THE DEVELOPMENT OF THE

CHINESE MEDICINE HOSPITAL

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PLANNING AND DESIGN BRIEF

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Important Notes

Unless otherwise defined herein, the capitalised terms carry the same meaning as their counterparts in the Invitation to Tender and the Service Deed.

The information contained in this Brief is for information only and is not intended to have any legal effect.

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SECTION 1
PROJECT OVERVIEW

Purpose of the Planning and Design Brief

1.   The planning and design brief sets out the key design and planning directives and concepts of the Hospital.   It outlines the possible mode of operation, operational requirements of the facilities and systems, departments and service units of the Chinese Medicine Hospital ("CMH").

2.   As the design concept, mode of operation may evolve and subject to construction, site, technology, applicability and other constraints, the hospital will be constructed according to the Planning and Design Brief and the approved schedule of accommodation ("SoA") with necessary changes and adjustments.

3.   This document should be read as for reference only.

Background

4.   In the 2014 Policy Address, the Chief Executive announced that "The Government has decided to reserve a site in Tseung Kwan O, originally earmarked for private hospital development, to set up a Chinese medicine hospital".   In the 2017 Policy Address, it was further announced that "the Government has decided to finance the construction of a Chinese medicine hospital on a reserved site in Tseung Kwan O, and invite the Hospital Authority ("HA") to assist in identifying a suitable non-profit-making organisation by tender to take forward the project and operate the hospital".

5.   The 2018 Policy Address has announced that "Through Government subsidising defined Chinese medicine services, Chinese medicine will be incorporated into the healthcare system in Hong Kong.

These services include:

(1) a combination of government-subsidised inpatient and outpatient services offered by the future CMH;

(2) government-subsidised outpatient services offered by the 18 Chinese Medicine Centres for Training and Research ("CMCTR") at the district level; and

(3) government-subsidised inpatient services providing Integrated Chinese-Western Medicine ("ICWM") treatment in defined public hospitals, in consultation with HA."

6. The 2018 Policy Agenda stated that the proposed Chinese medicine ("CM") hospital will be constructed by the Government and operated by a non-profit-making organisation.

7. In 2018, the Food and Health Bureau ("FHB") set up a Chinese Medicine Hospital Project Office ("CMHPO") to oversee the CMH project, and to take forward the planning, tendering, construction and commissioning of the CMH as well as the commissioning of a suitable non-profit-making organisation to operate the CMH.

8. After a series of consultation with the CM profession, trade and industry, healthcare professionals and patient groups, the proposed CMH is positioned as follows:

(1) the CMH will serve as the flagship Chinese medicine (CM) institution leading the development of CM (中醫) including Chinese medicines ("CMs")(中藥) in Hong Kong; and

(2) the CMH will be a change driver, promoting service development, education and training, innovation and research.

9. The missions and functions of the CMH are centred on the positioning of the CMH in the healthcare system, the key objectives in service, education and training, research, collaboration and creating health values, the aspirations in internal organisation and roles in

promoting CM including CMs outside Hong Kong.

Project model

10.   The CMH project will adopt a public-private partnership model. The Government will fund and construct the CMH and provide resources for other essential equipment and facilities such as furniture, medical equipment and Information Technology ("IT") systems that are considered necessary for the commencement of Hospital Services.   The Government would also inject substantial recurrent resources to support the subsidised services, and education and research functions of the CMH.

11.   Through a competitive bidding process, the Government would select a contractor ("the Contractor") to enter into a service deed for the operation of the CMH.   The service deed will cover arrangements for commissioning, a 10-year period (extendable by five years at most), followed by a six-year post service period.   The Contractor would have to incorporate a company limited by guarantee ("the Operator") to manage, operate and maintain the CMH.   The Operator would be a party of the service deed with the Government and the Contractor, and should obtain a licence pursuant to the Private Healthcare Facilities Ordinance (Chapter ("Cap") 633) for the operation of the CMH.

12.   The Government will subsidise a combination of inpatient and outpatient services to local residents, CM related professional training and CM research development.   The CMH will also provide add-on market oriented services positively interacting with CM services in the community. Other than government funding, the Operator would be able to generate income through the provision of add-on market oriented services (e.g. market driven CM services, training and research activities), related business initiatives as well as donation.   All surplus generated from the CMH would ultimately be ploughed back for hospital operation and development.

Major clinical services for the proposed Chinese Medicine Hospital

13.   The major clinical services will be logically distributed as per the below functional stacking diagram for the following major service areas:

(1) Inpatient wards (250 beds), day wards (90 beds), paediatrics wards (40 beds) and Clinical Trial and Research Centre ("CTRC") (20 beds)

(2) Ambulatory care facilities (outpatient facilities)

(3) Pharmacy facilities (CM and Western medicine ("WM"))

(4) Clinical supporting facilities – Day procedure

(5) Clinical supporting facilities – Radiology

(6) Clinical supporting facilities – Pathology

(7) Education, training and research facilities

(8) Allied health ("AH") facilities

(9) Community health and support facilities, and administrative facilities

Chinese Medicine Hospital
Functional stacking diagram

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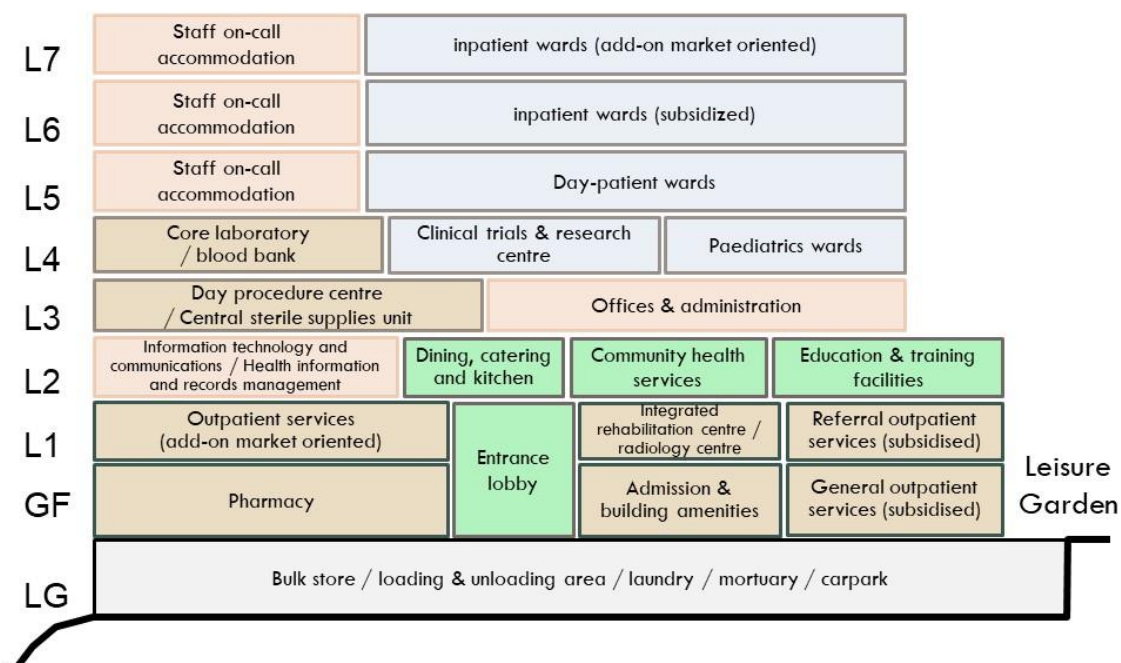
Project timeline

14.   The tendering procedure for the selection of the Contractor for the operation of the CMH was launched in September 2019.   It is anticipated that the Contractor will be awarded with the service deed in the first half of 2021 and be able to join the commissioning work by the second half of 2021.   On the hospital development side, subject to the funding approval from the Legislative Council, it is expected that the construction works for the CMH will commence in 2021 for phased completion around end of 2024 to early 2025.   The CMH will commence services by phases along its phased completion.

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SECTION 2
SERVICES OVERVIEW

Clinical Services Plan ("CSP")

1.   The CSP which set out the services overview including clinical, education, training and research of the CMH was published in 2019.   It forms the basis for the planning and development of the CMH project and helps ensuring that the physical design of the hospital meets the needs of future services and users.

Clinical services overview

2.   On the provision of healthcare service, the CMH will be integrated into the existing healthcare system with CM predominant mode of operation.

Level of care

3.   The services provided by the CMH will cover primary, secondary and tertiary care as well as the development of specialised services.

Service scope

4.   On the scope of service provision, the CMH will have inpatient, day-patient, outpatient and community services.

Inpatient and day-patient services

5.   Inpatients are those who are admitted to hospitals and stay for more than one day.   Day-patients refer to those who are admitted to

hospitals for non-emergency treatment and discharge within the same day and overnight accommodation is not required.

6.   Characteristics of hospitalised patients are as follows:

(1) they may have complex conditions which require monitoring on clinical conditions and response to treatments;

(2) they have to undergo intensive treatment and/or interventional programmes;

(3) some may have disability or functionally deficit who have difficulty in self-care and require an in-hospital environment for care; or

(4) some may need long-term care.

Outpatient services

7.   An outpatient is a patient who attends a clinic session for clinical care. Patient leaves after the consultation and is not admitted to a hospital and does not occupy a hospital bed. The outpatient clinic of the CMH will be further divided into:

(1) General outpatient clinic ("GOPC") which accepts patient self-referral cases. The GOPC can operate during normal operation hours or extended hours;

(2) Referral outpatient clinic ("ROPC") which accepts referrals from GOPC of the CMH, CMCTR, partnering organisations, CM practitioners ("CMPs"), WM medical practitioner and professional healthcare providers. Referrals will be handled by protocol;

(3) Special disease centres for CM service development. Patients can attend these centres by referral or self-referral;

(4) Preventive care and health maintenance centre caters for disease prevention and health maintenance. People can attend this centre by referral or self-referral; and

(5) Private clinic allows patients' choice of clinician. Patients can attend this clinic by referral or self-referral.

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Community outreach services

8.   This is part of the primary care services.   This encompasses the provision of healthcare to patients outside hospital setting.   The care is usually provided outreach at patients' home or other residential setting, old age homes, community health premises or mobile clinics.

Service type

9.   The CMH will provide a comprehensive range of CM services. Service types include pure CM, CM playing the predominant role and ICWM services:

(1) Pure CM Services

Pure CM services will be provided based on the theory of traditional CM with a comprehensive range of CM diagnosis and treatment methods, including CMs, acupuncture (針灸), cupping (拔罐), moxibustion (艾灸), bone-setting (正骨) and the like.

(2) Services with CM playing the predominant role in collaboration with WM

(a)   CM will be the dominant component of medical care.   The attending CMPs will provide diagnosis and treatment according to CM theory while supported by WM medical practitioners through WM methods.

(b)   If the patient has multiple diseases, the attending CMPs will provide treatment according to CM theory, while the WM medical practitioners will monitor and handle the adjuvant conditions, so as to achieve the goal of holistic care.

(c)   In the sequence of assessment, diagnosis, interventional treatment, patient outcome evaluation, CM will be the dominant component of medical care, while at different stages being supported with WM where indicated.

(3) ICWM services

In the design of ICWM programmes, collaboration will be on specific patient types or diseases where CM (having the predominant role) and WM would be integrated into the care protocols based on the strengths of both treatment types to achieve the desired patient outcome.

Disease category

10.   The hospital services will cover episodic, chronic, complex diseases, convalescence, rehabilitation, palliative care, health maintenance and preventive care and other disease categories.

Types of services not to be included in the CMH

11.   To ensure that the CMH will develop along the CM predominant model to fulfil its missions and functions in promoting the development of CM including CMs in Hong Kong, the following services will not be available as comprehensive WM services will need to be provided on their inclusion:

(1) Accident and Emergency Services

(2) General Anaesthetic Surgical Services

(3) Intensive Care Services

(4) Child Delivery Services

Roles of WM in the CMH

12.   In the CMH, WM will play the following roles:

(1) For services with CM playing the predominant role, WM will manage the adjuvant conditions in achieving holistic care for patients and can come in at different stages of care as clinically indicated for patient benefits and safety.

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(2) For ICWM services, WM will work together with CM as genuine parts of the total patient care.

(3) On-site CM and WM care will be made available at all times to address clinical needs and emergent situations including resuscitation, patient escort and transfer.

Clinical services operational model

13.　　CM and WM teams would provide joint clinical services where appropriate adopting an integrative collaboration model.

Collaboration model

14.　　Clinical departments in CM division would be set up based on specialised services and clinical departments in WM division would be set up based on specialties and subspecialties as indicated.　The two divisions and respective departments would be separate entities and collaborate through consultation and mutual support.

Integrative model

15.　　For the development of ICWM, there could be situation for the formation of an integrated team, comprising WM and CM professionals as required.

Clinical consultations between CMPs and WM medical practitioners

16.　　The CMH is targeted to provide pure CM, CM playing the predominant role and ICWM services.　As it will not provide pure WM services, in general, apart from some specific ICWM programmes, the clinician responsible for the first consultation would be a CMP.　After assessment of the CMP, depending on the clinical needs of individual

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patients, in case the situation falls under CM playing the predominant role or ICWM services, the CMP would initiate WM medical practitioner consultation. In general, provision of services from WM medical practitioners of specialties that have a wide scope of diseases coverage e.g. family medicine, internal medicine would be scheduled on daily basis. In that case, the patient consultation may take place in the same session. In case the consultation by WM medical practitioner is on a specialty service that is provided on sessional basis and not in the same session, a booking for the patient will be arranged. Similar arrangement will be made on inpatient basis, where joint or sequential ward rounds of CMPs and WM medical practitioners could be conducted where appropriate. In the process of CM and WM consultation, in view of the patient's clinical needs and as decided by the WM medical practitioner, respective radio-diagnostic services, laboratory services and other clinical supporting services will be requested. On completion of the respective examination and after professional reporting of special investigation results, the WM medical practitioner will discuss the findings and result of overall clinical assessment with the CMP to establish or refine the clinical management plan of the patient. The CMH Clinical Management System[1] ("CMS") will adopt an integrated approach to allow access of full set of clinical information by in-charge clinicians of both CMPs and WM medical practitioners.

17.   For pure CM services, the in-charge CMP together with his/her team will manage the patient's conditions and with support of other CM teams of other specialised services to initiate appropriate clinical supporting services on need basis through consultation and referral.

Specialised services

18.   Being the first CM hospital in Hong Kong, the range of specialised services will be broad as a start while room for future development will be allowed. In establishing specialised services, all CM services provided in the CMH should be based on the principle of the holistic fundamental

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[1] CMS is an IT system for managing clinical data of patients.

theories of traditional CM and the application of syndrome differentiation and treatment. The balance between ability in totality and ability in specialised services should be achieved. The following specialised services will form the fundamental specialised services and be a foundation for further development of other specialised services:

(1) Internal medicine (內科) in CM

(2) External medicine (外科) in CM

(3) Gynaecology (婦科) in CM

(4) Paediatrics (兒科) in CM

(5) Orthopaedic and traumatology (骨傷科) in CM

(6) Acupuncture in CM (針灸科)

Special disease programmes

19. The followings are recommended as direction in considering special disease programmes:

(1) stroke rehabilitation (中風後復康)

(2) cancer rehabilitation / palliative (腫瘤復康/紓緩)

(3) long standing pain (長期痛症)

(4) preventive care and health maintenance (治未病)

(5) infertility, prenatal and postnatal care (不孕及產前產後治理)

(6) elderly degenerative diseases (老年退化性疾病)

(7) mental illness (情志病)

(8) chronic skin diseases (皮膚頑病)

(9) chronic joint diseases (關節頑病)

(10)   seasonal flu (季節性流感)

(11)   others (其他)

Specialties and subspecialties required in WM

20.   Access to services of the following WM specialties and subspecialties will be developed along the CM services development in the CMH:

(1) Onsite 24-hour coverage

The hospital will provide 24-hour CMPs and WM medical practitioners onsite coverage. The requirement is to cater for inpatient clinical needs including emergent situations such as resuscitation, patient escort and transfer.   Services provided by WM medical practitioner of family medicine, internal medicine, emergency medicine, anaesthesiology and other background could be considered.

(2) Day-to-day ward round and outpatient clinic services

Coverage is for day-to-day inpatient, day-patient and outpatient services on consultation or joint programme basis.   Depending on the types of patients admitted and how outpatient clinics are organised, services provided by WM medical practitioners of family medicine, internal medicine, surgery, obstetrics and gynaecology, paediatrics, orthopaedic and traumatology, clinical oncology, neurology, psychiatry, dermatology, anaesthesiology and other background could be considered.

(3) Clinical supporting services

Selected diagnostic radiology and pathology services should be made available 24-hour to support routine, acute or emergency service demand of the inpatient services.   Arrangement for non-critical services or services not planned for onsite provision could be made accessible by referral.   Subject to service demand, on-site, on-call or visiting WM medical practitioners of the corresponding specialties and subspecialties can be arranged to render services.

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Clinical supporting services overview

Facilities related to WM diagnostic and treatment

21.   The CMH will have the essential WM diagnostic and treatment facilities to meet the clinical service requirements.   In case there is need for special investigations that cannot be provided onsite, the CMH can consider contracting out the related items to ensure service availability.

Radio-diagnostic and pathology services

22.   Radio-diagnostic and pathology services are required to be initiated by WM medical practitioners.   In the process of CM and WM consultation, in view of the patient's clinical needs and as decided by the WM medical practitioner, respective radio-diagnostic services will be requested.   On completion of the respective examination and after reporting by the radiologist, the WM medical practitioner will discuss the findings and result of overall clinical assessment with the CMP to establish or refine the clinical management plan of the patient.   The CMH Clinical Management System ("CMS") will adopt an integrated approach to allow access of full set of clinical information by in-charge clinicians of both CMPs and WM medical practitioners.

Radio-diagnostic services

23.   Radio-diagnostic facilities provided on-site in the CMH include plain X-ray, computed tomography ("CT"), magnetic resonance imaging ("MRI") and ultrasound services.   The different modalities of examinations are to serve both the clinical and research needs in assessing patient condition.   Main service will be provided during business hours or on sessional basis in line with the clinical operation. Plain X-ray and CT scan services will be provided on 24-hour basis for inpatients.   Both on-site and remote reporting by radiologist are possible

depending on modality of the examination.　Services not available on-site will be made available to patients off-site.

24.　X-ray service can be provided in a radiology examination room on each inpatient and day ward floor to minimise the need of transporting patients to the main radiology department for examination and eliminate the need of taking portable X-ray examination in the non-radiation shielded ward environment.

Pathology services

25.　The on-site pathology services provide a basic range of services to support the clinical needs.　Scope of services mainly include hematology, chemical pathology and blood bank services.　All results will be recorded in the CMS.　Microbiology services would be made available off-site.　For the latter, patient specimens will be collected and sent to outside laboratory for analysis.　Reports will be transmitted to the CMS electronically.　24-hour urgent laboratory services including blood bank services will be provided on-site for inpatients.　Services not available on-site will be made available to patients off-site.

Endoscopy services

26.　The endoscopy services will include upper or lower gastrointestinal examinations and bronchoscopy examinations.　Two endoscopy rooms will be provided with one capable of performing bronchoscopy equipped with negative pressure for infection control purpose.　Endoscopy services will be provided on sessional basis during business hours.

Electrophysiology and respiratory assessment services

27.　Services provided include lung function assessment and electric

potential studies mainly include neurological and neuro-muscular assessments. Sleep studies may be developed at a later stage.

Central sterile supplies facility

28. The sterilisation services will support the clinical services including outpatient clinics, day wards and inpatient wards together with services in minor operating theatre ("MOT"). The sterilisation services have to meet respective international standards with special designed process, monitoring and workflow. The services could be supplemented by off-site provision.

MOTs for surgical procedures requiring no general anaesthesia

29. There will be two MOTs catering for the needs of performing minor operations and surgical procedures with local anaesthesia. No general anaesthesia facilities will be provided. The service will be operated on sessional basis.

AH services and integrated rehabilitation centre ("IRC")

30. An integrated approach, which enables the AH health professionals to work closely as a team in the management of patients with complex needs, is planned. This will include physiotherapy ("PT"), occupational therapy ("OT"), speech therapy ("ST"), clinical psychology, dietetic, optometry, audiology, prosthetic and orthotic ("P&O"), podiatry and medical social services. The IRC will be subdivided into zones to suit special functions with integration across different zones. All areas are designed for specific clinical objectives and be used by the different disciplines as appropriate:

(1) The rehabilitation zone composes of sub-sections characterised by bodily functions enhancements such as upper limb, truncal and gait using special equipment and adaptive training for daily living.

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(2) The consultation and intervention zone is for individual patient assessment and interventional treatment with a variety of interventional modalities.

(3) The group activity zone is for conducting group training activities. One of the activity rooms is tailored for paediatric age group.

(4) Special equipment zone is for housing specific equipment requiring special physical set up and infrastructure provision such as hydrotherapy room and cognitive function training room.

(5) The workshop and special assessment zone is for prosthetic and orthotics, audiology and optometry services.

CM pharmacy and WM pharmacy

31.   Patients seeking care from the CMH will be provided with both CM and WM pharmacy services.   It is common that patients may have multiple diseases with the key health problem managed by the CM services.   WM services supported by WM pharmacy would play an adjuvant role in achieving holistic care.   Furthermore, for ICWM programmes, CM and WM services as supported by respective pharmacy services will be an essential part of the total patient care.

32.   For efficient dispensing, the CM and WM pharmacies will be set up next to each other.   The two pharmacies will have separate dispensing counters cater for patients requiring only one stream of medications.   A common CM and WM dispensing counter will be provided in the central position so that patients requiring both CM and WM medications can receive their medications in one go.   The two pharmacies will have common staff facilities and share a common back office.

CM pharmacy

33.   The CM pharmacy will consist of the following key areas:

(1) CMs dispensing

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(2) Simmering / decoction and packaging

(3) CMs storage

(4) CMs compounding

34.   The operational model will be aligned with the capability of the service providers in the CMs supply chain.   Modern technologies will be adopted to improve efficiency and safety.   Radiofrequency Identification ("RFID") and barcode systems will be widely used to ensure accuracy on dispensing.   Conveyor belt system will be used to integrate the workflow of different work areas and stations to enhance efficiency.   Automatic warehouse system will be adopted to cater for the storage requirements. For drug compounding, facilities will be designed for small volume production for individualised patient care, training and research.   Large scale production will be commissioned to outside service providers fulfilling good manufacturing practice requirements.   As the mode of operation of CM pharmacy and technology adoption are still under development, a flexible architecture approach will be adopted to facilitate future development and evolvement.   A CM pharmacy IT system will be developed to link up the end to end processes.

WM pharmacy

35.   The WM pharmacy will be a medium size pharmacy with standard set up of pharmacy in WM hospitals.   It will be equipped with different functionalities including storage, compounding, manufacturing, packaging, dispensing and distributing medications i.e. drugs and other pharmaceutical items (e.g. medical gases) for both inpatients and outpatients.   A WM pharmacy IT system will be developed to link up the end to end processes.   Technologies including automatic dispensing and unit dose dispensing system will be installed.   Barcode and RFID will be used to ensure accuracy.

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Education, training and research overview

36.   The CMH will provide clinical training platform to enhance capability of CM and related healthcare professionals as well as an evidence-based knowledge development.   The CMH also offers a research platform for enhancing knowledge acquisition, research capabilities and advancement in CM including CMs.

Education and training

37.   On education and training, the CMH will collaborate with academia, the professionals, trade and industry, and other related institutions, providing specific healthcare training and education opportunities to healthcare professionals related to CM and ICWM.   As a hospital with major role in training, the CMH will support the three local universities with School of CM ("Universities") to provide clinical training for their undergraduate and postgraduate students.   The CMH will also provide continuing training to the hospital staff.

38.   The CMH will collaborate with the professional organisations and partnering units to provide both basic and advanced clinical post-registration training opportunities to CMPs and relevant clinical professionals in practice related to CM and ICWM.

39.   Furthermore, the CMH will develop a collaboration platform with local and overseas professional bodies, institutions, universities to facilitate exchange and partnership.   The CMH would provide training and related supporting facilities to support its training function.

40.   For optimal utilisation of resources, teaching facilities will be for shared use.   These facilities include the following:

    (1) all clinical areas will be designed to accommodate clinical teaching;

    (2) two lecture theatres which can be converted into one big theatre

with audio-visual ("AV") for holding local and international seminars and conferences;

(3) a skill and demonstration laboratory with AV equipment and space for work stations. The facility will be able to provide hands-on training for acquiring specific techniques and for team-training using specific complex scenarios. A demonstration consultation room with built-in one-way mirror for observation could help student and trainee groups acquiring clinical or patient handling techniques, e.g. patient consultation, communication, conflict management, breaking bad news on simulated cases or situations. The skill and demonstration laboratory will also house an in-house AV service providing a range of support services within a multimedia, information and communication technology-enabled environment;

(4) tutorial rooms will facilitate theme or case based group discussion;

(5) one-way mirror consultation rooms in GOPC and ROPC, large teaching consultation and interventional rooms in inpatient, day-patient and outpatient settings that can accommodate multiple students or trainees will facilitate learning on real patient consultation;

(6) a CM library with discussion rooms, study areas and access to hard copies and electronic books and journals will help self-study and research planning;

(7) offices for the partnering Universities for education and research purposes will be provided;

(8) as students may attend different training or practicum at different places in the hospital campus during a day, student support facilities will be offered; and

(9) with the light emitting diode ("LED") display panel system, education material could be called upon and display in the above facilities to facilitate learning.

41.   With all the above setup, the CMH will hold international conferences and seminars from time to time and will be an international

exchange and training centre in CM.

Research

42.　　On research, the CMH will support the research and development of CM including CMs in Hong Kong.　The CMH will collaborate closely with relevant universities, educational and professional bodies and CM industry both local and outside Hong Kong to promote evidence-based clinical research for CM and ICWM.　The CMH would also encourage and facilitate research initiated by hospital staff.　The CMH aims at becoming an internationally recognised high standard clinical research platform. The types of research include:

(1) research on the basic theory of traditional CM and its clinical application;

(2) clinical research on CM or ICWM interventions; and

(3) clinical research on proprietary Chinese Medicines ("pCMs') (中成藥) development.

43.　　A research culture and a commitment to evidence-based service delivery will be fostered through the integration of clinical care and clinical research.　The integration of research and clinical service will be supported through the provision of shared clinical areas to enable researchers to work alongside clinicians when reviewing evidence, identifying and recruiting clinical trials participants and gathering research data.　Facilities will include consultation and interview space, and meeting space for booking.　Clinical research or clinical trials involving patients will be conducted in clinics, ambulatory care and inpatient areas in conjunction with the patient's treatment.

44.　　A CTRC will be set up in the CMH to conduct high standard clinical trials for the development of new pCMs and the establishment of new clinical indications of pCMs especially in expanding therapeutic uses, which will foster the development of pCMs industries and promote international marketing of pCMs.　This CTRC would be capable to

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conduct Phase I and Phase II clinical trials.   In the CTRC, there will be consultation rooms, bed cubicles (20 beds in total) and a patient leisure area.   Resuscitation and patient monitoring facilities will be provided.   While all medication preparation will be conducted in respective CM and WM pharmacies, space will be planned for drug storage with refrigerators and freezers, and for specimen processing and storage in the CTRC.   In addition, associated administration, staff and patient facilities will be set up.   Research data rooms would be provided within the CTRC to each of the partnering Universities.

Collaboration and networking overview

45.   Being an integral part of the Hong Kong healthcare system, the CMH will link up and network with related healthcare providers of various professional background in both the public and private sectors encompassing both CM and WM.   The CMH will also work with partners in the non-medical sectors to achieve health in the community.   The CMH will build a platform that would facilitate appropriate service development, patient flow, knowledge flow, personnel flow, partnership and collaboration in service, training, education and research.

46.   The 18 CMCTRs will closely network with the CMH to build a platform of CM development with collaboration in service development, education, training and research.   Linkage, exchange and collaboration will be extended to counterparts outside Hong Kong.   In particular, the CMH will collaborate with its counterparts in the Mainland to leverage on their expertise and experience in the development of CM, further lifting the CM professional standard in Hong Kong.

47.   The CMH will encourage participation of private CMPs or WM specialists, visiting scholars and experts from overseas and from the Mainland in the clinical service provision and development, education, training and research.   Accommodation facilities will be provided to visiting scholars and experts coming for short term exchange.

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48.   The CMH will be an international hub for service, education, training and research exchange for the development of CM both locally and internationally.

Creation of health values overview

49.   The CMH will play a key role in promoting the use of CM including CMs in achieving health to the community.   An evidence-based approach will be adopted to clearly articulate what specific health benefits can be achieved by specific CM treatments or interventions on specific health conditions in specific patient groups or population.   Evidence-based research could extend the clinical and therapeutic use of CM including CMs.   The community could also integrate CM approaches into daily living in creating health.

50.   The CMH will conduct community engagement, health education and promotion activities for the above objectives.   Patient and community supporting facilities including patient resource centre and counselling rooms are provided.   Through proper designs, displays and exhibitions, when hospital users including patients and visitors walk through the hospital, CM messages will be conveyed for better understanding of the development, theories, languages and equipment of CM and more importantly the use and benefits of CM including CMs.   The CMH by itself will be a CM museum and health education centre.

51.   Please also refer to sections concerning upholding CM tradition and culture, community and patient support, and research.

SECTION 3
CM SERVICES AND SUPPORT IN THE CMH

Overview of CM clinical services in the CMH

1.   As the first of its kind with the vision in being the flagship institution of the CM industry in Hong Kong, the CMH will establish a comprehensive series of CM services and demonstrate the genuine ideas of CM.   This requires a strong coordination on the design and space planning of the hospital to support and redeem the characteristics.

2.   The anticipated CM clinical and supporting services in the CMH will be introduced with a brief of features and space consideration in the ensuing paragraphs.

CM (中醫)

Consultation

3.   CMPs usually diagnose patients with an analysis of signs, symptoms and information gained by the four traditional diagnostic methods which include inspection, listening and smelling, inquiry and palpation i.e. 望、聞、問、切.   Among the public-familiarised CM diagnostic methods, palpation indeed includes body palpation e.g. abdominal palpation in addition to pulse taking (脈診) when necessary.   Thus, an examination bed is used to be equipped in each consultation room for gestural palpation and checking.   In addition, a sink is for hand

4.   Hand washing before and after the touch to patients as to achieve a better hygiene and control of infection.   Film viewing boxes will also be equipped in consultation rooms for reading films of clinical diagnostic imaging examination.   Following the consultation and diagnosis, a therapeutic proposal is suggested by the CMPs.   The most common CM treatment is prescribing CMs and acupuncture with moxibustion.

Patients go to CM pharmacy or interventional room by next to collect the CMs or receiving the treatment as per the clinical decision of CMPs.

5.   CMPs will decide individual CM clinical protocol for each patient based on syndrome differentiation under fundamental CM theory.   The weight-bearing point in considering a therapeutic plan is the root causes of the disease and the physique of the patient instead of the manifested symptoms.   To facilitate the CMPs in advising patients on medical condition and daily care, it is planned that LED display panel connecting to hospital network is provided in the consultation room for illustration.

Intervention (手法治療)

6.   Meridian (經絡) theory is an essential component of traditional CM theory which steer the development of acupuncture, tui-na (推拿) and other interventional measures.   Meridians are the routes for the circulation of qi-xue (氣血) in the human body.   They connect with the zang-fu (臟腑) internally as well as the limbs, as to coordinate all the parts of the body and maintain the balance between their functions and movement.   Under the etiology of CM, the obstruction and deficiency of qi (氣) will lead to the development of diseases.   By practicing various of CM interventional measures on patients, the qi of zang-fu can be regulated by giving stimulation to the meridians and achieve a balanced condition of body.

7.   Necessary medical instruments for practicing the general CM therapeutic measures will be provided in all intervention rooms in the CMH. According to the estimation of the applicability of moxibustion, it is intended to set up extra ventilation system in the intervention rooms with area of 25m^2 to alleviate the smoke and smell generated during the treatment.

8.   An electronic bed with ascending and descending function is needed to support the practice of CM intervention.   It takes care the

needs of all patients including the disabled persons to get on the bed easily and properly. Nevertheless, the bed should be reachable all-roundly to allow the space for CMPs to practise the treatment. This requirement is also crucial in practicing tui-na and bone-setting.

9.   As a common practice, CMPs leave the intervention room after practising the curative procedures and get back to the room when the treatment time is about to finish. Having regard to this, a Nurse Call System has to be installed among the intervention rooms. It is essential for patients to give help seeking signals during the treatment time when necessary. The high accessibility of intervention rooms from assisting staff area and consultation rooms will promote the prompt assistance given by CMPs and nurses/assistants to the patients. Besides, timers and clocks will help the CMPs in managing the patients' treatment timely. As some of the intervention treatment use open fire e.g. moxibustion and cupping, sufficient fire protection should be installed in the intervention rooms.

10.   It is assumed that the patients will be arranged to the intervention rooms to receive the treatment after seeing the CMPs in the consultation rooms. In reference to the current practices, the CMPs may separately consult two to four patients in a batch. Patients will be allocated to rooms/beds and get prepared for treatment e.g. clothes changing, pose appropriately on beds/chairs. The CMPs will carry out the therapy for the batch of patients one by one. This operational mode can significantly enhance the efficiency in meeting the high demand of service. Close distance between the consultation rooms and intervention rooms is favorable for clinical staff to manage and assist the patients. Besides, for orthopedics and traumatology in CM, it is habitual and regular to practise curative technique and test during consultation. Transfer of patients may not be preferential due to possible immobility of patients and consumption of time.

11.   The CMH will offer private treatment room for each patient and they may change clothes inside the room before the treatment if needed.

This is to remark that bathing facilities are not critical to the intervention area of day wards and outpatient department, as the patients are not advised to bath immediately after treatment under traditional CM theory. It is believed that to a certain extent, the intervention will open the gate of qi on the surface of body which the evil (病邪) will easily get into the body -

Acupuncture

(a) Acupuncture is a therapy to insert acupuncture needles into human body to regulate the qi within meridians. It is usually practised on acupoints. In coordination with different technique to make a movement of needles, the treatment can enhance and activate the qi or dredge the pathogenic qi. Angle and depth of inserting the needles will be decided by the disease, the characteristics of the body part having acupuncture and the orientation of the CM acupuncture faction. Besides general acupuncture mentioned above, there are also other ways of acupuncture with distinguishing features e.g. repeated stinging by plum-blossom needle (梅花針), fast punching with a fire needle (火針). Except from serious structural malfunction and trauma, acupuncture is always an option for most of the diseases but not restricted to pain diseases and stoke palliative care.

(b) Before implementing the treatment, CMPs will clean their hands by washing with soap or rubbing hand sanitiser. CMPs will wipe the acupoints which are going to put needles on with alcohol pad and insert the one-off acupuncture needles. It usually takes 15 to 30 minutes for leaving the needles on patients. Usually, the CMPs press the acupoints with a cotton ball when take out the acupuncture needles from patients' body. Occasionally there can be bloodletting from acupoints after acupuncture. The used needles will be disposed to sharp boxes.

(c) Nowadays, electrotherapy machine is widely adopted in practising acupuncture. The needles will be connected to the machine in pairs to receive electronic pulses. It is believed that the pulses can help to relieve pain and to a certain extent,

to replace the manual movement of the needles during the treatment time. Also, Thermal Design Power ("TDP") lamp, a kind of mobile instrument which generate electromagnetic wave and heat is arranged to irradiate on patients during the treatment time for warmth and therapeutic effect. As patients may expose large area of body parts e.g. whole back in the intervention room for treatment, a few TDP lamps may be provided for a patient at the same time as to keep him/her warm. At the same time, the location of air conditioning (A/C) outlet will be a conscious decision to avoid to strong blow to patients. The electrotherapy machines are handy and portable and mostly can be supported by both direct current ("DC") and alternating current ("AC"), while the TDP probably require the source of alternating current.

(2)   Moxibustion

(a)   Moxibustion is a kind of therapy that smoldering moxa pillars or sticks on a certain part of the body surface and giving the body a warm stimulus to prevent and treat diseases. The chosen moxibusting points are usually acupoints or points with strong induction as reflected by patients. The therapy can retrieve and enhance the effectiveness of acupuncture for indication.

(b)   There are several ways to apply moxibustion with moxa fluff or sticks. For moxa fluff, it can be rubbed into conical pillars/ barleycorn sized grainy, and ignite directly on skin or indirectly with separation of medicine/materials e.g. ginger slices. The process will repeat three to five times for an integrated treatment. The moxa pillar or grainy will be removed by the CMPs subject to the clinical judgement e.g. flushing of skin, sense of patients. Close monitoring is required for this way of moxibustion.

(c)   Moxa stick is another form of moxa used for treatment. Commonly moxa sticks will be put into moxa boxes to fix its position and contain the ash created during treatment. Depending on clinical needs, several moxa sticks can be

applied for the treatment of patient at one time. Moxibustion is usually carried out together with acupuncture which both takes around 20 to 30 minutes. Sometimes, the CMPs will rub and mold the moxa fluff/put a chopped cube of moxa stick on the needles after acupuncture and ignite the moxa. It is named Wenzhenjiu（溫針灸）which goes for a focused penetration of heat to the acupoints.

(d) Strong smell will be generated during moxibustion. In addition, the smoke created contains lots of herb oils which results in sticky and yellowish of walls in long term. A good independent ventilation system should be considered to alleviate the problem as to maintain a comfortable environment of the hospital.

(e) Having regard to the smoke and smell, smokeless moxa stick is considered to be an alternative. It is made from powder of carbonised moxa fluff presenting in a hard texture. In comparison to the traditional moxa fluff and sticks, its flexibility in shaping is low which largely limits its application to treatment. Moreover, carbonisation is one of the processed way to herbal medicine which alters the nature and flavor (性味) of medicine which brings up a suspect curative effect of smokeless moxa stick. This results to the low acceptance among CMPs for replacing the traditional moxibustion.

(f) The medical indication of moxibustion is wide. In an ancient CM book[2], it records that the moxa can expel cold evil (寒邪), give warmth to the mid part of human body and drive the movement of qi. It can treat the diseases caused by wind evil (風邪), cold evil and dampness evil (濕邪), and the disease arising from chronic deficiency as defined under CM. For example, moxibusting designated acupoints can be a treatment to diarrhea or enuresis caused by deficiency of qi.

(3) Cupping

(a) Cupping is a therapy to put cups on human body and create

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[2] 《本章正》:「艾葉，能通十二經，......善於溫中，逐冷，行血中之氣，氣中之滯」

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an air tight suction.   Negative pressure will be generated by burning inside the cups which results in tight sucking of cups to the muscles.   It is an additive treatment to acupuncture and moxibustion and rarely be worked out alone as a main therapeutic measure.   The number of cups used for treatment depends on clinical needs and body parts.   The treatment time should be within 10 minutes.   Marks in red or purple will be left on skin after the therapy, and be dispersed and disappeared in around a week.

(b)   The traditional variety of cups includes bamboo cups, clay cups and glass cups.   Bamboo cups and glass cups are more often to be used for different advantages.   While the bamboo cups are light and robust, the glass cups perform a stronger suction and uneasy leakage of air.

(c)   The common practice of cupping is (i) clipping a cotton ball soaked with 95% alcohol by a pair of tongs, (ii) burning the cotton ball, (iii) holding the burning cotton ball in the space inside the cup and (iv) quickly putting the cup on the muscle. The treatment can also be carried out by using air tight cups which the cups can suck on muscles without burning. Though the safety is enhanced, the traditional way is still the most popular way by the reasons of greater suction.   In the CM theory, the heat induced by fire can expel the cold evil and dampness evil of a human body, and reinforce the circulation of qi-xue.

(d)   Bloodletting cupping (刺絡放血拔罐), moving cupping (走罐) and repeated cupping with short retention time (閃罐) are extended development of cupping.   Bloodletting cupping will be in coordination with acupuncture when practise.   The cups with blood are washed immediately after treatment in general. For moving cupping, baby oil will be poured over the skin of the sick body part of patients and the CMPs will move the sucking cup along the meridians.

(e)   Aiming for a high quality service in the CMH, it is wished that the cups will be cleaned/sterilised every time after treatment for better hygiene and impression of patients.

(4)　Tui-na and bone-setting

(a)　Tui-na is a therapy that to practise massage on patients strategically for a curative effect.   An (按), Mo (摩), Tui (推), Na (拿), Rou (揉), Gun (滾), Cuo (搓), Dong (動), Bo(撥) and Da (打) are some of the common techniques of tui-na.   The CMPs will practise the tui-na technique on the corresponding acupoints, meridians and body parts to enhance the flow of qi. The therapy also helps to recover the movement and functions of the muscles and joints.

(b)　Bone-setting is a therapy to adjust the minor structural malfunction and dislocation of spine and joints.   For the case of bone fracture, small splints are used to stabilise the injured position after corrective relocation of bones.   The CMPs will advise the patients to pose properly to coordinate with exerting of force on a spot of body.   The space around the treatment bed/chair should be kept clear as to leave the space for the CMPs to practise the therapeutic technique.   Referring to the respective features of different branches of tui-na and bone-setting, there can be variation on the treatment protocol.

(c)　The therapies are commonly used in treating pain diseases especially for injury and strain of muscles and tendon, but not limited to.   As CM understands the human body as a lively organism in a whole, the movement of qi driven by the treatment can actually make an integrated curative effect to the patients.   For example, diarrhea can be cured by practising the tui-na technique to promote the qi of spleen in CM.   On the other hand, tui-na can be an alternative therapy of acupuncture for the patients with needle-phobia.

(5)　Fumigation and bathe (薰洗)

(a)　It is a therapy to fumigate and bathe the body parts with decocted herbal medicine soup.   Depends on the physique of patients and the cause of diseases, the medicinal soup for soaking and bathing can be served cool or warm.   The

therapeutic efficacy of the therapy will be up to the composition of the herbal medicine. Fumigation is to fumigate the affected area of the body with the vapor of the herbal medicine soup, and bathe is to bathe the body part into the warm medicine. In general, bathe follows the fumigation when the medicine turns warm from hot. The therapy can apply regionally or on the whole body with a specific fumigated machine and a bath tub.

(b) The service is anticipated to be provided to day-patients and inpatients of the CMH. A preparation area should be set up in the fumigation and bathe room to receive the prescribed processed herbal medicine (中藥飲片) from the pharmacy and prepare the decocted soup for the treatment. A heat resistant will be the media to drain the medicinal soup to the bath tub /tray from the decocting medicine. Basic drainage system will be established to support the application of bathe. An appropriate clothes changing area should be provided for patients for their preparation before and after treatment. Patients have to slightly erase the medicinal soup remaining on body after the bathe. However, instant shower is not recommended as to retain the curative effect.

(c) The curative effect of this therapy is significant on skin, genital and anorectal diseases. Privacy is of the utmost of importance when carrying out the treatment. For eye and nose diseases, fumigation is found more suitable as those parts are not fit for bathe.

(6) Dressing application (敷貼)

(a) It is a therapy to apply the compounded CMs preparation on specific acupoints or affected regions. The dressings can be prepared by squashing fresh herbal medicine, compounding CMs into a thick paste form, or mixing the adjuvant ingredients with the powder. The therapeutic efficacy of the therapy depends on the composition of the herbal medicine. To apply the dressing, the CMPs will put an amount of paste onto a piece of gauze or adhesive dressing, then stick the dressing

and fix it appropriately on patients with tapes or wraps.

(b) It is widely adopted in the Orthopedic and Traumatic diseases for alleviating the swelling and localised obstruction of qi and xue.   Seasonally, Tianjiu (天灸) is promoted to patients with deficiency of yang-qi (陽氣) by applying the dressing on the specific acupoints which are correlated to the lung and kidney in CM.

(c) As the treatment supports the clinical service of orthopedics and traumatology and external medicine in CM extensively, the treatment rooms in the outpatient clinics for these two specialised services can be used to store the commonly used compounded CMs preparations and the wrapping materials.

Specialised CM services (分科)

12.   Currently, the specialty system of CMPs is neither established in Hong Kong under the legal regimes nor prop up by professional training. Having said that, as to manage and categorise the expected high attendance of the CMH and to strategically train up the professions and CM students, the CM services in the referral outpatient clinic in the CMH will be provided on a specialised services basis.   Referral of patients can be from CMPs from the outpatient clinics of the CMH, the CMCTR in the 18 districts and all other private clinics. However, the clinical privileges of CMPs will not be limited by the specialised services, all CMPs will practise CM as a whole.   For example, CMPs under every specialised CM service can practise acupuncture on patients but not limited to those under the division of acupuncture and moxibustion.   Moreover, the wards will serve patients of all specialised services.

13.   Under the fundamental belief of holism (整體觀念), CM concerns the state of the whole human body during consultation but not single disease or organ.   In spite of that, the special nature of designated groups of human and diseases in the theory of CM is investigated and recorded in the ancient CM books separately.   Subsequently, people attempted to arrange and coordinate the knowledge by categories.   Thus, the follow

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six subjects are generally agreed as the penetrating points of learning CM.

Internal medicine in CM (中醫內科)

14.　　內科 – 內科所屬病症會按其病因病機及證治規律，以中藥為主要治療方法。

15.　　The scope of this specialised service is the widest as it is the foundation and confluence of diagnosis and treatment in CM.　In the principle of traditional CM, diseases caused by the imbalance of yin-yang (陰陽) within a human body will be subsumed to this category.　　Thus, this clinical principle is expected to owe the largest proportion out of all the varieties of service, while the other specialised services will cater for designated patient group.

External medicine in CM (中醫外科)

16.　　外科 – 外科範圍廣泛，凡是疾病生於人的體表，能夠用肉眼可以直接診察到的，凡有局部症狀可憑的，包括瘡瘍、皮膚病、瘰癧、乳病、癭瘤、岩、眼、耳、鼻、咽喉口腔、肛門病、和外科其他雜病，皆屬外科的治療範圍。

17.　　The subject concludes the diagnosis and treatment of the diseases can be observed externally under the theory of CM.　The scope includes sores, breast diseases, ridges, tumors, rocks, anorectal diseases, male anterior genital disease, skin diseases and sexually transmitted diseases, traumatic diseases and surrounding vascular disease and so on.

18.　　CM owes its unique treatment for external application.　Medicine will be applied directly on a diseased part to achieve the purpose of treatment.　Ointment and powder are the most common forms in nowadays.　Cooperating with the oral CMs medication, the external intervention can enhance the curative effect of the overall treatment.

Gynecology in CM (中醫婦科)

19.　　婦科 – 婦科服務內容為防治婦女特有疾病，包括月經、帶下、計劃生育、產前產後及婦人雜病。

20.　　The subject concludes the observation of the physio-pathological characteristics of women under the traditional theory of CM.　The service scope includes the diseases corresponding to menstruation, leucorrhea, pregnancy, childbirth and breast feeding.

Paediatrics in CM (中醫兒科)

21.　　兒科 – 兒科服務對象包括嬰兒、小童及青少年。

22.　　The target patient group ranges from infancy to adolescents. Since the CMH will not acquire emergency service for newborn infants, it is expected that the youngest patient group receiving the service in the hospital will be children in early childhood.

23.　　The service will be provided in the consideration of unique pattern of growth, physiopathology and healthcare of children under the CM theory. Besides, Xiaoer tui-na (小兒推拿) is a special feature of paediatrics in CM which is a curative massage designed for kids.

Orthopedics and traumatology in CM (中醫骨傷科)

24.　　骨傷科 – 骨傷科主要處理外傷(即骨折、脫位及筋傷)與內傷(即臟腑損傷及損傷所引起的氣血、臟腑、經絡功能紊亂而出現的各種損傷內證)。治療上會採用手法、針灸、中藥等方法。

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25.   The service scope mainly covers the injury and strain of muscles and bones with the support of functional exercise.   The major intervention will be tui-na and bone-setting, in coordination with acupuncture and CMs to adjust the physique of patients.

26.   Managing with the bone fracture cases, materials for cutting into small splints has to be stored in adjacent staff area for preparation of fixture to the injured part of patients.   Moreover, external application of dressing is common for this specialised CM service to promote the circulation of qi-xue regionally.   Sometimes, the dressing has to be warmed before adhering.   Necessary medical supplies and tools should be ready for use in the consultation/intervention rooms.   Apart from the above mentioned, a multifunction traction system should be equipped to serve the patients with symptoms of spinal compression.

Acupuncture and moxibustion in CM(中醫針灸科)

27.   針灸科 – 針灸科服務中，相關疾病的治療方法主要採用針灸，再按需要輔以中藥及其他中醫治療手段。

28.   The scope and target of the service is similar to internal medicine in CM.   Nonetheless, the major measure of this service will be acupuncture and moxibustion instead of oral medication.

Special disease programmes (專病)

29.   With the purpose of developing CM services strategically, special disease programmes will be developed.   Diseases with the clinical strength in CM as well as the demand of the local society will be selected. Comprehensive service support for patients with selected diseases will be organised under well designed protocol.   The disease programmes can be changed subject to the demand of service and availability of talents in the CMH.

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30. The CMH will provide stroke rehabilitation, cancer rehabilitation/palliative, long-standing pain and preventive care and health maintenance service under the special disease programmes since service commencement.

31. For preventive care and health maintenance service in CM, there is a trend to use modern equipment to collect information from patients by the four consulting methods of CM. The machine can record the face and tongue condition of patients with a photo taking functions. A questionnaire is programmed to ask for the symptoms of patients. A pressure sensor is linked with the machine system to test the pulse of patients. The machine will favor the collection of clinical data for research and make an initial assessment of the physique of patients. However, it cannot replace the professional and comprehensive judgement of CMPs. According to the results and further collected information from patients, the CMPs will advise on the daily habits of patients to maintain a balanced condition of body. It is predicted that the collected data will contribute to the clinical research of CM for a continuous and objective record of the clinical symptoms of patients. These equipment can be housed in the assessment rooms.

CMs

32. CMs plays an important role in supporting high quality CM service with efficacy and safety.

33. Being the leading institution in CM including CMs in Hong Kong, the CMH will offer extensive CMs service for patients. It is aimed to be a demonstrative unit to the industry and a training platform for CM and CMs students and professionals. The CM pharmacy of the CMH will be the one with largest scale and most comprehensive functions in Hong Kong.

34. It is expected that the service scope, operation mode, technology

adoption and service demand of the CMH will be on an evolving path. Thus, a flexible architecture concept is proposed in designing the CM pharmacy to allow easy physical changes. The features of different forms of CMs will be introduced below for comprehending in the adjustable design. In the estimation of attendance and application of CMs i.e. 85% occupancy of beds with 100% application of CMs and 85% of outpatients with application of CMs, the CM pharmacy in the CMH will have to handle around 1,200 prescriptions per day.

35. Understanding CMPs may prescribe different forms of CMs to a patient simultaneously at a time, the staff of CM pharmacy will collect all forms of prescribed CMs for the patient in the CM pharmacy and dispatch to him/her in one-go at counters for administering.

Processed herbal medicine

36. Processed herbal medicine is the general term to conclude the natural ingredients which are processed and readily be used as CMs for preparation. The origins of processed herbal medicine can be classified into three main types - plants, animal and minerals, while plants owe the largest proportion. The collected natural ingredients will be cleansed, sorted and cut, followed by different processing way i.e. drying in sunshine or shade, stir-frying (炒製), roasting (煨製), carbonising (炭化), steaming (蒸製). Adjuvant materials i.e. wine, vinegar, honey, salt-water will be added during different processing procedures to strengthen and control the natures and flavor of the medicine. The four natures of medicine include cold (寒), hot (熱), warm (溫), cool (涼), and the five flavors include pungent (辛), sweet (甘), sour (酸), bitter (苦) and salty (鹹). Nature and flavor will define the medicinal effect of processed herbal medicine to the qi, xue and zang-fu and its meridian tropism (歸經). The importance of concerted application (配伍) of medicine is believed in traditional CMs theory for mutual enhancement of efficacy.

37. In a set of medicine cabinets (百子櫃) of a large scale CM clinic locally, there will be around 300 to 500 kinds of processed herbal medicine.

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The work station can be set up in a 'U' shape with cabinets on the three sides of wall, or along a corridor with two columns of cabinets opposite to each other. A large working bench will be located in the centre of work station. Each kind of medicine will usually be located at both ends of the cabinets i.e. occupies at least two drawers to promote the dispensing efficiency. Currently, each drawer of the cabinet may store one, two or four kinds of processed herbal medicine. The arrangement is to save efforts in opening many drawers and storage space. Consulted the frontline staff of CM pharmacy, it is reviewed that contamination can be avoided if each drawer will only store for one kind of herbal medicines.

38. There is no standard in arranging the herbal medicine into the medicine cabinets. In general, the herbal medicines in classical or common complementation will be stored next to each other. The crucial philosophy of the arrangement is to bring greatest convenience to the staff of CM pharmacy coordinating with their habits. The mineral medicines will normally be stored in the lowest level of the cabinets as they are highly resistant to moist and relatively heavy. The leaves and flowers among herbal medicine will be stored in the middle to high level of the cabinets to avoid getting moisten and mildew. The most accessible drawers will be retained for the most commonly used medicine. Depending on the variety and value of the animal medicine, some of the types will be kept in fridges for preserve its quality. The valuable CMs may be stored and locked separately for security.

39. The processed herbal medicine has to store in cool and dry condition standardly. This is to prevent the medicine to diffuse oil extensively or be rotten due to insect bites or mildew. For those CMs listed under Schedule 1 of Chinese Medicine Ordinance (Cap. 549) with stronger toxicity biochemically, they must be stored separately from the other medicines, and properly packaged with labelling to avoid confusion. Usually, the herbal medicine without sulfuring or with high sugary will easily result in damage by worms. Those medicine will be stored in fridge for a higher standard of preservation.

40.   Processed herbal medicine is the fundamental basis to support decoction and compounded preparation for CM clinical purpose.   Though the decoction of herbal medicine requires complicated manual operation, it is still the mainstream for patients to take CMs, due to its supreme advantage on the flexibility of combination and dosage of medicine which can compose a best fit individual treatment for each individual.   The CM industry and public generally agree that decocted medicine is the best way in having CMs which maintains the traditions of CMs.

41.   There was an ancient CM book in Yuan Dynasty recorded that the efficacy of decocted medicine is significant and remarkable in treating serious diseases.[3] Most of the ancient prescriptions (古方) were written in the means of decocted medicine and they still make a high reference value to the CMPs nowadays.

42.   When staff of CM pharmacy receive the prescriptions from patients, they will vet and check whether the prescriptions are appropriate for dispensing without contradiction and incompatibility.   Signatures of CMPs may be requested to confirm the uncommonly large dosage of CMs. staff of CM pharmacy would then collect the CMs listed on prescriptions from the medicine cabinets after vetting.   Electronic pounds and Chinese steelyard are the tools commonly used to measure the weight of the medicine.   The herbal medicine will be distributed and packed in paper bags by dose per day.   Double verification on the dispensed medicine from two staff of CM pharmacy are usually requested to ensure the accuracy before packaging.   For those CMs which requires special decocted arrangement i.e. decocted earlier (先煎), decocted later (後下) will be packed separately and dispatched with the main packs of herbal medicine.   As per the request by CMPs, the staff of CM pharmacy will crush some of the processed herbal medicines for higher efficacy.   For packaging and fresh keeping of opened bags of stock, the staff of CM pharmacy may make use of sealing machines.   After checking with the patients' information and codes of prescriptions, the staff of CM pharmacy will distribute the packs of CMs to patients and advise on the decocted

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[3] (元・王海藏《湯液本草・東垣用藥心法》；「湯者，盪也，去大病用之」

method and the administered time.

43.   The most typical way in dispensing processed herbal medicine is collecting the processed herbal medicine from the medical cabinets with drawers.   This is also the most usual arrangement in Hong Kong.   The medicine would be purchased and stocked in bulk package i.e. one catty per bag with barcodes for source tracing.

44.   In the Mainland, the CMs suppliers usually provide processed herbal medicine in small packages to the Chinese medicine hospitals. Barcodes will be displayed on each small package for accurate tracking of origins and batches.   For each processed herbal medicine, packages in different dosage i.e. 3 grams, 5 grams, 15 grams will be manufactured to coordinate with the dosage required in each prescription.   The individual packaging can ensure the exactness of the amount of medicine and prevent intercross contamination among the CMs.   However, this way is not commonly adopted by the CM industry in Hong Kong.   The main concerns are the complication in managing the stock of various amount of each medicine, the perception of patients in disposing many plastic bags every day and the environmental problem.   The trend is still under observation locally.

45.   On the other hand, the tendency towards automatic CMs dispensing systems is developing in the Mainland.   There are two main streams – small packages and loose stock.   The dispensing systems and machines for small packages are developed by designated supplier of the processed herbal medicine.   The chains of small packages of medicine will be stored on the shelf conveying to the dispensing device.   It is understood that the system is still under trial and cannot cover all the variety of herbal medicine.

46.   The dispensing machine of loose stock of CMs is not extensively used or recommended at the current stage due to the constraints of precision of amount.   There is a standard in slicing and chopping for each herbal medicine in reference to the common criterion of the industry and

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the requirement of Pharmacopoeia of the People's Republic of China (中華人民共和國藥典). For the processed herbal medicine which are usually chopped into large slices can hardly be dispensed accurately through machines as each piece of medicine weighs a large unit differently. While the limitation of the current dispensing machines is pending for investigation, the flexibility and space for adopting future technology will be reserved for the CM pharmacy in the CMH in the prospect of being a smart hospital.

47.   In the vision of being an intelligent hospital, it is planned to adopt a stock refilling mode to the medicine cabinets.   Initially, it is anticipated that the herbal medicine can be repackaged into specific boxes which are designed to fit for the drawers of the medicine cabinets.   There will be at least two boxes of the same kind of medicine to be stored in the same roll of the medicine cabinets.   When the kind of medicine is out of stock, the staff of CM pharmacy can pull the next box of medicine behind the current empty box in the drawer for use.   The empty boxes will be returned to the store for cleansing and refill.

48.   At present, the operation mode for handling processed herbal medicine for the CMH is still under development.

CMs granules (中藥顆粒)

49.   CMs granules symbolises the modernisation and development of CMs.   It significantly shortens the preparation time and simplifies the concoction procedures of CMs.   The cup of CMs soup is ready to serve by simply compositing the granules into warm water.

50.   CMs granules is a form of concentrated herbal medicine.   The common manufacturing procedures of CMs include (i) extraction of effective component throughout repeated decoction, (ii) concentration, (iii) addition and mix of adjuvant materials and squashing into granules, (iv) drying and (v) packaging.   As it is concentrated during the manufacturing

process, the dosage of CMs granules will generally less the amount of herbal medicine.   For example, 3 grams of CMs granules will barely equal to 10 grams of processed herbal medicine.

51.   Two categories of CMs granules are provided in the market.   One of them is the concentration of a single Chinese herb (單味顆粒), while another one is a concentration of a combined herbal medicine (複方顆粒) referring to the classical ancient prescriptions.   Ancient prescriptions are originated from the classical ancient CM books and created by the famous ancient CMPs with experience of high efficacy.   The combined CMs granules are resulted from extraction and concentration of the decocted mixture of medicine instead of mixing the CMs granules of single herbs. As the traditional CMs theory value much on the concerted application a mutual enhancement of medicine during decoction, the combined herbal medicine CMs granules appears closer to the traditions in preparing CMs.

52.   There is no doubt on the advantaging convenience of CMs granules.   Yet, it cannot totally replace the processed herbal medicine by reason of the lack of combined decocting process of single herb form and the rigidity and inflexibility on the proportion of various medicine in the combined prescription.

53.   It is observed that the demand and usage of CMs granules is increasing locally.   The easy preparation and portability of CMs granules convince the busy metropolitans in taking CMs.   Besides, there is a tendency that the private clinics will offer CMs granules as the only medicinal treatment.   It reflects the advantages that the management of CM granules is much easier than herbal medicine, no matter storage and dispensing, which results in a lower operational cost and request on manpower.

54.   Foreseeing the seriousness of medical cases and the expectation of the inpatients and their family, decocted CM herbal medicine is still being expected to be the mainstream of medicinal provision to inpatients in the CMH.   Nevertheless, CMs granules will be offered to mostly

support outpatients and overnight demand on CMs of inpatients.

55.   In the market of CMs granules, each supplier would develop their own dispensing systems and provides relevant support to their clients. While the supplier of CMs granules of the CMH is not yet to be known at this stage, openness and workability have to be reserved on the planning of CMs granules dispensing area.   Three mainstreams of granules dispensing systems are introduced as follow:

(1) Some brands provide CMs granules in small packages.   Each small package contains a fixed dosage of granules of a single herbal medicine.   Following the prescription from CMPs, the staff of CM pharmacy will collect the correct number and variety of packages of medicine and put into sealing bags by dose per day.

(2) Some brands provide CMs granules in bottles for single herbal medicine as well as combined ancient prescription.   Barcodes are printed on the bottles for verification and source tracking.   The big brands will support a half-automatic dispensing system. Connecting with the information technology systems, the staff of CM pharmacy will scan the prescription followed by the corresponding bottles of granules to confirm the correctness.   By next, they will spoon the granules into a cup and weight the granules by the installed electronic pound.   If the weight of granules is deviated from the prescribed dosage, the system will give a warning signal. When the staff of CM pharmacy complete the spoon of all prescribed CMs granules, they will put the cup of granules into the integrated mixing and packaging machine.   Granules will be packed into bags by dose per time.   Usually the supplier will also provide measuring spoons for small scale clinic to dispense the granules manually in a simple manner without the dispensing system and machine.   Staff of CM pharmacy or clinic assistants will spoon the granules into a container and pack into small sealing plastic bags by dose per time for patients.

(3) The automatic dispensing system of CMs granules is under development.   Some CMs granules suppliers did research and develop an integrated machine with greater extent of automation. In coordination with the dispensing machine, the bottles of CMs

granules will be stored up on a designated shelf on wall with a pointing light set aside of each bottle of medicine. When the staff of CM pharmacy scan the barcode of the prescription, the pointing light of the required bottles of medicine will turn on to remind the staff of CM pharmacy the location of the medicine. Incorrect bottles of medicine will not be accepted for dispensing. By next, the staff of CM pharmacy will insert the bottles of medicine into the butting joint of the dispensing machine. The machine will then automatically collect the exact dose of each medicine. After the staff of CM pharmacy successfully getting all the required bottles of medicine, the machine will pack the granules into small bags or boxes by dose per time.

pCMs

56.　　pCMs means the manufactured Chinese medicinal products registered under Chinese Medicine Ordinance (Cap. 549). Pills, granules, tablets and capsules are the most common form of pCMs. Niuhuang jiedu tablets (牛黃解毒片) and Liuweidihuang pills (六味地黃丸) are the well-known examples of pCMs.

57.　　The greatest advantage of pCMs is convenience for taking medicine. Apart from that, some forms of compounded CMs preparations are hard to be prepared in small portion e.g. wine dose (酒劑) which can only be produced by pCMs manufacturers. For some urgent cases, pCMs is also a good option for fasting taking of medicine e.g. Angongniuhuang pills (安宮牛黃丸) for urgent stroke case. When the health state of patients are stable and be ready for a long-term course of health maintenance, CMPs may advise the patients to take pCMs for cost efficiency and convenience. The crucial consideration will be whether the physique of patients can match up with the curative effect of pCMs.

58.　　Besides, the mass public can also purchase pCMs to cure light disease eg. flu. pCMs can be bought in general pharmacy and personal care store without medical advice by CMPs.

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59.   It is assumed that the pCMs in the CMH will be dispensed from the CM pharmacy instead of selling in a pharmaceutical store.   As pCMs are manufactured products with proper box packaging like, it can be dispensed via the automatic mechanical dispensing system which is currently used for dispensing pharmaceutical products in a hospital pharmacy.

Decocted medicines (代煎中藥)

60.   CMs decoction service has been established to meet up with the needs of patients who are not able to prepare decocted medicine.

61.   CMs decocted service will be substantially support the medicinal needs of the inpatients in the CMH.   It is assumed that 90% of the inpatients will be having decocted processed herbal medicine.   The prescription of the inpatients may change frequently i.e. once per day subsequent to the condition of patients.

62.   Expecting half of the outpatients will be taking processed herbal medicine and another half will have CMs granules, the demand of decoction service for outpatients will not be high.   The CMH will promote and teach the patients to decoct the herbal medicine at home.

63.   For the prescription requiring in-house decoction, staff of CM pharmacy will pick the processed herbal medicine in the medicine cabinets of the dispensing area.   The herbal medicine will be packed in a big cloth bag instead of separate into bags per dose per day.   Following the decocting instruction prescribed by the CMPs, the bags of herbal medicine will usually be soaked in water before boiling.   The decoction process will be carried out by integrated decoction machines with packaging functions. The handling of repelling heat within the decoction room is a big challenge while it is essential in providing an easier working environment to staff.

64.   In the CMH, the decocted medicine for inpatients will be dispatched to wards for distribution and administering.   Those prepared for outpatients will be dispensed in the counters of CM pharmacy.

65.   To save patients' effort and time in collecting the decocted medicine in clinic, the dispatching service by courier is in coordination with the decoction centres to deliver the medicine to patients.   There is also a trend to establish off-site decoction centres and receive prescription from CMPs electronically.

CMs compounded preparation (中藥製劑)

66.   CMs compounded preparation is a substantial feature of CMs. Having regard to the relatively time-consuming and complicated processing procedure of the compounding form, it is not economically beneficial to the private CM market.   Moreover, the empirical judgement of experienced staff of CM pharmacy is crucial in compounding CMs preparations successfully, which there are relatively scanty talents in the industry.   It results in the diminishing of the technics in compounding CMs preparations and leads to a double-loss to patients and the preservation of traditional CM.

67.   As the flagship of the CM and CMs institution in Hong Kong, the CMH will provide the most extensive CMs service to support the clinical needs of patients and achieving the mission of teaching and training. CMs compounded preparation becomes a requisite part of the CMs service.

68.   An ancient book[4] in Ming Dynasty distinctly recorded that the

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[4]明‧徐春甫《古今醫統大全‧卷之九十七‧製法備錄》：
「藥有宜丸者，宜散者，宜水者，宜酒漬者，宜煎膏者。亦有一物兼宜者，亦有不可入湯酒者，並隨藥性，不可過越。湯者，蕩也，煎成清汁是也。去大病用之。散者，散也，研成細末是也，去急病用之。膏者，熬成稠膏也。液者，搗鮮藥而絞自然真汁是也。丸者，緩也，作成圓粒也，不能速去病，舒緩而治之也。漬酒者，以酒浸藥也。有宜酒浸以助其力，如當歸、地黃、黃柏、知母陰寒之氣味假酒力而行氣血也。有用藥細銼如法煮酒密封，早晚頻飲，以行經絡或補或攻，漸以取效是也。

nature and respective characteristics of different forms of CMs. Different forms of compounded CMs preparations will have dissimilar nature which brings distinctive curative effect. The forms of CMs must be in coordination with the nature and functions of the herbal medicine so as to enhance the efficacy of the CMs strategically.

69. According to the record in ancient CM books and the theory of CMs, it is explained that the decocted medicine is usually for serious disease, while the powder form (散劑) goes for its nature of light weight which favors the disperse of qi and fast administering for urgent condition. In addition, many ancient prescriptions are managed in powder for its light and loose nature to deliver and ascend the functions of herbal medicine. It is easy to serve the powder form for oral medication which is similar to CMs granules. The powder form of compounded CMs preparation will also be applied externally for skin and external diseases for the significant efficacy of direct absorption.

70. The paste form (膏劑) is processed from concentrated decoction of CMs in general. Adjuvant materials will be put into the concentrated CMs soup at the last stage of decoction to reach a thick state. For its thick texture and taste by long decoction time, paste is used for moistening the state of human body or supplementing the qi-xue in a seasonal term by ordinary for oral medication. The paste form of CMs i.e. ointment will also be applied externally for skin disease and orthopedics and traumatology in CM. The sticky and concentrated formula will facilitate continuous absorption of medicine during application and wrapping.

71. The pill form (丸劑) is commonly used for long term adjustment and stabilization of patients' constitution but not limited to. There is a therapeutic protocol under CMs theory to offer the herbal medicine with strong efficacy in a slow manner (峻藥緩攻) to preserve the qi in the body and the pill form is a good option for presentation. The pill form can also be offered to patients quickly under emergency situation. It is a convenient way for patients to take CMs over a period of time as no further

稱劑分兩，輕重多少，皆須甄別。若用得其宜，與病相合，入口必愈。」

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preparation is needed.   There are various ways to process the CMs pills which result in honeyed-pill, watered-pill, flour and water paste pill etc.

72.   Capsule is a modernised form of compounding preparation.   For the most part, the herbal medicine with strong and unbearable flavor e.g. Ziheche (紫河車) will be prepared in a capsule form for easier deglutition. The capsule form also fits with the herbal medicine at high cost e.g. Dongchongxiacao (冬蟲夏草) as to offer the patients at lower cost for small portion and to conserve the volume for consumption.

73.   The pellet form (丹劑) is no longer ordinary in CMs compounding due to possible hazard of compositing the mineralised and chemical ingredients.

74.   The powder, paste and pill forms will be the major CMs compounded products in the CMH.   The staff of CM pharmacy will process the compounded preparation according to the prescriptions signed off by the CMPs.   Each final product will be prepared for designated patient individually.   No large scale manufacturing or compounding of CMs will be carried out in the CMH.   The demand of processing CMs compounded preparation has to be observed as it is new to the patients and CMPs.   The clinical behavior of CMPs as well as the preference of patients will be consequential.   All in all, with the service support of compounding, it is believed that the beneficial traditions of CMs can be promoted and preserved locally.

75.   Processing workflow for the forms of the compounded preparation are as follows -

(1) Powder

(a) The processed herbal medicine can be put onto trays of dryer for around 24 to 48 hours at 70°C.   The appropriate dryness of herbal medicine is a sequential factor to the smooth grinding by next.   Mashed herbal medicine will stick and jam in the pulverising machine if the humidity of the medicine is too high.

The dried herbal medicine will then be poured into the pulverising machine and be crushed into powder.

(b) To avoid contamination, the compartments of machines have to be washed every time after use unless they will serve the same type and batch of herbal medicine. For those medicine listed under Schedule 1 of Cap. 549 with suspected toxicity, it is proposed to be grinded separately in a small grinder.

(c) Dust will be generated during grinding process. It is proposed to install an air purifier in the working area to prevent the accumulation of dust in the central ventilation/air conditioning system.

(2) Paste

(a) Oral medication

The water soaked herbal processed medicine will be decocted in repeated times to maximise the diffusion. By next, the decocted soup will be concentrated by boiling in a pot or processing by a concentrator. Adjuvant materials e.g. honey, which can help to form a thick texture for the paste will be added into the concentrated soup. The mixture will be kept stirring up during decoction. The final stage of the formulation of paste requires close manual monitoring to its condition.

(b) External Application

The herbal medicine will be chopped into small pieces and soaked in oil for few days. The soaked preparation will then be boiled directly on a fine fire or over water for around 30 minutes. Adjuvant ingredients which can solidify oil will be added into the mixture after filtering the pieces of medicine. The commonly used materials are beeswax and Vaseline. When the adjuvant material is dissolved and mixed well, the mixture can be poured into the container after cooling.

(3) Pill

Powder and adjuvant materials are the major ingredients in

formulating the pills. It is recommended that honeyed-pills will be the most common form of pills produced in the CMH for its easier preservation. Honey heated up to 100°C will be mixed into the powder of herbal medicine and be rubbed to a mixture. Next, the mixture will be cut into strips and put into the pills manufacturer. The machine will pound the mixture to pieces and reshape the pieces in round.

(4) Capsule

Empty capsules will be arranged in a capsule filler manually or by an automatic capsule arranging machine. The capsules will be opened by a separator of the filler. Powder will be poured and pressed into the capsules. Capsules will be composed again after the stuffing of powder by pressing the separator.

76. Machines and Equipment

(1) Dryer (中藥烘乾機)

The machine will provide an environment with appropriate temperature and humidity continuously to dry out the processed herbal medicine.

(2) Pulverizing machine (粉碎機)

The machine will take up the role of grinding the dried herbal medicine into powder. 100-200 meshes is the general required fineness of powder in preparing the pills. The capacity of the pulverizing machine ranges from 100 grams (in a portable size) to dozens of kilograms (in a table type or horizontal type).

(3) Concentrator (中藥濃縮機)

The machine will concentrate the soup by the vacuum concentrated technique. It usually acquires low temperature concentration function, which prevents the destroy of effective ingredients which is heat-sensitive.

(4) Pill making machine (製丸機)

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    (a) The pill making machine with greatest automation can prepare the pills automatically by putting in the dried herbal medicine and the adjuvant materials.   It also supports the functions of coating, polishing and drying of pills.

    (b) Since the pills production scale in the CMH will not be large, the table type pill making machine may be more suitable for small portions of pills.   The machine can roll the powder rough flatly, cut it into slices and shape it to small round shaped pills.

    (5)   Capsule Arranging Machine and Filling Machine (膠囊排列機及填充機)

Automatic integrated machine is available in the market which can arrange the capsules on tray and fill in the powder of herbal medicine. Depending on the scale of production, automatic capsule arranging machine, capsule filling machine and manual capsule filler are also feasible in producing the capsules.

Supporting care of CM in the CMH

77.   Holism is an essential belief of CM in understanding human being and the environment.   Not taking a disease as a confined medical problem of a body part, it emphasises dynamics of yin-yang, the movement of qi and the adequacy of xue (血) of a whole person, which are essentially influenced by living habits.   Therefore, supporting care provided under the theory of CM will be provided in the CMH to maximise and strengthen the therapeutic efficacy.   The measures will also serve as teaching means to patients for maintaining a healthy life after discharge.

78.   Other than educating patients, the CM supporting care in the CMH will also promote the culture and daily application of CM to the public.

Catering

79.   Guiding by the CM theory, the characteristics of each food can be

categorised into four natures and five flavors (四氣五味). Each nature and flavor brings different influence to the yin-yang and qi-xue of human body. Appropriate selection of food for individuals can help to strive for the equilibrium of yin-yang of the human body, which means a more balanced health condition.

80. Patients are required to take nutritious diet but not too greasy and strongly flavored generally. In coordination with seasons and common groups of individual physiques, the CMH will provide meals with consideration of natures and flavors of ingredients to patients subject to the advice of CMPs. Menu may change on a regular time schedule in correspondence with the features of four seasons.

Exercise

81. According to the CM theory, the movement of qi inside human body is a determining factor for one's health. Proper exercise will encourage the circulation and storing up of qi which could nurse one's physique and promote health maintenance in long term. Qi-gong (氣功), Tai-chi (太極) and Baduanjin (八段錦) are examples of the well-known traditional CM physical activities. It is anticipated that there will be exercise classes in the CMH for patients and interested public.

Recreational activities

82. Excess of seven emotions (七情) will influence the flow of qi in human body. Each emotion i.e. fear, joy and worry will influence the functions of designated zang-fu i.e. kidney, heart and spleen as defined in the theory of CM. Tutoring the patients to adjust the emotions throughout the hard time and daily life will bring positive consequence to their health and quality of life. Apart from the counseling provided by medical social workers, the CMH may also offer seminars or other recreational activities to support the patients' spirits.

Health educational programmes

83.   The CMH is dedicated in enhancing the public interest and knowledge in traditional CM by holding different education events.

CM predominant service in wards

84.   Simple, convenient, efficient and cost effective (簡、便、效、廉) is the pertinent description of the features of traditional CM consultation and treatment .   In general, the CM clinical procedure does not require sophisticated building provision or bulk furniture, equipment and machine. Despite of the provision of different specialised CM services, the clinical actions are not site specific.   Therefrom, the outpatient department and wards in the CMH will adopt a modular design to make preparations for future change or combined of services.   Though the wards are assumed not to be subsumed by specialised CM services, patients to be look after by the same clinical team will be grouped in the same ward as far as possible to elevate the efficiency.

85.   The CM day wards are foreseen to serve the patients who (i) have to receive several intervention treatment which takes time in a day, (ii) need close and short monitoring and observation after taking CMs or intervention before discharge and (iii) have to be consulted by multi-disciplinary and cross specialties clinical teams.

86.   It is apparent that the environment of a ward in a general hospital cannot brace the persistent monitoring and care with great importance and participation on CM.   Therefore, the characteristics of CM medical care together with the needs of patients should be taken into account for the set up in wards when we are planning the unprecedented CM inpatient service locally.

Dispensing and preparation of CMs

87. After the ward round by CMPs, the prescriptions of inpatients will be sent to the CM pharmacy for preparation. Decocted herbal medicine is predicted as the most commonly used form of CMs for inpatients, as it owes the greatest variety of herbal medicine and flexibility of combination, and highest efficacy in the belief of traditional CM as well as the perception of mass in society.

88. As mentioned above, the decocted medicine is usually packed into airtight heat-tolerant plastic bags. In reference to the practice of providing CMs to inpatients in the Mainland and Republic of Korea, glass bottles and paper boxes are also used as the containers of decocted medicine. No matter which package of decocted medicine will be taken in the CMH, unchangeable characteristics of the form of medicine are the necessity of appropriate storage and re-heat before dispensing.

89. Medicine preparation rooms are planned in wards for storing and preparing CMs. It is anticipated that the decocted medicine will be sent to the wards with barcodes of prescriptions to ensure correct dispensing. The medicine will be stored in fridge after it cools down. Usually the patients have to take medicine two times per day after meal in warm. The CMPs may propose other serving requirement for patients subject to clinical needs. For re-heating the medicine, soaking the packaged medicine in a hot tub is a common and traditional way. However, the occupational safety of staff and efficiency in bulk re-heat of medicine has to be considered when planning the space and operational flow.

90. Unlike providing CM service in clinics or day wards, CM medical care has to be provided overnight to support the needs to inpatients. While most of the CM treatment can be carried out in wards easily without space constraint, the preparation of medicine is one of the challenges. As the CM pharmacy may not be operated in 24-hour which decocted medicine can hardly be prepared, there will be a smart medicine cabinet for dispensing essential CMs granules overnight in the night pharmacy.

The cabinet will be shared by all the wards in the CMH.

Intervention and monitoring

91.   Common CM interventional treatment i.e. acupuncture, moxibustion and cupping will be carried out in the intervention rooms for inpatients and day-patients.   As smoke and smell will be generated during moxibustion, the management of exhaustion should be planned as to maintain the comfortable environment in wards.   Alike the arrangement in outpatient department, the patients' privacy and staff accessibility to patients should be reviewed when planning the setting.

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SECTION 4
KEY PLANNING CONCEPTS, OUTCOMES AND GENERAL DESIGN GUIDELINE

Key planning concepts

1.   The planning and development of the CMH, being Hong Kong's first flagship CM hospital, must be able to meet the unique regulatory requirements in Hong Kong and the needs in fulfilling the given missions and functions.   As a change driver which seeks to promote the service development, education and training, innovation and research, and becomes a reference model for many other regimes, the design of the CMH must be capable of rising to the challenges ahead as a result of the ever developing knowledge, skills and technologies in both CM and WM. The key planning concepts include:

    (1) Evolving development;

    (2) People first;

    (3) Upholding CM tradition and culture;

    (4) Intelligent hospital;

    (5) Green and environmental friendly; and

    (6) Visibility.

Evolving development

2.   With respect to the uniqueness of the Hong Kong healthcare system, education and training of healthcare professionals, legal and regulatory framework and culture in seeking medical care, the CMH will adopt a model that will suit the local environment and be able to achieve the given missions and functions.   Through a series of consultations with CMPs and other professionals, trade and industry together with patient groups, the positioning, directions and starting position of the CMH have

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been set.   However, it is understandable that the path of the CMH will be an evolving one building on the given foundational framework.   The hospital service content, service throughput, service complexity, delivery model, care and work processes, modalities and capacity will be very different from its starting position in the years to come.   This will create a changing demand on the physical facilities including alternation, expansion and design changes to suit new workflow, service demand and technology adoption.

3.   To cater for the anticipated and inevitable changing needs, the CMH should built-in the design that will provide the versatility and flexibility.   Modular design, flexible architecture and IT oriented would enable the CMH to flexibly adapt to the evolving development needs.

Modular design

4.   Service units of similar functions are designed with a set of common features including sub-unit orientation and relationship, a common foundation in infrastructure supporting variable requirements, and furniture and equipment set up adaptable for different functionalities. With such design features, similar small units may be merged into larger units, large units may be separated into smaller units, service units after incorporating specific features may be adapted for serving different services at different times, and service units can be modified into different settings by minimal adaptation.

5.   The applicability of this concept in the CMH is mainly on:

(1) outpatient service zoning concept, with similar general setup, common designed in layout and room features making them able to merge or segregate in view of development needs, and able to suit requirements of different specialised services and disease programmes;

(2) day wards, general inpatient wards and special inpatient wards are setup with common layout and generic design with common

staffing and workflow arrangements. Generic design of each ward unit with a full range of facilities provision enabling each ward unit to serve patients from different specialised services and of different age groups and bodily functions; and

(3) adaptable design in interventional rooms both in outpatient, inpatient and day-patient services to cater for multiple varieties of interventional modalities.

Flexible architecture

6.   For key service areas that the mode of operation is still on an evolving path, flexible architecture design is to be adopted. The design adopts an approach that increases the variety, flexibility and quality of space ensuring possible future adaptation without major renovation or alternation to suit development requirements. It will provide infrastructure supporting a range of functionalities with flexible electricity, water inlet and drainage, and IT trunking provision enabling flexible connection and support as required. The architecture should provide open layout as far as possible supported with flexible or movable partition enabling broader choice in laying out, equipping, and furnishing space.

7.   The applicability of this concept in the CMH is mainly on CM pharmacy dispensing area, decoction area and pathology laboratory where technology is developing and workflow depending on model of operation adopted. Many requirements may also be supplier dependent which cannot be specified in the early planning stage.

Versatility

8.   LED display panel system linked to an IT network can provide a flexible platform displaying diversify content tailored to different themes and purposes required for different services. This system can serve multiple purposes including directory, signage, hospital operation, event holding, patient education, health promotion and promotion of CM. It will

also facilitate explanation to patients in clinical consultation and facilitate teaching and training.

9.   LED display panel system consists of a series of LED display panels setup at various locations including main lobby, and lift lobbies and corridors; entrances to departments and various service units including clinics, consultation rooms, wards and bed cubicles; waiting areas, consultation rooms, single bed cubicles, individual tutorial rooms, lecture theatres, and skill and demonstration laboratory.   Their connection to individual IT systems will have to be well designed to suit their primary functions and added flexibility to secondary functions.

Built-in potential for future expansion

10.   Major clinical support service areas including the IRC, day procedure centre, radiology, pathology laboratory and pharmacies that cost the highest construction price should be planned with flexibility and ability for service expansion without the need to relocate.

People first

11.   Hospital service is a people service serving patients and served by care providers.   It aims at providing personalised care with quality, safety and convenience.   The CMH should also be staff friendly providing an environment conducive for staff performance.   The physical environment, layout, design, technology adoption, IT adoption, use of information together with the workflow design should be:

    (1) user friendly and able to cater for the convenience to patients, visitors, students, trainees and staff;

    (2) enabling the delivery of services in the most direct, just in time and a one-stop approach as far as possible with work redundancy eliminated and enhancement of efficiency;

    (3) protecting privacy at all times, facilitating personalised care and

providing choices to suit individual preferences;

(4) of a pleasant environment with barrier-free access and other elements in relation to patient-centred care; and

(5) enhancing the health and efficiency of staff with a healthy work environment attending to the personal, physical and mental needs, facilitating open communication and team building.

12. Applicability is illustrated in the following areas:

(1) patient choices on clinicians, meals, clothes, infotainment and so on;

(2) patient convenience on self-service one-stop mobile applications, kiosk and helpdesk support, and streamlined process design;

(3) personalised care and service support with personalised wayfinding, age-group specific designs, disability, languages, religion and culture friendly, pull and push access to personalised patient and clinical information;

(4) visitor and public convenience and support on patient visiting and accompanying arrangements, special need accommodation arrangement and easy wayfinding;

(5) staff convenience on user friendly layout and easy access to things needed with central nurse station, mobile communication system and internal path designs;

(6) staff friendly working environment with design features that support ergonomics and safe manual handling for occupation safety and health protection;

(7) staff efficiency enhanced with streamlined workflow eliminating work redundancy e.g. cart exchange system. Introduction of automation to replace manual processes e.g. Autonomous Mobile Robots ("AMR") and Pneumatic Tube Air Transport Systems ("PTS") for material transfer. Adoption of design layouts that align with the work processes e.g. nurse station design, and same floor service containment strategy minimising travel distance e.g. satellite rehabilitation room and satellite X-ray examination room on each ward floor. There will also be adequate provision of

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convenient staff facilities; and

(8) student and trainee friendly learning environment with facility design tailored to training needs, comprehensive learning and training facilities support.

Upholding CM tradition and culture

Design objectives

13.   The CMH aspires to be not only the first of its kind in Hong Kong, but also be missioned to demonstrate the genuine CM ideas as well as to promote CM to patients and the society.   The unique identity of the CMH will be reflected in the architectural design where CM traditions and culture are upheld while the unique features of the Hospital e.g. CM meeting WM, the infusion of intelligence and modernization into traditional CM being are also presented as contrasting features.

14.   The CMH, being a key platform to promote CM and CMs in Hong Kong, will take every opportunity including in its physical design to foster the patients and visitors of the hospital to have a better understanding of CM including CMs.   The good promotion would encourage a greater communication between CMPs and patients for deliberation of condition and treatment programs under CM theory.   The grasp of basic CM knowledge would also promote the patients and visitors to adopt CM approaches in daily living habits appropriately in achieving health.

Presentations

15.   In contrast to the traditional way of health education and promotion of having specific places like museum and resource centres, the CMH should make use of the whole facilities and premises, and take advantage of the people flow to maximise the opportunity of health education and promotion.   The CMH will be good at using every possible encounter,

starting from visualising the external appearance to the premises' interior design, to the walking experience across different wings, floors and sections through the care processes to achieve the learning objectives. The CMH should integrate the functions of a CM museum and health promotion facility into its physical facilities and design.

16. The wide use of LED display panels linked up with a central system can provide a versatile platform where themes and content can be coordinated and changed freely suiting the continual evolving and developing needs.

17. Visual and symbolic presentations of the CM culture related theme like graphics, motifs design should be incorporated in the interior design for the setting of the design atmosphere of the displayed areas. The design atmosphere should match with the artifacts or story display or text presentation throughout the specified locations in CMH. CM symbolic designs could be put to strategic positions in the hospital premises including, entrances, walls, ceilings, floorings and counters. Unique features such as making intelligent hospital seen by exposing automation systems (eg. PTS, AMR and electricity generated by renewable energy) and people-oriented themes (e.g. integration of traditional CM/CMs theme and wayfinding) should also be presented explicitly.

18. In doing so, the design should be able to bring in the following:
    (1) The fundamental elements in CM theory
    (2) The history and development of CM
    (3) The CM approaches in achieving health
    (4) The understanding on commonly encountered diagnosis, interventional modalities and CMs

19. For the history of development of CM, starting from the main entrance and through the lobbies of each floor, stories on the development

of CM could be told from ancient era through different dynasties to modern times.

20.   For the CM theories and approaches in achieving health, symbolic presentations can be integrated with the orientation of different wings and associated with the special features of specialised services and special disease programmes.

21.   For the understanding on commonly encountered diagnosis and interventional modalities, appropriate exhibitions of tools, herbs and specimens or interactive programs could be displayed and used respectively supported by electronic explanations.

22.   In each consultation room, clinicians can make use of electronic programs via LED display panel to explain details of diagnosis, treatment and interventions.

Perspectives of CM tradition and culture

The introduction of genuine CM ideas should make reference, but not limited to the following perspectives and content –

Fundamental elements in CM theory

23.   These are the crucial elements of the philosophy to support the development of CM. The completed deliberation of physiology, etiology and treatment is derived from these thoughts logically.

(1) 氣一完論
   (a) 衍生中醫的整體思想，以統一及完整性認識事物間的聯繫，認為人是一個整體
   (b) 在中醫的生理、病理、診治中，皆體現此特點
(2) 陰陽

_____

(a) 陰陽之間的對立統一為世界的總規律，兩者互根互用、互消互長、互相轉化、互相制約

(b) 《黃帝內經素問・陰陽應象大論》：「黃帝曰：陰陽者，天地之道也，萬物之綱紀，變化之父母，生殺之本始，神明之府也，治病必求於本。」

(c) 《黃帝內經素問・陰陽應象大論》：「陰靜陽躁，陽生陰長，陽殺陰藏。」

(3) 五行

(a) 五行的特性、推衍、相生相克規律

(b) 《尚書·洪範》：「一、五行：一曰水，二曰火，三曰木，四曰金，五曰土。水曰潤下，火曰炎上，木曰曲直，金曰從革，土爰稼穡。潤下作鹹，炎上作苦，曲直作酸，從革作辛，稼穡作甘。　」

(c) 《黃帝內經・素問・陰陽應象大論》：「天有四時五行，以生長收藏，以生寒暑燥濕風。人有五藏，化五氣，以生喜怒悲憂恐。」

CM diagnosis, treatment and daily health maintaining habits

24.　　The diagnosis of CM is not only depended upon the symptoms of patients, but to hinge on an integrated analysis with the cause of diseases, physique of patients and environmental condition.　Different treatment may be offered by the CMPs to patients correspondingly with similar symptoms.　The demonstration of information under this session could help the patients to understand their conditions, and the purpose, process and progress of their treatment basically.　The daily health maintaining habits could be promoted and established easily with the understanding.

(1) 臨床基本診斷方法

(a) 四診：望、聞、問、切

(b) 八綱：表裏、寒熱、虛實、陰陽

(2) 主要治療手法

(a) 針刺

(b) 艾灸

(c) 推拿

(d) 拔罐

(3) 中藥

(a) 四氣五味、升降浮沉、歸經走向

   i.　《神農本草經》:「藥有酸咸甘苦辛五味,又有寒熱溫凉四氣。」

(b) 真偽及等級辨別

(c) 中藥炮製

(d) 道地藥材的概念

(e) 中藥各種製劑的功效

   i.　《古今醫統大全》:「湯者,蕩也,煎成清汁是也,去大病用之。散者,散也,研成細末是也,去急病用之。膏者,熬成稠膏也。液者,搗鮮藥而絞自然真汁是也。丸者,緩也,作成圓粒也,不能速去病,舒緩而治之也。漬酒者,以酒浸藥也。」

(4) 養生

(a) 中醫養生的大原則

   i.　《黃帝內經素問·上古天真論》:「夫上古聖人之教下也,皆謂之虛邪賊風,避之有時,恬惔虛无,真氣從之,精神內守,病安從來。是以志閑而少欲,心安而不懼,形勞而不倦,氣從以順,各從其欲,皆得所願。故美其食,任其服,樂其俗,高下不相慕,其民故曰朴。是以嗜欲不能勞其目,淫邪不能惑其心,愚智賢不肖不懼於物,故合於道。所以能年皆度百歲,而動作不衰者,以其德全不危也。」

   ii.　《黃帝內經素問·上古天真論》:「上古之人,其知道者,法于陰陽,和于術數, 食飲有節,起居有常,不妄作勞,故能形與神俱,而盡終其天年,度百歲乃去」

(b) 飲食養生

   i.　《黃帝內經素問·臟器法時論》: 「五穀爲養, 五果爲助,五畜爲益, 五菜爲充, 氣味和而服之,以補精益氣」

(c) 四時養生

   i.　《黃帝內經素問·四氣調神大論》:「夫四時陰陽者,萬物之根本也。所以聖人春夏養陽,秋冬養陰,以從其根,故與萬物沈浮於生長之門。逆其根,則伐其本,壞其真矣。」

(d) 治未病

    i. 《黃帝內經素問・四氣調神大論》:「聖人不治已病治未病，不治已亂治未亂，此之謂也。」

(e) 太極拳、八段錦、氣功等氣息調理運動

25. CM origin (中醫起源), sample narrative description as follows -

(1) 信史前的遠古時代 (傳說，商朝之前，約公元前 1600年之前): 巫術，「祝由術」，驅魔祛病，借符咒禁禳及以各種民間醫術和草藥治病療傷，人類最古老、最早的疾病治療方法

(2) 軒轅黃帝與炎帝(又名神農)

26. CM history development – specialties and streams (歷史發展 - 分科與派系)

Specialties and streams are the examples of perspectives in describing the development of CM along the history.   Other aspects are encouraged to be proposed if appropriate.

(1) Specialties 分科:

(a) 周朝

    i. 分為疾醫（內科）、瘍醫（外科）、食醫（營養科）

(b) 春秋戰國時代

    i. 用針、用藥和重切脈三大派

(c) 西漢

    i. 醫經學派、經方學派兩大派
    ii. 重視針灸和切脈者並為醫經一派
    iii. 重視使用藥物方劑者為經方派
    iv. 《史記》記載其25個病例，內外婦兒齒科皆有

(d) 唐代

    i. 4 科 (醫科、針灸科、按摩科、咒禁科)
    ii. 醫科下又分體療、瘡腫、少小、耳目口齒、角法等五項

(e) 北宋

i. 9科，即大方脈（內科）、小方脈（兒科）、風科、產科、眼科、瘡腫科、口齒咽喉科、金鏃兼書禁科、金鏃兼折傷科

ii. 後撤銷金鏃兼折傷科，增加針灸科

(f) 元

i. 13科，大方脈、雜醫、小方脈、風、產、眼、口齒、咽喉、正骨、金瘡腫、針灸、祝由、禁

(g) 明

i. 13科；與元朝相比，少了風、雜醫、禁，增加了傷寒、按摩

(h) 清末

i. 增設了「痘診」，取消了祝由與按摩，將金鏃分屬於瘡與接骨

ii. 醫學分科變動較大，曾有11科、9科、8科、7科之分

iii. 同治五年時只分為5科，即大方脈、小方脈、外科、眼科、口齒咽喉

(2) Streams派系：

(a) 傷寒學派 （發端於晉唐，形成於宋金，興盛於明清）

(b) 河間學派（宋元）

(c) 易水學派（宋元）

(d) 攻邪學派（宋元）

(e) 丹溪學派（宋元）

(f) 溫補學派（明）

(g) 溫病學派（清）

(h) 匯通學派（清末）

_____

27.   Elite and legendary CMPs in history (歷代醫家), sample as follows
-

These refer to the historical CMPs who are iconic symbolisation to
the development of CM.

李東垣
末
公元 1180-1251 年

劉完素
宋
公元 1120-1200 年

葉天士
清
公元 1667-1747 年

朱震亨
金、元
公元 1281-1358 年

孫思邈
唐
公元 581-682 年

張從正
末
公元 1156-1228 年

張景岳
明
公元 1563-1640 年

吳鞠通
清
公元 1758-1836 年

扁鵲
戰國
公元前 401-310 年

金元四大家

李時珍
明
公元 1518-1592 年

張仲景
東漢
公元 150-219 年

華佗
三國
公元 145-208年
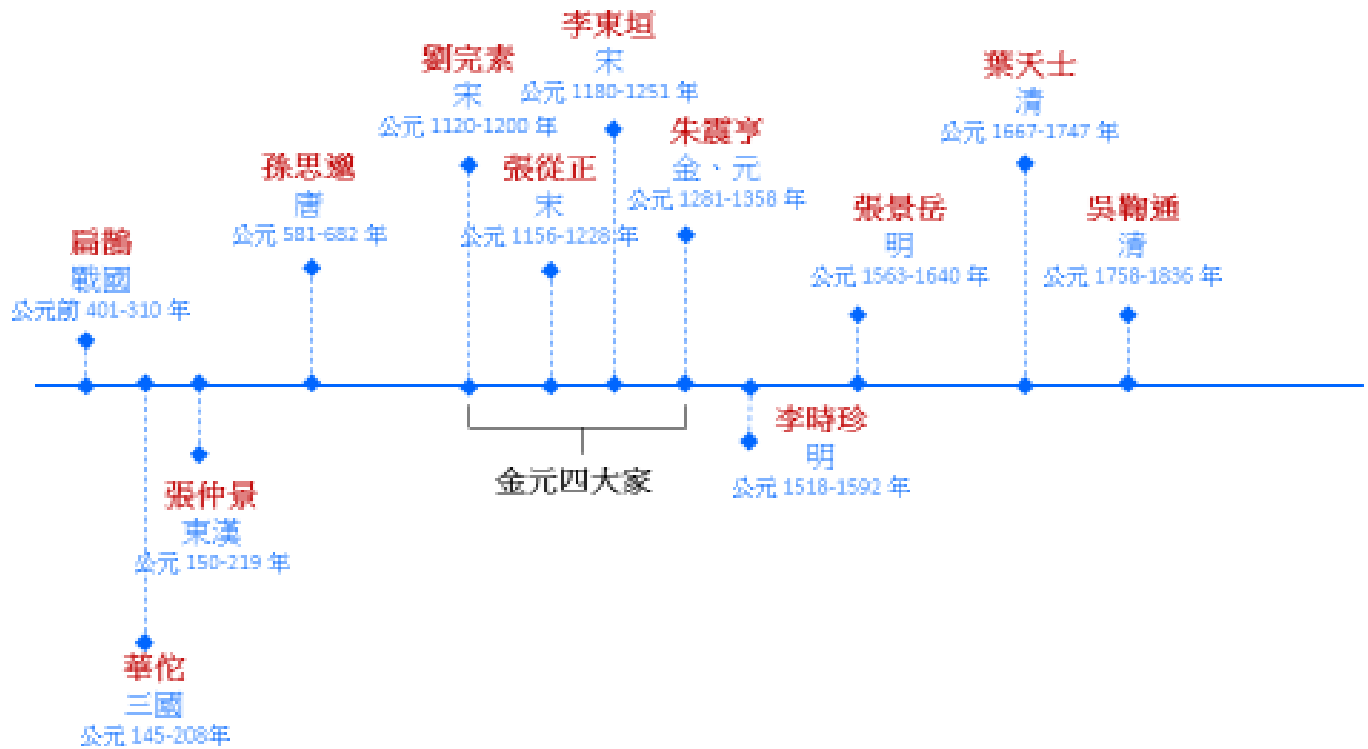
28. Classic CM Literatures (經典著作), samples as follows -

Among the remarkable ancient classic books of CM, four of them are being classified as the four Classics of CM (中醫四大經典) i.e. 難經, 黃帝內經, 神農本草經, 傷寒雜病論. They form a fundamental basis of clinical CM which illustrate the physiology and pathogenesis under CM theory.

秦漢
公元前 200-20 年
《難經》
《神農本草經》
《黃帝內經》

東漢末年
公元 200 年
《傷寒雜病論》

西晉
公元 260 年
《針灸甲乙經》
《脈經》

隋
公元 610 年
《諸病源候論》

東晉
公元 320 年
《肘後救卒方》

唐
公元 657 年
《唐·新修本草》

唐
公元 682 年
《備急千金要方》
《千金翼方》

唐
公元 850 年
《經效產寶》

宋
公元 1578 年
《太平民惠和劑局方》

宋
公元 1578 年
《太平聖惠方》

明
公元 1408 年
《永樂大典》

明
公元 1578 年
《本草綱目》

明
公元 1640 年
《景岳全書》

清
公元 1830 年
《醫林改錯》

清
公元 1700~1800 年
《溫熱論》
《濕熱條辨》
《溫病條辨》
《溫熱經緯》
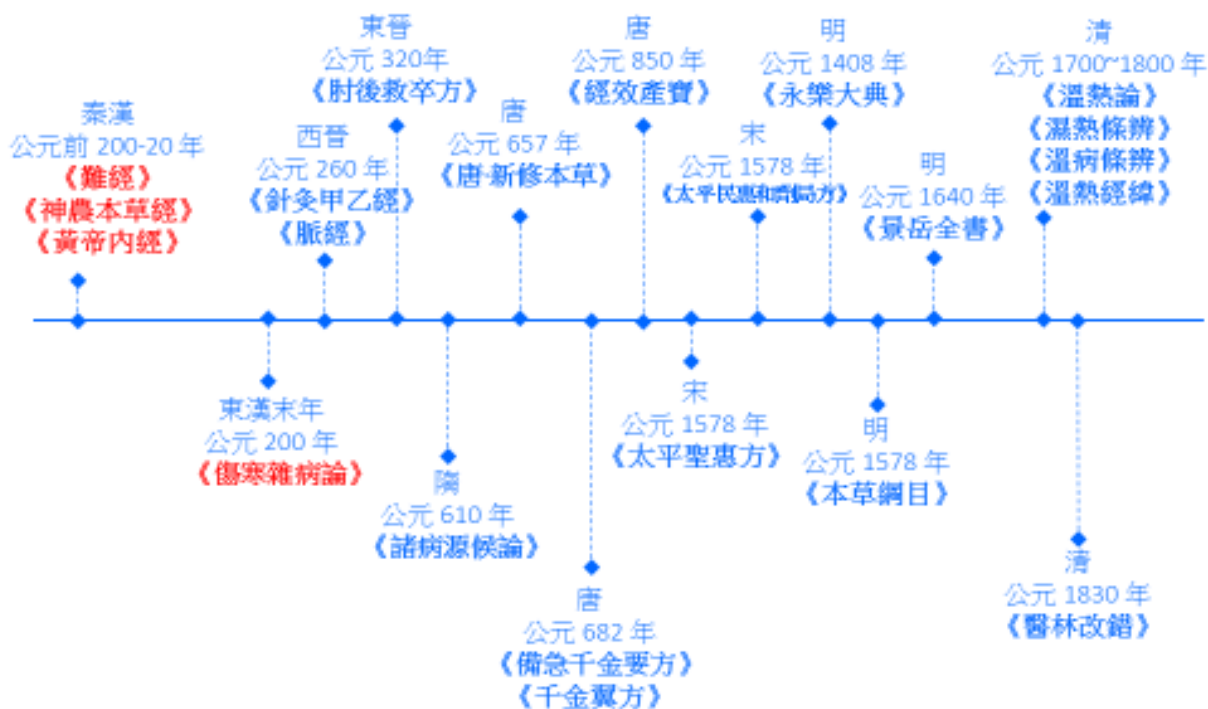
29. CM legend and myth (中醫藥傳奇故事), examples:

Although CM myth is not a key component to introduce genuine CM ideas, it could bridge up CM with the visitors and patients for its familiarisation.

(1) 「中藥龍骨」發現甲骨文
(2) 神農嘗百草
(3) 華佗之死
(4) 關羽「刮骨療傷」
(5) 董奉「杏林春暖」

Architectural design

30. Objectives

(1) To establish unique and iconic identity of the CMH being CM institution flagship in Hong Kong

(2) To promote CM culture and application

(3) To accommodate CM related health education to patients and general public

31. Planning concepts

(1) Access to natural light and views, noise minimisation, maintaining privacy and dignity;

(2) Design features that support ergonomics and safe manual handling;

(3) Patient accommodation and facilities that promote safety such as standardised configurations, appropriate visual observation, meeting the needs of vulnerable patients such as those with disabilities including people at risk of trips and falls or those with cognitive impairment;

(4) Minimised risk for hospital acquired infections;

(5) Minimised patient transfer or walking distance to receive treatment; and

(6) Family friendly design including facilities to assist parents and carers such as day rooms, toilets proximal to waiting areas, breastfeeding environment and baby care facilities.

32. Design requirement – interior design

(1) "Education Path" promoting CM culture and application:

(a) An educational route, including passageways, accessible areas by patients and visitors and open areas having specific hospital functions, will be provided in the building.

(b) The common areas connecting G/F Lobby Area / Atrium (N7-E2.3.1), Patient Waiting Area (Lobby)(E2.1.9) and Patient

Waiting Area (for Admission) to be located on G/F, G/F passenger lift lobby, typical passenger lift lobbies and associated alcove – Public Self-service (E2.1.10) from Level 1 to Level 7, Healthy Staircase and the entrances of various clinical departments and patient wards will form the "main circulation loop" of the education path having interfaces with other functional areas on different floors:

(i) Leisure garden on G/F, Rehabilitation Garden (N6-C3.1) on upper floors;

(ii) Main Helpdesk / Admission (E2.1.6), Patient Waiting Area (for Admission) (E2.1.7), Lobby Area / Atrium (N7-E2.3.1), Patient Waiting Area (Lobby) (E2.1.9), Patient Fees Collection Counter (Central Shroff) (E8.8.8), Queuing Area (E8.8.9) on G/F;

(iii) Patient Waiting Area (C4.3.14) of pharmacy on G/F;

(iv) Patient Waiting Area (B1.1.21) of General Outpatient Clinic on G/F;

(v) Patient Waiting Area (B1.2.21) of Referral Outpatient Clinic on Level 1;

(vi) Reception (C3.3.7) and Patient Waiting Area (C3.3.25) of Integrated Rehabilitation Centre on Level 1;

(vii) Reception (D1.1.8) of Auditorium on Level 2;

(c) The main circulation loop will be regarded as the CMH's backbone (space) accentuating the atmosphere of CM culture while delivering the CMH's core context including CM traditions, latest application and patient education of CM knowledge. Digital display panels, refer to the hospital information display for communal at item 4 of Part III – 5-Central Digital Display System), built-in picture/ drawing display holders, ceiling/ wall hung or floor- laid display, etc. without occupying net operating floor area ("NOFA") are anticipated.

(d) At the concerned functional areas having NOFA, appropriate pocket spaces will be introduced with appropriate lighting effect, special finishes and built-in fixtures including picture/ drawing

display holders, display cabinets for exhibition of CM related artifacts, models, objects, etc. (to be supplied and installed by hospital). Digital display panels will also be fully utilized to show various animated patient education information.

(e) Overall theme design, selection of materials and associated media presentation will be referred to the abovementioned "Perspectives of CM tradition and culture".

(f) Type and media of exhibition materials (to be supplied and installed by hospital, could be ranged from text, graphics, artifacts (exhibits), digital images cum videos and interactive activities (eg. workshop, seminars), subject to overall design proposal.

(g) Spatial sequence along the path will cater hospital's functional planning and corresponding wayfinding strategy and design.

(h) To properly allocate and make use of digital display panels (refer to the hospital information display for communal at item 4 of Part III – 5-Central Digital Display System) for flexibility of change of themes, stories or technical information to be shown along the path.

(i) Lighting tracks or mounting rods for energy efficient plug-in or flexible rod-mount spotlights will be provided throughout the education path with coverage for all wall display areas and also for areas where models, artifacts or movable display boards may be located. The number of spotlights provided will be sufficient to highlight display with two nos. spotlights for each wall display item/unit and/or model/artifact item/unit under full display situation.

(j) Integral concealed floor boxes with 3 x 13A power sockets and a LAN point will be provided each $10m^2$ along the concerned circulation areas of the education path for model/artifact display.

(2) Tentative activities of patients/ visitors along the "Education Path" against associated areas and corresponding CM-related design context:

Locations	Tentative Patient/ visitor activities	Tentative CM-related design context	Tentative Spatial configuration
(a) G/F - Main entrance hall in connection with Main Helpdesk / Admission (E2.1.6), Patient Waiting Area (for Admission) (E2.1.7), Lobby Area / Atrium (N7- E2.3.1), Patient Waiting Area (Lobby) (E2.1.9), Patient Fees Collection Counter (Central Shroff) (E8.8.8), Queuing Area (E8.8.9), and department entrance of B1.1 GOPC	The area should be the most significant public area of the hospital accommodating seating areas for approximately 50 ~ 100 patients/ visitors and main circulation of all concerned population coming in / going out of the hospital. Temporarily stay of patients/visitors at the open areas around should also be anticipated.	Background information of CMH and CM development in Hong Kong. Paragraph 23 of this section should be referred regarding he fundamental elements in CM theory. Anticipated details of contextual should be referred to sub-paragraph (3) below	CM-related contextual elements in 2-dimensional format to be displayed and/or integrated with interior fitting-out design on floor/wall/ceiling and images / videos to be displayed at digital display panels specified at Part III Section 5. "Central Digital Display System" (paragraph 4.). 2 nos. "nodal places" following way-finding design, having size approximately 1.5m x 1.5m should be allowed for display of statues/ objects (to be provided by the hospital) cohering with the corresponding CM-related design context. Anticipated details of spatial arrangement should be referred to sub-paragraph (3) below.
(b) G/F to Level 7 – Passenger lift lobbies and	The lobby area should be served as common circulation area	Paragraphs 25 & 26 of this section should be referred regarding the	CM-related contextual elements in 2-dimensional format

associated Alcove – Public Self-service (E2.1.10)	where patients/visitors are anticipated to be passed by while waiting lifts to other floors. While for the concerned alcoves, patients/visitors are anticipated to be stayed temporarily for waiting outside department/ ward areas at high season of seasonal flu. .	historical development of CM from ancient time till nowadays modern CM development, in chronological order from floor to floor.	to be displayed and/or integrated with interior fitting-out design on floor/wall/ceiling and, images/ videos to be displayed at digital display panels specified at Part III Section 5. "Central Digital Display System" (paragraph 4.). 2 nos. glass displaying cabinets having size approximately 1m x 0.6m x 1m(H) should be incorporated at the concerned alcoves for exhibition of artifacts/ objects (to be provided by the hospital) in relation to the corresponding CM-related design context.
(c)　G/F – Patient Waiting Area (C4.3.14) of Pharmacy (140 m^2 waiting area)	The area should accommodate 80 ~ 120 seats including wheelchair parking spaces for patients waiting for medication dispensary.	Paragraph 23(3) of this section should be referred regarding the technical/education information of CMs including CMs compounding, identification of CMs.	CM-related contextual elements in 2-dimensional format to be displayed and/or integrated with interior fitting-out design on floor/wall/ceiling and, images/ videos to be displayed at digital display panels specified at Part III Section 5. "Central Digital Display System" (paragraph 4.).

(d) G/F – Patient Waiting Area (C4.3.14) of Pharmacy (30 m² "Counselling Area for CM Medication"	To allow 30m2 as "Counselling Area for CM Medication", for providing individual patient care process on CM medication. Every specific individual patient will be taught/ instructed on how to handle specific prescription of CM medication, eg. decoction method, nature and special properties/uses of CM compounds (膏、丹、丸、散).	Paragraph 23(3) of this section should be referred, especially regarding the knowledge of CMs compounding.	Movable partitions should be adopted for provisions of 4 nos. cubicles for providing individual patient care process on CM medication or, 2 nos. open counter areas holding workshops/ seminars for groups of patients on the same purpose.
(e) G/F – Patient Waiting Area (B1.1.21) of General Out-patient Clinic	The area should accommodate 80 ~ 120 seats including wheelchair parking spaces for patients waiting for CM consultation / intervention.	Paragraphs 23(1), 23(2) of this section should be referred regarding the context of CM consultation and intervention.	CM-related contextual elements in 2-dimensional format to be displayed and/or integrated with interior fitting-out design on floor/wall/ceiling and, images/ videos to be displayed at digital display panels specified at Part III Section 5. "Central Digital Display System" (paragraph 4.).
(f) Level 1 – Main circulation area around the escalators and passenger lift lobbies, in connection	The area should be served as common circulation area where patients/visitors are anticipated to be passed by	Paragraph 27 of this section should be referred regarding the elite and legendary CMPs in history.	CM-related contextual elements in 2-dimensional format to be displayed and/or integrated with interior fitting-out design on

with department entrances of B1.2 ROPC, B2 Non-subsidized OP Services, C3 Allied Health & Rehabilitation Centre and C5 Radiology	among different departments.		floor/wall/ceiling and, images/ videos to be displayed at digital display panels specified at Part III Section 5. "Central Digital Display System" (paragraph 4.).
(g) Level 1 - Patient Waiting Area (B1.2.21) of Referral Out-patient Clinic	The area should accommodate 180 ~ 220 seats including wheelchair parking spaces for patients waiting for CM consultation / intervention.	Paragraphs 23(1), 23(2) of this section should be referred regarding the context of CM consultation and intervention.	CM-related contextual elements in 2-dimentional format to be displayed and/or integrated with interior fitting-out design on floor/wall/ceiling and, images/ videos to be displayed at digital display panels specified at Part III Section 5. "Central Digital Display System" (paragraph 4.).
(h) Level 1 – Reception (C3.3.7) and Patient Waiting Area (C3.3.25) of Integrated Rehabilitation Centre	The area should accommodate 30 ~ 40 seats including wheelchair parking spaces for patients waiting for rehabilitation services and, 15 ~ 20 queuing space for registration/ enquiry at the Reception..	Paragraph 23(4) of this section should be referred regarding CM rehabilitation (養生) .	CM-related contextual elements in 2-dimentional format to be displayed and/or integrated with interior fitting-out design on floor/wall/ceiling and, images/ videos to be displayed at digital display panels specified at Part III Section 5. "Central Digital Display System"

			(paragraph 4.).
(i) Level 2 – Main circulation area around the escalators and passenger lift lobbies, in connection with department entrances of D1 Education and Training Facilities, E1 Community Health Services, E3 Dining & Catering and Reception (D1.1.8) of Auditorium	The area should be served as common circulation area where patients/visitors are anticipated to be passed by among different departments.	Paragraph 28 of this section should be referred regarding classic CM literatures..	CM-related contextual elements in 2-dimentional format to be displayed and/or integrated with interior fitting-out design on floor/wall/ceiling and, images/ videos to be displayed at digital display panels specified at Part III Section 5. "Central Digital Display System" (paragraph 4.).
(j) G/F, Level 3 or Level 4 – Rehabilitation Garden (N6-C3.1)	This area should serve the patients of C3 Allied Health & Rehabilitation Centre for outdoor rehabilitation exercise.	Paragraph 29 of this section should be referred regarding CM legend and myth back to ancient time.	Landscape design of the concerned area including plant species, outdoor furniture/ fixture, materials of hard paved areas should follow the corresponding CM-related design context.

(3) Tentative special contextual atmosphere and associated spatial arrangement of G/F entrance lobby:

(a) General perception of going into the "world of Chinese medicine" should be achieved upon arrival at the entrance lobby of the hospital;

(b) Materials, colours, texture, lighting design symbolizing crucial elements of the philosophy supporting CM can be fully explored and adopted, eg. the principles of "balance" and "opposition" brought out by the theory of "yin" & "yang" (陰陽); eg. the behavior of the "five elements" reinforcing while counteracting each other at the same time; appropriate illustration of the above with annotation in the form of super graphic can form part of the interior fitting out design on wall graphic or material composition.

(c) A media wall (large sized LED display panel) should be located at the most prominent area where all people staying or passing by the lobby can clearly watch; the panel will be aimed at showing the background information of the Hong Kong first ever Chinese Medicine Hospital, its significance to the development of Chinese medicine in Hong Kong and the latest information, news, promotion of all CM related matters. The spectators gathered in front of the LED media wall should not interfere with the pedestrian flows or operation of the hospital. Digital displays in smaller sizes (80") should also be located at various locations around the lobby supporting the aforementioned major display by showing supplementary video information including up-to-date news of hospital services/ facilities and Government CM policies and implementation.

(d) For facilitating the planning and zoning of different lobby areas' functions including general enquiry, admission, paiting waiting, paying counter, etc. tentative two nos. "nodal places" are proposed to be introduced for incorporation in the overall way-finding design and strategy at the entrance lobby. The concerned "nodes", are anticipated to be in the form of statues, big objects or batches of exhibits cohering with the design theme of the lobby, which could be a traditional Chinese medicine acupuncture body point statue, a statue of a elite and legendary

Chinese medicine practitioner in history, a glass display cabinets showing sample of classic Chinese medicine literatures, or a sculpture illustrating certain Chinese medicine legend and myth. Areas having size approximately 1.5m x 1.5m should be allowed for display of the said statues/ object. The concerned "nodes", two nos. of more subject to the overall layout planning, can be incorporated into the seating or standing areas for patient waiting and/or formed part of the way-finding strategy.

(e) The designer should propose the overall interior fitting-out design with reference to the above mentioned principles, contextual background and possible spatial arrangement scenarios including the possible 2-D graphics (painting, plain sculptures, etc.) and 3-D objects (eg. statues, displaying cabinets) suiting the overall design, which belong to non-building works and should be procured by the hospital.

(4) To adopt special interior fitting-out elements, design motifs/ ornaments symbolising CM culture, for examples:

(f) Cloth curtain 中式布簾

(g) Wooden feature window frame 中式木製窗花 / 窗框

(5) Material:

(a) To properly apply materials used in traditional Chinese architecture, eg. blue brick, wood, paper; or to apply materials simulating / capturing the essence or characteristics of traditional Chinese architecture.

(6) Special theme design areas:

(a) Patient Waiting Area of Pharmacy

(b) Paediatrics wards

　　i. Distinctive theme design including special color, graphic, furniture, etc.

(c) Leisure Garden

　　i. Design, layout, plant species and material use will echo with the adjacent "Medicinal Garden" to be shared among the CMH and Government Chinese Medicines Testing Institute ("GCMTI") on G/F.

33.   Design requirement - façade design

(1) To shape a unique icon of Hong Kong's CM flagship by properly adopting modern Chinese architectural language in view of various aspects:

(a) Fenestration bring out special light quality:

i.   Feature window frames, lattice
ii.   Courtyard-like atmosphere of natural lighting through skylight

(b) Building envelope material symbolising CM culture:

i.   Signify traditional Chinese architecture while possessing advantage of modern façade materials, ie. durable, minimal maintenance
ii.   Examples: natural wood, wood-like material, ceramic elements, natural stonework

(c) Reflect traditional Chinese architectural elements:

i.   Roof tiles 屋頂瓦片, flying eaves 飛簷
ii.   Blue brick wall 青磚牆
iii. Feature window frame 中式窗花 / 窗框

(2) Building site layout / orientation against corresponding façade feature design

(a) Can be referred to general rules of traditional Chinese architecture in relation to the CMH main building and the surrounding site environment

34.   Design requirement - landscape, roof garden and open space

(1) Symbolic space format of traditional Chinese architecture (eg. 四合院 courtyard format) can be referred to feature traditional Chinese culture
(2) Plant species will be in relation to CM application and/or echoing the nearby medicinal garden
(3) Layout, siting, orientation of open space, walking pathway, water features, planters, trees, hard landscape features can refer to general rules of traditional Chinese architecture in relation to the CMH main building and the surrounding site environment.
(4) Special traditional Chinese garden elements - 亭、廊、軒, can be

appropriately introduced at various landscape areas.

35.   Design requirement - wayfinding design and strategy

(1) Theme design in relation to CM culture

(2) Example: zoning design can refer to Five Elements (五行) in terms of colors and materials of gold, wood, water, fire and earth (金、木、水、火、土)

(3) Flow of patients and public/ visitors within the CMH will be considered and facilitated:

  (a) hospital admission

  (b) consultation/ intervention

  (c) rehabilitation

36.   Reference projects of modern Chinese architecture

(1) Guangdong Museum (廣東省博物館)
(2) Suzhou Museum (蘇州博物館)
(3) The Community College at Lingnan University (嶺南大學社區學院)

Intelligent hospital

37.   An intelligent hospital brings together the architecture and design of the hospital, innovative technologies, usage of IT and information, designs of care and work processes, and best practices in healthcare to achieve optimal patient care and working environment.   The key concepts are:

(1) the appropriate use of IT and verification tools in managing work processes could significantly improve convenience and ensure accuracy;

(2) use of workflow design to eliminate intermediate work redundancy;

(3) use of wireless technology in healthcare environment interweaving remote devices and mobile technologies would offer a direct way of information access and transfer;

(4) the availability of real-time analysed service information would enable staff to better master and match service demand and with supply to eliminate waiting, manage risk and enhance efficiency; and

(5) the appropriate use of automated material transfer systems such as PTS and AMR system for transporting medications, specimens, documents, food, linens, consumables and wastes between wards and service departments will increase operational efficiency.

38. Applicability is illustrated in the following areas:

(1) A smart system using mobile applications could enable patients or carers to manage the whole patient journey from appointment booking, registration, accessing care, payment, discharge and accessing relevant personalised health information. Waits, queuing and manual processes could be effectively minimised or eliminated.

(2) Bundled application of IT systems in clinical management, patient service management, information management, education, training and research management.

(3) Wi-Fi coverage in clinical wards round, nursing care, infotainment system, transfer of clinical information collected by vital-sign monitors and synchronised time reporting using Wi-Fi clock system.

(4) Cart exchange system to eliminate or minimise intermediate up-shelf and down-shelf satellite store management.

(5) Application of business intelligence in identifying service gaps and trends, managing demand with supply. This is made possible by adopting a business intelligence system on service data.

(6) Real-time collection and analysis on supply and demand data targeting on just-in-time service provision and availability. This is made possible by using electronic ordering systems to capture demand, and monitoring supply through logging service response time e.g. task completion time in material and patient transfer.

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Thereby, proactively manages anticipated bottle necks and minimises waits by timely deployment.

(7) Application of big data technology in operational and clinical research.

(8) Adoption of automation in store management, material transfer, laundry, laboratory and pharmacy services.

(9) Application of barcode, RFID in ensuring accuracy, securing access and facilitating control.

(10) Flexible space utilisation and having a layout that optimises operational efficiencies.

(11) Adequately and strategically locating lifts and escalators for smooth flow of inpatients, outpatients, day-patients, staff and materials within the hospital.

Green and environmental friendliness

39. Energy consumption of a hospital is high due to genuine operational requirements including 24-hour A/C, cold store, lighting, IT applications, use of medical equipment and service support appliances. Material consumption is also high due to requirements in infection control and waste management. The CMH will adopt a multi-pronged approach in energy saving, minimising the use of disposable consumables, migrating to paperless operation as far as possible and instituting a green environment around the hospital premises. It will also take opportunity to promote environmental protection, energy, nature conservation and sustainable development to the users and community.

Modalities

40. The following modalities will be considered for incorporating into the hospital design and operation:

(1) The geographical character of the site of the CMH is elongated with the longitudinal south-west facing façade. The building form

and façade treatment have to be well designed to minimise heat gain while maximising visibility to the Tseung Kwan O so that energy consumption could be minimised.

(2) Water consumption and sewage volume could be minimised by having proper Building Services ("BS") systems.

(3) Use of roof area for garden with greenery as far as possible to provide leisure spaces as well as heat insulation. Coverage of greenery should be maximised to reduce heat island effect and cooling loading of the hospital. It would also harmonise with the surrounding natural environment with appropriate planting, gardening and landscaping within the hospital premises both indoor and outdoor.

(4) The Leisure Garden located adjacent to the Medicinal Garden in GCMTI will be designed holistically with the theme of CM and CMs yet allowing clear delineation along the site boundary for maintenance and liability concerns.

(5) Energy efficient building envelop to minimise cooling or heating requirement to maintain a comfortable indoor temperature together with appropriate use of energy efficient equipment and appliances.

(6) Maximise natural daylight by proper design in use of windows and doors, blinds and curtains, colour on wall, ceiling and floor and use of solar tubes and skylight.

(7) Maximise natural ventilation to reduce A/C requirement. Windows in areas not under strict A/C requirement can be opened in case of cool climate while preventing fall injury.

(8) Photovoltaics ("PV") panel for clean energy production and solar water heating systems to reduce energy consumption as far as possible.

(9) A/C and lighting zoning system to optimise energy consumption to suit the operation such as operation hours of different service units.

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Visibility

41.   Apart from being a high standard hospital providing quality services, education, training and research, the CMH is also acting as a platform and advocate in achieving collaboration and creating health values. Acceptance, appreciation and support from its serving communities are pivotal for her success. For design concepts that also target to deliver messages to the hospital users should be made visible. This applies particularly to upholding CM culture, intelligent hospital and environmental friendliness.   Provision of explanation should accompany the visibility to enable users to understand the designs and their applications, the underlying objectives, knowledge and impact.   With the design objectives, CM culture is genuinely highly visible, representative iconic technologies or design concepts such as AMR, PTSs, solar panels, greenery, and natural ventilation are to be presented to the hospital users in strategic locations.

Key planning outcomes

A building that achieves operational efficiencies

42.   The design of the hospital buildings must achieve a layout that optimises operational efficiencies and incorporates a whole of building approach for the delivery of health and support services.

43.   Evidence of achieving this outcome will include:

(1) functional relationships and design solutions that promote efficient use of time and space and minimising travel distances for patients and staff;

(2) use of materials which minimise maintenance, cleaning and replacement costs while meeting principles of infection prevention and control;

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(3) easy and efficient access for building maintenance to be performed;

(4) logical flows of goods and people throughout the building and efficient location of service points;

(5) uniformity in design elements throughout the building to maximise operational efficiencies through familiarity throughout the buildings;

(6) adequate and strategically located lifts and escalators installed for smooth flow of inpatients, day-patients, outpatients, staff and materials;

(7) separate check meters to monitor consumption of utilities (e.g. electricity, water and towngas) should be installed for services including but not limited to kitchen, laundry, pharmacies, radiology, pathology, shops, respective offices and data centres for the Universities;

(8) infrastructure that allows interface capability within hospital campus;

(9) smart hospital design to provide a patient navigation, smart patient and wait-less concept;

(10) provision of technologies to support operational efficiencies such as access controls, mobile applications and material tracking systems; and

(11) PTS and AMR systems to facilitate the delivery and transport of medications, patient specimens, documents, medical instrument, linens, meals, wastes and other materials.

Support teaching, learning and research

44. A contemporary education and research focus will support the delivery of quality patient care and be a key factor for attracting and retaining staff.

45. Evidence of achieving this outcome will include:

(1) requirements for teaching, learning and research are integral parts of the design;

(2) dedicated areas to provide teaching and learning close to clinical areas;

(3) provision of teaching and learning facilities to support staff, students and trainees;

(4) provision for collaboration between and across health disciplines and across collaborating institutions including IT connectivity to partnering Universities and CMCTR;

(5) use of innovative and reliable technology to support teaching and learning;

(6) provision of CTRC capable to conduct Phase I and II clinical trials; and

(7) clinical data analysing functions and use of big data technology will be built-in to facilitate training and research purposes.

Provision of technology and innovation

46.   The design must allow for a fully integrated information communications technology systems that supports staff to deliver care across a range of settings and a variety of internal and external clinical environments, from now and into the future.

47.   Evidence of achieving this outcome will include:

(1) integrated information communication technology platform

  (a) facilitates the delivery of clinical care and service delivery including interfacing with external vendors such as external suppliers, decoction centres, clinical and patient supporting services vendors such as laboratory, radio-diagnostic, sterilising supplies and laundry services

  (b) across collaborating institutions including IT connectivity to partnering Universities and CMCTR;

(2) accessibility of information close to point of care;

(3) technologies that support telehealth, video conferences, communications to support fire and patient emergencies;

(4) interface between building information management, security and building maintenance systems;

(5) Wi-Fi coverage in the hospital building; and

(6) no dead zone for mobile phone service within the hospital.

Contribution to staff experience, ergonomic and staff caring

48.　　Human being should always be of prominent concern in the design of the hospital.　The design should incorporate features that provide for the well-being of staff, support shift workers and offer a range of amenities that optimise staff experience and work-life balance.　While ergonomic is one of the considerations, the logical distribution of service points, internal and external relationship of each functional area with a view to achieving manpower saving as well as effective and efficient operation should also be the key contributing factors in the design concept.

49.　　Evidence of achieving this outcome will include:

(1) provision of staff facilities and amenities such as access to shops, cafes, and opportunities for other commercial enterprises;

(2) features such as adequate changing facilities, on-call accommodation, secure storage of personal items, adequate and safe carparking;

(3) access to IT such as wireless capability; and

(4) outdoor spaces for staff relaxation.

Licensing and regulatory requirements

50.   The hardware and software of the hospital should be able to comply with the licensing requirements as stipulated in the most up-to-date Code of Practice for private hospital issued by Department of Health ("DH") and comply with the Private Healthcare Facilities Ordinance (Cap. 633).

51.   Adequate provisions should also be put in place to meet the statutory requirements set out by the relevant governing authorities such as restaurant licensing governed by the Food and Environmental Hygiene Department ("FEHD") and fire safety measures governed by the Fire Services Department ("FSD").

General Design Guidelines

52.   The general design guidelines stipulate a close relationship with the overall operational policies and management philosophy of the CMH, with the key planning concepts forming the basic framework for the overall design of the CMH.

Building design

53.   The key planning building design concepts are:
(1) Direct and visual access should be provided to the registration or reception counter at main entrance of the CMH.   This area should be one of the busiest areas in the hospital and careful design should be given to minimise cross-circulation and conflicts with waiting and queuing lines.   Patients and visitors can use either lifts or escalators to quickly access the upper levels.   In addition, the lobby area on ground floor main entrance should be spacious with a minimum of 9 metre ("m") headroom, and the interior design should reflect the theme and significance of traditional CM.

(2) Natural daylight should be maximised as far as possible, and the typical headroom throughout the entire building should not be less than 2.6m unless specified otherwise.

(3) High-level priorities i.e. infection control and emergency readiness should be addressed in the hospital design.

(4) Wastes in form of travelling time, walking distance, number of waits, duplications should be minimised with an aim of achieving an efficient capital life cycle cost and smooth work flows (patients, staff, materials and the like).

(5) Flexible design should be incorporated into the building to allow better adaptation to the rapid cycle of innovation in medicine and technology. A design may be flexible in two ways: allow for ease of expansion, alteration, and renovation; or allow versatile use as conditions demand.

(6) Clear width of corridors should be provided with the following provisions:

  (a) Public and patient corridor should be at least 2,500 millimetres ("mm") wide;

  (b) Staff corridor with trolley, bed or AMR traffic should be at least 2,550mm wide;

  (c) Other staff corridor with daily operational traffic should be least 1,500mm; and

  (d) All other corridors should be at least 1,200mm wide.

(7) The following provisions should be provided for various corridors:

  (a) Integrated vinyl protective wall with handrail and vinyl crash rail should be provided for corridor with patient traffic;

  (b) Integrated vinyl protective wall with handrail, additional handrail for children and vinyl crash rail should be provided for corridors in paediatrics ward;

  (c) Upper and lower vinyl crash rail should be provided for parking alcove and staff corridor with trolley or bed traffic;

(d) 1mm thick non polyvinyl chloride ("PVC") Vinyl protection kick plate 900mm(H) will be provided for all doors facing corridor with bed and trolley traffic in clinical area.

(e) 1.5mm thick stainless steel kick plate 900mm(H) will be provided for all doors with trolley traffic in non-clinical area.

(f) Vinyl corner guard - continuous from skirting level to 1,500mm above finished floor level ("AFFL") should be provided for all exposed corner regardless of corridor or space; and

(g) Sufficient wash hand basin, floor cupboard with solid surfacing worktop and wall hung cupboard should be provided for all nursing corridor connecting consultation rooms and/or intervention rooms.

(8) Clear width of staff lift lobbies with lift door openings on opposite sides, for bed and AMR traffic should not be less than 4,000mm to allow sufficient manoeuvring space for AMR and bed movements.

(9) Ceiling light fixtures in constant interval with direct glare at corridor with patient wheeling traffic should be avoided.

(10) Standardisation reduces complexity and the risk of error, and thus improves quality. Standardisation of design should be implemented to ensure a level of standardisation across rooms of comparable functionality to yield repeatable designs. The designs should be adaptable and able to support changes in the model of care, technological development and quantum of activity. The structural and building services design, and internal wall system must enable adaptability, alternation and expansion with limited disruption for future change and expansion.

(11) Layout and setting should be worked out in a way to foster multi-disciplinary approach of care and dedicate to bring service to patients. Wherever possible, the team comes to the patient or patient to be transported on the same floor, instead of transporting the patient to other floors, for various treatment or services.

(12) Internet of things technologies should be applied to enhance efficiency (i.e. real-time location of equipment) and to support patient-centred hospital care which could extend care beyond the hospital physical perimeters.

(13)   Labour-saving technologies should be adopted integrally across the hospital.   There should be automation systems ensuring around-the-clock operation to minimise manual work, enhance efficiency and safety, allow flexible schedules and working models.

(14)   Clinicians, staff, patients and families should be involved in the design process to maximise opportunities to improve staff work flow and patient safety, and create a patient-centred environment.

(15)   Work areas should be separated from rest areas to ensure a staff-friendly environment for on-duty staff to take a break from work.

(16)   "Green" principles should be incorporated into the hospital design and construction to attain environmental sustainability. This includes every element of the hospital facilities such as water use, waste collection and recycle, renewable energy, green building design, soft landscape, energy efficiency and transportation in and around the hospital.

(17)   Building orientation determines the amount of radiation it receives, so the west façade should be minimised and provided with effective external sun shading device to reduce solar heat gain and to improve thermal comfort.

(18)   Prescribed windows should be operable and comply with the statutory requirement to conserve energy for A/C during winter season.   Natural ventilation assisted by mechanical ventilation should be the operation model in the CMH to promote energy reduction.   However, the operable windows should be designed to prevent patients from jumping or vandalising.

(19)   The provisions of the CMH should meet the needs of the ageing population.   Hospital elements are required to be geriatric friendly including floor finishes, illuminance, wayfinding, toilet and bathroom design, clarity of design and layout.   Long corridors should be provided with seating alcoves.   The CMH will need to be designed to safely accommodate these fragile elderly patients.

(20)   The entry of public toilets should be designed such that doors can be kept open yet sightline, regardless of direct or indirect,

could be obstructed from the corridor to provide privacy.

(21)   Provisions for toilet, shower, and changing should be provided as follows:

(a) wall mounted wash hand basin, wall mounted sensor and a shelf made of solid surfacing material should be provided for in all toilets;

(b) wall mounted water closet with both hand wave flush sensor and button flush;

(c) hot water supply for all wash hand basin except public toilet;

(d) floor standing urinal with auto flush sensor should be provided in the CMH to minimise stagnant of fluid.

(e) shower tray with level access grille, wall mounted shower seat, horizontal grab bar, shampoo/body wash holder, shower handset with fixed holder and flexible hose and single level water mixer should be provided all patient shower;

(f) proprietary shower tray, shampoo and body wash holder, shower handset with fixed holder and flexible hose and single level water mixer should be provided for all staff shower;

(g) nurse call button should be provided in each patient toilet cubicle, changing room and ensuite toilet

(h) panic alarm buttons should be provided in each public toilet cubicle, staff toilet cubicle and changing room.

SECTION 5
OVERARCHING MODE OF OPERATION

1.　　The CMH adopts a holistic approach to healthcare provision.　It provides a healing environment that contributes to patient outcomes in terms of disease prevention, health maintenance, improvement in symptoms, regaining health and functions, integration back to daily living together with positive patient experience during care.　It also protects healthcare staff and enhances their operational efficiencies.

2.　　General description of the management philosophy and operation policies of the CMH are set out in ensuing paragraphs.

Safety and quality

3.　　The CMH will seek to offer quality CM services meeting Hong Kong healthcare needs with patient experience and safety being the top priorities.　The hospital will set up the required structure, system, processes and operate in accordance with the above priorities that may include but not limited to the following:

(1) Clinical accountability system

The CMH will establish a clinical accountability system to ensure clinical accountability at both individual and team levels, and patient safety.

(2) Cross-stream review platform

The CMH will establish a cross-stream, multi-department and multi-disciplinary platform to formulate proposals for service development, workforce planning, training and research development, technology introduction, review service provision, clinical protocols, guidelines, quality assurance, professional standards and improvements and clinical system enhancement.

(3) Clinical review platform

The CMH will establish a clinical review platform to review clinical

patient services to identify areas for improvement and ensure continuous delivery of quality, effective and safe clinical patient services.   The clinical review platform will be in place for multi-party peer reviews, analysis, learning and initiation of improvement.

(4) Clinical care setup, guidance, audit and accreditation

The CMH will establish a system to ensure high standard care processes are maintained at all times to ensure quality, effective and safe clinical patient services. .   Components of such will include but not be limited to the on-site clinical support, clinical pathways, clinical guidelines, operation guidelines and clinical audit.   The hospital will provide clinical guidance on evidence-based practice, informed patient consent, resuscitation, Do-Not-Attempt Cardiopulmonary Resuscitation, advance directives, infection control, and management of deteriorating and critically ill patients.   The CMH will obtain accreditation by internationally recognised institution.

(5) Clinical risk management

The CMH will establish a system to anticipate, prevent, detect, respond, report and mitigate clinical risks and improve care standards.   Components of the system will include but not be limited to the following:

(a) high-risk patient groups, procedures and therapies will be reviewed and provided with guidance and control;

(b) for new therapeutics, procedures and technologies, pre-introduction evaluation and assessment will be in place to ensure effectiveness and safety; and

(c) clinical incident reporting and management system with incident reporting guideline and system, incident investigation, prevention of future incidents and improvement actions to current services, open disclosure to patients and family, notification to authority and public disclosure

(d) herb-drug interaction management system.

(6) Policy and manual

The CMH will formulate explicit written policies on the Hospital Missions and Functions to provide direction, lead development and facilitate decision-making. The CMH will formulate written policies on provision of health services, education and training, research, collaboration and creation of health values.   It will have operational policies (including manuals) on human resources management, financial management and procurement.

(7) Risk management, quality system and compliance

The hospital will establish a system to anticipate and mitigate risk, ensure delivery of effective and efficient services.   Components will include but not be limited to the following:

(a) patient complaint management system;

(b) patient feedback collection and analysis system;

(c) key performance indicator reporting and monitoring;

(d) organisation risk register system;

(e) contingency response system;

(f) internal audit;

(g) legal compliance reviewing and checking system; and

(h) service deed compliance reviewing and checking system .

4.   Models of care and service delivery of the CMH will be supported by evidence-based design to ensure the minimisation of errors, improvement in patient safety and outcomes, improvement in efficiency, effectiveness and positive experience of staff, patients and their family.

Operation hours

5.   Operation hours of different areas or services of the CMH are set out as follows:

(1) public areas of the CMH, including the main entrance, will be opened 24-hour a day, 7 days a week, i.e. 24/7;

(2) the reception desk at the main entrance will operate from morning through afternoon till evening daily.   Operation hours are flexible to suit different phases of development;

(3) internal areas not in use outside operation hours will be locked and may be accessed by authorised staff and/or visitors;

(4) inpatient services will be in operation 24/7 while outpatient services will generally operate during business hours, though they will have the capacity for extending their operation hours to meet operational needs;

(5) day-patient services will be in operation on morning and afternoon session basis and can include an evening session in case of service needs. Operation will continue between sessions.   Day-patients will not stay overnight.   In case patients require over-night stay, they will be admitted   to the inpatient services;

(6) clinical support services such as radiology and pathology may be partially in operation on a 24/7 basis depending on the operational needs.   In general, full services will be provided during business hours and essential services e.g. plain X-ray and CT for radiology and urgent laboratory and blood bank services for pathology will be provided on a 24/7 basis to serve the inpatients;

(7) other clinical supporting services such as pharmacies and IRC will be provided during the business hours with extended operation as needed.   Minor surgeries, endoscopy services, electrophysiology and respirator assessment services and central sterile supplies services will be provided on sessional basis depending on demand;

(8) the medical records department will operate mainly during business hours while services during weekends and public holidays will be arranged if necessary;

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(9) non-clinical supporting services such as security, carparks, mortuary and essential domestic supporting services will operate on a 24/7 basis and other services such as laundry, catering, general domestic supporting services, business supporting services (non-patient), patient complaint and relationship, public relations and library services will be operated during business hours to support the clinical services and with a provision for extended operation hours on need basis;

(10) staff canteen and canteen for the visitors will have defined operation hours to meet the operational needs of various services including events; and

(11) contingency arrangement will be in place to prevent or minimise service disruption.

Scheduling and booking

6. Being an intelligent hospital, the booking and scheduling of medical appointments, treatment etc. will be conducted through mobile applications and internet as far as possible. The system will provide precise information to the patients about when and where to go and what to do before clinical consultation or admission. Patients will be able to go directly to respective service areas without going through administrative processes. In case patients have difficulties in using the mobile applications and/or internet, there will be helpdesks and kiosks for taking patient attendances, booking appointments, payments and discharges for all patients including inpatient, outpatient and day-patient services.

7. For hospital departments and partnering Universities, the following shared spaces will be available for booking through an electronic central booking system according to education, training, research and administrative demands:

(1) meeting and conference rooms;

(2) education and training facilities;

(3) library; and

(4) CTRC.

Admission

8.   Most patients arriving for booked admission after undergoing the pre-admission process via the mobile applications or the internet can proceed to the appropriate service areas direct e.g. inpatient or day wards. Those requiring hospital support can go to reception areas located in the main lobby near the hospital entrance. Please also refer to the above paragraphs under Scheduling and Booking.

9.   Wherever possible, admission during business hours will be encouraged to minimise disruption to other patients. The patient will generally arrive by vehicle, on foot or by public transport and enter through the main entrance.

Discharge

10.   Patients will be discharged from the inpatient wards, day wards and other clinical areas throughout the hospital when their condition warrants discharge. Final payment can be settled by mobile applications or via helpdesks. For inpatient and day-patient discharges, it is targeted that the discharge processes including payment, booking of follow up, collection of medications etc. can adopt a one-stop approach completed within the service areas so that patients can depart the hospital direct.

Patient visiting

11.   Visiting hours are highly flexible and can be 24/7. Family members and carers are encouraged to visit and accompany patients during the patient hospitalisation. Patient visit can be booked in advance through mobile applications with issuance of a 2D barcode authorising access to specific wards. Visitors not using mobile applications can

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approach helpdesks for registration and collect a visitor card with 2D barcode authorising specific wards access. Facilities will be provided in wards and on ward floors to facilitate visitors in accompanying patients.

12.   Family members can accompany patients by the bedside, in day rooms within the wards and patient activity rooms on the ward floors as appropriate. For paediatrics patients or adult patients under special circumstances, overnight accommodation can be provided with charges.

Accessibility

13.   The design of the CMH should offer safe and convenient access for all patients, staff and visitors, and for the logical and efficient loading and unloading of goods and materials that are essential for the operation of the hospital. The design should comply with the prevailing Design Manual – Barrier Free Access issued by the Buildings Department, and the provisions should be strategically implemented to avoid inconvenience to patients on wheelchair or bed crossing tactile paths. Direct access with covered walkway from vehicular lay-by would be essential for disabled patients and elderly seeking ambulatory care. All entrances to the building and departments within the CMH with wheelchair or patient bed wheeling traffic should be provided with automatic doors.

Main entrance

14.   The main entrance is the key connection for all including staff, patients and public entering the CMH to their intended hospital destinations. The main entrance will be accessible round the clock every day and with adequate security control at each zone entry. It should be located near various external access and transport, and conveniently connected to different service and administrative areas within the hospital. Whilst persons who can use mobile applications will be guided to their destinations direct, special support and assistance will be available for persons with special needs. Reception helpdesk supported by self-help

kiosks, support and facilities provision for the disabled, easy access to lifts and escalators, easy wayfinding design should be provided at the main entrance.

Patient and public access

15.   Public access will be via the main entrance and other designated entry points.   The design (including wayfinding) must provide public access to the hospital after business hours.   Special landmarks on strategic locations are to be created to help locating where you are or where to go.   Please also refer to the paragraphs under access control system.

Staff access

16.   The design must allow staff access to the hospital building from points accessible by the public and by dedicated staff access points controlled by the security system e.g. staff card identification.   Apart from specially assigned public areas and public facilities, all administrative and service areas are designated as restricted areas only accessible by authorised persons e.g. staff and authorised visitors with specific access privileges.

17.   Parking for staff must be conveniently located for safe passage into the facility both during and after business hours.   After business hours parking spaces should be available for staff.   Staff leaving the CMH at night should be via secured corridors with good lighting, closed circuit television ("CCTV") coverage and panic alarms.

18.   Staff must be able to access the staff amenities after business hours with staff card.   The design should cater for all staff to access the hospital during and after business hours via the main entrance or dedicated staff entrances.

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Pedestrian access

19.   Safe and clear identifiable pedestrian routes must be provided between public transport facilities throughout the campus, including avoiding any significant pathway grades.   Where possible, shared traffic paths for pedestrians and vehicles should be avoided.   Continuous covered pedestrian walkways should be provided between the pedestrian entrance at Pak Shing Kok Road and the main entrance lobby of the CMH, and it will cover pathways, lift waiting area, escalators and staircases. The covered walkway will be made of laminated tempered glass with fritted pattern and shading devices.   Moreover, the network of continuous walkway will connect to the adjacent GCMTI building but with security control during non-business hours.

Vehicle access

20.   Direct access to the CMH's ambulance loading bays must always be maintained.   Public transport zones should be in proximity to the main entrance.   Appropriate parking facilities including disabled parking and ready access to public transport facilities will be provided to staff, patients and visitors.   The loading bays for contractors, couriers, and delivery drop-offs will be available near the central loading and unloading area.

21.   The vehicle flows to the following destinations from the mainline traffic routes should be separate with prescribed wayfinding to appropriate areas and mutually unobstructed to avoid traffic bottle necks:

    (1) ambulance or emergency vehicle bays;

    (2) main entrance (public traffic);

    (3) staff entrance;

    (4) logistic services at ground or lower ground level;

    (5) vehicular access for the loading and unloading of goods and patients should preferably be located at different levels;

(6) provisions should be allowed for pedestrian linkage to the adjacent future GCMTI but with security control during non-business hours;

(7) provisions for secondary roadway connecting to the GCMTI site and the Pak Shing Kok Road;

(8) escalators and lifts should be provided near at Pak Shing Kok Road to allow persons with disabilities to access the hospital via other public transportation such as public bus; and

(9) convenient access from outpatient clinics to IRC, radiology department and pharmacies are essential. These accesses have to be ensured at all times, especially not to be interrupted by high volume flows of outpatients and visitors during peak hours.

Carpark

22. Carpark should be designed to facilitate staff and visitors to park their vehicles nearest to the destinations as far as possible and it should meet "Secure by Design" principles. A secure perimeter fence will surround the hospital site with lockable vehicle and pedestrian gates at all entry and exit points. Car parking facilities will be provided for staff, visitors and persons with disabilities. Loading and unloading, ambulance, non-emergency ambulance transfer service ("NEATS") vehicles, staff carpark, and visitor carpark should be strategically zoned separately. Parking cards will be used by staff to access to parking area. Visitors will pay to park by electronic means. A carpark management system should be installed.

23.   The following car parking facilities are required:

    (1) carparking spaces for staff and visitors (including accessible parking spaces);

    (2) Public vehicle parks ("PVP") (to be managed, operated, and maintained by the Government Property Agency);

    (3) charging bays for electronic vehicles in staff parking area;

    (4) motor cycle parking spaces;

    (5) lay-bys for public light bus;

    (6) lay-bys for taxi or private car;

    (7) lay-bys for ambulance and ambulance parking spaces;

    (8) lay-bys for NEATS;

    (9) loading bay for vacuum insulated evaporator ("VIE") tanks and dangerous goods ("DG") stores;

    (10) separate loading and unloading areas for goods, pharmacies supplies and wastes; and

    (11) isolated parking spaces for hearse and other mortuary related facilities.

Hospital logistics and operational flow

24.   The hospital setting should be convenient for patients, relatives, visitors, staff and students.   To achieve an efficient and user-friendly design, an appropriate spatial arrangement of clinical activities for the convenience of patients and staff should be implemented so that the overall traffic of circulation would be minimised as far as possible.

Circulation routes

25.   The CMH will have two separate circulation routes with access control connectivity in between.   The public circulation route is for ambulatory patients, accompanying family members or carers, visitors and

public. The internal circulation route is for staff, material transfer, authorised contractors and patients under escort. The internal circulatory route is classified as a restricted area with security and access control. All staff, patient transfer and back of house movements and activities should be away from the public.

26. Strategic planning for evacuation lifts among passenger lifts (for public / staff / patients) and bed/passenger lifts (for staff / service) should be considered to allow patients on bed be evacuated from the hospital in case of fire and emergency as per the Code of Practice issued by FSD. Moreover, a goods lift should be provided for delivering heavy equipment such as parts for MRI and CT scanners for maintenance or replacement in the future. The external wall system (i.e. unitised curtain wall system) should cater for openable units, and the clear opening should be large enough for replacement or delivery of heavy equipment such as MRI or CT scanner via hoisting from a mobile crane. The location of the MRI should be carefully considered to allow erection and manoeuvring of mobile crane on street level without affecting the vehicular access for daily hospital operation.

27. In areas of large patient movement, such as the outpatient and ambulatory zones, escalators should be provided. There should be a visual connection between the passenger lift (for public) lobby and escalators for collaborating the overall vertical passenger movement system. In addition, "healthy staircases" should be implemented as far as possible to promote health by means of stair climbing. The "healthy staircases" should be strategically located with visual connection to the lift lobby to attract passengers to choose this alternative way for travelling between floors. Natural light should be provided for these staircases, and the tread and riser should be 300mm and 150mm respectively. All other staircases with clinical and clerical staff traffic should be provided with a minimum of 280mm tread and a maximum of 170mm riser.

Patient flow

28.	The following principles will be followed to facilitate patient flow:

(1)	waiting time and queuing should be minimised as far as possible;

(2)	patient and public access should not disrupt workflow of clinical and operational staff;

(3)	an automated queuing system with visual display will be used to invite outpatients to the appropriate consultation/assessment/treatment rooms. The automated queuing system in GOPC and ROPC will have audio announcement function to call individual patients;

(4)	separate patients, public and staff flows on all floors of hospital buildings;

(5)	designated routes and hot lifts (overriding mode of bed/staff lifts as needed) are available for transferring patients with critical conditions or with special conditions like contracted with infectious diseases, between departments, including those from admission, inpatient wards, day-wards, outpatient clinics, day procedure centre (endoscopy and MOT);

(6)	dedicated lifts for staff use, hospital support services including delivery of goods and removal of clinical waste, delivery of food and clean linen;

(7)	no access for patients or public to any non-designated patient areas and pathways including logistics floor;

(8)	separate pathway for the deceased which should not cross public pathway; and

(9)	dedicated staff-only entry to all clinical and clinical support units.

Portering services

29.	The supporting services department will manage the portering services across the hospital. Portering services principally provide

assistance to patients and clinical staff providing patient and material transfer such as patient transport, specimen transport, clinical equipment transfer and other related activities.

30.   Portering services will be requested by clinical staff via an automated dispatch system which will manage the manpower deployment and track the task completion electronically.   Portering includes provide support to central admission and waiting lounge areas, responsible for assisting patients (and their luggages) to wards or other service areas or to their vehicles on discharge.   The transport of patients under escort between services and departments will be via internal routes wherever possible.

Patient transfer system

31.   Patient transfer system works in the following ways:

(1) ambulatory patients will be guided by signage, mobile device or hospital staff to their required destinations using the public path;

(2) patients requiring escort e.g. wheelchair or bed trolley, and deceased bodies will use the internal path;

(3) tagging system on the conveying vehicles e.g. wheelchair and bed trolley will be used to track movement progress as they pass through key entrances and exits installed with scanners;

(4) a central portering service supported by a booking system will assist the management of patient transfers.   The portering team will be equipped with automatic dispatching system to facilitate deployment;

(5) transfers to other hospitals will be arranged on a routine, urgent or emergency basis.   There should be convenient access for the transfer of patients from wards to ambulance loading bay with adequate lifts.   This access should not cross public circulation;

(6) patient transfers from other facilities will be accepted on a pre-arranged basis.   Each clinical unit will have responsibilities for

transfer, retrieval, and acceptance of patients who require advanced or specific interventions, procedures or management; and

(7) the mode of transport and the need for a clinical escort will be determined by the patient's condition and any applicable unit-specific policies. Patients will be transported in a manner that reflects the level of risk identified for each patient, the risk assessment will be based on clinical condition.

Material transfer system

32. Material transfer system can be classified into three categories:

(1) Materials to be transferred by AMR system

This will cover CM and WM pharmacies supplies, clean and used patient clothes and linen, consumables and stationaries, Central Sterile Services Unit ("CSSU") supplies, large scale patient specimens, meals, documents and medical records, domestic waste, clinical waste and chemical waste. The transport will be through an internal path separated from public, visitors and ambulatory patients. Respective loading and unloading areas are to be provided at both supply and demand ends. The clean and dirty sub-systems are segregated with separate loading and unloading areas, specially designated robots and lifts to prevent cross contamination. Cart exchange system will be utilised as far as possible to eliminate intermediate steps of up-shelving and down-shelving. Carts are to be used directly as far as possible and be located at strategic locations to support services e.g. nurse stations or outside bed cubicles. Sufficient spaces for manoeuvring should be provided at staff corridors, lobbies, and areas such as linen stores, disposal rooms and parking alcoves.

(2) Materials to be transferred by PTS

This will be of limited scope catering for ad-hoc transfer of material including CM and WM pharmacies supplies, patient specimens for laboratory investigations and documents. The system will mainly

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connect clinical areas including outpatient clinics, day wards and inpatient wards with the pharmacies and pathology department.

(3) Materials to be transferred manually by portering services

This will be for other materials or materials listed above but required on ad-hoc basis and/or of bulky nature. Tagging system on the conveying vehicles e.g. carts will be used to track delivery progress as they pass through key entrances and exits installed with scanners.

Signage and wayfinding

33.   Signage and wayfinding tools will be required to support movement within the hospital. Key emphases would be from main entrance to individual administrative and service areas and vice versa between administrative and service areas. A logic approach based on workflow should be built-in to enhance efficiency and convenience. The signage system should be composed of physical signage to indicate individual physical locations and an electronic interactive LED display panel directory system for individualised support. Some key concepts are:

(1) it is planned that persons coming to the hospital that can use mobile applications will be guided to their destinations direct. However, these persons still need to be supported by easily comprehended physical signage system;

(2) an electronic interactive directory system with various languages capabilities will be set up. Touch screen interactive electronic directory will be located at strategic points and lobbies. Functionality of being able to input personal identifiers of the enquirers e.g. through barcode scanning for the issued 2D barcodes for displaying specific way-pointers to anticipated destinations will be explored;

(3) clear physical visual signage system is needed in supporting self-help wayfinding providing easy connectivity between clinical services zones, departments within the zones and to various

entrances and exits;

(4) establish a primary pedestrian hospital street and logical secondary connections to other service areas;

(5) signifying the traditional CM culture and use landmarks or artworks, to indicate arrival points within the facility.   The provision of "you are here" style signs will also be given regarding building and level. Multi-lingual signage is required at strategic locations;

(6) the design should be elderly friendly with consideration for the needs of people of diverse race; and

(7) clear and unambiguous signposting will be used to label the clinical service streams, services within those streams, rooms and spaces within the facility.

34.   Wayfinding should be accessible to all, including those with disabilities and special needs.   For example, colour schemes should be thoughtfully developed to avoid hindering access around the CMH.   Lifts should incorporate voice annunciation and information in braille.

Security services

35.   The CMH should have the physical design that could provide protection to the patients, visitors, staff and properties in the premises, and maintains a "zero tolerance" philosophy regarding violence.   The hospital design should also provide reasonable protection from suspicious, dangerous and illegal activities.

36.   Effective security system will involve appropriate use of electronic devices e.g. CCTV, access system, tagging system, deployment of personnel (guards) and proper design (lighting, concealed areas). Security will be monitored and facilitated through a central control room. The security office will have the ability to lock down the entire facility, individual levels or individual units electronically in emergency situations.

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Access control system

37.   The security services will provide 24-hour coverage on the whole hospital premises including indoor and out-door facilities.   A secured master key system will be utilised throughout the facility.   Security to the perimeter of all buildings and staff-only access points will be managed by access control entry points.   To maintain building and environment security, after business hours public access will be limited to one entry point manned by the security office.   All external doors will be locked by the security unit.   Regular site patrols will be undertaken by security staff. The periphery or boundary of the hospital should be provided with limited number of access points, and the visibility of open areas should be enhanced with minimum hidden points.   There will be access controls, soft and hard landscape to demarcate the site boundary of the CMH and the adjacent GCMTI at the connecting Central Garden. There is a fence wall and access control to prevent patients or public from entering the roadway at the back of house area, and there is a drop-bar to prevent unauthorised vehicles from entering the roadway at the back of house. The horticulture layout should also be planned to minimise blind spots, and adequate lighting with central control must be installed at outdoors for security monitoring.

38.   Good quality doors and windows are essential to ensure building security.   External doors should be strong, well-lit and fitted with good quality locks.   Doors that are not often used should be internally secured ensuring compliance with relevant fire safety regulations and their security monitored with an alarm system.   Intruder alarm, CCTV and lighting systems are commonly used to deter crime, detect offenders and delay their actions.   All these systems must be integrated so that they work in an effective and coordinated manner.   A holistic protective cage should be constructed to strengthen the protection of VIE tank.

39.   Rooftop and lower ground floor are high risk areas especially for missing patients with dementia or suicidal behaviour in where accidental entry may result in dire consequence.   Access control with staff card

sensor and CCTV must be in place to the entrances of the rooftop and lower ground floor in addition to the security equipment mentioned.

40.   Within the CMH, apart from specially assigned public areas and public facilities, all administrative and service areas are designated as restricted areas accessible by only authorised persons with specific access privileges including staff and other authorised persons including authorised visitors.   Within the restricted areas, there are special areas to be classified as exclusion areas where only specific designated staff are allowed for entry e.g. pharmacies and shroff office.   Clear signs should be displayed to alert entrants.

41.   Entrance to the restricted areas will be controlled by appropriate security system with access card (such as RFID) and barcode (such as 2D barcode). Visitor's entry into restricted areas can be made by prior booking, on-site registration or with direct staff authorisation through remote door control.   Barcode with built-in access rights to a specific destination could be issued through mobile applications or be provided on a visitor card through on-site registration.   Access to specific areas e.g. inpatient and day wards, specific departments or service areas can also by direct permission granted through a remote door control integrated with video door phone system.   Exit from specific clinical areas of restricted access e.g. inpatient and day wards is also controlled by the same authorisation mechanism.

42.   Paediatrics wards will accommodate paediatrics patients of various age groups and different genders.   Individual ward cubicles should have 2D barcode (visitors and patients) and RFID (staff) access control for both entrance and exit.   paediatrics patients could be granted access control up to levels defined by individual situations.

43.   For adult wards, individual wards are planned for accommodating patients of the same gender, there are situations that demand for inpatient services for patients of different genders may vary.   In that situation, each inpatient ward should have features and capability to accommodating

patients of either gender interchangeably.   Individual ward cubicles should have 2D barcode (visitors and patients) and RFID (staff) access control for both entrance and exit.   The security system could be activated on need basis.

44.   All electric locks should be installed in fail-safe mode and connected to main building fire alarms that will automatically deactivate the locks when an alarm is triggered.   Back-up battery system of minimum one hour should be in place to keep the lock in the locked position and maintain access control when there is power failure.   In the event of emergency evacuation, the internal break glass switch could be pressed to cut-off electricity to release the fail-safe electric lock.

Violence prevention

45.   Workplace violence is not uncommon in hospital environment. The design of the CMH should therefore be as far as reasonably practicable, equipped with appropriate engineering controls that deter the occurrence of workplace violence.   Such measures include the following:

(1) deep service counters can provide physical barrier from violent clients;

(2) furniture should not have sharp edges and be affixed to the floor, if possible;

(3) exits for counselling or patient care rooms;

(4) install alarm systems or panic buttons at nurse stations and selective rooms with patient encounters;

(5) use CCTV to monitor concealed areas and corners where problems may occur; and

(6) all balustrade will be a minimum of 2,000 mm AFFL to avoid suicide case.   Balustrade at outdoor garden will be designed to allow penetration of breeze.

Tagging system

46.   Key access points will be provided with RFID scanners for tracking passage of tagged patients or transfer vehicles.   Tracking transfers will facilitate deployment and planning in meeting service demands. Application of tagging system to selected patients will be under strict guidance and restricted to high risk patients e.g. dementia patients and young children.   Tracking of tagged patients will help security management and ensure patient safety.   Consent from patients, family members or guardians will need to be obtained.   The system will need to have alarm function connected to nurse stations or central security control room as appropriate.

CCTV system

47.   All communal and public areas should have CCTV surveillance cameras with video recording function.   Caution should be exercised to protect patients and staff privacy.   These CCTV cameras should be linked to the central security control room for monitoring.

48.   Local CCTV surveillance cameras for patient monitoring will have video recording function except the camera inside bedrooms at CTRC, and they will be linked to the central data centre and the local stations such as nurse station or reception for monitoring.

Catering services

49.   Choosing a proper diet specific to the bodily condition is one of the main themes in maintaining health in CM practice.   Patients, family members and public will be counselled in making correct food choices with appropriate preparation.   The CMH catering services will have the necessary setup and expertise in providing the catering capability and capacity for the following categories of services:

(1) Meal services to day-patients and inpatients

Meals will be served through pre-ordering with charges. Family members are also encouraged to bring their home-prepared meals to patients. The hospital will offer choices of food and cuisine tailored to the individual preferences. Therapeutic and religious diets should be provided. Guidance and recommendations will also be provided according to the patient bodily conditions. A meal ordering IT system will enable the patients to conveniently order their meals.

(2) Meal services for staff and public

Canteen of the CMH will provide a variety of food and cuisine choices to suit individual preferences. It will also obtain restaurant licence enabling it to serve visitors and public taking the opportunity to promote health through having proper choice of food according to the CM approaches. CM herbal cuisine will be developed for the same purpose.

(3) Meal services for local and international events

The CMH will be a local and international hub for education, training and research. Local and international training and exchange events will be organised frequently. The catering services will serve these events on demand basis.

Laundry services

50. Patients are encouraged to bring their own clothes for hospitalisation. This will enable the patients to feel more homely and maintain personal identity. A clothing standard will be provided to patients before admission and new clothes meeting the prescribed standard will also be available for purchase in the hospital shops. According to patients' choices, hospital will also provide patient clothes with charges.

51. For staff, working clothes will be provided. Different designs will be available for different grades and rank of staff. The CMH will provide

laundry services to staff working clothes, patient clothes and hospital linens.   The laundry will be equipped with automatic equipment able to complete most of the processes from end to end.   The laundry services have to meet the commonly accepted industrial standards.   It is planned to install uniform dispensing machines to facilitate staff in retrieving the right-size clean working clothes.

Library services

52.   A CM library will be equipped in the CMH.   Main themes will include CM and ICWM clinical books, journals and literatures.   There will be synergistic arrangement with the library located in the GCMTI next to the CMH.   Coordination over the location of the two libraries will facilitate the synergistic arrangement where the GCMTI library will focus more on CMs content.

53.   The CM library will be accessible by all professional users of the CMH including students and trainees.   Apart from being an accessible platform for CM knowledge, it will provide library services including searching functions, inter-library loans etc.   There will be a variety of electronic journals and knowledge database with on-site and remote access.   It will also provide a place for quiet studies and group discussion.

Medical record system

54.   The CMH will adopt electronic medical record as far as possible. Outpatient services are targeted for complete use of electronic medical record and inpatient services may adopt a hybrid approach.   A single, integrated medical record will be maintained for each patient and no individual clinical unit will maintain its own record system.   Compliance will be maintained with all relevant legislations, standards and policies. The medical record office will also support patient initiated personal data and medical report requests and coordinate completion amongst clinical departments.   The CMH will develop its record retention policies.   With

the development of an electronic patient information system, selected information of individual patients could be accessible by patients upon service registration.

Medication management

55.   Pharmacy services will provide a range of services including dispensing to inpatients, day-patients and outpatients, provision of clinical support to inpatient wards, discharge planning, drug information and patient counselling on medication therapy management.   Please also refer to Section 3 for details of CM pharmacy and WM pharmacy.

56.   For wards and clinics, medication including dangerous drugs will be stored in designated areas in accordance with prevailing legislative requirements and policy guidelines.   The storage site should be close to the nurse station and the dangerous drugs should be stored in a locked cabinet.   All access to the dangerous drug cabinet and movement of dangerous drugs should be recorded.   For non-ward areas e.g. outpatient clinics, cabinet with physical lock will be used and recording of all movements will be supported with CCTV monitoring.

57.   The pharmacies will supply medications (CM and WM) to wards on individual patient basis.   Locked drug cart will transport the required medications to individual wards daily.   Ad-hoc requests can be delivered through PTS.   Individual dispensing will be facilitated by barcode system matching patient identity, prescription and medication supplies.   Some CM medications may require prior preparation which will be done in the medication room.   Medications will be stored in a controlled environment in the medication room if needed.   Nurses will administer medication at the bedside as required.   Intravenous fluids and sterile supplies will be respectively stored in the medication room and medical consumables stores that are close to the patient areas.

Infection control and prevention

58.   The use of physical design and engineering control to assist in effective prevention and control of infection is essential.   It aims at creating a safe environment for patients, staff and visitors.

59.   Design and provision will follow the prevailing international standards and comply with the Code of Practice issued by DH. Necessary components including the design of patient care areas, isolation facilities, hand washing facilities, use of materials, regulation of traffic flows, and segregation of clean and dirty materials will be adopted to prevent transmission of hospital acquired infections and control of infectious diseases.

Mortuary services

60.   The mortuary services is an integral part of the pathology services. The services provide handling and storage of deceased patient bodies. Although the CMH does not have Accident and Emergency services, it will provide long term care or palliative services.   In case the deceased patient becomes a coroner case, the deceased patient body will be transferred to the public mortuary under DH for investigation.   There is no post-mortem facility in the CMH.

61.   The storage of deceased patient bodies will be charged on daily basis.   According to the family members' preference, the CMH could provide the ceremonial support with diversity of ethnical and religious need. To provide a comforting and respectful environment, the mortuary including location, access, indoor environment has to be specially designed, being quiet with privacy protected and able to accommodate different culture and religious requirements.   The transport of the deceased patient body will be from ward to the mortuary using the internal path.   Vehicle access to the mortuary should not be exposed to or crossed with patient access to minimise disturbance to the public.   The design should also be able to appropriately handle smoke and noise associated with funeral ceremonies.   There will be application of RFID

and barcode technologies to ensure accurate identification of the deceased patient body encompassing the end to end processes.

Volunteer services

62.   The involvement of members of the community as volunteers should be encouraged.   Volunteer personnel and voluntary organisations will provide the following examples of types of services and tasks:

(1) meet and greet services for patients and visitors on arrival to the CMH;

(2) escort patients to wards upon admission;

(3) loan library services to wards on magazines and books;

(4) organise group activities including entertainment programmes for patients;

(5) participate in promotion and incorporation of CM concepts to daily living to hospital users; and

(6) provide support services for selective patients of diversified culture, religion and linguistic background.

Spiritual care

63.   Spiritual care services will be provided to inpatients, day-patients, outpatients, families, carers, and staff based on individual spiritual needs. Spiritual care will be undertaken by the voluntary organisations, often on a one to one basis.   Multi-faith quiet spaces will be provided for reflection, prayer and meditation.   In addition, spiritual care may also take place by the bedside or in interview room as well as via telephone.

Interpreter services

64.   The CMH will provide services for culturally and linguistically diverse population to support clinical care.   Interpreter service providers will be engaged to provide a range of on-site and off-site interpretation services using video and voice capable technologies to support clinical care for patients.

Communication and switchboard

65.   The CMH will provide 24/7 unfailing telephone and internet connections for effective and efficient delivery of services.   There is complete Wi-Fi coverage in the hospital building.   The switchboard will operate 24/7.   Telephone operators will manage the switchboard services.   The private automatic branch exchange room, with console facility, located in the hospital will serve as a backup telephone operator room.   The CMH will adopt mobile phone technology as far as possible for voice, text and image communications.   The signal coverage in service and administrative areas should be steady and with no blind spot. The mobile phone system should be able to integrate with other hospital IT systems e.g. activated alarm signals be sent to designated persons. Desktop telephone system will also be provided with intercom capability.

Waste management

66.   The waste management services will be coordinated from the logistics floor of the CMH and will provide services to all areas of the hospital.   The waste services must comply with the relevant regulations, guidelines and requirements.   Waste management services (including confidential, general and recycling wastes) will comply with industry codes, standards and legislation.

67.   Waste management includes the collection, holding and disposal of the main waste streams which are domestic, clinical (otherwise known as contaminated), chemical, cytotoxic, recyclable, organic, liquid and general and including sharps wastes.   Clinical waste including infectious

waste, cytotoxic, pharmaceutical and chemical wastes are classified as hazardous wastes within the waste regulation. The management of chemical, cytotoxic and food wastes will be arranged by respective departments such as pathology department, pharmacies, radiology department, main kitchen of patient catering services and food retails. Other domestic, clinical and recycled waste will be managed by support services department. Details will be provided in Part II departmental sections of this brief.

68. Recycling and other waste segregation will be done at the point of source e.g. inpatient unit, colour-coded bins. This segregation of waste will require an extensive receptacle system with holding spaces in the kitchen, kitchenettes, beverage bays, pantries, public areas, disposal rooms and loading dock for the separation of waste.

69. Clinical waste will require separate receptacles. It may not be disposed of in the sewerage system and has to be managed in accordance with relevant policy and guidelines.

70. Types of clinical waste are:

(1) used or contaminated large sized sharps such as trocar, surgical stapler;

(2) used or contaminated sharps such as blades, needles, ampoules, injection spikes;

(3) used or contaminated syringes without needles;

(4) unsterilised specimens or stock from laboratory;

(5) dressing and other waste dribbling and caked with blood;

(6) infectious materials, acute respiratory syndrome coronavirus, middle east respiratory syndrome coronavirus, avian influenza virus;

(7) other contaminated materials assessed to be of significant infectious risk by healthcare personnel; and

(8) human and animal tissues, organs and body parts.

71.   Waste will be removed from designated collection points by dedicated staff.   Waste including compactors, pulping and grease units will be removed by contractors.   Pharmaceutical waste will be disposed of in accordance with relevant health policy and guidelines.   AMR system will be used to transfer different types of waste to their respective disposal areas.   The AMR and lifts used for this purpose will be designated for the dirty functions.   The lift and circulation used should be segregated from those performing clean functions.

72.   All wastes should be secured in dedicated areas.   Waste disposal areas should not be visible to visitors, patients or staff and normally accessible areas.   The design of the CMH is expected to integrate waste collection system into the mechanical handling facilities.

Biomedical engineering

73.   The biomedical engineering will house workshops for the on-site servicing and repair of biomedical equipment, a biomedical equipment pool, equipment decontamination and cleaning facilities, and office space for the biomedical engineering staff.   Dirty and clean equipment will be handled and stored separately in line with infection control guidelines. Servicing and maintenance of all high-end technologies such as imaging modalities will be provided mainly by the equipment suppliers.

74.   All equipment will be barcoded to facilitate tracking their movements to and from wards, satellite equipment stores and main workshops as well as for preventative maintenance programmes.   A centralised database will be available to monitor all functions of the service and to relay information to other service providers.   RFID technology may be used to tag and track mobile equipment.

75.   The satellite equipment stores and workshops are equipped with necessary services e.g. compressed air gas and tools to conduct

calibrations, testing and repairs. The equipment decontamination and cleaning facilities should meet both infection control and occupational safety requirements and standards.

Facilities management services

76.   The facilities management services will ensure that the facility operates smoothly and efficiently, and complied with all statutory requirements. Space is provided for maintenance carried out by Architectural Services Department ("ArchSD"), Electrical and Mechanical Services Department ("EMSD") and the Hospital/outsider contractor. Maintenance works will be managed by the facilities management services using a combination of in-house staff and contractors. Facility services will include the maintenance of:

(1) Buildings

(2) Building services and infrastructure

77.   Repairs and maintenance of plant, equipment and facilities will be undertaken through statutory and planned maintenance scheduling and through detection of faults or reduction in efficiency or reliability. The department will utilise suitably experienced and qualified trades and planning staff to facilitate all necessary maintenance and repairs, including the scoping of works, appointment of external contractors and authorising payment. The department will consist of appropriate personnel and trades to perform maintenance and operational tasks.

78.   Suitably sized workshops and storage areas (including for short term holding of construction waste) will be provided to facilitate efficient workflows. A central control and monitoring system ("CCMS") will monitor and manage the operation of the building systems, equipment status, and preventative maintenance programmes. Building energy management system will be used to monitor energy utilisation and as a tool for energy conservation. All maintenance and minor works projects will be planned by the facilities management services to incorporate

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necessary statutory works including planned or shut down maintenance programmes.

79.   Utility usage such as energy and water consumption will be monitored to ensure operational and financial efficiency.   Appropriate spares for minor repairs and maintenance will be held on-site taking into consideration stores replenishment policies.

Emergency management

80.   All wards will have access to resuscitation equipment and mechanism to summon the on-site resuscitation team in case of medical emergencies.   One resuscitation room is provided for managing clinical emergencies for each of the outpatient clinic floors (ground floor and Level 1).   Patients who require stabilisation or monitoring will be transferred to the high dependency unit ("HDU") in the hospital or acute general hospital nearby as indicated.   Other features of the emergency management system are:

(1) emergency call activation buttons or switches where hospital users including patients, visitors and staff can activate in case of need for emergency care will be strategically located in each communal areas including waiting areas, lobbies, long corridors (maximum 100m apart without separation by door access control), public toilets and rooms where patients may be staying unattended and nurse call system not provided.   The call system will, depending on the location, be linked to the central security control room for communal areas and nearby or respective nurse stations within clinical areas;

(2) nurse call system with voice communication capability will be installed for each inpatient and day-patient bed, and intervention rooms at outpatient clinics;

(3) panic alarm should be provided at service counters, helpdesks, consultation rooms, intervention rooms, assessment rooms, treatment rooms, patient interview rooms and staff changing

rooms.   The system should be connected to the central security control room; and

(4) automatic defibrillators with conspicuous signage will be strategically installed on each floor.   They should be stored in a special cabinet or stand for continuous charging be accessible through a secured mechanism.   Locations near helpdesks or nurse stations could be considered.

Contingency responses

81.   The CMH should have comprehensive contingency response plans against potential crisis development.   It will have well-developed emergency and disaster response procedures and conduct regular drills dealing with the situations, such as:

(1) service interruption including fire incident;

(2) infrastructure malfunction;

(3) infectious disease outbreak; and

(4) emergency medical responses to persons within and outside the hospital.

82.   The response plans will include but not limited to internal disaster, external disaster, fire, flood, bomb threat, chemical and other hazardous substance decontamination, and infectious disease outbreak including a patient evacuation plan where appropriate.

83.   A conference room will be converted into an incident control room when situation warrants.

Patient evacuation

84.   In crisis situations requiring patient evacuation, a partial or total evacuation may be ordered.   Thus, for handling both ambulatory and

non-ambulatory patients, it is necessary for staff to know not only where to evacuate but also how to evacuate.

85.   Horizontal and vertical evacuation by means of compartmentations, evacuation lifts and sufficient width of staircases will be adopted Therefore, a strategy for horizontal and vertical evacuation will be planned in advance by the hospital operator taking into consideration of the provisions provided.

86.   A partial evacuation means the removal of all patients from the immediate affected area to separated sections of the building where an area of refuge is afforded.   A total evacuation means the removal of all patients from the building to adjoining buildings where shelter and complete safety can be assured, or to the ultimate place of safety as defined in the prevailing Code of Practice for Fire Safety in Buildings issued by the Buildings Department.

Other areas

87.   Other areas include public relations and media communication services and business development services.   Please refer to Part II - respective departmental section of this brief for details.

SECTION 6
INFORMATION TECHNOLOGY SYSTEM OVERVIEW

1.   The CMH will have an IT infrastructure, IT systems, IT applications and effective IT management system in place to facilitate the achievement of the hospital missions and functions.   The IT platform will be capable of integrating the information collected in various IT systems for meaningful information analysis and sharing across systems and to the IT platforms of collaborating institutions.   The IT Systems should:

(1) perform good management on storing, handling, processing and retrieval of administrative, financial management, patient and health information, including patient personal data, clinical and health records for purposes related to provision of healthcare by and on behalf of the CMH;

(2) assist the day-to-day operation of the hospital;

(3) comply with the Government IT security requirements such as putting in place proper security management processes and controls to mitigate security risks and conducting security risk assessment and audit;

(4) comply with the Personal Data (Privacy) Ordinance (Cap. 486), the code of practices issued by the Privacy Commissioner for Personal Data, and other relevant Government regulations, policies and guidelines on confidentiality, integrity and security of patient data and information;

(5) improve efficiency and effectiveness of operation of the CMH;

(6) provide patient-centred care by bringing greater convenience for patients and provide necessary information to patients and their carers managing their health conditions;

(7) have the ability to perform data analysis for the purposes of evaluation, healthcare-related research, service improvement and disease surveillance; and

(8) share patient health data and access to the Electronic Health Record Sharing System ("eHRSS") in accordance with the Electronic Health Record Sharing System Ordinance (Cap. 625).

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Key categories of IT systems

Hospital information system

2.   Key features of the hospital information system are:

(1) The hospital information system covers both inpatient, day-patient, outpatient and outreach patient services with integration at appropriate level for providing effective patient management in respect of CM and WM.   The hospital information system includes comprehensive patient clinical information such as clinical history and progress, patient assessment tools, diagnostic requests and reports, treatment and medication profile.

(2) The CMH will register on the eHRSS as a healthcare provider and comply with the Electronic Health Record System Ordinance (Cap. 625), its codes of practices and all conditions of registration imposed by the Commissioner for the Electronic Health Record. The hospital information system is able to connect with, access the records on and upload patient data to the eHRSS in accordance with the Electronic Health Record Sharing System Ordinance (Cap. 625) and is able to integrate with other clinical IT Systems such as radiology, laboratory, pharmacy, nursing and allied health systems. The CMH will ensure that all relevant healthcare professional staff of the hospital have access to the eHRSS.   The CMH will encourage patients to give consent for sharing their electronic health records through eHRSS.

(3) Clinical data analysing functions will be built-in to facilitate training, evaluation, service improvement, disease surveillance and research purposes.

Patient administration system

3.   The patient administration system, preferably in the form of mobile application, website and/or quick response code system, provides a one-stop arrangement for patient administration such as making/changing appointment, registration, queuing, revenue collection, admission, discharges, medication dispensing and hospital wayfinding for patients. The system interacts on a real-time basis with information systems of the hospital administration and other service units e.g. pharmacies and shroff office, to streamline the patient journey and reduce waiting time.   It is also capable of analysing patient administration data reporting, performance management and facilitate formulation of improvement strategies.

Enterprise resource planning system

4.   The enterprise resource planning ("ERP") system streamlines and integrates various business processes including finance, human resources, and procurement functions of the CMH.   It also provides gateways for management control, monitoring, reporting and data mining to facilitate risk management, forward planning and maximisation of resource utilisation.

Non-clinical supporting system

5.   Non-clinical patient support systems may include material transfer system, catering, security, medication, purchasing, logistics and patient supporting services.

IT infrastructure

6.   In view of the rapidly developing IT technology, the CMH will have the appropriate level of IT infrastructure that could support IT systems and applications of the future.   IT trunking should be provided to cover all

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service areas, of sufficient bandwidth for fast data flow including complex images.   Wi-Fi capability is particularly important as more and more applications are engaging mobile technologies.   The CMH will be ready for the fifth generation of cellular network technology (i.e. 5G).

7.   In brief, six groups of trunkings are to be provided with each serving a set of IT systems.   Their grouping are as follows:

   (1) Clinical and Administration

   (a)   Hospital information system (CMS on ramp) – connecting Picture Archiving and Communication System ("PACS");

   (b)   CM information system on ramp;

   (c)   Laboratory information system;

   (d)   Radiology information system;

   (e)   Incidents reporting system;

   (f)   Pharmacy dispensing and automation system (CM and WM, herb-drug interaction);

   (g)   CSSU tracking system;

   (h)   Bed panel (wireless);

   (i)   Vital parameters monitoring;

   (j)   Bedhead data port (one for each bed, include day-patient bed);

   (k)   Telemedicine;

   (l)   Audio-visual system;

   (m)   Enterprise resource planning (including human resources, finance, procurement and asset management);

   (n)   Internal email system for staff, staff apps;

   (o)   Automatic dispatch;

   (p)   Dietetics and catering management (patients can order meal direct from catering); and

   (q)   Mortuary (RFID for morgue).

(2) For patients and public uses

    (a) Patient administration system - queue display management system; and

    (b) Patient administration system - appointment and payment.

(3) Connecting to Universities

    (a) Systems for offices and data rooms of the Universities

(4) Vendor-managed systems

    (a) PACS;

    (b) Physiologic Monitoring System ("PMS") (two systems in CTRC and HDU), individual patient monitoring using Wi-Fi connection);

    (c) AMR (furniture and equipment item requiring whole hospital Wi-Fi connection);

    (d) Electronic signage and display system, liquid crystal display televisions, central message display;

    (e) Visitor appointment booking;

    (f) Info-entertainment system; and

    (g) Wi-Fi clock system.

(5) Hospital developed systems (Operator-supplied IT Systems)

    (a) Office administration;

(6) Building maintenance; and

    (a) Security management (CCTV, access control and CCMS under building contract, RFID, barcode scanner)

SECTION 7
KEY FACILITIES OVERVIEW

1.   Detailed breakdown of the key facilities of the CMH are as below:

  (1) Inpatient and day-patient care services, including –

      (a)   General inpatient wards with 125 beds (including HDU with 4 beds)

      (b)   Special inpatient wards with 125 beds

      (c)   General day wards with 45 beds

      (d)   Special day wards with 45 beds

      (e)   Paediatrics wards with 40 beds

  (2) Ambulatory care services, including –

      (a)   GOPC

      (b)   ROPC

      (c)   Special disease centres

      (d)   Private clinics

      (e)   Preventive care and health maintenance centre

  (3) Allied health services, including –

      (a)   IRC (physiotherapy and occupational therapy, clinical psychology, podiatry, prosthetics and orthotics, speech therapy, optometry, audiology, dietitian and medical social work)

      (b)   Satellite rehabilitation rooms on inpatient and day ward floors

  (4) Pharmacy services, including –

      (a)   CM pharmacy

      (b)   WM pharmacy

  (5) Diagnostic, procedural, and ancillary services, including –

      (a)   Radiology or diagnostic, including MRI, CT scan, X-ray, ultrasound scan

      (b)   MOT

  (c) Electrophysiology

  (d) Endoscopy

  (e) CSSU

  (f) Core laboratory, including blood bank

  (g) Mortuary

(6) Training and research services, including –

  (a) CTRC with 20 beds

  (b) Lecture theatres

  (c) Multifunction classrooms

  (d) Tutorial rooms

  (e) Skill and demonstration laboratory

  (f) Student support facilities

  (g) One-way mirror consultation rooms

  (h) Teaching consultation rooms

  (i) Office for education and research

  (j) CM library

(7) Community health and support services, including -

  (a) Outreach facilities

  (b) Kitchen and cafeteria

  (c) Garden

  (d) Spiritual support

  (e) Family and relatives accommodation

  (f) Staff accommodation

  (g) Staff changing

  (h) Call room/Overnight room/Staff barracks

  (i) IT and communication

  (j) Purchasing and store

  (k) Linen and laundry

(l)   Housekeeping

(m)   Building amenities

(n)   Facility and plant management

(o)   Security

(p)   Printing and duplicating/mail

(q)   Transportation and portering

(r)   Carparking

(8) Administrative services, including hospital administration, admission and medical records

PART II - DEPARTMENTAL PLANNING AND DESIGN BRIEF

A. INPATIENT and DAY-PATIENT ZONES

This section describes the general design concepts, requirements, provision of all inpatient services including general inpatient wards, special inpatient wards, paediatrics wards, CTRC and day wards. Individual types of wards may have their special and unique features will be specified under separate sub-sections. All diagrams are for illustration purposes on the design concepts supplementing the textual descriptions.

A1. Overview of the department and service scope

1. CM inpatient/day-patient services to be provided in the CMH will be the first of its kind in Hong Kong. The operation model and associated building design and provisions of the patient wards are formulated by incorporating applicable features from conventional WM hospitals in Hong Kong and integrating with unique CM features referring from expertise of local CMPs and CM industry and CM hospitals in operation in the Mainland and around the world.

Scope of services

2. Services of the CMH would cover primary, secondary and tertiary care with a view to promoting the development of specialised CM services. The services may cover episodic (general) and chronic diseases, complex diseases, convalescence, rehabilitation and palliative care. However, the CMH will not provide accident and emergency services, general anesthetic surgical services, intensive care services and child delivery services.

3. In the CMH, six specialised services of internal medicine in CM, acupuncture, orthopedics and traumatology in CM, gynecology in CM, paediatrics in CM and external medicine in CM are defined as foundation services. Other specialised services will be developed further after the

commencement of the hospital services and according to the future development of CM in Hong Kong.

4.   The nature of health problems, types of patients, intervention and treatment could be different in different specialised services as they developed.   These different characteristics could have bearings to the physical design, furniture and equipment provision of the inpatient and day-patient wards.   To cater for the variable needs not able to be defined at this juncture, the design of each ward should be able to care for serving patients from all specialised services (except paediatrics patients who will be served in the paediatrics wards).

5.   Therefore, each ward will be multi-specialised services based.   A generic design will be adopted with functional zones within each ward adaptable to the requirement of different patients.   Patients with specific and similar needs will be allocated to the most applicable zone for care. Intervention rooms within wards are also modular with provision of infrastructure good for fitting in various types of loose furniture and equipment items specific to individual specialised services.

Types of patients

6.   The inpatients of the CMH will come from the CMH outpatient clinics, referral from the 18 CMCTRs, referral from CMPs in private sector, WM service providers in both public and private sectors and CM referral cases from regions outside Hong Kong.   Characteristics of the CMH inpatients are as follows:

(1) they may have complex conditions which require monitoring on clinical conditions and response to treatments;

(2) they may have to undergo intensive treatment/interventional programmes;

(3) some may have intense symptoms, variable disability or functionally deficit who have difficulty in self-care and require an in-hospital environment for care; and

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(4) some may need long-term care.

7.　　　As Hong Kong is having a rapidly aging population, it is estimated that a significant proportion of patients could be of the aged population. Therefore, certain zones or bed cubicles should be with elderly friendly features.

Subsidised and add-on market oriented services

8.　　　Of the total planned inpatient and day-patient capacity, the government-subsidised inpatient and day-patient services will be representing around 50 to 65% of the total service volume.　　Meanwhile, the Operator may offer add-on market oriented services for CM inpatient and day-patient.　　The proportion of subsidised and add-on market oriented services for inpatient and/or day-patient will vary within the 50 to 65% range.

9.　　　For planning purpose, 50% of the bed capacity for both inpatient (i.e. two general wards) and day-patient (i.e. one day ward) care would be planned for subsidised beds while the remaining 50% of the bed capacity for both inpatient (i.e. four special wards) and day-patient care (i.e. one day ward) would be planned for add-on market oriented services with built-in flexibility to cater for the variation within the specified range.

Total capacity and ward configuration

10.　　　The CMH will provide 400 patient beds comprising the following:

(1) 280 inpatient beds comprising:

(a) 250 beds in inpatient wards for patients receiving both subsidised and add-on market oriented services (including 4 HDU beds);

(b) 30 beds in paediatrics wards for patients receiving both

subsidised and add-on market oriented services;

(2) 100 day-patient beds comprising:

    (a) 90 beds in day wards for patients receiving both subsidised and add-on market oriented services;

    (b) 10 beds in paediatrics wards for patients receiving both subsidised and add-on market oriented services; and

(3) 20 beds for CTRC.

11.   Distribution of ward room among different wards as follows:

	六人病房 6-bed	四人病房 4-bed	三人病房 3-bed	二人病房 2-bed	單人病房 1-bed	單人病房 (負壓隔離病房) 1-bed (AIIR)	加護病床 HDU bed	Total Bed Number
住院病房 Inpatient Ward								
一般病房 General Ward A	9				6	4		64
一般病房 General Ward B	8				5	4	4	61
	17				11	8	4	125
專用病房 Special Ward C			6	4	6			32
專用病房 Special Ward D			6	4	5			31
專用病房 Special Ward E			6	4	5			31
專用病房 Special Ward F			6	4	5			31
			24	16	21			125
日間病房 Day Ward								
一般日間病房 General Day Ward A	6		3					45
專用日間病房 Special Day Ward B		9		3	3			45
	6	9	3	3	3			90
兒科病房 Paediatrics Ward								
一般日間病床 General Day Bed				2	1			5
一般住院病床 General In-patient Bed		3		1	1			15
專用日間病床 Special Day Bed				2	1			5
專用住院病床 Special In-patient Bed				6	1	2		15
		3		11	4	2		40
臨床試驗和研究中心 Clinical Trial & Research Centre								
住院/日間病房 Inpatient / Day Ward (CTC)	2	2						20
	25	14	27	30	39	10	4	

Grand Total   400

12.   The general wards, special wards and day wards are modular in design with the flexibility to merge two special wards to one general wards or separate one general ward into two special wards by minor local alterations and additions works ("A&A works") without alternating major building services provisions. A&A works include erection of proprietary demountable partition or dry wall. Day wards can be converted to inpatient wards and vice versa by simple change of operation mode.

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13.   For optimisation of hospital staff allocation and spatial utilization, a "standard ward module" was planned and used for the composition of general inpatient and special inpatient wards.   The concepts, requirements and provision of the standard ward module will be equally applicable to day wards, paediatrics wards and CTRC with the exception of a different bed composition as shown in the conceptual diagram below:

Single Ward Module

← - - - Public Entrance

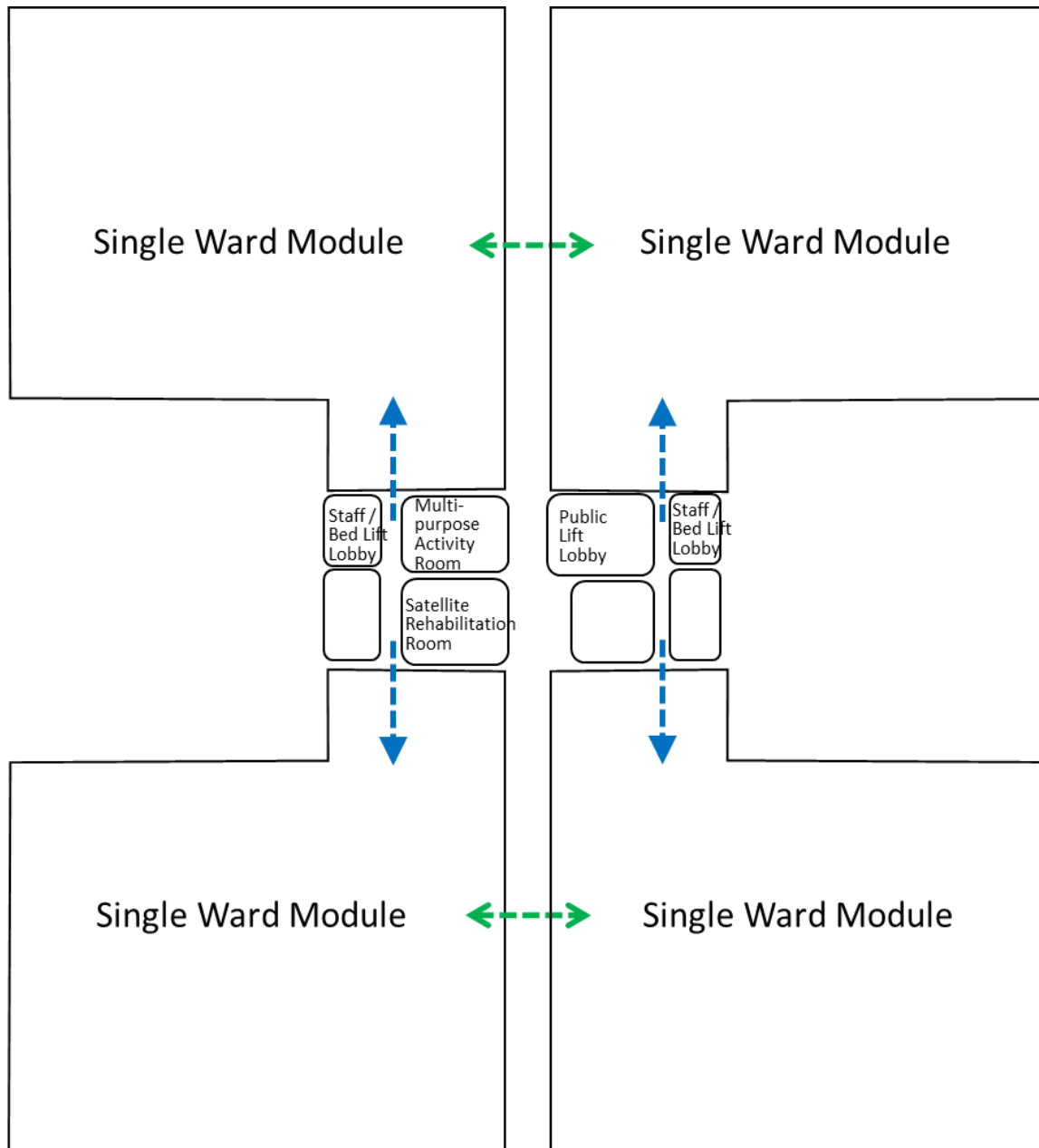← - - - Staff / Escorted Patient Entrance

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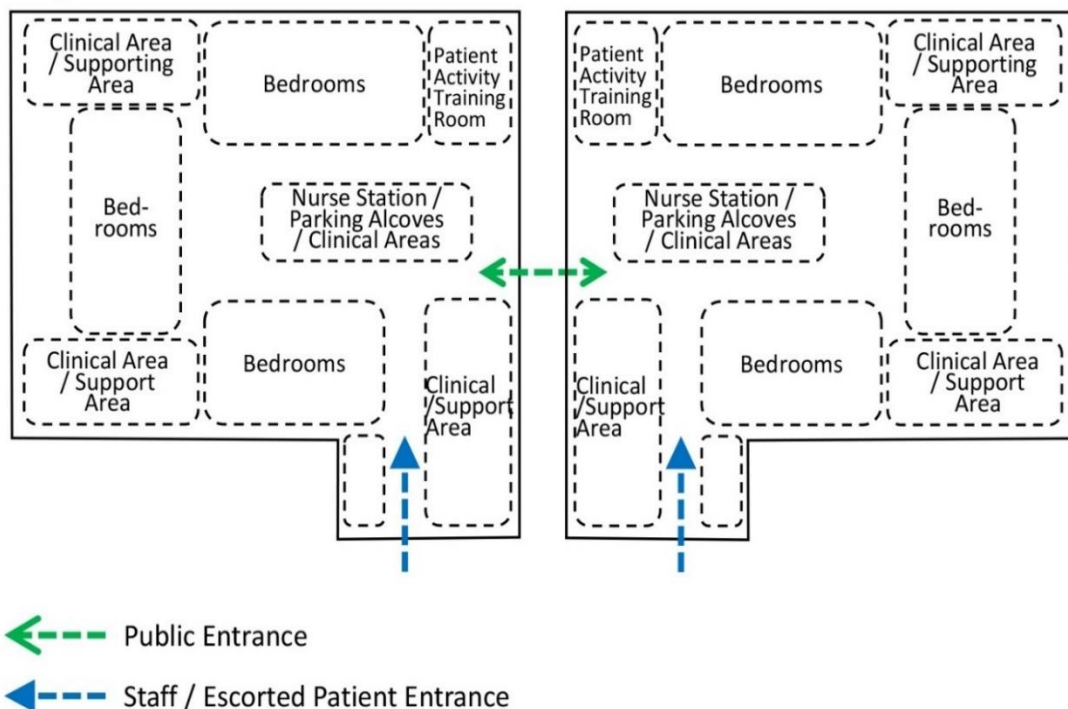
14.   Two standard ward modules will be planned for future flexibility of combining into one larger ward (40 / 45 / 61 – 64-bed) where required in change of hospital operation as shown in the conceptual diagram below:

Combined Ward Module
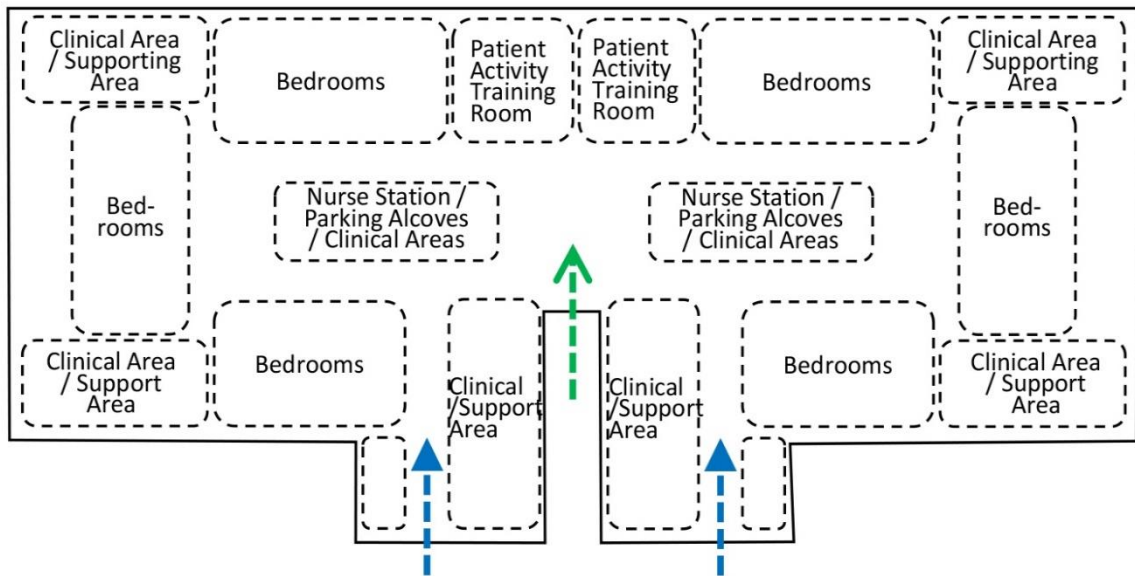
← - - - Public Entrance

◄ - - - Staff / Escorted Patient Entrance

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15.   Four standard ward modules are anticipated to contribute a standard ward floors, having overall functional zoning arrangement shown in the conceptual diagram below -
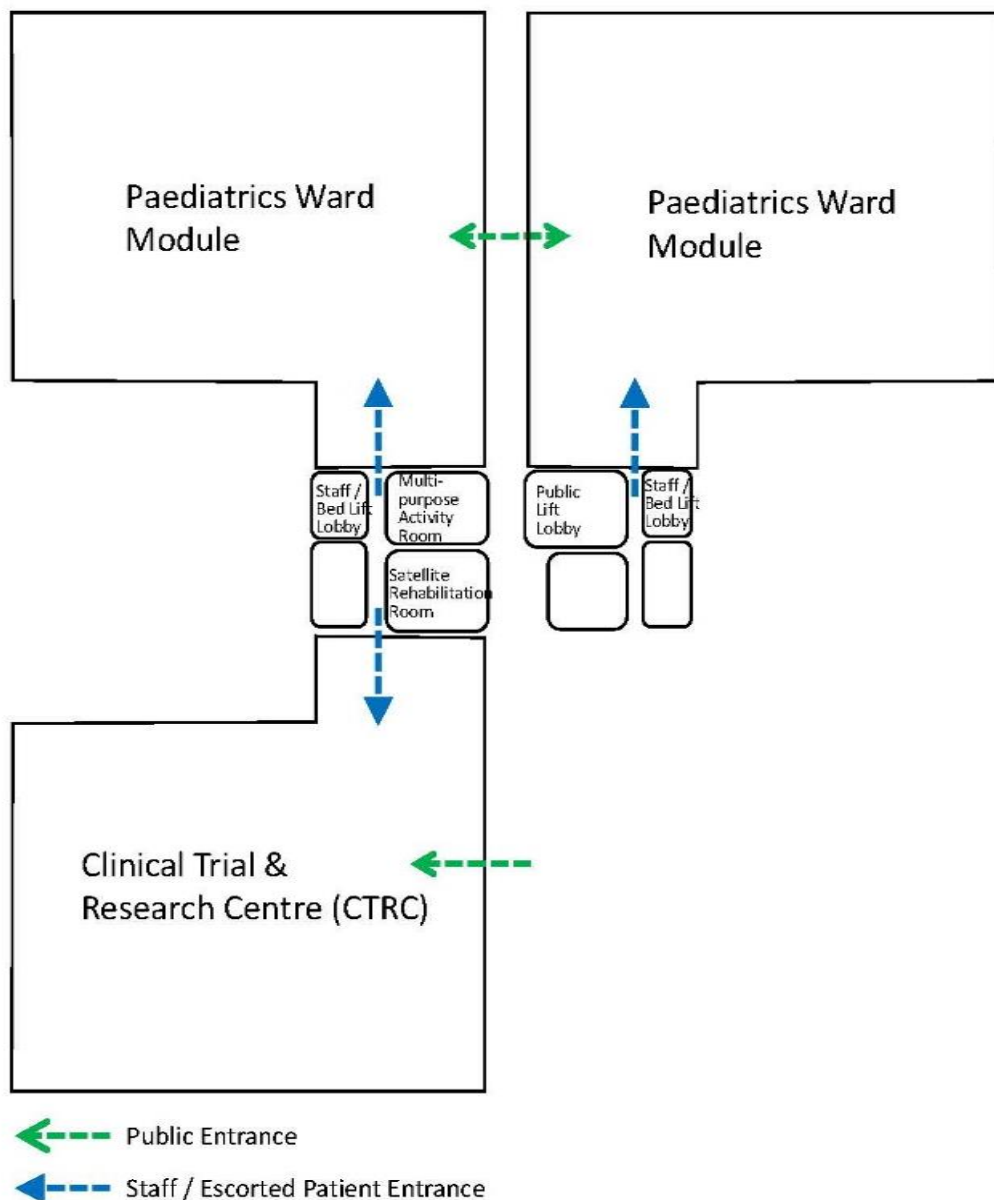
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16.   The same ward module concept is used for ward room area of day wards with the addition of an assessment and intervention area.   This will enable the interchangeability of turning the day ward into inpatient ward if needed.

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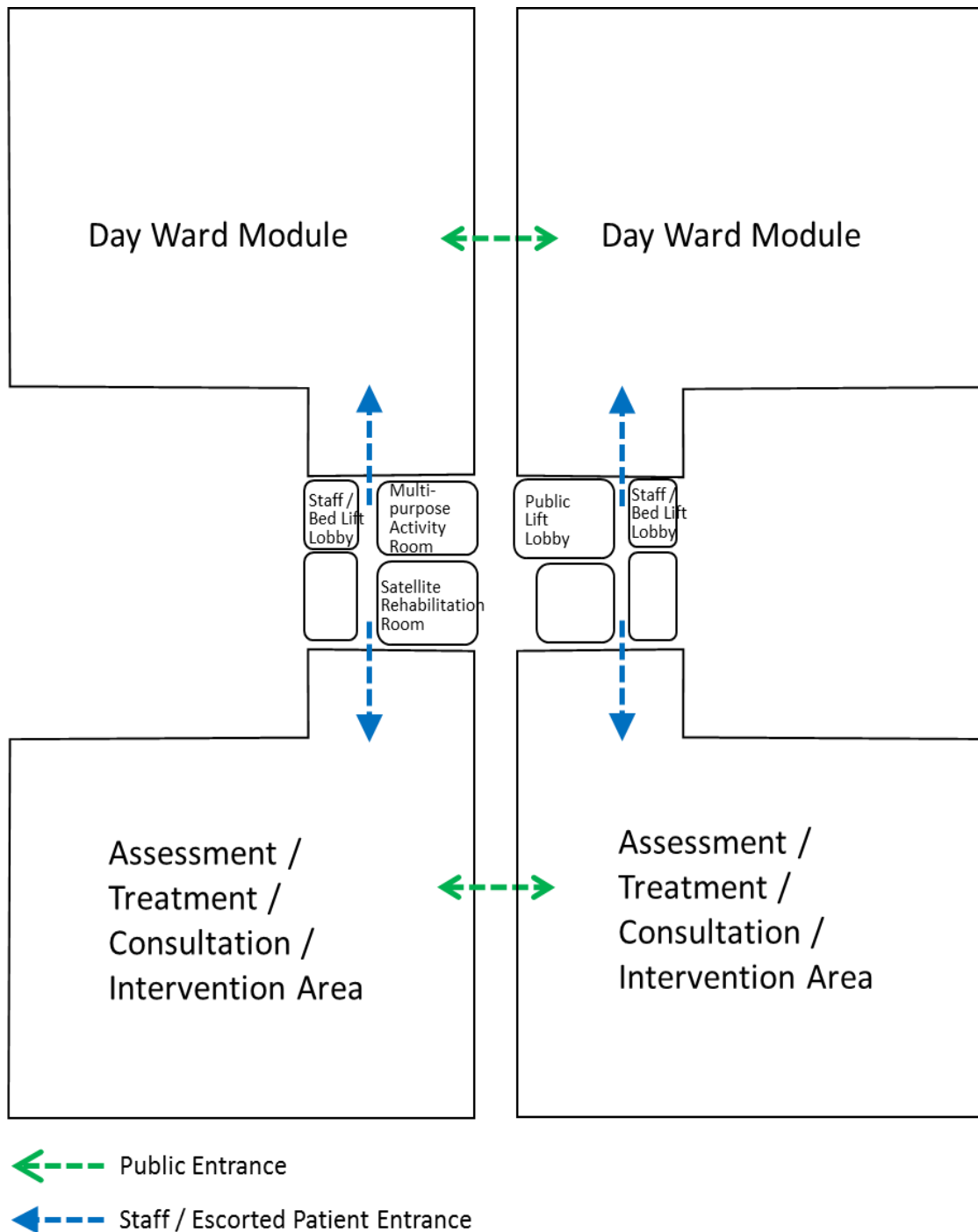
17.	The same ward module concept is used for the paediatrics ward with added special requirements tailored for the children and adolescent care.	Each ward module consists of a combination of inpatient / day-patient beds.	One module will provide general inpatient/day-patient service, and the other module will provide special inpatient/day-patient service.	Each ward module will be provided with the associated clinical rooms and supporting facilities.
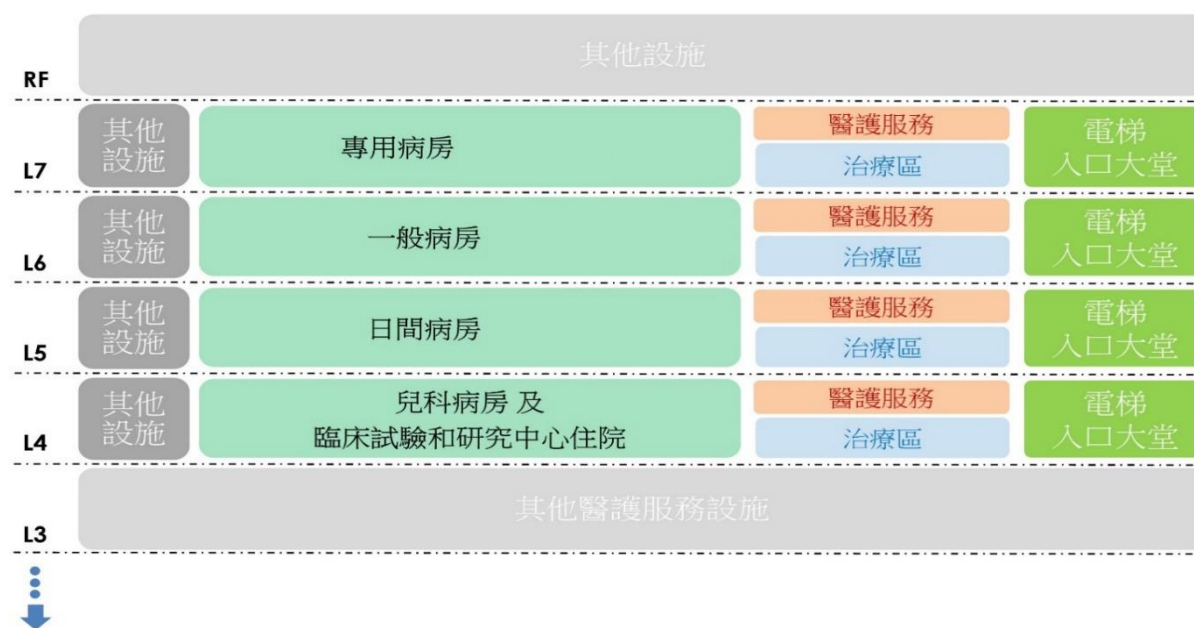
18.   In summary:

(1) General inpatient services comprises two wards (A) and (B), having 64 beds and 61 beds respectively.   Each general ward composes of two typical ward modules.

(2) Special inpatient services comprises four wards (C), (D), (E) and (F).

(3) The same ward module concept is used for ward room area of day wards i.e. wards (G) and (H).   This will enable the interchangeability of turning the day ward into inpatient ward if needed.

(4) All paediatrics patients will be accommodated in the paediatrics wards.   The age profile for paediatrics patients will be from infancy to 18 years old.   The ward will provide inpatient and day-patient care for patients receiving both subsidised and add-on market oriented services.

External relationships and adjacency requirements

19.   Based on typical ward floor layout planning, ward properties, operation consideration and project site conditions, the following vertical stacking relationship of all inpatient and day wards is resulted:

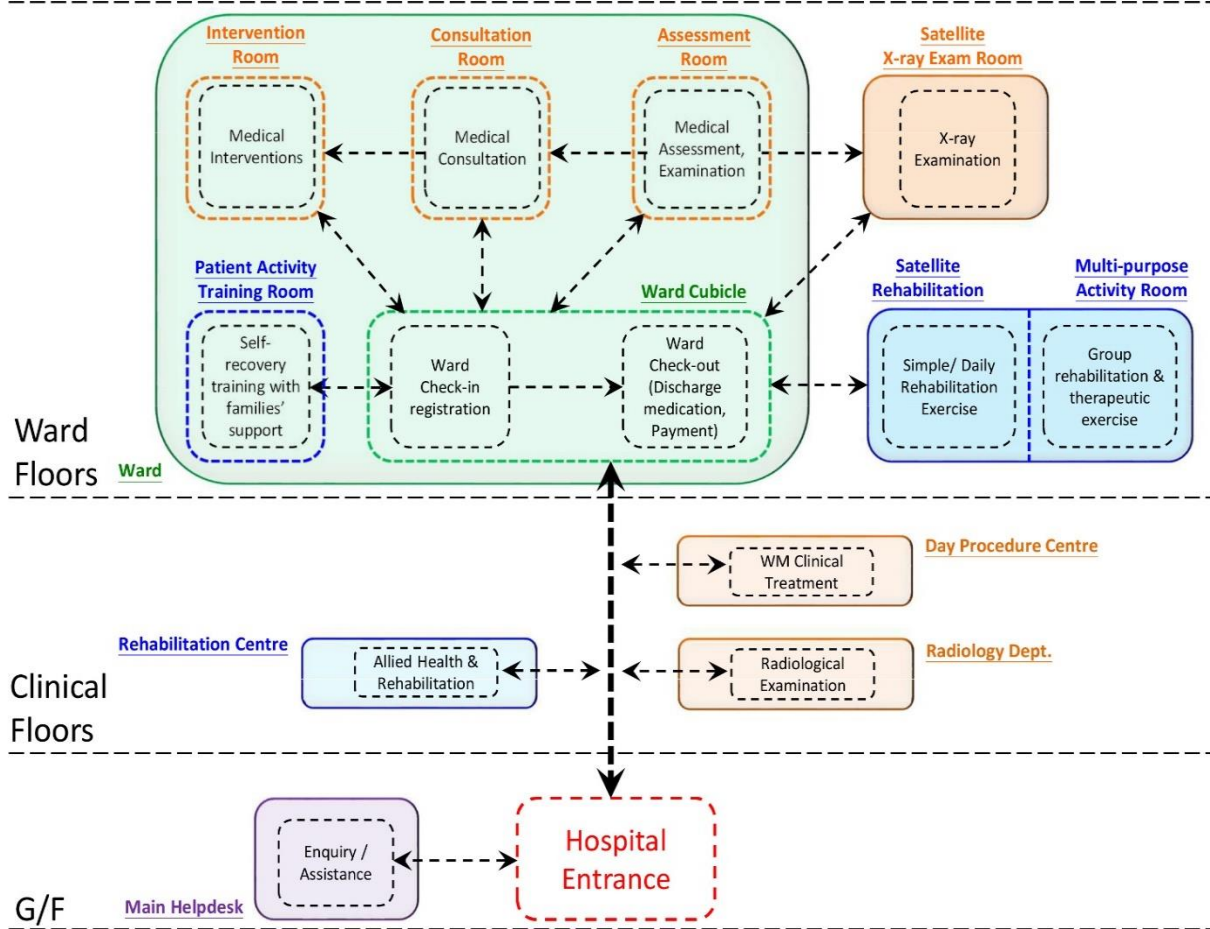| RF	其他設施		
L7	其他設施	專用病房	醫護服務 / 治療區	電梯 入口大堂
L6	其他設施	一般病房	醫護服務 / 治療區	電梯 入口大堂
L5	其他設施	日間病房	醫護服務 / 治療區	電梯 入口大堂
L4	其他設施	兒科病房 及 臨床試驗和研究中心住院	醫護服務 / 治療區	電梯 入口大堂
L3	其他醫護服務設施		

20.   The four ward floors will be located at the upper most floors of the hospital in view of the following:

(1) Away from relative traffic volume of daily activities at ground floor and lower floors including outpatient clinics, pharmacies, day procedure centre, radiology department and various teaching and training facilities serving CM students and visitors;

(2) Upper floors stay away from road traffic nuisance where quiet and pleasant quality is essential for a place for habitation; and

(3) Having all major supporting facilities, both clinical and non-clinical, and the major mechanical plant rooms to be located at lower floors of the hospital for operation need, it provides opportunity of larger ratio of building façade to floor area for introducing maximised natural daylight and surrounding external view which contribute to an optimised environment for a place for healing.
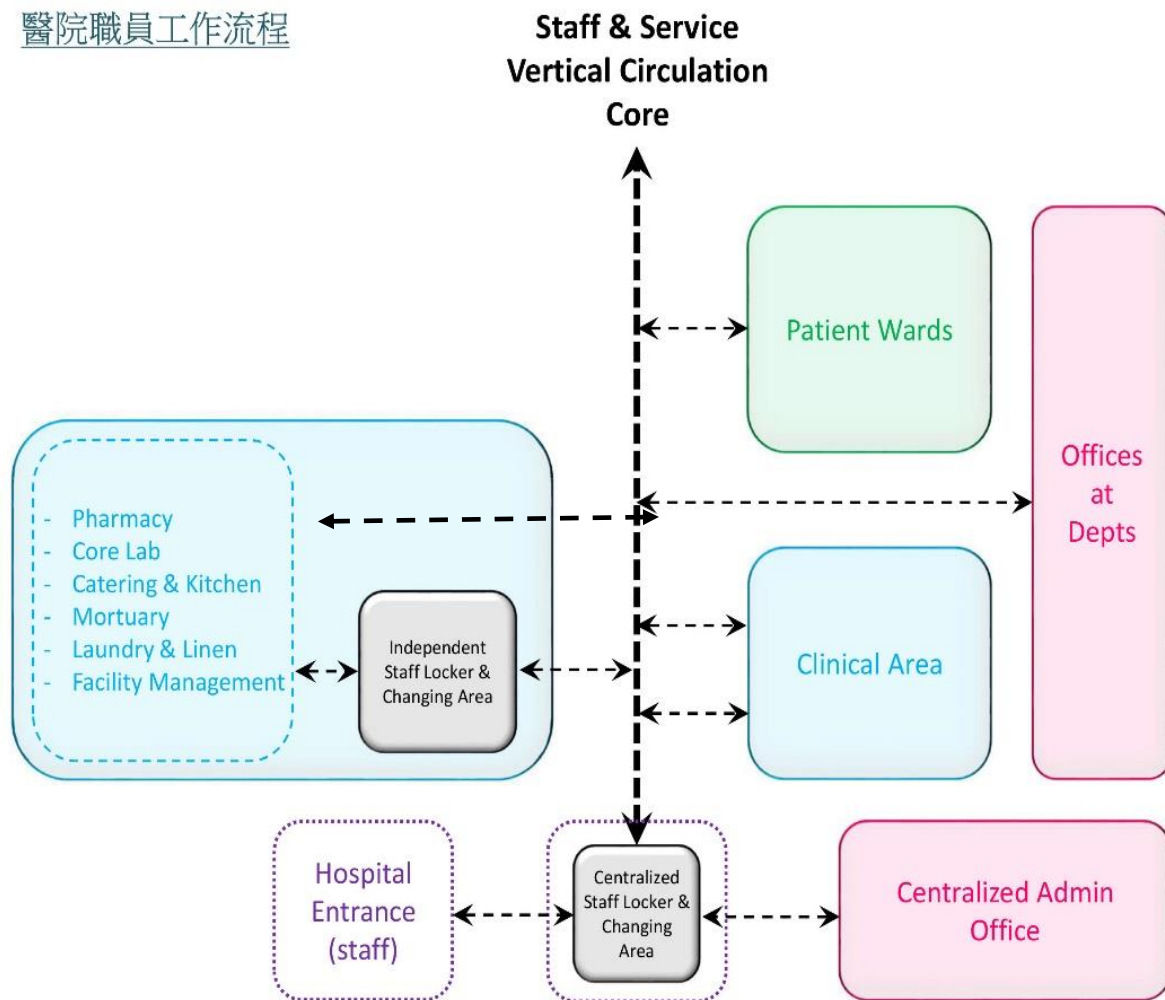
21.   Planning principles of patient wards:

(1) "Integrated approach" is being adopted at ward arrangement to include major clinical facilities including consultation rooms, intervention rooms, patient activity training room within each ward, and satellite rehabilitation rooms, multi-purpose activity room and satellite X-ray examination rooms on the same ward floor where the patients stay.   It aims at minimising patients' travel, especially vertically between floors, during their stay so as to optimise the inpatients' journey and associated hospital operation.   For services not available on the same floor, patients may need to travel to other service centres including day procedure centre, radiology department, and IRC.

(2) Registration, payment and all hospital administrative procedures to be undergone by patients will be processed and self-serviced by patients via wireless electronic mobile devices.

(3) Patients not able to process all administrative procedures will be supported by the helpdesk within each ward or helpdesk in the main entrance lobby on arrival to the hospital.

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22. Flow diagram of inpatient/ day-patient journey:

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23.   Flow diagram of hospital staff operation:

醫院職員工作流程

**Staff & Service
Vertical Circulation
Core**

- Pharmacy
- Core Lab
- Catering & Kitchen
- Mortuary
- Laundry & Linen
- Facility Management

Independent
Staff Locker &
Changing Area

Patient Wards

Offices
at
Depts

Clinical Area

Hospital
Entrance
(staff)

Centralized
Staff Locker &
Changing
Area

Centralized Admin
Office

24.   Each ward module has two circulatory routes supporting its function:

(1) Main public circulation route for access to the standard ward modules by patients, patients' families and visitors.

(2) Internal circulation route for staff, patients with escort and material movement.   The internal route also provides connection of patient wards to other internal hospital units. Back-of-house services including loading/unloading ("L/UL") zones for bulk goods scheduled delivery by AMR.   Clean and dirty passages are to be segregated.   Clean bulk items include meal, clean linen, drugs (CM and WM), laboratory specimen, CSSU items, consumables and medical record, whereas dirty

bulk items include used linen and wastes (domestic, chemical and clinical). The internal route also connects the ward to various clinical areas, and centralised staff facilities i.e. offices, changing area and overnight accommodation.

(3) Please also refer to the description of hospital logistics and operation flow under Section 5 of the Executive Summary.

Internal relationships, operation flow and functions

Internal relationships and operation flow

25. General ward design and planning concepts – "Modular design"

(1) Wards have been planned on "module-base", with one "ward module" accommodating 20 to 32 patient beds and associated clinical and supporting facilities. Single-bed and multi-bed patient ward rooms will be provided with standardised areas and building facilities/provisions.

(2) A generic design approach will be adopted with flexibility for converting ward as inpatient or day ward according to operational need.

(3) All inpatient beds are generic in nature to accommodate patients of all types, except the paediatrics wards which will have special design to meet the needs of children and adolescents.

(4) Patients of the same gender will be accommodated in the same ward irrespective of different types of specialised services.

(5) Ensuite toilet and shower room will be equipped at each patient cubicle room to minimise patients' traffic within ward floor and increase the utilisation efficiency of common area. It also aims at limiting the possible plumbing/drainage breakage at toilet/shower locally so as not to cause nuisance to all ward patients by local management.

(6) Associated ward facilities including consultation, intervention rooms, patient activity training room within the ward, satellite X-

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ray examination room, satellite rehabilitation room and multi-purpose activity room on each ward floor to minimise patient's vertical traffic within hospital and facilitate the overall inpatient/day-patient clinical and rehabilitation process.

(7) Patient ward staff team operation structure and manpower allocation can be standardised and optimised based on a single ward module.

26.   The operation flow of hospital staff and goods logistics for a typical ward module as shown in the conceptual diagram below:

Typical Ward Module
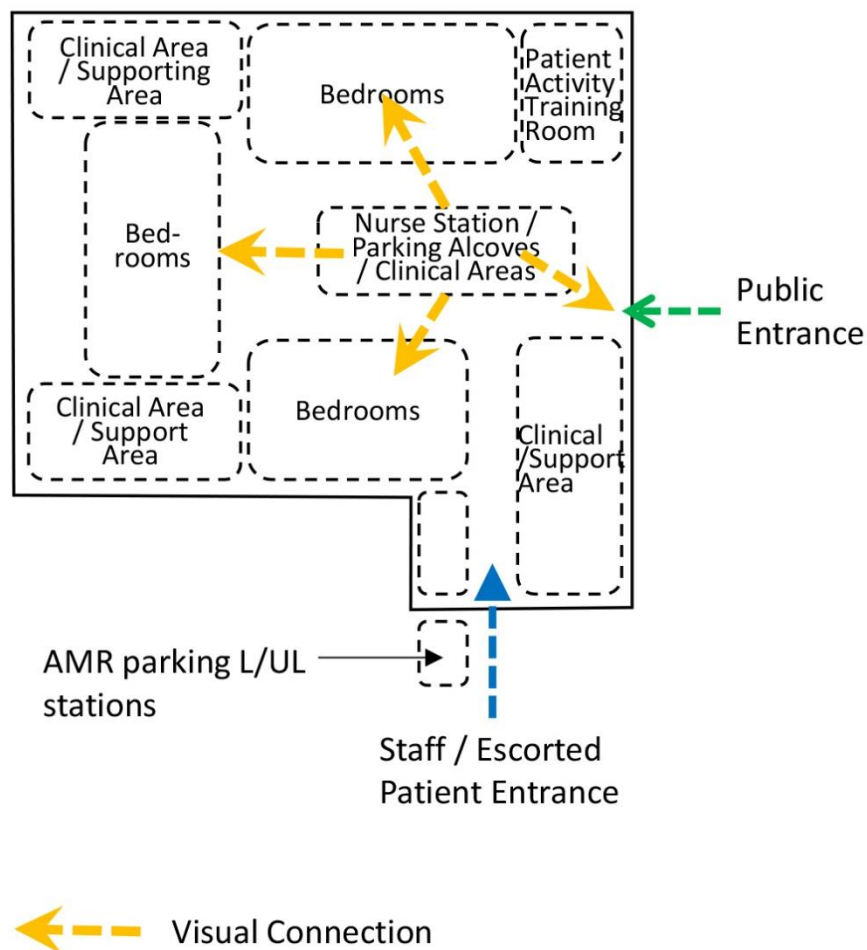
27.   General operation and activities in the inpatient wards include:

(1)   Handling patient's admission, transfer, discharge and death;

(2) Providing care according to the care plan of each patient;

(3) Training and education of patients and carers to manage the patients' health conditions;

(4) Observing and recording physical and mental status of patients;

(5) Preparing CMs, assisting CMPs or WM medical practitioners during physical examination and treatment provision such as specimens collection and administering medication;

(6) Scrutinising patients' condition, their reaction to medications and other medical/nursing interventions and take appropriate actions;

(7) Planning and documenting individual care plan to patients;

(8) Assisting patients in daily activities of living include bathing, manual handling operation, serving and feeding patients, treatment and other activities contributing to health promotion and recovery;

(9) Responding to patients' call signals and relatives' enquiries and keeping rooms (personal effects) in order; and

(10) Ward rounds will be conducted by different professional disciplines jointly or separately supported by mobile or portable devices.

28.   Patient admission, discharge and patient visiting

(1) Please also refer to the description of Admission, Discharge and Patient Visiting under Section 5 of the Executive Summary.

(2) One ward, either single ward or combined ward module accommodating one gender.

(3) Paediatrics ward will accommodate paediatrics patients of various age groups and patients of both genders.

Internal functions

29. Ward design and facilities provision

    (1) The décor of patient areas should provide a touch of class, simple yet elegant. The environment is tranquil, comfortable and home-like with natural lights. Natural daylight, room temperature and lighting are adjustable to suit patients' need.

    (2) There should one controlled access for visitors to each ward, and there are one and two controlled access from the internal passage for single ward module abd combined ward module respectively. The main visitor entrance should be easily identified.

    (3) Access to ward through the internal and public entrances are to be controlled by appropriate security door lock system accessible with access card (such as RFID) and barcode (such as 2D barcode). Access to patient wards can also by direct permission granted through a remote door control system, located at the helpdesk and nurse station, integrated with video door phone system. Exit from patient wards through both entrances are also controlled by the same access control mechanism. Please also refer to the description of access control system under Section 5 of the Executive Summary.

    (4) Individual patient cubicle rooms should have 2D barcode (visitor and patients) and RFID (staff) access control for both entrance and exit. The security system could be activated on need basis. Please also refer to the description of access control system under Section 5 of the Executive Summary.

    (5) All other individual rooms within the ward should also have RFID (staff) access control for entrance only. All individual non-public rooms on the ward floors should have RFID (staff) access control for entrance only.

    (6) Vital sign monitor will be available for all inpatient and day-patient beds via Wi-Fi devices on bedside, and the respective central console will be located at the nurse station. It will be interfaced with the Hospital Information System ("HIS").

(7) All wards are equipped with hand hygiene stations (e.g. wash hand basins or hand rubs) located appropriately to encourage infection control.

(8) All dirty facilities e.g. dirty utility, disposal room and cleaner's room will be located at a discrete area away from the patient and visitor areas.

(9) CCTV with recording function is to be installed outside the ward entrances (internal and public routes), ward corridors within the wards and over the dangerous drug storage. CCTV without recording function for patient monitoring is installed in patient cubicles of the CTRC and HDU. Please also refer to the description of CCTV System under Section 5 of the Executive Summary.

(10) Tagging system scanner for tracking material transfer and specific patient movement is to be installed above all ward entrances (internal and public). Please also refer to the description of Tagging System under Section 5 of the Executive Summary.

(11) PTS is to be installed to facilitate transport of pathology specimen and medication supplies from CM and WM pharmacies. The PTS stations in wards will be located near the nurse stations and helpdesk.

(12) For general inpatient wards, ceiling hoist system connecting one 6-bed ward rooms per ward module i.e. two sets per general inpatient ward and the assisted bathrooms will be provided for patients with walking difficulties. For other ward types and patient cubicle rooms, portable patient hoist system will be used.

(13) Sufficient provisions should be provided to enhance safety of patients and staff e.g. handrail, safety glass/windows, non-slippery floor, sufficient lighting and call systems.

(14) Patient bed is where patient stays most of the time. It should be comfortable and easy to operate. All accessories are within reach of the patient.

(15) Apart from the provision of appropriate A/C and ventilation system, the ward windows should be operable and comply with

the statutory requirement to conserve energy for A/C during winter season. However, the operable windows should be designed to prevent patients from jumping or vandalising.

(16) AMR loading and unloading areas are to be provided as close to the staff entrance as possible inside the ward.

30.   Patient cubicle room - single room

(1) Each bed will be equipped with a bed-head trunk ("BHT") having the standard provisions referred to the associated health technical memorandum ("HTM") standard, including bed light, nurse call system, outlet fitting for oxygen and suction, electric sockets, power control, data ports (IT and CMS). These should be fitted non-obtrusively and arranged conveniently with ergonomic consideration over the bed-head setting.

(2) Electronic mobile device either provided by the hospital or brought-in by the patient will be able to access the patient infotainment system through which patients can be self-serviced with television, AV entertainment, hospital service, patient education/communications, registration, payment, meal ordering and the like.

(3) A patient-centred and family-oriented approach will be adopted. Ensuite toilet and bathroom will be equipped at each patient cubicle room to minimise patients' traffic within ward floor and increase the utilisation efficiency of common area. It also aims at limiting the possible plumbing/drainage breakage at toilet/shower locally so as not to cause nuisance to all ward patients by local management.

(4) Clinical hand basin in each bedroom, with hands free taps and anti-splash design, is to be provided.

(5) Each patient bed space is to be curtained, include patient/visitor chair and storage for patient belongings.

(6) Adequate space at the bedside is to be provided so that carers and families can support the patients when required.

(7) There should be easy and direct access to the ensuite toilet and

shower.

(8) Each patient cubicle room will be equipped with an alcohol hand rub dispenser to promote hand hygiene.

(9) Patient control provision of electrically driven roller blind, room/bed lighting level control, temperature control will be provided for single room.

(10) A combination of shelves, cabinets and wash sink bench top integrated with television installation frame (minimum 50-inch LED television) will be provided for use by patients and/or patient's family.

(11) There should be provision for hot and cold drinking water supply with safety design and hot water temperature control to prevent accidental scalding.

(12) The ensuite toilet door should be swing type with a special feature on door control for emergency opening of door from both sides.

(13) Auto-flushing for toilet bowls can be considered. Cold and hot water supply with temperature control and scalding prevention device is required for all patient toilets.

(14) Wall-mounted medical rail should be installed with proper weight bearing to support hooking on of equipment and monitors.

(15) Room designed to provide a safe, quiet, pleasant and therapeutic environment for promotion of patient recovery.

(16) Hand-washing station should be located at or adjacent to the entrance of the patient room with unobstructed access for use by healthcare personnel and others before entering the room. (one station can be shared by two single room)

(17) Conceptual layout and building provisions of a single room as below:
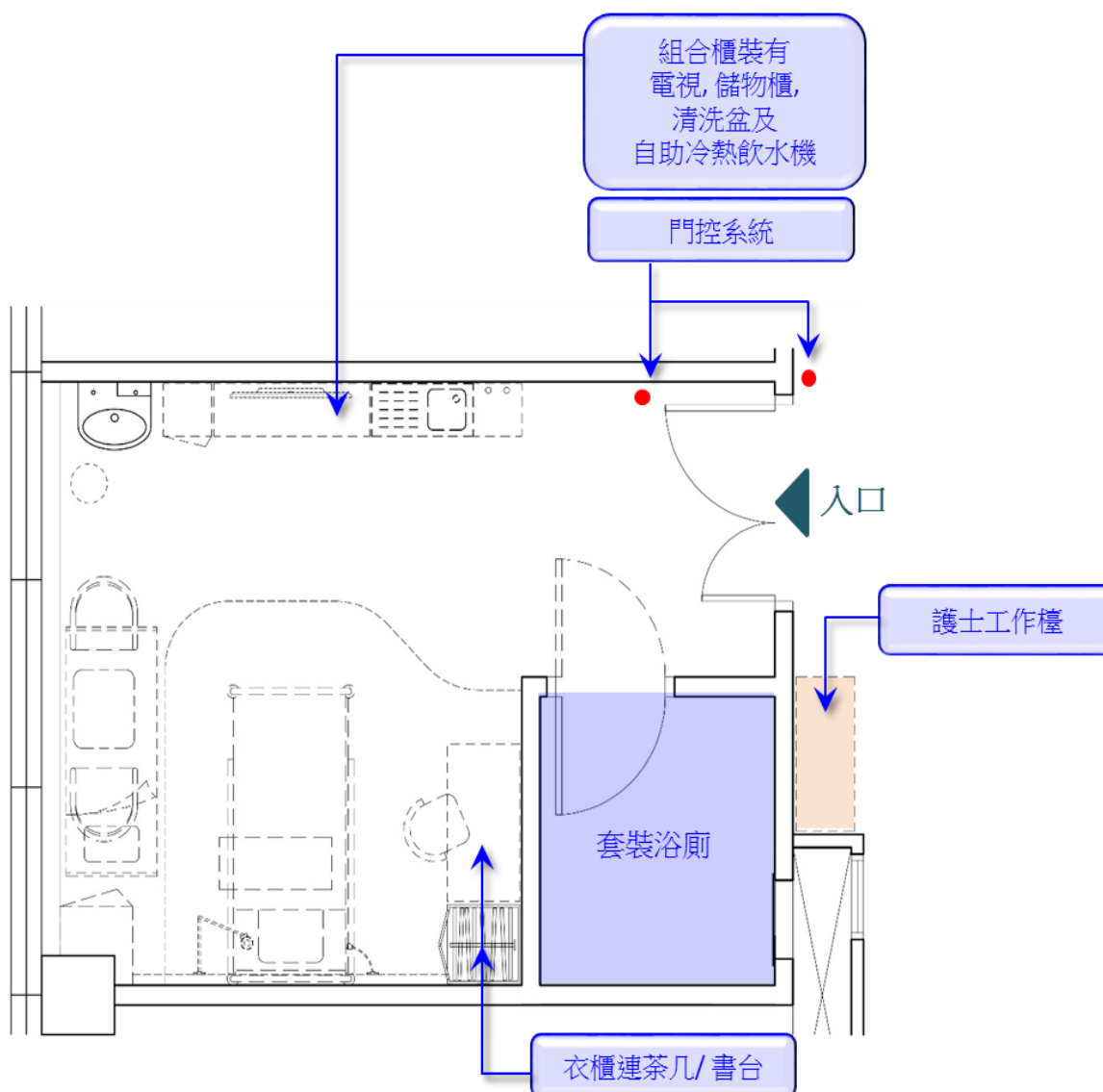
31.   Ward room – 2-bed or 3-bed rooms

(1) General design requirement and provisions are the same as single room as mentioned above, except the following:

(a)   Storage cabinet cum translucent glazed wall panel will be provided between two bed units;

(b)   No television provision is required; and

(c)   Electrically driven roller blind, individual patient control room temperature and general room lighting are not needed.   The

control and access will be made by the nursing staff either centrally or within individual rooms.

(d) Hand washing station should be located at or adjacent to the entrance of the patient room with unobstructed access for use by healthcare personnel and others before entering the room. (one for each multi-bed room)

(2) Conceptual layout and building provisions of 2-bed and 3-bed rooms are as below:
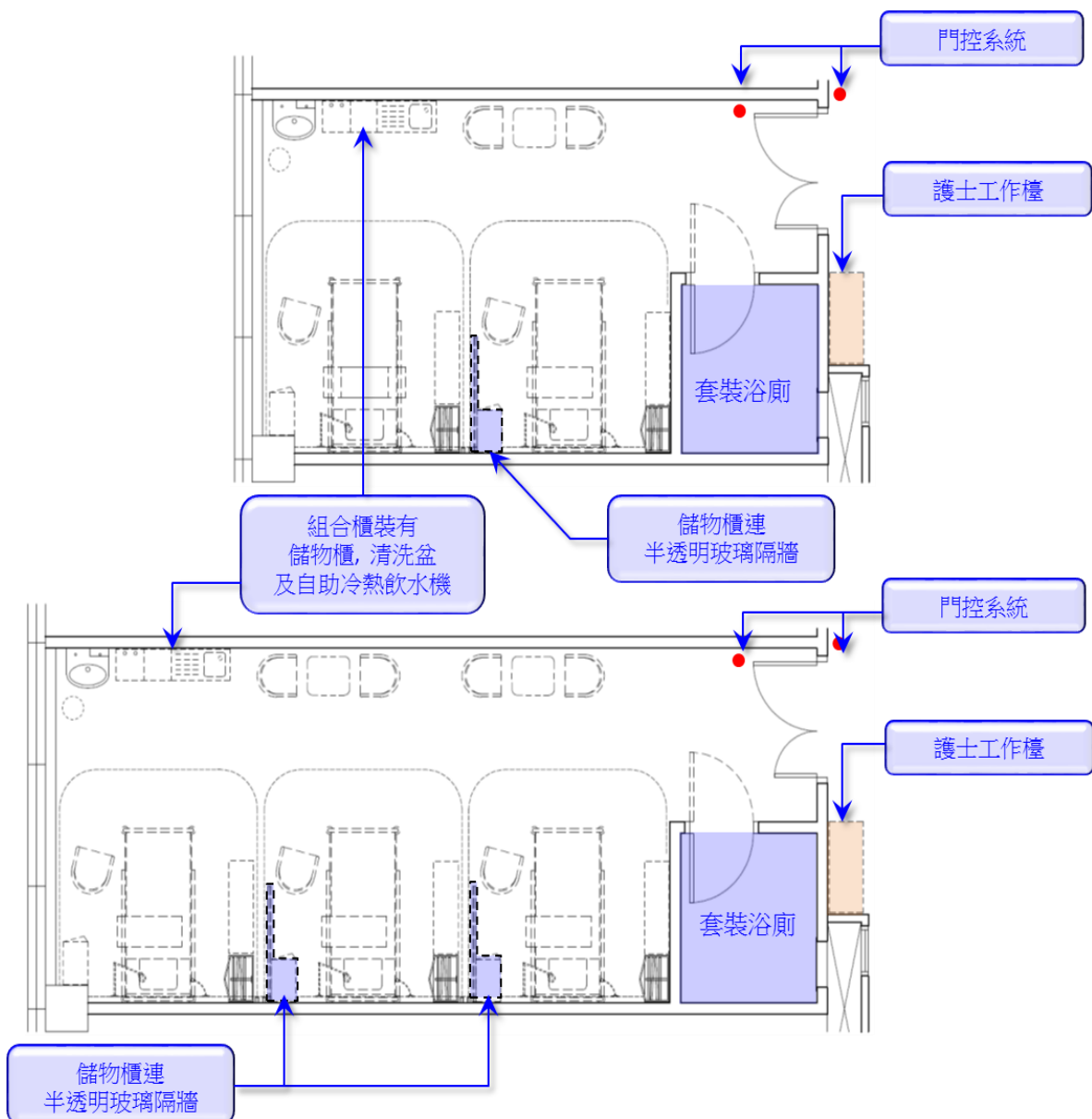
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32.   Ward Room – 4-bed room

(1) General design requirement and provisions are the same as single room as mentioned above, except the following:

(a)   Storage cabinet cum translucent glazed wall panel will be provided between two bed units;

(b)   No television provision is required; and

(c)   Electrically driven roller blind, individual patient control room temperature and general room lighting are not needed. The control and access will be made by the nursing staff either centrally or within individual rooms.

(d)   Hand washing station should be located at or adjacent to the entrance of the patient room with unobstructed access for use by healthcare personnel and others before entering the room. (one for each multi-bed room)

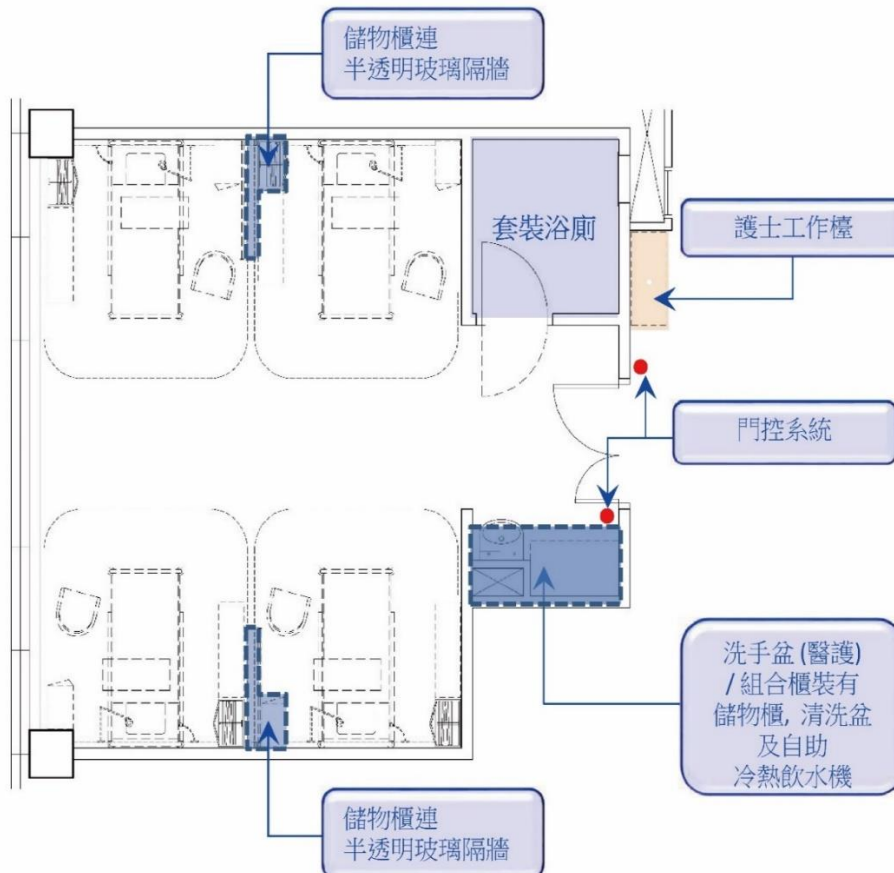(2) Conceptual layout and building provisions of 4-bed room are as below:

33.   Ward room – 6-bed room

(1) General design requirement and provisions are the same as single room as mentioned above, except the following:

(a)   Storage cabinet cum translucent glazed wall panel will be provided between two bed units;

(b)   No television provision is required; and

(c)   Electrically driven roller blind, individual patient control room temperature and general room lighting are not needed. The control and access will be made by the nursing staff either centrally or within individual rooms.

(2) Conceptual layout and building provisions of 6-bed room are as below:
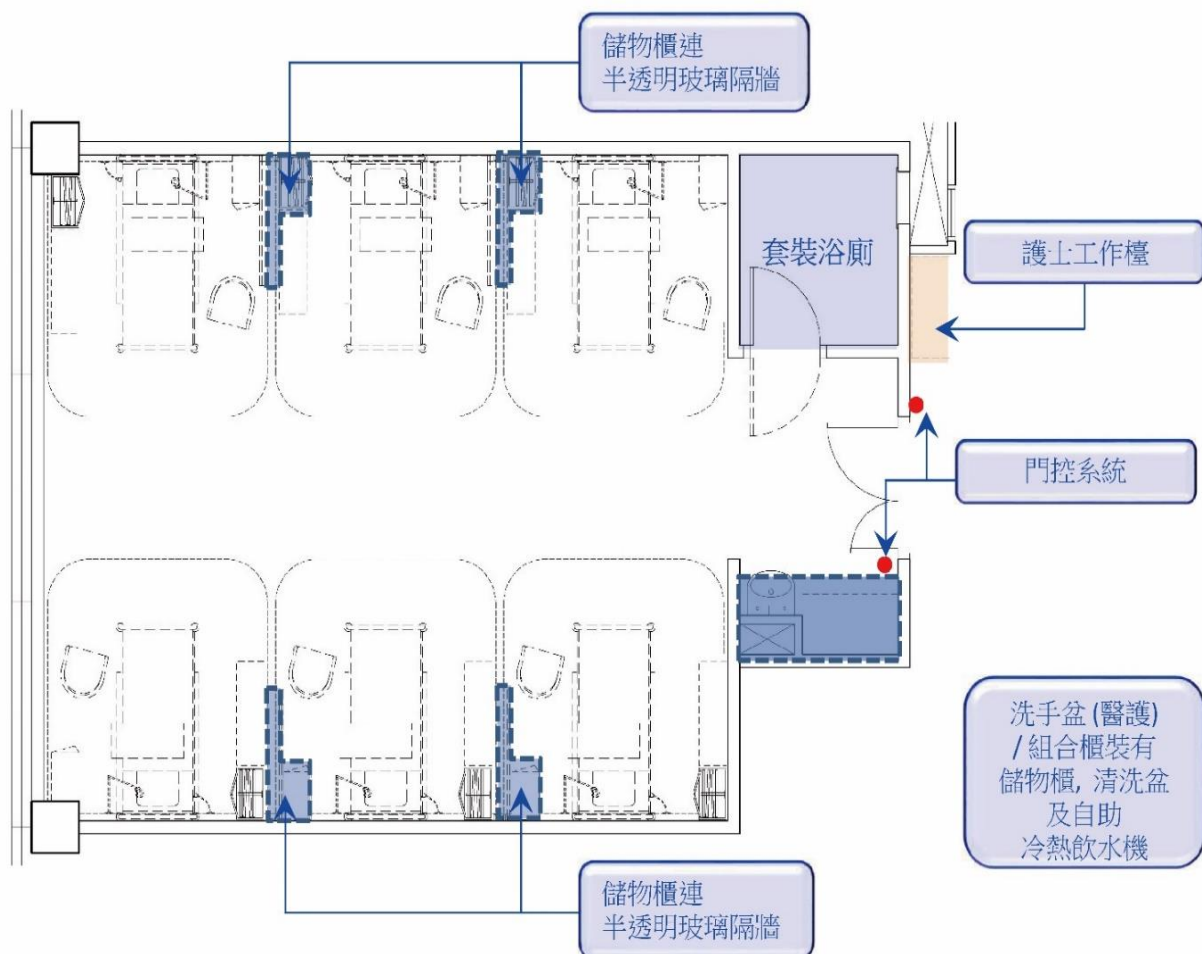
34.   Overhead patient lift track system to be installed at 6-bed room:
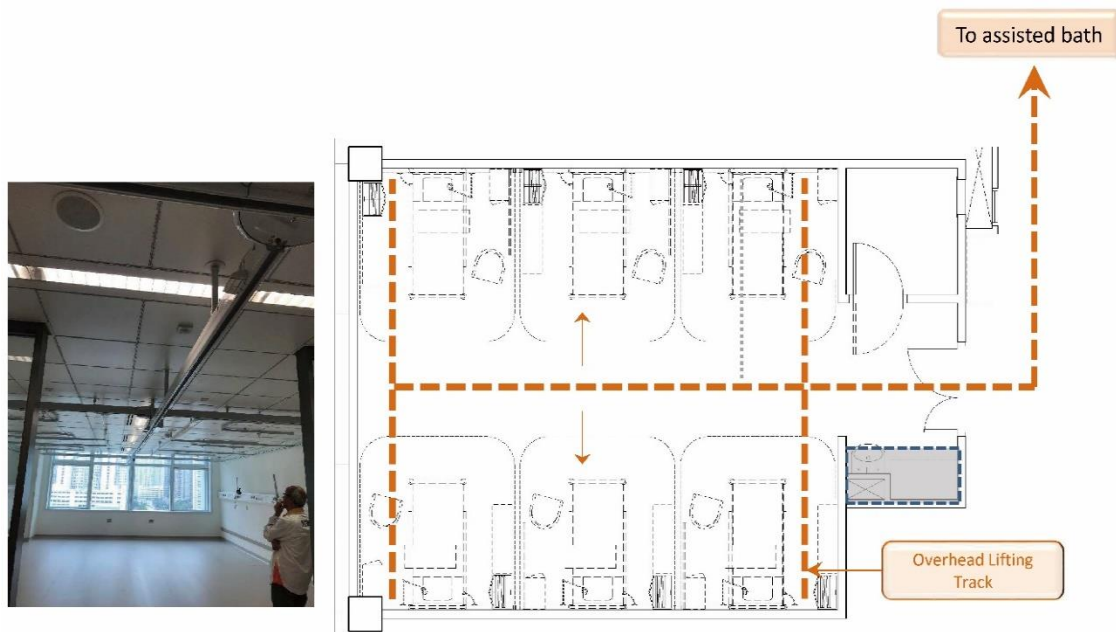
35.   Patient cubicle room - 4-bed room (HDU)

(1) General design requirement and provisions are the same as the single room.

(2) HDU is the inpatient ward for patients who need more intensive observation, treatment and nursing care than is possible in a general ward but slightly less than that given in intensive care.

(3) The unit is a mixed gender unit providing care to patients of different gender.   Deployable partition will be install in between beds to provide physical barrier in case of needs.

(4) All beds will require cardiac, vital sign and PMS with associated central monitoring capacity.

(5) Each patient bed space is to be curtained and include bedside monitoring, medical services panel, call systems, patient/visitor chair and storage for patient belongings.

(6) There will be one nurse station per bed capable of direct patient observation.

(7) Design consideration should take into account patient privacy. The unit should be located away from the main corridors of public

traffic.

(8) Patients requiring intensive care needs will be transferred to major acute hospitals in the region.

(9) The room's frontage facing the corridor will be provided with transparent glazed partitions, half-height, with roller blind for privacy provision when required.

(10) Each bed will have a pendant with two oxygen outlets, one air compressor outlet and two suction outlets and a minimum of 12 power sources.

(11) Glare from windows, direct sunlight and brightly coloured walls should be avoided.

36.   Patient cubicle room – single isolation room

(1) Design requirement:

(a) General design requirement and provisions are the same as the single room.

(b) The isolation rooms must be aesthetically pleasant, be designed to minimise noise and include the elements of a therapeutic and healing environment that promotes nursing, medical, and AH professionals and other care givers to deliver care to patients regardless of their diagnosis, mobility, or age.

(c) Bed rooms should include connection to the outside environment by the incorporation of view through windows with natural light. Privacy of individual patients should be protected by partition.

(d) Isolation rooms must be designed in the same pod located at designated area with direct access to anteroom where is able to accommodate two to three staff at one time.

(e) Uni-directional staff flow with anteroom must be designed and the same concept will be applied to gown-up and gown-down procedures as well. Clear definition of clear and dirty area according to the latest infection control guidelines.

(f) Auto-doors may be of sliding type with hermetically sealing design which is wide enough, with a minimum door width of 1,450mm, for mobilisation of patient bed, equipment and passage of staff together.

(g) Hand washing facilities must be appropriately installed in the anteroom and bedroom according to infection control guidelines e.g. facilities provided at the entrance for staff use.

(h) Bed mobilisation and patient transportation should be easily operated inside the room.

(i) Ensuite out-board design of toilet/shower will be provided. It should be accessible by patients in wheelchair and must have adequate space to accommodate two to three staff in assisting the patients.

(j) Separated ventilation system from general ward area. Negative pressure control is available for isolation or non-isolation purposes.

(k) Air change frequency, temperature and humidity control should be in compliance with Centers for Disease Control and Prevention (CDC) Guidelines for Envrinoment Infection Control in Health-Care Facilities (2003 or latest)

(l) Air exhaust will be provided at bed head side for infection control purpose.

(m) Ventilation and high efficiency particulate air ("HEPA") filter requirement should be all in accordance with latest HTM standard.

37. Alcove – Workstation

(1) One CMS workstation per 6-bed ward room, one workstation shares between one pair of 3 to 4-bed ward rooms and one workstation share among three units of one to 2-bed ward rooms.

(2) Each workstation will house one set of computer with CMS, barcode scanner, mouse, keyboard and writing space on benchtop for CMPs and WM medical practitioners' immediate access of patients' clinical information, viewing of radiographic

images, ordering mediations/ laboratory tests/ radiographic exams, etc. during bedside patient examinations and ward rounds.

38. Patient activity training room within each ward

(1) An area for patient activity is provided in each ward module. The purpose is to encourage patients to stay out of the beds, receive training and regain of functions and self-care capabilities to facilitate early discharges of patients. This will facilitate patient exercise, self-help training, social interaction and foster a homely feeling.

(2) Activities here could include reading books, watching television, internet surfing and doing relaxation exercise. Patients and carers may dine here rather in bed.

(3) Washing basins are provided to facilitate dining arrangement. Cabinet and bench top for self-served food and drinks are to be provided.

(4) Ambulatory patients will be encouraged to use the multi-purpose activity area on the same floor while more dependent patients may use this area under supervision.

(5) There will be provision of compressed air, oxygen and suction, nurse call, and support for patient monitoring equipment.

(6) LED display panel for watching television or other digital media concerning patient education, CM knowledge, etc. Lighting provision with dimming function is required. Area with computer with be connected to internet and hospital intranet.

39. CM consultation cum teaching room (診症室)

(1) This type of consultation rooms may accommodate three to four students or trainees for training.

(2) General design requirements and required building provisions are the same as the consultation room in the outpatient clinics.

(3) However, there is no Queue Display Management System

("QDMS") outside each consultation room, no public address system and no internal corridor are needed.

(4) Please refer to the description of consultation room requirements of the outpatient clinics.

(5) Conceptual layout and building provisions of a typical consultation room are as follow -

入口
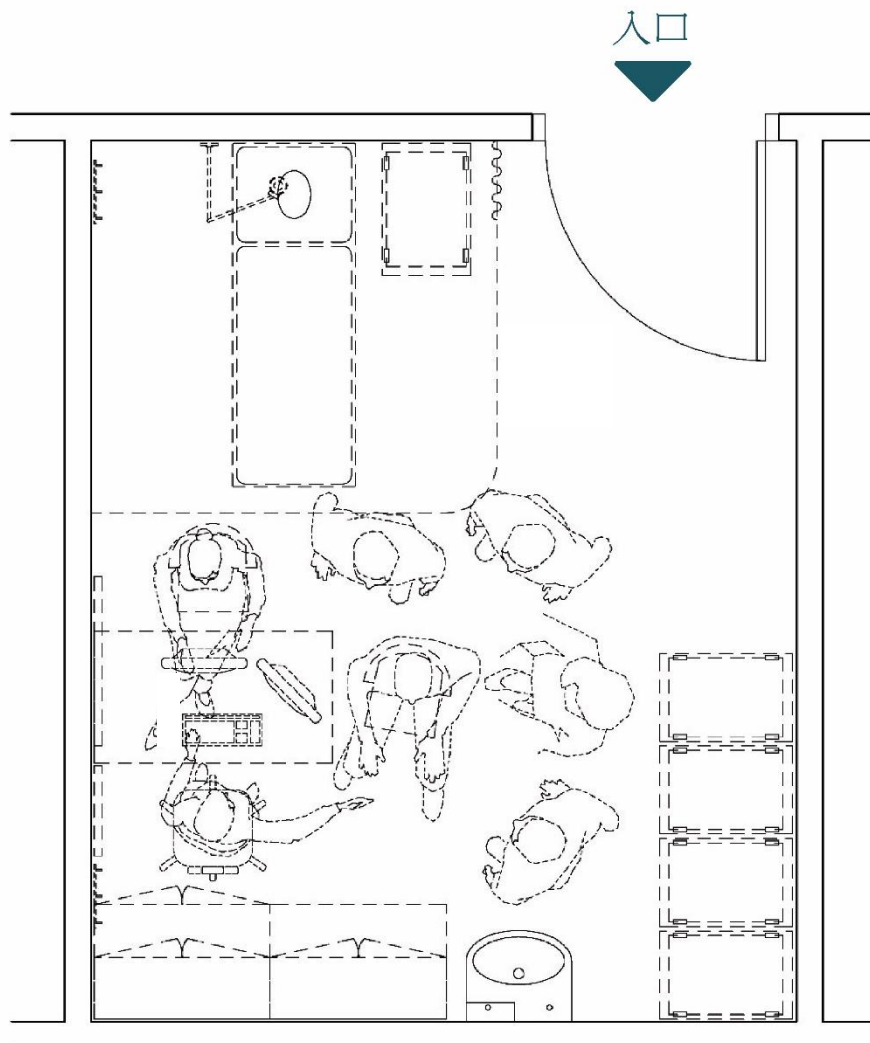
CM Consultation cum Teaching Room

40. Intervention room cum Teaching Room (A) (治療室) (20m²)

(1) This type of intervention room may accommodate three to four students or trainees for training.

(2) General design requirements and required building provisions are the same to the standard intervention cum teaching room (20m^2) in the outpatient clinic.

(3) Please refer to the description of the same type of intervention room requirements of the outpatient clinics.

(4) However, there is no QDMS outside each consultation room, no public address system and no internal corridor are needed. Also, complicated treatments like fumigation (薰蒸), CM bathing (中藥浸浴) may also be provided in this type of interventional room in the ward setting. Therefore, required infrastructure like ventilation, water inlet and drainage, temperature control is also to be provided. With the infrastructure, specific function of individual interventional room can be met by fitting out appropriate loose furniture and equipment items.

(5) Conceptual layout and building provisions of a typical intervention room (A) are as follows:

治療室 Intervention Room (A)
簡易治療室
(針刺、推拿、正骨、拔罐)

_____

41. Intervention cum Teaching Room (Moxibustion) (治療室) (25m^2)

(1) This type of interventional room may accommodate five to eight students or trainees for training.

(2) General design requirements and required building provisions are the same to the standard intervention cum teaching room (Moxibustion) (25m^2) in the outpatient clinics;

(3) However, there is no QDMS outside each intervention room, no public address system and no internal corridor are needed.
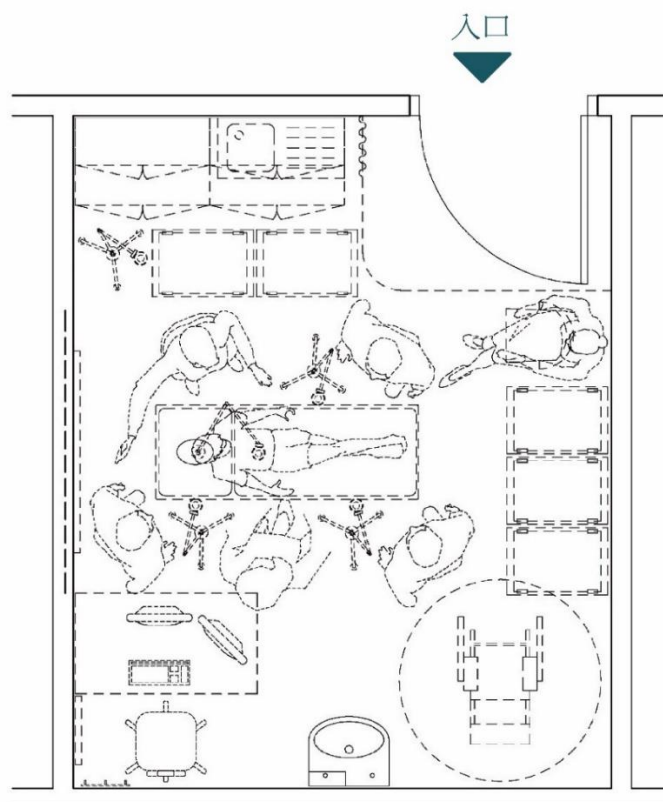
(4) Please refer to the description of the same type of intervention room requirements of the outpatient clinics.

(5) Conceptual layout and building provisions of a typical intervention room (B) are as follow -

治療室 Intervention Room (B)
綜合/帶教治療室
(所有治療手法，包括艾灸、針灸、 TDP)
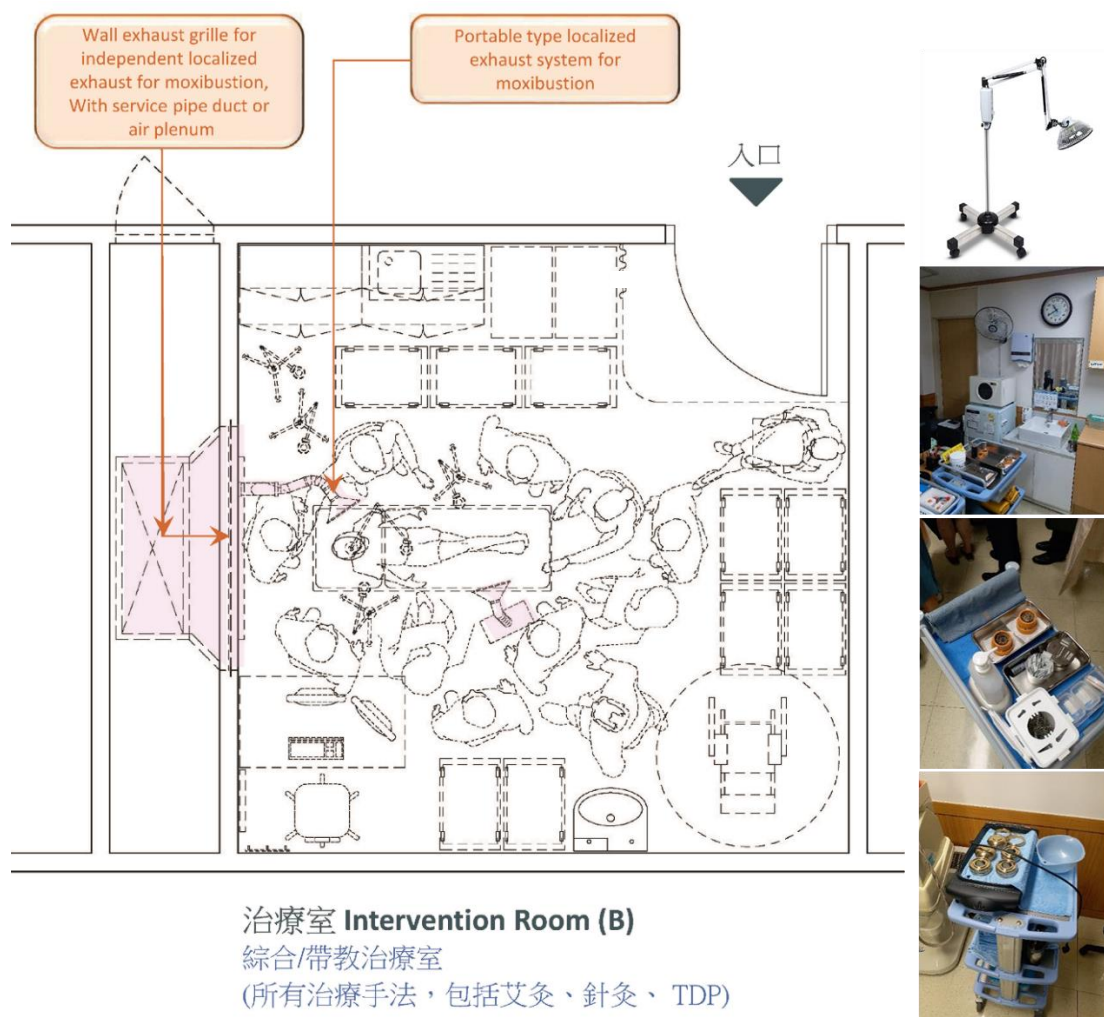
42. Assessment room

(1) This room is for carrying out nursing or clinical assessment of patients before or after clinical consultation. The assessment includes collecting patients' clinical information through interview or observation related to their health issues and measuring patients' health parameters with the help of various WM and CM equipment.

(2) General design requirements and required building provisions are the same as the assessment room in the outpatient clinics.

(3) However, there is no QDMS outside the assessment room, no PTS access and no internal corridor are needed.

(4) Please refer to the description of assessment room requirements of the outpatient clinics.

(5) Conceptual layout and building provisions of a typical assessment room are as follow:

入口
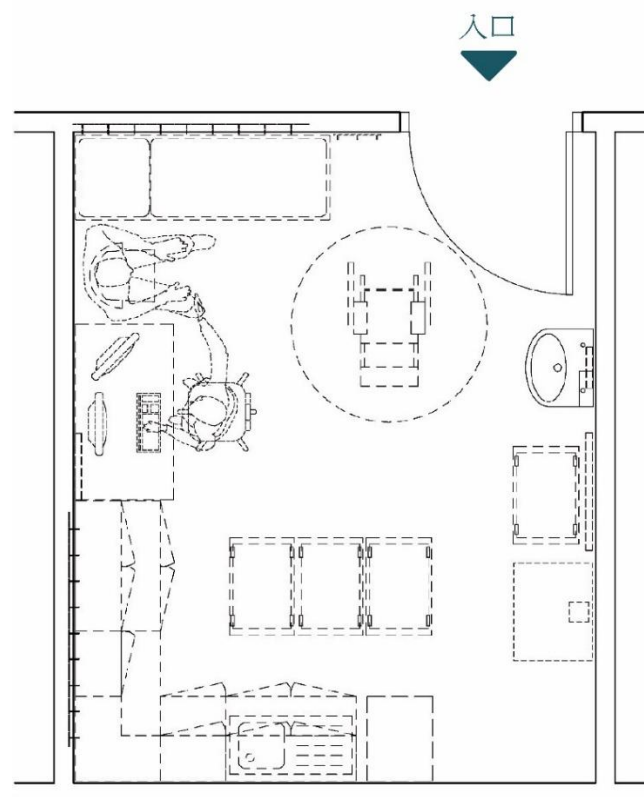
評估室 Assessment Room

43.   Treatment Room

(1) This room is for carrying out nursing or clinical procedures including wound care, external applications, injections, washing and manipulations.

(2) General design requirements and required building provisions are the same as the treatment room in the outpatient clinics.

(3) However, there is no QDMS outside the treatment room, no PTS access and no internal corridor are needed.

(4) Please refer to the description of the treatment room requirements of the outpatient clinics.

(5) Conceptual layout and building provisions of a typical assessment room are as follows:

護理室 Treatment Room

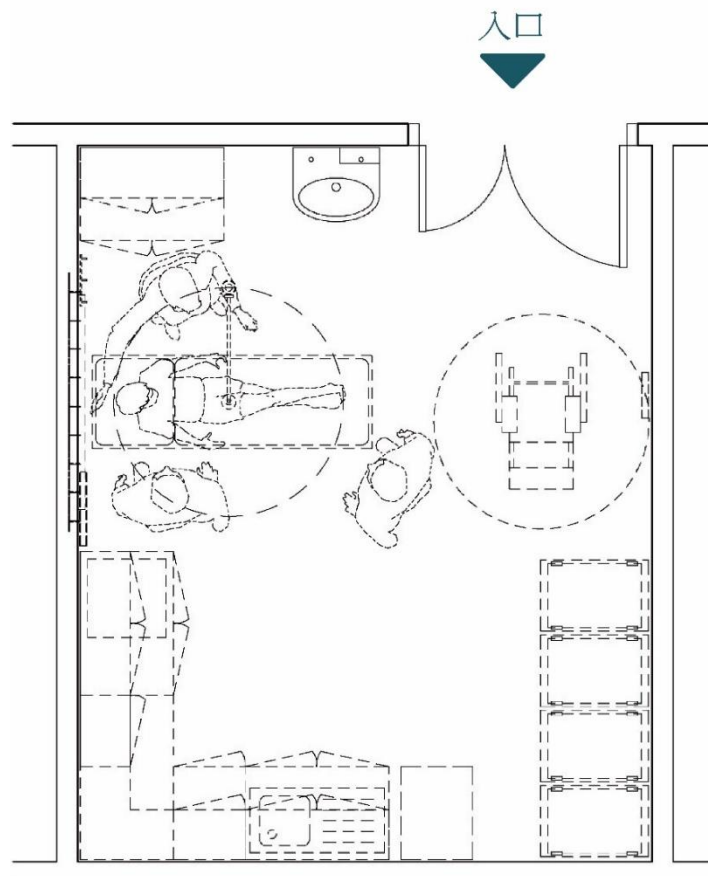44.   Patient counselling/Interview room

(1) Provide a quiet, warm and comfortable environment.

(2) Facilities for viewing of digital images and computer network should be installed.

(3) Good acoustic privacy is required.   Visual privacy should also be ensured through the use of blinds or curtains at the windows. Glazed panels in doors should be capable of being obscured, preferably with integrated blinds.

45.   Medicine preparation room (CM and WM)

(1) Storage of daily prescribed medication for inpatients.

(2) Located with close proximity to the nurse station.

(3) Locked cabinet and refrigerator should be installed for designated drug items.   There should also have provision of cabinets for CM instrument and CMs preparation storage,

(4) There should be provision of power sockets, plumbing, drainage, mechanical ventilation and air conditioning ("MVAC") for CMs preparation e.g. reheat, mixing, preparation of CMs paste local application.

(5) Space should be enough for installation of drug preparation workbench, shelves, infusion fluid storage and parking of at least three medication trolleys together with manoeuvering space for trolley setting, preparation of orthopaedic external application will be provided.

(6) Humidity control should be installed in the room.

46.   Patient meal preparation room

(1) Enough space for parking of meal trolleys together with sufficient space available for trolley manoeuvering.

(2) Should be located at close proximity to the staff/working corridor and the AMR L/UL area within for easy access by staff.

(3) Hand washing and utensil washing facilities are required with

adequate plumbing and drainage provisions.

47. Admission room

   (1) The room is for admission of patients including collecting clinical and non-clinical information of patients, patient risk assessment and orienting patients and carers on the inpatient services.

   (2) Admission room should be adjacent to the nurse station and adjacent to the public entrance of the ward.

   (3) Work bench for nurses and medical practitioners which is equipped with telephone outlet, computer and CMS data port should be provided.

48. Nurse stations

   (1) Open-plan arrangement and locating at a more central point provides maximised visual observation to the ward entrances, surrounding patient cubicle rooms, consultation rooms and interventional rooms for close monitoring of and support to the overall ward operation.   A conceptual sectional diagram shown below will refer:
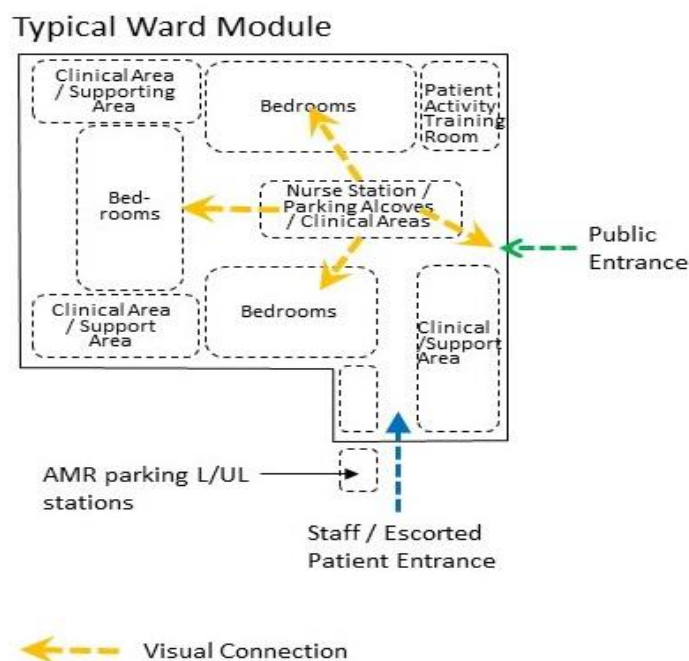
Typical Ward Module

(2) Open-plan layout approach for workstations design planning to optimise working space utilization behind front desk. It will also provide working space of various medical staff including CMPs, WM medical practitioners and nurses. A conceptual sectional diagram shown below will refer:

TROLLEY PARKING ALCOVES
AT NURSE STATION
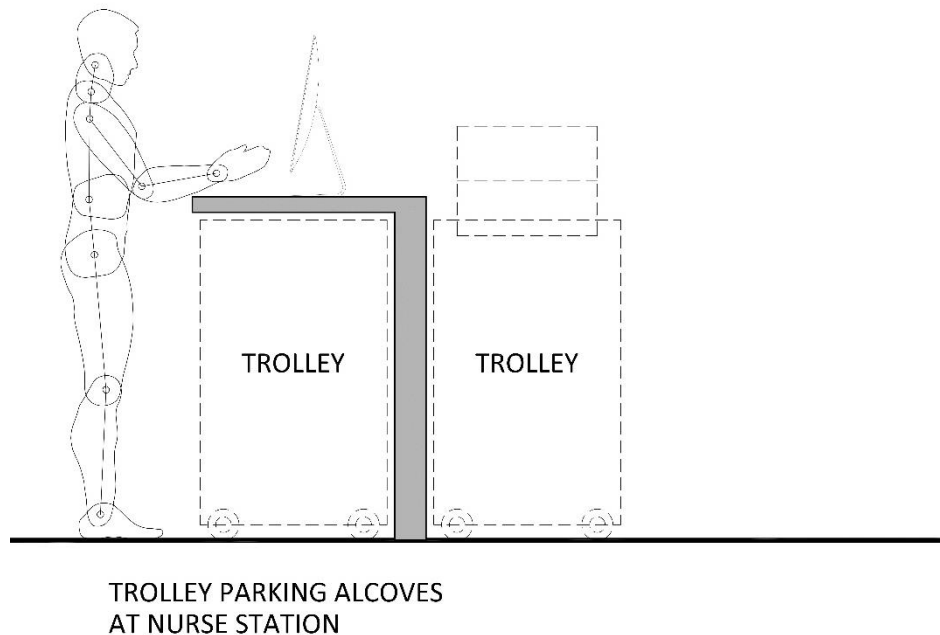
(3) The relationship of the helpdesk together with parking alcoves should be considered as a whole in designing the nurse station to enhance the efficiency of operation.

(4) The location of the nurse station should also be designed to minimise walking in the ward. The nurse station should have multiple access points from different parts of the ward to facilitate support.

(5) Service counter for arranging patient consultation and intervention services within the ward.

(6) To ensure that things required for supporting nursing functions are to be conveniently available, the nurse station will provide space for parking of carts and trolleys of frequently used medical supplies, medications, linen, stationaries, equipment, emergency trolley, inpatient record carts.

(7) The ward will adopt cart-exchange system on medical supplies, medications, linen and stationaries to minimise secondary storage

and transfer.   Space for carts and equipment trolley parking in the exterior of the nurse station are to be provided yet allowing visual connection to bedrooms.   A conceptual sectional diagram shown below will refer:
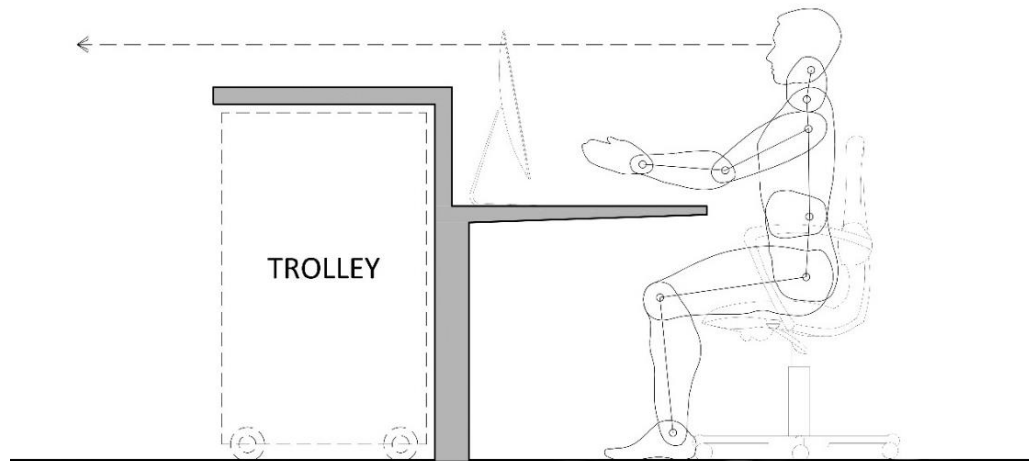
COUNTER FOR OBSERVATION OF BEDROOMS AND TROLLEY PARKING AT NURSE STATION

(8) For use of space, interior of the nurse station is the workstation of shared cellular office (for SNO/NO) for supporting core ward nursing functions while the exterior of the nurse station is for supporting nursing functions at the patient cubicle rooms.

(9) The dangerous drug cabinet should be installed within or near to the nurse station.   The cabinet will be double locked accessible first with a key and lock system and then with staff access card control of defined privilege.   CCTV surveillance with recording function will be installed monitoring access to the cabinet;

(10)   Every nurse station should cater for at least six computer workstations (four CMS with dual monitors, 2D bar code printers and printers, one Automatic Dispatch System ("ADS") and one standard computer), patient central monitors and CCTV monitors.

(11)   Every nurse station will have access to systems including:

(a)   Security systems (e.g. CCTV, door control integrated with video door phone system, tagging system);

(b)   Patient facilities control (e.g. temperature control); and

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(c)   Patient administration (e.g. appointment booking/payment, service ordering e.g. meal, portering, AMR alert/location)

(12)   PTS stations will be located in close proximately to the nurse station and helpdesk.

(13)   The ward steward will station at the ward helpdesk to serve patients and visitors, and it will face and clearly monitor the entrance into the ward.   The helpdesk will also have access to administrative and patient support systems.

49.   Helpdesk

(1) It is a multi-purpose workstation to support patients and visitors and ward administration.

(2) Functions including:

(a)   reception counter at ward entrance for visitor's enquiry (outside wards);

(b)   patients' registration, payment, appointment booking, service ordering, enquiry (within ward); and

(c)   supporting the nurse station

(3) The design and location should be considered with the nurse station and various alcoves as a whole.

(4) Functioning as the reception of a ward, it should have the door control integrated with video door phone system and located next to the entrance of ward with direct visual monitoring of the entrance.

(5) PTS stations will be located in close proximately to the nurse station and helpdesk.

(6) The helpdesk will also have access to administrative and patient support systems.

50.   Gown-up room and gown-down room

(1) Special design of uni-directional staff flow for gown-up as well as gown-down procedure.

(2) Hand washing facilities should be provided.

_____

(3) Separate rooms and facilities are provided for staff.

51. Patient toilet / Shower / Bathroom (Assisted)

   (1) Beside the toilets/shower ensuite for each patient room, there should be assisted patient bathroom accessible by patients in wheelchair with adequate space to accommodate a bathing trolley with two to three staff to assist.

   (2) Sanitary and bath facilities should be designed for self-care patients and patients required assisted-care.

   (3) Floor tiles and bath tubs should have non-slippery design.

52. Other patient, staff supporting and utility facilities

Associated facilities outside the ward area

53. Outside the ward entrances, there will be a common shared area for multi-functional use including the alcove – public self-service for visitor waiting located in a central area of the floor.

54. Night pharmacy

   (1) It is a room outside the ward area and located only on one inpatient floor serving all inpatient wards with emergency medication at night-time when pharmacies are closed.

   (2) It is equipped with smart cabinet and drugs refrigerators linked to and with controlled medication access connected to hospital CMS.

   (3) The room is only accessible with staff access card with defined privileges. CCTV with recording function and break-in alarm connecting to the security office should be installed.

55. Satellite rehabilitation room

   (1) One satellite rehabilitation room is being planned on each patient

ward floor, shared use by different ward patients.

(2) Total four rooms for rehabilitation services of inpatients and day-patients only on four ward floors.

(3) The room will be functionally zoned into different areas as follows:

  (a)   Nurse station

  (b)   Assessment zone

  (c)   Daily live training zone

  (d)   Multi-task gymnasium zone

  (e)   Multi-task rehabilitation exercise zone

  (f)   Equipment storage and supporting area

  (g)   Staff facilities

Rehabilitation therapy zone comprising four treatment cubicles with overhead frame and curtain.

(4) It should have oxygen and air outlets, and can be interconnected with multi-purpose activity room to allow future flexibility of service capacity/usage change.

(5) There will be easy obstacle-free access for transporting patients on walking aids, wheelchairs or stretches into this room for rehab training. Carers may be invited to participate in the training as needed (e.g. carer education and home training demonstration).

(6) Medical team may visit patients in the room for functional assessment.

(7) The room should be located away from quiet area as physical training may induce excessive noise.

56.   Multi-purpose activity room

(1) One multi-purpose activity room is being planned on each patient ward floor, shared use by different ward patients on the same floor.

(2) Total four rooms for use by inpatients and day-patients only on four ward floors.

(3) Major functions of the room as follows:

(a) To hold regular group rehabilitation and therapeutic exercise for inpatients and/or day-patients among the four ward floors, e.g. Tai-chi, Qi-gong, 五禽操, music therapy, play therapy; and

(b) To hold activities organised by volunteers, e.g. music performance, activities to entertain the patients and keep them staying in touch with the society.

(4) Every exercise class is planned to accommodate 30 to 40 patients at a time, with five to eight instructors and care-takers at a single time.

(5) Space is required for storing supporting equipment and facilities.

(6) To provide AV facilities, computer, LED display panel, overhead projector and screen as well as full-height mirror plane for group exercise on one wall.   Lights can be dimmed for movie watching.

(7) Wall mounted medical oxygen supply/suction supply outlet should be installed.

(8) During non-activity hours, this room will also serve as a gathering area for patients and visitors, and an alternative dining area as well.

(9) With the truly multi-purpose functions, versatile storage arrangement for different sets of furniture and equipment for fast setup, restoration and re-modelling will be required.

57. Satellite X-ray Examination Room

(1) One satellite X-ray examination room is being planned on each patient ward floor, shared use by different ward patients.

(2) Total four rooms for use by inpatients and day-patients for the four ward floors.

(3) Inpatients or day-patients will receive portable X-ray examination in this room. The facility has to be able to serve ambulatory patients, wheelchair-bound patients or bed-ridden patients from ward.

(4) CM intervention procedures will be included in the room requiring repeated X-ray examination at the course of intervention.

(5) Mobile X-ray service with direct digital radiography will be provided to inpatients and day-patients at the satellite X-ray examination room on each ward floor. Such setting would minimise patient transfer and eliminate radiation exposure to neighbouring patients and surrounding ward staff where traditionally mobile XR was taken at bedside.

A2.   Individual Ward Types

This Section will be read in conjunction with Section A1.   The design concept, ward requirements and provisions are to apply to all the ward types under this section.   Special and/or specific design requirements of individual ward types will be highlighted in the following sub-sections.

General inpatient

1.   This is mainly planned as a subsidised inpatient services.

2.   General inpatient services of the CMH comprises two wards (A) and (B), having 64 beds and 61 beds respectively.   Each general ward composes of two typical ward modules.

3.   Summary of ward rooms and clinical facilities of the general inpatient wards and major function rooms associated with the wards on the same floor are shown in the below table.   The requirements of the below rooms and facilities will follow corresponding items described in the "Inpatient Services" Section and those specific requirements described in this section:

ROOM	QUANTITY	
	Ward (A)	Ward (B)
6-bed Room	9	8
Single Room	6	5
Single Isolation Room with Anteroom	4	4
4-bed Room (HDU)	NIL	1
CM Consultation cum Teaching Room (20m^2)	2	2
Intervention cum Teaching Room (20m^2)	6	6
Intervention cum Teaching Room (Moxibustion) (25m^2)	6	6
Assessment Room	2	2
Treatment Room	2	2
Patient Counselling/ Interview Room	2	2
Medicine Preparation Room (CM and WM)	2	2
Night Pharmacy	1	
Patient Meal Preparation Room	2	2
Patient Activity Training Room	2	2
Admission Room	2	2
Nurse Station	2	2
Helpdesk	2	2
Store-General	2	2
Store-Equipment	2	2
Store-PPE	2	2
Store-Linen	2	2
Staff Common Room	2	2
Gown-up Room	2	2
Gown-down Room	2	2
Cleaner's Room	2	2
Alcove – Workstation	19	21
Alcove – Scale	2	2
Alcove – E-Trolley	4	4
Alcove – Medical Records Trolley	4	4
Alcove – Wheelchair/Stretchers	6	6
Alcove – Trolleys	8	8
Patient Toilet / Shower (Assisted)	2	2
Patient Toilet /Bath (Assisted)	2	2
Office (SNO/NO)	4	4

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4.   Summary of clinical and non-clinical facilities outside the ward area for supporting patients and hospital operation, and they may be shared with other departments on the same floor -

ROOM	QUANTITY	
	Ward (A)	Ward (B)
Satellite Rehabilitation Room	1	
Multi-purpose Activity Room	1	
Satellite X-ray Examination Room	1	
Visitor Waiting Area	1	
General Store	1	
Dirty Utility / Sluice Room	2	2
Disposal Room	2	2
Staff toilet (M)	1	1
Staff toilet (F)	1	1
Staff toilet (Disabled)	1	1
Staff shower (M)	1	1
Staff shower (F)	1	1
Public toilet (M)	1	
Public toilet (F)	1	
Public toilet (Disabled)	1	

5.   The general inpatient services are planned to be located one floor below the special inpatient services.

6.   For general inpatient wards, ceiling hoist system connecting one 6-bed ward rooms per ward module i.e. two sets per general inpatient ward and the assisted bathrooms will be provided for patients with walking difficulties. For other patient cubicle rooms, portable patient hoist system will be used.

7.   For special design consideration, primary focus is on user friendliness, convenience and operation efficiency. Material and finishes used should be of easy maintenance and high durability.

Special inpatient

8.	This is mainly planned as add-on market oriented services for inpatient.

9.	Special inpatient services of the CMH comprises four special inpatient wards (C), (D), (E) and (F), having 32, 31, 31 and 31 beds respectively. Each ward composes of one typical ward module.

10.	Summary of ward rooms and clinical facilities of the special inpatient wards and major function rooms associated with the wards on the same floor is shown in the below table. The requirements of the below rooms and facilities will follow corresponding items described in the "Inpatient Services" Section and those specific requirements described in this section:

ROOM	QUANTITY			
	Ward (C)	Ward (D)	Ward (E)	Ward (F)
3-bed Room	6	6	6	6
2-bed Room	4	4	4	4
Single Room	6	5	5	5
CM Consultation cum Teaching Room (20 m^2)	1	1	1	1
Intervention cum Teaching Room (20m^2)	3	3	3	3
Intervention cum Teaching Room (Moxibustion) (25m^2)	3	3	3	3
Assessment Room	1	1	1	1
Treatment Room	1	1	1	1
Patient Counselling/ Interview Room	1	1	1	1
Medicine Preparation Room (CM/WM)	1	1	1	1
Family/ Parent Overnight Room	1	1	1	1
Patient Meal Preparation Room	1	1	1	1
Patient Activity Training Room	1	1	1	1
Admission Room	1	1	1	1
Nurse Station	1	1	1	1
Helpdesk	1	1	1	1
Store-General	1	1	1	1
Store-Equipment	1	1	1	1
Store-PPE	1	1	1	1

Store-Linen	1	1	1	1
Staff Common Room cum Pantry	1	1	1	1
Gown-up Room	1	1	1	1
Gown-down Room	1	1	1	1
Cleaner's Room	1	1	1	1
Alcove – Workstation	16	15	15	15
Alcove – Scale	1	1	1	1
Alcove – E-Trolley	2	2	2	2
Alcove – Medical Records Trolley	2	2	2	2
Alcove – Wheelchair/Stretchers	6	6	6	6
Alcove – Trolleys	8	8	8	8
Patient Toilet / Shower (Assisted)	1	1	1	1
Patient Toilet /Bath (Assisted)	1	1	1	1
Office (SNO/NO)	3	3	3	3

11.   Summary of clinical and non-clinical facilities outside the ward area for supporting patients and hospital operation, and they may be shared with other departments on the same floor -

ROOM	QUANTITY			
	Ward (C)	Ward (D)	Ward (E)	Ward (F)
Satellite Rehabilitation Room	1			
Multi-purpose Activity Room	1			
Satellite X-ray Examination Room	1			
Visitor Waiting Area	1			
General Store	1			
Dirty Utility / Sluice Room	1	1	1	1
Disposal Room	1	1	1	1
Staff toilet (M)	1	1	1	1
Staff toilet (F)	1	1	1	1
Staff toilet (Disabled)	1	1	1	1
Staff shower (M)	1	1	1	1
Staff shower (F)	1	1	1	1
Public toilet (M)	1			
Public toilet (F)	1			
Public toilet (Disabled)	1			

12.   Special inpatient services will be located at the upper most floor of the ward floors' group for the highest level of privacy away from patients/visitors/hospital staff daily activities at lower floors.

13. There is no ceiling hoist system. The patient cubicle room will use portable hoisting system to support patients with walking difficulties.

14. The patient cubicles rooms are ranged from single bed to 3-bed rooms. It is highly likely that carers will be accompanying the patients frequently. Space provision and facilities catering for the carers' needs are to be considered.

15. Seat for dining with relatives and facilities for patient to store clothing and belongings will be provided in each patient cubicle.

16. For special design consideration, primary focus is on personalised care, privacy and choices. Material and finishes used should foster a high sense of comfort, home like in a highly relaxed environment.

17. Family/ Parent overnight room

(1) Total four rooms, one per special inpatient ward, to provide temporary emergency accommodation for patients' families or parents. The utilisation of such service/facilities will be charged and on a booking basis which belongs to part of add-on market oriented services for inpatient in the CMH.

(2) Ensuite toilet cum shower will be equipped for each room.

(3) To offer privacy and carry a non-institutional home-like feeling in order to mitigate the constant strain being experienced by patients' families or parents.

(4) Infotainment and internet access should be conveniently available. Telephone access to the nurse station should be provided.

(5) It should be located outside the ward module.

18. A discreet entrance and passage from vehicular drop-off area in the lower ground floor carpark leading directly to the special inpatient

wards via staff/bed lifts to cater for special access requirement will be provided.

Day wards

19.   The wards are designated for patients who do not need to be admitted to an inpatient ward, but require care in a hospital environment but not staying overnight.

20.   Usually these patients will be relatively ambulatory and have arranged a series of consultation, assessment, interventions, training, investigation, monitoring and care in morning and/or afternoon session.

21.   Ambulatory patients receiving complex modality of CM care such as fumigation、CM bathing and specific traction bed (整骨牽引床) for orthopaedic CM treatment will also be provided in day wards.   These modalities of treatment will not be provided in outpatient setting.

22.   The wards comprise subsidised general day wards (G) and special day ward (H) for add-on market oriented services, having 45 beds for each ward.

23.   The general and special day wards, providing subsidised and add-on market oriented services respectively, each of them will be made up of two major zones: (a) ward room area and (b) assessment and intervention area.

24.   As patient admission and discharge will be on sessional basis, the total number of patient admission and discharge required to be handled per day will be high. Individual patients may need to go through different assessment and intervention programs, internal flow in the day unit will be high.   Furthermore, patients will be accompanied by carers and relatives who may stay through the whole hospitalisation period, sufficient waiting

and circulation area are required. The treatment program for individual patients may involve care activities within and outside the day ward. Therefore, apart from patient flow within the day ward, patients may need to be transferred to other areas outside the day ward for patient care.

25. Summary of ward rooms and clinical facilities of the day ward and major function rooms associated with the ward on the same floor is shown in the below table. The requirements of the below rooms and facilities will follow corresponding items described in the Section A1 and those specific requirements described in this section:

ROOM	QUANTITY	
	General Ward	Special Ward
6-bed Room	6	NIL
4-bed Room	NIL	9
3-bed Room	3	NIL
2-bed Room	NIL	3
Single Room	NIL	3
CM Consultation cum Teaching Room (20m^2)	6	6
Intervention cum Teaching Room (20m^2)	5	5
Intervention cum Teaching Room (Moxibustion) (25m^2)	10	10
Assessment Room	2	2
Treatment Room	2	2
Patient Counselling/ Interview Room	2	2
Medicine Preparation Room (CM/WM)	1	1
Patient Meal Preparation Room	1	1
Patient Activity Training Room	1	1
Patient /Family Waiting Area	1	1
Patient Waiting Area	2	2
Admission Room	2	2
Nurse Station	2	2
Helpdesk	2	2
Store-General	2	2
Store-Equipment	2	2
Store-PPE	2	2
Store-Linen	2	2
Staff Common Room cum Pantry	2	2
Gown-up Room	1	1
Gown-down Room	1	1
Clean Utility Room	2	2
Cleaner's Room	2	2
Alcove – Workstation	9	15
Alcove – Scale	1	1

Alcove – E-Trolley	2	2
Alcove – Medical Records Trolley	2	2
Alcove – Wheelchair/Stretchers	6	6
Alcove – Trolleys	8	8
Patient Toilet / Shower (Assisted)	1	1
Patient Toilet /Bath (Assisted)	1	1
Office (SNO/NO)	3	3

26.   Summary of clinical and non-clinical facilities outside the ward area for supporting patients and hospital operation, and they may be shared with other departments on the same floor -

ROOM	QUANTITY	
	General Ward	**Special Ward**
Satellite Rehabilitation Room	1	
Multi-purpose Activity Room	1	
Satellite X-ray Examination Room	1	
Fever Triage Room	1	
Visitor Waiting Area	1	
General Store	1	
Dirty Utility / Sluice Room	2	2
Disposal Room	1	1
Staff toilet (M)	1	1
Staff toilet (F)	1	1
Staff toilet (Disabled)	1	1
Staff shower (M)	1	1
Staff shower (F)	1	1
Public toilet (M)	1	
Public toilet (F)	1	
Public toilet (Disabled)	1	

27.   High traffic volume of patients/visitors and hospital staff is anticipated at day wards that, the day ward floor will be located beneath the inpatient ward floors to minimise possible nuisance to the inpatients.

28.   There is no ceiling hoist system.   The patient cubicle room will use portable hoisting system to support patients with walking difficulties.

29.   The day ward is a mix-gender ward serving patients of both genders.   Patients will be accommodated in cubicles serving patients of the same gender.

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30.   The same ward module concept is used for ward room area of day wards i.e. Ward (G) and (H).   This will enable the interchangeability of turning the day ward into inpatient ward if needed.   Illustration on major facilities and overall operation flow of day ward floor cum day centres are shown in the following diagram:
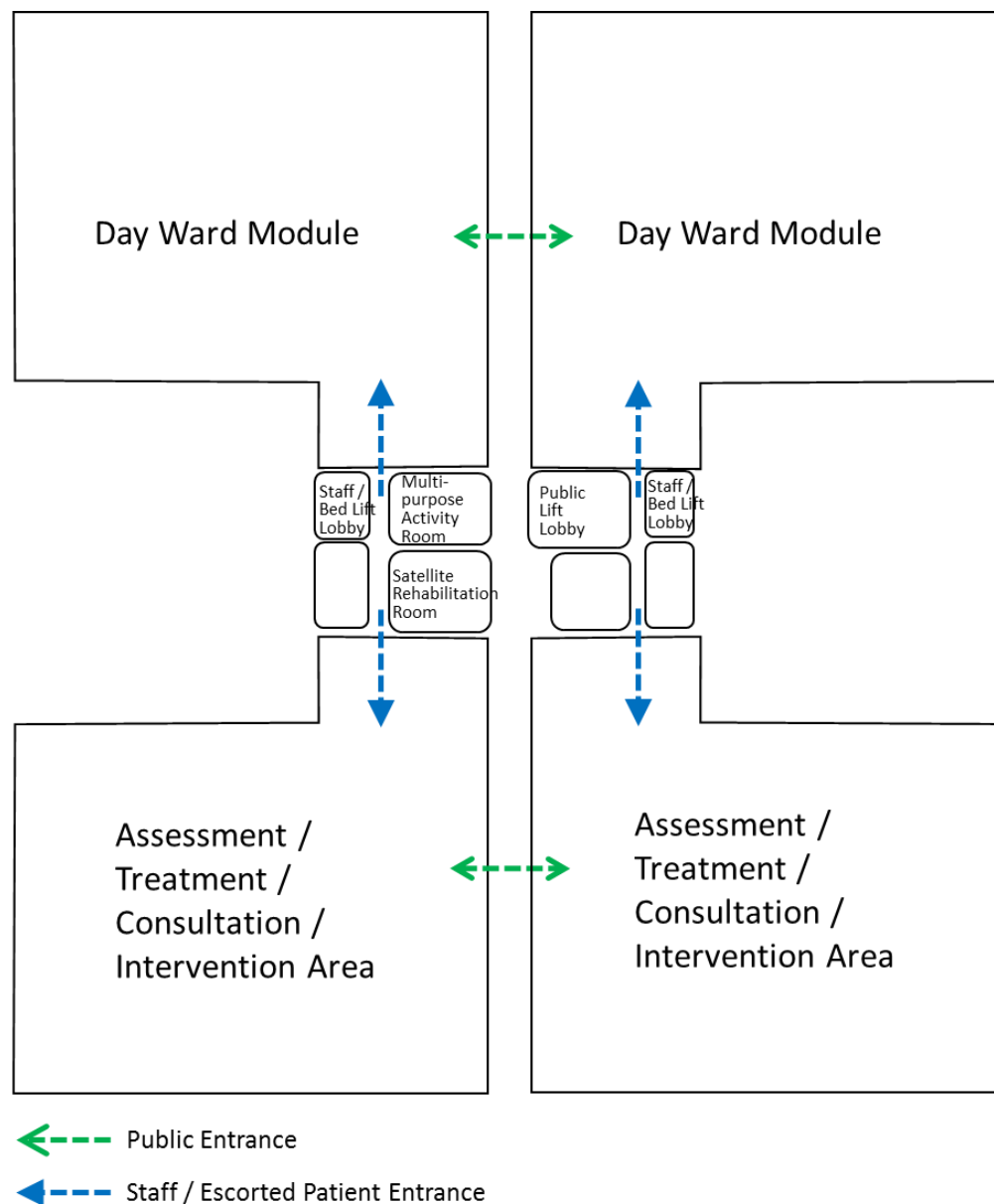
31.   Day ward operation

(1) Patients will be admitted to the day wards for a short period for observation and/or medical treatment by appointment and/or after CMPs' on-day examination.

(2) All patients will arrive with scheduled appointment by electronic mobile device having registration and payment processed at the same time. Patients not able to use mobile technology will be assisted by staff at the helpdesk.

(3) Patients should then go to the admission room of the wards. After initial nursing procedures at the assessment room, they will be allocated a bed in the ward room area and be prepared for consultation and/or intervention.

(4) When patients are prepared and clinical staff are ready, patients will move to the assessment and intervention area to receive further care.

(5) There could be short-term wait in the patient waiting areas for initial care or in between care. QDMS system having large size digital display to be installed at the patient waiting area will provide information on when and where care would be arranged while waiting.

(6) Patients requiring monitoring and rest before the next intervention will go back to the ward room area. Accompanying persons could wait at the bedside, in the patient waiting area or accompanying patients while patients move around the day ward.

(7) Patients staying through the morning and afternoon sessions or patients choose to stay through the meal time will be served with meal through meal ordering arrangement.

(8) On completion of the service, next appointment booking (if any), discharge instruction, collection of CMs and drugs will be arranged on-site.

(9) The day wards contain single bed, 2-bed, 3-bed, 4-bed and 6-bed rooms; these are allocated according to the medical condition of patients. Regarding to the severity of illness, the provision of general acute care is based on physician's orders and approved nursing care plans. Additional activities may include, but are not limited to, the following:

  (a)   Handling patient's admission, transfer and discharge.

  (b)   Observing and recording physical and mental status of

patients e.g. monitoring vital life signs.

(c) Preparing equipment and assisting physicians during physical examination and treatment provision.

(d) Operating specialised equipment related to this function and proper handling after use.

(e) Scrutinising patients' condition, their reaction to medications and other medical/nursing interventions and take appropriate action.

(f) Planning and documenting individual care plan to patients.

(g) Changing dressings and cleansing wounds.

(h) Assisting patients in daily activities of living include bathing, manual handling operation, serving and feeding patients as well as those activities contributing to health promotion and recovery.

(i) Responding patients' call signals and relative's enquiries, and keeping rooms (personal effects) in order.

32. Consultation and interventional rooms in ward room area

(1) Requirements on consultation rooms and interventional rooms will follow the description in Section A1.

(2) No internal corridor and QDMS are needed.

33. Consultation and interventional rooms in assessment and intervention area

(1) Internal corridor should be provided connecting consultation rooms and interventional rooms similar to outpatient clinics.

(2) Individual consultation rooms and interventional rooms will also have QDMS display similar to outpatient clinics.

(3) Other requirements on consultation rooms and interventional rooms will follow the description in Section A1.

34.   Admission room

(1) General provisions refer to the same item in Section A1.

(2) Relative much higher workload for admission rooms in day wards vs. inpatient wards in view of the following:

  (a)   Day-patients occupancies will include both full day (am and pm) or half-day (am or pm) sessions, daily frequent admission work is anticipated, compared with relative lengthy stay of inpatients;

  (b)   The anticipated high turnover rate of patient admissions of various patients' services, two rooms per day ward for parallel operation are required.

35.   Patient waiting areas

(1) Main waiting areas for the two major zones of the day wards: ward area as well as assessment and intervention area.

(2) Area for patients' queuing for admission, registrations, payments and/or enquiries, equipped with QDMS large size digital display panels.

36.   Patient/ family waiting areas

(1) Sub-waiting areas to be strategically located near each clinical zones: assessment, treatment, consultation and intervention rooms' clusters, for smooth patient flow among different clinical procedures, within the day ward.

(2) Major zoning requirement:

  (a)   Sub-waiting area for zone of two assessment rooms and two treatment rooms

  (b)   Sub-waiting area for zone of six consultation rooms

  (c)   Sub-waiting area for zone of five intervention rooms (Type 1)

  (d)   Sub-waiting area for zone of five intervention rooms (Type 2)

(3) QDMS will be provided here to display and manage queue status for patients who are waiting for consultation/intervention.

(4) Smart TV will be provided for patients in queue. The areas should be spacious and comfortable. Magazines and newspaper rack, etc. will be provided.

37.　　For the subsidised general day ward, primary focus is on user friendliness, convenience and operation efficiency. Material and finishes used should be of easy maintenance and high durability.

38.　　For the special day ward for add-on market oriented services, primary focus is on personalised care, privacy and choices. Material and finishes used should foster a high sense of comfort, home like in a highly relaxed environment. A discreet entrance and passage from vehicular drop-off area in the lower ground floor carpark leading directly to the special wards via staff/bed lifts to cater special requirement of add-on market oriented services for VIP or VVIP will be provided.

Paediatrics ward

39.　　The paediatrics ward, will admit paediatric admissions ranging from young children (幼童), children (小童) and teenagers/adolescents (青少年) of both genders. As the age range is wide, some facilities should be infant or child-friendly, and some adolescent friendly.

40.　　The ward will admit patients under scheduled clinical admission arrangement. Patient age may range from the infancy to 18 years old. The ward will provide day-patient and inpatient care to both subsidised and patients receiving add-on market oriented services.

41.　　The department is a single ward with two service zones:

(1) Subsidised general service zone composed of 4-bed cubicles.

(2) Special zone for add-on market oriented services composed of single bed and 2-bed cubicles.

(3) Isolation beds will service clinical needs of both patients receiving

both subsidised and add-on market oriented services.

42.   The ward will be made up of combining two ward modules serving as general services zone and special services zone having each of the zone providing inpatient beds, day-patient beds and all associated clinical rooms and supporting facilities.

43.   Summary of ward rooms and clinical facilities of the paediatrics wards and major function rooms associated with the ward on the same floor is shown in the below table.   The requirements of the below rooms and facilities will follow corresponding items described in Section A1 and those specific requirements described in this section:

ROOM	QUANTITY			
	General Services Zone		Special Services Zone	
	Day Bed	Inpatient Bed	Day Bed	Inpatient Bed
4-bed Room	NIL	3	NIL	
2-bed Room	2	1	2	6
Single Room	1	1	1	1
Single Isolation Room with Anteroom	NIL		NIL	2
CM Consultation cum Teaching Room (20m^2)	2		2	
Intervention cum Teaching Room (20m^2)	2		2	
Intervention cum Teaching Room (Moxibustion) (25m^2)	3		2	
Assessment Room	1		1	
Treatment Room	1		1	
Patient Counselling/ Interview Room	1		1	
Medicine Preparation Room (CM/WM)	1		1	
Family/ Parent Overnight Room	NIL		4	
Patient Meal Preparation Room	1		1	
Milk Processing Room	1		1	
Patient Activity Training Room	1		1	
Family Lounge	1		1	
Patient Supporting Services	1		1	
Play Area	1		1	
Admission Room	1		1	

Room		
Nurse Station	1	1
Helpdesk	1	1
Store-General	1	1
Store-Equipment	1	1
Store-PPE	1	1
Store-Linen	1	1
Staff Common Room cum Pantry	1	1
Gown-up Room	1	1
Gown-down Room	1	1
Clean Utility Room	1	1
Cleaner's Room	1	1
Alcove – Workstation	10	10
Alcove – Scale	1	1
Alcove – E-Trolley	1	1
Alcove – Medical Records Trolley	1	1
Alcove – Wheelchair/Stretchers	3	3
Alcove – Trolleys	4	4
Patient Toilet / Shower (Assisted)	1	1
Patient Toilet /Bath (Assisted)	1	1
Office – SNO/NO	2	2

44.   Summary of clinical and non-clinical facilities outside the ward area for supporting patients and hospital operation, and they may be shared with other departments on the same floor -

ROOM	QUANTITY	
	General Services Zone	**Special Services Zone**
Satellite Rehabilitation Room	1	
Multi-purpose Activity Room	1	
Satellite X-ray Examination Room	1	
Visitor Waiting Area	1	
General Store	1	
Dirty Utility / Sluice Room	1	1
Disposal Room	1	1
Staff toilet (M)	1	
Staff toilet (F)	1	
Staff toilet (Disabled)	1	
Staff shower (M)	1	
Staff shower (F)	1	
Public toilet (M)	1	
Public toilet (F)	1	
Public toilet (Disabled)	1	

45.   The ward will be child-focused and family-centred.   Space requirements of paediatrics wards differ from generic patient wards for adults.   Not only do they cater for patients, but also for parents.   The overall feeling throughout the paediatrics wards should be one of openness, maximising view to the natural environment.

46.   As the ward caters for patients of both genders, it is important that the design should cater for the separation of adolescent boys and girls.   Furthermore, paediatrics patients should be provided with extra protection and heightened security control.   Patients will be accommodated in cubicles serving patients of the same gender.   Individual patient cubicle rooms should have 2D barcode (visitors and patients) and RFID (staff) access control for both entrance and exit.

47.   Security system preventing illegal abduction of baby, children or young children is installed in the paediatrics ward.   Visitor control and patient tagging system, CCTV, door access control will be installed and implemented as appropriate.   Adequate space in front of the helpdesk at the ward entrance will also be available for checking/verifying personnel entry and exit.

48.   As the patient age range is wide, the bed-cubicles should have convertible design that can cater for patients of different age profiles e.g. 0-3 years old, 3- 9 years old, 9-12 years old and 12-18 years old.

49.   Adequate play and activity space is essential that caters for children as well as adolescents, to minimise the negative impact of hospitalisation on their psychological well-being.

50.   Play areas are very important and invaluable in calming fears in children that are in unfamiliar and alarming surroundings.   Two separate play areas, one for children under 4 and one for children of 4-9 years old, with different design and setup should be provided:

(1) This area is a discrete open space for children patients' playing

and relaxing activities from medical treatments.

(2) It will be located adjacent to the helpdesk and within nurse station's visual supervision.

(3) To provide soft padding on sides of wall and soft flooring with play facilities.

(4) Design and atmosphere should be appeal to children specific to the two age groups.

(5) Hand washing facilities with auto sensor and thermostatic mixer.

51.   It is important to recognise that this is an extremely stressful time for parents and family members.   While being encouraged to spend as much time as possible with their children, parents and family members will need nearby areas of calmness and relaxation that are quiet and free from distractions during the time that their children are in hospital. Recognising the need for parents and family members to emotionally and physically recharged, a family lounge will also be provided to allow patients to interact with other patients and families for mutual support.

52.   The family lounge should be designed and fitted out in a non-clinical, non-institutional manner with natural lighting and view to the outside as much as possible. The area will include comfortable chairs in home-like setting, preferably sun-room with plants, television and internet access.   These allow the families to have a break away from the stressful situation by patients' bed side.

53.   Consultation and intervention rooms

(1) Requirements on consultation rooms and interventional rooms will follow the description in the "Inpatient Services" Section.

(2) No internal corridor and QDMS are needed.

(3) The design and provisions will cater the use by children and adolescents.

54.   Family/Parent overnight room

(1) Total four rooms to provide temporary emergency accommodation for parents with severely ill children.   The utilisation of such service/facilities will be charged and on a booking basis which belongs to part of paediatrics department for add-on market oriented services in the CMH.

(2) Ensuite toilet cum shower will be equipped for each room.

(3) To offer privacy and carry a non-institutional home-like feeling in order to mitigate the constant strain being experienced by patients' families or parents.

(4) Infotainment and internet access should be conveniently available. Telephone access to the nurse station should be provided.

55.   Other patient, staff supporting and utility facilities.

Associated facilities outside the ward area

56.   Outside the ward entrances, there will be a common shared area for multi-functional use including the alcove – public self-service for visitor waiting located in a central area on the floor.   The design and provisions should be children and adolescents friendly.

57.   Satellite Rehabilitation Room

(1) General provisions refer to the same item in Section A1.

(2) The design and provisions to cater for the need of children and adolescents.

58.   Multi-purpose activity room

(1) General provisions refer to the same item in Section A1.

(2) The design and provisions to cater for the need of children and adolescents.

B. OUTPATIENT ZONES

This Section describes the general design concepts, requirements, provision of all outpatient ("OP") services that are located at three outpatient service zones. The three zones are (a) general outpatient services, (b) referral outpatient services, (c) outpatient clinics for add-on market oriented services including special disease centres, private clinics and preventive care and health maintenance centre. Individual types of outpatient clinics may have their special and unique features will be specified under separate sub-sections. All diagrams are for illustration purposes on the design concepts supplementing the textual descriptions.

B1. Overview of the department and service scope

1. The department plans to provide medical consultation, diagnostic and therapeutic services for outpatients on a 6-day week basis. Anticipated 310,000 OP attendances per year, i.e. approximately 1,000 to 1,200 attendances per day and 180,000 associated intervention attendances per year i.e. approximately 600 to 700 attendances per day.

2. 70 consultation rooms and 45 intervention rooms will be required according to the following considerations:

   (1) Approximately 1,000 OP attendance per day

   (2) Annual operation period in calendar day, excluding the following:

      (a) Public holidays

      (b) Service suspension due to inclement weather and building maintenance

   (3) Daily operation hours

   (4) Ratio of new cases vs. old cases

   (5) Ratio of special/complicated cases vs. ordinary cases

   (6) Ratio of cases for teaching vs. non-teaching cases

   (7) CM and WM collaborated consultation

(8) Duration of one single consultation

(9) Ratio of interventional care vs. consultation

3. Consultative services will be provided in the following specialized CM services:

(1) Internal medicine in CM(內科)

(2) External medicine in CM (外科)

(3) Gynaecology in CM (婦科)

(4) Paediatrics in CM (兒科)

(5) Orthopedics and traumatology in CM (骨傷)

(6) Acupuncture in CM (針灸)

Further sub-specialised services will be developed after commencement of services.

4. Interventions provided in the outpatient setting will include the following:

(1) Acupuncture

(2) Tui-na

(3) Moxibustion

(4) Cupping

(5) Bone-setting

Other more sophisticated interventions such as fumigation, CM bathing and specific traction (整骨牽引) for orthopaedic CM treatment will be provided in the day-patient and inpatient services.

5. For planning purpose, the department will provide two zones for subsidised services and one zone add-on market oriented services as follows:

(1) Subsidised general outpatient clinic

GOPC accepts patient self-referral cases mainly through appointment booking with a small percentage of walk-in cases. The GOPC can operate during normal operation hours, extended hours or 24-hour.

(2) Subsidised referral outpatient clinic

ROPC accepts referrals from GOPC of the hospital, CMCTR from 18 districts, partnering organisations, CMPs, WM medical practitioners and professional healthcare providers of the public and private healthcare systems. Referrals should be facilitated by protocol.

(3) Outpatient clinics for add-on market oriented services

(a) Special disease centres

These are for focused CM service development providing services on special disease programmes. Patients can attend these clinics by referral or self-referral through appointment booking. Patients can select their preferred CMPs.

(b) Private clinics

These clinics are headed by prestige CMP experts. Patients can select their preferred CMPs. Patients attend this clinic by referral or self-referral through appointment booking.

(c) Preventive care and health maintenance centre

The center caters for health maintenance and preventive interventions. Patients can attend this centre by referral or self-referral through appointment booking. Patients can select their preferred CMPs.
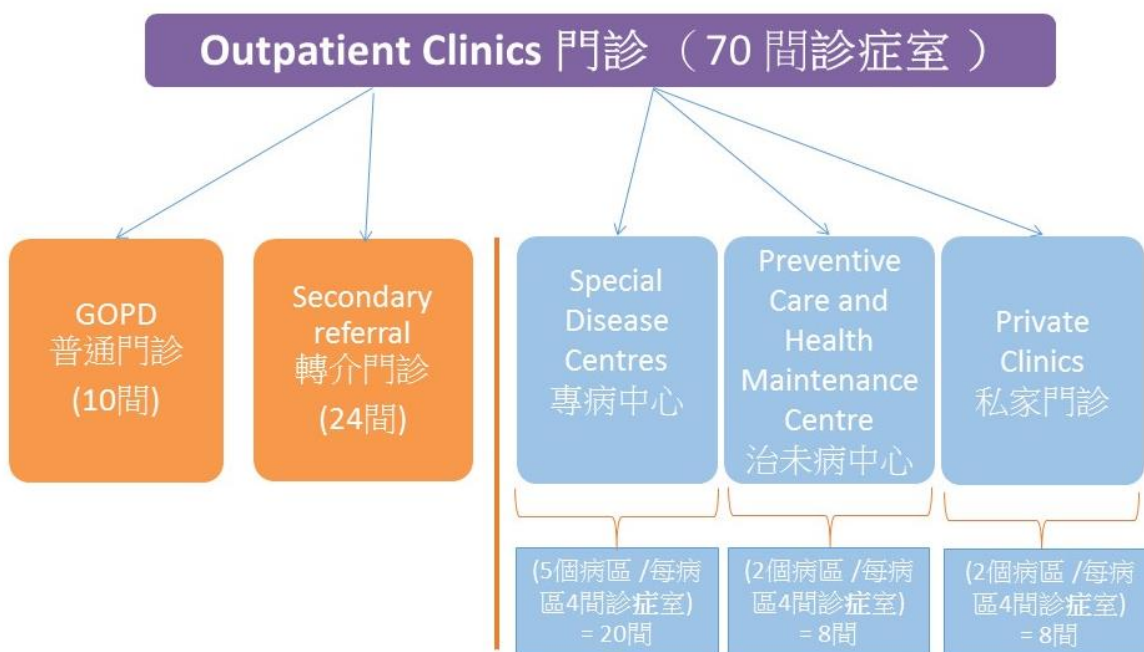
6.　　　Diagram showing composition of the department:

Outpatient Clinics 門診 （70 間診症室）				
GOPD 普通門診 (10間)	Secondary referral 轉介門診 (24間)	Special Disease Centres 專病中心	Preventive Care and Health Maintenance Centre 治未病中心	Private Clinics 私家門診
		(5個病區 /每病區4間診症室) = 20間	(2個病區 /每病區4間診症室) = 8間	(2個病區 /每病區4間診症室) = 8間

7.　　　Cluster Medical Zone Concept (小病區概念)

(1) The basic structure of an OP zone bases on consultation zones (門診病區) and corresponding intervention zones (治療小區) for complete OP procedures.

(2) By grouping of consultation/intervention rooms and associated supporting facilities into different medical zones to cluster related clinical services within discrete zone to create a more self-containing service environment that most services needed can be provided and make available within each zone adding convenience to patients and staff.

(3) Furthermore, each zone can have specific setup for meeting the specific requirements of different clinical groups.

(4) Principally, all consultation rooms will be generic in design and building provisions for shared uses by all CMPs irrespective of the specialised services and WM medical practitioners of various specialties for maximum flexibility and efficient use of facilities. Generic design can also add flexibility for future development by enabling merging small zones into a larger zone or separating

larger zone into small zones. They will also cater for teaching and multi-disciplinary joint clinics. The rooms will also cater for teaching and multi-disciplinary joint clinics.

(5) A good scheduling and clinic management system can provide flexibility in using the different zones for different specialised services or sub-specialised services in different sessions of the day or days of the week. The system will also help to streamline patient flow so as to ensure that patients can visit the same zone every time they visit the same specialised service clinic. It is important to recognise that many of the patients may require frequent return visits and familiarity with the surroundings will have a continuing and beneficially calming influence.

(6) The design of the two types of intervention rooms will be generic and able to fit out with different equipment in order to accommodate varied sub-specialised service needs enabling shared support across different specialised services and to ensure easy flow of traffic for patients and families. They will also cater for teaching function.

8.   Diagram showing distribution of consultation rooms at different consultation zones:

門診病區（一共７０間診症室）

普通門診 (10間) *入口大堂樓層	轉介門診 (24間)	專病中心 (4間)	專病中心 (4間)	專病中心 (4間)	專病中心 (4間)	專病中心 (4間)
		治未病中心 (4間)	(4間)	私家門診 (4間)	私家門診 (4間)	

External relationships and adjacency requirements

9.   The OP services should be easily accessible through the escalators/lifts located at convenient site directly from the main entrance of the hospital because of the high volume of patient flow.

10.   The GOPC is located on the ground floor and should be located adjacent to the hospital main entrance because of the walk-in patient provision.   The ROPC and various clinics/centres for add-on market oriented services are located on Level 1, they should be easily accessible from the hospital main entrance through escalators, lifts and stairs. Access and adjacency should also be made possible to the lobby helpdesk, central shroff, pharmacies, radiology department and AH department to facilitate the following:

(1) Anticipated high traffic volume of outpatients along whole day operation;

(2) Enquiry, registration, appointment booking, electronic and cash payment in case patients not using electronic mobile device for care process self-management;

(3) On patient discharge can collect CMs/drugs from pharmacies conveniently; and

(4) In case radiology examination or rehabilitation care are needed, can proceed to relevant department with ease.

11.   Each OP zone has two circulatory routes supporting its function:

(1) Main public circulation route for access to the standard ward modules by patients, patients' families and visitors.

(2) Internal circulation route is for staff, patients with escort and material movement.   The internal route also provides connection of patient wards to other internal hospital units.   Back-of-house services including L/UL zone for bulk goods scheduled delivery by AMR.   Clean and dirty passages are to be segregated.   Clean bulk items include clean linen, drugs (CM and WM), laboratory

specimen, CSSU items, consumables and medical record. Dirty bulk items used linen and wastes (domestic, chemical and clinical). The internal route also connects the ward to various clinical areas, and centralised staff facilities i.e. offices, changing areas and overnight accommodation.

(3) Please also refer to the descriptions of circulatory routes and hospital logistics and operation flow under Section 5 of the executive summary.

12. There are two resuscitation rooms, one next to GOPC and one next to ROPC. The resuscitation rooms are for serving patients with emergency conditions.

13. Vertical stacking diagram showing relationship of all major zones of the OP department across ground floor and Level 1 in accordance with the above operational requirements:
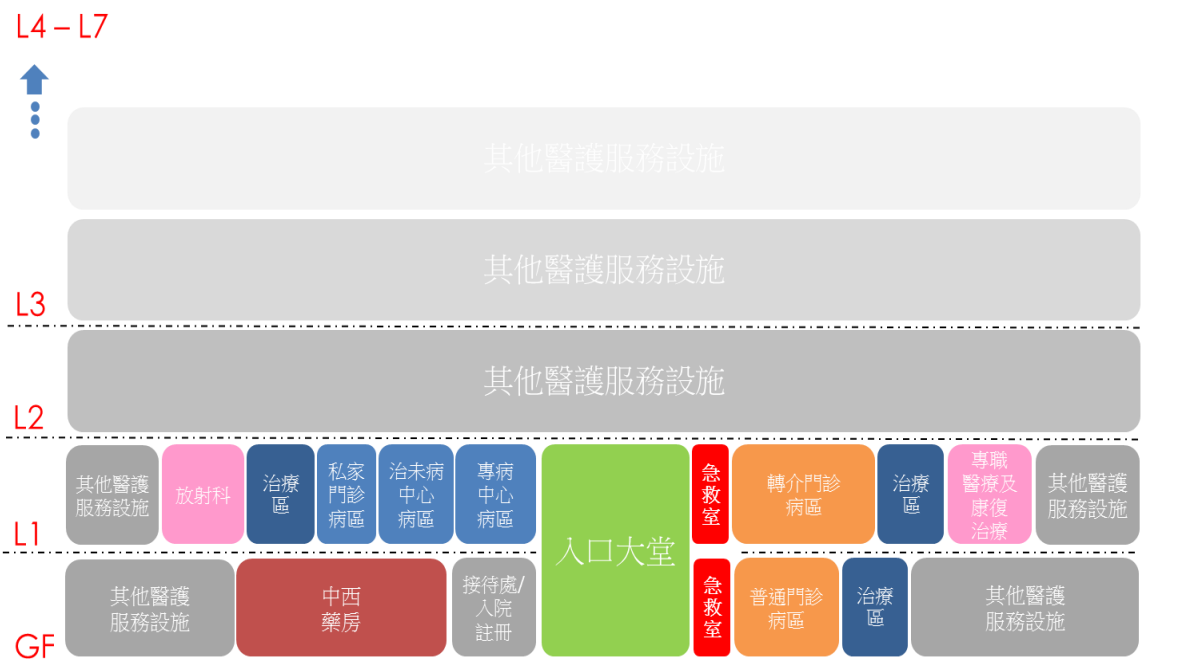
14. Diagram of patient flow at the OP department and associated departments/facilities on ground floor and Level 1 of the CMH:

綜合病人流程及門診服務樓層分佈
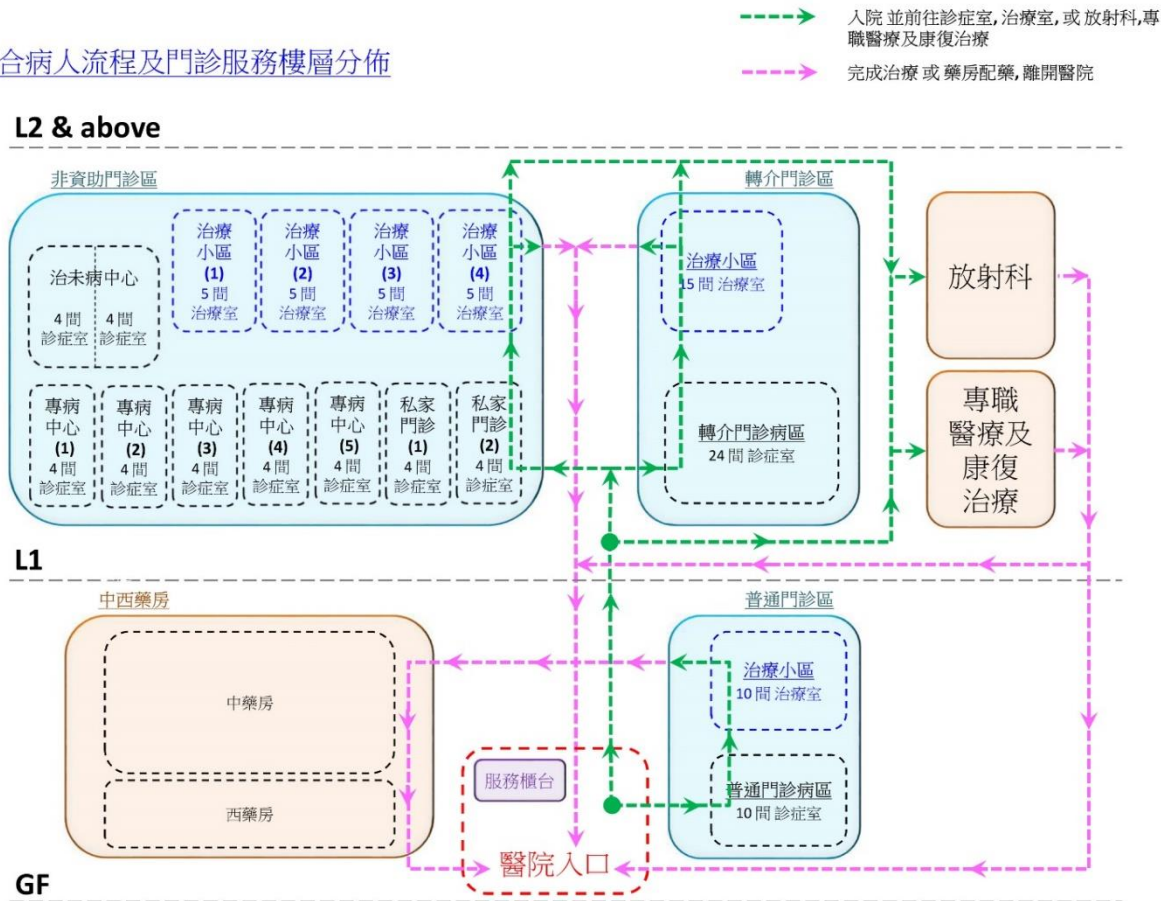
Internal relationships, operation flow and functions

Internal relationships of all OP clinics

15. Relationship between major areas within all OP clinics:

(1) Consultation and intervention rooms are the key service areas within the clinic zone. Adjacency of the two areas will facilitate staff and patient flow. The consultation rooms and intervention rooms will be grouped together and open directly into the patient waiting area.

(2) Nurse station, triage station of GOPC, assessment room and

treatment room provide clinical supporting functions to be mainly supported by nurses and care assistants.   These facilities should be close to each other. The nurse stations of GOPC and ROPC will also serve the respective resuscitation rooms on ground floor and Level 1.

(3)   Triage station of GOPC is for early identification of urgent patient conditions through nursing assessment.   It should be located close to the clinic entrance and next to the nurse station and the fever cohort area.

(4)   Helpdesk carries a reception function and provides support on patient administrative functions including electronic payment. This is operated by clerical staff and should be located next to the clinic entrance.

(5)   Patient waiting areas will be located centrally and visible by the staff in the nurse station or helpdesk within the clinics or intervention area.

(6)   Staff corridor to be provided to connect all consultation rooms, intervention rooms, assessment room, treatment room and resuscitation room to optimise the operation flow of clinical staff providing care to patients at different stages.   Multiple access to the staff corridor from the waiting area guarded by access controlled doors should be provided at convenient locations.   The staff corridor should link with the staff area, back-of-house services, supporting facilities including staff lifts, goods lifts and AMR L/UL areas.

(7)   PTS stations should be situated nearby and accessible to the nurse station, assessment room, treatment room and resuscitation room for transportation of patient specimens (blood, body specimen) and drugs/CMs to the core laboratory and from the pharmacies respectively.

(8)   The resuscitation rooms are for serving patients with emergency conditions. One resuscitation room is located on ground floor and the second resuscitation room on Level 1.   Both resuscitation rooms should be located close to the nurse stations of GOPC and ROPC and have convenient access to the ambulance loading area

in case of patient transfer to another hospital and patient lift to inpatient wards including HDU in case of hospital admission.

(9) The alcoves for scale, wheelchair/stretches, trolleys (E-trolley, medical records trolley) are common facilities and will be placed near to the clinics' entrances.

(10) The staff area is a restricted area and within the internal circulatory route with controlled access. It should also be connected to the staff corridors so that the staffs can access the consultation rooms and intervention rooms from staff area.

Internal operation of all OP clinics

16. An online appointment system will be operated for all OP clinic services including new and follow-up cases. All patients can use their own electronic mobile device (through mobile apps) to book their medical appointments, register their arrival and process all payments. Patients not able to use mobile technology will be assisted by staff at the helpdesk.

17. For walk-in patients and patients not using mobile apps for care process self-management, they can register and have electronic payments at the helpdesk in the main lobby or at the clinics supported by nearby automatic self-service kiosks. For handling of cash payment, patients can approach the central shroff. The central shroff will be located at ground floor near the hospital entrance for easy access by patients.

18. After registering patients' arrival/attendance electronically or through helpdesk, patients will be instructed electronically or through helpdesk to proceed to the clinics and consultation rooms waiting to be been seen by the clinical CMPs/WM medical practitioners. In case, pre-consultation procedure or preparation is needed, patients will be instructed to go to the nursing station, assessment room or treatment room for arrangement. While waiting for service, they can sit in the respective waiting areas while queuing information will be displayed in QDMS located

both centrally in the central waiting area or locally just outside the respective service areas.

19.   QDMS

   (1) QDMS will be provided in the OP clinics to display and manage queues status for patients who are waiting for consultation, intervention, assessment and treatment.

   (2) A keypad of the QDMS will be installed inside each consultation room.   When the medical staff is ready to serve the next patient, he/she can initiate the calling the queue no. in the head of the room's queue.   He/she can also insert a queue number in the queue by inputting the number via the keypad.

   (3) A medium size LED display panel in the designated patient waiting areas of the GOPC and ROPC and a small LED display panel outside the consultation, intervention rooms, assessment rooms, treatment rooms of all OP clinics will indicate the queue number to be served.

   (4) All the registration, queue number served, queue number missed will be recorded in the QDMS for analysis and reporting.

20.   Service areas within the clinic will include:

   (1) Consultation rooms

      (a)   These rooms are for clinical consultation by CMPs or WM medical practitioners.

   (2) Interventional rooms

      (a)   These rooms are for CM interventions including acupuncture, tui-na, moxibustion and bone-setting.

   (3) Assessment room

      (a)   This room is for carrying out nursing or clinical assessment of patients before or after clinical consultation.   The assessment includes collecting patients' clinical information through interview or observation related to their health issues and

measuring patients' health parameters with the help of various CM and WM equipment.

(4) Treatment room

(a) This room is for carrying nursing or clinical procedures including wound care, external applications, injections, washing, manipulations etc.

21.	After each service provided, the patient will be instructed of the next service step by staff together with provision of all necessary information through electronic notification or written printout information. The patient can then proceed to the next service station or wait at the waiting area and be informed of their expected turn of service through the central or local queuing management system until service completion. On discharge, all subsequent follow-up appointment will be automatically arranged and all booking information will be available in the mobile apps.

22.	In case patients need to collect CMs or drugs, they will receive the next step information electronically. They can then make the payment electronically and proceed to pharmacies. In case, patients need to have radiology investigation, they will be directed to the radiology department. In case patients need to have blood or urine tests, they will be served in the assessment room.

23.	Patients unable to use the mobile apps will be supported by staff or through the helpdesk. Adequate queuing space will be allowed in front of the helpdesk for patients who are not using the mobile apps.

24.	For GOPC, the walk-in patients and specific scheduled patients displaying acute symptoms will be assessed in the triage station. Patients with fever or suspected to have infectious disease will be directed to the fever cohort room after nursing triage. Early medical consultation will be facilitated and conducted at the consultation rooms situated in close proximity to the fever cohort room. Patients who are unstable will be sent to the resuscitation area for stabilisation.

25.   For ROPC and outpatient clinics for add-on market oriented services, specific scheduled patients displaying acute symptoms will be assessed in the nursing station.   Patients with fever or suspected to have infectious disease will be directed to the fever cohort room of GOPC. Patients who are unstable will be sent to the resuscitation room on the same floor for stabilisation.

26.   The resuscitation rooms will serve unstable patients having emergencies developed within the hospital premises or in the vicinity of the hospital. Stabilised patients will be transferred to other acute hospitals or be admitted to inpatient wards including HDU.

27.   As all patients will be served by the same clinical team within the clinic, nursing and clinical staff may need to provide services and support each other in the delivery of clinical care to patients at different stages.   It is also a common practice that the same CMP/WM medical practitioner attending the patient may follow through the same patient from consultation to the delivery of interventions.   A staff corridor linking the assessment rooms, treatment rooms, consultation rooms and intervention rooms will facilitate easy provision of nursing back-up to CMPs/WM medical practitioners, and facilitate CMPs/WM medical practitioners attending to patients at different care stages.

28.   To support the clinic operation, relevant consumables, stationaries, linen, patient specimens, CSSU sets and pharmacy supplies, furniture and equipment items and the like will be supplied to the clinics through the internal circulatory route.

29.   Clinic staff coming and leaving the clinic should also use the internal circulatory route.   The staff area should also be connected to the staff corridors so that the staffs can access the consultation rooms and intervention rooms from staff area.

30.	The OP operation will be targeted towards paperless operation as far as possible.	Electronic medical record will support clinical operation.

B2.   Operation of individual OP Service Zones

31.   Diagram of patient journey of GOPC on ground floor and ROPC on Level 1:
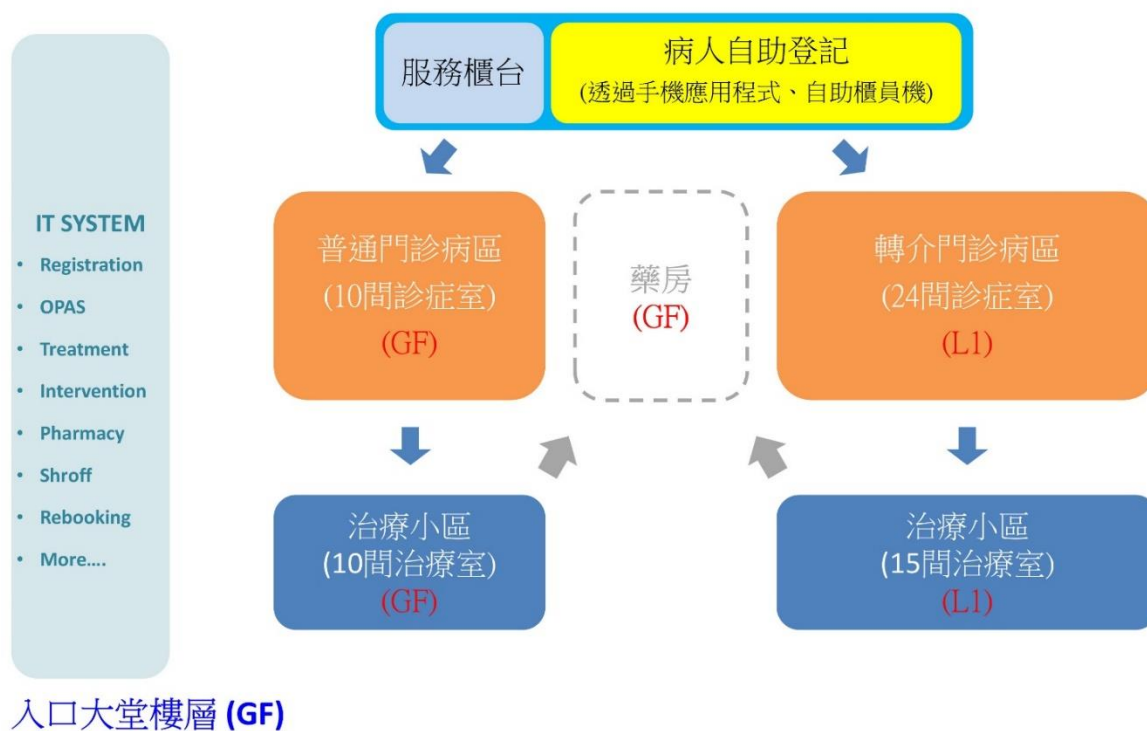
32.   Summary of consultation zones' major function rooms of GOPC and ROPC:

ROOM	QUANTITY	
	GOPC (Consultation Zone)	**ROPC** (Consultation Zone)
CM Consultation cum Teaching Room (20 m^2)	7	21
CM Consultation cum Teaching Room (Specialty) (25m^2)	2	2
CM Consultation cum Teaching Room (One-way mirror) (20m^2)	1	1
Observation Room	1	1
Assessment Room	2	4
Treatment Room	1	2
Triage Station	1	NIL
Fever Cohort Room	1	NIL
General / Record Office	1	1
Helpdesk	1	1
Automated Kiosk	2	4
Nurse Station	1	1
Cleaner's Room	1	1
Store-General	1	2
Store-Equipment	1	2
Store-PPE	1	2
Store-Linen	1	2
Staff Common Room cum Pantry	1	1
Gown-up Room	1	1
Gown-down Room	1	1
Patient Waiting Area	1	1
Play Area	1	1
Alcove - Scale	1	1
Alcove – E-Trolley	2	2
Alcove – Medical Record Trolley	4	4
Alcove – Wheelchair/Stretchers	6	6
Alcove - Trolleys	8	8
Alcove – Support Facilities	2	3
Patient Toilet (F)	1	1
Patient Toilet (M)	1	1
Patient Toilet (Disabled)	1	1
Staff Toilet (F)	1	1
Staff Toilet (M)	1	1
Staff Toilet (Disabled)	1	1
Staff Shower (M)	1	1
Staff Shower (F)	1	1
Staff Working Corridor	1	1

Office (SNO/NO)	2	2
Office (Executive Assistant)	2	2

33.   Summary of intervention zones' major function rooms of GOPC and ROPC:

ROOM	QUANTITY	
	GOPC (Zone (1))	**ROPC** (Zone (2))
Intervention cum Teaching Room (20m^2)	5	8
Intervention cum Teaching Room (Moxibustion) (25m^2)	5	7
Nurse Station	1	1
Patient Waiting Area	1	1
Staff Working Corridor	1	1
Cleaner's Room	1	1
Patient Changing & Locker (F)	1	1
Patient Changing & Locker (M)	1	1
Patient Changing & Locker (Disabled)	1	1
Patient Toilet & Shower (F)	1	1
Patient Toilet & Shower (M)	1	1
Patient Toilet (Disabled)	1	1
Store-General	1	2
Store-Equipment	1	2
Store – PPE	1	2
Store-Linen	1	2
Gown-up Room	1	1
Gown-down Room	1	1
Alcove – E-Trolley	1	1
Alcove – Wheelchair/Stretchers	6	6
Alcove - Trolleys	5	8
Staff Toilet (M)	1	1
Staff Toilet (Disabled)	1	1
Staff Working Corridor	1	1
Staff Common Room	1	1

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34.   Summary of clinical and non-clinical facilities outside the OP clinics for supporting patients and hospital operation, and they may be shared with other departments on the same floor -

ROOM	QUANTITY	
	GOPC	**ROPC**
Resuscitation Room	1 (ground floor)	1 (Level 1)
Dirty Utility / Sluice Room	1	1
Disposal Room	1	1
Public toilet (M)	1	1
Public toilet (F)	1	1
Public toilet (Disabled)	1	1
Cleaner's Room	1	1

35.   Diagrammatic layout plan showing intended functional zoning of GOPC/ROPC:

36. Diagrammatic layout plan showing flow of patients and patients' families of GOPC/ROPC:

37.　　　Diagrammatic　layout　plan　showing　staff　operation　of GOPC/ROPC:

樓層平面佈局概念及運作模式 - 普通門診 (G/F) / 轉介門診 (L1)
物流, 醫護及各職員工作範圍

乘客電梯 (病人, 家屬, 公眾)
貨運電梯 (醫護及各職員, 貨物)
門診區入口
PTS 氣動管道系統 (管道及分站)

- Unobstructed view towards all consultation & intervention rooms' entrances and across the whole clinic entrance and patient waiting area
- Unobstructed view across the station
- Open space work stations

- Service corridor connecting and supporting Consultation and Intervention Rooms
- Dedicated parking space for AMR

- Dedicated parking space for carts of various supplies at 貨物卸載 / 分流區

38. Diagrammatic layout plan showing special design requirements of GOPC / ROPC:

樓層平面佈局 - 特別設計要求

- Localized exhaust system for elimination of smoke and odor from moxibustion
- Rooms to be located along building façade for "open air", natural air ventilation preferred for intervention rooms with 薰蒸設備

- Integrated patient waiting areas of both Consultation Zone and Intervention Zone for optimized use of space

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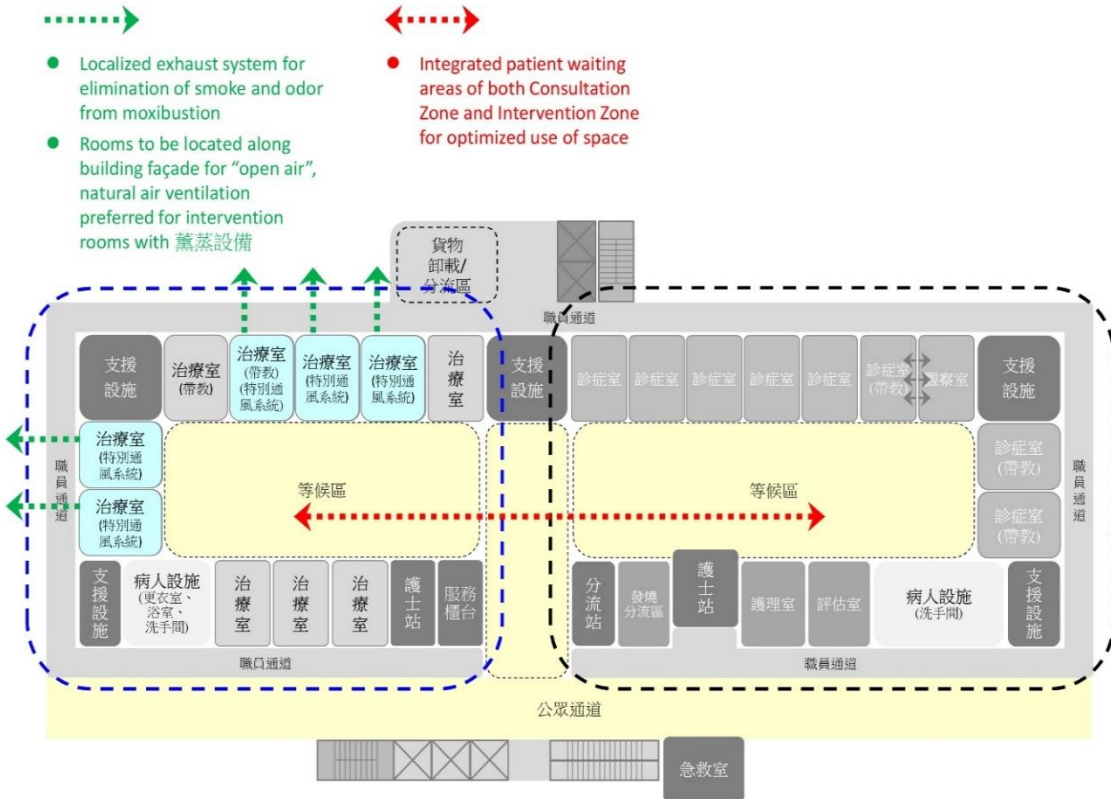
Internal operation of outpatient clinics for add-on market oriented services

39.   Diagram of patient journey of outpatient clinics for add-on market oriented services on Level 1:
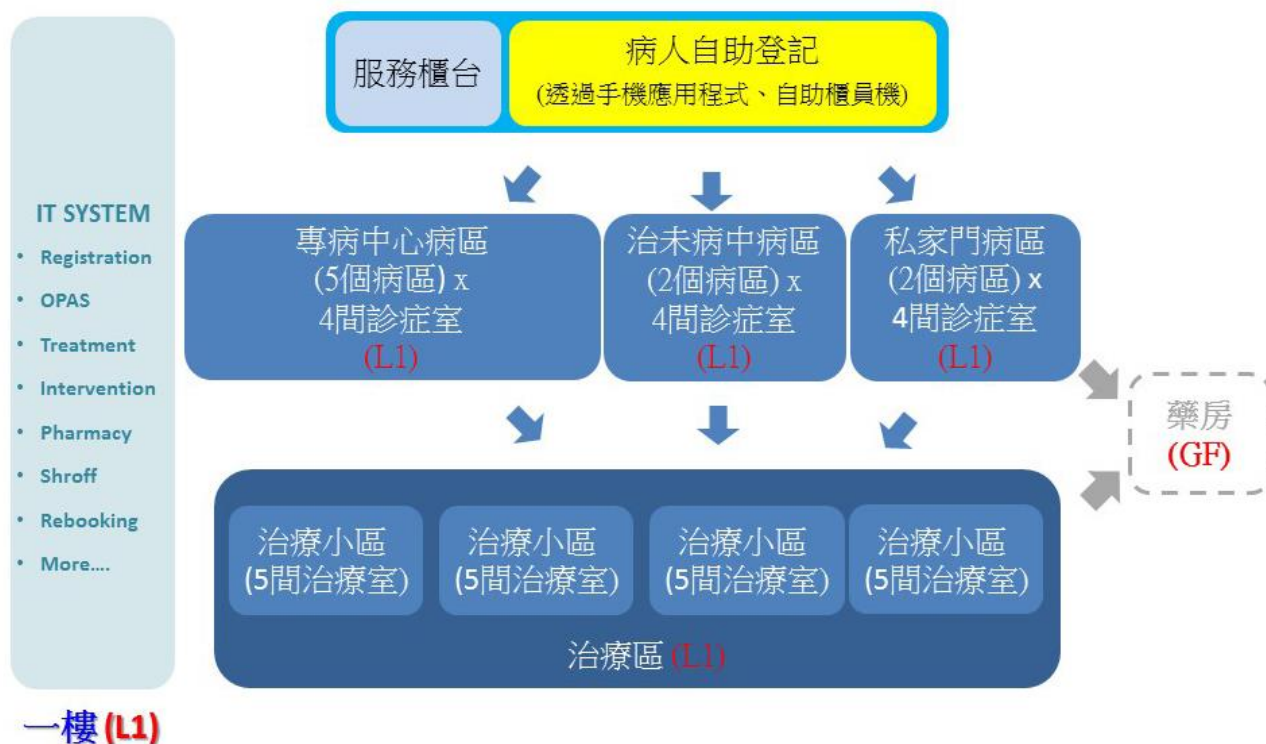
40.   The 36 consultation rooms and 20 intervention rooms serving the outpatient clinics for add-on market oriented services will be grouped into nine modular consultation zones and four modular intervention zones. The nine consultation zones are allocated functionally as follows:

(1) Five modular disease zones serve as Special Disease Centres (專病中心)

(2) Two modular disease zones serve as Private Clinics (私家門診)

(3) Two modular disease zone serves as Preventive Care And Health Maintenance Centre (治未病中心)

41.   Major components of consultation and intervention zones refer to the following:

    (1) A single module clinic zone:

        (a) Four consultation rooms

        (b) One assessment room

        (c) One treatment room

        (d) One helpdesk

        (e) One automatic kiosk area

    (2) A single module intervention zone:

        (a) Five intervention rooms

        (b) One nurse station

42.   Summary of typical consultation zones' major function rooms -

ROOM	QUANTITY		
	Special Disease Centres (typical Consultation Zone)	**Private Clinics** (typical Consultation Zone)	**Preventive Care and Health Maintenance Centre** (Consultation Zone)
CM Consultation cum Teaching Room (20m²)	3	3	6
CM Consultation cum Teaching Room (Specialty) (25 m²)	1	1	2
Assessment Room	1	1	4
Treatment Room	1	1	1
Helpdesk cum Nurse Station	1	1	1
Automated Kiosk Area	1	1	2
Patient Waiting Area	1	1	1
Play Area	1	1	1
Store- General	1	1	1
Store – Equipment	1	1	1
Store – PPE	1	1	1
Store – Linen	1	1	1
Gown-up Room		1	
Gown-down Room		1	
Helpdesk cum Nurse Station	5	2	1

Alcove – Scale	1	1	1
Alcove – E-Trolley	2	2	2
Alcove – Medical Records Trolley	4	4	4
Alcove – Wheelchair/Stretchers	6	6	6
Alcove – Trolleys	8	8	8
Alcove – Support Facilities	5	2	2
Patient Toilet (F)	1	1	1
Patient Toilet (M)	1	1	1
Patient Toilet (Disabled)	1	1	1
Staff Toilet (F)	1	1	1
Staff Toilet (M)	1	1	1
Staff Toilet (Disabled)	1	1	1
Staff Common Room		1	
Cleaner's Room	1	1	1
Staff Working Corridor	1	1	1
General / Record Office		1	
Office (SNO/NO)	1	1	1
Office (Executive Assistant)		2	

43. Summary of facilities outside the OP clinics for supporting patients and hospital operation, and they may be shared with other departments on the same floor -

ROOM	QUANTITY		
	Special Disease Centres (typical Consultation Zone)	**Private Clinics** (typical Consultation Zone)	**Preventive Care and Health Maintenance Centre** (Consultation Zone)
Resuscitation Room	1 (located outside ROPC)		
Dirty Utility / Sluice Room	1	1	1
Disposal Room	1	1	1

44. Summary of a typical intervention zone' major function rooms -

ROOM	QUANTITY
	Typical Intervention Zone
Intervention cum Teaching Room (20m^2)	2
Intervention cum Teaching Room (Moxibustion) (25m^2)	3
Nurse Station	1
Patient Waiting Area	1
Patient Changing & Locker (F)	1
Patient Changing & Locker (M)	1

Patient Changing & Locker (Disabled)	1
Patient Toilet & Shower (F)	1
Patient Toilet & Shower (M)	1
Patient Toilet (Disabled)	1
Staff Working Corridor	1

45.   Summary of shared facilities in intervention zones -

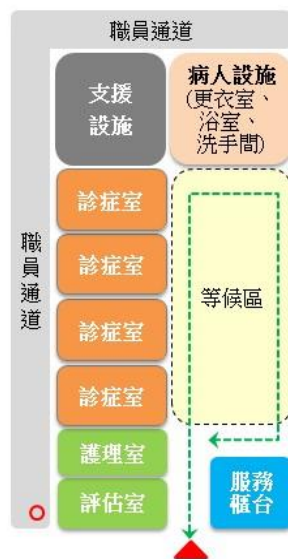| ROOM	QUANTITY
	Typical Intervention Zone
Disposal Room	1
Cleaner's Room	2
Dirty Utility / Sluice Room	2
Store- General	4
Store – Equipment	4
Store – Linen	4
Gown-up Room	2
Gown-down Room	1
Alcove – E-Trolley	2
Alcove – Wheelchair/Stretchers	6
Alcove – Trolleys	8
Alcove – Support Facilities	4
Staff Toilet (F)	1
Staff Toilet (M)	1
Staff Toilet (Disabled)	1

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46.   Diagrammatic layout plan showing intended functional zoning and flow of patients and patients' families of typical modules of consultation zone and intervention zone of outpatient clinics for add-on market oriented services -
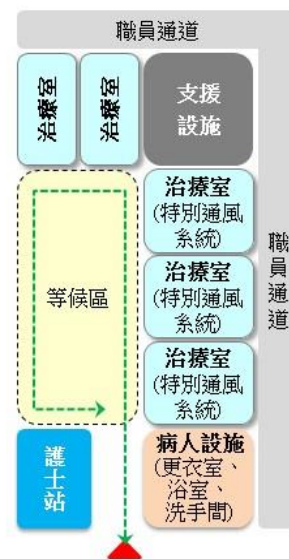

樓層平面佈局概念及運作模式 -市場導向(私家)門診 (L1)
病人, 家屬, 公眾活動

乘客電梯 (病人,家屬, 公眾)
貨運電梯 (醫護及各職員,貨物)
門診區入口
PTS 氣動管道系統 (管道及分站)

Patients activities extent within consultation and intervention zones

職員通道
支援設施
病人設施 (更衣室、浴室、洗手間)
診症室
診症室
診症室
診症室
護理室
評估室
等候區
服務櫃台

門診小區模組
(5個專病中心病區,
2個治未病中心病區,
2個私家門診病區)

職員通道
治療室
治療室
支援設施
治療室 (特別通風系統)
治療室 (特別通風系統)
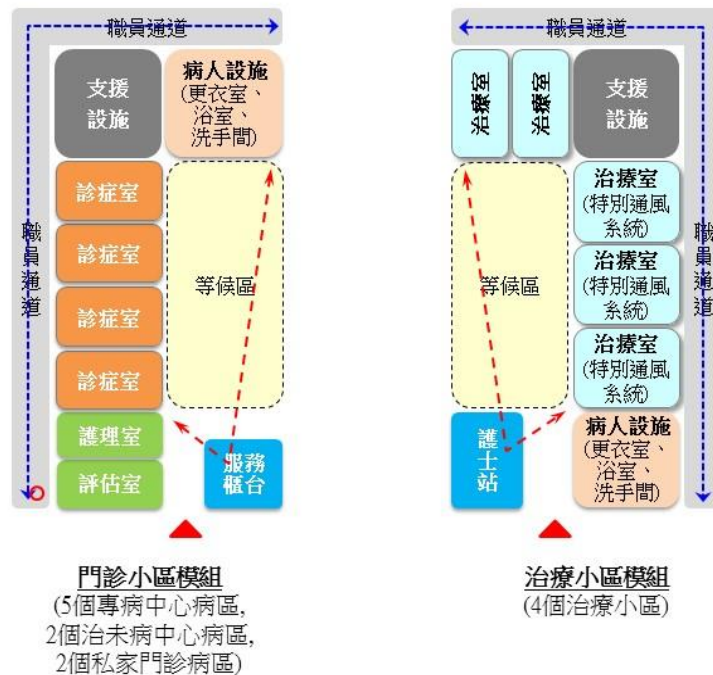治療室 (特別通風系統)
病人設施 (更衣室、浴室、洗手間)
等候區
護士站

治療小區模組
(4個治療小區)

47.　　　Diagrammatic layout plan showing intended functional zoning and staff operation of typical modules of consultation zone and intervention zone of outpatient clinics for add-on market oriented services -

樓層平面佈局概念及運作模式 -市場導向(私家)門診 (L1)
物流, 醫護及各職員工作範圍

乘客電梯(病人,家屬,公眾)
貨運電梯(醫護及各職員,貨物)
門診區入口
PTS 氣動管道系統(管道及分站)

- Unobstructed view towards all consultation & intervention rooms' entrances and across the whole clinic entrance and patient waiting area
- Unobstructed view across the station
- Open space work stations

- Service corridor connecting and supporting Consultation and Intervention Rooms
- Dedicated parking space for AMR
- Dedicated parking space for carts of various supplies at 貨物卸載 / 分流區

職員通道

支援設施 | 病人設施(更衣室、浴室、洗手間)
診症室
診症室 | 等候區
診症室
診症室
護理室 | 服務櫃台
評估室

門診小區模組
(5個專病中心病區,
2個治未病中心病區,
2個私家門診病區)

職員通道

治療室 | 治療室 | 支援設施
治療室(特別通風系統)
等候區 | 治療室(特別通風系統)
治療室(特別通風系統)
護士站 | 病人設施(更衣室、浴室、洗手間)

治療小區模組
(4個治療小區)

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48.   Diagrammatic layout plan showing overall layout of outpatient clinics for add-on market oriented services on Level 1, tentative option (1) which is more patient-oriented for easy patient access:

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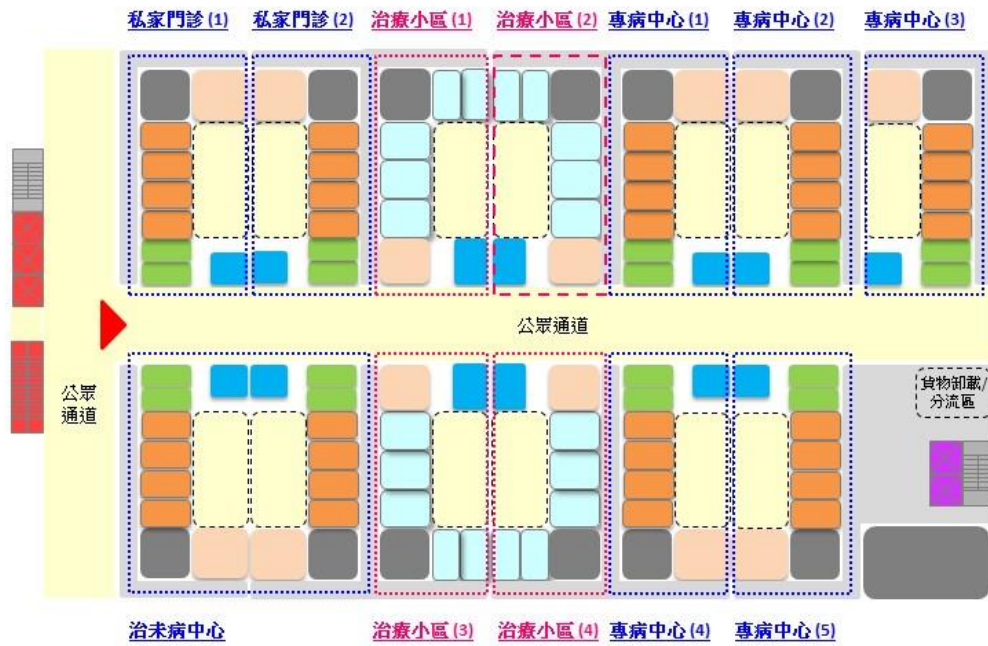
49. Diagrammatic layout plan showing overall layout of clinics for add-on market oriented services on Level 1, tentative option (2) which is more CMP-oriented for quick access between consultation rooms and intervention rooms via the well-connected staff corridor:


50. As different specialised services and special theme clinics will be operating on sessional basis within the eight units, a generic operation design will provide maximum flexibility. However, it is planned that the interior design should have the capability of being easily changed to suit the special themes especially along the entrances and waiting areas. This could be achieved by using multiple large LED display panels to provide specific background related to the special themes.

Special functions and design requirements of the services areas of all OP services

51.   CM consultation cum teaching room (standard, 20m^2)

(1) Consultation room is for clinical consultation by CMPs or WM medical practitioners including CM and WM collaborated consultation (中西醫會診) and meeting with patient families.

(2) The CMH is a teaching hospital providing training and teaching for undergraduates and postgraduates of the Universities, training for CMPs (basic and advanced clinical training) as well as related healthcare professionals (CM and ICWM).   Every consultation room is anticipated as training venue, expecting average three to four students at each consultation room.

(3) Working space around the examination bed is required for various CM disciplines' consultation measures.

(4) Clinical practice and observation are unique and crucial for teaching and training of CMPs which requires a versatile perspective on every single patient, i.e. 望、聞、問、切. Demonstration and hand-on practice also form important parts/procedures of CMPs training.

(5) All consultation rooms should be equipped with standard facilities in OP clinics, including examination couch, clinical hand washing basin, desks, cabinet, Private Automatic Branch Exchange System ("PABX") telephone and emergency call system, and there is a QDMS display outside each consultation room with activation inside the consultation rooms.

(6) Staff/working corridor on back side of each room will be provided for easy access to other consultation rooms and intervention rooms to enable close liaison between different room users. However, they should have their own doors to ensure privacy.

(7) Door be wide enough for access for stretcher and wheelchair.

(8) Port and connection to IT support will be provided.

(9) Communication device e.g. telephone should be installed in every consultation room.

(10)   Public Address ("PA") System to enable calling of patients. This function is only available in the GOPC and ROPC consultation rooms.

(11)   Room availability indicator (room engagement lamp/ light outside the consultation room to indicate availability) will be provided.

(12)   Emergency call bell should be installed.

(13)   Infection control facilities, temperature control, water supply and hand towel will be provided;

(14)   The design of the consultation room should be safe, quiet and pleasant so as to promote a therapeutic environment.

(15)   The room should have temperature control.

(16)   A medium size LED display panel linked to central server will be equipped to support patient explanation, health education and for teaching and training purpose.

(17)   Conceptual layout of a typical consultation room -

病人等侯區

入口

Queue Display & Management System

Back door connecting to staff corridor

職員通道
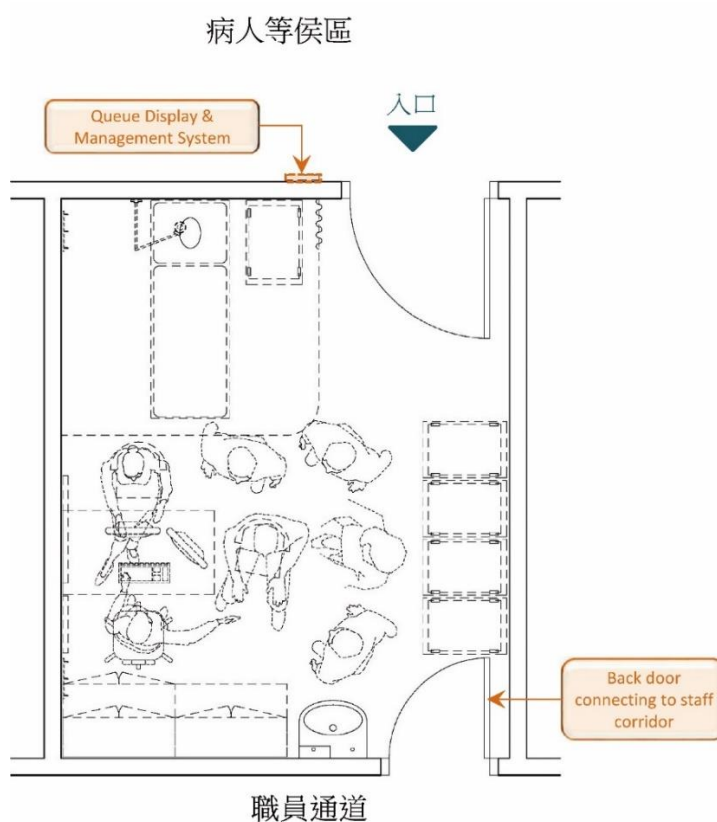
CM Consultation cum Teaching Room

52.   Consultation rooms (for teaching, area 25m^2)

(1) General design requirement and required building provisions refer to standard consultation rooms of area 20m^2;

(2) The consultation rooms for teaching will be 5m^2 larger in size than ordinary consultation room to accommodate more students or trainees (maximum 10) for special cases discussion under various CM disciplines.

53.   CM consultation cum teaching room (with one-way mirror, area 20m^2) and Observation room in GOPC and ROPC:

(1) General design requirement and required building provisions refer to standard consultation rooms of area 20m^2, having the room layout to cater a one-way mirror on one wall side in connection with the observation room.

(2) Operation mode:

(a) CM students or trainees to observe the course of real case consultation at the observation room through the one-way mirror, where adequate space will be provided to accommodate 10 people seeing through the mirror concurrently.

(b) Audio system should be installed to transmit clearly the conversation in the consultation room to the observation room so that students or trainees are aware of the communication between the clinician and the patient and/or carer.

(c) A medium size LED display panel with synchronised display of the clinician's desktop computer screen will be installed so that students or trainees are aware of the clinical findings and prescriptions recorded by the clinician.

(d) Conceptual layout of the observation room in relation to adjacent CM consultation cum teaching room (one-way mirror):

病人等侯區

入口

Queue Display & Management System

One-way mirror

診症室

觀察室

職員通道
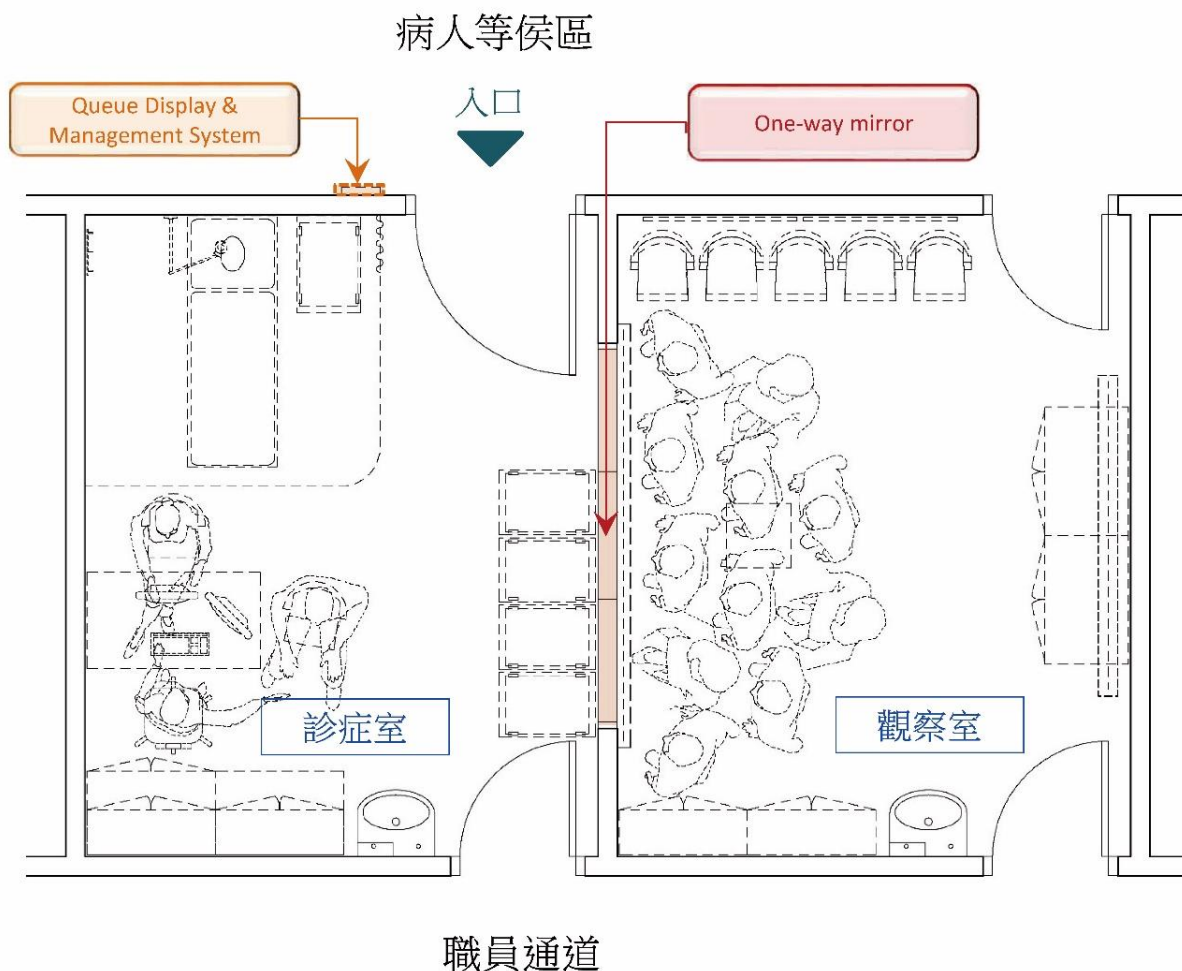
54. Intervention cum Teaching Room (20m^2)

(1) The room serves multi-purpose functions of various CM intervention measures including acupuncture, tui-na, CM orthopedics bone-setting, cupping with installation of different modality of equipment.

(2) Each intervention room will serve only one patient at one time with lockable door at entrance for patient's highest level privacy. Curtain will be installed at the access to the intervention rooms from staff corridor for easy patient monitoring and support.

(3) Staff/working corridor on back side of each room will be provided for easy access to other intervention rooms and consultation

rooms to enable close liaison between different room users.

(4) Space to accommodate students or other trainees (maximum three to four) for training and studying of interventions under various CM disciplines.

(5) Wash hand basin and drainage provisions are required.

(6) Data ports for CMS and digital radiography are required.

(7) PA system to enable calling of patients is required. This function is only available in GOPC and ROPC intervention rooms.

(8) QDMS display outside each intervention room with activation inside the rooms.

(9) All rooms required to be wheelchair accessible.

(10) Conceptual layout of a typical intervention cum teaching room -
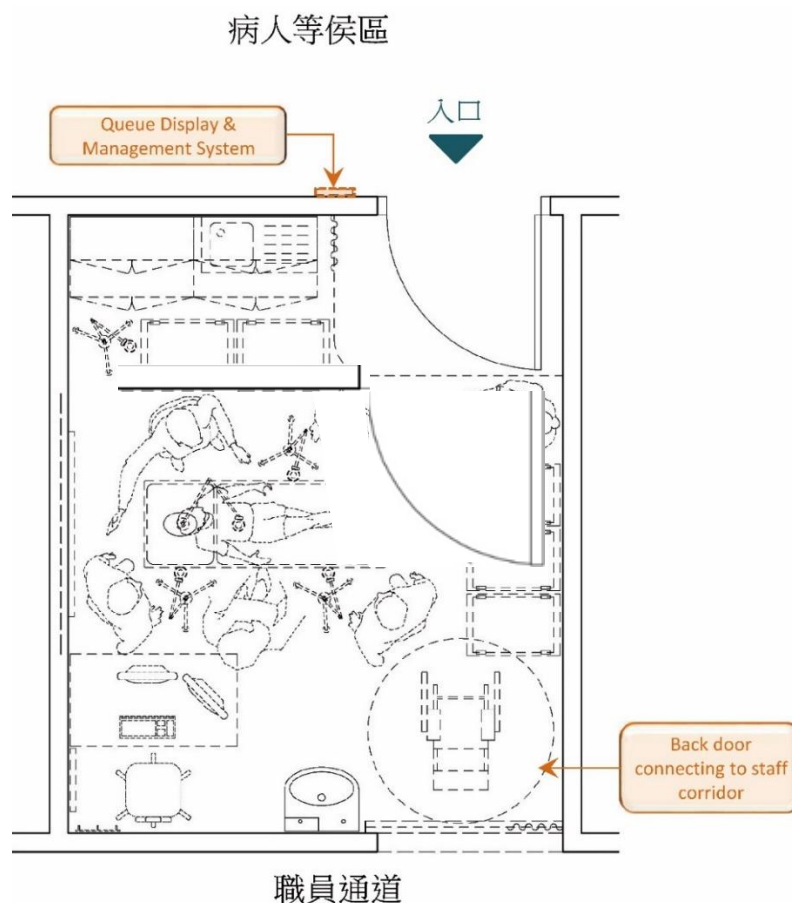
治療室 **Intervention Room (A)**
簡易治療室
(針刺、推拿、正骨、拔罐)

_____

55. Intervention cum teaching room (Moxibustion) (for teaching, with special Building Services ("BS") provisions; 25m^2)

(1) General design requirement and required building provisions refer to standard Intervention Rooms having area 20m^2.

(2) Larger space required from ordinary intervention cum teaching room for provision of non-recycled fresh air and independent multi-directional mechanical ventilation exhaust system around the examination bed at low, mid and/or high level for proper exhaust of smoke resulted from moxibustion.

(3) To accommodate students or other specialty CMPs and/or WM medical practitioners (maximum five to eight) for special cases of interventions under various CM disciplines.

(4) Special MVAC system dealing with moxibustion aims at eliminating or minimising the resulted smoke and smelly odour.

(5) PA system to enable calling of patients is required. This function is only available in GOPC and ROPC intervention rooms.

(6) Conceptual layout of a typical intervention cum teaching room (Moxibustion) -

治療室 Intervention Room (B)　　　職員通道
綜合/帶教治療室
(所有治療手法，包括艾灸、針灸、 TDP)
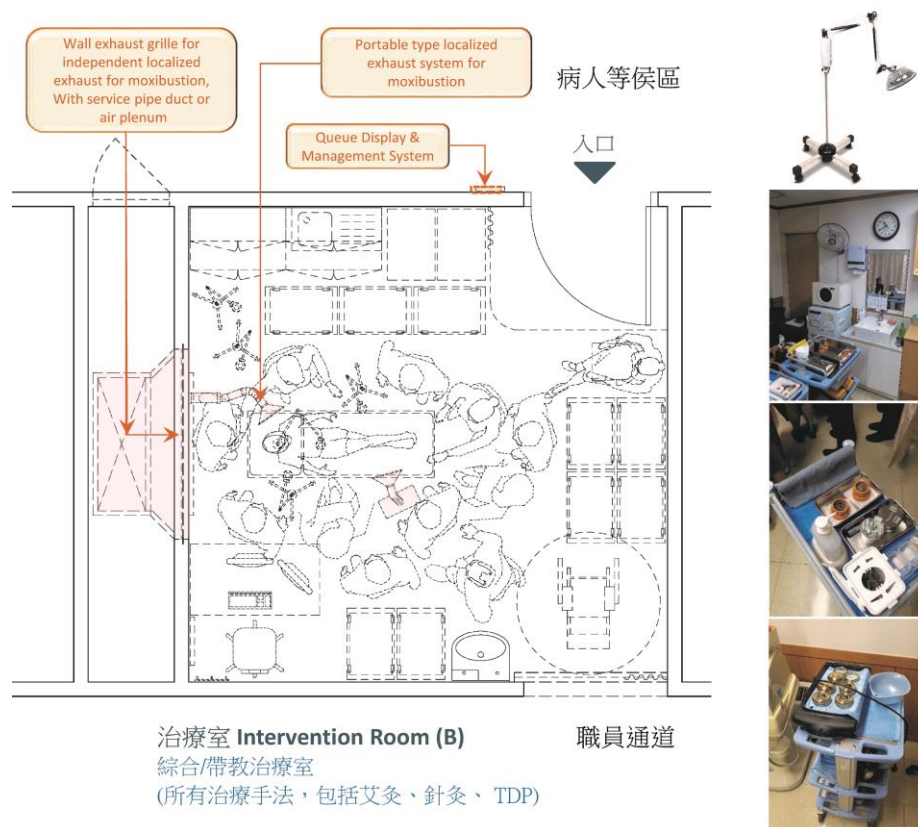
56. Assessment room

(1) This room is for carrying out nursing or clinical assessment of patients before or after clinical consultation. The assessment includes collecting patients' clinical information through interview or observation related to their health issues and measuring patients' health parameters with the help of various CM and WM equipment.

(2) Common tasks to be conducted may include:

   (a) conducting a nursing assessment and interview;

   (b) measuring blood pressure, electrocardiogram, oximeter, body temperature, weight and height;

   (c) collecting blood, urine, stool specimen;

   (d) desktop point of care blood, urine and stool examination; and

   (e) CM related measurements - the room could be used to install a wide range of equipment for various physical measurements including electric current measurement, thermal scanning or digital picture taking.

(3) There must be space for all necessary equipment for patient assessment and worktops for staff. The room should have computer ports and be able to turn to a dark room with window blind and adjustable light system.

(4) Wall-mount piped medical compressed air, medical vacuum (suction), oxygen supply outlets should be provided. Dedicated refrigerator for storage of biohazard specimen should be installed.

(5) PTS stations will be located nearby and accessible to the assessment room.

(6) QDMS display outside each assessment room with activation inside the rooms.

(7) Conceptual layout of a typical assessment room -

病人等候區

職員通道

評估室 **Assessment Room**
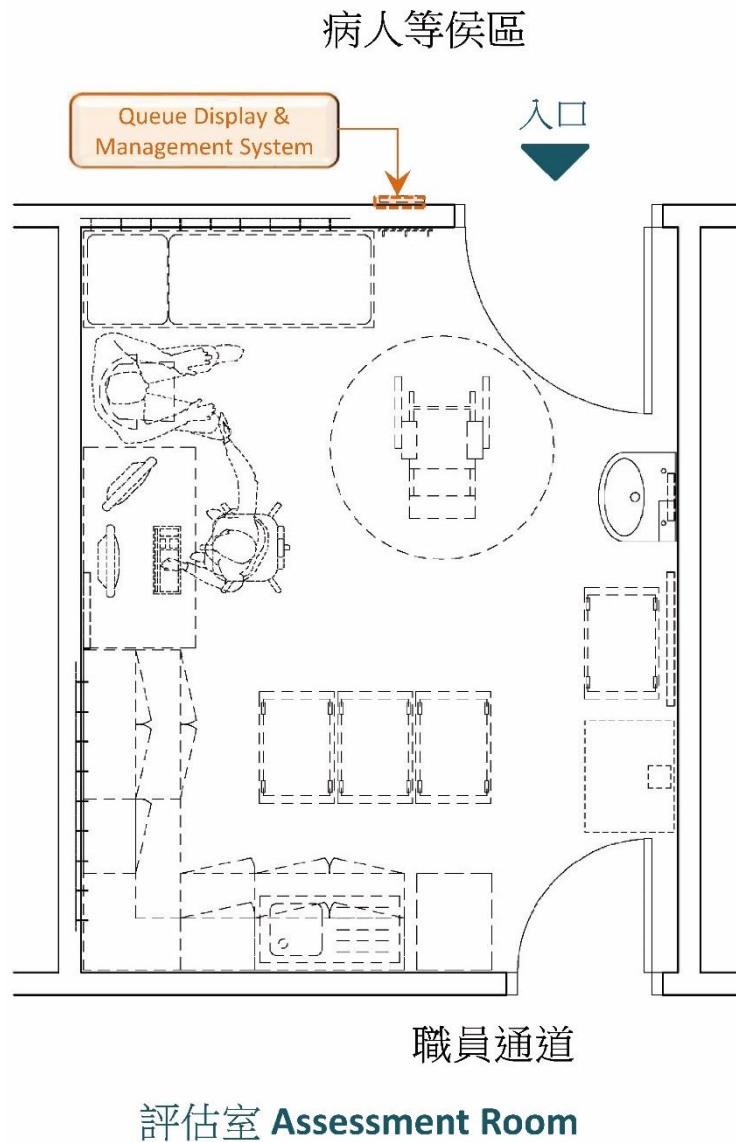
57. Treatment room

(1) This room is for carrying nursing or clinical procedures including wound care, external applications, injections, washing, manipulations

(2) To provide stainless steel sink and wash hand basin with all associated plumbing and drainage provisions

(3) Wall-mount piped medical compressed air, medical vacuum (suction), oxygen supply outlets should be provided

(4) Ceiling mounted multi-angle examination lamp over the examination couch for patient assessment and procedures purpose

(5) Sufficient space for patient stretcher and accommodate three to four staff inside the room

(6) Drug and intravenous fluid cabinet with dedicated refrigerator for storage of drugs should be installed

(7) Storage cabinet for sterile items should be provided

(8) Room temperature control is required

(9) PTS stations will be located nearby and accessible to the treatment room

(10) QDMS display outside each treatment room with activation inside the rooms

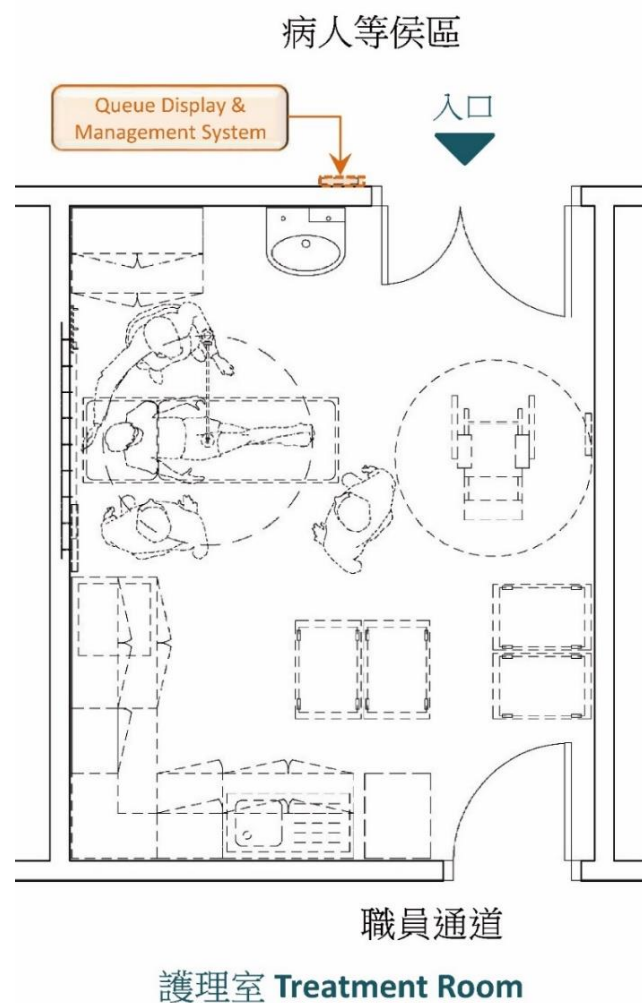(11) Conceptual layout of a typical treatment room -


護理室 Treatment Room

58.   Triage station in GOPC

(1) CMS and computer stations are provided with adequate space for seating and sit-stand work position

(2) Parking space for monitoring equipment

(3) Parking space for wheelchair for patients

(4) Hand washing facilities adjacent to nurse station

(5) The facilities, lighting and space for staff working areas are designed according to occupational safety and ergonomic design requirement

59.   Fever cohort room in GOPC

(1) Fever cohort room is a stand-alone room for receiving high risk fever patients. It should be equipped with relative negative pressure

(2) Uni-directional airflow and non-recirculated exhaust air.   It should not be connected to the staff corridor.

(3) Located in area when patient transport would not disturb OP procedures;

(4) Hand washing facilities according to infection control guidelines for fever cohort room;

(5) Relative negative pressure switching on and off control is required. Pressure monitoring devices with alarm function should be installed outside the fever triage room

(6) Air change frequency, temperature and humidity control follow latest infection control standard

(7) Wall-mount piped medical vacuum (suction), oxygen supply outlets and a control panel for lighting, nurse call, PABX telephone should be provided

(8) CCTV monitoring without recording is to be provided.

60. Resuscitation room next to GOPC or ROPC

(1) Resuscitation rooms should be next to the nurse stations of GOPC or ROPC

(2) There should have secured access by staff only and accessible by wheel chair, stretcher and mobile X-ray

(3) It will be equipped with life-saving and vital signs monitoring equipment including pendent, examination light, head-side working bench with sink and cabinet and trolley parking and hand washing basins along both sides

(4) The room will have temperature control. There will be oxygen and suction provision, Wi-Fi access, telephone system, multiple power sockets, computer ports, CMS work station with X-ray viewing system and power supply for mobile X-ray

(5) PTS stations will be located nearby and accessible to the resuscitation room

(6) Conceptual layout of a resuscitation room -
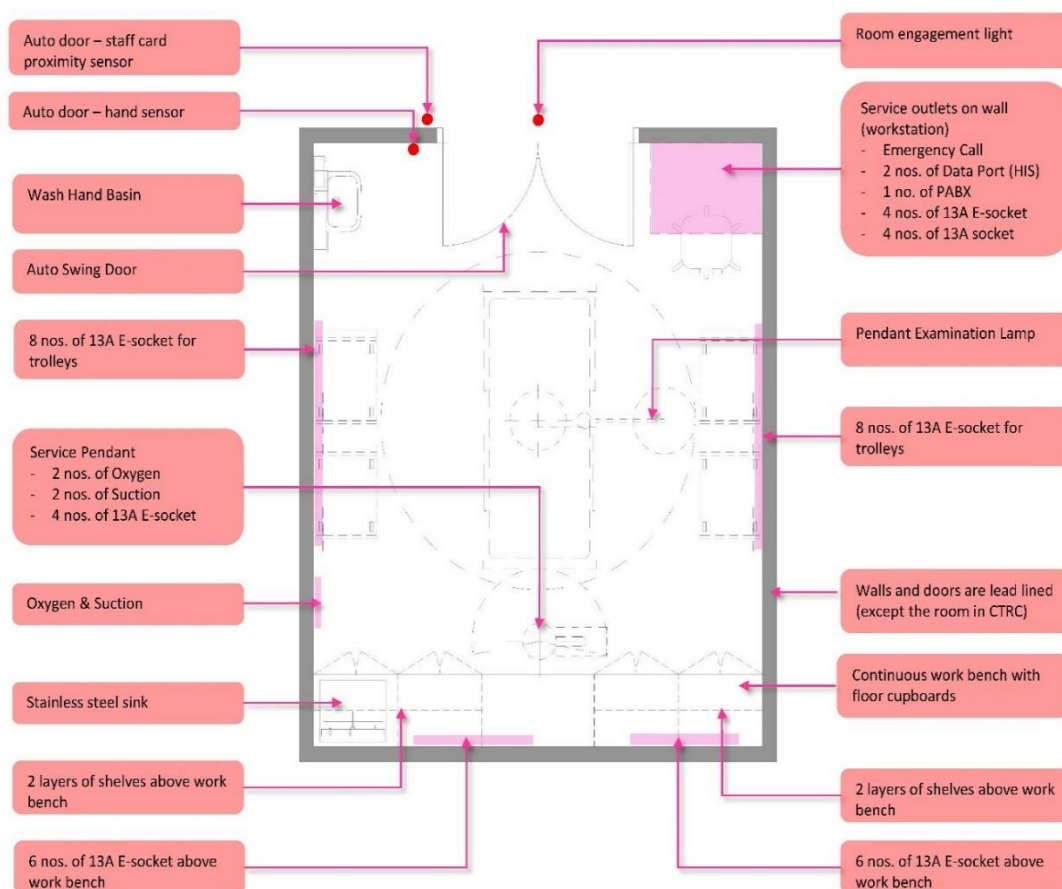
61.   Helpdesk cum nurse station

(1) It is a multi-purpose workstation to provide a one-stop service

(2) Apart from general enquiry function, it provides administrative support to patients who may not be able to fully self-served themselves with the mobile apps throughout the care processes

(3) It should be located next to the entrance of OP consultation with direct visual monitoring of the entrance and all patient waiting areas

(4) Service provided include:

(a) Reception counters at OP consultation/intervention zones' entrances for visitor's general enquiry; and

(b) Support patients' registration, electronic payment, appointment booking, provision of care process information

(5) For patients that could not use the mobile apps for care process management, the station will assist the enquiring patients in checking and making arrangement for the next service step, printout the next step information, carrying out next appointment booking and completing electronic payment.   The automatic kiosks supplementing the helpdesk service on enquiry, registration, payment, information printout will facilitate a semi-self-service or assisted workflow

(6) Integrated space and associated BS provisions and equipment support e.g. computer workstations, power, data ports, telephone, barcode scanner, photocopying, printers

(7) For the helpdesks cum nurse station in GOPC and ROPC, PA system is to be provided to enable announcement to the patient waiting area. This function is not required in the clinics for add-on market oriented services

(8) Conceptual layout of a typical helpdesk cum nurse station -
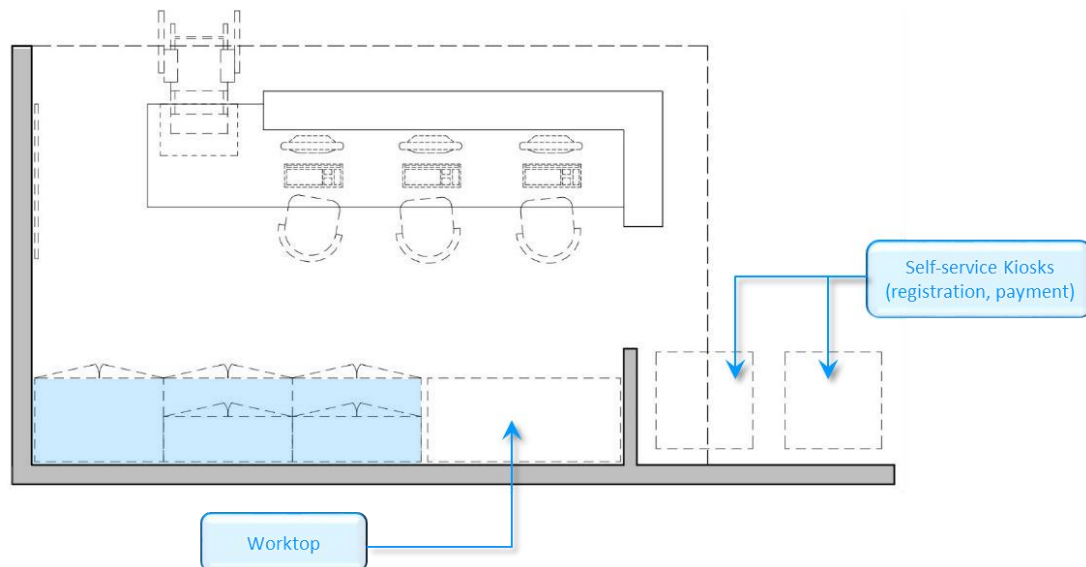
62. Nurse station

(1) Nurse stations are located in each GOPC, ROPC and intervention zone of all clinics.   They principally serve the following functions:

    (a) Nursing observation to patients attending the clinic and in waiting

    (b) A nursing hub to support -

        i. the nearby work areas including triage station of GOPC, assessment room, treatment room and resuscitation room

        ii. A nursing hub to support the operation of the clinic including the intervention rooms.

(2) Open-plan layout approach for workstations design planning to optimise working space utilisation behind front desk with direct open access to staff corridor.

(3) Open-plan arrangement provides maximised visual connection between the station and all patient waiting areas and function rooms of consultation and intervention zones for close monitoring of all relevant activities.   It should preferably at a more central point with unobstructed view towards all patients and activities happened within the zones.

(4) The nurse station is programmed to function in an expanded role in supporting the clinic operation.   It will incorporate storage for

frequently used medical supplies, medications, dangerous drugs, linen, stationaries and equipment. Space will also be provided for equipment trollies, and hand washing facilities.

(5) Every nurse station should cater for at least three computer workstations (one CMS with dual monitors, 2D bar code printers and printers, one ADS, and one standard computer), CCTV monitors. Access to systems will include security system (e.g. door control), patient facilities control (e.g. temperature control), and patient administration (e.g. appointment booking/payment and service ordering (e.g. portering, AMR alert/location).

(6) Communication devices e.g. nurse call system, emergency call system and PABX telephone system. PA system is to be installed in the nurse stations of GOPC and ROPC.

(7) PTS stations will be located nearby and accessible to the nurse station area in the consultation zones.

(8) The facilities, lighting and space for staff working areas are designed according to occupational safety and ergonomic requirement.

(9) Various alcoves (E-trolley, Alcove – Medical Records Trolley, Alcove – Trolleys & Alcove – Support Facilities) can be incorporated into the space under the Nurse Station counter where appropriate to optimize spatial utilization.

(10) Conceptual layout of a typical nurse station at OP clinics -

Under Counter Parking Space for Crash Carts, Medication and Case Record Carts
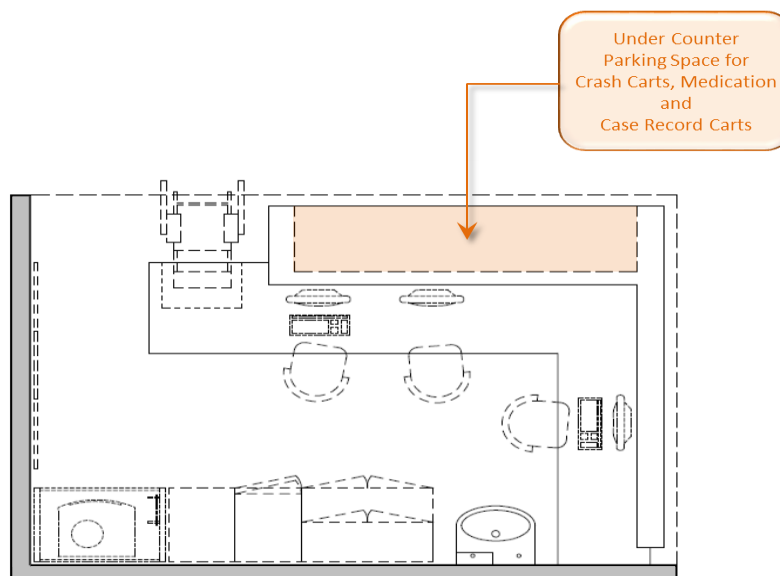
63. General/ record office

(1) To provide office cubicle, computer workstations, power and data ports, all loose furniture e.g. shelves/cabinets.

(2) To provide a tranquil environment by appropriate interior design in consideration of finishes' color, lighting colour and intensity for back office working staff.

64. Patient waiting area

(1) Patient waiting area for each consultation zone and intervention zone will be located centrally and shared among different service areas within the clinics.   They will be appropriately sub-divided into various sub-waiting areas catering the patient flow among different function rooms.   After registration and after each service provided, patients will be directed to the sub-waiting areas of respective clinical rooms to wait for the next service arranged.

(2) For GOPC and ROPC, a large LED display panel linked to QDMS is to be installed showing the overall queuing situation in each waiting area of the consultation and intervention zones of the two clinics.   PA system connecting individual consultation rooms, respective helpdesks and nurse stations broadcasting patient calls are to be provided.

(3) LED display panels connecting to central network are to be installed to broadcast hospital messages in all OP clinics.

(4) Provide comfortable seating furniture which are durable and easy to maintain.

(5) The waiting area should be welcoming and non-threatening.

(6) A safe and barrier free design of environment should be provided.

(7) Convenient access to public transport and lifts should be provided.

(8) Easy wayfinding and clear signage system should be provided.

(9) The interior design and layout planning will properly incorporate the play areas in an integrated manner.

65.   Play areas in GOPC and ROPC

   (1) The areas will be placed in between the different zones of patient waiting areas and be easily observed from nurse stations.

   (2) Finishes materials will be carefully specified for children in view of safety, hygiene and creation of harmonious atmosphere.

   (3) This item is a discrete open space specially for children patients' playing and relaxing activities from medical treatments.

   (4) To provide soft padding on sides of wall and soft flooring with play facilities.

   (5) There should be two parts with one part with design and atmosphere appealing to children of age between 1-3 and another part to children of age between 4-9.

66.   Other patient, staff supporting and utility facilities.

C.   AMBULATORY CARE ZONE

C1.   Day Procedure Centre

Overview of the department and services scope

1.   The CMH will provide a comprehensive range of CM services. Service types include pure CM, CM playing the predominant role with collaboration of WM services and ICWM services.

2.   The day procedure centre, including endoscopy centre ("EC"), MOT and, electrophysiology and respiratory assessment centre ("ERAC"), will support the CMH with WM consultation, diagnosis and treatment by providing a one-stop service for patients' early diagnosis, assessment, effective treatment.

3.   The day procedure centre will provide services to inpatients including CTRC, day-patients, and outpatients and provide services to patients with episodic, chronic, complex diseases, convalescence, rehabilitation, palliative care, health maintenance and preventive care and other disease categories.   The patients may be fully ambulant, or on stretchers and/or on wheelchairs.

4.   For the endoscopy and minor surgical services, the procedures could be conducted under local or regional anaesthesia or general sedation.   No general anaesthesia will be administered at the CMH.

5.   EC
   (1) For procedures such as oesophago-gastro-duodenoscopy, colonoscopy and bronchoscopy.
   (2) There will be two endoscopy rooms.

6.   MOT

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(1) For procedures such as biopsies, lumps and bumps excisions, wound debridement, joint aspirations and other minor surgical procedures.

(2) There will be two MOTs.

7.   ERAC

(1) For a wide range of neuro-electro-assessment services and lung function testing. Procedures such as electroencephalogram ("EEG"), nerve conduction velocity ("NCV"), electromyography ("EMG"), transcranial doppler, lung function tests could be conducted.

(2) There will be seven assessment rooms of various electrophysiology and respiratory functions.

8.   The day procedure centre will provide scheduled services during the business hours on sessional basis with extended operation as needed serving OP and ward patients.   The centre will also provide emergency services for patients under urgent clinical indications.

9.   Flexibility in design of zoning and arrangement of facilities will be adopted so that the regular services can be maintained at times where scheduled maintenance and/or renovation in the building and building services is needed.

External relationships and adjacency requirements

10.   The day procedure centre (EC, MOT and ERAC) will be located at Level 3 with convenient access for the patients and families by lifts.   It will have access control and will not be a throughway for other services.

11.   The MOT will be in close proximity to the CSSU facilitating the transportation of sterile supplies.

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12.   The ERAC must be located as far away from the radiology department as possible, in particular the MRI machine, to avoid signal interference.   With the same reason, it will not be located near places having moving metals which generates substantial electromagnet fields, e.g. elevators, escalators, generators, transformer rooms, mechanical and electrical plant rooms, vehicular roads.

13.   The day procedure centre has two circulatory routes supporting its function:

(1) Main public circulation route is for access to the day procedure centre by OP and patients' families.

(2) Internal circulation route for staff, escorted patients and material movement. The internal route provides connection of day procedure centre to other internal hospital units i.e. mainly for receiving patients from inpatient wards including CTRC and day wards, for easy access to staff facilities, and receiving service support from bulk store, WM pharmacy, laundry and CSSU.   L/UL zone outside the day procedure centre for bulk goods scheduled delivery by AMR is to be provided.   Back-of-house services including transfer of clean and dirty bulk items.   Clean and dirty passages are to be segregated.   Clean bulk items include receiving-in WM drugs and related pharmaceutical products, sterile supplies from CSSU, consumables and stationaries.   Dirty bulk items include wastes (domestic, chemical and clinical) and used linen for disposal.   All bulk items will be transported by AMR and supplemented by manual portering.

14.   OP with scheduled appoints could arrive the day procedure centre directly or first admitted as day-patients depending on the condition of the patients and services required.   They will approach the reception then directed to the designated waiting area and change clothes if needed. Upon completion of the procedure and recovery process, the patients will receive their discharge medications and instructions at the discharge

lounge then discharged home directly. Streamline workflow with the pharmacies will be adopted to facilitate the discharge process.

15. Ward patients will be escorted to the day procedure facilities on foot, by wheelchairs or stretchers via the internal circulatory route. They will go directly to the designated waiting area. Upon completion of the procedure and recovery process, the patients will be escorted from discharge lounge to his/her ward.

16. The planning and room adjacency of the day procedure facilities will follow the operational model within the department as follows –
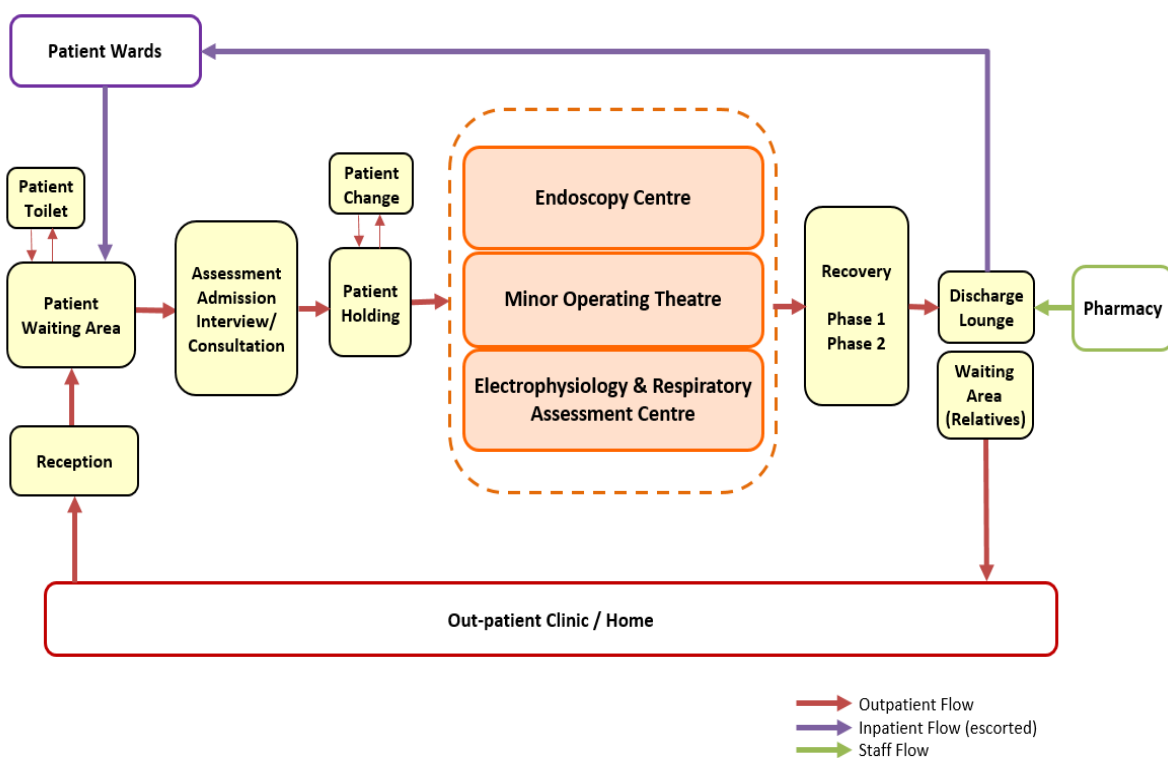
Internal relationships, operation flow and functions

17. The day procedure centre will be separated into different zones based on the functional areas:

   (1) Pre-procedure

   (2) Procedure

(3) Post-procedure

(4) General support

(5) Staff and administrative support

18. The procedure facilities (EC, MOT and ERAC) will be located and arranged in such way as to prevent non-related traffic through the suite and will share the pre- or post-procedure, general support, staff and administrative facilities. Process efficiency, for patients flow, staff workflow and instrument/material flow between different areas should be considered, enabling a simplified and clear wayfinding pathway for patients and staff.

19. There will be no cross traffic of staff and supplies from the contaminated/soiled areas to the sterile/clean areas. The flow of goods and personnel will not compromise universal infection control precautions or aseptic technique -

(1) Patient flow: from reception to procedure room and to Phase 1 recovery

(2) Instrument flow: Will be uni-directional from sterile/clean to dirty. That is, from sterile store into procedure rooms. Used instrument is flowed from procedure room to decontamination/washing area

(3) Staff changing will be arranged in a unidirectional flow, such that person entering from outside can change and move directly to the procedure rooms.

C2.   Central Sterile Supplies Unit ("CSSU")

Overview of the department and services scope

1.   The CSSU at the CMH will be a stand-alone unit providing high quality and central decontamination service for the whole hospital to assure patient safety through breaking the nosocomial infection chain. No satellite disinfection centre is planned at the CMH.

2.   The CSSU is responsible for collect, reprocess, and supply all reusable medical devices to all clinical areas (including the day procedure facilities, inpatient and day wards, OP clinics and intervention rooms, CTRC, laboratory, pharmacies) processing by steam sterilisation and thermal disinfection.   It will operate with appropriately segregated processes, meeting the infection control standard and effective environmental control.

3.   The CSSU will also support topping up services of sterilised, cleaned and disinfected medical devices and surgical materials/products (including sterilised instrument packs, linen packs, and dressing packs), and ad-hoc requests by departments.

4.   Generally, the CSSU will provide central sterilisation services during the business hours with extended operation as needed.   The actual operating hour and capacity will largely depend on the actual demands in future. Extended services to evenings, Saturdays, Sundays and Public Holidays may be necessary.   There will be adequate space and flexibility design.

External relationships and adjacency requirements

5.   The CSSU has two circulatory routes supporting its function:

(1) Main public circulation route is for access to the CSSU by authorised visitors. Depending on the design, the public circulatory route is not mandatory as patients and families are not required to approach the CSSU directly.

(2) Internal circulation route for staff and material movement. The internal route provides connection of CSSU to other internal hospital units i.e. mainly for receiving items requiring decontamination/sterilisation from wards including CTRC, day wards and OP clinics, day procedure centre and pharmacies, for easy access to staff facilities, and receiving service support from bulk store and laundry. L/UL zone outside the CSSU for bulk goods scheduled delivery by AMR is to be provided. Back-of-house services including transfer of clean and dirty bulk items. Clean and dirty passages are to be segregated. Clean bulk items include receiving-in items for decontamination/sterilisation, laundry supplies, consumables and stationaries from bulk store. Dirty bulk items include wastes (domestic, chemical and clinical) for disposal. All bulk items will be transported by AMR and supplemented by manual portering

6.   The CSSU will be in close proximity to the day procedure facilities, in particular, the MOTs, for transportation of clean and soiled items via separate entrances into the CSSU so that demarcation of dirty and clean area can clearly be separated as follows:

(1) Clean zone:

   (a) Offices

   (b) All rooms under SoA C2.2 Preparation & Assembly

   (c) All rooms under SoA C2.3 Process Holding

   (d) All rooms under SoA C2.4 General Support

   (e) Hot Air Dryer

(2) Dirty zone:

   (a) All rooms under SoA C2.1 Decontamination Area except Hot Air Dryer

7.   The entrance to CSSU's dirty zone for transporting soiled items requiring decontamination/sterilisation from day procedure facilities and other clinical areas will open into the decontamination area of CSSU and soiled items will be collected by designated CSSU staff.

8.   There will not be public/patient access to the CSSU.

9.   There should be access control and CCTV with recording function at all entrances and/or exits.

10.   All corridors and lifts involved in the transportation for CSSU items will be large enough to accommodate and allow rotation of the CSSU trolleys.

11.   To facilitate the supply of raw materials and consumables, CSSU bulk store and forward bulk store will be convenient to loading/receiving dock, hospital general stores and central transport.

Internal relationships, operation flow and functions

12.   Upon arrival in the decontamination area inside the CSSU, the soiled devices are sorted and washed in double–ended washer disinfectors.   Difficult and delicate instruments which are not recommended for mechanical washing will be washed manually.   All surgical instruments will go through ultrasonic cleaning to ensure thorough cleaning. After all items are cleaned and disinfected, they will be passed to the clean zone, Preparation & Assembly.

13.   Decontaminated area will be regarded as dirty zone with independent exhaust with filter to outside.   There will be a negative pressure gradient in the decontamination area in comparing with the

adjacent environment in the department.   Physical barriers will be installed by the supplier of the washer disinfector to separate dirty zone and clean zone during the installation of the washer disinfectors to prevent cross contamination of staff and the equipment.

14.   Material trolleys will be cleaned and disinfected in the trolley wash zone.   A cart washer will be installed to decontaminate the trolleys collecting dirty medical device from clinical departments.   The cart washer also will be a pass through design so that the disinfected trolley will be come out to be placed in the clean zone.

15.   All cleaned surgical instruments and medical devices will be held in Preparation & Assembly and when the volume of stock is large enough, arrangement for inspecting, assembling, testing and packing will be made.

16.   Clean linen and dressing items are packed in a separated packing room to prevent cross contamination.   This room's exhaust will have a pre-filter that can be cleaned and to ensure particles are trapped and removed.   The exhaust will be kept at the foot level to avoid generation of fibrous dirt all over the room.

17.   All packed items are sent for sterilization either by steam sterilization or low temperature plasma sterilization. After sterilization, items are placed in sterile store waiting for dispatching. The steam steriliser and low temperature plasma steriliser will be the pass through type where the packed items to be wheeled into the steriliser at one side and the sterilised items be drawn out at the opposite side of the steriliser so that the non-sterilised items will be physically separated against the sterilised items.

18.   The CSSU sterile store will have an independent air handling unit ("AHU"), with backup support and independent fresh air supply to this zone.   Room temperature has to be maintained to about 22°C and relative humidity ("RH") at 55%±10%RH.   The room will have temperature

and RH display for monitoring. Mechanical lifting device will be available for transferring heavy items. The sterile store will be free of window to prevent sunlight.

19.   All sterilisers have to be housed in an area (Process Holding) with plant room with holding areas for both pre-sterilised and cool down area for post-sterilised items. For installation of steam sterilisers, there will be a pit with at least 400mm in height below the floor level to accommodate the steam sterilisers.

20.   All staff working in CSSU will change to uniform to prevent carrying dust and dirt from outside. Those working in the decontamination area must not mix with staff from other areas of the department and will take off the PPE in the gown down area before going to the clean zone of the department.

21.   To assure infection control standard and patient safety, a computerised tracking system will be developed to keep tracking the whole reprocessing cycle of reusable medical device, which will also link the steriliser cycle number to each sterilised surgical instrument set so that product recall will be feasible.

22. Schematic diagram showing the operation workflow and spatial relationship among different rooms/ areas of the CSSU:

Flow of dirty items
Flow of clean items
Flow of sterile items
Staff access
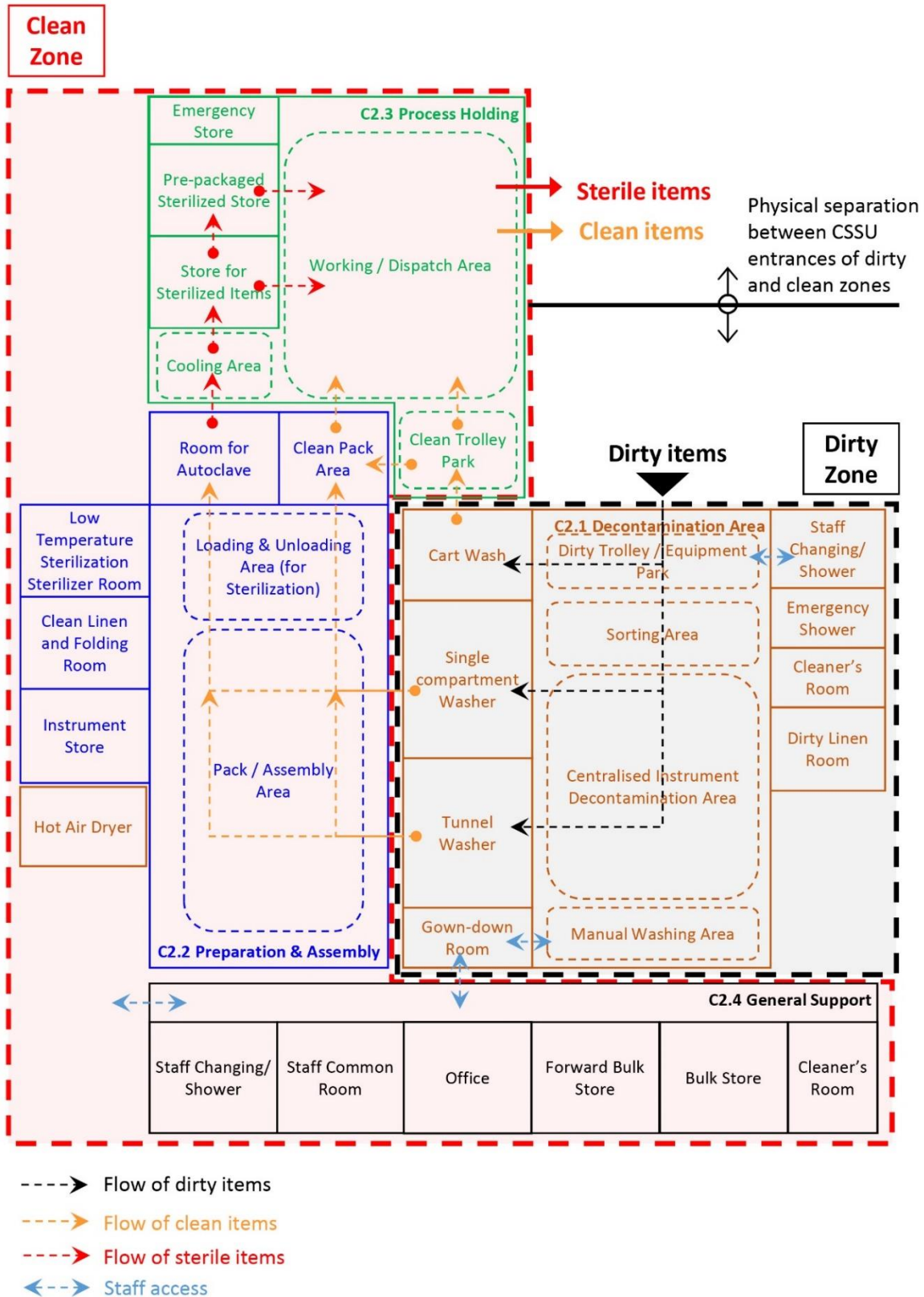
C3.   Integrated Rehabilitation Centre

Overview of department and services scope

1.   AH services and IRC aim to deliver therapies and rehabilitation, especially at early stage, to restore and maintain the optimal status of the patients, including patients' physical, cognitive and social function, allowing safe and timely discharge or transition to community/self-care. Although rehabilitation is a key focus, assessment, screening and health promotion activities will also be provided.   Furthermore, AH will support research at the CMH and providing quantifiable documentation of CM treatment on rehabilitation and recovery.

2.   The AH services at the CMH will be a CM-led integrated rehabilitation service achieving holistic care at different stages of patient care, assessment, diagnosis, treatment, outcome monitoring, as well as screening and prevention.   It will cover inpatient including CTRC, day-patient and OP, providing services to patients with episodic, chronic, complex diseases, convalescence, rehabilitation, palliative care, health maintenance and preventive care and other disease categories. Example of rehab programmes are neurological rehab, orthopaedic rehab, general medical/physical rehab, ante-natal and post-natal care.

3.   It is planned to be a one-stop integrated service for patients, where multiple team members co-treat a patient in a context-based setting, enabling the different AH professionals to work closely as a team, with staff moving in and out of therapy sessions as required.   The service can be delivered at -

(1) bedside in wards;

(2) satellite rehabilitation rooms on ward floors; and

(3) IRC at the AH floor.

4.   Different disciplines of AH services will be set up in the CMH in phases depending on the development of hospital services. Factors will include patient types, disease types and treatment protocols. AH disciplines may include –

(1) Audiology

(2) Clinical psychology

(3) Dietetics

(4) Medical social work

(5) Occupational therapy

(6) Optometry

(7) Physiotherapy

(8) Podiatry

(9) Prosthetics and orthotics

(10)   Speech therapy

5.   The IRC will be strategically designed as functional modules, rather than traditional departmental/disciplinary based setting.   Patients will receive a series of assessment and therapy modalities at different functional modules in the same outpatient session.   The overall planning is as follows –
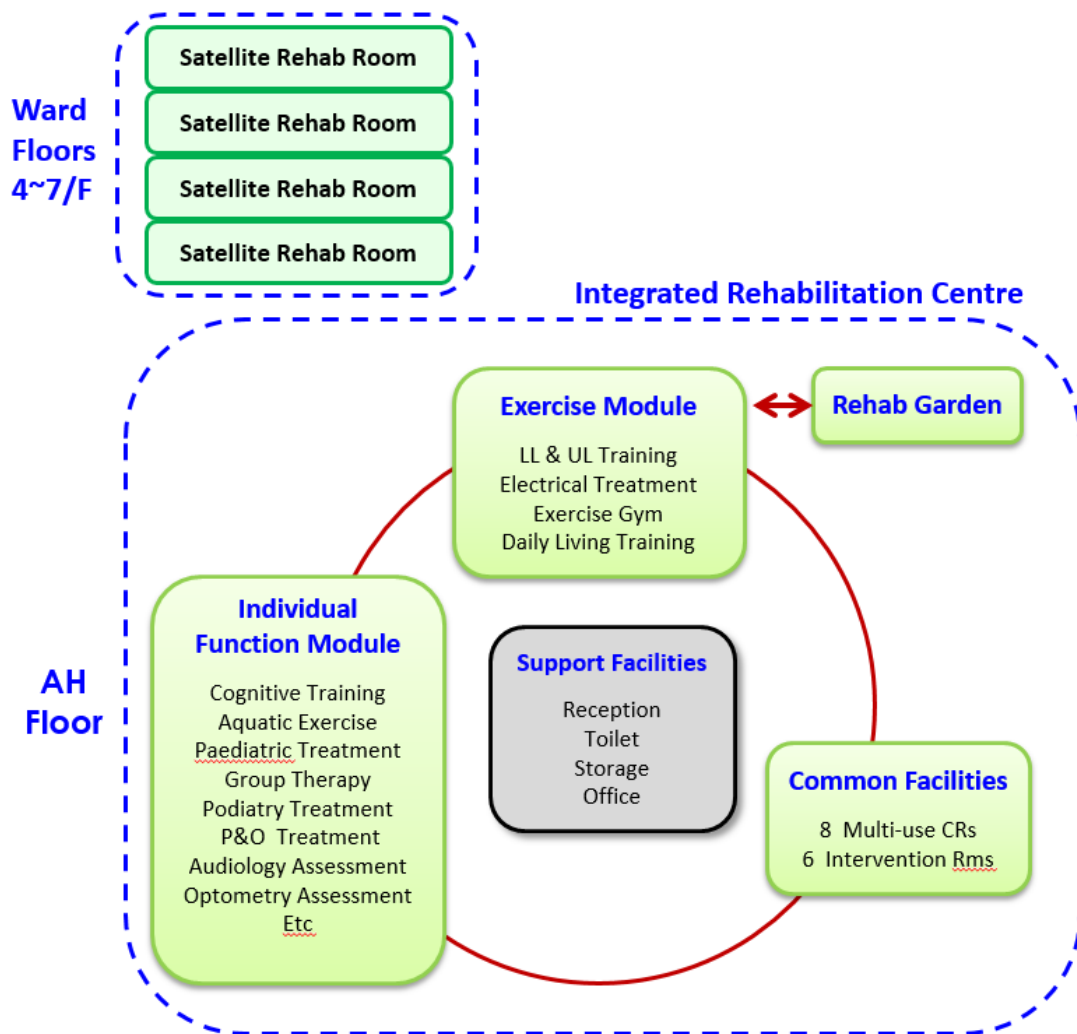
6.   AH will provide services at IRC during the business hours with extended operation as needed serving mainly OP, and also inpatients and day-patients.   Extended services to evenings, Saturdays, Sundays and Public Holidays may be necessary in future.   AH services at the satellite rehab rooms will be an extension of integrated rehabilitation for inpatients including CTRC and day-patients on ward floors, and will be available daily (and extended hours) in sessions according to patient need.

External relationships and adjacency requirements

7.   The planning and room adjacency of the IRC and satellite rehab rooms will follow the operational model as follows –
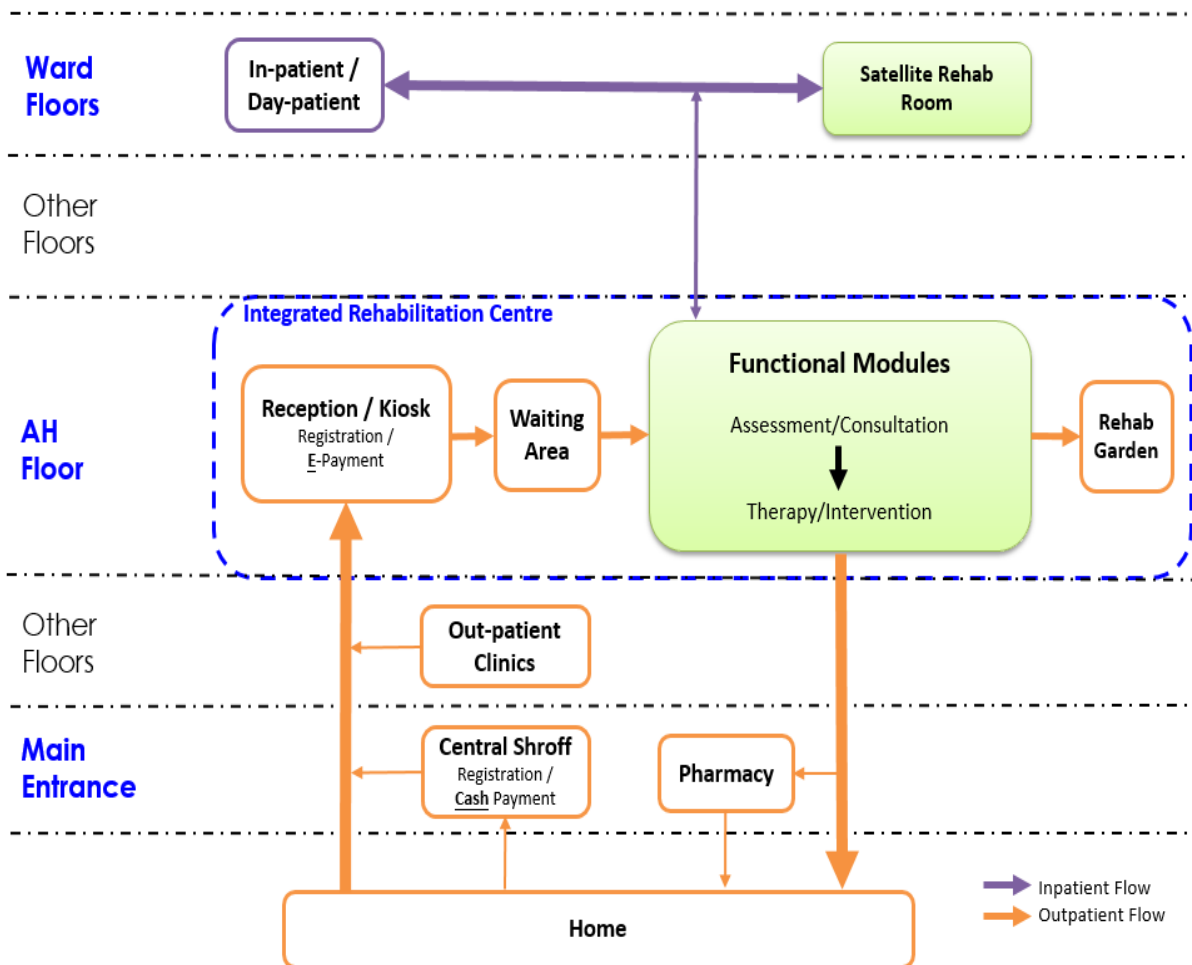
The IRC at the AH floor (Level 1)

8.　　Most of the patients served in the IRC are OP.　Patients may attend IRC after their clinical consultation in the OP clinics. The overall design and relationship and patients, staff, and material flow should be similar to OP clinics.

9.　　The IRC will have convenient access to OP, such as direct escalator and lift access from hospital main entrance and OP clinics to facilitate vertical transport.　The entrance should be barrier free and will accommodate wheelchairs.　It will be a relatively busy area and will not be a throughway for other services.

10.　　The IRC will also serve ward patients who need special AH services which are not available at the satellite rehab room.　These patients generally with more disability thus the route including corridor and door entrances from wards to IRC should be wide enough to fit hospital beds/stretchers.

11.　　The IRC has two circulatory routes supporting its function:

(1) Main public circulation route for access to the IRC by OP and patients' families.

(2) Internal circulation route for staff, escorted patients and material movement. The internal route provides connection of IRC to other internal hospital units i.e. mainly for receiving patients from inpatient wards including CTRC and day wards, for easy access to staff facilities, and receiving service support from bulk store, WM pharmacy, laundry and CSSU.　L/UL zone outside the IRC for bulk goods scheduled delivery by AMR is to be provided.　Back-of-house services including transfer of clean and dirty bulk items. Clean and dirty passages are to be segregated.　Clean bulk items include receiving-in WM dugs and related pharmaceutical products, sterile supplies from CSSU, consumables and stationaries. Dirty bulk items include wastes (domestic, chemical

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and clinical) and used linen for disposal.   All bulk items will be transported by AMR and supplemented by manual portering.

12.   IRC will have convenient access to the rehabilitation garden for outdoor rehabilitation need, encouraging patients' natural progression from rehabilitation in the enclosed areas of a department/gymnasium to going home.   The garden will be partitioned from public use during therapy sessions.

13.   OP will first register and make electronic payment if needed either through patients' own mobile devices or at the helpdesk or kiosks nearby, or through central shroff at ground floor should cash payment is involved.

14.   The IRC patients will have convenient access to the pharmacies.

The satellite rehabilitation rooms at Levels 4 to 7

15.   Satellite rehabilitation is an extension of AH services to cater for ward patients with frequent rehabilitation need such as PT and OT therapies.   It will be of shared-use by all AH professions.

16.   There will be four satellite rehab rooms, one on each ward floor, with direct access to and from all wards of the same floor.   This will allow horizontal transportation of patients, so that vertical transportation can be kept to a minimum, thus facilitating patient convenience and necessary nursing supervision.   The satellite rehab rooms will be located at:

(1) Level 7 – for four special wards (Wards C, D, E and F), total 125 beds;

(2) Level 6 – for two general wards including four HDU beds (Ward A and B), total 125 beds;

(3) Level 5 – for the general day ward and special day ward, total 90 beds;

(4) Level 4 – for the paediatrics wards (40-bed; combined general and

special patients; inpatients and day-patients) and the CTRC (20-bed), total 60 beds.

17.   Each satellite rehabilitation room should be adjacent to the multi-purpose activity room on the same floor with removable partition in between, which could be combined into one large area when necessary. There should have minimal number of columns allowing visual monitoring of all patients.   The rooms should have direct access for patients from all wards on the same floor.

18.   Ward patients who require special AH assessments and treatment which are not available at the satellite rehabilitation rooms will be escorted to the IRC on foot, by wheelchairs or stretchers/ hospital beds via internal circulatory route.

19.   For back of house services, the satellite rehabilitation rooms may share same L/UL zones outside the wards on the same floor for bulk goods scheduled delivery by AMR.

Internal relationships, operation flow and functions

The IRC at the AH floor (Level 1)

20.   The IRC will have functional modular design, rather than traditional departmental design, to facilitate integrated and team-based service for assessment and rehabilitation of patients.   The design should be flexible and optimise the utilization of space.   The IRC will be separated into the follow functional areas:

(1) The rehabilitation zone composes of sub-sections characterised by bodily functions enhancements such as upper limb, truncal and gait using special equipment and adaptive training for daily living connecting to the rehabilitation garden.

(2) The consultation and intervention zone is for individual patient assessment and interventional treatment with a variety of

interventional modalities.

(3) The group activity zone is for conducting group training activities. One of the activity room is tailored for paediatrics age group.

(4) Special equipment zone is for housing specific equipment requiring special physical set up and infrastructure provision such as hydrotherapy room and cognitive function training room.

(5) A workshop and special assessment zone is for prosthetic and orthotics, audiology and optometry services.

(6) Office, staff and supporting facilities

21. In principle, inter-disciplinary approach will be adopted with shared use of all zones, whereby multiple AH professionals will arrange services to patients in one time slot in order to provide a one stop service for the patients wherever or whenever possible.

22. The planning and room adjacency of the IRC will follow the zoning diagram as follows –

Integrated Rehabilitation Centre
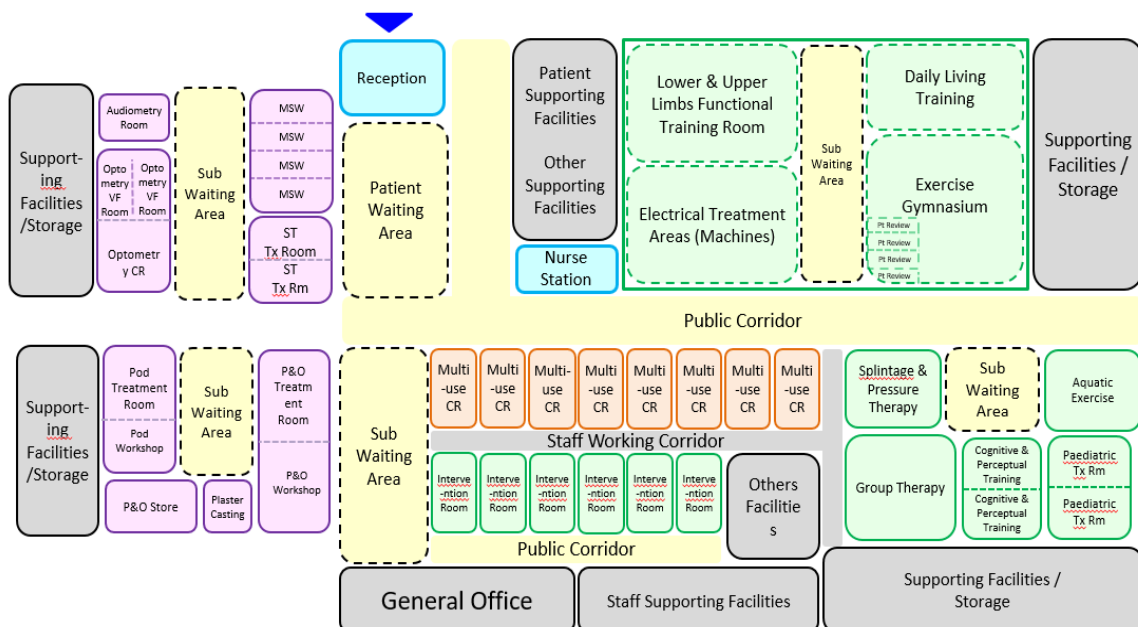
23.   Entrance and Reception

(1) Will have separate entrances for ward patients and OP, both entrances should have access control.

(2) Ward patients will be directly transported to the designated therapy area. Operation logistics will be arranged such that minimal waiting time will be required. The clinical escort will stay until the patient is handed over to the allied health staff or rehabilitation team

(3) Outpatients will have easy access from the main lobby, outpatient clinics, and central shroff to the AH reception.   The reception should have at least one accessible counter and induction loop. There will be automatic kiosks nearby supporting registration, electronic payments and inquiries.   There will be queuing area for 5-10 persons.

(4) L/UL zone for AMR will be provided outside the internal entrance. Please refer to Part III of this brief for AMR detailed operation requirement.

24.   Waiting area and sub-waiting area

(1) The main waiting area

(a) Patients, families and relatives after registration will wait to be directed to respective treatment zones.

(b) Will be located next to the reception

(c) Will provide approx. 30 cushioned seats and 10 parking bays for patients on wheelchairs

(d) Will allow space adequacy and smooth circulation.

(2) The five sub-waiting areas

(a) For waiting patients in the process of multiple AH assessment and therapies, such that patients will be going between different functional zones in the same session

(b) Will be strategically zoned against different functional modules

(c) Will allow adequate space for patient waiting and queuing in

an ordered manner

(d) Will have clear wayfinding, such as colour coding or special themes

(3) All waiting areas should have

(a) QDMS to display and manage queue status for patients who are waiting for consultations / assessments / therapies

(b) Oxygen and suction points

(c) LED display panels connected to hospital network

(d) Display area for posters or other education leaflets / booklets

(e) Public Wi-Fi provided for patients or carers

(f) Space for wheelchair/stretcher parking

(g) Power socket and water point for water dispensary of hot and cold water

25.   Lower and Upper Limbs Functional Training Area

(1) An open area with equipment for upper and lower limbs rehab training, adequate safety zone, circulation space and power sockets for each equipment should be allowed.

(2) Will have adequate ceiling height to house equipment, special facilities, and allow walking up / down staircase.

(3) Will be free of column and has a staff working station allowing visual monitoring of all patients.

(4) A 6m ceiling-mounted track will be installed in the area for hoisting of patients and in assisted ambulatory training.

(5) A wall-mounted vertical metal frame for spring and pulley exercises.

(6) Staircase and ramp are required for ambulation and wheelchair mobility training.

(7) To house advanced mobility training equipment; weight bearing and vasomotor training equipment like tilt table, various standers,

walkers and standing wheelchair; fitness equipment, High-low electrical couches for examination, range of motion, strengthening and pain modulation.

(8) Two screened cubicles of 2m wide with high-low electrical couches to ensure patient privacy during assessment and treatment.

(9) Ceiling mounted LED display panels for projection of display linked with equipment.

(10)   Will have internal passages to the area.

26.   Electrical Treatment Areas

(1) An area specially designed for treatment using electrotherapy.

(2) Will be an open area adjacent to the Lower and Upper Limbs Functional Training Room and connected with internal passages.

(3) Corridor and entrance to the area and floor loading should be wide enough for passage of machineries should repair or replacement is needed.

(4) Will have at least the following cubicles (2,300mm height partition):

(a) two cubicles shielded for electro-magnetic signals to avoid possible interference to patients with special electronic implants such as cochlear implants.

(b) one cubicle to be non-reflective and lockable for laser treatment.

(c) four cubicles of 2m wide, with curtain tracks on all sides, each for one examination couch and electrotherapy equipment.

27. Exercise Gymnasium

(1) The exercise gym should be located within the open plan area composes of lower and upper limbs functional training, electrical treatment areas, daily living training and the exercise gymnasium, free of column for group exercises/therapies. It should have access to an area/corridor satisfying a 6-minute walk test, which requires a space for a walkway of 30m long straight path for patients to walk without interruption from cross traffic, free from furniture or other obstructions for assessing gross motor function and for video-taking gait pattern.

(2) Will have sunken floor to allow embedment of force platform in desired orientation to eliminate the un-necessary step up/down motions during gait analysis and re-education.

(3) Will have four patient interview/ review stations in an open plan to facilitate patient flow from consultation and review to therapy.

(4) Will have a staff working station allowing visual monitoring of all patients.

(5) Will be adjacent to the lower and upper limbs functional training room and electrical treatment areas.

(6) Will be used for therapeutic physical exercise group such as Tai-Chi (太極)、Qi-Gong (氣功)、「五禽操」、「八段錦」 etc.

(7) At least two out of four sides of the room will have floor to ceiling height mirror.

(8) Will have hand-rail installed on at least two sides of the gym.

(9) Will have four nos. of ceiling mount LED display panels connected with the hospital network.

(10) Will have internal passages to the Exercise Gymnasium.

28.　　The lower and upper limbs functional training room, electrical treatment areas, and exercise gymnasium should be linked together in an open plan with open access to allow flexible use of space, placing of equipment, and smoothness of patient flow.

29.　　Rehabilitation Garden

(1) For patients to participate in out-door rehab training under supervision of therapists.

(2) Will have two direct access entrances from the open plan area described above, preferable from the Lower and Upper Limbs Functional Training Room and the Exercise Gymnasium.

(3) Will be partially covered, design with ramps, hard-paved walking areas with adequate railing provisions for patient's safety.

(4) Will be partitioned for patients (with controlled access) during therapy sessions.

30.　　Daily Living Training Area

(1) For simulated daily living skills assessment, including pre-discharge assessment, and explorative learning with training conducted in a virtual environment. Training will also be extended to the family or carer to learn how to overcome the challenges in daily life in taking care of the patients.

(2) Patients will be trained to control the physical challenges in their daily living environment as well as dexterity such as switching on and off electrical appliances and lights, open and close window, curtains and doors etc.

(3) Will be an open area connecting different simulation modules, including model home, model kitchen with electrical stove and kitchen cupboards, and model toilet with shower and bath.

(4) Will have movable partitions to simulate different environments/areas for patients rehab and return to daily living.

(5) The various modelled facilities/furniture should have adjustable height to fit different working height.

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31. Aquatic Exercise Area and Shower place, Aquatic Area (Patient)

(1) The area will house two proprietary hydrotherapy tanks and associated water supply, drainage, and plant facilities. It will also house two whirlpools for localised upper and lower limb hydrotherapy.

(2) Will have shelves for linen and accessories.

(3) Will have convenient access from the linen store room.

(4) Will be directly connected to shower area, which should have individual shower facilities, changing area, locker and toilet, and should be able to accommodate different genders and accessibilities as appropriate.

(5) Will be easily accessible to staff toilet with shower cubicle and lockers.

32. Cognitive and Perceptual Training Room

(1) There are two cognitive and perceptual training rooms for individual patients for multi-sensory stimulation and training

(2) The rooms will be sound proof, equipped with cameras for recording the clients' performance and documentation of progress, and have light dimming provision.

(3) An engagement light system to be installed to avoid disturbance during assessment.

33. Splintage and Pressure Therapy Room cum Heavy Workshop

  (1) For fabrication of pressure garments, splints and other tailor-made appliances.

  (2) Will have two curtain partitioned cubicles for fitting of materials/devices for patients.

  (3) Will have hot water baths for preparing low temperature thermoplastic materials of both upper and lower limb splints.

  (4) Heavy Workshop will have -

      (a) partitioned with half glazed wall

      (b) controlled access and vision panel on door

      (c) 3-phase power supply for heavy duty equipment/machines

      (d) storage rack for various tools

      (e) emergency alarm connecting to nursing station

34. Paediatric Treatment Room

  (1) For various activities and will have child friendly design, safety and size fit and height considerations.

  (2) The two Paediatric Treatment Rooms should be adjacent to each other with removable partitions, which can be combined into a larger treatment room when necessary.

35. Group Therapy Area

  (1) The Group Therapy Area will be used for multidisciplinary / joint clinic, group training, as well as teaching and video taking.

  (2) It should be free of column, with standing height bench cupboard, wash hand basin, and equipment with AV facilities with recording function and engagement light.

36. Audiometry Room

  (1) For audiology assessment such as hearing tests.

  (2) Will house a proprietary audiometry booth and required equipment.

37.   Consultation Room / Visual Field Room (Optometry)

(1) For consultation and visual assessment.

(2) Will be connected through internal passage.

(3) The two Visual Field Rooms will

   (a) house multiple sophisticated equipment

   (b) have independent diming light control and temperature and humidity control

   (c) have adequate length without blockage/furniture for vision tests.

   (d) no window is preferred as a completely darkened environment is needed for certain eye examinations.

38.   Treatment Room / Workshop (podiatry)

(1) For examination, diagnosis, treatment and prevention of diseases and malfunctions affecting the human foot and its related or governing structures.

(2) Will be connected through internal passage and located relatively close to lift lobby as patients often have ambulating difficulty.

(3) Treatment Room

   (a) entrance will be wide enough for passage of wheelchair and stretchers

   (b) adequate dimensions to house a podiatry couch and associated circulation space in all directions.

   (c) have increased air flow and exhaust standards for tighter infected control.

(4) The workshop should have 3-phrase electricity and stainless steel sink.

39.   Plaster Casting/Measurement Room / Treatment Room / Prosthetic/Orthotic Fabrication Workshop / Store -Equipment/Machine Store

(1) For on-site clinical P&O treatment, such as adjustment and emergency repair of P&O appliances

(2) Will be connected through internal passage and located relatively close to lift lobby as patients often have ambulating difficulty.

(3) Treatment room entrance will be wide enough for passage of wheelchair and stretchers

(4) Plaster Casting/Measurement Room

    (a) will have sink with plaster trap, hot and cold water supply.

    (b) will also house the Computer Aided Design/Computer Aided Manufacturing (CAD/CAM) system, which will link to an electronic format and provide digital data base for further development.

(5) Prosthetic/Orthotic Fabrication Workshop

    (a) Connected to plaster casting/measurement room with half glaze wall, and vision panel on door entrance.

    (b) Will have 3 phase electricity supply for heavy duty equipment/machineries, sink with plaster trap, non-slip flooring, hot and cold water supply, air exhaust system / hood, storage rack for various tools, and emergency alarm connecting to nursing station.

(6) Store - Equipment / Machine

    (a) Will have 24-hr A/C provision.

    (b) With back door connected to staff corridor and shared use with other AH as necessary

40. Speech Therapy Treatment Room cum ST Office

(1) For assessment and management of communication / swallowing disorders

(2) The two rooms will be located in a relatively quiet area of the IRC.

(3) Each room will be sound proofed.

(4) Entrance will enable access of stretchers

(5) Will have wall-mounted oxygen and suction outlets, no window is preferred.

41. Office – Assistant Social Work Officer

(1) For counselling of patients and families through casework and group work.

(2) The four rooms will be located in a relatively quiet area of the IRC.

42. Consultation cum Teaching Room (multi-use)

(1) There are eight consultation cum teaching rooms multi-use which will have generic design for shared use by AH, CM and WM professionals (such as dietitian, clinical psychologist, joint consultations).

(2) These rooms will have dual access, externally by patients and internally by staff, and located in relatively quiet area of the IRC.

43. Intervention Rooms

(1) There are six intervention rooms with generic design for shared use by all AH professional to provide therapies/interventions.

(2) They will have flexible design to also support integrated AH, CM and WM interventions/therapies, such as bone-setting/ tui-na/ acupuncture/ cupping integrated with mobility training program.

(3) Moxibustion will not be provided in IRC as special exhaustion facilities would be required.

(4) Two of the rooms can be combined into one larger room with removable partition when necessary.

(5) The rooms will have dual access, externally by patients and internally by staff.

(6) Will be close to patient toilet, changing and shower (Female/Male/Disabled).

44. Other patient, staff supporting and utility facilities

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Satellite rehabilitation rooms (Levels 4 to 7)

45.   Satellite rehabilitation rooms are extension of AH services to cater for patients of the same ward floor with frequent PT and OT rehabilitation need, for physical re-conditioning, mobility training, cardio-pulmonary rehabilitation training, as well as prosthetic and orthotic devices fitting and training, group educations, carer training etc.

46.   Glazed partition to allow supervision from ward's staff.   Floor will be non-slippery and low resilience for preventing fall-related injury. Opening width to all zones within the Satellite Rehab Room will be accessible by wheelchair.

47.   The four satellite rehabilitation rooms will be shared use by all AH professionals, and will have similar workflow for patients, staff, and goods. Each room may incorporate special themes or designs, and may situate specific facilities or equipment to cater for different type of patients on the corresponding ward floor: -

(1) 7/F – for inpatients receiving add-on market oriented services;

(2) 6/F – for subsidised inpatients;

(3) 5/F – for day-patients receiving both subsidised and add-on market oriented services;

(4) 4/F – for paediatrics patients and individuals on CTRC.

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48.   To best utilise these generally large open areas, the zoning of the Satellite Rehab Rooms will follow the operational model as follows -
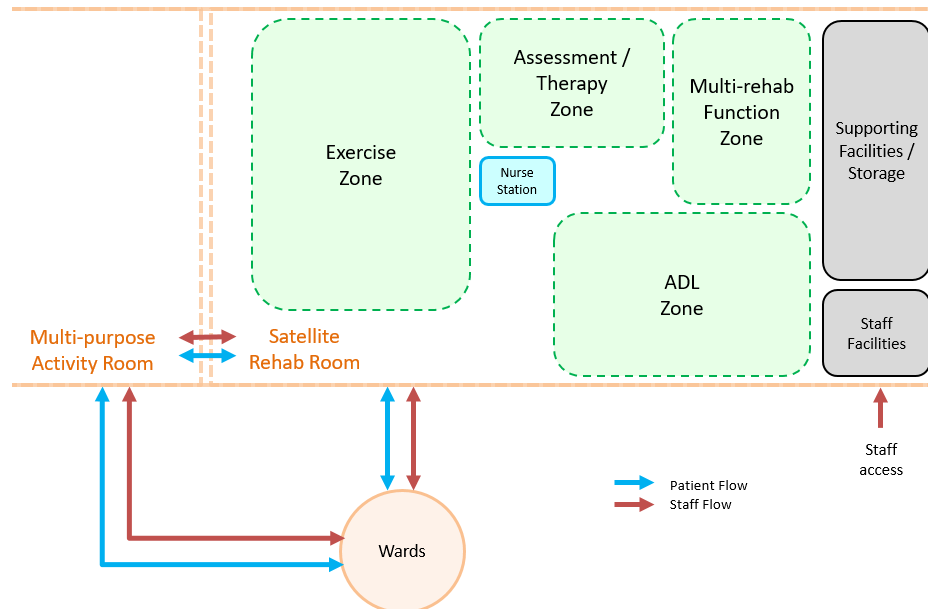
49.   Exercise Zone and ADL Zone

   (1) Power-controlled ceiling hoist systems will be provided for patient mobility training. The ceiling height will be at least 3,000mm for the installation of ceiling mounted power operated hoist.

   (2) Wall mounted heavy equipment like wall bars, ceiling exercise frame, OB pulleys will be installed.

   (3) Adequate power sockets on wall and floor will be provided for the operation of ergometers, treadmills and various equipment.

   (4) Adequate oxygen outlets are needed for these areas.

   (5) Water supply and floor drainage point will be provided for the installation of ice-making machine and hot pack machine for therapeutic use.

   (6) Adjustable height work bench and table for various needs of patients with different working heights.

50.   Assessment / Therapy Zone

(1) For assessment, measurement, therapy, device fitting, etc, shared use by all AH, as well as CM, WM professionals when necessary.

(2) With flexible design and respect patient privacy

(3) Will be adjacent to multi-rehab function zone

51.   Multi-rehab Function Zone

(1) Will be used for multidisciplinary/ joint clinic, skill/ carer training, patient/ carer education, case conference, and video taking, etc

(2) With be partitioned from other zones and free of column within the zone

(3) Adequate oxygen outlets are needed for these areas.

(4) Will have flexible design, standing height bench cupboard, wash hand basin, and workstation with data port for CMS, equipment with AV facilities and engagement light

52.   Supporting Facilities / Storage / Staff Facilities

(1) Disabled toilet will be located in this room which is accessible to patients on wheelchair.

(2) Store room for shared AH equipment storage.

(3) Adequate workstations with CMS, adequate data ports and computer related hardware

(4) Staff common area and toilet.

C4.   Pharmacy Department

Overview of department and services scope

1.   The CMH pharmacy department has two pharmacies. The CMH pharmacy services are provided by a CM pharmacy and a WM pharmacy. The two pharmacies generally provide comprehensive pharmaceutical services for the CMH:

(1) 280-bed inpatient services;

(2) 100-bed day-patient services;

(3) Outpatient services of 1,000 ~ 1,200 attendance / day;

(4) Support of the CTRC (20-bed).
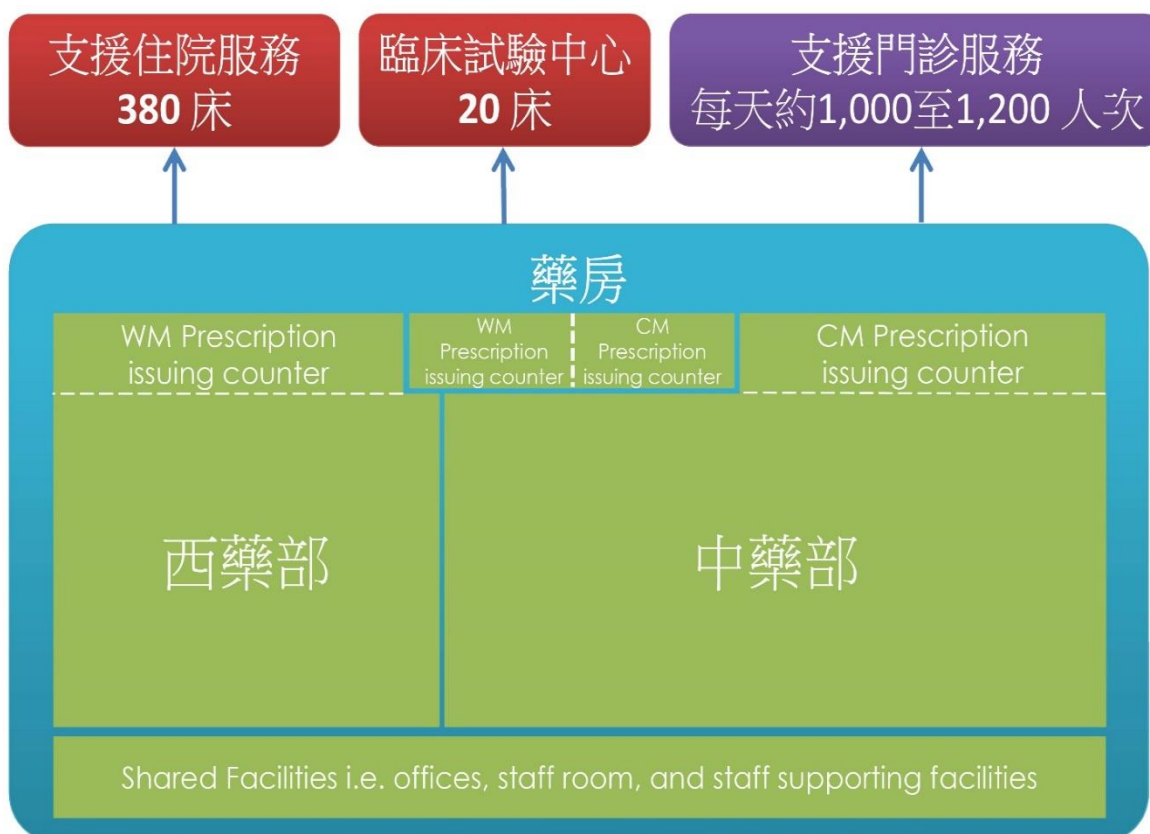
2.   Apart from serving medication provision for inpatients, day-patients and outpatients, the both pharmacies will also support training and research. The CM decoction and compounding facilities of the CM

pharmacy will also serve as formal training venue for CMPs and CM pharmacy personnel in view of traditional and genuine method and techniques of CM medication compounding from local and/or overseas institutions.

3.   The CM pharmacy services will handle herbal medicines, herbal granules, pCMs, decocted medications, and compounded medications. The WM pharmacy will handle drugs in different preparations and formats and other related pharmaceutical products.

4.   The pharmacy department centrally coordinate all matters pertaining to CMs and drugs and related pharmaceutical products respectively in the entire hospital. The responsibilities will include formulary review and maintenance, procurement, quality assurance; dispensing, decoction and compounding for CMs, supply and distribution, and ensure safe and effective use of CMs, drugs and related pharmaceutical products.

5.   The operation of the two pharmacies will adhere to the requirements of various ordinance and regulations, policies, procedures, Code of Practice laid down by Hong Kong SAR Government, Department of Health.

6.   Effective, accurate and efficient services provision are essential to ensure patient safety, effective clinical outcomes and quality patient services. The end to end processes from procurement, storage, prescription, dispensing, special preparation, supply and distribution of CMs, drugs and related pharmaceutical products to wards, other patient care areas and outpatients will adopt wide range of technologies including IT systems linking up work processes, business intelligence through data management, various automation including warehouse management system, automatic conveyor belt system, and AMR system, tools including barcoding, RFID, smart labelling, and smart equipment such as smart drug cabinets in the night pharmacy room etc.

7.   Appropriate patients' communication and counselling by professional staff is essential in the process of dispensing of medications to patients/carers. Drug and CMs information will be make available to patients and carers through electronic and other means. Pharmacy staff will provide education and advice to medical, nursing and other hospital staff on the purchase, and clinical usage of CMs, drugs and related pharmaceutical products.

8.   The pharmacy department will operate both morning and afternoon sessions from Monday to Saturday, and only morning session on Sunday and Public Holidays. It may extend services hours for outpatient, inpatient and day-patient services when necessary or in case of emergency. Normally, the pharmacy department do not operate overnight. Availability of essential medications at night time is supported through the night pharmacy arrangement.

External relationships and adjacency requirements

9.   Pharmacy department (Location)

(1) The department comprises CM and WM pharmacies generally provides services for procurement, storage, preparation, supply and dispensing of Chinese medicines products, drugs and related pharmaceutical products together with other relevant administrative services.

(2) Combinations of CMs and/or drugs will be dispensed to individual outpatients at the dispensing counters (both subsidised and add-on market oriented services), to inpatient/day-patient wards for patients under hospitalisation or on discharge, outpatient interventional areas for interventional therapy, CTRC for research patients and night pharmacy.

(3) It should be easily accessible to patients from outpatient clinics for add-on market oriented services and subsidised outpatient clinics i.e. ROPS on Level 1, and situated in close proximity to the

subsidised outpatient clinics i.e. GOPC on G/F.

(4) For patients coming back to pick up medications after completion of processing e.g. prescribed CM compounded preparations and CM decocted medicines (中藥湯劑), adjacency to hospital Main Entrance on G/F will add convenience to patients.

(5) Being located on G/F with direct and convenient public access. It will be a very busy area and will not be a throughway for other services and should stay away from busy traffic flow. Since high outpatient volume is anticipated, the patient waiting area for dispensed medications will specially be noted for space adequacy and smooth circulation.

(6) Payment for outpatients has to be made before collection of drugs. Payment method would be mainly through electronic means either by mobile applications, self-help kiosks or assisted by the helpdesks. If cash handling is required, payment has to be made at the shroff on G/F. Shroff counters cum office should be at close proximity to the pharmacy department.

(7) The main stores for CMs, drug and other related pharmaceutical products should be located together with the other components of the two pharmacies on the same floor. A supplies receiving area within the stores should be close to the loading dock on the same floor.

(8) The loading dock will have direct access by large sized delivery trucks for frequent bulk deliveries of CMs and drug supplies. The docking facilities will be provided with a covered and well drained loading and unloading bay.

(9) DG stores, while located in designated areas following statutory and FS (DG) requirements, are preferably to be easily accessible by the pharmacy staff. A discreet passageway for DG transportation, such as alcohol and medical gases, should be established between the pharmacy and the associated DG stores.

10. Medication transport / logistics within the Hospital

(1) The pharmacy department has two circulatory routes supporting

its function:

(a) Main public circulation route is for access to the pharmacies by patients and patients' families;

(b) Internal circulation route is for staff and material movement. The internal route provides connection of pharmacy department to other internal hospital units i.e. mainly for servicing inpatient wards including CTRC and day-patient wards, and outpatient clinics, for easy access to staff facilities, and receiving service support from bulk store. L/UL zone for bulk goods scheduled delivery by AMR is to be provided. Back-of-house services including transfer of clean and dirty bulk items. Clean bulk items include sending-out medications and supplies (CMs, drugs and related pharmaceutical products), receiving-in consumables and stationaries. Dirty bulk items include wastes (domestic and chemical) for disposal. The clean and dirty passages are to be segregated.

(2) All medications and supplies from the pharmacies will be transported by AMR or PTS to the designated wards, clinics and service areas supplemented by manual portering. The department should be serviceable by the goods lifts which are interfaced with AMR.

(3) PTS will supplement AMR transport system for ad-hoc supply of CMs and drugs. PTS stations must be located within the CM and WM dispensary areas (G/F) for efficient dispatch of supplies from pharmacies to inpatient wards including CTRC and day-patient wards, and outpatient clinics. PTS stations will be suitably located and will not be located in the middle of an operation area and disturb the dispensing workflow.

11. Other external relationship and workflow

(1) All prescriptions will be processed electronically. For outpatients and inpatients to be discharged according to current regulations, a printed prescription will be issued to patients for collecting the medications.

(2) Outpatients are required to present the prescriptions to pharmacy

department after settling drug charges to satisfy the legal requirement on pharmacy keeping a record of the prescriptions.

(3) Outpatients will wait at waiting area and queue up at the designated medication issuing counters for medication collection. QDMS will be provided here to display and manage queue status for patients who are waiting for prescriptions.

(4) For inpatients including CTRC and day-patients, medications will be dispensed to patients in the ward on patient discharge. For inpatients and outpatients, medication payment will be settled by electronic means from mobile devise. Inpatients could also be settled through subsequent billing. For CTRC patients: medication payment will be settled by billing to research organiser.

(5) Inpatients, day-patients and CTRC patients under hospitalisation or on discharge will receive their medications via AMR through scheduled delivery and PTS or manual portering on ad-hoc basis from the pharmacy to respective wards.

(6) Supplies to wards and outpatient clinics will be dispatched to the AMR Loading and Unloading Area outside the pharmacies for AMR pick-up and delivery to the receiving ends. Delivery could be supplemented by manual portering on ad-hoc basis. The two pharmacies will also receive hospital supplies through AMR from the bulk store. The two pharmacies will share the same AMR L/UL area. Considerable space will be required at the AMR L/UL area to accommodate the daily heavy transaction.

(7) Procurement staff will receive goods / supplies delivered by suppliers through the supplies receiving areas. They then will unpack, inspect, print receipt and adhere barcode labels (if necessary) and put goods to shelves inside the CMs store and WM drug store.

(8) Frequent disposal of packaging waste together with other domestic waste from the pharmacies will be needed. Drug returns from wards, drugs expired and other chemicals will be disposed as chemical waste. CMs returns from wards, CMs expired will be disposed as domestic waste. These wastes will be transferred manually to the waste collection point nearby and subsequently to

specific waste disposal points by AMR supplemented by manual portering.

(9) One night pharmacy equipped with "Smart Cabinet" will be set up at the general inpatient ward floor providing essential inpatient medications at night-time when the pharmacy department is closed. The stock in the night pharmacy will be refilled by the pharmacy staff when used up.

(10) Medicine preparation rooms will be provided at each inpatient / day-patient ward for temporary storage of medications delivered from the pharmacies. There could be a small ward stock of medications necessary for common ad-hoc patient usage. Facilities or equipment necessary for preparation or handling of medication before patient usage will be equipped.

Internal relationships between CM and WM pharmacies

12.   Diagrammatic layout of pharmacy showing internal relationships:
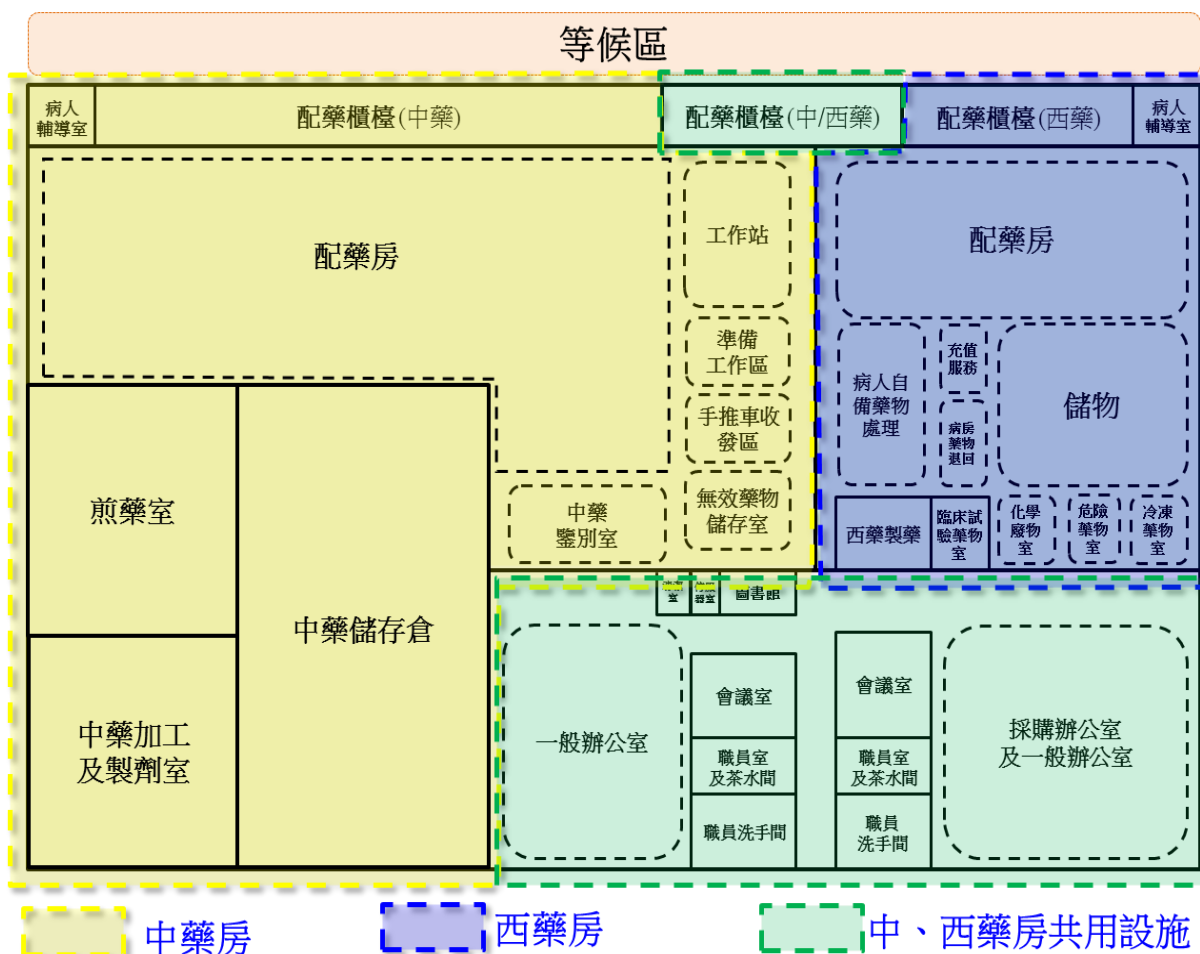
13.   The WM pharmacy and CM pharmacy are working side by side to serve patients with different pharmacy service's needs.

(1) Patients collecting medications from the pharmacy department may collect CMs and drugs at the same time for treatment of medical conditions. These patients will receive their medications and receiving counselling in the central dispensing counter in one go.

(2) The design of these counters with the pharmacies will follow existing regulations of Dangerous Drugs Ordinance (Cap. 134), Antibiotics Ordinance (Cap. 137), Pharmacy and Poisons Ordinance (Cap. 138) and Chinese Medicine Ordinance (Cap. 549) respectively. There should be lockable doors connecting this

central dispensing counter to the other sections of the two main pharmacies.

(3) Patients receiving either CMs or drugs can be served on respective counters of the respective pharmacies.

(4) WM pharmacy and CM pharmacy will share common back office and common supporting facilities with integrated workflow on procurement, quality assurance, information management etc. together with staff facilities.

CM pharmacy

14.	CM pharmacy operation mode

(1) The CM pharmacy will provide different types of CMs including processed herbal medicine, CMs granules, CM compounded preparations, decocted medicines and pCMs in forms of liquid, pills, tablets, ointments, etc..

(2) CM dispensing will assemble different types of CMs according to individual patient prescriptions and dispense to:

(a) outpatients (subsidised and add-on market oriented services) over counter;

(b) inpatient wards including CTRC and day-patient wards for patients under hospitalisation or on discharge.

(3) CM dispensing will assemble different types of CMs for replenishing supply:

(a) Outpatient clinics;

(b) Night pharmacy;

(c) Ward stock (Medicine preparation rooms) in wards.

15.	The CM compounding services are for preparing special medication preparation base on prescriptions. These preparations are usually not available commercially and only required in small scale. Both the compounding and the packaging of completed items into convenient dispensing packs are to be performed in a clean and up-to-standard

environment with guidelines in place to safeguard the process accuracy and safety.

16.   Decocted medicines will be a major CM medication provided for inpatients and day-patients. Decoction services of processed herbal medicine will also be provided for outpatients and discharged inpatients on request. CM decoction for external application of CM intervention will also be available for outpatient services. There is possibility that the decoction services and associated home delivery services for the outpatients or discharged patients could be provided through contracting out arrangement.

17.   CMs store will hold adequate stock of different types and forms of CMs. Specific requirements in space, security, temperature and humidity have to be met for fulfilling regulatory requirements and quality maintenance of stock items. CMs store will have major space requirement due to bulkiness nature of herbal medicines.

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18.   CM pharmacy overall operation flow diagram:

中藥部

運作模式
Operation Mode

IT support for queuing / payment / logistics (externally and internally) / admin./ patient information system

Supplier — Products / Local Storage

採購   送貨

CMH — Bulk Store / Working Store (Modular Design / Auto Refill)

配藥   煎藥   制藥

送往病房、門診病人自取、送往治療室

藥方訂單

外判煎藥中心   煎藥、制藥

送貨

病人指定地址
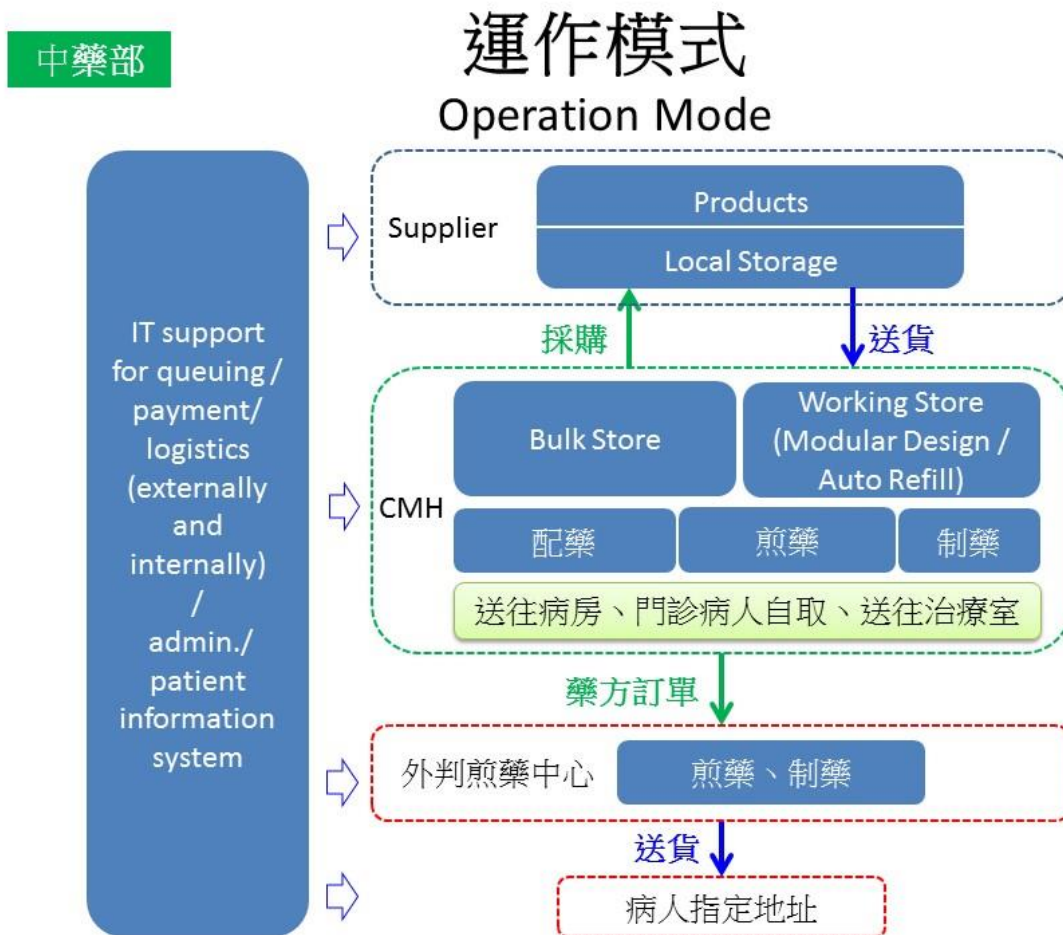
19.   CM pharmacy operation flow and zoning diagram:
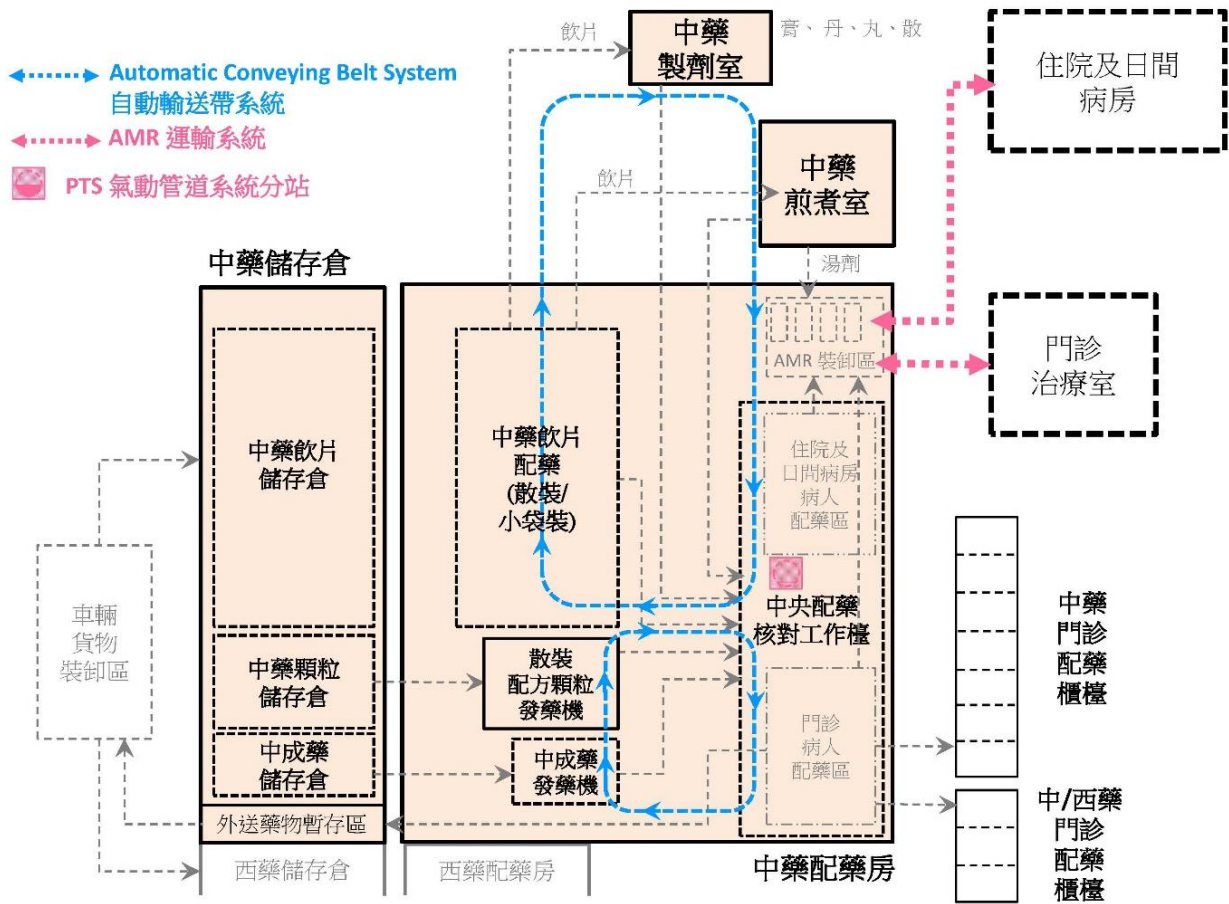
20.   Definition and format of CM medications:

	Term 用語	**Definition** 定義
(a)	Decocted medicines 中藥湯劑	Decocted medicinal soup prepared for individual patients according to the prescriptions given by CMPs
(b)	Processed herbal medicine 中藥飲片	The processed form of herbal medicine, which has passed through processing treatment under the guidance of Chinese medicine theories. The processed herbal medicine is usually being ready for dispensing for home decoction.
(c)	CM compounded preparations 中藥製劑	Compounded medication prepared for individual patients according to the prescriptions given by CMPs. The compounded preparations could be in forms of paste, ointment, pills or powders (膏、丹、丸、散)
(d)	CMs Granules 中藥顆粒	Proprietary CM medication in granule format.
(e)	pCMs 中成藥	Proprietary products which are composed of Chinese herbal medicines and/or materials with herbal/animal/mineral origins, and formulated in a finished dose form. They must be known or claimed to be used for the diagnosis, treatment, prevention or alleviation of any disease or any symptom of a disease in human beings, or for the regulation of the functional states of the human body. The products could be dispensed from the pharmacy and/or sold in the drug store without prescriptions.

CM pharmacy design concept, operation zones and relationship

21. The evolving practices and needs:

(1) The common practices and mode of operation of CM pharmacy is still under evolvement. There is no standard practice or experience that can be transplanted to the CMH.

(2) Automation and technologies are in development and adoption are mainly piecemeal for suiting individual situations and needs. The automation and technologies could also be CMs supplier specific.

(3) The CMH operation and service needs will also be evolving. It is anticipated that the CM pharmacy service needs both in terms of quantity and complexity will also be changing especially during the initial years after commencement of services.

(4) To suit the changing needs, the layout, workflow and equipment adoption have also to be evolving to suit the changing needs.

22. The requirement of a flexible design and architecture:

(1) The concept of "flexible architecture" will be adopted at CM pharmacy so that these areas are designed to be malleable to meet various operation model and needs over time. The architecture will also be able to cater the latest equipment and automated technology in the future.

(2) Flexible architecture will be implemented by means of open plan concept. The perimeter of these areas will be constructed with solid walls, which could be either block wall or dry wall to comply with the statutory requirements. The internal layout within the area will be partitioned with proprietary demountable partition as far as practicable yet complying with the statutory, performance requirement and international standard.

(3) All building services provisions such as MVAC, exhaust system, power, data will be provided from the ceiling void for connecting to the partition and equipment at locations which are subject to the operational needs. Water supplies on walls and floor drainage are to be carefully planned to allow flexible and easy access.

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(4) Sufficient structural loading will be allowed for the flexibility of special equipment following latest market availability and automation technology. The structural floor slab will be sunken to allow sufficient drainage fall ratio from any possible drain points at finish floor level to the waste stack so that any future change of room and equipment layouts could be accommodated by the building plumbing and drainage system without creating significant nuisance to other departments. Light weight concrete will be filled so that the finish floor level will be flushed with the main floor.

(5) The design should be zone based rather than component based to enable specific infrastructure tailored to individual zones' needs to cater for specific zone requirements but allowing flexibilities within zones.

(6) The CM pharmacy will adopt mostly loose furniture and equipment items so that relocation, re-assembling of the production line can be flexible without the need for alternation of physical structure. For the above purpose, easy access to infrastructure provision including electricity, computer port, lightning, water supply and drainage would be critical.

23.   The CM pharmacy will include a dispensary area, a CM decoction area, a CM compounding area, and a CMs store.

24.   CM dispensary area – General Set-up

(1) CM dispensary area is a central processing region of the CM pharmacy linking up with or servicing other work regions:

(a) Dispensing to wards and outpatient clinics, night pharmacy through the trolley dispatch/return area and PTS within the CM dispensary area;

(b) Dispensing to outpatients through the dispensary counters within the CM dispensary area;

(c) Dispensing to decoction area.

(d) Dispensing to compounding area

(e) Receiving supplies from the CMs store

(2) Medication Order Entry system would be used and appropriate computer trunking, data ports and computer related hardware and software should be prepared for.

(3) The dispensing process will adopt technologies such as automate dispensing for CMs granules, automated dispensing for pCMs, and manual workstations for dispensing processed herbal medicine. The three areas handling the three types of CMs will form three dispensing zones. Each with its workstations for handling prescriptions and gathering the medications. These zones will be connected through automatic conveyor belt system with sensor technology (e.g. Barcode, Bluetooth, RFID) installed for accurate and efficient operation of the pharmacy

(4) The dispensary area should be of an open space with the flexibility of erecting non-full-height partition as needed. Adequate floor loading will be allowed with clear headroom min. 4m (H) to cater the use of automation and, adequate data ports and power sockets for the IT and automation systems having certain power cords from ceiling zone.

(5) 24-hour A/C provision (essential power connected);

(6) Appropriate MVAC system with independent exhaust and filter for removing the powder and dust generated during the dispensing procedure of CM herbs and granules and, odour control.

(7) Appropriate numbers of drain outlets evenly distributed within the area and appropriate numbers of power sockets for computer system, large automation and small equipment such as dehumidifiers are required.

(8) The dispensary area should be blocked from natural sunlight.

(9) There should be sufficient hand washing facilities available around the dispensary area;

(10) The dispensary area will be free of column as far as possible;

(11) Senior staff of CM pharmacy office will be located inside the pharmacy and preferably in close proximity to the dispensary area to facilitate supervision and for ease of communication with the

whole department.

(12) The dispensary area will mainly be divided into six major sections:

(a) Processed herbal medicine dispensing area composes of six manual workstations connected with automatic conveyor belt system among themselves and to decoction area, compounding area and the central working bench area;

(b) CMs granules dispensing area equipped with automatic dispensing machines and connected to the central working bench through automatic conveyor belt system;

(c) pCMs dispensing area equipped with automatic dispensing machines and connected to central working bench through automatic conveyor belt system;

(d) Central working bench area for consolidating dispensed CMs, decocted preparations, compounded preparations according to individual patient prescriptions for dispensing to outpatients through the dispensary counters, day-patients and inpatients including CTRC through the trolley dispatch/return area.

(e) Dispensary counter dispensing medications on individual prescription basis to outpatients.

(f) Trolley dispatch/return area for consolidating medication supplies to other clinical areas

25. CM dispensary area –The processed herbal medicine dispensing area

(1) The processed herbal medicine dispensing area will be connected to the reception counter of the decoction area by a convey belt system sending over dispensed processed herbal medicine for decoction in the decoction room;

(2) The processed herbal medicine dispensing area will also be connected to the reception counter of the compounding area by a convey belt system sending over dispensed processed herbal medicine for compounding into different CM compounded preparations i.e. 膏、丹、丸、散 produced at the adjacent CM

compounding rooms

(3) The processed herbal medicine dispensing area will also be connected to the central working bench by a convey belt system sending over dispensed processed herbal medicine for individual patient prescription consolidation and subsequent dispensing to outpatients.

(4) The layout planning and operation flow of the CM processed herbal medicine dispensing area will depend on the operation model to be adopted. Two models are described below as a reference example.

Manual CM processed herbal medicine dispensing area

(a) Layout and operation flow diagram of manual CM processed herbal medicine dispensing area with workstations and automatic conveyor system (自動輸送帶系統):

中藥飲片
補充流程
(人手)

人手配藥模組
式工作站

工作檯

人手配藥

中藥飲片櫃

中藥飲片
補充流程
(人手)

◀┈┈┈▶ 自動輸送帶系統

藥方接收處及
數碼識別系統
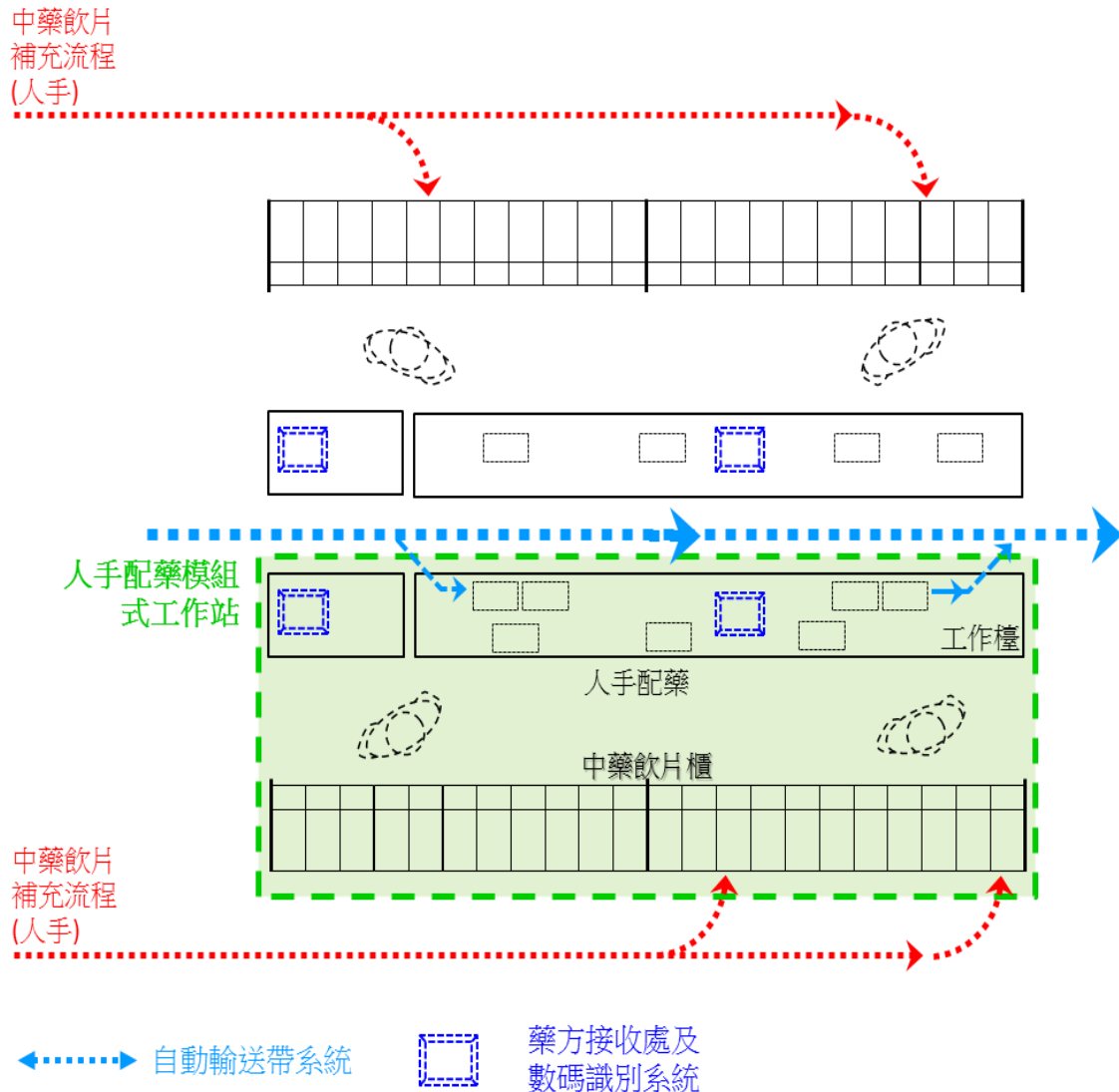
(b) Processed herbal medicine dispensing area will comprise around six nos. of modular workstations, tentatively. The workstations are connected with automatic conveyor belt system among themselves and to decoction area, compounding area and the central working bench area.

(c) Details operation model and sequence:

    i. Each modular workstation will be manned by two staff, each be responsible to assemble CM herbs according to individual patient prescriptions and support each other for accuracy checking. Each modular workstation will have one set of processed herbal medicine cabinet, one working bench and two sets of computers.

    ii. The two staff will share one set of processed herbal medicine cabinet and one work bench. One set of processed herbal medicine cabinet will have at least multiple compartments with two- sided access from front and back.

    iii. Each compartment within the cabinet will hold two stainless steel or plastic containers. Each container will hold one or a few items of CM herbs. The two containers are arranged in each compartment with one in front and one at back. The one in front if used up, can be taken out from the front and the one at back moved to the front. Refill of a new fully loaded container will be from the back. Thereby, always assuring continuous supply.

    iv. Each staff will have one set of computer workstation and barcoding equipment. The bench-top working area has to be adequate for assembling various herbs and for multiple doses of a treatment duration.

    v. The working benches will be connected by automatic conveyor belt system equipped with RFID sensors and the working bench has to provide areas for loading and unloading for respective processed and unprocessed products. CCTV with recording function will be installed above each staff's working area to help in herb identification and also for dispensing record purpose.

    vi. Processed products will be subsequently delivered to the CM decoction area (中藥煎煮室), compounding area and/or central working bench area (中央配藥核對工作檯) automatically guided by RFID and built-in functions of the IT system.

    vii. The dispensing working bench will have an independent air-suction system installed at underneath cabinet. The air-suction system is to reduce the particles in the air caused by the handling of herbs. The air-suction system will have filters and air can be recycled.

CM processed herbal medicine dispensing area using Automated medicine cabinet (自動中草藥櫃)

    i. Each set of automatic medicine cabinet is an Automated Storage and Retrieval System ("ASRS") with storage capacity of 300 to 500 kinds of processed herbal medicine. Several sets can be assembled to match the required capacity.

    ii. Each kind of processed herbal medicine is stored in one or several containers, and the number of containers for each medicine is depended on the frequency of retrieval and the volume of consumption of particular medicine.

    iii. The main function of the automatic processed herbal medicine cabinet is to bring in various processed herbal medicine through an automated system to the workstation of the dispensing staff for manual picking and weighting according to individual prescriptions. This system will enhance efficiency, reduce walking distance during dispensing and ensure dispensing accuracy of the whole process.

    iv. The layout plan and operation flow diagram of CM processed herbal medicine dispensing area with workstations and automatic conveyor system (自動輸送帶系統) are described below:
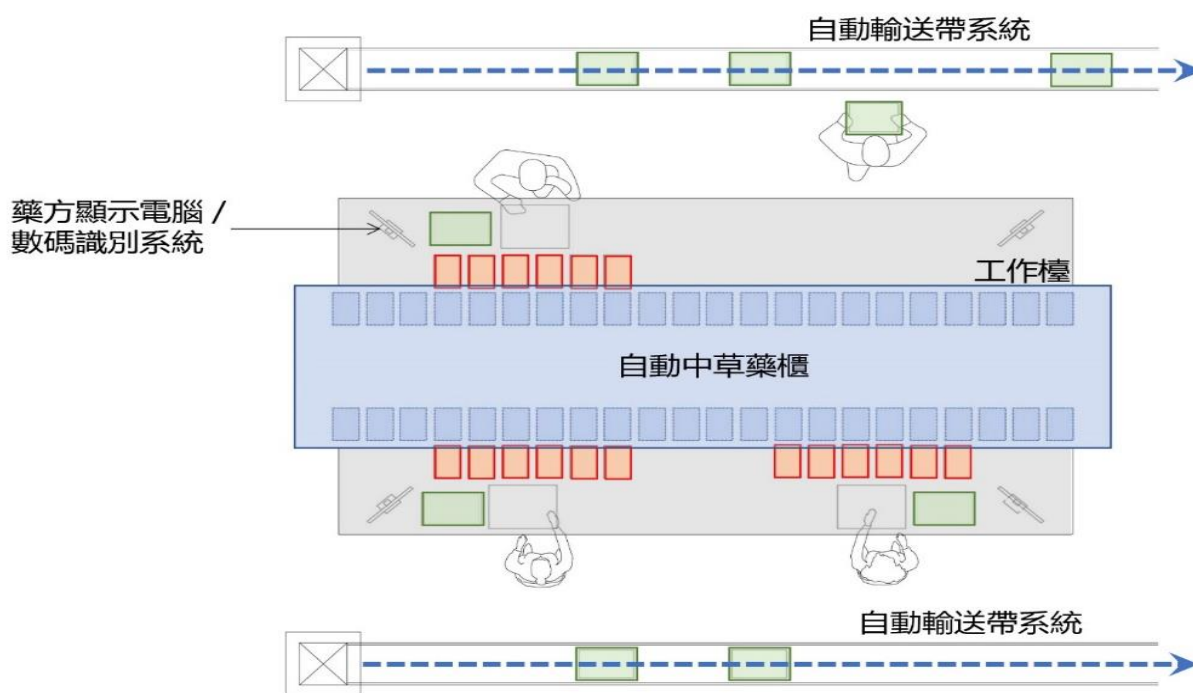
v. Each workstation will be manned by one dispensing staff operating a set of six container outlets tentatively. The two dispensing staff manning each of the two workstations will support each other in pairs. A total of 12 workstations are planned tentatively.

vi. The configuration of these 12 workstations could be in one long row or in two parallel rows next to each other.

vii. By day end, the ASRS could generate a list of containers requiring refill which will be ejected from the system for manual refilling.

viii. Other features in setting up the system including computer and barcoding / RFID requirements, conveyer belt system, work bench and CCTV arrangements, other accessary systems will be the same as the manual system described above.

26. CM dispensary area –CMs granules dispensing area

(1) CMs granules dispensing area will have two work stations. Each workstation will be equipped with one set of automated granule dispensing machines. The two stations are connected to the central working bench through automatic conveyor belt system sending over dispensed CMs granules for individual patient prescription consolidation and subsequent dispensing to outpatients, day-patients and inpatients including CTRC.

(2) Each station will have:

(a) One CMs granules automatic dispensing machine (裝配方顆粒發藥機)

(b) Two nos. granules dispensing table with an air-suction system installed at underneath cabinet. A set of computer system including main computer unit, monitor, keyboard, etc., and the label printer, barcode/ RFID scanner, and an electronic weight and granules mixer placed on and under each table.

(c) CMs granules cabinets/shelves next to the automatic dispensing machine as working store for multiple bottles of granules.

(d) Cupboard or drawers for storage of accessories including packing paper, labels and plastic bags

27.   CM dispensary area –pCMs dispensing area

(1) pCMs dispensing area will have one workstation. The workstation will be equipped with an automatic pCMs dispensing machines and connected to the central working bench through automatic conveyor belt system sending over dispensed pCMs for individual patient prescription consolidation and subsequent dispensing to outpatients, day-patients and inpatients including CTRC

(2) The workstation will have:

(a) One pCMs automatic dispensing machine (中成藥發藥機)

(b) One pCMs dispensing table having a set of computer system including main computer unit, monitor, keyboard, etc., and the label printer, barcode/ RFID scanner.

(c) One working bench for handling pCMs refill to the machine.

Cupboard or drawers for storage of accessories including packing paper, labels and plastic bags

28.   CM decoction area

(1) The decoction area will have one reception counter, one issuing counter, one decoction control IT system station, one decoction and packing area.

(2) The counters are open counters of the decoction rooms. The decoction and packing area is within the decoction room. Automatic decoction machines and packing machines are linked to the decoction control IT system. The decoction machines and the packing machines are linked for transferring decocted medicine from the decoction machines to the packing machines for packing.

(3) Overall layout planning and operation flow diagram of CM decoction area (中藥煎煮室運作模式):

中藥煎煮室

中藥飲片人手配藥

中央配藥核對工作檯

中藥煎煮機

工作檯

飲片

湯劑

住院及日間病房

AMR 裝卸區

自動輸送帶系統

數碼識別系統 RFID 標籤機

湯劑包裝機
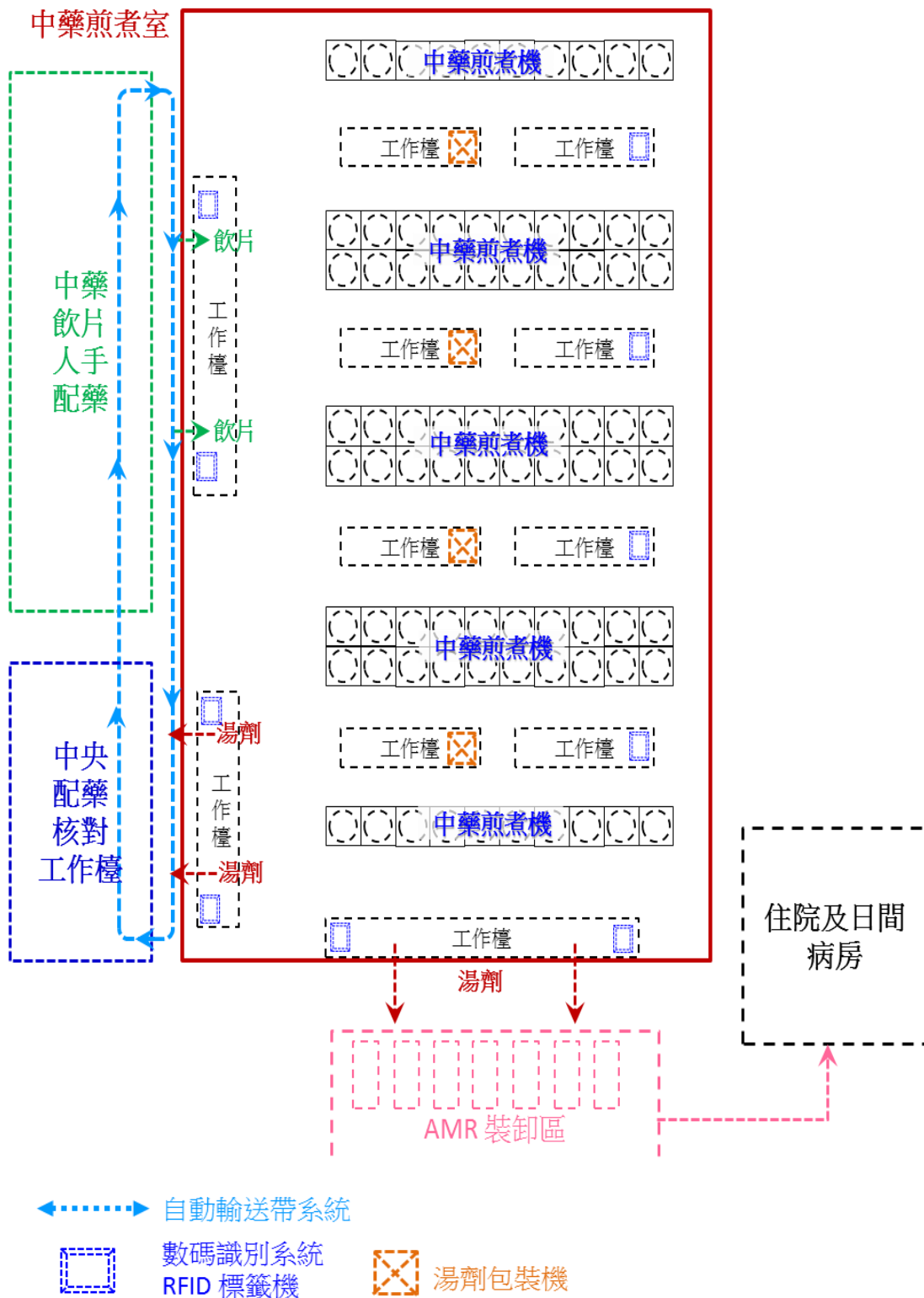
(4) General operation model and sequence:

(a) Prescribed processed herbal medicine packages with RFID tags will be transported from the processed herbal medicine dispensing area to the CM decoction area reception counter by automatic conveyor belt system with an unloading function to the counter. The counter will have a computer workstation with barcode and RFID functions.

(b) The herbal packs will be checked by dedicated staff and assigned with electrical decoction machines for decoction by the IT system;

(c) The checked herbal packs will be manually transferred to the allocated decoction machine for processing.

(d) The decocted medicines will be transferred automatically to linked packing machines（湯劑包裝機）for packing and labelling. The packed decocted medicines will be transferred manually to the issuing counter.

(e) The issuing counter is connected by automatic conveyor belt system to the central work bench area. The counter will have a computer workstation with barcode and RFID functions. Packed decocted medicine with be RFID tagged and transferred to the central working bench area.

(5) Reference images of decoction room:

東華三院李恩李鎏麟父子中央煎藥中心   韓國首爾江東慶熙大學校韓方病院

(6) Major CM decoction facilities catering the demand:

(a) Multiple electrical decoction machines (Large)

(b) Multiple electrical decoction cookers / pots (Small)

(7) Multiple working benches will be available for processing packing of decocted medicine from the decoction cookers / pots or for further handling of packed medicine after decoction from the decoction and packing machines.

(8) Large stainless steel sinks for cleansing of utensils

(9) Large stainless steel benches for placing of pre-cooked raw herbs and soaked raw herbs

(10) Sufficient cupboard or shelf for storage of necessary accessories

(11) Heavy duty non-slip homogeneous floor tiles.

(12) Effective floor drainage for frequent floor cleansing.

(13) Transportation with trolley should be easily operated inside the room

(14) Design consideration on ventilation system is required to ensure there would be ample ventilation to dissipate the heat and odours from the decoction processes. Installation of exhaust hood equipped with effective odour control provision such as water scrubber with hydrovent, electrostatic precipitator, carbon filter or equivalent filtering provisions considered as necessary should be provided to minimize odur before discharging to prevent nuisance to the surrounding.

(15) Local supply air grille will be designed strategically to optimise the working environment for the staff.

29. CM compounding area

(1) The CM compounding area will have one combined reception counter and issuing counter and CM compounding rooms. The combined counter is open counter sharing one computer workstation with barcode scanner and label printer and RFID tagging equipment.

(2) Prescribed processed herbal medicine packages with RFID tags will be transported from the processed herbal medicine dispensing area to the CM compounding area reception counter by automatic conveyor belt system with an unloading function to the counter.

(3) The herbal packs will be checked by dedicated staff and registered under IT system. The will be transferred to appropriate compounding room for processing.

(4) After processing, the compounded medications will be transferred to the issuing counter. The issuing counter is connected by automatic conveyor system to the central work bench area. Compounded medications will be RFID tagged and transferred to the central working bench area.

(5) The compounding areas will have a good ventilation and air exhaust system for efficient removal of chemicals in this area. Fume cupboards will be installed inside this section for each room.

(6) CM compounding facilities comprises the following five rooms:

Room Name / Medication Production	Equipment
(a) CM Compounding Room 1 (Powder 打散) Oral medication (內服)	1 no. Grinder 粉碎機 1 no. CMs dryer 中藥烘乾機 1 no. UV Steriliser 紫外線消毒機
(b) CM Compounding Room 2 (Powder 打散) Medication for external application (外敷)	1 no. Grinder 粉碎機 1 no. CMs dryer 中藥烘乾機 1 no. UV Steriliser 紫外線消毒機
(c) CM Compounding Room 3 (Paste and Powder 製膏, 打散)/ Medication for external application (外用) or handling Schedule 1 medicines	1 no. Grinder 粉碎機 1 no. concentrator 收膏機 1 no. fume cupboard

(d) CM Compounding Room 4 (Paste and Pill 製膏, 製丸) Oral medication (內服);	1 no. concentrator 收膏機 4 nos. electrical cookers 電爐 1 no. pill manufacturer 製丸機
(e) CM Compounding Room 5 (Paste 製膏) Medication for external application (外敷); CM Paste for CM orthopaedic and traumatology (骨傷) and skin disease medication.	1 no. concentrator 收膏機 4 nos. electrical cookers 電爐

(7) Each compounding rooms will be supported by one computer station.

30. CM dispensary area – Central working bench area

(1) Central working bench area will receive dispensed CMs from the processed herbal medicine dispensing area, CMs granules dispensing area, pCMs dispensing area, decocted preparations from the decoction area and compounded preparations from the compounding area. The received CMs will be consolidated according to individual patient prescriptions for dispensing to outpatients, day-patients and inpatients including CTRC.

(2) The central working bench area will have multiple working benches (中央配藥核對工作檯) with workstations with one sub-area designated for handling prescriptions of outpatient services and one sub-area designated for handling prescriptions of inpatients including CTRC and day-patient services. Each workstation should have sufficient space for CMs packaging, data ports and power sockets for placing a set of computer system including main computer unit, monitor, and keyboard and barcode scanner etc.

(3) The outpatient service sub-area of the central working bench area should be in close proximity to the dispensary counter for dispensing medications to outpatients conveniently.

(4) The inpatient service sub-area of the central working bench area should be in close proximity to the trolley dispatch/return area so that validated medications can be dispensed to clinical service areas conveniently. PTS should be close to this area.

31. CM dispensary area – Dispensary counter

(1) This will be an open counter for dispensing outpatient medications after validation at the central working bench areas to individual outpatients. The counter will be equipped with roller shutters.

(2) There will be shelves for temporary placing of CMs ready for patient collection. The station should be able to put up patient calling information to the QDMS displaying queuing information to patients in the waiting area.

(3) There will be one computer workstation per outpatient collection counter to verify and documenting the issuing process with associated Public Address System for calling patients.

(4) Brief professional counselling and instruction to patients will be conducted here. Complex patient counselling will be in patient counselling room.

32. CM dispensary area – Trolley dispatch/ return area

(1) The trolley dispatch/return area is for consolidating medication supplies after validation at the inpatient service area of the central working bench area for transfer to other clinical areas. The two work regions should be in close proximity.

(2) A large area should be made available for handling daily heavy transaction of ward supplies, including parking areas of trolleys. Large shelves should be available for holding bulky ward stock items.

(3) Supplies to wards and outpatient clinics will be dispatched through the trolley dispatch / return area to the AMR L/UL area outside the

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pharmacies for AMR pick-up and delivery to the receiving ends. Delivery could be supplemented by manual portering on ad-hoc basis. The two work regions should be in close proximity.

33.   CMs Store

(1) Operation flow and layout planning diagram:

中藥儲存倉

雪櫃
中藥暫存區
貨物數碼登記
中草藥檢測
中藥退貨區
外送藥物暫存區

中藥供應商來貨

中藥配藥房

藥物裝載上／下架自動系統
(Automated Storage and Retrieval System – ASRS)

外送藥物營辦商

中央工作檯

西藥儲存倉
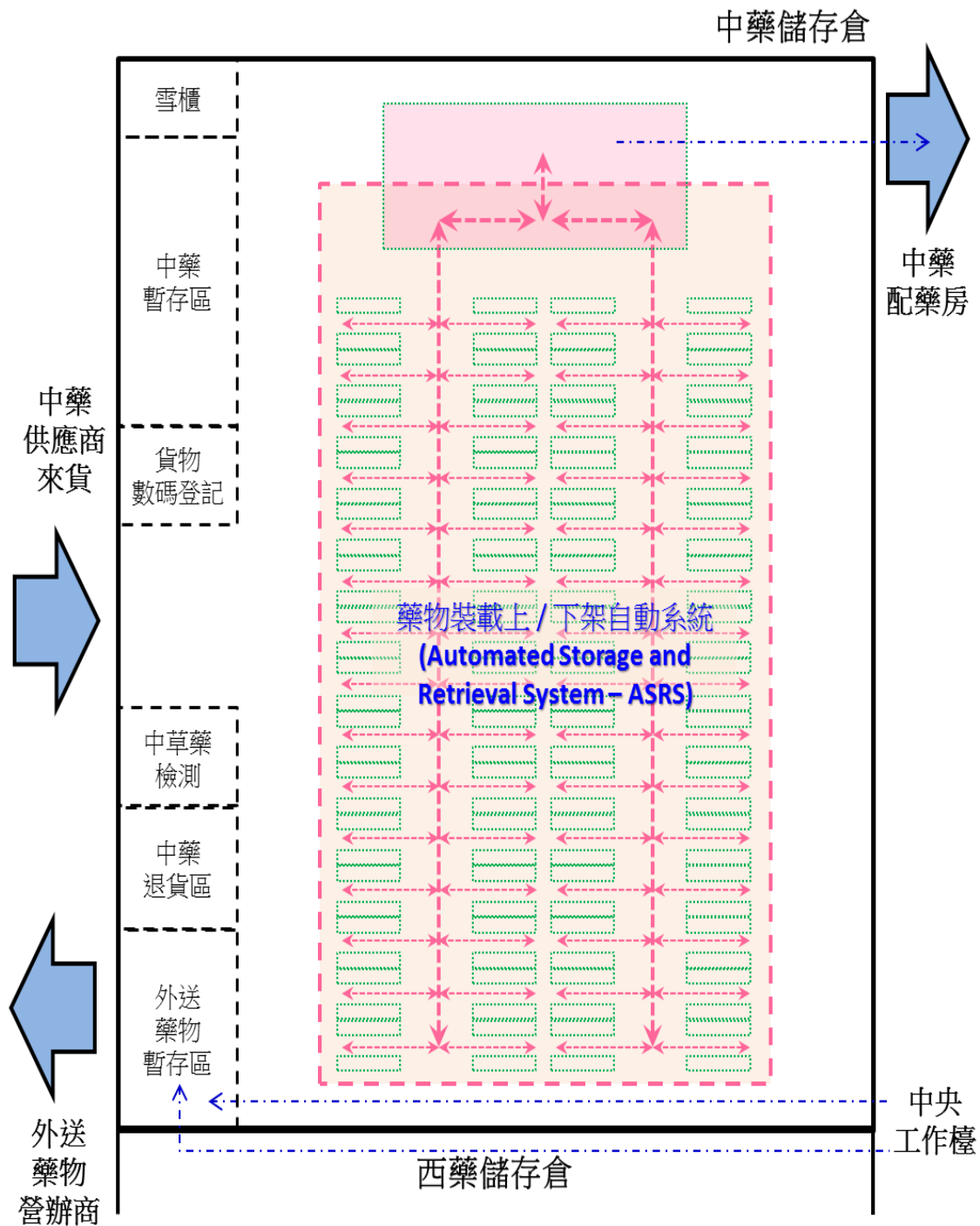
(2) General operation model and sequence:

(a) The store design should be considered from an end-to-end perspective covering electronic ordering, supplier packaging and supplies labelling, use of RFID/barcode based warehouse management and shelving system, repacking and retrieval of stock and subsequent delivery to dispensing workstations i.e. granules, pCMs and processed herbs.

(b) The RFID/barcode based warehouse management and shelving system should be able to transfer the prepared stock to the shelves and retrieve the stock from the shelf automatically. For the warehouse management and shelving system, one robotic arm will be able to manage two shelves one on each of its side. A long and tall shelving system will be able to minimise the number of robotic arms to be installed. A stock preparation and retrieval area linking up with the system is needed. Enough data ports and power sockets should be provided to support this system.

(c) Medication supplier unload the stock at the docking area and will deliver to the Temporary CM medication storage area (藥物暫存區) (supplies receiving area) at the entrance of the CMs store;

(d) All unloaded stock will be randomly checked for quality/ specification at the Temporary CM medication storage area, unqualified batch will be temporarily stored at the returned CM medication room (中藥退貨間);

(e) In the stock preparation and retrieving area, cleared CMs stock packs will be registered with barcode label and RFID tagged. The ASRS will allocate the dedicated store location and stock packs are transported by automatic warehouse management and shelving system to the shelves. The reverse workflow will be for stock retrieval.

(f) For refilling/retrieving supplies to the CM dispensary area, the pharmacy staff will retrieve the stock packs through the automatic warehouse management and shelving system to the

stock preparation and retrieving area. The staff will perform the refill/retrieval functions, register the retrieved amount/item in the computer.

(g) The stock preparation and retrieving area will have a large work bench linked up with the automatic conveyor system of the warehouse management and shelving system, a computer station linking up with the warehouse management and shelving system's IT system and the hospital's pharmacy inventory system. Nearby to this area should be control station of the warehouse management and shelving system's IT system. The stock preparation and retrieving area should be in close proximity to the temporary CM medication storage area.

(h) There will be a sub-store area housing (1) refrigerators for storage of CMs requiring refrigeration. The refrigerators should be connected to essential power and linked to temperature monitoring systems with local alarms, linked to a remote alarm panel to be located next to CCMS and able to send emergency message to responsible staff through the mobile devices. (2) expensive or poisonous CMs stored in locked cabinets with appropriate security control including CCTV with recording and alarm system linked to security office. The sub-store area has to be conveniently located close to the dispensing areas to facilitate manual retrieval for dispensing purposes.

(3) CM identification room is for CMs inventory checking and quality checking by visual inspection on various aspects including appearance conditions, humidity, level of surface damage, etc and will be in close proximity to the temporary CM medication storage area.

(4) General store is for storage of instrument, drugs, accessories, consumables, PPE, and machines. It will be equipped with mobile shelf for storage

(5) 24-hour A/C provision

(6) 24-hours essential power connected A/C supply

(7) Appropriate ventilation system for odour control

(8) Minimum four nos. drain outlets evenly distributed at the store for emergency drainage / floor cleansing and power sockets for the dehumidifiers

(9) Sufficient structural floor loading to support heavy bulky goods and for the installation and operation of heavy equipment such as mobile shelf system, automatic conveyor belt system, automatic stock loading/ unloading robots/ heavy lifting and transportation machineries , will be allowed.

(10) Sufficient clear head room will be allowed at the store.

(11) Whole area should be blocked from natural sunlight which would be detrimental to CM raw herb storage. No window should be provided.

(12) Direct access to the CM dispensary (at adjacency)

(13) CMs store will be separated from WM drug store in view of WM licensing requirement.

(14) No fresh / waste water pipes will be allowed to be installed within all store areas at pharmacy drug stores.

WM pharmacy

34.   WM pharmacy overall operation mode diagram:
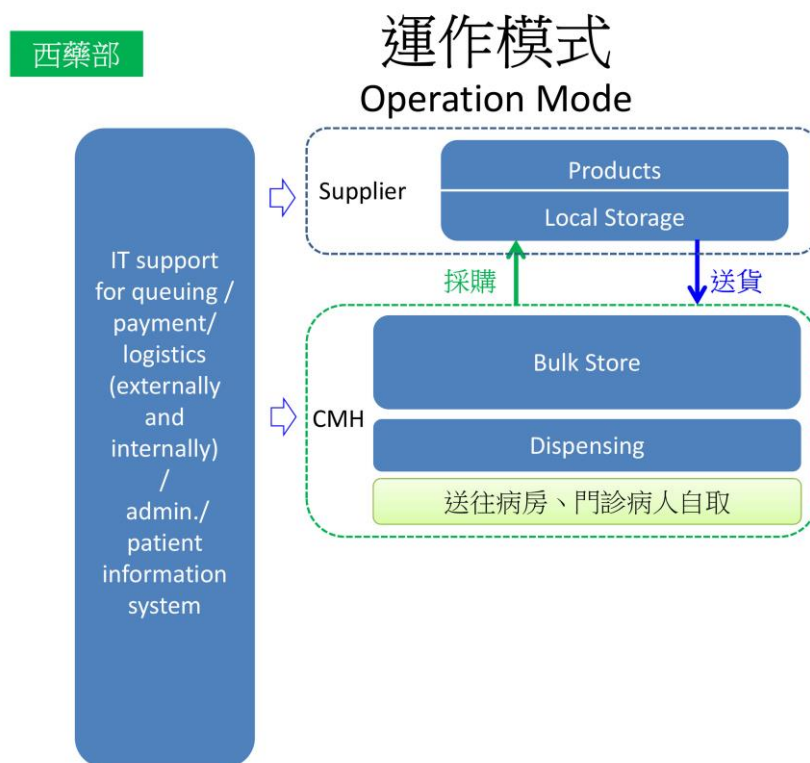
(1) The WM pharmacy will be equipped with different functionalities and cover different scopes of pharmaceutical services. Pharmacy department procures, stores, compounds, manufactures, packages, controls, dispenses and distributes medications i.e. drugs and other pharmaceutical items (e.g. medical gases) for both in-and outpatients under the jurisdiction of a licensed pharmacist.

(2) The pharmacy will provide dispensing services using new IT/AT systems like Medication Order Entry ("MOE"), Express Dispensing system ("EDS"), unit dose dispensing etc.

35.   Dispensary (WM) – General

(1) A large and open dispensing area forms the core of the pharmacy

with various related units surrounding this function. The dispensing area will include dispensing –inpatient section, refill-inpatient section, dispensing – outpatient section and prescription issuing counter to accommodate the necessary automation/information technology, e.g. automate medication unit dose dispensing system ("AMUDDS") for efficient dispensing activities.

(2) The dispensing areas will be free of column as far as possible.

(3) The core dispensing area of the pharmacy will have sufficient space and structural floor loading capacity for installation of necessary equipment (e.g. pharmaceutical refrigerators) and facilities (e.g. sufficient power sockets and data ports) to accommodate new automation technologies e.g. AMUDDS.

(4) Dispensing for inpatients is to be performed at the dispensing - inpatient section, refill -inpatient section and top-up -inpatient Section, thus these three areas will be adjacent to each other or in close proximity.

(5) To facilitate coverage of service between inpatient and outpatient section, these two sections will be next to each other.

(6) Senior pharmacist and pharmacist office will be located inside the pharmacy and preferably in close proximity to the dispensing area to facilitate supervision and for ease of communication with the whole department.

(7) Trolley dispatch/return area for topping up services and dispensing individual drug items to patients in wards will be located adjacent to the pharmacy drug store and dispensing-onpatient section, refill-inpatient section for picking, assembling and checking of drugs to replenish the ward stocks stored at medicine preparation rooms of inpatient and day-patient areas.

36. Dispensary (WM) – Overall operation flow and zoning/ planning diagram
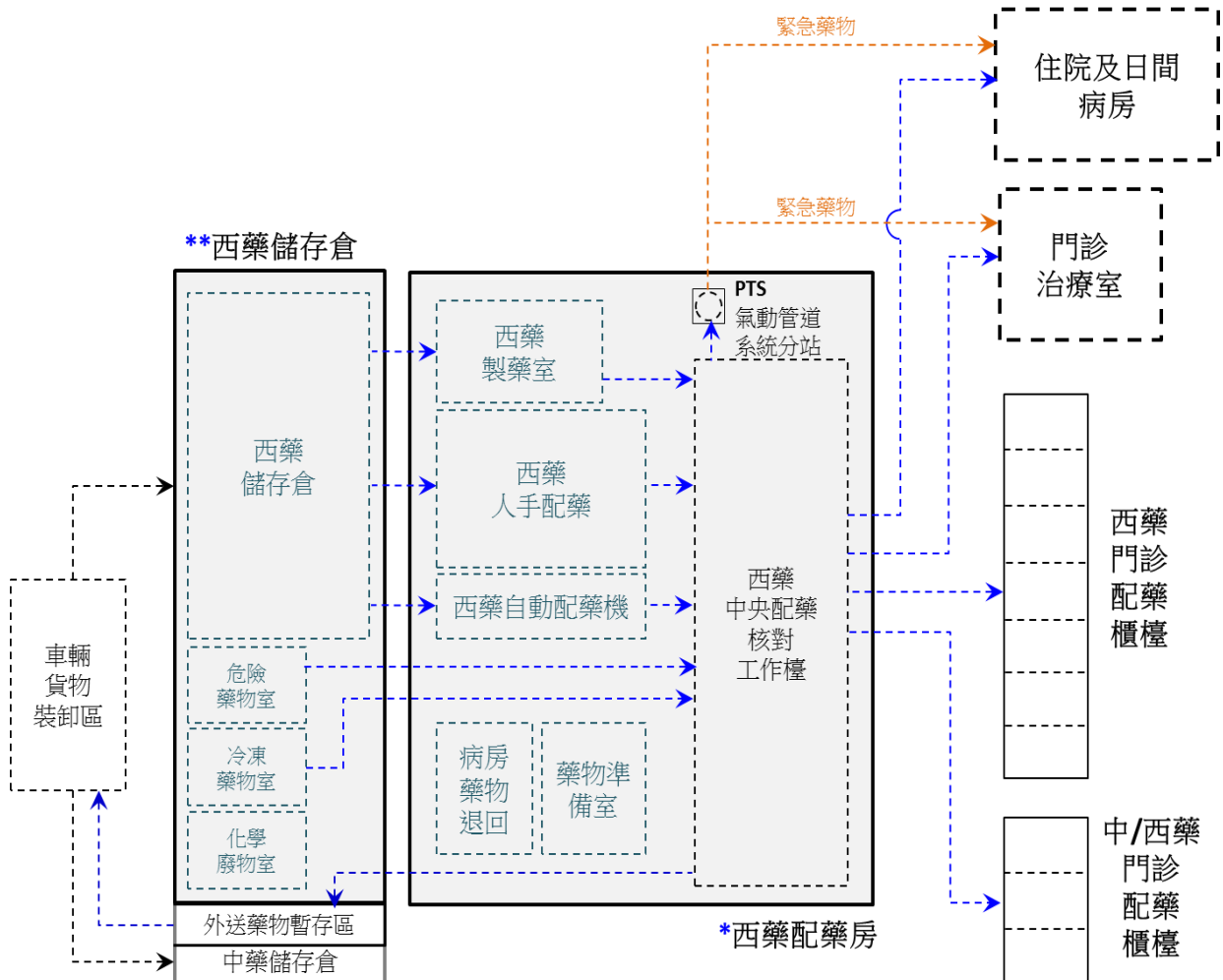
(1) Typical operation flow and layout plan diagram of a manual WM pharmacy dispensary station (西藥配藥運作):

人手配藥模
組式工作站

西藥中央配藥
核對工作檯

工作檯

人手配藥

西藥櫃

西藥
補充流程
(人手)

自動輸送帶系統

藥方接收處及
數碼識別系統
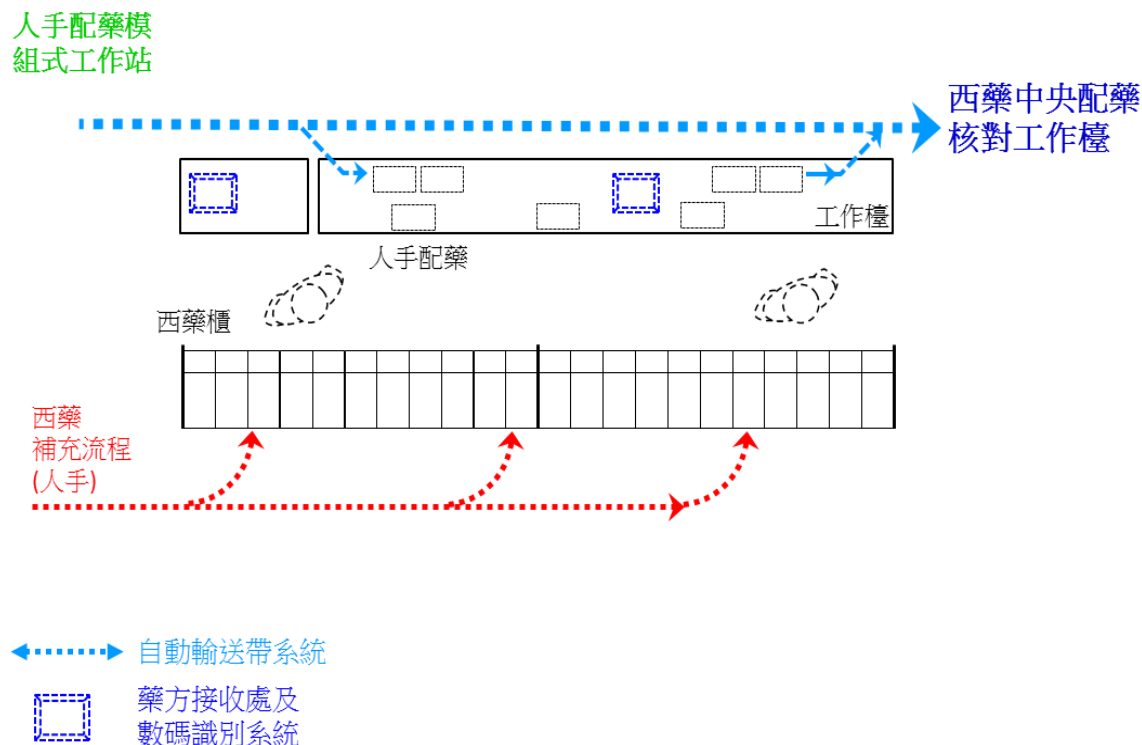
(2) General operation model and sequence:

(a) WM dispensing section (西藥人手配藥區) will comprise around two nos. modular workstations, tentatively;

(b) The workstations will be connected with other areas/ rooms by automatic conveyor belt system to increase the production efficiency, i.e. the central work bench for WM dispensary (西藥中央配藥核對工作檯);

(3) Details operation model and sequence

(a) Each modular workstation will be consisted of one set of WM medicine cabinet, one no. dispensing bench, one set of computer workstation and RFID code reading machine;

(b) The automatic conveyor belt system will automatically receive empty basket and issue filled basket via RFID identification to the central work bench for WM dispensary;

_____

(c) Manual refilling of WM medication stock at the backside of the WM medicine cabinet, upon pick-up at the work desks connected to the bulk store for drugs, by automatic conveyor belt system, in which the dispensary works will not be disturbed.

37.   Adjacent to the top-up service area, there will be the pre-packing area. This area is for the pre-packing activities and for the storage of the pre-packed items.

38.   Dangerous Drugs Room

(1) The DD Store with lock and alarm will be located near to the pharmacist office;

(2) Specific access control and security alarm systems connecting to CCMS for staff access only;

(3) Storage facilities for keeping legal documents, confidential and restricted information as well as other professional reference information for easy retrieval and security purposes.

39.   Ward Returned Drugs

(1) Directly accessible to chemical waste store for drugs disposal;

(2) This room will be equipped with electrical mobile storage racks, lockable storage cupboards will be required for keeping legal, restricted/confidential documents and returned drugs;

(3) Working benches are required for pharmacy staff to inspect, handle and store the returned drugs.

40.   Medication Preparation Room

(1) For central dispensing of patient bring-in western medications to be administered in wards.

(2) For pre-packaging of drugs into appropriate dispensing unit.

(3) Follow general drug storage conditions' requirement in terms of

temperature and humidity with appropriate numbers of lockable drug shelving / cabinets provided.

(4) Require installation of power sockets / data ports to facilitate data input and track of trace of medication dispensed; and provision of pharmacy system (computer unit, monitor, keyboard) and accessories (e.g. scanner, label printer etc.)

41.   Compounding (WM)

(1) Within the area, there will be a store room sufficient for storing and rotating the different batches of sterile water for irrigation used for compounding different pharmaceutical items. In this area, there will be separate wet zone with sterile water supply and sink facilities for washing up and cleaning of the equipment used; and dry zone for manufacturing creams and drug powders, etc.

(2) The compounding areas will have a good ventilation and air exhaust system for efficient removal of chemicals in this area. Fume cupboards will be installed inside this section for each room.

42.   WM Drug Store

(1) WM drug store will be separated from CMs store in view of WM licensing requirement. The WM drug store will house WM drugs and related pharmaceutical products.

(2) Within the WM drug store, a clear ceiling height (for piling up two pallets of goods in addition to the clearance rule of fire sprinkler and the space for storage racks and shelving) with structural floor loading will be allowed. Heavy duty mobile shelving will be located in this area.

(3) The WM drug store will be effectively connected to the L/UL areas for receiving supplies for efficient transportation and stocking logistics, which will be located on the same floor of the pharmacy (G/F).

(4) There will be a cold room built close to the WM drug store to facilitate immediate refrigeration of refrigerated pharmaceutical

items once delivered by suppliers.

(5) Power sockets and data ports for at least one set of computer system including main computer unit, monitor and keyboard, printer, barcode scanner etc.

(6) No fresh / waste water pipes will be allowed to be installed within all store areas at pharmacy drug stores.

(7) 24-hour A/C provision

(8) 24-hours essential power connected A/C supply

(9) Whole area should be blocked from natural sunlight. No window should be provided.

(10)   Direct access to the WM dispensary (at adjacency)

43.   Cold Room (sub-store of WM Drug Store)

(1) The cold store (sub-store) is essential for drugs requiring refrigeration.

(2) All conduits / trunkings installed at cold room (equipped with refrigerators and freezers) will be well sealed so that condensation of water will not take place inside the plastic cover of fluorescent light / power socket.

(3) Two individual refrigeration circuits, which can be switched to the other one automatically if one failed, will be installed for contingency purpose.

(4) Precautious measures will be installed to prevent trapping of person.

(5) Data of the performance of the cold store will be transmitted to Electrical and Mechanical Services Department ("EMSD") electronically for their continuous monitoring.

(6) Stainless steel used for constructing the cold room will be in good quality and rust-resistant to prevent rust when there is water leakage inside or outside the room.

(7) Drug fridge alarm system should be linked to temperature monitoring systems with local alarms and able to send emergency

message to responsible staff through the PABX.

(8) Adequate drainage outside cold room will be required.

Common facilities of the pharmacy department

44.   Patient waiting area

(1) TV for entertainment

(2) Two nos. digital display panels for QDMS to display and manage queue status for patients who are waiting for prescriptions

(3) Display area for posters or other education leaflets / booklets

(4) Display cabinets for CMs

(5) Water drinking facility (eg. hot and cold water dispenser)

(6) Wi-Fi connection for patients, visitors and public

(7) Local PA system

(8) A transparent electric roller shutter with lock and alarm will be installed from ceiling to the floor between patient waiting area and the corridor outside central pharmacy.

(9) Space will be available for installing electronic digital display, audio visual aids, and interactive electronic multi-function kiosk for patients' self-service on information enquiry, admission/ registration, payment, etc.

(10)   Special Interior Design ("SID") required for the following special functions of the area:

 (a)   Counselling area for special tailor-made CM medication/ formulation/ CM compounded preparations (e.g. 膏方) tailor made for individual patients, movabe partitions should be adopted for provisions of 4 nos. cubicles for providing individual patient care process on CM medication. A work desk and chairs should form the basic configuration of each cubicle;

 (b)   Tutorial/ workshop for patient education of home decoction (煎煮中藥湯劑), 2 nos. open counter areas should be allowed for holding workshops/ seminars for groups of patients;

(c) Installation and storage space for AV equipment, bookshelf with publications demonstrating general and special CM healthcare knowledge including traditional CM culture.

45.   Dispensing Counters (CM and WM)

(1) Multiple counters for CM, WM and CM/WM medications directly connected with CM and WM dispensary areas required. Each counter should be separated from the other with partitions to protect patient privacy. Each counter should have its separate smart queuing system and LCD panel display.

(2) Patient counselling rooms to be allocated adjacent to the counters and directly accessed from the waiting areas.

(3) The waiting area will be properly zoned against the corresponding dispensing counters and allowed adequate space for patient waiting and queuing in an ordered manner.

(4) A reception station should be available for ward staff to make enquiry and collect medication in the pharmacy.

(5) A patient fees collection counter should be situated close to the main pharmacy.

(6) Minimum one no. window for handicap (height: 750mm) at each sections (CM, WM and CM/WM); for the others, windows with split height level with two desks fronts

(7) An enclosed type electrical roller shutter (transparent type preferred) must be installed outside the counter to conserve the use of A/C at night as well as for security control

(8) Correct numbers of power sockets, video graphics array ("VGA") output, telephone ports, data ports, fax ports, PA system should be installed in the designated positions. The audio output should be installed besides the VGA output.

(9) Sufficient drawers / cupboard for each counter to store accessories to be dispensed along with the CM.

(10) For WM pharmacy dispensing counter, the glazed portion will be up to the false ceiling level.

(11) Sufficient spaces with adjustable shelves will be provided for the accommodation of medication prescription and management system, QDMS and local PA system.

(12) Partitions between windows will be required for maintaining privacy of patients.

(13) Roller blinds will be installed at the glazed part of the counter.

(14) Location of lighting fittings will be installed to ensure sufficient lighting level on bench-top without back light effect.

46.   Patient Counselling Rooms

Adjacent to the CM and WM dispensing counters, with adjustable partitions for one to two pharmacy staff to conduct concurrent sessions of patient counselling and drug compliance service. The rooms need dual access – externally by patients and internally by the pharmacy staff.

47.   Reference Library / CM Drug Information

(1) Requires internet access for pharmacy staff, serves as case study room or training and education room and will be equipped with a large LED display panel and audio system.

48.   Procurement Office

(1) Open plan office having required number of working stations. Should have direct access and close to the CMs store and the WM drug store;

(2) It will be fitted with a video door phone connecting to the docking area to facilitate the direct communication with the delivery crew outside.

49.   Other patient, staff supporting and utility facilities

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50.   Dangerous Goods Stores

(1) There will be separate purpose-built DG stores for the storage of Category 2, Category 5 and Category 7 substances. These stores will be appropriately located within the hospital compound in an area within reasonable distance from pharmacy store to facilitate pharmacy staff to perform inspection, receipt, storage, issue and transportation of these substances at the DG stores.

(2) The facility of all DG stores and VIE tank of liquid oxygen must comply with FSD statutory and licensing requirements.

C5.   Radiology Department

Overview of the department and services scope

1.   The CMH will provide a comprehensive range of CM services. Service types include pure CM, CM playing the predominant role with collaboration of WM services and ICWM services. The radiology department is one of the WM facilities supporting the operation of the CMH.

2.   The radiology department is a medical speciality delivering diagnostic imaging examinations with or without ionizing radiation. The modality of imaging services provided by the CMH will include -

(1) General radiography ("XR")

(2) Computed tomography ("CT")

(3) Magnetic resonance imaging ("MRI")

(4) Ultrasonography ("US")

(5) Fluoroscopy ("Fluoro")

3.   There would be two examination rooms for XR and US respectively, and one examination room each for CT, MRI and Fluoro. XR, CT and Fluoro will emit ionising radiation. Radiation protection measures should be incorporated into the design appropriately.

4.   The department will provide scheduled services to inpatients including CTRC, day-patients and outpatients of the CMH during weekday office hours. Essential services e.g. XR service and CT services will be provided on a 24/7 basis for inpatients under urgent clinical indications. Extended evening and weekend service may be introduced in future.

5.   XR service will be provided in a satellite X-ray examination room ("Satellite XR Exam Room") on each inpatient and day-patient floor to

minimise the need of transporting the patients to the main radiology department for examination and eliminate the need of taking portable X-ray examination in the non-radiation shielded ward environment.

6.   Except mobile XR service, all imaging services should be centralised and arranged in modular manner.

7.   PACS will be adopted for digital radiological images to be captured, processed, transferred, accessed remotely, archived, and allows collaboration with other healthcare providers.

8.   Filmless radiology will be planned for the CMH as far as possible.

9.   The Radiology Information System ("RIS") will integrate into the hospital CMS.

10.   Warning signs and indicators should be provided at the corresponding scanning rooms.

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External relationships and adjacency requirements

11.   The external relationship of radiology department with inpatients and outpatients are as follows-
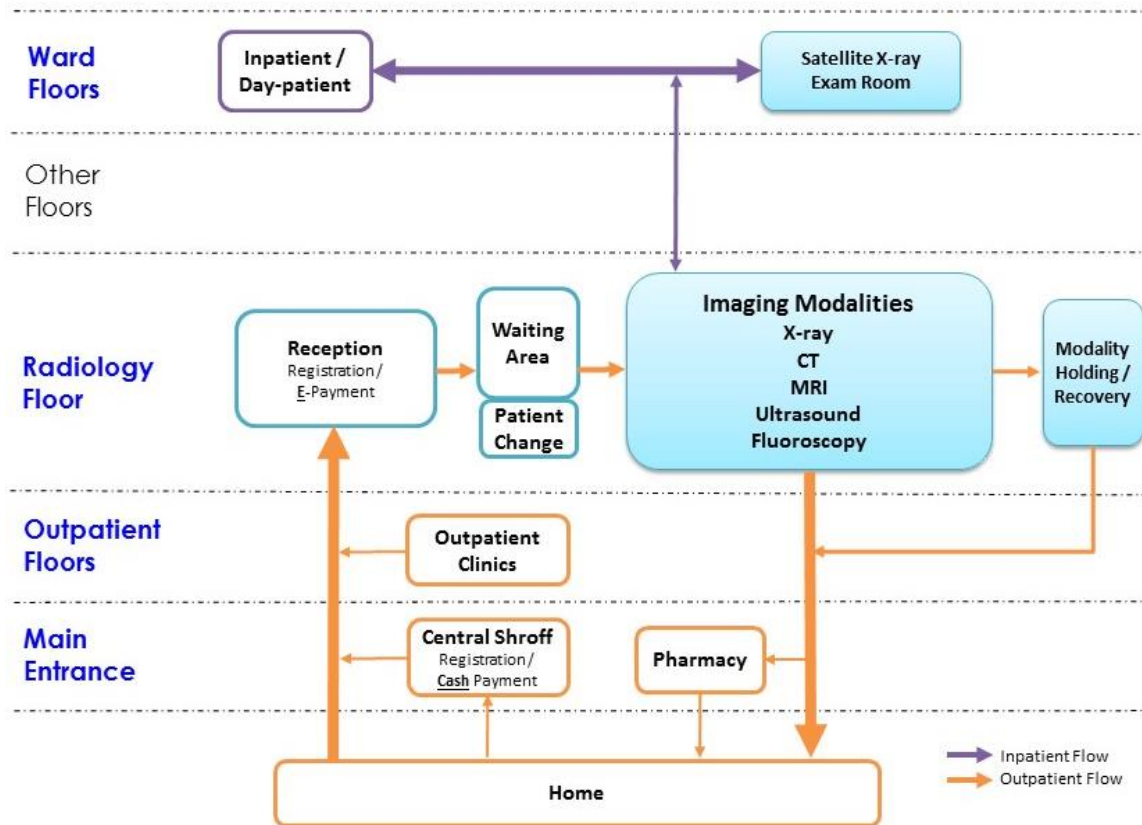
12.   The main service area of the radiology department will be located at level L1. It is planned to build four satellite XR examination rooms, one on each ward floor (Levels L4-L7). All satellite XR examination rooms will have identical / similar design.

13.   The radiology department at L1 will be conveniently accessible for both inpatients, outpatients and staff within the CMH. The department will be a relatively busy area and should not be along a throughway for other services.

14.　　The radiology department has two circulatory routes supporting its function:

(1) Main public circulation route is for access to the radiology by patients and patients' families;

(2) Internal circulation route is for staff and material movement. The internal route provides connection of radiology department to other internal hospital units i.e. mainly for receiving patients from wards including CTRC and day-patient wards, for easy access to staff facilities, and receiving service support from bulk store, WM pharmacy, laundry and CSSU. L/UL zone outside the department for bulk goods scheduled delivery by AMR is to be provided. Back-of-house services including transfer of clean and dirty bulk items. Clean bulk items include receiving-in WM dugs and related pharmaceutical products, sterile supplies from CSSU, consumables and stationaries. Dirty bulk items include wastes (domestic and chemical) and used linen for disposal. The clean and dirty passages are to be segregated.

15.　　All bulk items will be transported by AMR and supplemented by manual portering.

16.　　Direct escalator access from both hospital main entrance and outpatient floors to the department will be provided to facilitate vertical transport.

17.　　For patient privacy and operational convenience, separate entrances will be provided for patients and staff, where controlled access will be required at staff entrance. Inpatients and outpatients will enter via different routes.

18.　　The inpatient entrance will be provided with access control with video-phone door bell, and will be located near the designated lift to-and-from ward floors for convenient access of patients. Inpatients will be allowed to enter the sub-waiting area of specific imaging modality directly.

19.   Outpatients requiring radiology service will first register and make electronic payment if needed either through patients' own mobile devices or at the helpdesk or kiosks nearby, or through Central Shroff at ground floor should cash payment is involved.

20.   There should not have outpatient access to the Satellite XR Exam Rooms. Direct access should be provided for inpatients to move between the ward and the Satellite XR Exam Room on the same floor, i.e. horizontal transportation.

21.   Total two mobile XR machines will generally be stationed at any two of the four Satellite XR Exam Rooms. The Mobile XR Alcove in the main department will be used for maintenance of the mobile XR machines, data uploading, etc. The radiology department will be conveniently accessed by lift large enough to accommodate the mobile XR system to and from L1 and ward levels.

Internal relationships, operation flow and functions

22.   Internally, the radiology department will be arranged in functional zones. The entrance to the department will provide access control with a reception. Imaging areas will be located in clusters along with related support facilities such as holding, sub-waiting areas and patient changing rooms. Support areas such as reporting and processing will be located conveniently to the imaging areas and may be shared. Staff areas may be located in a discreet and staff only accessible area.

23.   The main entrance of the department will be adjacent to the reception counter.

24.   Imaging modalities with 24-hour usage, high usage and/or shortest examination time will be located close to the main entrance, such as XR

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and CT; and complex procedures which involve longer time should be located away from the major patient traffic route, such as MRI.

25.   The XR, CT, US and Fluoro modules will have similar operation flow. Specific zoning pre- requisites are required for MRI module, yet the operation flow will be similar.

26.   All examination/scanner rooms will be planned to be accessed from two opposite sides of the room for separate patient and staff entries.

27.   All patient sub-waiting areas will be located near individual examination/scanner rooms.

28.   There should have a clear one-way flow of patients from entry, holding, imaging procedures, to recovery and then exit.   Overall patient flow are as follows -
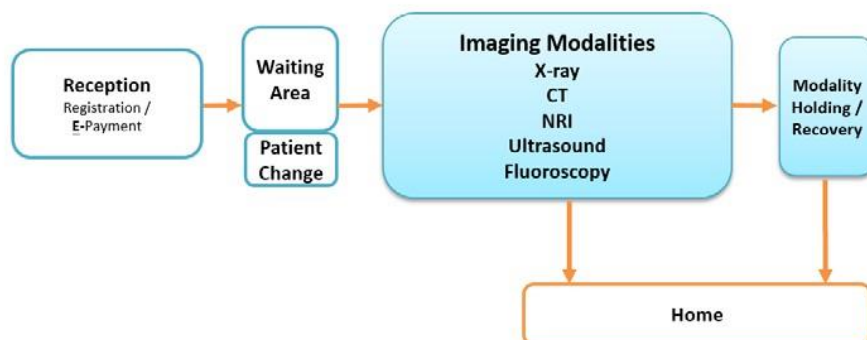
(1) Outpatients will register (and pay if applicable) at the reception of the department and then be directed to appropriate sub-waiting area of the imaging modality;

(2) Patients will be prompted to individualised changing cubicle to get change if required, and proceed direct to the examination/scanner room (or patient preparation room as appropriate) after change;

(3) Staff will enter the examination/scanner room (or control room as

appropriate) in separate entrance, via staff corridor;

(4) After imaging studies, patients may be discharged home directly, or for observation/recovery before discharging home. MRI patients must go through the recovery phase in the designated MRI recovery area;

(5) Inpatients will be escorted from ward to the sub-waiting area near the appropriate examination/scanner room via entrance restricted for inpatients. The clinical escort will stay until the patient is handed over to the radiology team.

29.   All examination/scanner rooms and associated control rooms will be accessed by staff via staff working corridor.

30.   The planning and room adjacency of the radiology department at L1 will refer to the operational model as follows –

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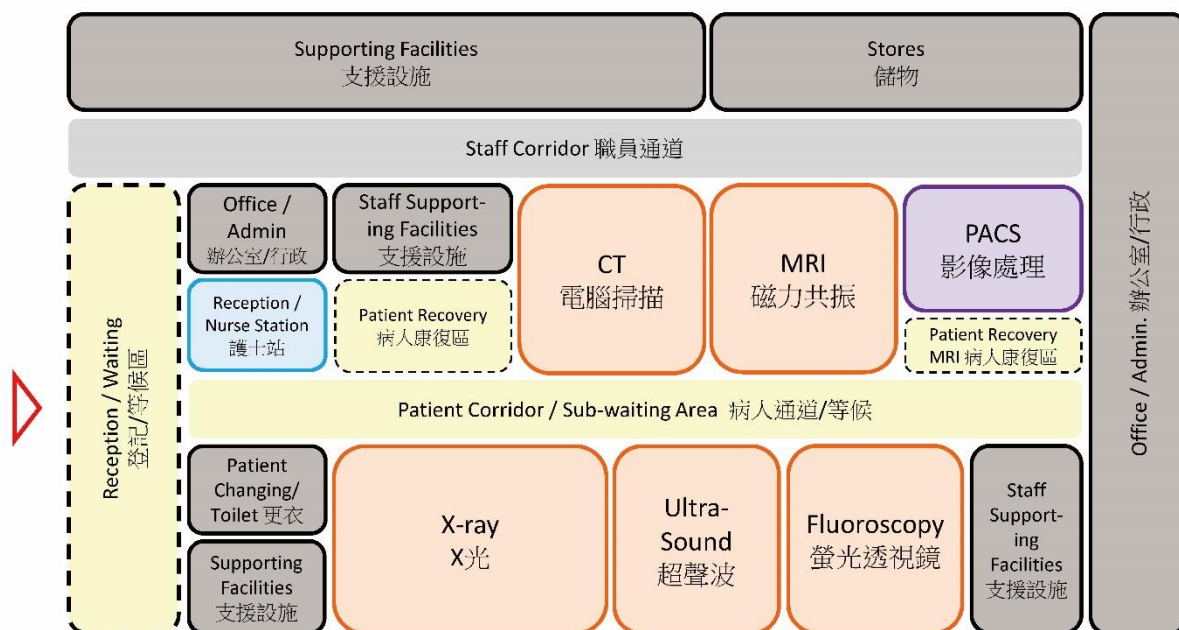
C6.   Pathology Department

Overview of department and services scope

1.   The CMH will provide a comprehensive range of CM services. Service types include pure CM, CM playing the predominant role with collaboration of WM and ICWM.   The pathology department with its Core Laboratory ("the Lab") is one of the WM facilities supporting the operation of the CMH.

2.   All laboratory functions in the CMH will be centralised in the Lab. It will provide routine services to inpatients and outpatients, and operate round the clock to provide 24-hour urgent services to inpatients of the CMH. On top of basic laboratory tests in haematology and chemical pathology, the laboratory will also include a blood bank with testing facilities. Microbiology services will be made available off-site.

3.   The pathology department will provide a one-stop service for the CMH patients by networking with outside laboratories for specialised tests / tests not to be carried out onsite. Such specimens will be collected at the CMH, and/or handled at the laboratory before transfer. Reports will be received electronically and in hard copies to be further handled at the Lab.

4.   High specimen turn-over activities are anticipated. The process related to pathology request will be controlled and coordinated by an integrated information system. Specimen flow will be tracked throughout the whole process to ensure efficiency, safety, and security.

5.   The laboratory should be flexible architecture design with open plan layout, and it applies automation and digital reports/records as far as possible.

External relationships and adjacency requirements

6.   The pathology department has two circulatory routes supporting its function:

(1) Main public circulation route is for access to the pathology department by authorised visitors. Depending on the design, the public circulatory route is not mandatory as patients and families are not required to approach the department directly.

(2) Internal circulation route is for staff and material movement. The internal route provides connection of pathology department to other internal hospital units i.e. mainly for receiving patients' specimens from wards including CTRC, day-patient wards and outpatient clinics, for easy access to staff facilities, and receiving service support from bulk store. L/UL zone outside the department for bulk goods scheduled delivery by AMR is to be provided. Back-of-house services including transfer of clean and dirty bulk items. Clean bulk items include receiving-in patient specimens, reagent supplies, consumables and stationaries from bulk store. Dirty bulk items include wastes (domestic, chemical and clinical) for disposal. The clean and dirty passages are to be segregated. All bulk items will be transported by AMR and supplemented by manual portering

7.   PTS will be installed for transporting patient specimens from clinical areas to the Lab on an ad-hoc basis. The system will mainly connect to clinical areas including outpatient clinics, day-patient wards and inpatient wards including CTRC.

8.   It will be located in an area away from heavy traffic of hospital activities, but convenient to clinical areas that generate a high volume of specimens or with a high proportion of urgent requests.

9.   There will be easy access by contract-out laboratories staff/courier for collection of specimen and delivery of reports.

10.   The laboratory will provide quiet environment for checking procedures and protecting patient privacy as far as practical.

Internal relationships, operation flow and functions

11.   The department will consist of (a) central reception and area for pre-testing process for both specimens and blood products, (b) combined laboratory area for haematology and chemical pathology, (c) laboratory area for the blood bank, (d) laboratory service supporting facilities, (e) offices and general storage, and (g) common facilities.

12.   The main entrance of the department will be adjacent to the reception counter.

13.   All laboratory areas and supporting facilities are classified as dirty areas, which should be accessed through designated gown-up/down-down area.

14.   Offices and some common facilities are classified as clean areas. There should be direct accesses to these areas without going through the dirty areas.

15.   Operational flow of the laboratory are as follows -

   (1) Specimens taken from patients will be delivered, in appropriate containers, either by porters or through pneumatic tubes to the Lab;

   (2) Pre-testing process including receiving, sorting, acknowledgment, registration, aliquoting, temporary storage and/or packing will be carried out as appropriate;

   (3) Specimens will be transferred to laboratory areas for testing onsite, or be dispatched to outside laboratories for testing;

   (4) Specimens will be stored in refrigerators/freezers as appropriate;

   (5) Used containers/equipment will be washed and disinfected in the

supporting facilities and clinical waste will be temporarily stored in designated room before disposal. Different kinds of waste as generated in the course of testing will also be stored in respective storage room; and

(6) Patient records and lab reports will be stored at designated filing rooms.

16.　　The planning and room adjacency of the department will follow the operational model as follows –
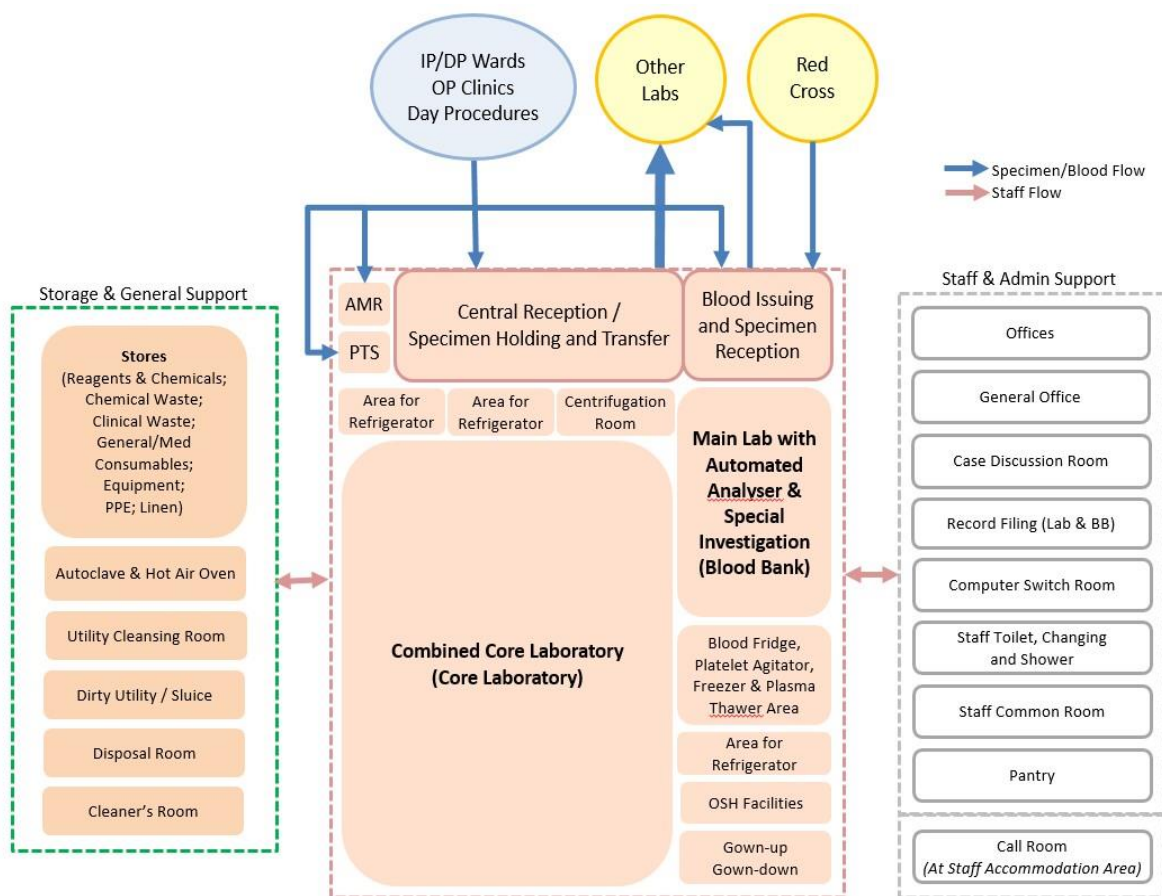
D. EDUCATION, TRAINING AND RESEARCH

D1. Education and Training Facilities

Overview of department and services scope

1. The CMH is a change driver, promoting service development, education and training, innovation and research, and facilitating collaboration with both local and international parties concerned with CM. In particular, the CMH will provide a platform for promoting teaching, training and clinical research in CM. It will support with the three local universities with School of CM to provide clinical training for undergraduates and postgraduates, as well as relevant basic and advanced post-registration training for healthcare professionals related to CM and ICWM.

2. The target audiences of education and training facilities include -
   (1) CM students
   (2) CM and WM professionals including those in the community
   (3) Hospital staff
   (4) The Mainland and international professionals

3. The education and training facilities at the CMH includes -
   (1) Auditorium
   (2) Classrooms and lecture facilities
   (3) Skill and demonstration laboratory
   (4) Hospital library
   (5) University staff offices
   (6) Support facilities
   (7) Teaching consultation and interventional Rooms

4.	The main focus of the Education and Training Facilities in this section are designed to fulfil the CMH's missions on education and training as stated above.	Regular staff meetings, case discussions and conferences will mainly be conducted at conference room facilities at the central hospital administration (Section E8).

5.	The operating hours of the facilities follow the business hours in general.	However, it will be common for the hospital to conduct training programmes, seminars and conferences during Saturdays, Sundays and Public Holidays. The activities could be on sessional basis or throughout the day followed by dinner events.

External relationships and adjacency requirements

6.	The education and training facilities will be located at Level 2, easily accessible to students, trainees, and staff, yet away from the very busy clinical areas.

7.	Depending on the design configuration, the Education and Training Facilities could be planned as an integrated section. The section should have two circulatory routes supporting its functions:

(1) Main public circulation route for access to the students, trainees, visitors and public;

(2) Internal circulation route for staff, students, trainees and material movement. The internal route also provides connection of the section for easy access to staff, student and trainee facilities, and receiving service support from bulk store. Back-of-house services including a common L/UL zone for bulk goods scheduled delivery by AMR. Clean bulk items include consumables and stationeries. Dirty bulk items include wastes (domestic). The clean and dirty passages are to be segregated. The internal route also connects the ward to various clinical areas, and centralised staff facilities i.e. offices, changing area and overnight accommodation. All bulk

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items will be transported by AMR and supplemented by manual portering.

8.　　With the Community Health Services ("CHS") (E1) located on the same floor, an overall theme for education and learning for professionals/staff and the public can be created.

9.　　Adequate supporting facilities such as public toilets and special security considerations is necessary to cater for the large crowd.

Internal relationships / special design considerations / planning issues / trends

10.　　The Education and Training facilities will be arranged in manner that students and trainees can frequently go between different facilities at ease, such as between the locker room and classrooms, between the skill and demo laboratory and shower room, etc.

11.　　The auditorium will be adjacent to other education and training facilities as classrooms and lecture facilities to enable the organization of larger symposiums with simultaneous exhibition and multiple sessions.

12.　　The skill and demonstration laboratory will be in close proximity to classrooms and lecture facilities and auditorium for shared use in providing didactic sessions and also to cater for classes of large capacity.

13.   The planning and room adjacency of the Education and Training facilities will be as follows –

Auditorium

14.   There are two nos. of 250-seat multi-purpose lecture halls to accommodate large-scale education and training activities.   The two auditoria will be combined to one larger hall of 500 seats when necessary. Same provisions should be provided for each lecture hall.

15.   The acoustic folding partition between the two auditoria will be motorised or power assisted for easy operation.

16.   AV facilities will be able to support wide range of presentations, digital imaging, video conferencing, etc. and will enable real-time presentations to and from both auditorium to multi-function classrooms.

Presenters will have ready access to network data ports to enable them to immediately connect lap-top computers and other devices for projection to large digital display screens placed strategically for easy audience viewing.

17.   As AV and digital presentation technology is constantly changing and in need of continuous upgrading, all possible options and flexibility for future upgrading will be accommodated.

18.   The presentation stage having minimum depth of 3,000mm will be raised approximately 300mm above the finish floor level.

19.   The stage back wall of the presentation platform may be used to provide video walls, e.g., a single large LED display panel and a motorised projector screen controlled by the control booth, hospital network and presentation station.

20.   There will be alcoves at either side of the platform to enable holding of off-stage presentation materials.   There will be proprietary large poster hangers on both sides of the stage for hanging the presentation materials or posters.   The hangers will be integrated with a pulley system which allows easy erection of posters without requiring erection of working platform.

21.   The backstage is an area to support auditorium for rehearsal, waiting, event preparation and temporary furniture storage.   One area for each auditorium with entrance from either side of the stage, and will be fully complied with all the necessary fire safety, PPE ordinance / regulations.

22.   There will be a glazed projection booth/control room at the side or rear of each auditorium with projectors, and attached with a multi-media AV equipment store room in the backstage.   The color and finishes of the

room will be dark and sound absorptive with separate dimmable control of floor and ceiling lighting.

23.   A full-range of lighting modalities will be available with the ability to control lighting (e.g. stage spot lights, dimmable ceiling, wall and step lighting) and multi-media AV equipment both from back stage and the projection booth at the rear of the auditorium.

24.   There will be adequate waiting area in the foyer for gathering pre- and post-function, as well as space for poster exhibitions to both auditoria. The reception / foyer space should be able to separate into two areas to support each auditorium holding different programs when necessary.

25.   There will be adequate entrances so as to allow late comers to enter without disturbing an in-process presentation.

26.   The cloak room, public toilets, and furniture store room will support both auditoria.

27.   The auditorium seats will have writing bench top and the floor will be raked with tiered seating to avoid obstructed view to all presentation. Adequate dimmable floor and step lighting at stairways in the tiered seating areas will be provided for safe entries / exits during times when lighting is dimmed for presentations.

28.   Easily accessible wheelchair parking spaces for disabled persons will be provided. They will have unobstructed views to all presentation. There will be provision for barrier free access to the platform.

29.   There will be two nos. of Simultaneous Interpretation ("SI") room which could operate individually or coherently to support either auditorium for local and international conference.   Therefore, the signal from each of the SI room could cover all 500 seats in the auditorium.

30. Acoustics are extremely important, and all measures will be taken to ensure that all areas of the auditorium are free from blind spots or other interferences, such as air handling equipment. The geometry of the room should be designed to naturally enhance the acoustics of the auditorium, while also taking variable and enhanced acoustic materials like carpets, reflectors, proprietary sound absorptive wooden panel and other applied wall materials into consideration.

31. Sound Lock will be provided at all entrances and exits of both auditoria with high acoustic absorptive finishes on doors, walls, ceiling and floors.

32. Sightlines must be carefully studied to ensure that every seat has an unobstructed line of sight to stage of both auditoria.

Classrooms and Lecture Facilities

33. It is planned to have three nos. of multi-function classroom, four nos. of discussion / tutorial rooms, and two nos. of 20-station computer training rooms. They will be grouped together in one area and easily accessible and preferred to be located in close proximity to the auditorium for flexibility in organizing different types of training programs.

34. The three multi-function classrooms will be separated by acoustic folding partitions, which can be combined into one big classroom when necessary. AV facilities will be provided for all multi-function classrooms to support real-time presentations to and from both Auditorium.

35. The multi-function classroom and the large discussion / tutorial room will be provided with AV systems which are described in Part III of this brief.

36. The two computer training rooms will accommodate 20 workstations in each room. It will be separated by folding sound-dampened partition feasible to be combined to one larger classroom, when necessary. Teaching facilities are required.

Simulation Centre (Skill and Demonstration Laboratory)

37. The skill and demonstration laboratory will provide high-level professional skill training to students and healthcare providers. It aims at augmenting learning with high-fidelity simulation technology in a multi-dimensional and multi-disciplinary setting. The centre will be designed with extraordinary versatility that can mimic real life clinical scenarios for participants to practise procedures without any risk to patients and to develop effective team dynamics in complex clinical situations.

38. The scope of services will include:

(1) Hosting of courses with different simulated environments, such as complex clinical assessment and manipulation skills, acupuncture skills, CMs preparation and compounding skills, disasters, workplace violence management, multidisciplinary team training, etc.

(2) Credentialing staff, conduction of professional assessment and examinations.

(3) Developing, testing and refining care models and protocols in clinical care in a simulated environment.

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39.   The planning and room adjacency of the simulation centre will follow the operational model as follows –
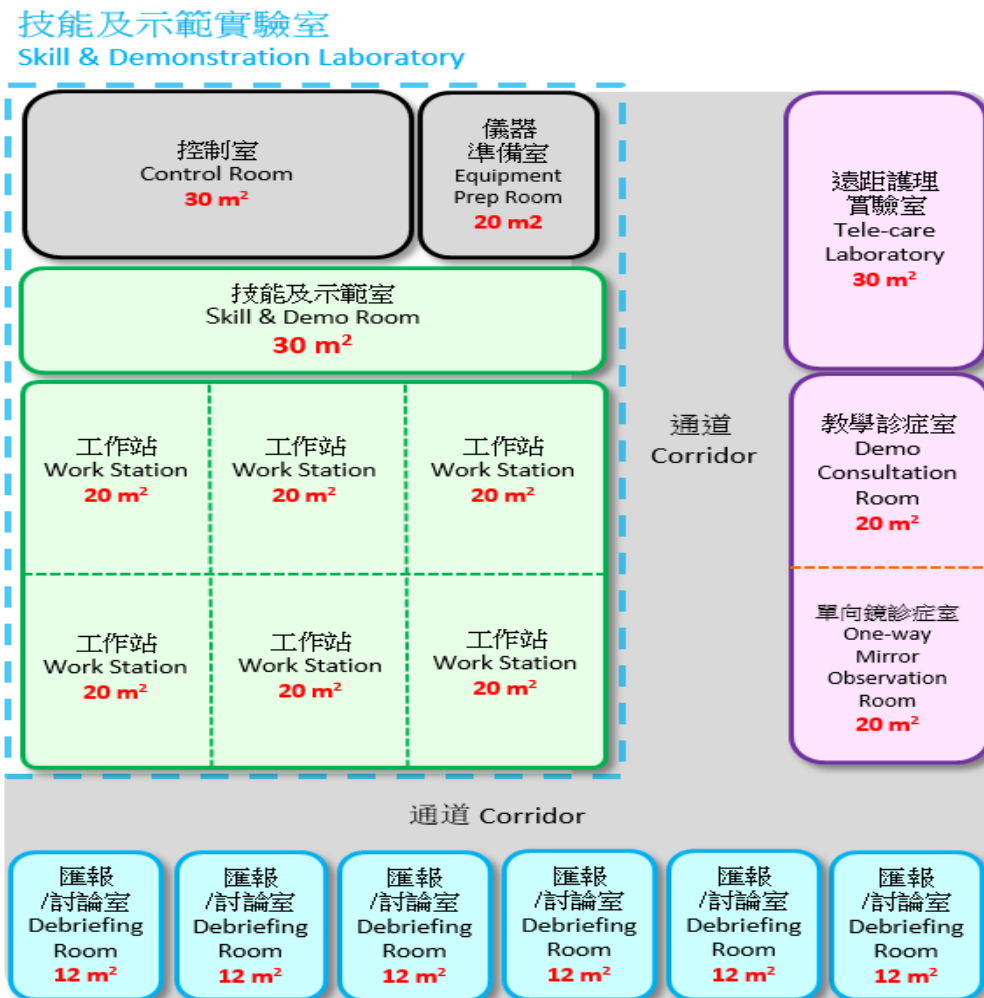
40.   The skill and demonstration laboratory is one cellular space which comprises of the skill and demo room and six skill and demo workstations, which are facilitated by AV facilities, virtual reality simulators, recording equipment etc.

41.   This area will be highly versatile with the ability to cater for different physical setup. There will be no fixtures and with convenient access to electricity and data ports from the floor. There will also be cameras at strategic locations to record trainee activities for subsequent debriefing. The skill and demonstration area will have a projector screen with the

associate ceiling mounted projector and audio system connected to the hospital network.

42.   The control room will be an area for mock set up and testing to replicate the skill and demo work station and space for technical support including material preparation, recording, broadcasting/receiving support.

43.   A lot of preparatory work will be done by the trainers for skill-based or scenario-based training.   Different scenarios will require different sets of equipment, gadgets and consumables. The equipment preparation room will be located adjacent to the control room at the rear part of the centre and will be equipped with full height cupboards and some work benches.

44.   The six debriefing rooms should be located in close vicinity with the six skill and demo work stations to support immediate debriefing, group discussion and evaluation after skill and demo activities.   Each room will provide space where instructors can debrief and review the recorded videos with learners.   The rooms will have good acoustics and good lighting that can be dimmed or adjusted for video presentations.   The rooms will be clustered together and arranged in pairs with folding partition in between every two rooms for flexible use of the rooms and catering for larger classes.

45.   The demo consultation room is replica of the actual consultation room at the CMH for clinical and non-clinical scenarios training, such as patient exam and diagnosis, management of patient complaints/violence, etc.   It will be connected to the observation room with one-way mirror, allowing 15-20 students/observers to have clear observation.   Please refer to the requirements as described in the outpatient clinic. To demonstrate different clinical settings, oxygen and vacuum outlets will also be installed in the room.

46.   The tele-care laboratory will be equipped with advanced AV technology for distance education which extends the reach of simulation training. AV images should be able to be broadcasted to the skill and demonstration area.

47.   Participants will arrive at the Registration Area (D1.3.9) for registration.   Adequate waiting area for 50-60 participants will be provided.

48.   Simulation training is becoming more important and is the trend for future training models. Spacing, interior design and IT network capacity and AV systems will allow for the feasibility of future development.

Chinese medicine library

49.   CM Library procures, stores, indexes, classifies, annotates, and abstracts books, journals and other materials in order to provide students, trainees, hospital and university staff, healthcare professionals and other professionals ("Library Users") with good accessibility to relevant, properly organised and the most up-to-date information during their course of work and study.   The CMH will maintain good linkage to external libraries of other local and overseas universities, including overseas interlibrary loan activities and document delivery (For both CM and WM literature).

50.   The CM Library will easily be accessible by Library Users.   It will have convenient access to service lifts connected to a loading / unloading dock for easy transport of bulk shipments.   The Library will be located away from the kitchen and cafeteria to avoid potential pest problem.

51.   The Library can be in close proximity to the classrooms and simulation centre to create a common area to encourage the research staff to mingle with clinical staff, thus facilitating translational research.

52.   The following areas forming an open plan for library users are:

(1) Reception, receiving, assistant and check out area

(2) Display area

(3) Information / resource corner for OSH, infection control, psychological support etc

(4) Computerised catalogue area

(5) Reading / study area

(6) Books stack area and journal, periodical shelving and publication area

(7) Alcove - Trolleys

53.   Cellular rooms will include the

(1) Photocopy / scanning / printing Room

(2) Discussion / AV viewing room

(3) Archive / store room

54.   The reception will be near the entrance in order to receive / check-out books and provide assistance to Library Users. It will be combined with books and Materials in process, storage and work area for operation convenience, and attached to the CM Library offices for flexibility of manpower and working areas. An alcove for keeping library trolleys in place will be available near the counter. The reception, display area, info/resource corner, books and journal stack, computer area and photocopying room will be in close proximity. These areas will be adjacent to the CM Library office for easy supervision.

55.   A book drop with an opening facing the exterior of the Library and connected to the CM Library office will be provided to facilitate Library Users to return the books and journals after the opening hours of the Library.

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56.   Computerised catalogue area for accessing electronic journals and book search will be placed near the reception for quick assistance, if Library Users required.

57.   Reading / study area with carrels and benches for reading and power plugs for laptop recharging will be provided. they will be in a quiet section away from the service and reception area, but close to books and journal stacks.

58.   Books and journal stacks will easily be identifiable by clear signpost.   Some seating will be available near this area to allow casual reading.   A discussion and AV viewing room will be incorporated for user orientation and education programmes to be conducted in this room. It will be located near the reception.

59.   The two CM Library offices will be attached to the reception counter and easily accessible to computer catalogue / terminal.   Activities to be conducted in this staff office will be packing, unpacking, wrapping books, processing journals and other clerical duties.

60.   Archive / store room will be attached to the staff office for books and journals archiving, as well as supplies / materials storage.

61.   Library staff will be provided with easy access to staff facilities, e.g. pantry.

62.   Flexibility is required for design of the CM Library so that it can expand or change the use of rooms in future.

63.   Information technology will affect the design of the CM Library. Increasing number of electronic materials being made available on the knowledge network and internet means planning and laying of network cables and ports is crucial.   Terminals will be purpose-built, extra network

ports and wireless LAN for portable personal computers will have full coverage within the library. Lighting will be designed to avoid glare on the monitors.

64.   Noise control - area will be designed and located by progressive noise levels.   A logical progression from the nosiest area to the quietest areas: reception, computer terminals, books stacks, reference area, and finally, the study area.

65.   Library User traffic will be minimised by locating the library entrance in a central position.

66.   Floor loading is important to cater for printed matters and book shelves.

67.   Electronic inventory security systems - the entrance of the CM Library will be equipped with an electronic book detection system fully controlled by staff at the reception / check-out counter. Building contractors will have to provide electricity power supply and conduits as indicated by the system vendor.

68.   Electrical and security control devices:

(1) Library main entrance will be guarded by electronic book detection system and under CCTV surveillance.

(2) Book drop - a wall mounted book drop setup, connected from external wall to inside the library preferred.

(3) Book stack area - light fixtures must be centered between book stacks to achieve luminance uniformity.

69.   Photocopying / scanning area - building contractors will have to provide electricity power points and data points to facilitate the operation of photocopiers and scanners.

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70.   Shelving requirements:

(1) Shelving will be adjustable in height to cater for publications of various sizes.

(2) Oversized books and journals will be catered for.

(3) Shelving units will be required in the archive / store room (D1.4.5) for housing back issues of journal collection to save space. Heavy floor loading must be taken into consideration.

71.   Lighting

(1) The whole library, especially reading area, will have good overall lighting from the ceiling.

(2) The lighting trays will be arranged continuously and perpendicular to the book shelves at full length.

University Staff Offices

72.   There will be offices and support facilities for each of the three Universities.   These facilities should be clustered together with controlled access for each University.   Adequate power supplies and data ports to support systems for each University is required.   The offices and support facilities for each University include

(1) 1 cellular office for the Head

(2) 10 cellular offices for the teachers

(3) 1 general office including space for printing

(4) 1 general storage room

73.   In addition, there will be five cellular offices for teachers of other academia.   Each office will have controlled access and able to accommodate five teachers.

Support Facilities

74.   Changing and Locker with Shower (F/M)

   (1) Will have lockers for female zone and male zone respectively

   (2) Will provide two entry/exit points in both male and female zone

   (3) Space for locker/changing and an allowance for toilets, wash hand basin, showers and handicap toilet with wash hand basin

   (4) Will provide full height mirror

   (5) Will provide good ventilation

75.   Vending machines will be provided in common area / convenient locations for students, visitors, lecture attendees etc for items such as hot drink, cold drink, snack and convenient items.   Power supplies should be provided.

76.   There will be cleaner's rooms, disposal rooms, and adequate number of public toilets (F/M/Disabled) and staff toilets (F/M/Disabled) to support the large number of users of the Education and Training facilities with design according to the hospital standard design.

D2.   Clinical Trial and Research Centre

Overview of the department and services scope

1.   The CMH will provide a platform for promoting teaching, training and clinical research in CM with collaboration with the three local universities.   The CTRC will be set up in the CMH to conduct internationally recognised high-standard clinical research and provide a scientific research platform for the development of CM including CMs, especially in the therapeutic application of CMs, promotion of the clinical development of pCMs, and enhancement of the position of CM in the international market.

2.   The CTRC at the CMH is an inpatient ward of 20 beds dedicated to support clinical and research activities. The design of the CTRC should meet the international standards and able to perform phase 1 and phase 2 clinical trials. The planning does not cater for the conduction of bio-equivalent studies commonly conducted in WM clinical trial centres.

3.   The CTRC is an inpatient module. The operation mode and design will generally follow the inpatient requirements of a ward module but with its special features as described below.

External relationships and adjacency requirements

4.   CTRC will be located at L4, sharing similar overall operation and general support as other inpatient wards from levels L4~L7.

5.   The CTRC has two circulatory routes supporting its function:

(1) Main public circulation route for access to the CTRC by patients, patients' families and visitors;

(2) Internal circulation route is for staff, patients with escort and

material movement. The internal route also provides connection of the CTRC to other internal hospital units mainly for transferring patients to other clinical supportive service units, for easy access to staff facilities, and receiving service support from bulk store, WM pharmacy, laundry and CSSU. Back-of-house services including L/UL zone for bulk goods scheduled delivery by AMR. Clean bulk items include meal, clean linen, drugs (CM and WM), laboratory specimen, CSSU items, consumables and medical record. Dirty bulk items include used linen and wastes (domestic, chemical and clinical). The clean and dirty passages are to be segregated. The internal route also connects the ward to various clinical areas, and centralised staff facilities i.e. offices, changing area and overnight accommodation. All bulk items will be transported by AMR and supplemented by manual portering.

6.   Individuals undergoing clinical trials and research will require close monitoring as well as immediate access to resuscitation and other clinical support facilities when there is sudden change in condition.   Adequate resuscitation equipment will be placed near to bedside for emergency use.

7.   There will be easy access to the HDU and the radiology department as individuals undergoing clinical trials and research may require these supports. There should also be easy access to patient lift for transferring the patients to other acute hospital in case of clinical emergencies.

8.   Drugs and CMs used will be supported by the CM pharmacy and WM pharmacy. Supplies will be delivered by PTS, AMR or manually by portering team under strict protocols. The medications will then be prepared in the dispensing room, stored in the drug storage room or directly dispensed to patients as appropriate.

9.   There will be a clear advantage for the CTRC and the university offices to be located close to each other.

Internal relationships, operation flow and functions

10.   CTRC provides the required setting of inpatient wards for individuals undergoing clinical trials and researches.   The operations will be similar to special inpatient ward (Section A2), except that for safety reason, beds will be arranged in 4-bed and 6-bed cubicles and there will be no ensuite toilets as a controlled environment is necessary.

11.   The CTRC is a mix-gender ward. All patient rooms including bed cubicles, Toilet/Shower rooms, multi-purpose activity room should have electronic access control operated by card proximity sensor and 2D barcode scanner. The arrangement will follow those of the inpatient ward module.

12.   All bed cubicles and the multi-purpose activity room should have CCTV linking to the nursing station for patient monitoring without recording function.

13.   The physical layout of CTRC will also be similar to special inpatient ward with additional facilities to cater for clinical trials and researches.

14.   Admission Room

(1) When patients are admitted to the ward, usually there will be procedure to explain to the patients on how the research will be conducted, the rules and regulations to be adhered during the stay and revisit the consent for the research to be conducted. This will be done in the admission room. The admission room will be close to the main entrance and the helpdesk area.

15.   Multi-purpose Activity Room

(1) A designated space to provide adequate living space with calming,

relaxing and safe environment to maintain daily routine, exercises, entertainment, study, and family support to uphold individuals' psychological and emotional health as individuals may need to stay within this confined area for days.

(2) The room will have

(a)   Reading area (book, magazine, newspaper)

(b)   TV zone, with digital projection screen for movie

(c)   Communal area for group activities, e.g. board game, card game

(d)   Internet connection with nos. of workstation

(e)   Pantry area for meal, drink or light refreshment

(f)   Gym facilities, e.g. treadmill

(g)   Area for classes, talks and workshops

16.   Resuscitation Room

(1) To be equipped with standard provisions of a hospital non-trauma resuscitation room to support CTRC individuals in case of sudden deterioration.

(2) Please refer to the requirements of the resuscitation rooms in the outpatient clinic floors.

17.   Computer Room

(1) Working space for three to four staff and space for four computer server racks, one set of computer server racks for each of HKU, CUHK, HKBU

(2) Each set of individual server racks should have direct link to the IT platforms of the three individual universities.

18.   Data and Record Room (three rooms)

(1) Clinical trial and research admin and data room

(2) Room should be double-lock for data security requirement

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(3) One room for each HKU, CUHK, HKBU

(4) The data and record rooms should be located just outside the main entrance of the CTRC to minimise unnecessary staff movement disturbing clinical trials in conduction.

19.   Specimen Processing Room

(1) For safe storage of human derivatives

(2) Will have automatically log-recorded freezers and refrigerators and automatic alarm system. The alarm system will be connected to the nursing station, linked to a remote alarm panel (to be supplied and installed by hospital) to be located next to CCMS and able to send emergency message to responsible staff through the mobile devices

(3) Will have three sets of freezers, refrigerators and centrifuges, one set for each HKU, CUHK, HKBU

(4) 24-hour A/C provision

20.   Drug Storage Room

(1) To store research products and requires effective monitoring

(2) Will house three sets of independent lockable equipment including cabinets, drug freezers, drug refrigerators following the security protocol. One set for each HKU, CUHK, HKBU

(3) Security alarm required for fridge/ freezer and access doors. The alarm system will be connected to the nursing station, linked to a remote alarm panel (to be supplied and installed by hospital) to be located next to CCMS and able to send emergency message to responsible staff through the mobile devices

21.   Dispensing Room

(1) For preparation of research drugs

(2) Provision of biological safety cabinet

(3) Shared use by the three Universities

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22.   One PMS will be used in one of the 4-bed cubicle. The central monitor of the system will be locating in the nursing station. This 4-bed cubicle will be located close to the nursing station.

23.   Other patient, staff supporting and utility facilities.

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E.   GENERAL SUPPORTING SERVICES

E1.   Community health services

Overview of department and services scope

1.   The CMH is a special theme hospital, apart from the direct development and provision of services, training and research, the CMH also has missions and functions to promote and create the health values of CM in healthcare, in better understanding of CM, adopting CM approaches in daily living and using CM services in achieving health.

2.   There is a wide range of non-medical-seeking visitors/users to the CHS including patients (inpatients, day-patients and outpatients) and their families/relatives/carers,   volunteers   including   patient   self-help groups/associations/ non-governmental organisations ("NGOs"), elderly, persons with disability, and contract-out staff from Social Enterprise Business which provides job opportunities for the disabled, etc ("Clients"), thus the design and location of the CHS will put all Clients into consideration.

3.   The CHS include the following services to achieve the above said missions and functions, providing additional accessibility, convenience, scope and values of services with added choices:

(1) Community Health Education and Volunteers

(2) Patient Resource Centre

(3) Spiritual Support

(4) Cafeteria

(5) Gardening

4.　　General operation hours are the general business hours.　The different services may extend activities during weekday evenings and weekends to accommodate working families and relatives.

External relationships and adjacency requirements

5.　　Community health education and volunteers, patient resource centre and spiritual support will be clustered together and located at L2 of the CMH, conveniently accessed by public and close to public elevators.

6.　　Gardening section should be located within the area of roof top garden to facilitate garden maintenance.

7.　　Depending on the design configuration, the CHS facilities could be planned as an integrated section. The CHS has two circulatory routes supporting its function:

(1) Main public circulation route for access to the CHS by patients, patients' families and visitors;

(2) Internal circulation route for staff and material movement.　The internal route provides connection of CHS to other internal hospital units i.e. mainly for easy access to staff facilities and receiving service support from bulk store. L/UL zone outside the medical record office for bulk goods scheduled delivery by AMR is to be provided. Back-of-house services including transfer of clean and dirty bulk items. Clean bulk items include receiving consumables and stationaries. Dirty bulk items include wastes (domestic) for disposal. The clean and dirty passages are to be segregated. All bulk items will be transported by AMR and supplemented by manual portering

8.　　Cafeteria ("Cafe") should have convenient access to garden areas, so that patients/visitors take rest in the open garden area after purchasing food/drinks from Cafe.

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9.   Depending on architectural design, accessibility to the CHS with escalators from the hospital main entrance as well as lifts for people on wheelchair would be preferred.   Clear signage will be available to direct public to this area and designs indicating different areas of the centre.

10.   The design of CHS should be welcoming and pleasant to visitors, and environment to promote healing.   The entrance will have conspicuous entrance that is the first thing people would notice once arriving at the floor through lifts.   It will be decorated with an eye-catching and beautifully designed façade which can denote one main purpose of the centre – health education and patient resources.

11.   Accessibility of all services by all different types of visitors should carefully be considered, such as connection between the Cafe to the garden, relationship between the Cafe in CHS and main hospital dining, active provision of spiritual support to hospital patients yet allowing passive enquiries from patients.

Internal relationships, operation flow and functions

12.   The elements of the CHS: community health education and volunteers, patient resource centre, spiritual support and Cafe will be clustered together allowing frequent and easy access between them. The green house will be at G/F in proximity to the medicinal garden which will be easily accessible from Cafe.   All will share the general support facilities.

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E2.   Admission and Building Amenities

Overview of department and services scope

1.   The CMH will serve as the flagship CM institution leading the development of CM and CMs in Hong Kong.   It will be a change driver, promoting service development, education and training, innovation and research.   Apart from the direct development and provision of medical services, training and research, the CMH will promote the health values of CM to the public in better understanding of CM, adopting CM approaches in daily living and using CM services in achieving health.   With this special theme, the building entrance and design should have special considerations to achieve above missions and functions for all visitors of the hospital, including patients and their families and relatives, students and trainees, volunteers, staff, vendors etc ("Visitors") on their first sight while entering the hospital.

2.   The main entrance to the CMH will be the initial contact for all Visitors and should be patient-centred, family-oriented, barrier-free and welcoming.   It will include the vehicular access, entry lobby, atrium, general public amenities, main helpdesk reception and waiting area. Arriving at the CMH must be simple and streamlined.   Visitors must be able to find their way directly from the entrance to their destination, with landmark features throughout the hospital.

3.   There will be digital wayfinding to guide visitors to various areas in addition to mobile applications.

4.   The front of house services and amenities are those that must be located in the main thoroughfare of the hospital and easily accessible by Visitors.   It needs not necessarily be in a single confined space, but will be positioned along the main thoroughfare through the facility.

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5. The facilities included in this section include

(1) Admission and Building Amenities

(2) Death Documentation Office ("DDO") and Release of Information ("RoI")

(3) Patient Amenities

(4) Transportation / Porter / Transfer

External relationships and adjacency requirements

6. The Admission and Building Amenities (E2.1), Patient Amenities (E2.3), DDO and RoI offices (E2.2) should be located next to main helpdesk/admission (E2.1.6), and be clearly visible and easily directly accessible for Visitors through the hospital entrance and located. The Transportation/Porter/Transfer (E2.4) will be close the Supporting Services and Security area to facilitate staff deployment and handling of emergency situation.

7. The whole design of the CMH will limit the extent of movement required by Visitors and day-patients within the hospital grounds. The design will prevent paths of travel for day visitors from entering into inpatient areas by creating a clear separation between inpatient zones and ambulatory services precincts. The design of vertical transportation systems must support this security principle with clear separation between day visitors, inpatient areas and staff only areas.

8. Arriving at the hospital will be simple and direct. Walkway and/or access route to the hospital entrance will be barrier free and led by clear signage. Drop-off points and lay-bys in relation to vehicle access will be provided. Public transport access (e.g. green mini-bus, bus) to the hospital, and maintain access for ambulance pick-up, NEATs and other transport as required. Good traffic control and safety must be ensured. Digital wayfinding will be provided and mobile applications will be explored.

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9.   The location of the workroom – control cum staff briefing room will be easily accessible from the main entrance.   The security depot serving the main public entrance will be the control point for visitors to obtain the relevant accreditation for after hour access.

10.   Public access to the CMH from the visitors' carpark (lower ground floor) will be required to change lift at ground floor after visiting hours.

Internal relationships, operation flow and functions

Admission and building amenities

11.   The CMH being an intelligent hospital will widely adopt the self-serve model with modern mobile technology, including registration, payment, receipts, information, purchasing, etc.   Helpdesks and nearby kiosks are readily available to support those encountering difficulties on the mobile applications or those without such devices.

Patient amenities

12.   Shops and snack bar

(1) In view of complementing the CMH's function, services and mission, and, commercial viability, it is planned to have shops and snack bars, although the actual provision of the food and retailed outlets is based on out-sourced providers.

(2) Individual meters for utilities supply for these service outlets are required.

(3) Should provide power supplies, sink, water point, drainage for all shops.   Special consideration of numerous number of heat dissipation machines, e.g. refrigerators, freezers, coffee machines, boilers, etc.

(4) The planned shops are as follows:

(a) Rehabilitation shop
to serve functional deficit/disability, chronic disease patients who need special equipment for home care such as wheelchairs, assisted bath chair, bedside commode, and related assistive equipment

(b) CM drug / Herb shop
to provide special/high-grade CM herb accommodating different market demand, with the following breakdown of area: store, dispensing area, service counter, reception area

(c) WM drug, health food and supplements shop
to provide WM consumables for health maintenance and prevention and health food/ supplement, with associated health instruction, with the following breakdown of area: store, dispensing area, service counter, reception area

(d) Patients' consumables and home-use equipment shop
to provide hospital patient uniform, daily living accessories, CM decoction cooker, blood pressure meter, thermometer, home-use monitoring equipment, etc

(e) Foot massage/bath shop
as added-value CM healthcare services, available for patients' families/visitors

(f) Convenient store

(g) Flower and fruit Shop

(h) Snack bar

13. Other patient, staff supporting and utility facilities

E3.   Dining, Catering and Kitchen

Overview of the department and services scope

1.   The CMH will be an international hub for CM services in Hong Kong. Non-patient Catering ("NPC") will provide catering services to customers including hospital staff, visitors etc. in the CMH.   The hospital operator should obtain restaurant license and should meet all licensing requirements for the NPC.

2.   The menu choices of NPC will include the following -

   (1) Chinese and Western food items including congee and dim sum for breakfast

   (2) Chinese and Western food items including siu mei, stir-fry items for lunch, afternoon tea and dinner

   (3) Vegetarian and Healthy food items

   (4) Noodles/Pasta in soup items

   (5) Chinese and western soup

   (6) Hot and cold snack items

   (7) Sandwiches, bread, toast, salad and dessert items

   (8) Specialty and/or Chinese medicinal cuisine

   (9) Chinese and Western international cuisine, buffet, a la-carte and cocktail menu for waiter service offered to customers and/or seminar/convention events in the Hospital

   (10)   Hot and cold beverage

3.   NPC will implement cook fresh catering mode, i.e., the process where food (fresh, chilled or frozen) is prepared, cooked, portioned and served to customers at food services counter or served dining area once they place their orders at the cashier counter, automatic ticketing machines or by waiter services.

4.   Mode of operation and seating for the main dining area and served dining area of NPC will be self-service with approximate 350 seats and waiter service with at least 20 seats respectively, which are also the target nos. of seats of dining areas for restaurant license application.

5.   Normal service hours for NPC will cater for breakfast, lunch, afternoon tea and evening dinner daily. The facility will also provide catering support to seminars and conferences.

6.   The operation of kitchen facilities of NPC especially for food preparation and production will be integrated with the kitchen of Patient Catering.

7.   Patient Catering ("PC") at the CMH provides good quality food and services to meet the needs and dietary requirements of the patients in the CMH.   PC is responsible for the planning of all food purchases, production of all menu items, the assembly and delivery of meals to wards and served to patients.

8.   The provision of patient meals includes:
   (1) Daily set meals for inpatients and day-patients
   (2) A la-carte menu available for patients
   (3) Special diets or nutritional products for patients to meet their dietary or religious requirement
   (4) Chinese medicinal cuisine/food therapy according to traditional recipes for preventive care and achieving a healthy and proper balance of human body and organs for patients on demand

9.   PC will implement cook fresh catering mode, i.e., the process where food (fresh, chilled or frozen) is prepared, cooked, portioned and

served to patients once they select and order their meals via the Patient Meal Ordering System directly at their digital integration bedside terminals.

10.   Assembled patient meal trays will be stored in heated food trolleys and delivered to wards by AMR three meals a day. Ad-hoc meal/snack delivery service will be offered upon patients' request. After each meal, the trays and trolleys are collected and returned to the kitchen by AMR for washing.

11.   PC will prepare and deliver nutritional liquid formula milk to patients upon requested from clinical professional including CMPs and dietitians.

12.   PC also oversees non-patient catering services and functions which may be run by an out-sourced caterer.

13.   PC will be operated from morning to evening daily and the operating hours will be extended if needed.

14.   NPC and PC will be located at L2 of the CMH and the dining facilities for NPC will be easily accessible to hospital staff and visitors.

Operational flow (Materials / Staff):

15.   The following diagram shows the internal functions and operational flow of the NPC:

Zoning Diagram of NPC
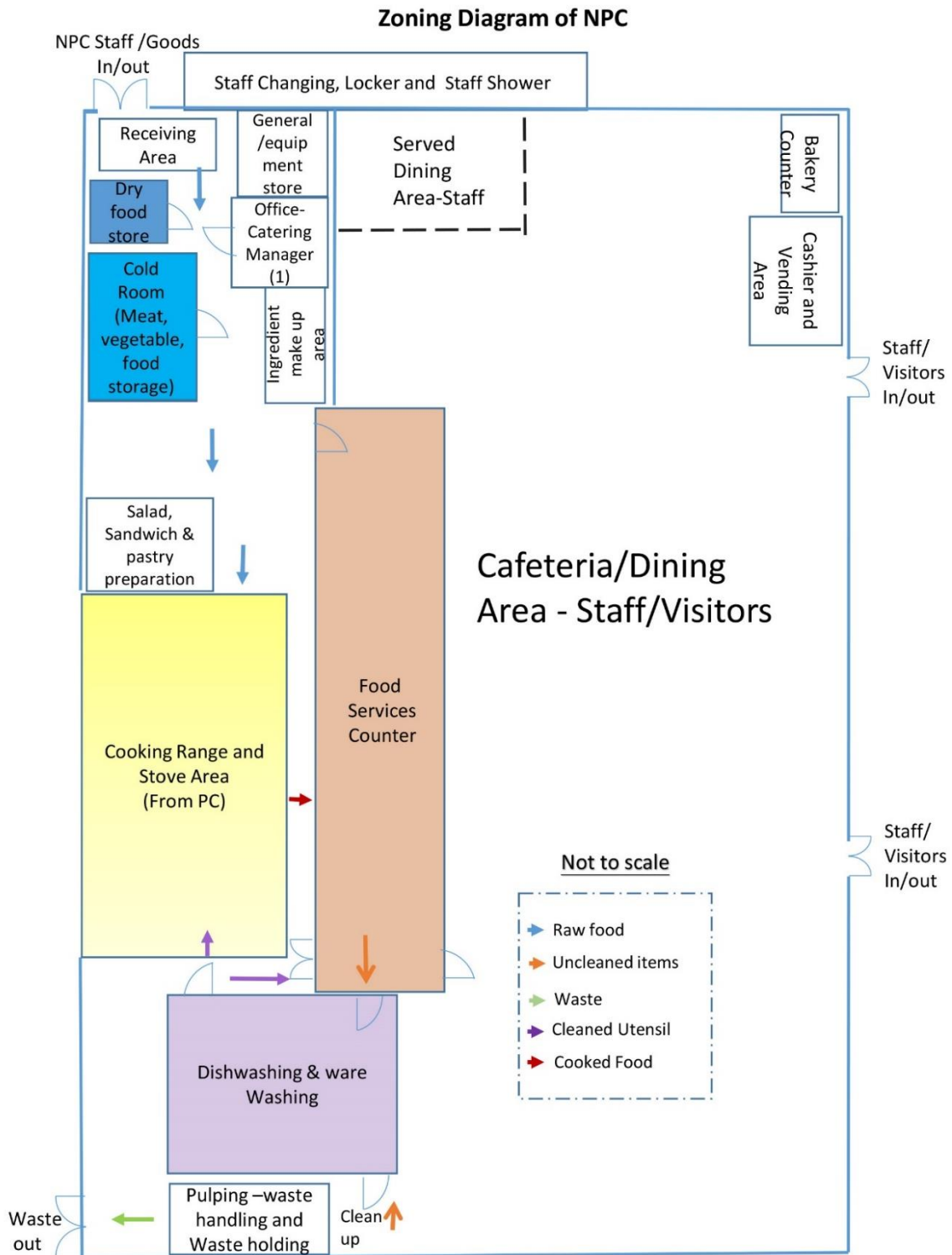
16.   The following diagram shows the internal functions and operational flow of the PC:

Zoning Diagram of PC
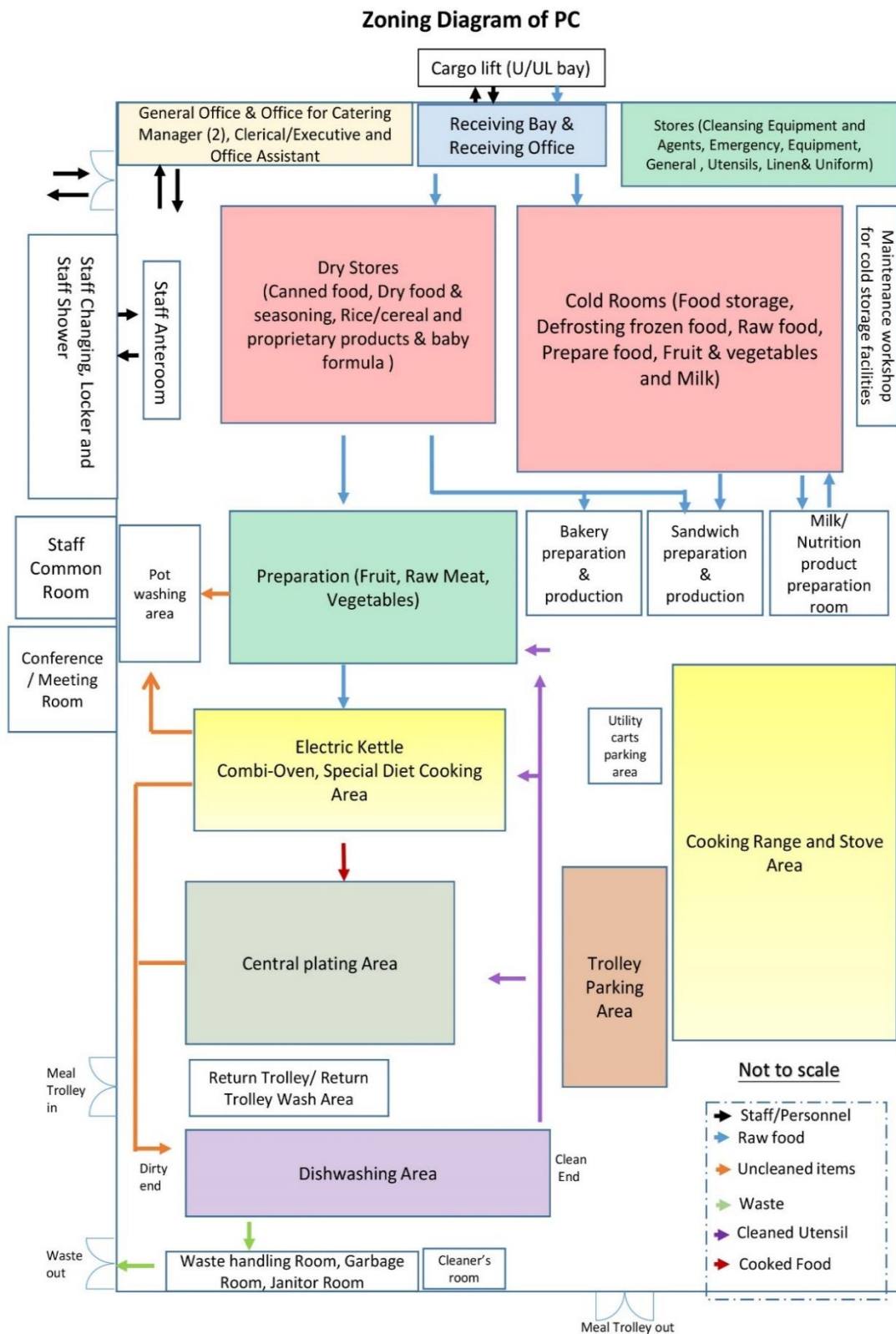
17.	One-way logical flow will be adopted for smooth operation in the NPC/PC.

Receiving	Unpacking	Stores	Preparation	Cooking	Central Plating	Meal Distribution and Return	Washing Up	Waste handling
• Goods inspection • Designated loading dock for catering	• Removing the packageing of received goods before storage	• Cold Rooms • Dry Store • General Store	• Ingredients make up • Liquid formulae preparation	• Cooking of food • Texture Modification s	• Portioning and meal tray setting	• Delivery of Meal and return of used meal trays and trolleys	• Dishwashing • Warewashing • Trolley washing	• Link to Rubbish Depot

E4. Information Technology and Communications

E4.1 Communications

Overview of department and services scope

1.   The CMH will provide hospital-wide voice communication facilities. In particular, the PABX system provides the hospital staff with both internal and external voice communications including the telephone system, paging system and around the clock fax transmission service.

2.   The PABX room provides a space for keeping the main telephone system and other associated systems such as voice mail system, call administration system etc.

E4.2 Data Centre and Network Infrastructure

Overview of the department and services ccope

3.   The CMH will be an intelligent hospital adopting modern technologies for effective, safe, user friendly, environment friendly, efficient care delivery and patient-centred care. The IT systems of the CMH will be a flagship for the overall CM IT applications and development in HK.

4.   The CMH IT strategy, technologies and applications will support hospital-wide Wi-Fi and public Wi- Fi coverage, Bluetooth low energy coverage, as well as concept and technologies on mobile Apps, QR code, Big Data, RFID.

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5.   The IT service will establish an information technology infrastructure to facilitate application of corporate and clinical information systems in the Hospital through computer networks.

(1) Corporate information systems include systems to support corporate finance, human resources, administration and communications. An ERP system will be put in place to support these corporate operations. An internet and intranet platform will be established to support corporate communications.

(2) Clinical information systems will support clinical functions of patient admission/discharge/billing, electronic patient records, clinical and radiological images, laboratory operations, information management for clinical and clinical support operations, etc. It is anticipated that the Hospital will make full use of the Government's Electronic Health Record Systems and available modules to support the clinical functions

6.   The department is also responsible for managing system and network security, personal data privacy, risk management, software distribution, virus control, inventory control, systems database backup and recovery, as well as remote diagnosis of problems arising from users' computer terminals.

7.   The hospital information technology infrastructure provides access for hospital end-users to corporate/shared IS applications. It includes:

(1) Wide Area Network ("WAN") connecting hospital to corporate data centres and other hospitals and institutions

(2) Hospital's own data center and Diversified Network Location ("DNL")

(3) Hospital campus network connecting major buildings/floors

(4) Data ports for connecting workstations to the network

(5) Cabling for data, WLAN and other equipment

(6) Full wireless coverage in hospital block

(7) Public Wi-Fi and hospital-wide Wi-Fi access network Systems

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Management Services including software distribution, virus control, inventory control and remote diagnosis.

8.   The CMH IT systems will include the following applications:

(1) Clinical systems

(a) Such as HIS, Chinese Medicine Information System ("CMIS"), Outpatient Appointment System ("OPAS"), PACS, pharmacy automation system

(2) Patient Administration System

(3) Non-clinical Management System

(a) Such as ERP, Asset tracking, Security Management

(4) Third Party Logistics ("3PL")

(a) Such as drug/medication automation, medical consumables and general supplies management, catering ordering system

9.   Applications will be synchronised with each other, such as the clinical systems will synchronise with hospital administration, shroff and pharmacy. It is anticipated that the Hospital will make full use of the Government's Electronic Health Record Systems and available modules to support the clinical functions.

10.   The CMH IT will have the ability to share patient health data to the Electronic Health Record Sharing System eHRSS in accordance with the requirements of the Electronic Health Record Sharing System Ordinance (Cap. 625 (eHRSSO) as the CMH will join the eHRSS.

11.   The IT facilities are comprised of backbone networks, building networks, floor networks and Integrated Cabling system. The entire IT service will be supplied and installed by the hospital. Building contractor is required to provide all cable containment, adequate power supply and the covering plates for the port outlets. All power supply for the IT services will

be connected with essential power supply. All wiring works will be carried out by Hospital's direct contractor/suppliers.

12.　　Intelligence, streamlining the patient journey, hospital-wide usage of AMR, and automation in pharmacy supply chain from storage, decoction, packaging, dispensing to inventory management would be applied as far as applicable. Adequate capacity and space should be planned for future expansion in view of rapid changing technologies.

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E5.   Health Information and Records Management

Overview of department and services scope

1.   The CMH will strive to maintain medical records in a standardised and professional manner in order to protect patient confidentiality and promote quality patient care while allowing adequate access to providers.

2.   The Health Information and Records Management ("HIRM") Department consists of the main office and satellite offices namely the Death Documentation Office ("DDO") and the Office of Release of Information ("RoI").

3.   HIRM is responsible for maintaining a record system for the use, retrieval, storage and disposal of patient records, and the production of indexes, abstracts, and statistics for hospital management and medical staff uses.   DDO is responsible for processing death documentation and RoI is responsible for handling request for release of information.

4.   Records of the CMH patients, including inpatient, day-patient, outpatient, allied health, will be processed and stored upon discharge of patients or after each attendance.   These records will be available for retrieval for selected outpatient visits and every readmission, or for reporting and research purposes.

5.   Paperless medical record system is planned. The hospital will go for paperless outpatient services as far as possible. Only selected follow-up visits with complex admission episodes will need prior medical record folder retrieval before patient attendance. For inpatient readmission, prior medial record retrieval to the designated admission wards will be arranged before patient admission. Electronic Health Record ("eHR") and CMS will

be put in place to reduce the need for paper medical record and storage as much as possible.

6.   HIRM will ensure the proper record management at satellite/departmental record stores.

7.   HIRM will operate seven days a week while DDO and RoI will open on weekdays only.

E6. Mortuary

Overview of department and services scope

1.   The CMH services will cover episodic, chronic, complex diseases, convalescence, rehabilitation, palliative care, health maintenance and preventive care and other disease categories.

2.   The CMH mortuary is for (i) temporary storage of body of inpatients passed away in the CMH until they are removed for burial or cremation, (ii) viewing and identification of a dead body, (iii) expression of respect for the deceased and their visiting relatives/next of kin, and (iv) holding cultural/religious funeral ceremonies. Layout of the mortuary should enable sufficient space and privacy for each function/activity which may be carried out concurrently.

3.   The mortuary will provide 24-hour body receiving service but has designated service hours for body releasing.

4.   There will be no autopsy service at the CMH mortuary. Dead body will be transported to public mortuary/coroner service for postmortem examination/autopsy if required.

External relationships and adjacency requirements

5.   The mortuary will be located at lower ground floor and shares the floor with back of house facilities, vehicular loading/unloading area and car parks. It should be situated at a discreet and relatively quiet position away from major public/staff/patient traffic, yet not readily overlooked.

6.   The mortuary should be directly connected and accessed by vehicular traffic, for hearse parking and routine maintenance services, and segregated from public vehicular entrance.

7.   There should have direct and restricted access to the gated and covered hearse parking area for the movement of bodies and equipment. The exit from the mortuary will be discrete and will not be within view of inpatient wards and nearby residential blocks.   It should not be adjacent to the garbage collection point or major public access to the hospital.

8.   The mortuary has two circulatory routes supporting its function:

   (1) Main public circulation route is for access to the mortuary by patients and patients' families;

   (2) Internal circulation route is for staff, deceased bodies and material movement. The internal route provides connection of mortuary to other internal hospital units i.e. mainly for receiving deceased bodies from inpatient wards, release of deceased bodies to hearse parking area, for easy access to staff facilities, and receiving service support from bulk store. Transfer of deceased bodies are through manual portering. L/UL zone for bulk goods scheduled delivery by AMR is to be provided. Back-of-house services including transfer of clean and dirty bulk items. Clean bulk items include receiving-in consumables and stationaries. Dirty bulk items include wastes (domestic, clinical) for disposal. The clean and dirty passages are to be segregated. All bulk items will be transported by AMR and supplemented by manual portering.

Internal relationships, operation flow and functions

9.   When an inpatient passed away in the ward, the deceased's relatives and friends will pay their last respect in the ward. After the last respect, the body will be transferred from the ward to the storage chambers room of the mortuary.

10.   Occasionally there will be direct body removal requests due to religious issues. The body may be temporarily stored in the body storage room of the mortuary pending completion of the required statutory requirements, or if arrangements are made swiftly then the body can be collected by the undertaker from the mortuary direct and transported to the religious venue.

11.   Convenient and separate accesses to the mortuary should be arranged for staff, relatives of the deceased, undertakers and/or other authorised persons. There will also be a separate route for release of dead body.

12.   All in-house body and equipment transportation should take the shortest possible pathways in relation to the location of the inpatient wards, and far from hospital main entrance and public's view. Designated lifts for vertical transport will be provided. The lift will be of appropriate size to accommodate the mortuary trolley, transporting staff and a few accompanying persons.

13.   All passages from the wards to the mortuary, entrances and exits of the mortuary should be barrier-free and wide enough to facilitate movement of mortuary trolleys, AMR and wheelchairs without congestion.

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14.   The planning and room adjacency of the mortuary will follow the operation model of the mortuary as follows -
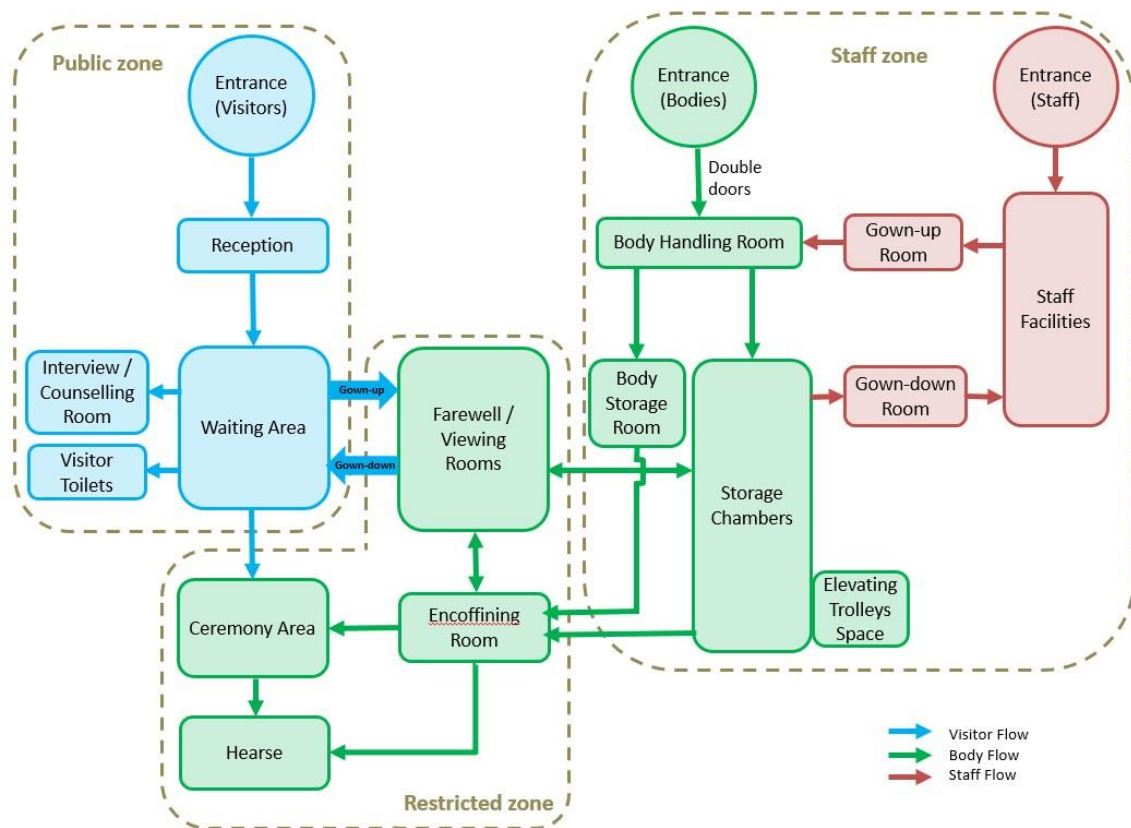
15.   The mortuary area will be divided into public zone, restricted zone, and staff zone. Public are free to access to and move within the public zone. Restricted zone is only accessible by authorised persons with access permission. Bodies will not be taken in and out of the mortuary under public scrutiny and services related to body receiving, handling and releasing are confined to the restricted zone. Staff zone include mortuary office, staff facilities, storage areas and staff working corridors to facilitate quick movement of staff and equipment among different function areas.

E7.   Staff Accommodation and Facilities

Overview of the department and services scope

1.   Staff accommodation and facilities include accommodations and related general support facilities as well as staff facilities.

2.   Staff accommodation is primarily about the provision of rest or sleeping facilities to both on and off duty staff, regardless of their grade and rank for their carrying out of on-call/night duties and during special situation such as hoisting of typhoon signal no. 8 or above.

3.   Call room/ overnight room mainly for serving professional staff including medical practitioners and nurses are designed as 1-bed rooms. The 4-bed rooms are planned for the other grades including supporting staff.   All rooms are planned with ensuite toilets with showers.   Barracks, with 4-8 beds in each partitioned cubicle, are for supporting staff's accommodation.   Shared toilet, changing and shower facilities will be provided in barrack area.

4.   Accommodations for guest / visiting scholars will be located together with staff accommodation. On the other hand, the family / parent overnight rooms will be located in respective inpatient wards and details should refer to the inpatient section of this brief.

5.   General facilities such as linen/store/disposal rooms and reception and waiting area will be provided to support accommodation services.

6.   Staff changing service will be provided centrally, with locker, changing and shower facilities for staff to store personal belongings, to change to working uniform before work and vice versa after work as well as to clean up.   Such facilities will be provided to all staff except those who require to change and flow directly into clean/sterile areas, such as

those units handling sterile supplies, pharmacy, laundry, and general office staff who are not required to change or wear uniforms.

7.   Other staff facilities such as lactation and baby-care rooms, common room, activity/recreation space and outdoor courtyard/rest area will be designed to achieve a positive working environment.

E8.   Office and Administration

Overview of department and services scope

1.   The CMH hospital administration provides overall management and administration to the hospital. It comprises of the following departments/offices:

(1) Nursing Administration

(2) Outreach

(3) Administration/General Registry

(4) Finance

(5) Human Resources

(6) Public Relations Unit

(7) Credit and Collection

(8) Information Technology

(9) Common Supporting Facilities

2.   While most of the above departments/offices will be clustered together to facilitate operational flow, those listed below will be located adjacent to respective functional areas:

(1) Infection Control Office under the Nursing Administration

(2) Credit and Collection

(3) Information Technology

Details are deliberated in relevant sections below.

3.   Medical staff offices outside the ward/clinic areas will also be centralised to the office and administration floor whereas clinical supporting departments such as pharmacy, allied health, radiology, day procedures and core laboratory will have their offices located within respective departments for operational need.

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E9.   Purchasing and Stores

Overview of department and services scope

1.   The purchasing and supplies department of the CMH is responsible for central material management, asset inventory control, purchase, physical storage and internal distribution activities, each with specific types of material/service with the exception of food and pharmaceutical items.

2.   Purchasing includes the central procurement of supplies, equipment, and services from vendors and their routing to specific user area or warehouse. Activities involved may include receipt and processing of requisition, monitoring perpetual supply items, obtaining quotations from vendors, monitoring receipt of supplies and inspection of stores received.

3.   Storage and internal distribution includes the central storage of all supplies and materials (with the exception of food and pharmaceutical items). Activities involved may include planning of items to be stocked, monitoring the stock level and maintaining stock records, receiving and inspecting incoming goods, and distributing materials to specific user area.

4.   Material management in the CMH will be supported by an IT system say ERP System for management of supply chain. Automated or robotic systems will be installed as appropriate to improve efficiency. This covers asset management.

5.   RFID / iBeacon technology will be employed for management and tracking of Furniture and Equipment (F&E). All users will be able to know the location of some tracked F&E items.

6.   Topping-up system of supplies and consumables for all wards / departments in the CMH is planned for better resources management and stock control, and relieving frontline staff of non-clinical duties.

7.   Material management / storage in the CMH are organised into:

(1) Working Store

(2) Bulk Store

(3) Medical / Laboratory Consumable Store

(4) Medical Equipment Inspection Store

(5) Forms and Stationery Store

(6) Store for Condemnation Items

(7) Emergency store

(8) General Store, one for each ward floor

(9) DG Stores

(10)   Logistic Centre is set up on each hospital floor.

8.   General Store is planned on each ward floor of inpatient and day-patient, for storage of wards supplies.

9.   The logistic centre on each hospital floor (i.e. eight in total) is planned for temporary loading and unloading of supplies to support all departments/units on the same floor when necessary.   Together with the general store, it will also support the patient flow and turnover of the wards by keeping the buffer furniture that are essential for daily operation, portering, emergency use or seasonal fluctuation of different age group of patients.   Through better organization of these F&E, a more tidy and safe ward environment without standby furniture in hospital corridors is expected in the CMH.

10.   DG Stores in the CMH includes specific stores for DG Categories 2, 3, 4, 5 and 7, and VIE tank room for storage of liquid oxygen.

E10.   Laundry and Linen Services

Overview of the department and services scope

1.   Laundry and linen services is responsible for providing safe, clean, adequate and timely supply of linen to hospital staff and patients of all clinical and non-clinical functional units throughout the CMH.   It involves (1) collection of dirty linen, (2) central laundering (except dry clean), (3) storage and distribution of clean linen, and (4) mending or replacement of linen.   Linens include patient uniforms, staff uniforms and working clothes, beddings, bedside curtains, blankets, bedspreads, restraints, and window curtains.

2.   Disposable linens may be used for areas such as EC and MOT for invasive procedures.

3.   The department has to maintain inventory of linens for routine use as well as emergency needs.

4.   Collection of dirty linen items from various departments using AMR and distribution of clean linen items will be supported by the AMR using linen cart exchange as far as possible.

5.   Automation will be applied as far as possible. Automatic uniform dispensing machine will be considered for staff to collect clean uniform items.

6.   Soiled linens can be a source of infections if not washed and disinfected properly before use.   To reduce the incidence of infections, it is essential that the linens provided to the patients as well as staff are free from infections.   Quality assurance system will be set up for ensuing uniforms and linens were washed according to the infection control guidelines.   Measures include physical inspection of laundered linens,

checking the temperature of main wash procedures by temperature logging devices, testing pH value of linens in final rinse stage, and checking the moisture content of sampled laundered products. There will be distinct clean and dirty zones to prevent cross infection.

7.   The department will operate during business hours generally. Under needed situations, the laundry may need to work seven days a week, with extended working hours.

8.   Part of the laundry service demand may be catered for through contracting out to outside service providers. Operators may be engaged to deliver part of the laundering services such as dry clean or special cleaning services.

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E11.   Plant Maintenance

Overview of the department and services scope

1.   The structural and external of the building will be maintained by Government, hence ArchSD and Electrical and EMSD. The interior of the building will be maintained by the CMH, through in-house building maintenance team and/or appointed contractors. ArchSD, EMSD, and the CMH will perform the functions of preventive maintenance and repair of the hospital building, electrical and mechanical ("E&M") plant and equipment, and they also provide first line fault attendance, support, operation and maintenance.

2.   The maintenance of medical equipment and other non-clinical F&E items will be carried out by the CMH through in-house biomedical engineers and/or approved contractors. This bio-medical engineering team will co-ordinate, repair and maintain medical equipment and instrument for clinical users, and provide first line fault attendance, support, operation and maintenance.

3.   The above teams will provide technical assistance in the procurement, installation, operation and replacement of building plant engineering services, and equipment.

4.   The teams will also perform inventory/material storage and management, and monitor the energy consumptions of the CMH.

5.   The teams will provide emergency support as and when required.

6.   Contractors will be engaged to deliver the above mentioned services, as appropriate.

7.   The CCMS control room will operate 24/7.

E12.   Supporting Services

Overview of department and services scope

1.   The Supporting Services ("SS") supports the operation to all departments in the CMH, including the education, training and research facilities, as follows -

(1) Central transportation and portering

(a)   Collection and delivery of supplies and materials

(b)   Patient portering for intra-hospital transfer and inter-hospital / external transfer by NEATS

(2) Housekeeping

(a)   Cleansing in wards, clinics, and public areas

(b)   Waste management including refuse collection and disposal

(c)   Pest control

(d)   Gardening

(3) Centralised printing and mailing

(4) Contingency support

2.   The house keeping team helps to preserve the hospital's physical facilities in a safe, orderly and functional arrangement and to prevent the spread of infection, in managing an aesthetical and pleasing environment of the hospital.

3.   The SS will be supported by appropriate IT systems to ensure operational efficiency.   Workstations and networks will be provided as appropriate.

4.   The central transportation and portering function will be supported by AMR, PTS and Porter Call System/ Automatic Dispatch System.

5.   Contractors may be engaged to deliver the above-mentioned services. There will be both in-house employment and contractor staff.

6.   The supporting services will operate 24/7.

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E13.　　　　Security and Carpark

Overview of the department and services scope

1.　　　　The CMH will provide a safe hospital environment.　The security department maintains the safety and well-being of hospital patients, personnel, and visitors while at the hospital's facilities.　It also serves to protect the hospital assets and patient information.

2.　　　　The major functions of the security department include 24-hour surveillance of hospital complex, car park control and fire safety.

3.　　　　Clear security services demarcation will be established among:

(1) The CMH including the building, hospital carpark to be operated by the CMH/its approved contractor and outdoor open area at ground floor and lower ground floor.

(2) Public vehicle park facilities located at lower ground floor of the CMH to be operated by another contractor of the Government

(3) Outdoor open area including the medicinal garden at ground floor of adjacent GCMTI under separate security management.

4.　　　　The CMH will adopt the latest technologies using various security systems including CCTV and security alarm systems.　Through the use of security devices, areas such as wards, mortuary, laboratories, hospital main entrances, bulk storage area and office areas, etc. will be monitored. Passageway within hospital complex and hospital carpark will also be monitored to safeguard free flow of traffic.

5.　　　　The security department is the focal point of contact for safety and security issues. All security systems and repeater panel of building services system will be linked to and monitored 24-hour a day in the security workroom.

6.   The security department will manage the master key system of the hospital.

7.   The security department may serve as the hospital's Property lost-and-found.

8.   Carparks and loading bays are provided for staff, visitors, ambulances, NEATS and hearse respectively.   Drop-off points and lay-bys in relations to vehicle access will be included.   The number of parking and lay-by spaces were proposed in reference of the Hong Kong Planning Standards and Guidelines for hospital.

9.   The hospital carpark is managed by the hospital and PVP will be managed by contractor of another government department. Separate carparking management systems will be installed.

10.   Both security department and carpark operate 24-hour daily.

11.   List of security systems and quantities required by respective department / unit are stipulated in Part II - departmental section of this brief.

PART III - PLANNING AND DESIGN BRIEF OF ELECTRICAL AND MECHANICAL SYSTEMS AND OTHER SYSTEMS

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1.   PHYSIOLOGIC MONITORING SYSTEM

(to be purchased and installed by the Hospital, trunking and conduit provided under building contract)

System Overview

1.   PMS will be provided to monitor patient's physiological data in the following patient beds connected to the respective main nurse station, including:

(1) 4 nos. of HDU beds (via data port)

(2) 20 nos. of CTRC beds (via data port)

2.   Two central console monitors are installed in the nurse station and all patients' physiological data will be shown on the central monitor simultaneously.   Patient's physiological data from the PMS will be automatically transferred to the HIS for integration of patient's physiological information into the electronic documentation. The above system will be installed in all workstations of departments with PMS.

3.   The PMS will comprise of, but not be limited to, the following components:

(1) Patient monitor, PMS workstation and device interface concentrator for bedside area of inpatient beds with PMS.

(2) One central console stations, One PMS printer, two nos. of 65" LED display panels are installed in the main nurse station.

(3) Wired and wireless network for PMS.

(4) One server cabinet to be placed at server room.   Switches will be placed at server room and total weight of the server components will be estimated. Trunking opening above ground level and main trunk of horizontal trunking across the corridor near each service points and server room will be included for local network. Power point and normal AC power point will be installed.   There must be no drainage system from the level above or in the ceiling.

(5) It is recommended a mounted switch cabinet will be placed below

the false ceiling for cabling connecting to the server room and additional switch cabinet will be provided when the overall cables length exceed 65m from a data port. The Design and Construction Contractor is required to coordinate and work with the hospital's contractor of this system to identify the locations and requirement of the required switch cabinets before installation of the Building Services Provisions. A fiber connection from the switch cabinet to the server cabinet will be implemented.   Two essential AC power points with dual outlet are required.

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2. PATIENT AND ASSET TAGGING SYSTEM

(to be purchased and installed by the Hospital, trunking and conduit provided under building contract)

Overview

1.   The hospital will utilise RFID technology for the following central purposes. The description here does not include local systems for clinical operation, library and mortuary:

   (1) Check identity of patients for hospital services administration e.g. drug administration and clinical procedures

   (2) Prevent abduction of paediatric patients,

   (3) Security and access control

   (4) Tracking of high risk patients

   (5) Track movement and location of asset

   (6) Monitor performance of portering, patient and material transfer

2.   The tagging systems will compose the following components:

   (1) Passive RFID tags with long-range sensor at entrances and exits. The applications include:

     (a)   Prevent abduction of paediatrics patients – active RFID tags (also Wi-Fi / Bluetooth capable to prevent tampering in the entire patient accessible area in the paediatrics ward)

     (b)   Tracking of high risk patients (also Wi-Fi / Bluetooth capable to prevent tampering)

     (c)   Track movement and location of asset

     (d)   Monitor performance of portering, patient and material transfer

     (e)   Book tagging for Library operation

   (2) Passive RFID tags with short-range sensor at mobile workstations and door access control.

     (a)   Check identity of patients for hospital services administration

e.g. drug administration and clinical procedures

(b)   Authorised access control.

(3) Nurse station or workstation will include, but not be limited to, the following:

(a)   Network switch

(b)   Wireless handheld administration device

(c)   Wireless handheld barcode and RFID scanners

(d)   RFID barcode printer

(e)   Visual and audible alarms

(f)   Alarm mute button

(g)   Door lock interface to the electromagnetic door lock system

(4) All the login information (except local systems) of the various tags will be collected by various receivers to a central server located at the HDC and used for their specific functions including analysis and monitoring.   The alarm and control monitor could be located at reception or helpdesk near the entrances and exits of the department.

(5) Patient tagging system for patient ward areas:

(a)   Patient tagging system will apply on all inpatients including the CTRC and all day-patient wards mainly in the form of wrist bands.

(b)   Long-range radio-frequency receivers will be installed at false ceiling or at high level of all entrances/exits of the wards.

(c)   In addition to item b above, wireless network transceivers (shared use with other system transceiver) will be installed with coverage of the entire patient accessible area within the paediatrics ward.

(d)   The patient wrist band when applying to the door access

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control will allow authorised access in and out of bed cubicles and wards.

(e)   The patient wrist band when registered by short range hand held sensor devise will capture patient identification for administration of drugs and CMs, performance of investigations and procedures.

(f)   The patient wrist band when associated with mobile devise can be used for service ordering e.g. meal or infotainment ordering.

(g)   Specific type of wristband catering for prevention of uncontrolled exit from wards will have temper proof design and when the patient tag is tampered (e.g. loosing or removal from patients, strap being cut) or being detected to be near the exit or its signal is found missing for a pre-defined time, the system will initiate a visual and audible alarms to alert the healthcare staff of the event. This type of wrist band will also have active Wi-Fi / Bluetooth capability and able to login all wireless network transceivers designated for other purposes (shared use with other system transceiver). This type of patient tags will be applicable to paediatric and high risk patients.

(6) Non-patient tagging system in Library and other service units (passive-type RFID tags)

(a)   For long-range sensors in other service units, radio-frequency receivers will be installed at false ceiling or at high level at the selected entrance/exit of the service units to detect movement of tagged items / persons to and/or out of the service units.

(b)   Passive RFID tags could be attached to the following:

(c)   items e.g. books in library, equipment

(d)   conveying vehicles e.g. goods and patient trolleys, wheelchairs

(7) Planning of REID Long-range Tagging Sensor:

Service Area/ Department/ unit	Front or patient entrance / exit	Back or staff entrance / exit	Remarks
Inpatient ward modules including CTRC	Y	Y	
Day patient ward modules	Y	Y	Include the doorways at the premises of intervention and assessment zone
Paediatrics ward modules	Y	Y	Full coverage of all patient accessible area
Satellite Rehabilitation Rooms	Y	Y	
Multi-purpose Activity Rooms	Y	Y	
Satellite X-ray Examination Room	Y	Y	
Logistics Centres	NA	Y	
GOPC	NA	Y	
ROPC	NA	Y	
Resuscitation Rooms	NA	Y	On GOPC and ROPC floors
Outpatient Services including intervention area for add-on market oriented services	NA	Y	
Integrated Rehabilitation Centre	NA	Y	
Day Procedure	NA	Y	

Centre			
CM Pharmacy	NA	Y	
WM Pharmacy	NA	Y	
Core Laboratory	NA	Y	
Mortuary	NA	Y	Includes doorways at cold body chamber and Hearse Parking Area
CSSU	NA	Y	
Radiology	NA	Y	
Education and Training Facilities	NA	Y	Include auditorium / classrooms and lecture facilities
Community Health Services	NA	Y	
Hospital Administration	NA	Y	
Staff Accommodation	NA	Y	
Procurement	NA	Y	
HIRM	NA	Y	
Hospital Data Centre and Equipment Store (IT and Communication)	Y	Y	
Supporting Services	NA	Y	
Purchase and Stores	NA	Y	
Laundry	NA	Y	
Catering and Kitchen	NA	Y	

3. BOOK TAGGING SYSTEM

(to be purchased and installed by the Hospital, trunking and conduit provided under building contract)

Overview

1.   The purposes of book tagging system in the CM Library include search, issue, return, re-issue, and stock verification and anti-theft detection of books and media.

2.   Patrons could use the staff card to perform self-check out and return at designated kiosks located near entrance of the library.

3.   Patrons could also use the staff mobile app or internet to renew borrowed library materials.

4.   The book tagging system will utilise RFID technology for remote sensing of the book tags. The major components of the book tagging systems will include, but not be limited to, the following:

(1) Passive RFID tags

(2) Administrative computer station with RFID and barcode reader at helpdesk

(3) RFID / barcode printers

(4) Self-serve kiosks with RFID and barcode reader

(5) Anti-theft detection at entrances

(6) Control server

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4. QUEUE DISPLAY AND MANAGEMENT SYSTEMS

(to be purchased and installed by the Hospital, trunking and conduit provided under building contract)

Overview

1.　　QDMS will be integrated with mobile apps for instant information notification. It displays and manages queues status for patients waiting in the following areas :

- (1) General outpatient clinic (consultation and intervention area)
- (2) Referral outpatient clinic (consultation and intervention area)
- (3) Special disease centres (consultation and intervention area)
- (4) Private clinics (consultation and intervention area)
- (5) Preventive care and health maintenance centre (consultation and intervention area)
- (6) Integrated rehabilitation centre
- (7) Radiology department
- (8) Day ward (intervention and assessment area only)
- (9) Shroff
- (10) Pharmacy

2.　　The system will also be able to display video clips stored in the central data centre, television broadcast, text messages and /or images in addition to providing queue information, special announcements and/or health education to patients.

General outpatient clinic / Referral outpatient clinic / Special disease centres / Private clinics / Preventive care and health maintenance centre / Integrated rehabilitation centre

3.　　The QDMS will be integrated with the OPAS and Public Announcement System (available in GOPC and ROPC only) of the department so that the systems will function properly.

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4.   The QDMS will arrange the sequence of queue, and LED display panel will display the order of queue with information up to eight patients at a time.   It will synchronise with the audio announcement outside the rooms where patients are waiting for services.   The volume of the speakers will be adjustable and the locations will be strategically considered to avoid creating nuisance to other patients.

5.   A keypad of the QDMS will be installed inside each reception/registration counters and also consultation / assessment / treatment / intervention room.   When the healthcare staff is ready to serve the next patient, he/she can initiate the calling of the queue number. He/she can also key in a specific queue number via his/her keypad.

6.   A 80" LED display panel in the designated patient waiting area and a 24" LED display outside rooms with patient waiting (i.e. consultation rooms, intervention rooms, treatment rooms, scanning rooms and assessment rooms) will indicate the order of queue and the queue number to be served. When required, audio announcement by the QDMS via the PA system will be used to call the queue no. to the assigned room.

7.   All the registration, queue number served, queue number missed will be recorded in the QDMS for analysis and reporting.

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5. CENTRAL DIGITAL DISPLAY SYSTEM

(to be purchased and installed by the Hospital, trunking and conduit provided under building contract)

Overview

1.   System Organization

(1) The hospital utilise a variety of digital display equipment for visual communication. These equipment, through a computer or built-in hardware e.g. smart TV, is linked to a central server through the hospital network.

(2) In the central server, there is a central library of multimedia materials that can be broadcasted to any of the LED display panel equipment linking to this network on a pull and push basis. The central server is also hosting or interfacing with the infotainment system providing this function on activation. Other systems can also be interfaced and made accessible.

(3) Such arrangement will enable the individual equipment to be controlled and carrying out functions by local users or through a central control station depending on the setting.

(4) This system excludes all digital display connected to a stand-alone system e.g. QDMS or not set-up for the central function e.g. clinical systems.

2.   Setting

(1) Type I - Predominant central function with pull (active on-demand locally) or push (passive displaying function controlled centrally) operation. This category of digital display is in the form a smart TV set up at the following locations:

   (a)   Consultation rooms

   (b)   Waiting areas

   (c)   Digital signage including event information display and outside patient cubicles

   (d)   Electronic directory

(e)   Digital information panels in communal areas

(f)   Reference Library

(g)   Gymnasium in IRC

(h)   Patient activity area in ward

(i)   1-bed patient cubicle (interfaced with infotainment system)

(2) Type II - Predominant local function as controlled by a local system e.g. local computer or AV system but also linked to the central server enabling access to or execution of the central functions as needed.   All types (Type A to G) of AV systems described under Part III AV System belong to this category.

3.   Other systems linking to the Central Digital Display system

(1) Hospital Electronic Directory System

(a)   A wayfinding directory system provided by 3-party contractor. The system provides a self-serviced, interactive means (touch screen and 2D-barcode) of directory enquiry service for the public. The system could be accessible via wired and Wi-Fi connection by the hospital users and the public. Wired connections are applicable to all digital display connected to the same network and at primarily the entrance lobbies at G/F and all public lift lobbies from lower ground floor to Level 7.

(b)   The local control computer, touch screen LED display panel and the 2D-barcode reader will be integrated with the architectural and wayfinding design seamlessly.

(2) Hospital Infotainment system

(a)   An entertainment system provided by 3-party contractor and could be accessible via wired and Wi-Fi connection by authorised users. Wired connections are applicable to all digital display connected to the same network and at primarily to waiting areas, canteen, single patient cubicles.   This system is described under Part III Patient Infotainment System.

4. Locations of Type I digital display

Key Functions	Department / Service Unit	Locations
Clinical Counselling	GOPC	Consultation Room
	ROPC	Consultation Room
	Special Disease Centres	Consultation Room
	Private Clinics	Consultation Room
	Preventive Care and Health Maintenance Centre	Consultation Room
	Inpatient wards	Consultation Room
	Day-patient wards	Consultation Room
	Day Procedure	Consultation Room
	CTRC	Consultation Room
	Integrated Allied Health Center	Consultation Room
	Skill and Demonstration Laboratory	Consultation Room
Directory	Communal	Main Lobby
		Lift lobby
Signage	GOPC	Entrance
	ROPC	Entrance
	Special Disease Centres	Entrance
	Private Clinics	Entrance
	Preventive Care and Health Maintenance Centre	Entrance
	Outpatient intervention area for add-on market oriented services	Entrance
Event Display	Auditorium	Entrance
	Classrooms	Entrance
	Discussion / Tutorial room	Entrance

	Skill and demonstration laboratory	Entrance
	Debriefing Room	Entrance
Hospital Information Display	Communal (3 to 4 nos. of TV with each in vertical position per group. These groups of TV will be distributed along education path in public corridor from LG to L7)	Corridor
		Lift lobby
	Canteen	Purchase Counter/ Cashier
		Served Dining Area - Staff
		Food Services Counter
		Vending area for operational use
	Main Lobby	Waiting area
	Shroff	Waiting area
	Inpatient wards	Waiting area
	Day-patient wards	Waiting area
	GOPC	Waiting area
	ROPC	Waiting area
	Subsidised Outpatient Intervention Areas	Waiting area
	Special Disease Centres	Waiting area
	Private Clinics	Waiting area
	Preventive Care and Health Maintenance Centre	Waiting area
	Outpatient Intervention Areas for add-on market oriented services	Waiting area
	Day procedure Center	Waiting area
	Integrated Allied Health Center	Waiting area and sub-waiting area

	Pharmacy	Waiting area
	Radiology	Waiting area and recovery area
	Admission and Building Amenities	Waiting area
	Health Information and Records Management	Waiting area
	Mortuary	Waiting area
	Staff Accommodation	Waiting area
	Office and Administration	Waiting area
Infotainment	Single bed cubicle	
	Canteen	
Patient activity / education	Patient activity training room	
	Multi-purpose activity room	
	Satellite Rehabilitation Room	
	Patient Supporting Services	
	Integrated Rehabilitation Centre	Exercise Gymnasium
		Lower and Upper Limbs Functional Training Area
		Paediatrics Treatment Room (Activity Room)
	Patient Relations Unit	Patient Complaint Interview Room

6. INTERCOM SYSTEM

(to be purchased and installed by the Hospital, trunking and conduit provided under building contract)

Design considerations

1.　　There are two types of intercom systems.

(1) Intercom system will be provided at patient counter with glazed partition at shroff and WM pharmacy dispensary counters:

(a)　　E.8.8.8 Patient Fees Collection Counter at Central Shroff (four sets)

(b)　　C.4.3.15 Dispensary Counter (6 sets for WM dispensary counters + four sets for WM cum CM dispensary counters)

(2) Intercom system for remote communication:

(a)　　C1.3.1 Ambulatory Video-EEG Monitoring and C1.4.24 Nurse Station and Doctor's Charting

(b)　　C5.1.1 Digital Radiography Room (two sets) and C5.1.2 X-ray Control Room (two sets)

(c)　　C5.2.1 MRI Scanner Room and C5.2.2 MRI Imaging / Control Room

(d)　　C5.3.1 CT scanner Room and C5.3.2 CT Control / Image Processing / Viewing Room

(e)　　C5.5.1 Multipurpose C-Arm Examination Room and C5.5.2 Multipurpose C-Arm Control Room

(f)　　E3.1.4 Food Services Counter and E3.1.5 Cashier and Vending Area (three sets)

(g)　　E6.2 Reception and E6.4 Storage Chambers Room

(h)　　E13.1.4 Workroom - Control cum Staff Briefing Room

(i)　　E13.2.1 Security Guard Booth and E13.2.2 Carpark Guard Booth (two sets)

2.   Any required multi-way intercom system will feature two-way speech communication between a master station and any of the sub-stations or between a master station and all the sub-stations.

3.   Each master station will provide at least the following operation facilities:

(1) Selective call to any sub-station by the operation of a single push button.

(2) Visual indication of any incoming call.

(3) Audible warning of an incoming call with the signal terminated when the call is answered.

(4) Answering by operation of a single push button to establish two-way speech.

(5) Call to all sub-station by the operation of a single push button.

(6) Privacy feature such that call cannot be established automatically, and the call button should be pressed to enable call is connected.

4.   Each sub-station will provide at least the following operational facilities:

(1) Call to the master station by the operation of a single push button.

(2) Audible warning of a call from the master station by a single soft tone.

(3) Hand-free operation with momentarily depressing the call button when initiating calls

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7. WALKIE TALKIE SYSTEM

(to be purchased and installed by the Hospital, trunking and conduit provided under building contract)

Overview

1. Walkie talkie system will be provided for the hospital for rapid and portable internal voice communications for selected staff.

2. The walkie talkie system will include, but not be limited to, the following equipment:

(1) Repeater station

(2) Remote control unit

(3) Outdoor antennae

(4) Indoor antennae

(5) Handheld transceiver units

(6) Battery chargers

8. LOCAL PUBLIC ANNOUNCEMENT SYSTEM

Design Considerations

1. PA system will be provided for GOPC, ROPC and pharmacy.

2. Inhibit circuit control unit will be equipped in the system and indicator will be provided on each microphone for to indicate the activation of other microphones.

3. One background music channel with player will be provided. It will be overridden when a microphone is in use.

4. At least two nos. of spare inputs for the inhibit control unit will be allowed for each system.

5. The local PA system will be available for covering the waiting area and patient toilets of GOPC, ROPC and pharmacy respectively. Volume control will be provided by the central control panel at the nurse station.

6. Microphone will be provided in the nurse station/helpdesk, all consultation rooms, assessment room and treatment room.

7. The local PA system could integrate with the QDMS for automatic calling when necessary.

9. AUDIO-VISUAL SYSTEM

(to be purchased and installed by the Hospital, power supply, trunking and conduit provided under building contract)

Overview

1. The AV systems will be state-of-the-art technology for multi-media presentation as well as interactive operations. It will be modular in design so as to be flexible and to facilitate easy replacement of outdated equipment in future.

2. Individual AV equipment of the AV systems will be integrated by centralized control systems for easy and unified operation. The control interfaces and AV signals for the AV equipment will be of industrial and off-the-shelf standards to facilitate equipment replacement and upgrading in future.

3. Each AV system will include, but not be limited to, the following equipment:

    (1) motorized projector screens

    (2) video projectors

    (3) LED display panels

    (4) video source equipment (e.g. desktop computer, laptop computer, blue-ray disc player, digital video player and Chromecast for Apple and Android devices)

    (5) Wi-Fi network (e.g. for mirroring of Apple and Android devices)

    (6) wired microphones

    (7) ceiling mount microphones

    (8) wireless microphones

    (9) AV signal input panel at the concealed floor box on the stage or at conference table

    (10) audio digital mixing console with Dante networking and Dugan Automixing

(11)   audio amplifier

(a)   flushed ceiling mount stereo loudspeakers and/or full-range wall mount speakers at appropriate spots

(b)   video cameras (IP-based or HDMI interface fixed installation)

(c)   portable video camera

(d)   4K video conferencing system (tele-conference system)

(e)   simultaneous interpretation system including transmitters and receivers

(f)   audio-video signal converters and switches

(g)   centralized AV equipment controller

(h)   touch screen control panel

(i)   AV network broadcasting and recording equipment

(j)   proprietary AV racks and servers with locks

4.   Audio-visual systems with different configurations will be installed in the following areas:

(1)   Auditorium - SoA item D1.1.1 (Type A)

(2)   Multi-function classrooms - SoA item D1.2.1 (Type B)

(3)   Study Room – SoA item D1.2.5 (Type C)

(4)   Conference Room, Discussion Room/Tutorial Room & Meeting Room - SoA items C1.5.5, C1.5.6, C4.3.10, C5.8.7, C6.1.24, D1.2.2, D2.32, E1.4.2, E1.4.3, E8.10.1, E8.10.2 (Type C)

(5)   Computer Training Room – SoA item D1.2.3 (Type C)

(6)   Reference Library and Discussion / AV Viewing Room in the CM Library – SoA item C4.3.9 and D1.4.4 (Type C)

(7)   Surgeon Rest Room / Charting – SoA item E1.5.4 (Type C)

(8)   Spiritual Support (Sanctuary / Multi-purpose Room) – SoA item E1.3.2 (Type C)

(9)   Multi-purpose function room – SoA item E1.1.4 (Type C)

(10) Group Therapy Areas – SoA item C3.1.3 (Type C)

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(11) Hospital Governing Committee ("HGC") Board Room – SoA item E8.4.15 (Type D)

(12) Consultation Room (One-way mirror) & Observation Room – SoA item B1.1.4, B1.1.5, B1.2.4, B1.2.5, D1.3.6, D1.3.7 (Type E)

(13) Simulation Centre– SoA item D1.3 (Type F)

(14) Cognitive and Perceptual Training Room – SoA item C3.1.4 (Type G)

(15) Main entrance lobby at G/F (Type H)

5.　　Sophisticated AV Systems with various configurations (Type A to G) will be installed in the CMH to facilitate diversified functions such as training, meeting, conference, teleconference and ceremonial occasions.

(1) Type A

(a)　A (3 x 6m) LED display panel is installed at the back of the stage with pixel pitch not inferior of P1.5. for each auditorium.

(b)　There is a projector for large venue with resolution of not inferior to 4K for each auditorium.　It will be installed at the projection booth/control room with sufficient exhaust and ventilation provision, and the installation of the projector will not allow vibration induced by anything.　Easy maintenance such as replacing lamp and air filter will be considered.

(c)　A motorized projector screen will be controlled at the projection booth / control room.

(d)　Master control panel in each control room can take full control of the audio, visual, projector screen and lighting systems of either or both auditoria.

(e)　Server and AV racks will be located inside the projection booth/control room with provision of sufficient cooling.

(f)　AV control systems will be integrated with dimmable lighting system featured various scenes such as lecturing, conferencing, video viewing and stage performance.

(g) Wireless microphone system will be installed in the auditorium with no dead-spot. There will be 12 nos. of wireless microphone in each auditorium, and there will be sufficient space and power sockets for the charging stations of wireless microphone in the AV equipment store room.

(h) There will be ceiling grid integrated flush mount microphones with coverage of each audience and speaker on stage.

(i) Video conferencing system and webcasting for signals received from all microphones and four nos. of ceiling mount face tracking cameras (min. of 20x optical zoom) within the auditorium will allow AV recording, live broadcasting and tele-conference of 4K image quality via high-speed internet (connected to outside the CMH and overseas) and/or intranet connection (connected to three multi-function classrooms D1.2.1 as well as the central server in the CMH). Communication between audience from the multi-function classrooms and the speaker in auditoria should be allowed for on-line Q&As. The microphone system will be integrated and controlled by the master control panel.

(j) The audio signal from each of the simultaneous interpretation room could cover all 500 seats in the two auditoria. There will be 160 receivers which could be used in either auditorium, and they will be stored in a cabinet near the reception with sufficient space and power sockets for charging stations.

(k) Flushed ceiling mount stereo speakers and/or full-range wall mount speakers (powered by amplifier) will be provided and integrated with acoustic features such as sound reflectors and absorption panel in the auditorium so that the reverberation time and speech clarity could be optimized for various events such as speech, lecture, movie and musical performance.

(l) There will be a stage monitor system which includes a set of performer-facing loudspeakers in each auditorium.

(m) Four nos. of 13A power sockets, eight nos. of port for wired microphone, two nos. of audio port, HDMI, VGA and data ports will be provided on stage of each auditorium with

concealed floor box. The provision will enable the speaker stand at stage be provided with gooseneck microphone, control of dimming facilities, two dataports for connection of notebook, and two power points.

(n) Wi-Fi network enable for mirroring of Apple and Android devices at stage for projection on LED display panel and/or projector.

(o) High-speed Wi-Fi network will be provided in the auditorium with no dead-spot.

(2) Type B

(a) A motorized projector screen (2 x 3m) is provided in each room.

(b) A 4K quality projector installed on a motorized retractable concealed ceiling mount projector platform in each room. The projector mount will be sturdy, and structure-borne vibration should be minimized.

(c) There are four nos. of wireless microphones in each room with no dead-spot.

(d) There are two nos. of ceiling mount face tracking cameras (min. of 20x optical zoom) in each room with no dead-spot. (for three Multi-function classrooms only)

(e) Four nos. of 13A power sockets, two nos. of audio port, wired microphone, HDMI, VGA and data ports will be provided for the speaker at the front of the room

(f) Wi-Fi network enable for mirroring of Apple and Android devices for projection on LED display panel or projector.

(g) There will be ceiling grid integrated flush mount microphones with coverage of each audience and speaker

(h) Video conference system will be provided in each room

(i) Flushed ceiling mount stereo input speakers (powered by amplifier) will be provided

(j) AV system (i.e. wired and wireless microphones and cameras) of each room (multi-function classroom only) will be integrated with the AV systems in the two auditoria via high-speed internet/intranet connection for instant communication.

(k) AV racks and servers should be provided in each room with additional power sockets for charging stations of wireless microphone.

(l) There is a dimmable lighting system which allows setting for various scenes such as presentation, lecturing, conferencing and video viewing.

(m) Any of the AV racks in the three nos. of multi-function classroom or study room can take full control of the three AV systems (dimmable lighting control, wireless microphones, projectors, video and audio signals) when these rooms are combined with all acoustic folding partition opened

(n) High-speed Wi-Fi network will be provided in the room with no dead-spot.

(o) Video and audio signals received in AV racks will be connected to the central servers.

(3) Type C

(a) 80" 4K quality LED display panel with integrated loudspeakers.

(b) Four nos. of 13A power sockets, two nos. of audio port, wired microphone, HDMI, VGA and data ports will be provided near the AV rack.

(c) Wi-Fi network enable for mirroring of Apple and Android devices for projection on LED display panel or projector.

(d) There are three nos. of wireless microphones in each room with no dead-spot.

(e) Flushed ceiling mount stereo input speakers (powered by amplifier) will be provided.

(f)　AV rack should be provided in the room, and each AV rack will be connected to the central server.

(g)　There is a dimmable lighting system which allows setting for various scenes such as conferencing, presentation and video viewing.

(h)　High-speed Wi-Fi network will be provided in the room with no dead-spot.

(4)　Type D

(a)　A 2 x 3.6m high resolution LED display panel with pixel pitch not inferior of P1.5 will be installed.

(b)　Flushed ceiling mount stereo input speakers (powered by amplifier) will be provided.

(c)　There are eight nos. of wireless microphones in each room with no dead-spot.

(d)　There is a 21" 4K LED display panel (retractable motorized display panel from a concealed position on table surface) for each seat.　It will be integrated with the AV system.

(e)　There is a conference table for 27 seats. A flexible gooseneck microphone with individual switch and light indicator will be provided for each seat.

(f)　One no. of 13A power socket and USB power supply, covered by easy access concealed panel, will be provided for each seat.

(g)　In addition to the above, there are two presenters with two nos. of 13A power sockets, one no. of audio port, HDMI, VGA and data port for each presenter.

(h)　Wi-Fi network enable for mirroring of Apple and Android devices for projection on LED display panel or projector.

(i)　Two nos. of video conference system will be provided.

(j)　AV rack and desktop computer integrated with the AV system should be housed in a cabinet within the room.　The audio

and video signal of the AV system and data network could be connected to the central server in the hospital data center.

(k)   There is a dimmable lighting system which allows setting for various scenes such as conferencing, video conferencing, presentation and video viewing.

(l)   High-speed Wi-Fi network will be provided in the room with no dead-spot.

(5)   Type E

(a)   Two nos. of 65" 4K quality LED display panel in the observation room.   The video signal both display panels will be synchronized with the CMP's desktop computer.

(b)   Two microphones in the consultation room, each to record audio signals from the CMP / interviewer and the patient / interviewee with switch and light indicator be provided at the CMP's desk of the consultation room.

(c)   Flushed ceiling mount stereo input speakers (powered by amplifier) will be provided in the observation room.

(d)   There is a dimmable lighting system with appropriate acoustic design in the observation room.

(e)   Acoustic performance of the observation room will achieve a minimum of STC 50 such that double layer glass system for the one-way mirror may be adopted.

(f)   AV rack will be provided in the observation room.

(g)   There are two nos. of ceiling mount face tracking camera (min. of 20x optical zoom) at the demo consultation room in the simulation centre.

(h)   There is a recording function to capture video and audio at the demo consultation room in the simulation centre.

(i)   A flexible gooseneck microphone with switch and light indicator will be provided at the CMP's desk of the consultation room.

(j) The audio and video signal of the AV system and data network could be connected to the central server in the hospital data center.

(6) Type F

(a) A motorized projector screen (2 x 3m) is provided in the skill & demo room.

(b) A 4K quality projector will be installed on a motorized retractable concealed ceiling mount projector platform at the skill & demo room. The projector mount will be sturdy without any structure-borne vibration transmitted to the projector.

(c) There are 12 nos. of wireless microphones with no dead-spot in the main area of the Skill and Demonstration Laboratory.

(d) There are two nos. of ceiling mount camera facing the skill & demo room (min. of 20x optical zoom) with no dead-spot for video recording purpose and play back at the debriefing rooms.

(e) Flushed ceiling mount stereo input speakers (powered by amplifier) will be provided in the skill & demonstration laboratory

(f) Four nos. of 13A power socket and a data port will be provided at the floor box with waterproof concealed cover for each of the six workstations.

(g) Each work station will have two cameras recording the practices at different angles.

(h) AV rack with recording and live broadcasting functions of all video and audio captured in the skill & demonstration laboratory will be provided in the control room. The signal would be broadcast to six work stations.

(i) The audio and video signal of the AV system and data network could be connected to the central server in the hospital data center.

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(j) A 50" 4K quality LED display panel with integrated loudspeakers and a desktop computer (connected to the server in the HDC) in each of the debriefing room to play back recorded video and audio in the skill & demonstration laboratory.

(k) Tele-conference system will be provided in the tele-care laboratory.

(l) Tele-conference capability will also be provided in the main area of the skill and demonstration laboratory through the control room and the tele-care laboratory.

(7) Type G

(a) One no. of 50" 4K quality LED display panel with integrated loudspeakers.

(b) AV rack will be provided.

(c) There is one no. of wall mount face camera with recording function to capture video and audio.

(d) The audio and video signal of the AV system and data network could be connected to the central server in the HDC.

(8) Type H

(a) A (3 x 12m) LED display panel of is installed at the back of the stage with pixel pitch not inferior of P1.5.

(b) Flushed ceiling mount stereo input speakers (powered by amplifier) will be provided in the main entrance lobby of approximately 200sm (300 standing people).

(c) Ceiling mount LED stage lighting will be provided for a notional stage of approximately 4 x 12m in front of the large LED display panel.

(d) There are eight nos. of wireless microphone with no dead-spot in the main entrance lobby.

(e) Dimmable lighting system integrated with the AV system to facilitate activities such as ceremony and special function.

(f) The media wall and the audio signal will be controlled by either the AV rack and a desktop computer housed in a concealed alcove at the main entrance lobby or the central server in the HDC.

(g) The location of the AV rack and desktop computer will be located with direct visual connection to the large LED display panel.

10. VACUUM INSULATED EVAPORATOR TANK

(to be purchased and installed by the hospital's VIE system vendor; gas pipes, trunking and conduits to be provided under building contract)

Overview

External relationships

1.　　VIE Tank Compound (N4-E9.1).

2.　　An interface box located at the local VIE control panel to be connected to the central medical gas alarm in the CCMS control room (E11.1.11).

Internal function, operation and relationships

3.　　In each building that requires oxygen will have zone valves and pipe works for oxygen supply.

4.　　Number of end unit will be advised for sizing the system.

11. AUTONOMOUS MOBILE ROBOTS ("AMR")

(to be purchased and installed by the Hospital, trunking and conduit provided under building contract)

Overview

1.   The provision of AMR in the hospital allows staff to focus on jobs rather than logistics, and it increases the productivity and patient satisfaction.   It works long shift without breaks. Please also make reference to the material transfer section of the executive summary in this brief.

2.   AMR will be widely adopted for delivery of items. These include WM Drugs and supplies, CMs and supplies, patient specimens, patient meals, medical record/document, sterile supplies, linen supplies (clean and used), consumables and stationaries, wastes disposal (domestic, clinical and chemical) within the hospital.

3.   The function of the AMR could be scheduled routine bulk delivery (i.e. meal) or ad-hoc delivery (i.e. consumable goods or document)

4.   Various types and numbers of AMR will be provided to fulfil the payload capacity and usage capacity of specific tasks and time slots. (For instance, the AMR for the delivery of meal will be high payload capacity to avoid unreasonable numbers of trip for delivering meals to all patients within a time period)

5.   Designated AMRs and designated route between AMR L/UL zones and service lifts will be provided for delivery of dirty items (i.e. dirty linen and waste on carts) and clean items (i.e. meal and clean linen on carts) respectively to avoid contamination.

6.   The AMR navigates autonomously and safely through hospital, so it will only run along staff corridor with automatic doors, integrated with AMR system, along the route.

7.   The AMR will integrate with workflows, IT systems, automatic doors, and lifts.   Scheduled time slots for designated use of lifts for AMR delivery could be programmed.

8.   The AMR system will be secure, accurate tracking of items. There will be mobile network and Wi-Fi signals provided continuously along the delivery route including lift calling.   For items requiring secured deliver (i.e. medication or patient record), the AMR will feature assignable and lockable drawers accessible through a combination of pin-code or staff card security system.

9.   The drawers in the AMR come with a variety of sizes for the flexibility of accommodating items of different sizes and tasks

10.   The AMR systems will provide peak capacity as needed, and it could also allow on-demand telepresence with track record.

11.   There will be approximately 25 numbers of AMR with individual charging stations.

General setup and operation

12.   The AMR system is to be managed by the supporting services department

13.   AMR system general operation
   (a) Goods transport orders by various department between various locations will be optimally assigned to the total 25 nos. AMRs

considering their orders in hand and the nearest locations against next possible assignment by computer program

(b) 2 nos. groups of AMRs for transporting clean and dirty items will be allocated and grouped at 2 nos. separate Home Stations. Nos. of AMRs of each group are subject to transport capacity calculation by the AMR vendor.

(c) 4 nos. staff lift will be used by AMR travelling between floors, to be divided into 2 nos. groups (1 clean and 1 dirty per group) at 2 major lift service cores of the building

(d) 2 nos. modes of operation should be available by AMR duty:

   (i)   Scheduled delivery (eg. patient meals, linen)

   (ii)   Ad-hoc delivery (eg. urgent document, body specimen)

14.   Function and design requirement of AMR stations

  (a) AMR Home Station

   (i)   Station for AMR's maintenance

   (ii)   Primary station for AMR's electrical charging

   (iii)   Primary parking space for AMR not in operation

   (iv)   Total 33 nos. stations, divided into 2 nos. groups for clean items and dirty items. Nos. of AMRs of each group are subject to transport capacity calculation by the AMR vendor.

   (v)   To be located at lower ground floor near the service lift cores

  (b) AMR Satellite Station (waiting/ temporary parking)

   (i)   Secondary station for AMR's electrical charging away from Home Stations

   (ii)   Secondary station for AMR parking temporarily away from Home Stations and waiting for next transport assignment at near locations

   (iii)   Total 16 nos. stations evenly distributed at 8 nos. floors (G/F to Level 7), 2 nos. per floor, having 1 no. per located near the lift service core, along Staff Working Corridor

    (iv)   The layout and orientation of the station should cater the space required for AMR traffic shown on paragraph 36 of this section

(c) AMR Satellite Station (send/ receive)

    (i)   Dedicated areas for loading/ unloading goods at each department using AMRs with reference to paragraphs 25 & 32 of this section

    (ii)   Stations to be located along Staff Working Corridor at the nearest possible area to the entrance of the specific department

    (iii)   The layout and orientation of the station should cater the space required for AMR traffic shown on paragraph 36 of this section

(d) AMR Control Room

    (i)   The room provide space for AMR vendor's operation, control and maintenance of the whole system

    (ii)   General cubicle office provisions are required for installation of computer workstation and desktop/ cabinets for paper works

    (iii)   Total 2 nos. rooms, 1 no. room per group of home station, to be located adjacent to the home station area

15.   Workflow of AMR in relation to AMR stations

(a) First step: A goods transport task will be assigned to an AMR either parking at Home Station/ Satellite Station (waiting/temporary parking) or carrying out a transport task at the moment through wi-fi signal

(b) Second step: The AMR will then go to the designated Satellite Station (send/receive) of a department, through the Staff Working Corridor and/or staff lift, and pick up a trolley already loaded and parked by the hospital staff at the station

(c) Third step: The AMR then travel, through the Staff Working Corridor and/or staff lift, to the targeted Satellite Station (send/receive) and unload the trolley at the station for pick up by other hospital staff.

16.   AMR base station with charging function should be located strategically in lower ground floor close to the lift service cores, general stores and laundry

17.   AMR should only be traveling within the internal circulatory route. The route will be a 2-way route sending, collecting material or returning empty carts for the next dispatch.

18.   As the internal route will have heavy traffic with various staff, patient and material movement, the route of the AMR will be one-way on each side of the corridors

19.   The paths including lifts carrying clean items and dirty items will be segregated to prevent cross contamination. AMRs will also be designated for transport of clean and dirty items.

Clean items

20.   Clean items include WM Drugs and supplies, CMs and supplies, patient specimens, patient meals, medical record/document, sterile supplies, clean linen supplies, consumables and stationaries.

21.   For clean items transport, it will be mainly between sending-out and receiving-in destinations. L/UL zones will be set up outside the internal entrances of individual service areas/departments/units.

22.   No ARM charging function is to be provided in these zones. Sufficient space in terms of stations has to be provided. Each station will include space for parking on card and associated maneuver space of the AMR. The number of stations will depend on transfer requirements on timing, payload volume and frequency.

23.   For service areas/departments/units that back-of-house services requirements are not heavy or frequent, they may share the same AMR L/UL zone with another nearby service area/department/unit. Service units within a department or service area will share the same AMR L/UL zone.

24.   25 nos. of home stations of AMR for transporting clean items will be provided, and they should be segregated from the dirty zone.

25.   Planning of L/UL zones and AMR satellite station (send/ receive)(E12.2.2) for clean items:

Service Area/ Department/ unit		Items types	L/UL zones	Satellite Stations per L/UL zone	Total
16 ward modules (sharing with associated Satellite Rehabilitation Room, Patient Activity Room, Satellite X ray Room on the same floor)		WM Drugs & supplies, CMs & supplies, patient specimens, patient meals, medical record, document, sterile supplies, clean linen supplies, consumables and stationaries,	16	4	64
3 Outpatient Clinic modules		WM Drugs & supplies, CMs & supplies, patient specimens, medical record, documents, sterile supplies,	3	3	9

		clean linen supplies, consumables and stationaries			
IRC		medical record, documents, sterile supplies, clean linen supplies, consumables and stationaries,	1	2	2
Day Procedure Center		WM Drugs & supplies, patient specimens, medical record, documents, sterile supplies, clean linen supplies, consumables and stationaries,	1	2	2
CM & WM Pharmacies (Share)		WM Drugs & supplies, CMs & supplies, documents, sterile supplies, clean linen supplies,	1	6	6
Pathology		patient specimens, document, sterile supplies, clean linen supplies, consumables and	1	3	3

		stationaries,			
CSSU		sterile supplies, clean linen supplies, documents, consumables and stationaries	1	3	3
Radiology		WM Drugs & supplies, medical record, document, sterile supplies, clean linen supplies, consumables and stationaries,	1	2	2
Training & Education		document, consumables and stationaries,	1	2	2
Community		document, clean linen supplies, consumables and stationaries,	1	2	2
Hospital Administration		medical record, document, consumables and stationaries,	1	2	2
Staff Accommodation		document, clean linen supplies, consumables and stationaries,	1	2	2
Procurement		document, consumables	1	6	6

		and stationaries,			
HIRM		medical record, document, consumables and stationaries,	1	3	3
Supporting Services		document, clean linen supplies, consumables and stationaries,	1	25	25
Purchase & Stores		document, consumables and stationaries,	1	6	6
Laundry		document, clean linen supplies, used linen, consumables and stationaries	1	6	6
Catering & Kitchen		patient meals, document, clean linen supplies, consumables and stationaries,	1	6	6
Total:			35		151

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Dirty items

26.   Dirty items include used linen and wastes (domestic, clinical, chemical).

27.   For dirty items transport, dirty item collection points will be set up on each floor. Depending on the footprint of the hospital, at least two collection points will be setup on each floor.

28.   Each collection point should have two entrances, one leading to the used linen collection area, and another leading to the wastes collection area. The transfer of dirty items from service areas/departments/units will be by manual means.

29.   The two areas within the collection point will be separated by partition. Each area will have a separate exit with no door leading to a common path to a designated lift for transporting the items to their disposal destinations.

30.   The designated AMRs will access these areas and collect the items to their respective disposal areas. Sufficient space will be provided within the collection areas for AMR maneuvering.

31.   8 nos. of home stations of AMR for transporting dirty items will be provided, and they should be segregated from the clean zone.

32.   Planning of L/UL zones and AMR Satellite Station (send/ receive) (E12.2.2) for dirty items (wastes). Arrival requirement for Laundry subsumed under above Laundry requirement:

Service Area/ Department/ unit	Items types	L/UL zones per floor	Satellite Stations per L/UL zone	Total
L4-7 floors x 1 L/UL Zone with 2 Collection Points per floor	Domestic Wastes	2 (4 floors)	4	32
	Clinical Waste		1	8
	Chemical Waste		1	8
	Used linen		4	32
L2-3 floors x 1 L/UL Zone with 2 Collection Points per floor	Domestic Wastes	2 (2 floors)	6	24
	Clinical Waste		1	4
	Chemical Waste		1	4
	Used linen		2	8
Ground floor-L1 floors x 1 L/UL Zone with 2 Collection Points per floor	Domestic Wastes	2 (2 floors)	6	24
	Clinical Waste		1	4
	Chemical Waste		1	4
	Used linen		2	8
Lower ground floor x 1 L/UL Zone with 2 Collection Points per floor	Domestic Wastes	2 (1 floor)	6	12
	Clinical Waste		1	2
	Chemical Waste		1	2
	Used linen		2	4
Domestic Waste Disposal Area	Domestic Wastes	1	6	6
Chemical	Chemical Waste	1	2	2

Waste Disposal Area				
Clinical Waste Disposal Area	Clinical Waste	1	2	2
Total:		21		190

12. AUTOMATIC DISPATCH SYSTEM

(to be purchased and installed by the Hospital, trunking and conduit provided under building contract)

Design considerations

1.   Patient, document and equipment transport is an important function in the hospital, and the task is handled by porters.   Each porter will carry a mobile device for receiving deployment by the Automatic Dispatch System ("ADS").

2.   The ADS is an IT system which is integrated with the hospital Wi-Fi system or mobile data system for real time communication with individual porter.

3.   To increase the efficiency and capacity of porters, ADS features a priority system to insure that urgent trips have precedence when a queue for patient or non-patient movements builds up.   It is essential that any established priority system be decided and communicated on a hospital-wide basis and is created with input from all parties affected.

4.   Identify and collect time stamps in the porter movement process. Proper tracking of these time stamps enable management to track system effectiveness, monitor porter performance and identify where bottlenecks occur. These time stamps also are the basis for system performance metrics.

5.   Establish performance metrics, response targets and performance standards by priority. After establishing a priority system for different patient/non-patient moves, users need to be aware of targets and standards to be expected (e.g., what is the maximum time a unit should have to wait until a porter is dispatched, arrives at the ward and finishes a job). These performance measurements must be communicated hospital wide.

6.	The ADS could collect data to improve the ability of management to track and analyze the porter system. As different departments have different requirements, it is important that users and porter managers work to establish data collection formats that meet a variety of needs. Manual data collection can be the first step; however, implementation of an electronic data entry method should be the end goal for the CMH to make data analysis a much less time consuming process. Data collection protocols must be established in a fashion that supports any implemented standards and metrics.

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13. ELECTRONIC PAYMENT SYSTEM

(to be purchased and installed by the Hospital, trunking and conduit provided under building contract)

Overview

1.   Patient payment methods for the CMH will be as follows:

(1) Cash (service provided at the shroff only)

(2) Automated Teller Machine (ATM)

(3) Internet Banking

(4) PPS Terminals

(5) Electronic payment such as Octopus, EPS, credit card, PayMe, Apple pay, Google Pay, Samsung Pay, Alipay, WeChat Pay and Faster Payment System.

(6) Mobile payment system

2.   Electronic payment can be done at the shroff, helpdesk, kiosk and also on patient's own mobile device.

3.   Patients are encouraged to use their mobile devices to settle payment conveniently at anywhere in the hospital.   They could settle the payment on the spot and proceed to the next stop such as pharmacy and treatment without the need for queuing and waiting.

4.   Inpatient can settle the payment via mobile device for inpatient service and medication received and pick up drugs or CMs on the bed before discharging from the hospital.

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14. PATIENT INFOTAINMENT SYSTEM

Overview

1.   Bedside infotainment system will be accessible for each inpatient and day-patient bed (including CTRC beds) through Wi-Fi connection to mobile phone and tablet.   Pre-registration and payment are needed for usage.   System content are to be provided by commercial providers and could include high speed internet access, live television broadcast, music, games, and movies.   The system may interface with other hospital services including payment and meal ordering.

2.   Mobile phone and tablet could be of individual's personal belongings.   Equipment rental will be available.   There should be a way to secure and lock these items near the patient bed to prevent getting lost.

3.   Patients have to login the account to pay for paid movies or other expanded features.

15. PATIENT/ROOM INFORMATION DISPLAY

Overview

1.	Patient information display is a bed panel (tablet) which will be provided at the bedhead of each inpatient/day-patient bed (including CTRC beds) and day bed to display patient information and identity.

2.	The tablet is powered by one no. of USB and connected to the smart cloud management platform located at the main nurse station via Wi-Fi network for instant update of messages for individual patient.

3.	The size of the tablet for patient display will not be less than 11 inches for displaying at least nine nos. of messages at the same time with a feature of displaying additional nos. of messages.

4.	A 24" LED room information display will be provided outside each inpatient/day-patient bedroom (including CTRC beds) for displaying patients, WM medical practitioners or CMPs but with limited information to protect patient privacy. The size of room display will not be less than 19" with 13A power supply and a data port connected to the main nurse station.

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16. FRIDGE AND FREEZER ALARM SYSTEM

Overview

1.   Fridge and freezer alarm system will be provided in the CMH with the following three types of systems:

   (1) Local alarm

   (2) Local and remote alarm located at CCMS control room

   (3) Local and remote alarm located at CCMS control room and interfaced with IP/mobile system

2.   Local alarm will be provided for fridge and freezer in any 24-hour manned area such as inpatient ward and day ward.

3.   Local and remote alarm (dual wiring system with both Wi-Fi and fixed wired for connecting the alarm system at CCMS control room) will be provided for fridge and freezer in any non-24-hour manned area. (i.e. cold rooms in kitchen and body store in mortuary).   Repeater signal should be connected to the CCMS control room.

4.   Local and remote alarm (dual wiring system with both Wi-Fi and fixed wired for connecting to IP/mobile devices and CCMS control room) will be provided for fridge and freezer in areas with critical concerns for immediate follow-up actions.   (eg. pharmacy, core laboratory, blood bank and CTRC).   It will be connected to external security agent through direct telephone line or other network system (e.g. internet) as appropriate. Repeater signal should be connected to the CCMS control room.

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17. CCTV SURVEILLANCE SYSTEM

Design Considerations

1.   The CCTV surveillance system will have provision for future expansion for additional cameras and monitors by installation works (e.g cabling) within that floor only

2.   The CCTV equipment will be powered backup by UPS units for at least one hour.

3.   The CCTV system will provide security protection against unauthorised modification to the system configuration and setting, viewing of the real time video and reviewing of the recorded video. Physical security protection will also be provided to the CCTV equipment to prevent the unauthorised access to the CCTV system.

4.   The hardware offered will be state-of-the-art, standardised commercial off-the-shelf and modular equipment. Equipment will be selected and installed such that repairs may be accomplished on site, by module replacement, utilizing spare components whenever possible.

5.   The coverage of the CCTV System will follow the CCTV provision guidelines and also to meet the users' operation requirements

Building security related CCTV surveillance system

6.   CCTV will cover the following locations but not limited to:
  (1) Entrances (vehicular and pedestrian) at the site boundary
  (2) Entrances (vehicular and pedestrian) at the building
  (3) Lift lobbies (staff and public)
  (4) Lift cars (staff and public)

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(5) Loading/unloading bays (including goods, refuse, ambulance, NEATS and hearse)

(6) Vehicular lay-by (taxi/private cars/mini-bus)

(7) Car parking areas (exclude PVP)

(8) External gardens (including roof garden if applicable)

(9) Doorways to external areas including roof top and gardens

(10) Doorways at all staircases including healthy staircase

(11) Entrances of departments or staff areas from public/patient areas

(12) Entrance lobbies at ground floor and lower ground floor

(13) Escalator landings

(14) Covered / underground walkways & other remote areas

(15) Female staff chyaning room entrances

Local departmental CCTV surveillance system

7.   The local departmental CCTV surveillance system will be IP based with state-of-the-art security system to protect from hacking, and the location of control system, server and storage will be located in the central server at the HDC.

8.   The CCTV cameras will monitor the key areas/rooms, entrance and exit of each department and sub-department, doorways of patient and staff changing/toilet, doorways of staff accommodation, doorways from patient/public to staff area, and also any communal corridors without direct vision from the nurse station, workstations or counter.

9.   Localised LED display monitor will be provided for areas which may require immediate attending, and the system will cater for future expansion or modification such as installing additional local display monitor or change of locations without interrupting other CCTV cameras.

10.   Some CCTV cameras (eg. HDU and CTRC bedrooms) are connected to the local LED display monitor at the nurse station or workstation without recording function.

11.   Authorised personnel could access the recorded video clips from mobile devices or workstations with strict access control.

12.   In addition to item 8 above, location of local CCTV cameras will cover the following locations but not limited to:

Department / Service Unit	Location	Function
Inpatient Ward Module (30-32 beds)	Ward Entrance and Exit / Patient Corridor / Dangerous Drugs Cabinet / Patient Activity Training Room	Recording
	HDU beds	No Recording
Day Ward Module (45 beds)	Ward Entrance and Exit / Patient Corridor / Patient Waiting Area / Family Waiting Area / Dangerous Drugs Cabinet / Patient Activity Training Room	Recording
Day Ward - Intervention and Assessment Zone	Ward Entrance and Exit / Corridor	Recording
Paediatrics Ward Module (20 beds)	Ward Entrance and Exit / Patient Activity Training Room / Play Area / Patient Waiting Area / Family Lounge / Patient Corridor/ Dangerous Drugs Cabinet	Recording
Inpatient Services on ward floors	Satellite Rehabilitation Room / Multi-purpose Activity Room / Night Pharmacy / Respective Entrances and Exits	Recording

CTRC	Ward Entrance and Exit / Multi-purpose Activity Room / Drug Storage Room / Dangerous Drugs Cabinet / Corridors	Recording
	Each Bed Cubicle	No Recording
GOPC / ROPC (including intervention areas)	Entrance and Exit / Nurse Station / Helpdesk / Waiting Area / Play Area / Fever Cohort Room	Recording
Special Disease Centres / Private Clinics / Preventive Care and Health Maintenance Centre / Intervention areas	Entrance and Exit / Helpdesk cum nurse station / patient waiting area / play area	Recording
Day Procedure	Entrance and Exit / Reception / waiting areas / corridors	Recording
	Patient holding area / infectious patient holding area / Recovery Room / Patient rest area	No Recording
CSSU	Entrance and Exit	Recording
Allied Health Services	Entrance and Exit / Reception / waiting areas and sub-waiting areas / corridors	Recording
Pharmacy	CM Pharmacy: Entrance and Exit / CM Herb and Drug Store (bulk store, refrigerator, cold room, special drug cabinet) / Each CM dispensing workstations / Each CM dispensing counter / Preparation Area WM Pharmacy:	Recording

	Entrance and Exit / Bulk Store for Drugs and Pharmacy Consumables / Dangerous Drugs Room / Ward Returned Drugs / Each WM dispensing workstations / Each WM dispensing counter / Helpdesk / Waiting Area / Play area	
Radiology	Entrance and Exit / Reception / Waiting Areas / Play Area / Corridors	Recording
	Patient holding area / infectious patient holding area / Recovery Room / Patient rest area	No Recording
Pathology	Entrance and Exit	Recording
Education and Training Facilities	Entrance and Exit / Reception / Waiting Area / Corridors CM Library Check Out Area / Book Drop	Recording
Community Health Services	Entrance and Exit / Reception / Waiting Area / Corridors / Play Area / Cafeteria / Dining Area	Recording
Admissions and Building Amenities	Main Helpdesk / Admission / Patient Waiting Areas / Play Area / NEATS counter / NEATS waiting room	Recording
Dining and Catering Facilities	Entrance and Exit / Cafeteria / Served Dining Area / Food Services Counter / Cashier and Vending Area	Recording
Information Technology and Communications	DNL / HDC	Recording
Health Information and Records Management	Entrance and Exit / Reception and Waiting Area	Recording

Mortuary	Entrance and Exit / Reception / Waiting Area / Storage Chambers / Hearse Parking Area / Joss Paper Burner Room	Recording
Human Resources	Entrance and Exit / Reception	Recording
Patient Relations Unit	Entrance and Exit / Patient Complaint Interview Room / Waiting Area	Recording
Credit and Collection	Entrance and Exit / Patient Fees Collection Counter / Queuing Area	Recording
Purchasing and Stores	Entrance and Exit / Bulk Store / Delivery and Dispatch Dock / Logistics Centre	Recording
Laundry and Linen Services	Entrance and Exit / Uniform Exchange / Store Room (at reception counter)	Recording
Supporting Services	Print Shop	Recording
AMR	AMR Home Station / Satellite Station / Corridors	Recording

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18. ACCESS CONTROL SYSTEM

Overview

1.   The coverage of the access control system will follow the CCTV provision guidelines above and users' operation requirements.

2.   The access control system will have alarm system such that audio and visual alarms in the central security control room will be activated when anyone of doors leading to roof tops of all buildings is opened.   The location of the opened door will be indicated on the control panel.

3.   The access control system should provide RFID (staff) access control for entrance only unless other specified.

4.   The access control system will also feature logging, monitoring and interfacing with IP/mobile device notification systems.

5.   The main entrance door (for patient/public) of each department should be provided with satin finish stainless steel frame full heigh tempered glass door with high contrast fritted pattern (removable translucent film) considering pesons with visual impairment.

6.   The staff entrance door of each department should be wooden door with large vision panel and 1mm thick non polyvinyl chloride ("PVC") Vinyl protection kick plate 900mm(H) on both sides.

Design considerations

7.   Public area with free access to patients/public except automatic sliding/swing doors.

    (1) Types

    (a)   All entrances and exits to and from hospital compound to outside hospital compound.

    (b)   All entrances and exits to and from in-door hospital building to out-door hospital compound.

    (c)   Public entrances and exits to and from in-door hospital building to individual service zones and departments providing direct patient care or public support.   e.g. Outpatient clinics waiting areas, Day-Procedure center waiting areas, AH and Integrated Rehabilitation Centre waiting areas, Radiology waiting areas, Pharmay waiting area, Mortuary waiting area, Community Health Services, Education and Training Facilities, canteen

    (d)   Rooms connecting to public area allowing free access to patients/public supporting facilities e.g. toilet, changing and locker room

(2) Access control

    Manual lock and key to keep locked or opened based on operation requirements

8.   Non-public area with allowing patient/public access by invitation except automatic sliding/swing doors.

(1) Types

    (a)   Zones, departments, rooms with allowing patient/public access by invitation e.g. consultation room, intervention room, treatment room, assessment room, interviewing room, counseling room, direct patient service areas/rooms, multi-purpose activity room, satellite rehabilitation room at Outpatient zones, Pharmacy, Radiology, Day Procedure Centre, AH & IRC

    (b)   Conference rooms and lecture rooms accessible by event visitors

(2) Access control

    Manual lock and key to keep locked or opened based on operation requirements

9. Non-public area allowing patient/public access only by authorization.

    (1) Types

      (a) Departments not providing direct patient care e.g. pathology, CSSU, laundry, kitchen, administration offices, bulk stores (general and pharmacies)

      (b) Wards including inpatient, day-patient and CTRC

    (2) Access control

      Electricity lock with access control by RFID card, 2D-barcode and remote control linked with video phone

10. Non-public area, zones, rooms not allowing patient/public access.

    (1) Types

      (a) Zones and rooms not allowing patient/public access e.g. store, dirty utility, supporting services zones and areas, Staff Accommodation, Mortuary, Health Information and Records, IT & Communications, Admission and Building Amenities, EMSD Workshop, AMR Home Stations, Control Rooms at back-of-house area and Staff Working Corridors

      (b) Rooms accessible by students, trainees, staff only e.g. tutorial rooms, skill and demonstration laboratory, library, student and trainee supporting facilities

    (2) Access control

      Electricity lock with access control by RFID card and 2D barcode

11. Restricted areas into and within staff internal circulatory route

    (1) Types I

      (a) All entrances from public to staff internal circulatory route

      (b) All rooms accessible from staff internal circulatory route

    (2) Access control

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(a)   Electricity lock with access control by RFID card and 2D barcode.

(b)   Rooms with no required access by outsourced contractors, vendors can have access control by RFID card only.

(3) Types II

All staff internal entrances to departments/administration offices, wards, service zones

(4) Access control

Electricity lock with access control by RFID card, 2D barcode and remote control linked with video phone

12.   Others

(1) All other specified areas, zones, departments, rooms

(2) Access control as specified.

Operation of access control system (building security control)

13.   There are two main groups of users which require the access control system.

(1) For visitors or staff without permission entering or leaving the premises/departments at designated hours or at all time, it will interface with video door phone systems such that the door lock can be released remotely with the visual assistance of video door phone systems.

(2) For visitors or staff with permission entering or leaving the premises/departments at designated hours or at all time, it will interface with RFID proximity sensor and 2D barcode reader such that door lock can be released.

14.   The reception or nurse station of the department can release the door lock with video door phone systems, and the Workroom – Control

cum Staff Briefing Room can bypass the local access control devices and lock/unlock individual door or doors of a specific premises.

Operation of local access control system (departmental)

15. There are two main groups of users which require the access control system.

(1) For staff with permission to entering the rooms which require security control such as medical record, night pharmacy, data and record room in CTRC.

(2) All doors at patient/public areas accessing non-public rooms or corridors will be provided with local access control system within department.

(3) For staff, patients and visitors in inpatient and day-patient wards, individual patient cubicle rooms should have 2D barcode (visitors and patients) and RFID (staff) access control for both entrance and exit. The security system could be activated on need basis. Please also refer to access control system under Section 5 Overarching Mode of Operation of Executive Summary;

16. The attendance recording sub-system will be able to temporarily read and store data from the personal access card to scanners. Fixed type scanners will be installed at the entries of auditorium, lecture room, classroom and play studio. After connecting the scanners to central control server via the communication station, the data can be uploaded to server of central control server and feasible for analysis and report printing. The communication station will be USB based for data transmission. Software with license will be provided.

17. The system will allow the hospital to print text information, e.g. hospital logo, staff name, etc., and photo on the front and/or back of the access card.

18.   The hardware offered will be state-of-the-art, standardised commercial off-the-shelf and modular equipment. Equipment will be selected and installed such that repairs may be accomplished on site, by module replacement, utilising spare components whenever possible.

19.   The access control system will provide security protection against unauthorised modification to the system configuration and setting. Physical security protection will also be provided to the equipment to prevent the unauthorised access to the access control system.

20.   The access control system's equipment will be powered backup by UPS units for at least one hour.

19. LIFTS AND ESCALATORS

Lift design considerations

1.   Lift bank will be zoned to suit the hospital operational flow and needs as stated under section 5 of the Executive Summary of this brief.

2.   In principle, the following groups of lift lobbies will be separated and without any cross traffics

(1) Lifts serving public circulatory route, staff and patient

(a)   Passenger lifts for public

(b)   Passenger lifts for patient service areas (including hospital staff)

(c)   Passenger lifts for non-patient service areas e.g. hospital administration and auditorium

(2) Lifts serving staff internal circulatory route

(a)   Passenger lift (for hospital staff/service) (number of lifts will comply with the statutory requirements)

(b)   Bed/Passenger lifts - staff, AMR, manual portering for transporting clean items and bed traffic (twelve nos. of lift)

(c)   Goods lift for delivery of heavy equipment (one no. of lift)

(d)   Goods lifts for delivery of waste items - AMR or manual portering (two nos. of lift)

(e)   Public lifts for connection from the pedestrian walkway of Pak Shing Kok Road to the main entrance level (two nos. of lift)

3.   Destination Control System ("DCS") will be implemented for bed/passenger lifts within staff internal circulatory route on lift lobby with more than two lifts.   There will be keypads for staff to select desired mode of transports to make sure that there are rooms for the mode selected at the arriving lift.   There will be four modes available for selection:

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(1) passenger only

(2) passenger with trolley

(3) passenger with bed

(4) urgent patient transfer (hot lift operation mode)

4.   Requirements for lift car provision will be as follows:

(1) Bed/Passenger lifts for AMR, manual portering, bed transfer and good lifts for delivery of waste items:

    (a)   Lift car internal size (clearance) 1,800mm(W) x 2,700mm (D) x 2,600mm (H) with minimum capacity of 2,500kg

    (b)   Lift door opening (clearance) 1,600mm(W) x 2,300mm (H)

(2) Goods lift for delivery of heavy equipment

    (a)   Lift car internal size (clearance) 2,550mm(W) x 3,000mm(D) x 2,600mm(H) with minimum capacity of 4,350kg

    (b)   Lift door opening (clearance) 2,000mm (W) x 2,300mm (H)

(3) Goods lifts for delivery of waste items

    (a)   Lift car internal size (clearance) 1,800mm(W) x 2,600mm(D) x 2,600mm(H) with minimum capacity of 2,500kg

    (b)   Lift door opening (clearance) 1,200mm (W) x 2,300mm (H)

5.   A 'staff use lift locking service' throught a key swtich will be provided for all passenger lifts, bed/ passengers lifts, goods lifts for dedicated use and by-passing other floors to meet staff needs for special function called upon.

6.   Lift lantern at lift lobbies will be prominent with visual and audio signal.

7.   A 80" touch screen LED display panel floor directory will be provided in each public lift lobby.

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8.   Lifts should incorporate voice annunciation and information in braille.

9.   Full width high level LED display panel floor directory above lift door will be provided inside the lift car.   Information displayed on the directory of all lifts could be updated by the administrative staff at the Workroom – Control cum Staff Briefing Room..

10.   Ceiling light fixtures will be carefully designed to avoid glare on patients and staff especially patients on bed.

11.   Stainless handrail and crash rail will be provided for all lift cars.

12.   Floor material at lift lobbies and lift cars will be durable, anti-slip, and easy cleaning.

13.   Wi-Fi and mobile signal will be available in all lift lobbies and lift cars.

14.   Lift call and lift buttons will be made of durable material and high contrast in colour with backlit light.   Lift buttons inside the lift car will be provided on both side.

15.   It will comply with the latest Design Manual of Barrier Free Access by the Buildings Department

Escalators design considerations

16.   A pair of escalators are for patients and visitors transport both up and down in between each floor from ground floor to Level 2.

17. A pair of pairs of escalators (external use) for visitors from the pedestrian walkway of Pak Shing Kok Road to the main entrance level.

18. Energy saving features should be available during non-busy hours.

19. It will comply with the latest Design Manual of Barrier Free Access by the Buildings Department.

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20. NURSE CALL / EMERGENCY CALL / PANIC ALARM SYSTEMS / EMERGENCY HELP CALL

Overview

1.   Nurse call system and emergency call system are nursing communication and management systems and capable of interfacing with IP technology so that they can be used for both wired and wireless connections.

The system is fully modular and highly versatile, adapts to the characteristics of each department or unit and is very easy to extend.

Both nurse call button and emergency Call button at patient area will be connected to the nurse station, helpdesk and/or staff mobile devices for immediate response.

All call buttons located at wet area such as patient toilet cubicle and shower cubicle will be splash proof.

2.   Nurse Call System

(1) Nurse call system comprised of a handset with pushbutton, microphone and speaker for communicating with the control panel at nurse station and the handheld devices.

(2) Nurse call system will be provided for each bed or couch at area the absence of clinicians for any period of time so that patient could call for assistance whenever he or she needs help.   These areas include but not limited to inpatient bed, CTRC inpatient bed, day bed, ward day room, intervention room, treatment room, selected treatment areas and rooms of rehabilitation center and rehabilitation unit of each clinical floors, selected rooms of electrophysiology and lung function assessment unit, surgical procedure center recovery room.

(3) Nurse call button will always be installed together with emergency

call system for further urgent help from the attendant.

3.   Emergency Call System

(1) Emergency call system comprised of a pushbutton and a reset button for communicating with the control panel at nurse station and the handheld devices.

(2) Other than the emergency call button paired with nurse call system, emergency call button will be provided at other clinical areas for patient care.   These areas include consultation room, assessment room, multi-purpose activity room, inpatient and day-patient ward patient toilet, outpatient clinic toilet etc.

(3) There should be a function to indicate the location of the call.

4.   Panic Alarm

(1) Panic alarm button is connected to the central security control room or immediate response and assistance.

(2) Panic alarm button will be provided at all counters (i.e. helpdesk, reception, pharmacy dispensary, shroff), nurse station, consultation room, interview / counselling room, intervention room, treatment room, assessment room, patient relation officer's office, female changing room, call rooms, staff barrack,

(3) Overnight rooms, and areas likely serving emotional and violent patients.

(4) For nurse station, helpdesk, reception with multiple workstations at the same continuous counter, one panic alarm button will be provided for two workstations.

(5) There should be a function to indicate the location of the call.
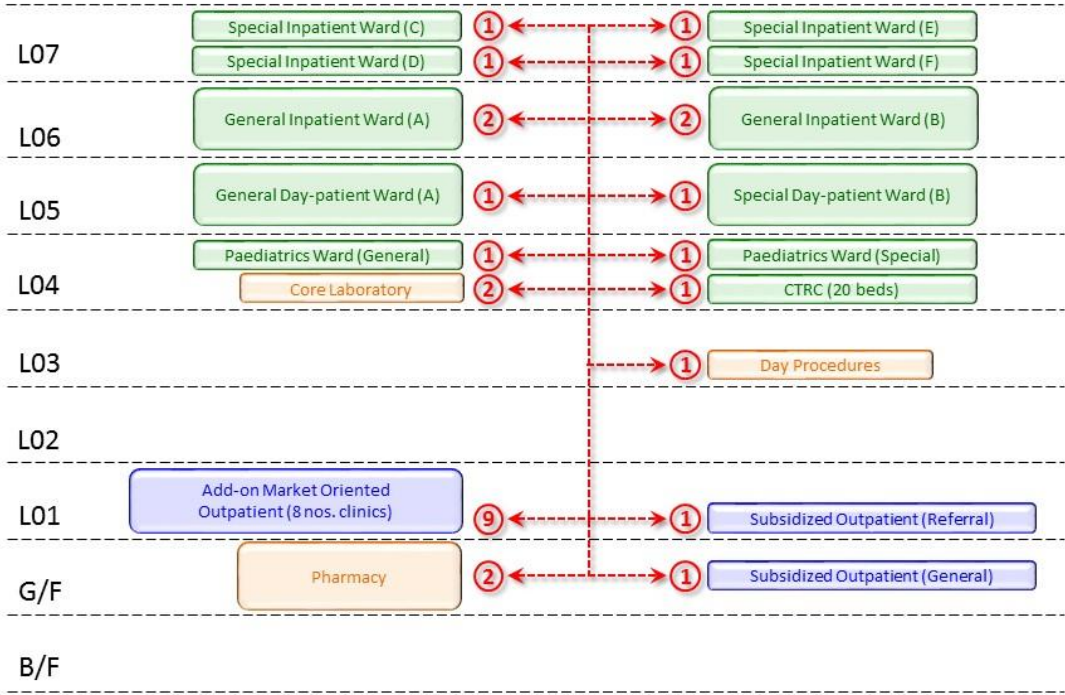
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5.   Emergency help call

(1) This will be for patients / public to seek emergency help.

(2) It is to be connected to central security control room with voice communication functions.

(3) These should be provide in key locations in communal areas and waiting areas.

(4) There should be a function to indicate the location of the call.

21. PNEUMATIC TUBE AIR TRANSPORT SYSTEM

Overview

1.   A multi-point pneumatic air tube transport system will be provided for prompt delivery of laboratory samples, pharmacy items, blood products, documentation around the CMH.

2.   A rack will be provided immediately adjacent to the PTS station for holding a minimum of six nos. of carriers.

3.   There is a total number of 29 PTS stations, and they are provided in the following locations/departments:

(1) Adjacent to the nurse station of each inpatient and day-patient ward module (approximately 30 beds), including the 20-bed CTRC (13 stations)

(2) Core laboratory (two stations) at central reception

(3) Day procedure (one station) at nurse station

(4) Special disease centres (five stations) at the staff corridor nearby Assessment Room and Treatment Room

(5) Private clinics (two stations) at the staff corridor nearby assessment room and treatment room

(6) Preventive care and health maintenance centre (two stations) at the staff corridor nearby assessment room and treatment room

(7) Referral outpatient clinic (one station) at the staff corridor nearby nurse station, assessment room and treatment room

(8) General outpatient clinic (one station) at the staff corridor nearby nurse station, assessment room and treatment room

(9) CM and WM pharmacies (two stations) at the dispensary area of CM and WM pharmacy respectively

4. PTS Schematic Diagram