



基督教聯合醫院
UNITED CHRISTIAN HOSPITAL



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HOSPITAL
AUTHORITY



CLINICAL SERVICES PLAN FOR THE REDEVELOPMENT OF UNITED CHRISTIAN HOSPITAL



Planning Tomorrow's Hospital



基督教聯合醫院

UNITED CHRISTIAN HOSPITAL

基督精神 醫護全人

With Christian Love We Care

With Excellence We Serve

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Foreword

Redevelopment of United Christian Hospital presents a unique opportunity to consider the care and service models provided by the hospital with a view to enabling the latter to better meet the healthcare needs of the community in the years to come. It is paramount that high quality planning forms the basis for shaping the hospital and its future services; for supporting the delivery of care by staff, and for enhancing patient experiences and treatment outcomes.

This Clinical Services Plan for the Redevelopment of United Christian Hospital is the culmination of a structured process which has engaged frontline staff and senior executives of the hospital, as well as the Hospital Authority Head Office. It articulates the key service developments, models of care and recommendations by clinical specialties for the hospital. All of these are aligned with the overall service directions and priorities of the Hospital Authority. As such, it forms a core reference to guide the further design and planning stages of the redevelopment.

I am delighted that this service plan has been undertaken through a participative approach. My gratitude goes to the wide range of staff and stakeholders for their dedication and support. Their contribution remains the strong foundation for the hospital's future development.



Dr P Y LEUNG

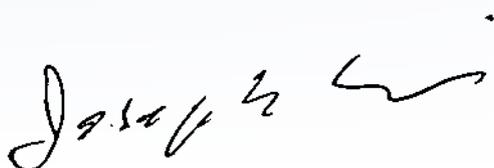
Chief Executive

Preface

This Clinical Services Plan for the redevelopment of United Christian Hospital has been prepared by hospital clinicians, senior management and executives of United Christian Hospital; and by Hospital Authority Head Office staff in the Strategy & Planning Division.

The Clinical Services Plan will guide the development of clinical services at United Christian Hospital in the years to come and inform the design and organization of new facilities and existing buildings. The plan demonstrates the commitment and vision of United Christian Hospital staff to provide holistic services which are patient-oriented, efficient & sustainable, high-quality, safe, and evidence-based, through multi-disciplinary collaboration.

We are grateful to all people who are professionally concerned with the needs of patients at United Christian Hospital, and their contributions to the development of the Clinical Services Plan. We would particularly like to acknowledge the work of the Project Steering Committee and the United Christian Hospital Working Group, as well as the Hospital Governing Committee.



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Executive Summary

This report presents the Clinical Services Plan for the redevelopment of United Christian Hospital (UCH). It maps out the planned future services of the hospital, taking into account its current and projected service demand.

The Clinical Services Plan will form an integral part of the Master Development Plan, which will guide the design and construction of new buildings and facilities in future.

The UCH Clinical Services Plan is in similar format to prior Hospital Authority (HA) hospital clinical services plans, and where appropriate reference has been made to elements of those plans. This is duly acknowledged.

In this plan, additional detail has been included regarding the rationale for redevelopment of UCH. This was considered important in setting the context.

About United Christian Hospital

United Christian Hospital is a cluster regional hospital under the management of HA, serving as the tertiary referral centre for the Kowloon East Cluster (KEC) of Hong Kong.

Opened in 1973 and founded through the cooperation of the Hong Kong Christian Council and the Alice Ho Miu Ling Nethersole Hospital, UCH provides in-patient, day-patient, out-patient, and community care services.

Although recognizing itself as an acute hospital, UCH is committed to developing services and partnerships to enable greater integration with the community, as such promoting the concept of “Hospital Without Walls”¹.

¹ The term “Hospital Without Walls” refers to the philosophy that although UCH is an acute hospital, it is an integrated part of the community, not an isolated institution. As such, services are developed with consideration of the community, where appropriate.



Background to the Review

The majority of the existing infrastructure at UCH was planned in the 1980s, which makes it difficult to cope with growing service demand². The hospital faces the challenge of delivering high quality services against increasing service volume, rising patient expectations and developments in technological advances and clinical innovations. The capacity of clinical teams to perform is frequently constrained by limitations in physical facilities and infrastructure inflexibility. Staff at UCH deliver high quality services and are efficient in treating and managing large patient numbers. However, improving efficiency alone is not enough to cope with future demand challenges without development of infrastructure and new service delivery models.

The philosophy adopted in this plan is one which begins with the consideration of the needs of patients, staff, and service delivery; to understand the functional requirements of new buildings. This strategic planning process was established to determine the models of care, technology advances and human factors necessary to fulfill the aspirations of all parties for the redeveloped UCH.

² Buildings at the UCH site date from 1972 through to the 1980s and 1990s, with the last building constructed in 2000.

Analysis of existing service gaps, projection of service demand, and international trends, form the rationale and basis of the shared objectives for redevelopment of UCH, which are:

1. Introduction of new services to fill notable service gaps, such as cancer services.
2. Orientation to more sustainable models of service delivery.
3. Strengthening continuity of care across the patient pathway.
4. Uphold service standards through modernization of facilities.
5. Greater support for staff welfare, training and development.
6. Support service development and technological advancement.

Other Considerations in the Review

Future service planning of UCH needs to take into account the Government's intention to develop a Centre of Excellence in Paediatrics (CEP) and a Centre of Excellence in Neuroscience (CEN), as well as a new acute general hospital, centrally located in the Kowloon region. In his Policy Address of 2010–11, the Chief Executive of the Hong Kong Special Administrative Region announced that active preparation was underway for establishment of a multi-partite paediatric medical centre at the Kai Tak Development Area, with expected project completion in 2016³.

Under the proposed service model, the CEP will serve as the tertiary referral centre for paediatric patients with complex clinical conditions, whilst HA regional hospitals with paediatric departments will provide emergency and secondary services, and community paediatric care, as part of a coordinated and integrated network⁴. Within this model of care there will be future opportunity for UCH to progressively rationalize its paediatric services, in close collaboration and partnership with the CEP.

Implications of the developments outlined above are likely to relate to specific clinical specialties at UCH and aspects of capacity planning; and should not affect the overall recommended service developments, models of care and design implications described in this Clinical Services Plan.

³ The 2010–11 Policy Address: Sharing Prosperity for a Caring Society (www.policyaddress.gov.hk/10-11/eng/pdf/policy.pdf). Accessed April 2011.

⁴ Report on Review of Paediatric Services in Hospital Authority, 2011.

Planning Process

Development of the UCH Clinical Services Plan, commencing in December 2010, was overseen by a Steering Committee, co-chaired by the Head Office Director of Strategy and Planning (HA Head Office), and the Cluster Chief Executive of KEC/Hospital Chief Executive of UCH. The Steering Committee was supported by a Working Group, comprising hospital and KEC senior management and executives.

To guide redevelopment of the hospital, the review examined each clinical service available at UCH and began with an examination of how models of care are likely to change. This was used to map out the clinical role and services of UCH for the next 10 to 15 years, including the recommended service developments and models of care, and an assessment of the impact that modern treatments and technologies will have on health care delivery in the foreseeable future.

The methodology involved a questionnaire which was distributed to 27 participating departments, covering medical, nursing, allied health and support services. An extensive consultation process was also undertaken with staff at UCH between December 2010 and January 2011, with 182 staff being interviewed in 30 sessions.

Other key stakeholders were also consulted during the process, including senior management from hospitals within the KEC (Tseung Kwan O Hospital and Haven of Hope Hospital). Subsequent to evaluation by the Working Group, the directions for future service development were communicated to UCH staff through an interactive staff forum involving 159 staff.

Existing Service

United Christian Hospital manages 1,385 beds, through a workforce of around 4,000 staff⁵. The hospital offers a wide range of clinical services; however, a notable gap is the provision of a comprehensive cancer service. In 2010, there were nearly 2,800 new cancer cases in KEC, representing 14% of the HA total, many of which were referred out of cluster for chemotherapy and/or radiotherapy treatment.

Each day approximately 540 patients attend the Accident and Emergency Department, of which around a quarter are admitted. In addition, UCH manages around 2,700 patients per day in Specialist Out-patient, Family Medicine, and General Out-patient Clinics. A significant proportion (one third) of patients requiring convalescent/rehabilitation beds are transferred out of the cluster for extended care. In 2010, around 5,300 babies were born at UCH.

⁵ As at December 2010.

Recommended Service Developments

As part of the UCH redevelopment many existing services will be enhanced. However, four priority service areas have been identified in particular for development.

1. Cancer Services

The most important service gap identified and hence the most significant of the recommendations for service development relates to cancer services. Many patients with cancer who have their initial management at UCH, usually as a surgical or procedural intervention, also require chemotherapy and radiotherapy pre- or post-operatively. The absence of a comprehensive chemotherapy and radiotherapy service at UCH is a service gap that should be resolved, particularly given the strategic intent of the redevelopment.



2. Emergency Services

Being the cluster regional hospital of KEC, UCH should be able to provide high quality acute emergency care for residents of Kwun Tong district and the KEC. Emergency services at UCH need to be efficient and effective in providing prompt treatment, as well as directing patients to the most appropriate care in a timely manner. This begins at the Accident and Emergency Department (AED). Important developments to achieve this will be the establishment of an



Emergency Medicine Ward and an Acute Admission Ward to improve efficiency, reduce the in-patient burden, and avoid unnecessary hospitalization from the AED. A designated area in the AED for managing patients with minor conditions will optimize resources and improve patient care. Safe and appropriate transfer of patients to definitive care should be developed to ensure smooth and efficient emergency care.

3. Ambulatory Services

To reduce the burden on acute in-patient services and unnecessary hospitalizations, a worldwide trend in health care delivery has been a focus on ambulatory services and short-stay management to achieve more efficient use of resources and better patient care. This not only improves patient experience, but also helps to address the sustainability of hospital services. It reflects the trend that many complex and sophisticated health services can be provided



in settings orientated to the needs of patients. At UCH, every specialty and discipline has embraced these concepts to shift away from in-patient care, where appropriate, with a greater emphasis on high-tech intervention services and multi-disciplinary management of patients in ambulatory settings. Examples of services in ambulatory settings include day surgery, day procedures, day care, and specialist out-patient services.

4. Rehabilitation Services

Enhancing convalescent and rehabilitation (in-patient) services at UCH is considered an important development to improve the quality and continuity of extended care. Instead of inter-cluster transfer, this service development aims to optimise mixed specialty management of patients at UCH, through a coordinated and multi-disciplinary approach. Rehabilitation and convalescent services will be an integral part of the patient's care plan throughout their stay and organized in such a way as to create inter-specialty care for more complex cases, and support better outcomes, such as reducing unplanned readmission of patients with multiple needs. Rehabilitation services can be provided in a variety of settings and it is likely that, where appropriate, in-patient rehabilitation will be integrated with services in ambulatory settings.



Recommended Service Direction for Clinical Specialties

A condensed presentation of the future directions of each clinical service is presented in the tables on the following pages. Developed for each discipline are the recommended service developments and enhancements in delivering the new models of care: (1) streamlined emergency services, (2) coordinated patient-centred ambulatory services and, (3) holistic rehabilitation and convalescent (in-patient) services.

Recommended Service Direction for Clinical Specialties at UCH

Clinical Specialty ⁶	Streamlined Emergency Services
Accident and Emergency (AED)	<ul style="list-style-type: none"> • Introduce an Emergency Medicine Ward to manage patients requiring extended observation and short-stay care, which also covers toxicology service • Support the Acute Admission Ward, with multi-specialty collaboration, for timely specialist assessment, investigations, definitive treatment and further management (including a Paediatric Assessment Unit to support prompt management and short-stay care of paediatric patients) • Set up a designated patient area in the AED to handle patients with minor emergency conditions (e.g. category 4/5 AED patients) • Set up a purpose-built psychiatric assessment area at AED, with enhancement of psychiatric emergency observation facilities
Anaesthesia, Operating Theatre and Endoscopy Services	<ul style="list-style-type: none"> • Support the Acute Admission Ward for prompt management of patients requiring emergency operations
Clinical Oncology	<ul style="list-style-type: none"> • Support the Acute Admission Ward for prompt management of cancer patients with emergency conditions
Clinical Toxicology	<ul style="list-style-type: none"> • Expand the scope of poisoning enquiry service
Dentistry & Maxillofacial Surgery	<ul style="list-style-type: none"> • Standard care support
Ear, Nose and Throat (ENT)	<ul style="list-style-type: none"> • Support the Acute Admission Ward for prompt management of patients with acute ENT problems

⁶ Note: Service enhancements at UCH have to be considered under the context of the Government’s intention to develop Centres of Excellence in Paediatrics and Neuroscience, as well as a new general acute hospital, centrally located in the Kowloon region.

	Coordinated Patient-Centred Ambulatory Services	Holistic Rehabilitation and Convalescent Services
	<ul style="list-style-type: none"> Standard care support⁷ 	<ul style="list-style-type: none"> Standard care support
	<ul style="list-style-type: none"> Establish a Peri-Operative Centre to provide a one-stop service for surgical patients, including patient admission, pre-operative preparation and assessment, post-operative care and patient discharge and follow-up Establish a peri-operative patient education clinic and a peri-anaesthetic nurse clinic 	<ul style="list-style-type: none"> Standard care support
	<ul style="list-style-type: none"> Enhance chemotherapy day services Enhance oncology out-patient services to enable multi-disciplinary care and joint consultations Enhance psychosocial and other supporting services provided in ambulatory settings 	<ul style="list-style-type: none"> Enhance physical, mental and psychosocial support to cancer patients undergoing rehabilitation
	<ul style="list-style-type: none"> Standard care support 	<ul style="list-style-type: none"> Standard care support
	<ul style="list-style-type: none"> Enhance dental-maxillofacial service support to the Cleft Lip and Palate Service 	<ul style="list-style-type: none"> Standard care support
	<ul style="list-style-type: none"> Enhance services provided by the ENT Centre through strengthening of the integrated out-patient service Enhance facilities to enable minimally invasive procedures, as well as minor operations under local anaesthesia, to be performed in the ambulatory setting 	<ul style="list-style-type: none"> Standard care support

⁷ Standard care support refers to the clinical specialty supporting the key recommended service direction through their usual service activity.

Clinical Specialty	Streamlined Emergency Services
<p>Family Medicine & Primary Health Care</p>	<ul style="list-style-type: none"> Collaborate with AED colleagues for management of emergency patients with minor conditions (e.g. category 4/5 AED patients)
<p>Intensive Care</p>	<ul style="list-style-type: none"> Support the Acute Admission Ward for prompt management of patients requiring intensive care Number of ICU beds should be of adequate capacity to cope with the increase in service demand related to a growing and ageing population
<p>Medicine & Geriatrics</p>	<ul style="list-style-type: none"> Establish a Cardiac Care Centre and introduce a primary PCI service for acute coronary emergencies with enhanced CCU support (<i>Note: service enhancement has to be considered under the context of the HAHO review of cardiac services</i>) Enhance acute stroke care with rapid CT assessment and enhanced neuro-intensive care following thrombolytic therapy Support the Acute Admission Ward for prompt management of patients with acute medical conditions
<p>Obstetrics & Gynaecology (O&G)</p>	<ul style="list-style-type: none"> Support the Acute Admission Ward for prompt management of obstetric and gynaecology patients
<p>Ophthalmology</p>	<ul style="list-style-type: none"> Support the Acute Admission Ward for prompt management of patients with acute eye problems
<p>Orthopaedics & Traumatology</p>	<ul style="list-style-type: none"> Support the Acute Admission Ward for prompt management of patients with acute orthopaedic problems
<p>Paediatrics & Adolescent Medicine</p>	<ul style="list-style-type: none"> Support the Acute Admission Ward (with a Short-Stay Paediatric Assessment Unit) to support prompt management and short-stay care of paediatric patients The number of NICU beds should be of adequate capacity to cope with future service demand

	Coordinated Patient-Centred Ambulatory Services	Holistic Rehabilitation and Convalescent Services
	<ul style="list-style-type: none"> Enhance triage clinic services for routine specialist referrals Set up nurse and allied health clinics for screening and early treatment of respiratory problems, continence care, wound care, and fall prevention 	<ul style="list-style-type: none"> Standard care support
	<ul style="list-style-type: none"> Standard care support 	<ul style="list-style-type: none"> Standard care support
	<ul style="list-style-type: none"> Enhance Renal Replacement Therapy, including peritoneal dialysis, haemo-dialysis and transplant support services Establish a multi-disciplinary Endocrine Centre to handle patients with diabetes mellitus, osteoporosis and other endocrine conditions Establish an Integrated Continence Care Centre with collaboration of Geriatrics, Urology, Gynaecology and Allied Health professionals Enhance community nursing services for management of post-discharge patients 	<ul style="list-style-type: none"> Enhance rehabilitation services and facilities for specific disease groups (e.g. post-stroke, end-stage renal failure, cardiac, pulmonary and musculoskeletal) Enhance palliative care for patients with end-stage organ failure
	<ul style="list-style-type: none"> Enhance collaboration with Paediatrics for antenatal diagnosis of cleft lip and palate 	<ul style="list-style-type: none"> Standard care support
	<ul style="list-style-type: none"> Enhance ambulatory eye surgery services, which include pre-operative care, major and minor ophthalmic surgery done under local anaesthesia, and post-operative care 	<ul style="list-style-type: none"> Standard care support
	<ul style="list-style-type: none"> Increase minimally invasive surgery, day surgery services, and day-of-surgery admissions for total joint replacement cases 	<ul style="list-style-type: none"> Expand the orthopaedic rehabilitation service through enhancement of multi-disciplinary support and provision of adequate rehabilitation beds
	<ul style="list-style-type: none"> Enhance the Ambulatory Adolescent Service with multi-disciplinary input to handle both the physical and psychosocial needs of adolescents Establish a Paediatric Day Care Centre for day procedures (e.g. electro-diagnostic procedures, and imaging studies requiring sedation) Enhance support to the Cleft Lip and Palate Service through close collaboration with O&G for antenatal diagnosis Enhance the Paediatric Dermatology Service for patients with disfiguring birthmarks 	<ul style="list-style-type: none"> Enhance rehabilitation services and facilities for paediatric patients with chronic problems requiring supportive care (e.g. chronic respiratory problems and chronic neurological diseases)

Clinical Specialty	Streamlined Emergency Services
Pain Management	<ul style="list-style-type: none"> • Standard care support
Pathology	<ul style="list-style-type: none"> • Enhance the laboratory, blood bank, other diagnostic pathology services, and services provided by the infection control team to support the Acute Admission Ward for prompt management of emergency patients
Psychiatry	<ul style="list-style-type: none"> • Enhance psychiatric consultation liaison services and facilities to ensure close collaboration with all clinical specialties in managing emergency patients with psychiatric problems
Radiology	<ul style="list-style-type: none"> • Enhance diagnostic imaging and interventional radiology service to facilitate prompt management of emergency patients
Surgery	<ul style="list-style-type: none"> • Support the Acute Admission Ward for prompt management of patients with acute surgical problems
Supporting Services to Clinical Departments	<ul style="list-style-type: none"> • Standard care support

	Coordinated Patient-Centred Ambulatory Services	Holistic Rehabilitation and Convalescent Services
	<ul style="list-style-type: none"> • Enhance the comprehensive pain management service with introduction of cognitive behavioral therapy • Establish a nurse-led clinic to enhance specialty care for chronic pain-patients 	<ul style="list-style-type: none"> • Standard care support
	<ul style="list-style-type: none"> • Enhance laboratory and other diagnostic pathology services to support the development of ambulatory services 	<ul style="list-style-type: none"> • Standard care support
	<ul style="list-style-type: none"> • Enhance Psychiatric Day Hospital capacity for both adult, child and adolescent patients • Set up a Psycho-geriatric Day Hospital to address the special needs of geriatric patients • Set up age-specific psychiatric out-patient services with special provision for different patient groups 	<ul style="list-style-type: none"> • Strengthen psychiatric rehabilitation services, through enhancing day hospital capacity
	<ul style="list-style-type: none"> • Set up a satellite radiology service for specialist out-patients and other ambulatory patients, with X-ray and ultrasound services readily accessible 	<ul style="list-style-type: none"> • Standard care support
	<ul style="list-style-type: none"> • Strengthen the Minimally Invasive Surgery Service • Enhance the Breast Centre services through collaboration with specialty nurses for screening and social support • Establish a Urology Centre with service enhancements, including a lithotripsy service • Enhance support to the Cleft Lip and Palate Service 	<ul style="list-style-type: none"> • Standard care support
	<ul style="list-style-type: none"> • Specialist Out-patient Department (SOPD): expansion of SOPD at UCH campus is essential to address increasing service demand; streamline patient flow and enhance out-patient service delivery with multi-disciplinary collaboration • Pharmacy: set up a satellite pharmacy for specialist out-patients and other ambulatory patients • Nurse and Allied Health clinics: set up multi-disciplinary clinics for coordinated patient management (e.g. triage clinics, community health services) 	<ul style="list-style-type: none"> • Enhance Nurse and Allied Health support to rehabilitation services, including: <ul style="list-style-type: none"> – Nurses – Physiotherapy – Occupational Therapy – Prosthetic & Orthotic – Podiatry – Medical Social Service – Clinical Psychology – Dietetics, and – Speech Therapy

Principal Recommendations

It is recommended that UCH continues its role as a major acute hospital and cluster tertiary referral centre for KEC. The daily demands of emergency presentations and consequent admissions will dictate that a comprehensive range of clinical services is required to support this role.

The existing repertoire of services is expected to continue. A major addition will be development of a comprehensive cancer service and the major shift will be in the care delivery model.

United Christian Hospital is well positioned to develop more integrated patient-centred services. New models of care will ensure a holistic approach to patient management. The redeveloped UCH campus will be a clean, safe, welcoming setting; respecting the dignity of patients, and which supports staff to provide the high quality service they aspire to.

Proposed models of care will enable services to better manage growing demand, deliver high quality safe services, and nurture a skilled multi-disciplinary workforce. These recommendations are elaborated on below.

Cancer Services

The most significant service development identified by the review and highlighted by the UCH clinical team was cancer services. Cancer represents a significant proportion of the workload in KEC, however many patients are required to travel long distances to other clusters for chemotherapy and/or radiotherapy.

The development of comprehensive cancer services at UCH will be provided through state-of-the-art facilities, including an Oncology Centre as the ambulatory component, and oncology wards for in-patient services. The purpose-built Oncology Centre will provide a range of services to support patients and healthcare professionals, including diagnostics, different treatment options, including chemotherapy and radiotherapy, as well as services for pain and symptom management, and support for the physical, psychological, and social needs of patients. In addition, services such as spiritual support, as well as education programmes, and family support will be provided, as part of the holistic model of care. Linkages with palliative care and end-of-life programmes are also critical components.

The provision of cancer services will reflect the needs of the patient, from time of symptom presentation, through to access to appropriate specialist care; from diagnosis to support offered to patients both during and after treatment. The model adopted will be that of a “one-stop-service” at the UCH campus.

Emergency Services

Emergency services at the redeveloped UCH will focus on integrated and streamlined pathways, leading patients to the right care, in a prompt and coordinated manner. This is characterized by intelligent design and careful planning of services. A rethink and reorganization of process will address the needs of patients presenting with a spectrum of emergency conditions. For those patients requiring extended observation, or short-stay care (typically less than 48 hours), after initial AED assessment, an Emergency Medicine Ward will help to ensure appropriate management under the care of the Emergency Physician, without the need for hospital admission. With the establishment of an Acute Admission Ward, patients will receive timely definitive treatment under the care of specialist teams without unnecessary delay, which may then follow with transfer to specialty in-patient wards for further management. A designated area in AED for managing emergency patients with minor conditions will reserve the AED to handle more serious emergencies. Finally, direct fast-track of patients with urgent and high acuity presentations from AED to definitive care will be established, supported by smooth patient flow. Given that children will present to the AED at UCH, facilities and design appropriate for children should be included.

Appropriate functional relationships of different services, and multi-specialty collaboration, are essential ingredients to support this model of patient-oriented care. Reorganization of emergency service at UCH will go a long way in managing demand by changing to a more efficient and appropriate model.

Ambulatory Services

In step with managing demand and shifting to a more patient-centred approach, the redevelopment of UCH aims to change models of care in favour of ambulatory and short-stay management. It reflects the trend that many complex, sophisticated health services can be provided in a setting that is orientated to the needs of the patient. Rather than a single ambulatory centre *per se*, the major direction at UCH is delivery of a range of clinical services in ambulatory settings. Day admissions, high-tech surgical and procedural technologies, efficient patient management, and way-finding are logical developments to fulfill this vision.

Ambulatory settings will be easily accessible within the UCH campus and easy to navigate. Environments will be welcoming, user-friendly, comfortable, age and culturally appropriate, to support a positive patient experience. The ambulatory settings will also support patient carers and family members and provide an accessible link between the hospital and the wider community. Flexible and shared space, with co-location of services support the “one-stop-service” model. This model will be exemplified by the new Oncology Centre.

Specialist Out-patient Clinics, nurse clinics and allied health clinics will be enhanced and organized so that individual patients can see their healthcare team in one visit during the course of a day.

For surgical patients, establishment of a Peri-Operative Centre will facilitate efficient management in the peri-operative period, supporting day surgery and day-of-surgery admissions. High-tech surgical and procedural technologies are important elements in developing day surgery services. The Peri-Operative Centre will provide a “one-stop-service” in an ambulatory setting. The model requires good logistics and dedication from staff, particularly surgeons and anaesthetists.

With the day hospital concept, patients can stay in the community whilst still receiving hospital support, reducing avoidable in-patient stay. For example, a psychiatric day hospital will provide care in a setting familiar to its patients, where they can spend a substantial portion of their day under active multi-disciplinary therapy, to facilitate rehabilitation.

A focus on ambulatory models of care requires major consideration of hospital layout, workload patterns, and the composition of clinical teams.

Rehabilitation and Convalescent (in-patient) Services

Enhancing rehabilitation services is recommended to improve the quality and continuity of care provided to UCH patients, reducing the need for unsatisfactory inter-cluster transfers. Rehabilitation services at UCH will be an integral part of the patient’s care plan throughout their stay and organized in such a way as to create partnerships between services to support better patient outcomes. Patients with sub-acute conditions will benefit from a period of extended care with high quality mixed specialty management, through a coordinated multi-disciplinary approach. Discharge planning, in partnership with the patient, will help to support timely and appropriate discharge, and reduce unplanned readmissions.

The multi-disciplinary team approach will be strengthened, involving close collaboration and coordination between clinical specialists, nursing, and allied health teams. Rehabilitation will be delivered in accessible, relaxed and healing environments, where patients and visitors can feel at home. Rehabilitation is best undertaken in a similar environment to that in which new skills or knowledge will normally be used. State-of-the-art facilities and equipment, such as purpose-build gymnasiums and hydrotherapy, as well as areas simulating “activities of daily living”, will be important to support patients in their optimum transition to home. To facilitate the delivery of rehabilitation, spaces need to have functional flexibility which takes into consideration the unique requirements of service users.

Transition from in-patient to the out-patient setting will be an important stepping-stone in the patient journey back to the community, and provides an important interface through which multi-disciplinary teams and partner agencies can interact with patients and carers; to support their individual continuing needs.

Flexible Space Utilization

A significant proportion of in-patient burden from population growth and changes in the patient age structure will be offset by the service enhancements and models of care discussed above. That is, more services in an ambulatory setting, decreased length of stay for those who do need overnight admission, and streamlining of the emergency care pathway.

Having said this, the design and use of ward space needs to be more flexible. Hospitals of the future will have far more flexible accommodation spaces and the notion of the specialty-based ward will be phased out.

Holistic Care

The redeveloped UCH will continue in its tradition of delivering a “whole person-body, mind and spirit” model of care. The organizational arrangements of the campus will be important to strengthen patient-centred management at the point of admission through to discharge. Greater emphasis on multi-disciplinary collaboration will facilitate a coordinated approach to ensure the physical, mental, social and spiritual needs of patients are acknowledged and met.

Design Implications

The redevelopment of UCH represents a unique opportunity to revamp models of patient-centred care delivery and ensure that efficiency, patient and staff safety, and accessibility are addressed. In hospitals of the 21st Century, environments should be welcoming, respecting the dignity and privacy of patients and their families, easy to navigate with convenient access.

Hospital activities need to be better connected. To achieve an efficient and patient-friendly design, the need is for appropriate spatial arrangement of clinical activities that are centred on the convenience of patients, wherever possible. In the redevelopment of UCH, the overall network of circulation should also be considered to reduce travel and waiting times for patients and staff. Importantly, there should be a three-dimensional circulation that allows “a number of ways through” for patients and staff, consisting of a lattice of strategically located lifts, concourses, and escalators.

In-patient areas for adults, adolescents, and children should be separated and age-appropriate. Large floor plates and modular design should be pursued wherever possible.

The use of external green space and integration of nature should be an essential provision throughout the UCH site.

The principle established in this strategic plan should be carried forward in subsequent stages of the redevelopment project.

Concluding Remarks

The redevelopment of UCH offers a unique opportunity to rethink and realize future healthcare models. The redeveloped UCH will provide services which are efficient, sustainable, high quality and evidence-based, safe, community- and patient-oriented. In this report, four priority service areas have been highlighted for development. With service enhancement in cancer services and rehabilitation services, patients will experience greater continuity of care, taking a holistic approach, based on a “one-stop-service” model within the cluster. The introduction of new models of care in ambulatory and emergency services will enable the right patients to get the right care, at the right time, with their needs being addressed in an efficient and effective way. Having said this, many other clinical services and facilities will also be enhanced through the redevelopment. Modern flexible facilities will be vital to support the challenge of these changes and ensure the future proofing of service delivery. Full engagement and support from all stakeholders is critical to the success of this project.

Purpose of Plan

This document presents the Clinical Services Plan for the redevelopment of United Christian Hospital (UCH). Mapping out the planned future services of the hospital, it is the culmination of an intense, highly consultative process with clinical and executive staff of UCH.

This report considers the design implications of the preferred strategies. It is intended to inform the design process, such as development of the Master Development Plan, which will guide the redevelopment of UCH.

This report does not address workforce issues or the change management strategies necessary to give effect to the models of care described, although the importance of these cannot be overstated.

Background

United Christian Hospital is a cluster regional hospital under the management of Hospital Authority (HA), serving as the tertiary referral centre for the Kowloon East Cluster (KEC) of Hong Kong. The hospital manages 1,385 beds (comprising 1,231 acute beds, 74 convalescent/rehabilitation beds, and 80 psychiatric beds) and provides a wide range of clinical services, through a workforce of around 4,000 staff (**Appendix 1**)⁸. An organization chart of UCH is available at **Appendix 2**.

Opened in 1973 and founded through the cooperation of the Hong Kong Christian Council and the Alice Ho Miu Ling Nethersole Hospital, UCH provides in-patient, day-patient, out-patient, and community care services.

United Christian Hospital operates a 24-hour Accident & Emergency service, with approximately 540 attendances every day, around a quarter of which are admitted. In addition, UCH manages around 2,700 patients per day in the Specialist Out-patient, Family Medicine and General Out-patient Clinics. In 2010, around 5,300 babies were born at UCH.

In addition to the main hospital site, UCH manages the psychiatry, physiotherapy, occupational therapy, and geriatric day hospital services at Yung Fung Shee Memorial Centre, as well as the pharmacy and radiology services of the Pamela Youde Polyclinic at Cha Kwo Ling Road. Since July 2003, UCH has been responsible for the management of five General Out-patient Clinics in the Kowloon East Region.



⁸ As at December 2010.

The hospital is also recognized as a major training centre in Hong Kong for medical, nursing, and allied health professionals.

Over the last three decades the hospital has developed areas of excellence well recognized in the locality and across Hong Kong. Examples include its cluster-based multi-disciplinary Cleft Lip and Palate Service (CLAPS), integrated continence care program, patient flow and efficiency improvement initiatives (such as the Service Load Integrated Management Program), and a paediatric dermatology service for children with “catastrophic” congenital skin problems (disfiguring birthmarks). United Christian Hospital is an innovator of community-orientated services in HA, such as community nursing service and volunteer service, and has developed geriatric and psychiatric outreach teams, and a health resource centre, as components of its modern approach to patient care.



Much of the step changes in approach to patient management at UCH can be attributed to the commitment and aspirations of its medical, nursing, and allied health professionals. Apart from continuous efforts for quality improvement of in-patient services, out-patient and community services have been developed based on an approach of patient-centred holistic care. With an emphasis on developing services and partnerships to enable greater integration with the community, UCH promotes a philosophy of “Hospital Without Walls”⁹.

⁹ The term “Hospital Without Walls” refers to the philosophy that although UCH is an acute hospital, it is an integrated part of the community, not an isolated institution. As such, services are developed with consideration of the community, where appropriate.

United Christian Hospital was designed primarily for in-patient services and more from the provider's perspective, when it was first established. Staff members are productive in treating and managing large patient numbers within the current setting. However, after several decades of heavy utilization the physical condition and facilities of the hospital require significant improvement. The physical setting and facilities have become outdated over the years and require redevelopment in terms of space, capacity, and design to cope with increasing service demand and adoption of modern models of health care delivery.

Staff at UCH aspire to deliver world-class, evidence-based healthcare, with efficient use of resources. The redevelopment of UCH would enable continued realization of patient-centred holistic care through development of tertiary and subspecialty services, collaboration with primary health care providers, enhancement of community-based care, and the promotion of innovation and teaching. Modern flexible facilities would support this and further enable UCH to achieve its strategic direction *To Become a Community Oriented Tertiary Hospital of the 21st Century*.

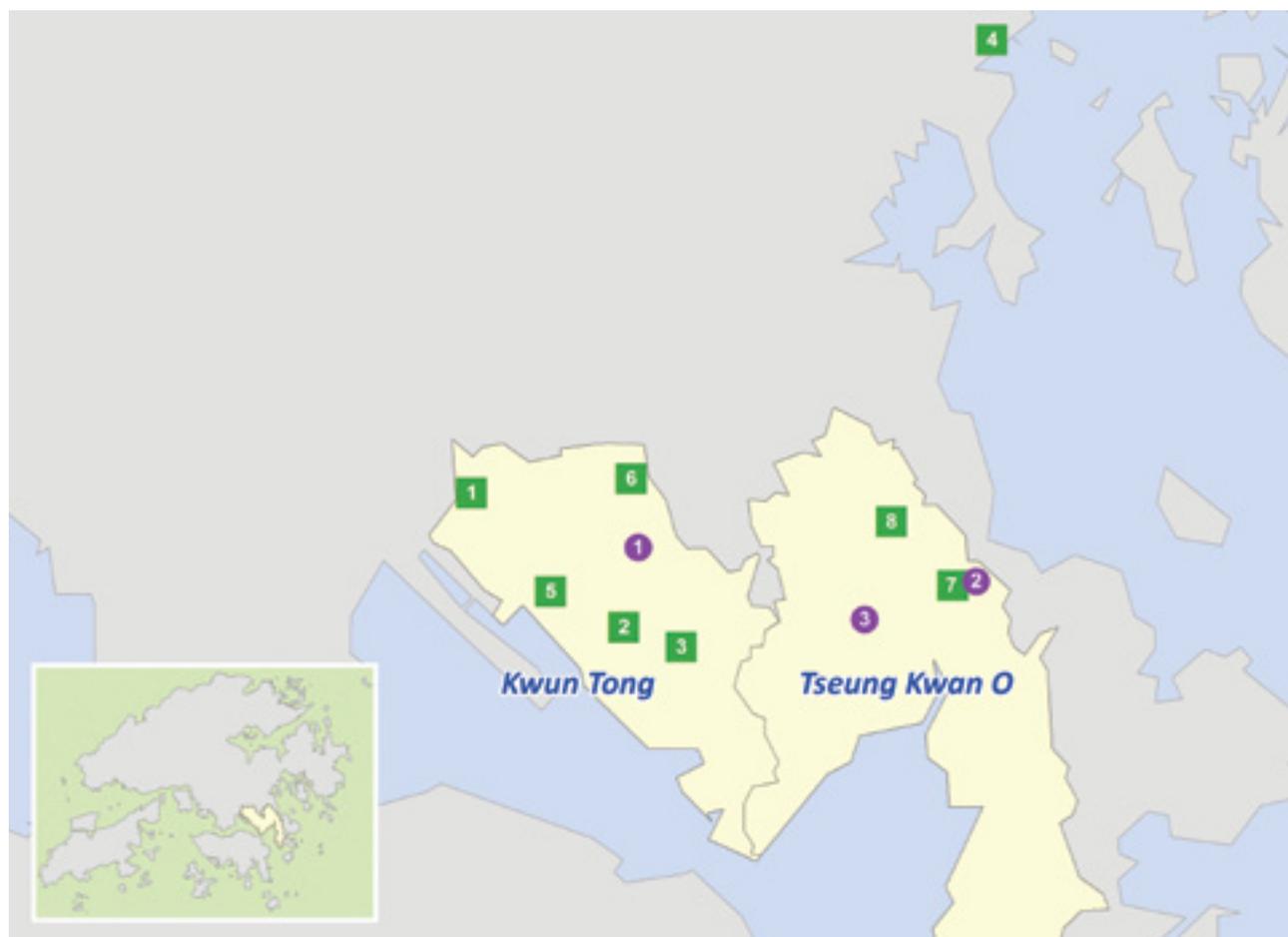
Role Statement of United Christian Hospital

1. United Christian Hospital is the cluster regional hospital that serves as the tertiary referral centre for the KEC.
2. It will serve as a major training centre for healthcare professionals.
3. It will continue its tradition of fostering community-oriented care with the philosophy of "Hospital Without Walls".

Location of United Christian Hospital

United Christian Hospital is located in the Kwun Tong district of Hong Kong, in the HA's KEC. As at 2010, the population of Kwun Tong, which is the catchment area of UCH, was estimated to be over 612,000. Together with Tseung Kwan O Hospital (TKOH) and Haven of Hope Hospital (HHH), the other two network hospitals in the KEC, clinical services are provided to a population of nearly one million people. Figure 1 shows the location of UCH in relation to other hospitals and General Out-patient Clinics in the KEC. The site map of UCH is illustrated in **Appendix 3**.

United Christian Hospital serves diverse communities. Compared to Hong Kong overall, the population of KEC, and in particular Kwun Tong district, is older and less affluent. Kowloon East Cluster is set to experience continued rapid population increase, with a growing proportion of older residents in Kwun Tong district. The rapid population growth has given rise to increasing demand in both ambulatory and in-patient services. However, although challenging, these present opportunities for staff at UCH to develop appropriate services to meet the needs of local communities (**Appendix 4**).

Figure 1: Map of Hospitals and General Out-patient Clinics Managed by the Kowloon East Cluster

Hospital

- ① United Christian Hospital
- ② Tseung Kwan O Hospital

- ③ Haven of Hope Hospital

General Out-patient Clinic

- ① Kowloon Bay Health Centre GOP Clinic
- ② Kwun Tong Jockey Club Health Centre GOP Clinic
- ③ Lam Tin Polyclinic GOP Clinic
- ④ Mona Fong GOP Clinic

- ⑤ Ngau Tau Kok Jockey Club GOP Clinic
- ⑥ Shun Lee Government GOP Clinic
- ⑦ Tseung Kwan O (Po Ning Road) GOP Clinic
- ⑧ Tseung Kwan O Jockey Club GOP Clinic

About the Review

This review arises from a general consensus among key stakeholders of UCH that there is a need to develop the hospital site, to incorporate new facilities and modern flexible hospital design. Most of the existing infrastructure of UCH was planned in the 1980s and many aspects are no longer conducive to the type of care aspired to. The redevelopment entails construction of new buildings on the UCH campus, as well as reorganization and enhancement of clinical services in remaining buildings.

To guide redevelopment of the hospital, this project has begun with an examination of how models of care are likely to change, to map out the clinical role and services of UCH for the next 10 to 15 years. These include recommended models of care, and an assessment of the impact that modern treatments and technologies will have on health care delivery in the foreseeable future.

The models of care adopted in this plan have been developed with consideration of the needs of patients, staff, and service delivery. All stakeholders are committed to seeing that the principles in this plan are carried forward to subsequent stages of the redevelopment process, master planning, design, and construction.

The terms of reference for this project do not include non-clinical support services even though catering, transport and parking, stores, purchasing, etc. are crucial for master planning. They are not within the scope of this project. However, the implications for clinical services planning of aspects of non-clinical service strategies are of such importance that some comments have been made. These are mostly confined to the Design Implications section of this report.

Other Considerations in the Review

Future service planning of UCH needs to take into account the Government's intention to develop a Centre of Excellence in Paediatrics (CEP) and a Centre of Excellence in Neuroscience (CEN), as well as a new acute general hospital, centrally located in the Kowloon region. In his Policy Address of 2010–11, the Chief Executive of the Hong Kong Special Administrative Region announced that active preparation was underway for establishment of a multi-partite paediatric medical centre at the Kai Tak Development Area, with expected project completion in 2016¹⁰.

The development of the CEP, aimed at enhancing quality of clinical services, is widely supported by clinicians from all disciplines involved in child care and within HA there is consensus among healthcare professionals about the merit of establishing a CEP in Hong Kong. Paediatric services will be organized under a proposed hub-and-spoke service model, with particular emphasis on partnerships between the CEP and HA's hospitals. The CEP will serve as the tertiary referral centre

¹⁰ The 2010–11 Policy Address: Sharing Prosperity for a Caring Society (www.policyaddress.gov.hk/10-11/eng/pdf/policy.pdf). Accessed April 2011.

for complex cases, while paediatric departments in HA's regional hospitals will continue to provide consultation services to other specialties, emergency care, secondary services (including step-down care for patients returned from the CEP), and community paediatric care¹¹.

With proximity to the proposed CEP, there will be future opportunity for UCH to progressively rationalize its paediatric services, as part of the integrated network model and in close collaboration and partnership with the CEP.

Although this Clinical Services Plan relates to the redevelopment of UCH, delivery of UCH services and demands of the hospital are inextricably linked to the development of other healthcare facilities and their service catchment zones. However, such developments are likely to relate to specific clinical specialties at UCH and aspects of capacity planning; and should not affect the overall recommended service developments, models of care and design implications outlined here.

Implications of the developments described above for relevant clinical specialties at UCH are discussed in the section Key Recommendations on Clinical Specialties, without passing judgment on any particular proposal or policy intent. An analysis on the future capacity of UCH is also provided in the Capacity Planning chapter.



Summary

Extensive consultation with clinical staff from all disciplines has identified that most clinical teams at UCH are enthusiastic to embrace the models of care described in this report and being implemented in many institutions across the world. Indeed, this Clinical Services Plan is set against the HA's Strategic Service Plan 2009–2012 of developing options to reduce avoidable hospitalization, and the HA Mission of *Helping People Stay Healthy*; contributing to shaping the direction of healthcare at UCH for years to come.

¹¹ Report on Review of Paediatric Services in Hospital Authority, 2011.

Service Challenges at United Christian Hospital

The majority of the existing infrastructure at UCH was planned in the 1980s, which makes it difficult to cope with the growing demand¹². The hospital faces the challenge of delivering high quality services against increasing service volume, rising patient expectations and developments in technological advances and clinical innovations. The capacity of clinical teams to deliver care is frequently constrained by limitations in physical facilities and infrastructure inflexibility. Staff at UCH deliver high quality services, and are efficient in treating and managing large patient numbers. The UCH team has strived to innovate streamlining of patient flows and maximizing its efficiency. However, improving efficiency alone is not enough to cope with future demand challenges without development of infrastructure and service delivery models.

The KEC, and in particular Kwun Tong district of Hong Kong is set to experience rapid population growth (**Appendix 4**). In 2010, around 17% of the Kwun Tong population was aged 65 years or over. However, in 20 years over a quarter of the Hong Kong population will be over 65 years of age¹³. Facilities and services need to be flexible, age-appropriate, and with the optimal mix of ambulatory care to sustainably meet the needs of a rapidly growing and ageing population.

Analysis of existing service gaps, projection of service demand and international trends, form the rationale for redevelopment of UCH. Key areas of service challenge at UCH are highlighted below.

¹² Buildings at the UCH site date from 1972 through to the 1980s and 1990s, with the last building constructed in 2000.

¹³ Data source: Population & Vital Statistics, Statistics & Workforce Planning Department Webpage, HAHO. (<http://shis.home/shis/home/asp/home.asp>). Accessed 15 April 2011.

Notable Service Gaps

Cancer Services

Many cancer patients who have their initial management at UCH, usually as a surgical or procedural intervention, also require chemotherapy and radiotherapy pre- or post-operatively. The provision of comprehensive radiotherapy and chemotherapy services in KEC has become a significant service need. Most cancer patients in KEC, following diagnosis and surgery at UCH, are referred to Pamela Youde Nethersole Eastern Hospital or Queen Elizabeth Hospital for chemotherapy and/or radiotherapy treatments. Upon completion of treatment, they are then referred back to KEC for further management and follow-up care.

In 2010, around 2,800 new patients seen at HA oncology clinics were living in Kowloon East region, representing 14% of the HA total. In addition, around 37,000 (11% of HA total) follow-up attendances at HA oncology clinics were from KEC patients. Of note, among the 37,000 oncology clinic attendances, only 5% took place at UCH. Considering the increasing service demand for cancer services, it would be appropriate for the KEC to develop its own cancer services.

Continuity of Care

In-patient Convalescent and Rehabilitation Services

In 2010, due to limited rehabilitation services available at KEC, around 2,600 patients (about one third) requiring extended care had been transferred to Kowloon Hospital in the Kowloon Central Cluster.

At present, only 74 convalescent/rehabilitation (C/R) beds are available at UCH. Together with the 306 C/R beds provided by Haven of Hope Hospital, a total of 380 C/R beds are available in KEC. This amounts to an Extended Care Bed to Population ratio of 0.4 per 1,000 population. Currently, 190 C/R beds in Kowloon Hospital cater for the extended care service needs of KEC patients. This involves cross-cluster patient transfer, which makes it difficult to ensure continuity of care, especially in the context of community support networks, such as social welfare services, non-governmental organization support, community nursing services, housing arrangement, etc.

Sustainability of Services

Ambulatory Care Services

Healthcare systems around the world are focusing on ambulatory care services to reduce the burden on acute in-patient services, where possible. Models of care in favour of ambulatory and short-stay management are also supported by adoption of smart technology and minimally invasive techniques for patient management. At present, there are small-scale ambulatory and day care services provided at the UCH campus, with further development constrained by space availability.

Uphold Service Standards through Modernization of Facilities

To uphold service standards to meet international benchmarks, certain clinical areas at UCH with outdated and aged facilities need to be modernized. Examples of such clinical areas include pharmacy, operating theatres, endoscopy rooms, labour ward, radiology and the AED. Facilities to further support good infection control also need to be enhanced so that UCH can appropriately respond to major infectious disease outbreaks in the future.

Specialist Out-patient Department

During the period 1996¹⁴ to 2010, the number of specialist out-patient attendances has increased from 283,000 to 527,000 a year, an increase of 86%. Such a large increase in the volume of specialist out-patient attendances has placed considerable demand on existing facilities. Space constraint has limited further accommodation of additional Specialist Out-patient Clinic sessions to match



the growing demand, which has contributed to the lengthening of specialist out-patient waiting times at UCH. Apart from accessibility to health care services, privacy and quality issues are associated with space limitations. For example, over 85,000 patients a year at UCH have medical consultations conducted in shared consultation rooms. Such high service demand and congregation of patients also presents additional challenges regarding infection control, which the hospital must be increasingly vigilant.

¹⁴ Existing infrastructure of the Specialist Out-patient Department at UCH was built in 1995.

Staff Welfare, Training and Development

Staff is a fundamentally important and valued asset at UCH. Supporting staff welfare, training and development are key elements to build and nurture high quality professional teams. United Christian Hospital is recognized as a major training centre in Hong Kong for medical, nursing, and allied health professionals. Currently, there is need to expand and develop staff areas and facilities. Well-equipped areas for training and development are essential to enable UCH to continue to maintain excellence in this role. Facilities should be in place to facilitate training of all staff levels and disciplines. Offices, research facilities, seminar rooms, conference rooms, common areas, call rooms, overnight rooms and recreation facilities are all important to provide safe, optimal, and supportive conditions for staff to work and realize their potential. Moreover, well-equipped localized specialty-based training centres are needed in the cluster for staff development. Enhancing staff welfare and development is an essential element of the redevelopment project.

Service Development and Technological Advancement

In order to facilitate the introduction of new technologies and service innovations aimed at improving patient outcomes, modern flexible facilities will be vital to support and ensure future proofing of service delivery.

A rethink of the way services are delivered and how hospital facilities are organized will be important elements to rolling out and enhancing new models of care. Apart from new initiatives, established areas of excellence are expected to continue and develop into the future.

Planning Process

Development of the UCH Clinical Services Plan, commencing in December 2010, was overseen by a Steering Committee, co-chaired by the Director of Strategy and Planning (HA Head Office), and the Cluster Chief Executive of KEC/Hospital Chief Executive of UCH. The membership comprised of HA Head Office senior management, as well as a UCH Hospital Governing Committee member, and KEC senior management. The terms of reference and membership of the committee are set out in **Appendix 5**. The Steering Committee was supported by a Working Group, comprising hospital and KEC senior management and executives, which had significant input on development of the Clinical Services Plan. The membership of the Working Group is set out in **Appendix 6**.

This plan has been produced with reference to and consideration of the HA's Strategic Service Plan 2009–2012, to ensure that the proposed models of care and recommendations for the redevelopment of UCH are entirely consistent with the HA corporate direction and its vision, mission, and values¹⁵.

Staff consultation and engagement was a crucial component of the planning process. The commitment and enthusiasm demonstrated by UCH staff and management was remarkable throughout. A summary of the stakeholder engagement process is set out in **Appendix 7**.

¹⁵ Helping People Stay Healthy: Strategic Service Plan 2009–2012 (HA).

Methodology

The review examined each discipline and specialty currently available at UCH, how models of care are likely to change, and the impact technology would have on healthcare delivery in the next decade or so. Information was collected through a questionnaire survey and face-to-face consultation interviews conducted with senior clinical staff and executives between December 2010 and January 2011. The process also involved demand projection that informed capacity planning for new facilities, evaluation by Working Group, and policy overlay provided by the Steering Committee. A role delineation approach was also adopted for the development process.

Questionnaire Survey

A structured process to gather the views and input from staff on plans for the redevelopment of UCH, and models of care, was undertaken. Self-administered questionnaire survey was distributed to 27 participating departments at UCH, covering Medical (16 departments), Nursing, Allied Health (9 departments), and support services. Questions covered existing service and staff profiles, service gaps, key relationships with other disciplines or hospitals, and future development plans of each specialty.

Around 80 service heads and senior clinicians were briefed about the project and process, in a kick-off session chaired by the Cluster Chief Executive of KEC/Hospital Chief Executive of UCH, before they were invited to complete the questionnaire. Thirty-four surveys were returned from the UCH teams, with around 93% of departments responding. Following the survey a series of face-to-face interviews were conducted for in-depth exploration and understanding of responses received and to gather additional information from departments. In addition, follow-up interviews with departments who did not return questionnaires were conducted to complete the survey.



Consultation Interviews

Using completed questionnaires as a basis, the Working Group conducted an extensive series of consultation interviews in December 2010 and January 2011. Participants included hospital management, service heads and other clinical, nursing and allied health professionals. The sessions helped to clarify responses from the survey, address issues related to service gaps, and deliberate present and future models of care.

In total 182 staff members of UCH were interviewed in 30 sessions (56 doctors, 52 nurses, 57 allied health professionals and 17 administrative and other staff).

Two additional sessions were conducted with the management of Tseung Kwan O Hospital and Haven of Hope Hospital in the KEC to achieve comprehensive engagement. To explore future oncology service development, discussions with experts from Oncology teams at Queen Elizabeth Hospital and Prince of Wales Hospital were also conducted.

Role Delineation

Role delineation refers to a classification of the level of clinical services based on the sophistication of their service delivery models, including factors such as the range of support services available and staff mix. It provides a systematic basis for developing an appropriate model for the organization and delivery of healthcare services. Under the approach, clinical services are classified into different levels, each with a defined level of support services, staff mix and other requirements. This helps to ensure that clinical services meet safety requirements and are appropriately supported. The levels of care delivered by clinical specialties at UCH were analyzed. Results for UCH are presented in the Role Delineation section of this report.

Demand Projection

Service demand for UCH in the coming decade was computed with consideration of population growth and demographic changes up to 2021. Details of this process are documented in the Capacity Planning section of this report. The demand projection also factored in the growth of individual services in the light of international trends, as well as anticipated development and patient load.

Evaluation by the Working Group

Information collected from the questionnaire survey and consultation interviews was evaluated and synthesized for drafting of the Clinical Services Plan, supplemented by data from the demand projection. The Working Group reviewed the results and deliberated on recommendations for the plan. These covered the anticipated service demand, future models of care, development of specific services, service enhancement, and capacity appropriate for the new UCH.

Additional Staff Engagement on UCH Clinical Service Directions

Following evaluation by the Working Group, the clinical service directions for the UCH redevelopment were consolidated. An open staff forum was held in February 2011 to obtain opinion on the proposed clinical service directions. A questionnaire was distributed at the forum to the 159 participants, with 89% response. Over 90% of staff surveyed agreed or mostly agreed with the UCH clinical service directions, with the remaining 10% mostly neutral about the proposals.

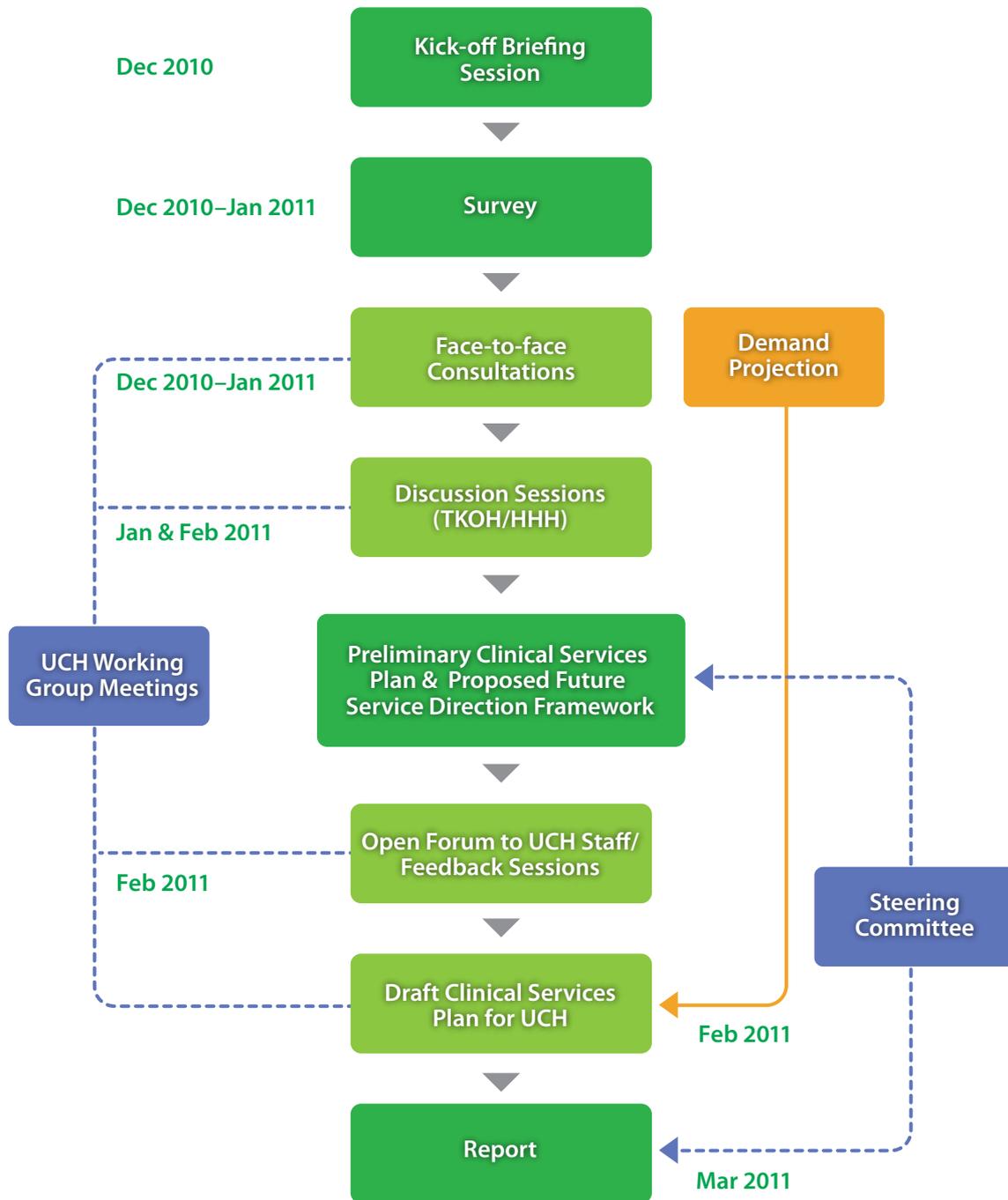
Four further engagement sessions were organized with 105 staff from different clinical departments for follow-up discussions. Constructive feedback was received and was of considerable value in development of the Clinical Services Plan.

Policy Overlay

Policy overlay for the Clinical Services Plan was provided through the Steering Committee. This involved policy decisions at high level with broad considerations having regard to the views of various stakeholders, including the Government and the HA Board.

Illustrated below is the methodology and process outlined above for the development of the Clinical Services Plan (Figure 2).

Figure 2: Outline of process for development of the Clinical Services Plan



Capacity Planning

A key factor underpinning the formulation of the Clinical Services Plan for redevelopment of UCH is the projected demand for clinical services, which forms the basis for capacity planning. This needs to take into account the Government's intention to develop a CEP and a new acute hospital, centrally located in the Kowloon region. Provided in this chapter is an overview of the capacity planning for the indicative number of acute beds¹⁶ and operating theatre (OT) rooms required to be provided at the new UCH, to support planning of the redevelopment.

Methodology

Using demand modelling techniques, a demand projection exercise was carried out to determine the future capacity required of UCH in terms of acute general hospital beds and OT rooms for the next 10 years up to 2021, with 2007 as the base year. The projection took into account population growth and demographic changes, as well as age- and specialty-specific service utilization rates. Scenario modelling was also carried out in the bed projection to factor in changes in service delivery.

Data Sources

Projections were based on data from three main sources:

- Service utilization data in 2007 from the HA data warehouse, which included the Integrated Patient Administration System, the Obstetrics Clinical Information System for newborn delivery data, the Executive Information System for bed occupancy data, and Operating Theatre Record System.
- Local birth statistics in 2009 and birth projection figures from 2009 to 2021, obtained from the Census & Statistics Department (C&SD) of the Government.
- Population projection figures obtained from the C&SD, and district-based population projections from the Planning Department of the Government, from 2007 to 2021.

¹⁶ Accident & Emergency, Emergency Medicine, Nursery, and Psychiatry specialty are excluded.

Planning Parameters

All planning parameters for the projections were age- and specialty-specific. They comprised a combination of the following age and specialty groups:

- 10 age groups of 0–4, 5–14, 15–24, 25–34, 35–44, 45–54, 55–59, 60–64, 65–69, 70+.
- 13 specialty groups of ICU/HDU, Medicine, Surgery, Orthopaedics, Gynaecology, Obstetrics, Neonatology, Paediatrics, Ophthalmology, Ear, Nose & Throat (ENT), Oncology, Hospice and Other/Unclassified specialty. Accident and Emergency, Emergency Medicine Ward, Nursery and Psychiatry specialty were excluded from the model.
- Age-specific rates per female population for Obstetrics and Gynaecology specialties.
- For Neonatology, including Neonatal Intensive Care Unit (NICU) and Special Care Baby Unit (SCBU), planning parameters were devised from birth data.

Bed Projection Model

For the projection of bed requirement for each clinical specialty, other than Obstetrics and Neonatology, the volume and mix of expected service demand from residents in each of the 21 districts were first computed taking into account age- and specialty-specific hospital service utilisation rates and average length of stay (ALOS) per episode at base year (2007), as well as population growth and ageing over the period to 2021.

Using the base-year data on specialty-specific cross-district patient flow for acute bed days, the hospital patronage pattern across the 21 districts was computed. The demand for UCH acute bed days was then derived by applying this hospital patronage pattern specifically for UCH, that is, the proportion of residents residing in each of the 21 districts who used UCH services.

The bed demand for Obstetric services was derived from projected births in Hong Kong, including births to local and Mainland mothers. For projected local births, territory-wide figures were distributed across districts based on the districts' projected female population aged 15 to 49, together with the territory-wide age-specific fertility rates. For projected births to local mothers at district level and Mainland mothers at territory-wide level, the respective base-year hospital patronage patterns, firstly between public and private sectors and secondly among the eight HA Obstetric Units, was applied to derive the projected Obstetric service bed demand for UCH.

The projected births at UCH formed the basis for estimating the demand for SCBU and NICU, with the use of respective admission and tertiary referral rates among inborns. For the demand for NICU from outborns, it was based on the NICU admission rate from total projected births at private hospitals, as well as the relative distribution of outborn admissions among UCH and the other seven NICU units in HA. The demand for SCBU and NICU beds was estimated using the respective service utilisation per episode planning parameters.

Assumptions for Bed Projection

The projection model described above provided a base case scenario to demonstrate the nature and volume of work to be expected for UCH up to 2021, with the following assumptions:

- UCH will expand its cancer service, starting from 2018, and 80% of cancer patients in the catchment districts will remain at UCH, as opposed to the current arrangement.
- The overall HA maternity service will be capped at around 43,000 births per annum. The projected births by Mainland mothers at HA hospitals were adjusted downwards proportionately, should the total projected births at HA exceed the assumed cap.
- Upon the opening of an Obstetrics unit at TKOH by 2016, there will be an increased proportion of local mothers in the catchment district utilizing public maternity services and also switching from UCH to TKOH.
- The scenario of a CEP and new acute hospital, centrally located in the Kowloon region, on UCH bed capacity was assessed in terms of changes in catchment zone, hospital patronage, services, and referral patterns. The CEP will serve as the tertiary referral centre for diagnosis and treatment of complex cases, including paediatric surgical, ENT, eye and oral-maxillofacial-dental cases.

The model covered both in-patient (IP) and day-patient (DP) bed days. The projected bed days were translated into the number of beds required for each specialty by assuming an optimum occupancy rate of 85% and 120% for IP and DP beds, respectively. A lower optimum occupancy rate of 80% was assumed for ICU/HDU and NICU¹⁷ to allow flexibility throughout the year, since these departments generally admit patients on an urgent but random basis.

¹⁷ UK Neonatal Staffing Study Group. Patient Volume, staffing and workload in relation to risk-adjusted outcomes in a random stratified sample of UK neonatal intensive care units: a prospective evaluation. *Lancet* (2002); 359:99–107.

Scenario Modeling

Besides the base case scenario, two different scenarios were constructed to model changes in service delivery, including changes in ALOS and service substitution and diversion, which sought to promote effective alternatives to reduce reliance on IP hospital services:

- **Scenario A** – It depicted an efficiency gain in IP services achieved through reducing ALOS by 1% per year over the whole projection horizon.
- **Scenario B** – In this scenario, on top of the efficiency gain of 1% for ALOS, it was assumed that the share of DP service (relative to IP service) for hospital admissions would increase by 0.5 or 1.0 percentage point per year, by comparing the past specialty-specific DP share trends with international benchmarks.

Projected Bed Requirement

The projected bed requirements for UCH by 2016 and 2021 are summarized in Table A. Specialties that would be affected by the CEP and a new acute hospital, centrally located in the Kowloon region, are shown in range to illustrate the different projection assumptions. The number of beds required was highest under the base case scenario. Scenario B, being the most efficient scenario, required the least number of beds. In 2021, the number of beds required at the new UCH would be around 1,100 to 1,400 under the different scenarios.



By-specialty results show that Medicine specialty required the largest number of beds and accounted for around 50% of total beds. The other two specialties with a high number of projected beds were Surgery (around 15% of total beds) and Orthopaedics (around 10% of total beds).

It should be noted that the by-specialty beds are only indicative numbers and are presented in the context of the by-specialty projection model.

Table A. Acute General bed requirement for UCH in **2016** under different scenarios and in **2021** after accounting for a new acute hospital, centrally located in the Kowloon region

Specialty	2016			2021		
	Base case Scenario	Scenario A – 1% efficiency gain in ALOS	Scenario B – 1% efficiency gain in ALOS + increase in DP	Base case Scenario	Scenario A – 1% efficiency gain in ALOS	Scenario B – 1% efficiency gain in ALOS + increase in DP
ICU/HDU ^{1,2}	34	34	34	33–34	33–34	33–34
Medicine	690	633	579	715–723	621–630	534–542
Surgery	223	206	186	220–226	191–196	158–164
Orthopaedics	154	141	129	149–152	128–131	109–112
Gynaecology	37	34	31	37	33	30
Obstetrics ^{2,3}	52	52	52	43	43	43
Paediatrics and Neonatology ^{2,4}	90	85	83	70–77	63–70	60–67
Oncology	–	–	–	66	58	49
Hospice	36	33	33	42	37	37
Others ⁵	28	26	24	31	28	26
Total⁶	1,344	1,244	1,151	1,406–1,431	1,235–1,260	1,079–1,104

1. Adult ICU/HDU, including intensive care or high dependency beds from specialties of Medicine (including CCU), Orthopaedics, and Surgery.
2. Scenario A and B not applicable to ICU/HDU, NICU, SCBU, and PICU bed projection, and Obstetrics specialty.
3. The bed requirements in Obstetrics are shown with the assumed opening of an Obstetrics unit at TKOH by 2016.
4. The proximity of the CEP to UCH, Queen Elizabeth Hospital, and Kwong Wah Hospital will mean that paediatric service provision, such as critical care, will need to be further discussed amongst the three hospitals to determine how services are reconfigured once the CEP is established, in the context of an integrated service network and HA policy overlay. Neonatology includes NICU and SCBU beds. Paediatrics includes general paediatric beds, PICU, and paediatric infectious disease beds.
5. Includes Dentistry & Maxillofacial Surgery, ENT, Ophthalmology and Other/Unclassified specialty.
6. Projection model excludes Accident & Emergency, Emergency Medicine, Nursery, and Psychiatry specialty.

Extended Care Bed Projection

Within this Clinical Services Plan for the redevelopment of UCH, enhancing convalescence and rehabilitation (in-patient) services is highlighted as an important development to improve the quality and continuity of extended care at the hospital. To support planning, the projected extended care bed requirement for KEC as a whole was computed to the year 2021, using HA-wide age- and specialty-specific parameters, which included:

- For convalescence/rehabilitation beds, the percentage of specialty-specific in-patient episodes requiring convalescence/rehabilitation beds was taken into account, as well as the average bed-days occupied per episode.
- For local infirmary beds, the ratio of local infirmary episodes to acute in-patient episodes for Medicine, Orthopaedics and Surgery, as well as bed-days occupied per episode formed basis of the projection.

The base case projection assumed a 90% occupancy rate and a further scenario was constructed to take into account an efficiency gain in IP services achieved through reducing ALOS by 1% per year over the whole projection horizon.

Projection results show that 621–680 extended care beds (including both convalescence/rehabilitation and local infirmary beds) would be required in the KEC in 2016 and 679–781 in 2021, under the different scenarios.

OT Room Projection

The projected number of OT rooms required was computed using HA-wide age- and specialty-specific rate of operations and magnitude of procedures. The projection was based specifically on the past utilization trend of OT rooms at UCH, and assumed a benchmark throughput of 1,000 operations per room per year.

Projection results show that 16 and 17 OT rooms would be required at UCH in 2016 and 2021, respectively.

Recommended Service Developments

Following consultation with key stakeholders and evaluation of anticipated health care needs, three shared objectives for the redevelopment of UCH have been identified, namely:

- To address service gaps through development of infrastructure and systems to enhance patient access, equity, continuity of care, sustainability and improve service standards.
- To deliver coordinated patient-centred care by strengthening the interface and collaboration between services to enhance synergy.
- To spearhead service development and technological advancement.

As part of the UCH redevelopment, many existing services will be enhanced. However, four priority service areas have been identified for development, based on the shared objectives. They are:

1. Cancer Services

The most important service gap identified and hence the most significant of the recommendations at the redeveloped UCH will be establishment of a comprehensive cancer service. Serving a population of up to one million people in the KEC, together with the projected rise in cancer patients related to ageing of Kwun Tong and Tseung Kwan O district, cancer represents a significant proportion of the workload and is anticipated to increase with the growing and ageing population. Many patients with cancer who have their initial management at UCH, usually a surgical or procedural intervention, also require chemotherapy and/or radiotherapy pre- or post-operatively. The absence of a comprehensive chemotherapy and radiotherapy service at UCH is a service gap that should be resolved, particularly given the strategic intent of the redevelopment.

Along the care pathway of cancer patients, services provided by various specialties and disciplines need to be enhanced. To ensure timely diagnosis, diagnostic radiology, pathology and endoscopic services at UCH need to be strengthened and aligned with technological advances. As far as treatment modalities are concerned, timely operation relies on the enhancement of UCH operating theatre services and facilities, as well as close collaboration between surgical teams, anaesthesia teams, oncology teams and intensive care teams. Non-radiation oncology services also need to

be strengthened to support provision of non-radiation treatment modalities. Radiotherapy and chemotherapy services will also need to be developed and enhanced. Pharmacy services, including development of the oncology clinical pharmacy service, will be strengthened to support the oncology service. Psycho-social support and rehabilitation services provided by nurses, allied health professionals, and other supporting departments in KEC are critical to ensure total patient care. Finally, cancer pain management and palliative care services will be enhanced.

2. Emergency Services

Being the cluster regional hospital of KEC, UCH should be able to provide high quality acute emergency care for residents of Kwun Tong district and the KEC. Emergency services at UCH need to be efficient and effective in providing treatment, as well as directing patients to the most appropriate care in a timely manner. Each day approximately 540 patients present to the AED, of which around a quarter are admitted.

To achieve appropriate and timely patient management, the patient journey should be streamlined with alternative options provided, rather than the traditional “one-size-fits-all” system. The use of short-stay beds located in close proximity to the AED will help improve efficiency, reduce in-patient burden and avoid unnecessary hospitalization. In addition, the less complex ambulatory patients will be managed in a designated area, separated from sicker patients with high acuity presentations. Co-location of services and multi-disciplinary collaboration will be established to support the future model of care. In addition, timely access to imaging and pathology services, pharmacy support and allied health services are essential components. Safe and appropriate transfer of patients to definitive care should be developed to ensure smooth and efficient emergency care.

3. Ambulatory Services

To reduce the burden on acute in-patient services and unnecessary hospitalizations, a worldwide trend in health care delivery has been a focus on ambulatory services and short-stay management, to achieve more efficient use of resources and better patient care. This not only improves patient experience, but also helps to address the sustainability of hospital services. At UCH, every specialty and discipline has embraced these concepts to shift away from in-patient care.

Enhanced services and facilities are recommended to support the delivery of surgeries and other procedures in ambulatory settings. Peri-operative care of surgical patients should be arranged to facilitate efficient and smooth patient management. Day care for specific patient groups (e.g. psychiatric patients, adolescent patients with complex psychosocial needs) will support them to remain in close connection with family and the community, whilst providing appropriate hospital care.

Multi-disciplinary collaborative services currently operating at a scale below service demand also need enhancement. Examples include services provided by the Integrated Continence Care Centre, Breast Centre, Multi-disciplinary Pain Centre, ENT Centre, Endocrine Centre, as well as the cluster-based Cleft Lip and Palate Service and the multi-disciplinary ambulatory adolescent service.

4. Rehabilitation Services

Enhancing convalescent and rehabilitation (in-patient) services at UCH is considered an important development to improve the quality and continuity of extended care. Instead of inter-cluster transfer, this service development aims to optimise management of patients at UCH, through a coordinated and multi-disciplinary approach. Rehabilitation and convalescent services will be organized in such a way as to create mixed specialty care for more complex cases, and support better outcomes, such as reducing unplanned readmission of patients with multiple needs. An adequate provision of rehabilitation beds will help meet UCH aspirations for the community to receive treatment and management within the district. The improved convenience facilitates patients to receive better family and community support during their rehabilitation process.

At UCH, rehabilitation services will be developed for various patient groups with special needs, which include geriatric patients, post-stroke patients, end-stage renal failure patients, patients with chronic cardiac and respiratory problems, orthopaedic patients, psychiatric patients, and cancer patients requiring rehabilitation.

Models of Care

For UCH, the opportunity presents itself in the redevelopment project for every clinical program to rethink the way services are delivered and to organize the hospital's facilities to enhance these changes.

The new hospital will be orientated to the patient, putting their needs first, and one of the key planning elements is to reduce travel time in the hospital by intelligent design of the location of related services wherever possible. New models of care will help to ensure that the hospital will be a holistic environment which supports all patients on their individual journeys. The new hospital campus will be a clean, safe, welcoming setting; respecting the dignity of patients, and which supports staff to provide the high quality service they aspire to.

Redevelopment of the hospital will enable new clinical services to be established, such as cancer services, existing services to be enhanced, and continue to enable clinical teams to be leaders of innovation and evidence-based medicine. Satisfaction with care has two dimensions – one has to do with technical excellence – the skill and competence of professionals and the ability of equipment, procedures, and systems to accomplish what they are meant to accomplish reliably and effectively. The other dimension relates to patient experience – the patient's perception of illness or well-being and interactions with the healthcare system. In health care it is the quality of care provided in this subjective dimension that patients experience most directly. At UCH the new models of care will address both technical excellence and quality of care through a "patient-centred" approach.

Cancer Services

Future cancer services at UCH aim to deliver a whole person-mind, body, and spirit model of care, combining the science and technology of conventional cancer medicine, with the holistic approach of complementary therapies to meet individual needs. The cancer service focus is treating the whole patient within the context of a full continuum of cancer care and support services, adopting the approach of a "one-stop-service" at the UCH campus. Care reflects the patient journey, from time of symptom presentation, through to access to appropriate specialist care; from diagnosis to

support offered to patients both during and after treatment. Within the model of comprehensive cancer services, many patients will have received initial management at UCH, such as surgical or other procedural interventions from specialist teams. Patients also requiring chemotherapy and radiotherapy, pre-operatively or post-operatively, or in some cases both, will be managed by the oncology team collaboratively. For the patient this transition of care will be a seamless process.

Cancer services will be delivered within a holistic healing environment to support the patient experience. It will be welcoming and friendly, respecting the dignity and privacy of patients and their families, user friendly, convenient, and easy to navigate.

The comprehensive cancer service at UCH will be provided through state-of-the-art facilities, including an Oncology Centre as the ambulatory component, and oncology wards for in-patient services. The purpose-built Oncology Centre will provide a range of services to support patients and healthcare professionals, including diagnostics, different treatment options such as chemotherapy and radiotherapy, as well as services for pain and symptom management, and support for the physical, psychological, and social needs of patients. In addition, services such as spiritual support, as well as education programmes, and family support will be provided, as part of the holistic model of care. Linkages with palliative care and end-of-life programmes are also critical components.

Emergency Services



To provide timely access to the most appropriate care, and addressing the spectrum of emergency conditions patients present with, a new model of care is proposed to provide integrated and streamlined emergency services; leading the right patient to the right definitive care in a prompt and coordinated manner.

The new model of care for emergency services is focused on reorganizing care processes and changing the way patients are managed; providing alternative options to facilitate early assessment, fast-tracking and early initiation of clinical care. This will help remove disconnects and delays that can often exist in the process of service delivery and decision-making, as well as improve efficiency in-patient management.

Essential ingredients to the model include:

1. The AED; for initial assessment, triage and stabilization. This requires good floor space and access, including (but not limited to) the following:
 - A single point of triage that is safe, discreet and efficient;
 - Waiting areas that are secure, under surveillance and child friendly;
 - Good functional relationships with imaging facilities and diagnostic services;
 - Infection control facilities; including isolation facilities.
2. The Emergency Medicine Ward; for patients under the care of the emergency physician, assessed as not requiring hospital admission, but who need a further period of short-stay assessment, investigation and/or observation. Typically, these patients would be discharged within 48 hours.
3. The Acute Admission Ward; for patients who are assessed by the emergency physician as requiring specialist care and/or hospital admission. Under the care of the appropriate specialist team, patients in the Acute Admission Ward will receive timely specialist assessment, investigations, definitive treatment, and further management, which may involve transfer to the specialty in-patient ward. For managing paediatric patients, a Paediatric Assessment Unit, with child-friendly design, will cater for their special needs, to facilitate prompt management and short-stay care. Patient stay in the Acute Admission Ward would typically be less than 48 hours.
4. A designated patient area in AED to handle patients with minor emergency conditions (e.g. triage category 4/5 patients). Patients with minor emergency conditions will receive expedited care in a separate patient area, to reduce the impact on patient volume and waiting time in the AED.
5. Direct fast-track of patients with urgent and high acuity presentations from AED to definitive care, which includes Operating Theatre, Intensive Care Unit, Coronary Care Unit and other units for interventional procedures (cardiac, radiology, endoscopy, etc). Smooth patient flow and safe transfer will be supported by carefully designed functional relationships between clinical departments and facilities.

The emphasis is on providing timely access to the appropriate level of care, with clinical teams commencing care, and reducing the total time spent in the AED. Using an integrated team-based approach, and realigning staff roles and drawing on their skills and experience, will support efficient patient management to definitive treatment through to discharge. The model of care will promote patient dignity and respect. Patients and their carers will know who is looking after them, know what is happening, and understand what will happen next.

Key enablers to achieve an integrated and streamlined emergency service include:

- A coordinated multi-disciplinary team approach.
- Services provided by clinical specialties, such as radiology, pathology, pharmacy, nursing, and other allied health professionals, will be orientated to support the patient pathway and facilitate timely access.
- Appropriate functional relationships between clinical specialties and facilities to support the new model of service delivery and patient flows.

Ambulatory Services

It is recommended that a key component of the redeveloped UCH will be an emphasis on ambulatory services. Rather than a single ambulatory centre *per se*, the major direction at UCH is delivery of a range of clinical services in ambulatory settings.

The ambulatory care concept is not a new term for out-patients, neither is it the end result of reducing lengths of stay. It reflects the trend that many complex, sophisticated health services can be provided in a setting that is orientated to the needs of the patient. This development aims to change the models of care in favor of ambulatory and short-stay management.

Day admissions, high-tech surgical and procedural technologies, and efficient patient management are logical developments to fulfill this trend. In the chapter on Key Recommendations on Clinical Specialties, a range of services to be provided in ambulatory settings will be identified. These will range from complex surgical procedures to multi-disciplinary clinics, to health education classes.

Ambulatory settings will be easily accessible within the UCH campus and easy to navigate. The environment will be welcoming, user-friendly, comfortable, age and culturally appropriate, to support a positive patient experience. The ambulatory settings will also support patient carers and family members. Flexible and shared space, with co-location of services supports a “one-stop” model of care.

Professional assessment, treatment, intervention and comprehensive patient support services will be delivered through improved flexible facilities and systems of care; which seek to strengthen the interface between services to enhance collaboration, synergy, and ultimately patient outcomes.

Whilst a number of different services will be provided in the ambulatory setting, three specific services are highlighted below:

1. Specialist Out-patient Services

To address increasing service demand, patient expectation, and quality and safety, the Specialist Out-patient Department will be expanded to provide more spacious and comfortable environments for service delivery. Moreover, in contrast to the tradition model of patients attending hospital clinics on many separate occasions to see a diverse range of clinicians and health care professionals, under the new model, clinics will be organized so that individual patients can see their healthcare team in one visit during the course of the day.

2. Day Surgery and Day-of-Surgery Admission (DOSA)

The evolution of minimally invasive procedures and technologies that enable complex procedures performed with little collateral damage has supported the development of ambulatory models of care. This is not to say that the procedures are simple or that the conditions being treated are less complex, but fast patient recovery facilitates discharge on the same day. Apart from day surgery, within the model of DOSA, patients will be admitted on the morning or afternoon of the same day in which surgery is to be performed, to reduce avoidable hospital stay.



Establishment of a Peri-Operative Centre will facilitate the management of surgical patients in their peri-operative period. This is a one-stop centre for all patients undergoing operative procedures, which provides patient admission, pre-operative preparation, post-operative care, discharge and follow-up. This model of service delivery allows efficient and effective peri-operative patient management in the ambulatory setting. The model requires good logistics and dedication from staff, particularly surgeons and anaesthetists.

3. Day Procedures and Day Care

For non-surgical activities, numerous procedures or interventions, such as renal replacement therapy, endoscopic procedures, as well as various paediatric procedures can be performed in the ambulatory setting.

Other patient groups will also benefit from provision of day services, such as psychiatric patients. Establishment of a psychiatric day hospital would support these patients to stay in the community, whilst still receiving appropriate hospital support, helping to reduce avoidable in-patient stay. Care will be provided in settings familiar to patients, where they can spend a substantial portion of the day under active supervised multi-disciplinary therapy, to facilitate rehabilitation. Close collaboration between the day hospital and community support services facilitates post-discharge continuity of care.

Rehabilitation and Convalescent (In-patient) Services

Rehabilitation is a dynamic process which aims to restore people to their highest level of functioning, following injury, surgery, or illness. Through relearning and retraining programmes, patients acquire the strengths and skills they need to achieve their maximum potential. At the redeveloped UCH, in-patient rehabilitation will be significantly enhanced to provide comprehensive, multi-specialty and inter-disciplinary care, which are sustainable, accessible, effective, based on patient need and best available evidence.

Central to the new model is the maintenance and optimization of an individual's independence, function and ability. Within the hospital setting this means that easy and early access to rehabilitation services is essential. Multiple access points for different specialties into rehabilitation, and streaming of patients into the most suitable rehabilitation pathway/service, following comprehensive assessment, will ensure that the suite of available rehabilitation services work successfully together to meet the needs of patients.

In-patient rehabilitation is an intense level of care which is supported by effective collaboration across clinical settings and services, such that specialist knowledge and clinical expertise at UCH can be best utilized to support patient need. Coordinated programs of rehabilitation will include physical, psychological and social dimensions, which form an integral part of the patient's care plan. Enhancing the links and communication between clinical specialties and disciplines will support services which are seamless across the continuum of care. This model also enhances continuity of care for patients with sub-acute conditions where mixed specialty care is offered, addressing their ongoing and complex needs during recovery.



Goal-orientated programs of rehabilitation will be individualized for each patient depending on their presenting condition, changing needs and goals, which require flexibility and coordination of a range of health professionals. The model places patients and their family/carers at the centre of care, respecting their needs and treating them with dignity. Comprehensive discharge planning in partnership with patients and carers will help to achieve timely and appropriate discharge, facilitating a smooth and safe return to the community.

Enhanced rehabilitation services will be delivered in accessible, relaxed and healing environments, where patients and visitors can feel at home. Rehabilitation is best undertaken in a similar environment to that in which new skills or knowledge will normally be used. State-of-the-art facilities and equipment, such as purpose-build gymnasiums and hydrotherapy, as well as areas simulating “activities of daily living”, will be important to support patients in their optimum transition to home. To facilitate the delivery of rehabilitation, spaces need to have functional flexibility taking into consideration the unique requirements of service users.

Case Illustration: A Cancer Patient’s Journey at the Redeveloped UCH

Mr. C is a fifty year-old man living in Kwun Tong district for many years. On a usual day at work, he vomited old blood and developed blackout. He attended the AED of the redeveloped UCH. On arrival, he found the environment of the new AED comfortable and easy to navigate. After triage, he was attended by an AED physician in a timely manner and was found to have severe anaemia. He was arranged to receive further care at the new Acute Admission Ward. He was impressed by the timely specialist assessment and convenient arrangement, where he received imaging and other investigations just nearby. After blood transfusion and a period of observation, he was sent to the endoscopy suite for upper endoscopy, with biopsy taken. Once stabilized, he was discharged with an earliest possible CT scan appointment and a follow-up appointment for specialist consultation.

Mr. C was seen in a timely fashion, at the new Specialist Out-patient Department - which he found was user-friendly and easy to find. With all investigation results ready, he was reassessed by the specialist and was told to have stomach cancer. The need for an operation was discussed and arranged. He then received a pre-operative workup and assessment, followed by a nurse education clinic to answer any questions he had regarding the operation.

He was admitted to the hospital on the day of surgery through the new Peri-Operative Centre. Minimally invasive surgery was performed and he had a fast recovery. During his stay at UCH, the surgical team, oncology team, nursing and allied health teams closely collaborated, with a post-surgery treatment plan thoroughly discussed in partnership with him. He was discharged with an appointment at the Oncology Centre at UCH.

At the new Oncology Centre, he was attended by caring staff in a warm and nurturing environment. Chemotherapy was offered in an ambulatory setting, together with coordinated supporting services offered to address his psychosocial needs. Both Mr. C and his family members were very satisfied with the one-stop service. Following a program of rehabilitation, his condition improved and he returned back to the community.

Key Recommendations on Clinical Specialties

The key recommendations in this section have been derived from a process of consultation and deliberation, with reference to the proposed models of care outlined previously.

The specialties covered here are:

- Accident and Emergency
- Anaesthesia, Operating Theatre and Endoscopy Services
- Clinical Oncology
- Clinical Toxicology
- Dentistry & Maxillofacial Surgery
- Ear, Nose and Throat
- Family Medicine & Primary Health Care
- Intensive Care
- Medicine & Geriatrics
- Obstetrics & Gynaecology
- Ophthalmology
- Orthopaedics & Traumatology
- Paediatrics & Adolescent Medicine
- Pain Management Service
- Pathology
- Psychiatry
- Radiology
- Surgery (including Neurosurgery Out-patient Service provided by QEH through service networking)

In addition to the above, supporting services to clinical departments are also included.

Accident and Emergency Service

The AED of UCH provides a 24-hour service to the community. It is not a major trauma centre, and there is no emergency medicine ward.

Recommended Service Enhancement

- Introduce an Emergency Medicine Ward to manage patients requiring extended observation and short-stay care, which also covers toxicology service
- Establish an Acute Admission Ward with multi-specialty collaboration for timely specialist assessment, investigations, definitive treatment and further management
- Set up a designated patient area in AED to handle patients with minor emergency conditions (e.g. category 4/5 AED patients)
- Set up a purpose-built psychiatric assessment area at AED, with enhancement of psychiatric emergency observation facilities
- Enhance the facilities for resuscitation
- Enhance imaging services for emergency patients
- Enhance isolation facilities and space for disaster contingency
- Adequate and appropriate cubicles for patient review and management
- Dedicated comfortable bereavement facilities for families away from public areas, which can allow them to remain with their deceased relative



Demand Management

- Introduction of Emergency Medicine Ward should help to cater for future demands by reducing in-patient burden

Design Implications

- Emergency Medicine Ward and Acute Admission Ward should be in close proximity to AED for easy access
- Design should facilitate rapid transfer of critical patients from AED to OT, ICU, CCU, Labour Ward and other units for interventional procedures
- Adequate unloading area for ambulances should be provided outside the AED

- Pharmacy, pathology, and radiology services should be readily accessible
- Infection control facilities with special waiting area for potentially infectious cases should be provided

Anaesthesia, Operating Theatre and Endoscopy Services

The Department of Anaesthesiology and Pain Medicine provides anaesthetic services and operating theatre services. The Endoscopy Centre provides services for performing various endoscopic procedures.

Recommended Service Enhancement

- Establish a Peri-Operative Centre as a one-stop service for surgical patients, including patient admission, pre-operative preparation and assessment, postoperative care, patient discharge and follow-up
- Establish a peri-operative patient education clinic and a peri-anaesthetic nurse clinic
- The number of operating theatres should be of sufficient capacity to cope with projected increases in service demand associated with an ageing and growing population
- Enhance Operating Theatre facilities and services (e.g. Minimal Invasive Surgery Theatres, Endovascular Services, Operating Theatre equipped with CT and navigation technology)
- Enhance the Endoscopy Centre facilities and services (e.g. day colonoscopy, capsule endoscopic screening services, integrated mixed-specialty out-patient endoscopic procedures)

Demand Management

- A significant proportion of service demand is expected to be met with the increasing number of day surgeries performed

Design Implications

- Design should facilitate smooth and rapid patient transfer between the OT, ICU, and AED
- Pathology, blood bank, and radiology services, should be readily accessible for efficient patient management
- Centralized sterilization facilities
- Consolidation of theatres will enhance economies of scale

Clinical Oncology Service

Currently, only limited chemotherapy service is provided and there is no radiotherapy service available at UCH. The new comprehensive Clinical Oncology service will be provided by a newly set-up department in UCH to manage patients with confirmed or suspected cancers, including cancer diagnosis, investigation, and treatment using a multi-modality and holistic approach. Scope of service includes radiotherapy, chemotherapy, and psychosocial care.

Recommended Service Enhancement

- Establish an Oncology Centre to provide radiotherapy, chemotherapy, and psychosocial care
- Equip the Oncology Centre with linear accelerators to provide radiotherapy service
- Establish oncology wards for in-patient management
- Enhance chemotherapy day care service as the ambulatory component
- Enhance oncology out-patient services to enable multi-disciplinary care and joint consultations
- Services provided by pain management team, psychiatry, clinical psychology, palliative medicine and various nurse and allied health professionals enhanced to handle the mental and psychosocial needs of oncology patients
- Radiology and Pathology services enhanced to support the oncology service
- Pharmacy support for the Oncology Centre to be strengthened, including enhancement of oncology clinical pharmacy services and an on-site cytotoxic pharmacy service

Demand Management

- Increase in service demand is expected with the introduction of the new oncology service in KEC. The overall clinical oncology and oncology-related specialty service should be of adequate capacity to cope with the demand of the whole cluster. In addition, demand will be partially offset by the ambulatory model of cancer service delivery

Design Implications

- The special needs of oncology patients should be addressed, regarding privacy, dignity, comfort, and safety
- The Oncology Centre should have convenient and easy access for cancer patients and their families
- Both in-patient and out-patient facilities should include isolation rooms, private rooms, interview rooms, treatment rooms and waste storage
- Design should facilitate the protection of immuno-compromised cancer patients within in-patient and ambulatory settings

Clinical Toxicology Service

The Hong Kong Poison Information Centre provides a 24-hour toxicology service in UCH, as well as telephone consultation on poison information and management advice in clinical toxicology to all health care professionals across Hong Kong. It also provides toxicology training to health care workers in Hong Kong.

Recommended Service Enhancement

- Enhance poisoning enquiry services through expanding the scope of service and maintaining a local poisons database
- Enhance support to the Emergency Medicine Ward for management of short-stay toxicology patients

Dentistry & Maxillofacial Surgery Service

The Department of Dentistry & Maxillofacial Surgery serves as the tertiary referral centre of the HA Schedule II dental & maxillofacial network service involving UCH, Caritas Medical Centre, Alice Ho Miu Ling Nethersole Hospital and Kwong Wah Hospital, as well as KEC. It provides hospital dentistry, maxillofacial surgery services, and a staff dental service.

Recommended Service Enhancement

- Support the oncology service for patients with maxillofacial cancer
- Provide dental-maxillofacial service support to the multi-disciplinary Cleft Lip and Palate Service
- Modernize imaging facilities for dental-maxillofacial patients
- Enhance collaboration with ENT and Ophthalmology teams for management of patients with maxillofacial disease or trauma

Demand Management

- Increase in demand is expected to be met by service enhancement and development of ambulatory models of care

Design Implications

- There should be easy access to dental-maxillofacial imaging facilities and maxillofacial prosthetic services

Ear, Nose and Throat (ENT) Service

The Department of Ear, Nose and Throat provides general ENT services and management of head and neck cancers, facioplastic surgery and paediatric ENT cases.

Recommended Service Enhancement

- Enhance the services provided by the ENT Centre through strengthening of the integrated out-patient service
- Enhance facilities to enable minimally invasive procedures, as well as minor operations under local anaesthesia, to be performed in the ambulatory setting
- Close collaboration with Oncology Team for cancer patient management

Demand Management

- Increase in demand is expected to be met by service enhancement and development of ambulatory models of care

Family Medicine & Primary Health Care (FM&PHC) Service

The FM&PHC service includes General Out-patient Clinics, Family Medicine Specialist Clinic, HA Staff Clinic, Occupational Medicine Care Service, Community Dermatology Clinic and various integrated nurse and allied health clinics.

Recommended Service Enhancement

- Enhance Triage Clinic services for routine specialist out-patient referrals
- Enhance nurse and allied health clinic services for screening and early treatment of respiratory problems, continence problems, wound care, and falls prevention
- Collaborate with AED colleagues for management of patients with minor emergency conditions (e.g. category 4/5 AED patients)
- Develop a KEC Family Medicine Training Centre for Family Medicine doctors, nurses and allied health professionals in the cluster
- Enhance Staff Clinic services

Demand Management

- Increase in demand is expected to be met with the changing model of care and efficient service design

Design Implications

- Infection control facilities with special waiting area for potentially infectious cases should be provided at the clinics
- Space should be available to provide counseling service

Intensive Care Service

The Intensive Care Unit (ICU) of UCH provides critical support and monitoring of adult patients requiring intensive care services.

Recommended Service Enhancement

- The number of ICU beds should be of enough capacity to cope with the increase in service demand related to the growing and ageing of population, as well as expansion of oncology service in the cluster
- Adequate nursing level for safety and quality assurance
- Improve isolation facilities for infection control
- Strengthen support to the reorganized emergency care at UCH, through enhanced collaboration with AED, Acute Admission Ward and clinical specialties

Demand Management

- Better utilisation of resources with improved quality of service is expected with co-location of similar levels of intensive care services

Design Implications

- Design should facilitate smooth patient flow between ICU and AED, OT and Radiology Department
- Design should facilitate a layout with central workstation and peripheral bed distribution

Medicine and Geriatrics Service

The Department of Medicine and Geriatrics at UCH provides the following subspecialty services: Cardiology, Endocrine-DM-Metabolism, Gastroenterology & Hepatology, Geriatric Medicine, Haematology, Infectious Disease, Nephrology, Neurology, Rehabilitation Medicine, Respiratory Medicine, Rheumatology and Palliative Medicine. It also runs the Medical Day Centre, Renal Day Centre and Rehabilitation Day Centre.

Recommended Service Enhancement

- Enhance Renal Replacement Therapy, including peritoneal dialysis, haemo-dialysis and transplant support services
- Establish a multi-disciplinary Endocrine Centre to handle patients with Diabetes Mellitus, osteoporosis and other endocrine conditions in the ambulatory setting
- Establish an Integrated Continence Care Centre with collaboration of Geriatrics, Urology, Gynaecology and Allied Health professionals
- Enhance community nursing services for management of post-discharge patients
- Establish a Cardiac Care Centre and introduce a Primary Percutaneous Cardiac Intervention service for acute coronary emergencies, with enhanced Coronary Care Unit support¹⁸
- Enhance acute stroke care with rapid CT assessment and enhanced neuro-intensive care following thrombolytic therapy. Set up a Transient Ischaemic Attack (TIA) rapid triage clinic to facilitate patient management in the ambulatory setting
- Enhance rehabilitation services and facilities for specific disease groups (e.g. post stroke patients, End Stage Renal Failure (ESRF), cardiac, pulmonary and musculoskeletal)
- Enhance palliative care for cancer patients, as well as patients with end-stage organ failure
- Enhance non-radiotherapy oncology services including workup, treatment, and management of treatment-related complications
- Enhance Haematology service, especially Haemato-oncology services (including development of autologous Bone Marrow Transplant, with facilities for stem cell harvest, subject to corporate direction and service networking)

¹⁸ This service enhancement has to be considered under the context of the HAHO review of cardiac services and corporate direction.

Demand Management

- With development of an ambulatory model of care, the reliance on in-patient medical beds should decrease. Patient care is expected to be increasingly delivered in day or community settings

Design Implications

- With the ageing population, it is important to have an elderly friendly ward environment
- Proper infection control facilities should be put in place

Obstetrics and Gynaecology (O&G) Service

The Department of Obstetrics and Gynaecology at UCH provides comprehensive O&G service to the community. It handles a high volume of deliveries every year.

Recommended Service Enhancement

- Enhance collaboration with Paediatrics for antenatal diagnosis of cleft lip and palate
- Close collaboration with Oncology Team for cancer patient management
- Modernization of labour ward and delivery rooms is needed (including a delivery room with negative pressure design)
- Consultation rooms equipped with ultrasound machines should be provided to meet service need
- More isolation rooms are required in O&G wards for infection control



Demand Management

- With the provision of obstetric services at TKOH, expansion of the obstetric service at UCH is not recommended
- Most gynaecological work is expected to be catered for in the ambulatory setting

Design Implications

- Antenatal and Postnatal Wards should be physically and functionally linked with NICU and SCBU
- Greater privacy in the delivery suite setting, through single rooms

Ophthalmology Service

The Department of Ophthalmology provides comprehensive ophthalmic services, including 24-hour emergency consultation to KEC, laser therapy and ophthalmic surgeries for in-patients and day-patients.

Recommended Service Enhancement

- Enhance ambulatory eye surgery services, which include pre-operative care, major and minor ophthalmic surgery done under local anaesthesia, and post-operative care. The service will collaborate closely with the Wu Ho Loo Ling Cataract Centre at TKOH
- Close collaboration with Oncology Team for cancer patient management
- Set up a nurse-led clinic to enhance specialty care for ophthalmology patients



Demand Management

- Increase in demand is expected to be met with ambulatory models of care

Design Implications

- Special consideration should be given to the location and layout of the department to facilitate accessibility of elderly and other patients with poor vision

Orthopaedics and Traumatology (O&T) Service

The Department of Orthopaedics & Traumatology at UCH provides comprehensive O&T service to the community of KEC. Subspecialty services provided include spine, shoulder, hand, sports injury, joint replacement, arthroscopy, microvascular, and paediatric orthopaedic services.

Recommended Service Enhancement

- Increase minimally invasive surgery, day surgery services, and day of surgery admissions, especially for total joint replacement cases
- Expand the orthopaedic rehabilitation service through enhancement of multi-disciplinary support and provision of adequate rehabilitation beds
- Close collaboration with Oncology Team for cancer patient management
- Establish a Prosthetic Centre for KEC to cope with increase demand associated with an ageing population

Demand Management

- Joint replacement service is expected to increase with ageing of population. Service enhancement and ambulatory models of care will help address rising demand

Design Implications

- Floor plan and work-flow design should be physically and functionally linked with allied health departments to facilitate easy access to rehabilitation services

Paediatrics & Adolescent Medicine Service

The Department of Paediatrics & Adolescent Medicine at UCH provides comprehensive paediatric services, including neonatal and paediatric intensive care services.

The planning of paediatric services in UCH has to be considered under the context of the Government's intention to develop a CEP at the Kai Tak Development Area, for expected project completion in 2016. Once established, the CEP will serve as the tertiary referral centre within an integrated and coordinated network of paediatric departments in HA's regional hospitals. The Paediatric and Adolescent Medicine Department of UCH will continue its role in providing consultation services to other specialties, step-down care for patients returned from the CEP, emergency and high volume secondary level services (including ambulatory services, continuing care for patients with chronic medical problems, and neonatal service support, e.g. NICU and SCBU), as well as community paediatric care. With proximity to the proposed CEP, there is opportunity for UCH to progressively rationalize its paediatric services, as part of the network, and in close collaboration and partnership with the CEP.

Recommended Service Enhancement

- Strengthen the Ambulatory Adolescent Service with multi-disciplinary input, including Paediatrics, Psychiatry and Clinical Psychology, and other Allied Health disciplines, to handle both the physical and psychosocial needs of adolescents
- Establish a Paediatric Day Care Centre for day procedures (e.g. electro-diagnostic procedures and imaging studies requiring sedation and observation)
- Enhance support to the Cleft Lip and Palate Service through close collaboration with O&G for antenatal diagnosis
- Enhance the Paediatric Dermatology Service for patients suffering from "catastrophic" congenital skin lesion (disfiguring birthmarks)
- Support the Acute Admission Ward (with a Paediatric Assessment Unit specially designed for paediatric patients) for prompt management and short-stay care
- The number of NICU beds should be of adequate capacity to cope with future service demand
- Enhance rehabilitation services and facilities for paediatric patients with chronic problems requiring supportive care (e.g. chronic respiratory problems and chronic neurological diseases). This requires multi-disciplinary input, intervention programs, chronic ventilator care and pulmonary rehabilitation
- Develop an integrated dermatology service in collaboration with Family Medicine
- Collaborate with Psychiatry to develop an integrated mental & sexual health service

Demand Management

- Increase in demand is expected to be met with the shift to more ambulatory models of care
- The proposed CEP will take the lead role in providing tertiary services and research for paediatric services in Hong Kong

Design Implications

- Floor plan and work-flow design should be physically and functionally linked with NICU, SCBU, Labour Ward, AED
- Sex segregation for in-patient care, with separate adolescent wards for boys and girls
- Proper accommodation for parents is needed
- A child and parent friendly environment (e.g. play area, breast feeding area) should be provided in paediatric in-patient, day-patient, and out-patient areas

Pain Management Services

The Kowloon East Pain Management Centre at UCH provides pain management services in ambulatory settings.

Recommended Service Enhancement

- Enhance the comprehensive pain management services with introduction of cognitive behavioral therapy, with multi-disciplinary collaboration
- Establish a nurse-led pain clinic to enhance specialty care for chronic pain patients
- Enhance cancer pain management service in close collaboration with Oncology Team
- Enhance facilities to support interventional procedures for pain management performed in the ambulatory setting

Demand Management

- An increase in demand is expected to be met by service enhancement and ambulatory models of care

Pathology Service

The Department of Pathology of KEC provides pathology services to the cluster clinical departments. Services include anatomical pathology, chemical pathology, microbiology, immunology and haematology.

Recommended Service Enhancement

- Enhance laboratory, blood bank, other diagnostic pathology services, as well as services provided by the infection control team, in particular to strengthen the support for emergency services, oncology services, and ambulatory services
- Set up a purpose-built and designed Molecular Laboratory to enhance molecular genetic services
- Develop a clinical toxicology screening service
- Improve the orientation and increase the size of the Mortuary, with enhanced areas to include designated loading areas for funeral parlor vehicles



Demand Management

- Increase in demand is expected to be met by service enhancement, as well as improved efficiency through modernization of equipment and facilities (e.g. laboratory automation)
- Develop a specimen transport system to facilitate workflow

Design Implications

- Designated isolation beds should be provided in acute wards and AED for infection control
- Recommend to include specimen collection areas in ambulatory service areas
- Floor plan and work-flow design should be carefully designed to be easily accessible to clinical areas

Psychiatry Service

The Department of Psychiatry at UCH provides psychiatric services for adult, geriatric, child and adolescent patients in KEC. It also provides sub-specialty services including rehabilitation psychiatry, substance misuse, and consultation liaison psychiatry.

Recommended Service Enhancement

- Enhance psychiatric services in ambulatory settings:
 - Enhance Psychiatric Day Hospital capacity for both adult and child & adolescent patients
 - Set up a Psycho-geriatric Day Hospital with facilities designed specifically for geriatric patients to address their special needs
 - Psychiatric rehabilitation services will be strengthened through enhancing day hospital capacity, which will also enable collaboration with Non-Government Organizations
- Set up age-specific psychiatric out-patient services with special provision for different patient groups (e.g. early psychosis, substance misuse, learning disability and peri-natal women)
- Close collaboration with Oncology Team for cancer patient management, including development of a psycho-oncology service
- Enhance psychiatric consultation liaison services and facilities to ensure close collaboration with all clinical specialties
- Set up separate modernized wards and therapeutic areas for child & adolescent, adult, and psycho-geriatric in-patients
- Enhance community psychiatric service and outreach capacity
- Enhance collaboration with Family Medicine/GOPC for joint psychiatric assessment and management

Demand Management

- An increase in demand is expected to be met by service enhancement and ambulatory models of care

Design Implications

- Designated areas in ambulatory facilities should be designed for different age-groups, gender and clinical needs

Radiology Service

The Department of Radiology and Organ Imaging at UCH provides radiology services to support UCH clinical departments. Scope of services includes Fluoroscopy, Ultrasonography, Computed Tomography, Breast Imaging, Angiographic Examinations and Interventions, Non-vascular Invasive and Interventional Procedures, Magnetic Resonance Imaging and Nuclear Medicine.

Recommended Service Enhancement

- Enhance radiology service to support cancer service, which includes imaging for diagnosis, disease staging, as well as post-treatment follow-up imaging studies
- Strengthen interventional radiology services, in particular to support cancer service
- Set up a satellite radiology service for specialist out-patients and other ambulatory patients, with X-ray and ultrasound services readily accessible
- Support the AED, Emergency Medicine Ward, and Acute Admission Ward for prompt imaging and interventional procedures for emergency patients
- Totally filmless in the new hospital



Demand Management

- Increase in demand associated with establishment of oncology service in KEC, as well as change in clinical practice and technological development, is expected to be met with radiology service enhancement. This will also be partially offset by the advances in technology with more efficient machines
- Radiology equipment and facilities, such as CT, Magnetic Resonance Imaging (MRI), Ultrasound, PET/CT should be provided with enough capacity to cope with future service demand

Design Implications

- Radiology Department should be physically and functionally linked with AED, Emergency Medicine Ward and Acute Admission Ward to facilitate timely investigation of emergency patients

Surgical Service

The Department of Surgery at UCH provides comprehensive surgical services to the community. It provides services in general surgery, colorectal surgery, hepatobiliary surgery, vascular surgery, head and neck surgery, breast surgery, upper gastro-ental surgery, urology and paediatric surgery. In addition, a neurosurgical specialist out-patient service is available at UCH, provided by the Queen Elizabeth Hospital (QEH) Neurosurgical Department, through neurosurgical service networking between QEH and UCH.

Recommended Service Enhancement

- Strengthen the Minimally Invasive Surgery Service at UCH to facilitate day surgery and promote early recovery of patients
- Enhance the Breast Centre services through collaboration with specialty nurses for screening and social support
- Establish a Urology Centre with service enhancements, including a lithotripsy service, as well as modernization of equipment and facilities
- Enhance support to the Cleft Lip and Palate Service through close collaboration with other clinical, nursing and allied health teams
- Close collaboration with Oncology Team for cancer patient management
- Enhance Endovascular Services
- Establish a hospital-based surgical skill training centre to cater for the training needs of UCH staff



Demand Management

- A substantial proportion of surgical in-patients will be shifted to day-patient care in the future

Design Implications

- Specific designs and facilities are required to enable surgery to be done in an ambulatory setting

Supporting Services to Clinical Departments

Within the new models of care mentioned in the last section, including cancer services, multi-disciplinary ambulatory services and rehabilitation services, nursing and allied health services play an important role to provide an integrated and collaborative service to achieve total patient care. With the support of new facilities and infrastructure in the redeveloped UCH, supporting services will be delivered in a flexible and coordinated way.

Nursing and allied health services include, but are not limited to:

- Clinical Psychology
- Community and Volunteer Services
- Dietetics
- General and Specialty Nurses
- Medical Social Service
- Occupational Therapy
- Pharmacy
- Physiotherapy
- Podiatry
- Prosthetics and Orthotics
- Speech Therapy



Role Delineation

In this section, clinical services at UCH are classified into various levels using the role delineation model. The levels range from Nil to 6, each with a defined level of support services, staff mix and other requirements, as set out in the role delineation definitions of Table B.

Presented in Table C is the role delineation of clinical services at UCH. It is applied using a broad-brush approach, and is meant to provide a quick reference and an overall picture rather than for meticulous comparison.

United Christian Hospital services in 2010 are delineated according to their existing levels of service, while the figures for 2021 are recommended levels based on the key observations and recommendations outlined in the previous section for each specialty. The analysis is based on the assumption that the roles of the other hospitals in the KEC (namely, TKOH and HHH) will not change in relation to the redevelopment of UCH.

Most of the clinical services at UCH are at level 6 and are recommended to remain so in future. It is also recommended not to change the role delineation of ophthalmology and ENT, which are currently at 4/5.

With the inception of the CEP, in future a significant proportion of the most complicated management will be carried out at the Centre of Excellence. Therefore, paediatric services, including those at other hospitals, will be no more than level 5 by 2021 and beyond.

The other changes in role delineation are for clinical oncology, which is currently limited at UCH. It is recommended that a level 5/6 clinical oncology service be provided at the redeveloped hospital.

Table B. General Guidelines for Clinical Services Role Delineation

MEDICAL			SURGICAL		
Generalist	Type I Subspecialties	Type II Subspecialties	Generalist	Type I Subspecialties	Type II Subspecialties
<ul style="list-style-type: none"> • Physician 	<ul style="list-style-type: none"> • Cardiology • Dermatology • Endocrinology • Gastroenterology • Geriatric Medicine • Neurology • Renal Medicine • Rheumatology • Venereology • Paediatrics • Respiratory Medicine 	<ul style="list-style-type: none"> • Clinical Haematology • Clinical Microbiology • Immunology • Medical Oncology • Palliative Care • Radiotherapeutic Oncology • Genetics • Clinical Infectious Diseases 	<ul style="list-style-type: none"> • General Surgeon 	<ul style="list-style-type: none"> • Ear, Nose and Throat • Obstetrics and Gynaecology • Ophthalmology • Orthopaedics • Urology 	<ul style="list-style-type: none"> • Cardiothoracic • Neurosurgery • Plastics surgery • Transplant Surgery • Vascular Surgery • Burns

Level of Service – In-patient Services

- Nil** No service available
- 1** Out-patient care – Registered Nurse (RN) and visiting General Practitioner (GP).
- 2** Out-patient and in-patient care – plus 24-hour GP cover and limited visiting general specialists for out-patient services only
- 3** Out-patient and in-patient care – plus visiting general specialists (low risk obstetrics and elective surgery)
- 4** Out-patient and in-patient care – plus resident general specialists plus visiting Type I subspecialists, plus some junior medical staff
- 5** Out-patient and in-patient care – plus visiting Type II subspecialists plus some medical staffing plus HDU. May include some research and training.
- 6** Cluster-wide services, including Type II subspecialists and research/education/training

Level of Service – Ambulatory Care Services

- Nil** No service available
- 1** GP only
- 2** GP and out-patient clinic at discharge hospital. Limited access to community nursing
- 3** Visiting specialist. Some hospital avoidance/substitution/early discharge services. Access to community nursing and some allied health services
- 4** Increasing range and complexity of hospital avoidance/substitution/early discharge services. Chronic disease programs. Visiting medical specialist. Good access to generalist allied health/nursing staff
- 5** Specialist medical/nursing/allied health staff. Increased range and complexity. Enhanced diagnostics. Teaching and training role
- 6** Research role. Fully integrated ambulatory care services. Fully integrated diagnostics

Adapted with permission from Western Australia Department of Health, "WA Health Clinical Services Framework 2005–2015", 2005. Please refer to the original document for detailed definitions of the different levels of service of individual specialties.

Table C. Clinical Services Role Delineation of UCH (Level Nil to 6)

Clinical Service	Year	
	2010	2021
A&E	6	6
Anaesthesia	6	6
Clinical Oncology	Nil	5/6
Dental	5/6	5/6
ICU	6	6
Medicine & Geriatrics	6	6
Obstetrics & Gynaecology	6	6
Orthopaedics & Traumatology	6	6
Paediatrics	6	5
Pathology	6	6
Radiology	6	6
Surgery	6	6
ENT	4/5	4/5
Family Medicine & GOPC	5/6	5/6
Ophthalmology	4/5	4/5
Psychiatry	4	4/5

Note: The role delineation of clinical services is for quick reference and provision of an overall picture.

Principal Recommendations

It is recommended that UCH continues its role as a major acute hospital and cluster tertiary referral centre for KEC. The daily demands of emergency presentations and the consequent admissions will dictate that a comprehensive range of clinical services are required to support this role.

In the redeveloped UCH, the existing repertoire of services is expected to continue. A major addition will be development of a comprehensive cancer service and the major shift will be in the care delivery model.

Proposed models of care will enable services to better manage growing demand, deliver high quality, safe services, and nurture a skilled multi-disciplinary workforce. These recommendations are elaborated on below.

Development of Comprehensive Cancer Services

The most significant area for development identified by the review and highlighted by the UCH clinical teams was cancer services. Cancer represents a substantial proportion of the workload, which is anticipated to continue to increase considerably in KEC.

With the development of comprehensive cancer services at UCH, the needs of the patient will be addressed by a “one-stop-service” within the cluster; ranging from access to appropriate specialist care, timely diagnosis and treatment, through to supporting services being offered both during and after treatment. This will help avoid inter-cluster patient transfer and unnecessary treatment delay.

The cancer services at UCH will be provided through state-of-the-art facilities, including an Oncology Centre as the ambulatory component, and oncology wards for in-patient services. The development of radiotherapy and chemotherapy, together with psychosocial, spiritual and educational supporting services, form the essential components of the holistic model of care.

Changing Models of Care

Changing models of health care delivery will not only help UCH face service challenges related to growing demand, ageing of population and rising patient expectation, but also help meet the aspirations of UCH staff to deliver high quality services. Models of care describe the way in which health care services are delivered and organized, to ensure people get the right care, at the right time, by the right team and in the right place. These new models will be exemplified by the three areas of service development at UCH, namely the emergency care, ambulatory care and in-patient rehabilitation services.

Focus on Patient Journey

With a focus on patient journey, services are reorganized and orientated to patient needs, promoting a patient-centred continuum of care.

At UCH, rethinking of the emergency patient journey has led to the redesign of a streamlined emergency service. The development of Emergency Medicine Ward, Acute Admission Ward and a designated area for management of minor emergency patients will help direct patients to the most appropriate care according to their needs. Readily accessible diagnostic services help ensure timely, safe and efficient patient management. Fast track to definitive treatment, established through careful planning, helps avoid unnecessary delay for urgent conditions. Redesign of infrastructure and facilities, together with co-location of services, facilitates efficiency and effectiveness.

Coordinated Multi-disciplinary Approach

The new models of care will deliver coordinated health care services that align with health care needs, which enhance quality and patient experience. A multi-disciplinary approach will be adopted to enhance collaboration and effective teamwork. Flexible and shared spaces, together with carefully designed layout will be needed to facilitate collaborative teamwork.

This model of care can be illustrated by the well-known Cleft Lip and Palate Service at UCH. Instead of providing fragmented care by individual departments, a team approach is adopted to provide diagnosis, treatment, counseling and psychosocial support to the child as well as the family in a coordinated manner. This widely recognized service model will be rolled out to many other service areas, through development of various multi-disciplinary clinics in the redeveloped UCH.

Coordinated multi-disciplinary care will also be applied to the in-patient rehabilitation service at UCH. In the current setting, one-third of patients requiring extended care are transferred to another cluster for rehabilitation beds. With the future service development at UCH, mixed specialty care and multi-disciplinary teamwork will be enhanced to address patient needs across the continuum of care. Effective



communication between different teams and disciplines, including doctors, nurses and allied health professionals, helps ensure safe and appropriate discharge planning and follow-up care, as well as seamless transition between services.

Ambulatory Model

In the model, services are delivered in favour of ambulatory and short-stay management. It reflects the trend that many complex, sophisticated health services can be provided in a setting that is orientated to the needs of the patient, reducing avoidable hospital stays. Day admissions, high-tech surgical and procedural technologies, and efficient patient management help fulfill this vision. This will be achieved through enhancement of day surgery, day endoscopy, medical day procedures and paediatric day care, as well as establishment of a Peri-Operative Centre at the redeveloped UCH. In addition, in the day hospital setting, patients will receive supervised therapy and spend a significant portion of the day with hospital support, yet stay in the community.

Flexible Space Utilization

A significant proportion of in-patient burden from population growth and changes in the patient age structure will be offset by the service enhancements and models of care described above. That is, more services in an ambulatory setting, decreased length of stay for those who do need overnight admission, and streamlining of the emergency care pathway.

Having said this, the design and use of ward space needs to be more flexible. Hospitals of the future will have far more flexible accommodation spaces and the notion of the specialty-based ward will be phased out.

Holistic Care

The redeveloped UCH will continue its tradition in delivering a “whole person-body, mind and spirit” model of care. The organizational arrangements of the campus will be important to strengthen patient-centred management at the point of admission through to discharge. Greater emphasis on multi-disciplinary collaboration will facilitate a coordinated approach to ensure the physical, mental, social and spiritual needs of patients are acknowledged and met.



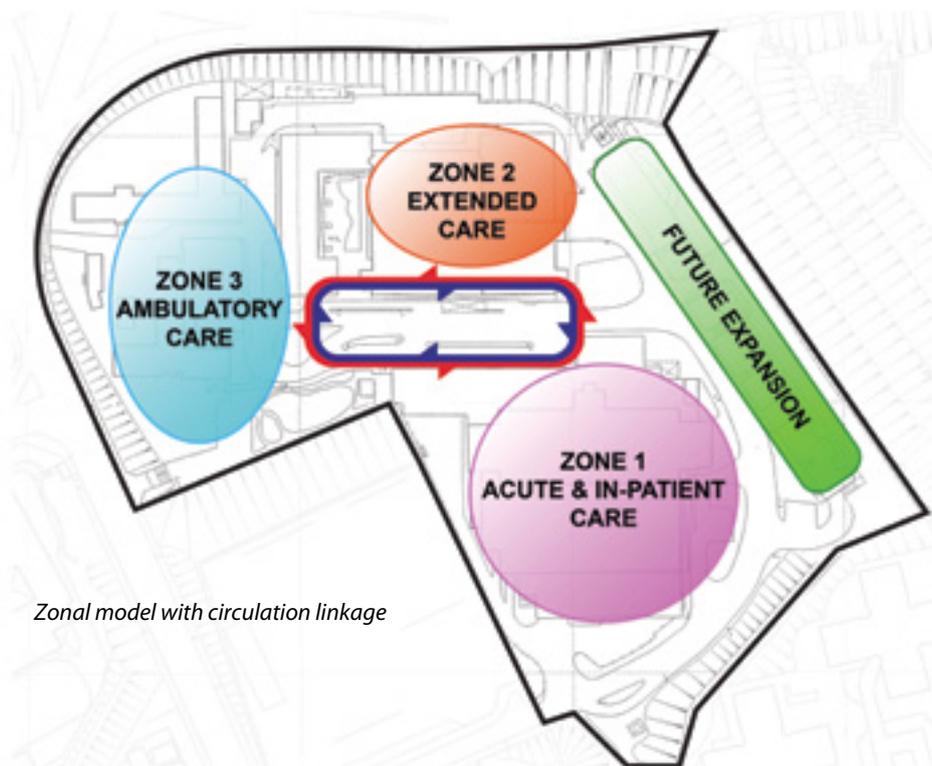
Design Implications

A hospital is a complex system of interrelated services and functions, supporting the needs of many different users. The design and physical configuration of a hospital, its circulation and logistics systems, are inextricably intertwined and constantly evolving with new medical needs, service developments and technological advancements.

Intelligent design is a powerful driver of change, and can be utilized to ensure that the old way of doing things is no longer practical and that new models of care are supported and become the norm. Changes to models of care recommended in this report have important implications for design.

The redevelopment of UCH will involve expansion of services, reorganization and redefining the functional and spatial relationship between service areas in the new and existing buildings.

One fundamental concept in hospital planning is the zonal approach to campus layout and management. The concept essentially refers to planning facilities around clinical activities, not around wards or beds or even specialties. This means that the areas are classified according to their functions; such as ambulatory zone, diagnostic zone, in-patient or accommodation zone, and so on. The zonal model groups patients and clients around their needs and not the discipline that owns them.



Zonal model with circulation linkage

Ambulatory Zone

The case for the creation of an ambulatory zone is irrefutable. Each day thousands of patients utilize the facilities of UCH, with only a small percentage requiring admission and an overnight stay.

The ambulatory zone should ideally be a radical departure from the model which is commonly found in many Hong Kong hospitals. Arguments favour an environment that will be perceived by the community as receptive, healing and non-institutional. A large floor plate with multiple levels and clear way-finding would be ideal. Child care, food outlets and health education areas can also be incorporated, offering a “one-stop shop” experience. A modern shopping plaza is a good conceptual start. However, the ambulatory zone should also be a clinical services area. It is intended to be client friendly, whilst still offering the highest levels of technology and sophistication. The ambulatory zone would be a wireless, paperless, and filmless environment.

The ambulatory zone should have large rooms suitable for multi-disciplinary clinics and case conferences. The master plan should also provide for future integration of clinics with good access to procedural areas and diagnostic facilities, with multiple transit points to connect the ambulatory zone with other areas of the hospital to enhance operational efficiency and facilitate movement of patients and staff.

Within the master plan the ambulatory zone should have a close physical relationship with the diagnostic and procedural facilities. These facilities may be located as a core function which can also be accessed from the critical care zone, therefore avoiding expensive duplication while enhancing access to technologies.

Day surgery facilities, endoscopy suites, etc. should all be designed with maximum amenity from the front of house perspective, but can share facilities with the back of house. There is no doubt that day facilities for surgery are now a major imperative and at UCH it is proposed to integrate these with the main operating theatre complex.

The Peri-Operative Centre will be a key component and must cater for patient admission, pre-operative preparation, post-operative care, discharge and follow-up. The Peri-Operative Centre should be designed to facilitate movement of patients and staff into, through, and out of defined areas within the surgical suite. The movement can be viewed as the patient journey within the Peri-Operative Centre. The journey should be unambiguous and clear, offering reassurance to patients and efficiency to staff. Some guiding principles to support this include:

- A clear and distinct point of entry
- Immediately visible and welcoming reception areas
- Comfortable, relaxing, and child-friendly environment which respects the privacy and dignity of patients
- Adequate space provision in waiting areas
- Clear way-finding within the centre
- When sharing operating theatres with the main operating theatre department, access should be on the same floor or connected by a dedicated lift. Separation of the two units must be carefully designed
- Good functional relationship with the imaging department, pharmacy, and sterile service
- Infection control and decontamination facilities
- Barrier-free access for disabled people
- Sufficient recovery areas for staged recovery
- Private interview areas for patients and their family in post-operative areas

Critical Care Zone

The critical care zone, including emergency services, ICU and CCU should be clearly identified. The existing Accident and Emergency facilities will be enhanced to provide patient-centred and efficient services in a calm and effective setting. Facilities will be designed to optimize the management of patients with different categories of need within the emergency setting, while minimizing anxiety and stress to both patients and their relatives. The enhanced design will include development of an Emergency Medicine Ward, Acute Admission Ward, and a designated area in the AED to handle minor emergency conditions.

The patient flow is based on the principle that on arrival in AED patients are seen, treated and referred for further assessment, or discharged. The AED should be designed to facilitate movement of patients into, through, and out of various areas. However, this will vary depending on the means of arrival, the clinical condition, and whether the patient is an adult or child. Notwithstanding this, the patient journey should be unambiguous and clear. Directions to the AED must be clearly signposted and there must be immediately visible and welcoming reception areas, with adequate space provision.

The privacy and dignity of each patient should be maintained at all times, while allowing for adequate observation of patients by staff. Comfortable, relaxing and child-friendly environment and facilities are important, with private sitting and interview areas for patients and family. Furthermore, all critical care areas need appropriate respite/time out facilities for staff. Facilities for concerned/grieving families and counselling are a must.

Good functional relationships between the above components of the new model of streamlined emergency service at the redeveloped UCH are essential, as is the relationship with the imaging department, operating theatres and other procedural suites, acute services, and pharmacy. Co-location of the ICU/HDU within the critical care zone will support efficient workflow and facilitate a concentration of skills and technology and a focus on critical care.

In-patient Zone

The location and configuration of the in-patient spaces will be important. Many of the beds will be associated with other zones (ambulatory, A&E, critical care, etc.). However there is still a need for in-patient beds in the reconfigured existing buildings.

Recent developments in hospital planning may inform this decision. Large floor plate areas are very much in favour. Typically a large ward is configured in three smaller units. At the core are the services and work areas with the beds distributed circumferentially. This is an economical configuration for staff. It is not simply individual wards with an isolated set of staff. The large ward design has the capacity to lock down individual units at off peak periods. This model negates the typical concept seen in many hospitals of bed and floor ownership. Usage of ward space needs to be more flexible instead of following rigid bed allocation to specific teams and disciplines. This will help optimize the utilization of space and resources.

Patients will have high expectations of the environment in which they are to be treated and how and where healthcare is provided. The provision of high quality facilities, which are age, sex, and condition appropriate, is important. A key element that should be addressed in all patient accommodation is that of privacy and dignity, focusing on respect for the individual, so that:

- Patients feel they matter all the time
- Patients experience care in an environment that is comfortable, reassuring, stress reducing and which provides an appropriate level of choice and control
- Patients' personal space is actively promoted by all staff
- Communication between patients takes place in a manner that respects their individuality
- The care of patients actively promotes their dignity and privacy and respects their modesty, including gender segregation
- Patients can access an area that safely provides privacy
- Environment is designed taking into account different levels of physical, mental, and sensory impairment

The in-patient zone should provide space for all the clinical activities that need to take place at the bedside and good functional relationships with staff departments or other patient support areas, such as rehabilitation. Conveniently located space for storage of equipment and support to staff is essential, as is storage for patients' possessions. The in-patient zone should be equipped with sufficient isolation facilities and promote good infection control.

Cancer Services

A key service development at UCH will be establishment of a comprehensive cancer service, with both in-patient and out-patient components. Facilities must meet the needs of this unique and vulnerable patient group and the specialized services which support them.

Many cancer patients will make multiple visits to receive treatment, and at times many will attend hospital on a daily or weekly basis for varying periods of time. Therefore, the cancer service environment should be welcoming and easy to navigate for the first-time visitor, convenient for patients who will spend only a few minutes at the service, offer variety for the patient whose treatment lasts many hours, and address the needs of family members who accompany the patient.

Creating a non-institutional and relaxed environment for both patients and staff is essential to optimize care. For those patients spending many hours receiving treatments (such as chemotherapy) the need to be able to control their environment to meet their individual needs is important. This includes levels of privacy, lighting, and temperature. For example, the chemotherapy infusion area should provide privacy if patients wish to read or sleep, and most importantly, to interact with other chemotherapy patients.



Concept illustration of Oncology Centre entrance

Spaces for patient family members and carers should not be overlooked, as they may also be present for several hours, and need a variety of spaces in which to relax and reflect, engage in private consultations with medical and support staff, and access information about health and community resources. The cancer service facilities at UCH need to offer family members and carers the means to develop their own support network by talking to other families/carers about the caring process.

Within the ambulatory zone, an Oncology Centre is proposed to provide in-house cancer chemotherapy support to patients from Surgery, Gynaecology, Orthopaedic, Medicine and other specialties. In addition, a radiotherapy service will be provided for either curative or palliative purposes. Some patients may receive chemotherapy and radiotherapy concurrently and ideally these facilities should be located side by side, for patient convenience and to enable efficient working practice. These facilities require good access to the main diagnostic, surgical, in-patient, critical care, Accident and Emergency, and rehabilitation facilities. In addition to supporting the unique requirements of cancer patients, rest rooms and facilities should be present to support family and carers, including overnight accommodation. Cancer service facilities should incorporate areas for patient support and complementary therapies, sitting and quiet rooms, interview/counseling/advisory rooms, changing rooms, and rooms for multi-disciplinary team meetings and case conferences. A mixture of both open-plan and individual treatment areas should be considered.

In both the ambulatory and in-patient setting, the need to protect immuno-compromised cancer patients from infection should be a fundamental part of the hospital design, including consideration of cancer services in relation to the hospital circulation and main thoroughfares, and provision of isolation facilities.

The design of the centre will need to accommodate the range of specialist treatments and interventions delivered to cancer patients, in particular chemotherapy and radiotherapy. For chemotherapy, special consideration of the preparation of drugs, mode of administration, effect

on patients, and disposal facilities need careful consideration, since cytotoxic drugs are hazardous and their use and disposal regulated. For radiotherapy, careful planning of facilities is required, including intelligent positioning of high technology equipment, such as linear accelerators, and their associated design and safety requirements. Radiotherapy may also involve the use of unsealed sources (radiopharmaceuticals) and sealed sources of radiation (brachytherapy). Implications of these different treatment modalities on organization and arrangement of facilities, and consideration of the relevant safety and regulatory requirements, should be incorporated at an early stage of the design process.

Hospital Circulation

Very often in a large hospital, journeys and waiting occupy much staff and patient time. This kind of inefficiency could and should be minimized with good hospital design. The redeveloped hospital should be easy and convenient to use for patients and staff. To achieve an efficient and patient-friendly design, the need is for appropriate spatial arrangement of clinical activities that are centred on the convenience of patients and, importantly, a three-dimensional circulation that allows “a number of ways through” for patients and staff. The corollary is that in cities, based on grids of streets, if there is a traffic hold-up at one intersection, a different set of streets is available to get to one’s destination. Hospitals need similar “alternative routes”.

In the redevelopment of UCH the overall network of circulation should be considered to reduce travel and waiting time for patients and staff. The present circulation systems in the hospital rely on connecting lift cores. In areas of large patient movement, such as in the ambulatory zone, escalators can provide easy connection as they do in shopping centres. Therefore, instead of continuing circulation systems made up of lift cores connected at the ground floors, it is proposed that a circulation network in the form of a three-dimensional grid, or lattice of lifts, and of concourses be established. Escalators in strategic places for high patient traffic are proposed.



Concept illustration of atrium space

Intelligent use of space by locating support spaces so that they may be shared by related functional areas, providing optimal functional adjacencies between services, and making prudent use of multi-purpose spaces will assist in reducing unnecessary travel and enhance operational efficiency.

Within the hospital much of the circulation should be controlled, such that out-patients visiting diagnostic and treatment areas should not travel through in-patient functional areas, nor encounter severely ill in-patients – their routes should be simple and clearly defined. In addition, visitors should have simple and direct routes to each patient nursing unit, which do not penetrate or interfere with other functional areas.

Patients, visitors, and all staff need to know where they are, what their destinations are, and how to get there and return. A patient’s sense of competence is encouraged by making spaces easy to find, identify, and use without having to ask for help. Incorporating “way-finding” into the fabric of the hospital design will be important, as well as accessibility for individuals with temporary or permanent disabilities.



Concept illustration of campus linkage

Other Facilities

Parking and traffic flow can impact on the clinical model. The convenience of and access to public transport must be fully explored and utilized.

An efficient logistics system, including elevators, box conveyors, manual or automated carts, and gravity or pneumatic chutes should be considered. Outflow of waste, recyclables and soiled material should be separated from movement of food and clean supplies, and both should be separated from routes of patients and visitors.

Future Proofing

The development of medical needs, modes of treatment, and models of care, mean that the redeveloped UCH has to incorporate design flexibility to accommodate inevitable changing future requirements of its users. Where possible modular concepts of space planning and layout should be considered, including generic room sizes and plans as much as possible, served by modular, easily accessible and easily modifiable mechanical and electrical systems.

Planning for future expansion of some areas may be incorporated into the hospital design, for instance positioning “soft” spaces, such as administrative areas, adjacent to “hard spaces”, such as clinical laboratories or operating theatres.

Sustainability

Hospitals are large public buildings that have a significant impact on the environment and economy of the surrounding community. They are heavy users of energy and water and produce large amounts of waste. Because hospitals place such demands on community resources they are natural candidates for sustainable design.

Abbreviations

AED	Accident and Emergency Department
CCU	Coronary Care Unit
CEP	Centre of Excellence in Paediatrics
CT	Computed Tomography
ENT	Ear, Nose and Throat
GOPC	General Out-patient Clinic
HA	Hospital Authority
HHH	Haven of Hope Hospital
ICU	Intensive Care Unit
KEC	Kowloon East Cluster
MRI	Magnetic Resonance Imaging
NICU	Neonatal Intensive Care Unit
O&G	Obstetrics and Gynaecology
OT	Operating Theatre
PCI	Percutaneous Coronary Intervention
PET/CT	Positron Emission Tomography/Computed Tomography
PICU	Paediatric Intensive Care Unit
SCBU	Special Care Baby Unit
SOPD	Specialist Out-patient Department
TKOH	Tseung Kwan O Hospital
UCH	United Christian Hospital

APPENDIX 1

Services Available at United Christian Hospital

Scope of Services

Specialties

- Accident & Emergency
- Anaesthesiology & Pain Medicine
- Clinical Toxicology
- Dentistry & Maxillofacial Surgery
- Ear, Nose & Throat
- Family Medicine & Primary Health Care (*General Out-patient Services*)
- Intensive Care
- Medicine and Geriatrics
- Obstetrics & Gynaecology
- Ophthalmology
- Orthopaedics & Traumatology
- Paediatrics & Adolescent Medicine
- Pathology
- Psychiatry
- Radiology & Organ Imaging (*including CT Scan and Nuclear Medicine*)
- Surgery (*including Neurosurgery Out-patient Service provided by Queen Elizabeth Hospital through service networking*)

Specialty Centres & Ambulatory Services

- Kowloon East Pain Management Centre
- Integrated ENT Centre
- Geriatric Day Hospital
- Hong Kong Poison Information Centre
- Renal Ambulatory Care Centre
- Kowloon East Cluster United Christian Hospital Hospice Centre
- Kowloon East Cluster Breast Centre
- Psychiatric Day Hospital
- Toxicology Training Centre
- Day Surgery Centre
- United Ambulatory Care Centre

Allied Health Services

- Clinical Psychology
- Dietetics
- Medical Social Services
- Occupational Therapy
- Pharmacy
- Physiotherapy
- Podiatry
- Prosthetic & Orthotic Services
- Speech Therapy

Others

- Community Nursing Services
- Chaplaincy Services
- Community Relations & Volunteer Services

APPENDIX 2

Organization Chart of United Christian Hospital



Clinical Services include:

- Accident & Emergency
- Anaesthesiology & Pain Medicine
- Clinical Toxicology
- Dentistry & Maxillofacial Surgery
- Ear, Nose & Throat
- Family Medicine & Primary Health Care (*General Out-patient Services*)
- Intensive Care
- Medicine and Geriatrics
- Obstetrics & Gynaecology
- Ophthalmology
- Orthopaedics & Traumatology
- Paediatrics & Adolescent Medicine
- Pathology
- Psychiatry
- Radiology & Organ Imaging
- Surgery

APPENDIX 3

Site Map of United Christian Hospital



F 吳詠棠大樓
NG WING TONG BLOCK
BLOCK F

G 馮朗庭紀念大樓
FUNG LONG TING MEMORIAL BLOCK
BLOCK G

H H 座
BLOCK H

J 陳國本大樓
CHEN KOU BUN BUILDING
BLOCK J

K 林護堂
LAM WOO HALL
BLOCK K

L 林植豪堂
LAM CHIK HO HALL
BLOCK L

P 新翼大樓
NEW BLOCK
BLOCK P

S 邵逸夫大樓
SIR RUN RUN SHAW BUILDING
BLOCK S

APPENDIX 4

Demographic and Socio-economic Characteristics of KEC Districts

	Kwun Tong	Tseung Kwan O	KEC Catchment	Hong Kong Overall
Year 2006				
Population	587,423	344,872	932,295	6,861,280
Median age	40	36	39	39
Proportion of population aged 65 and above	16.0%	8.2%	13.1%	12.4%
Child dependency ratio	189	207	196	185
Elderly dependency ratio	227	108	181	168
Overall dependency ratio	417	314	377	353
Average household size of domestic households	2.9	3.1	3	3
Median monthly domestic household income (HK\$)	14,050	20,600	16,400	17,260
Proportion of population aged 15 and above having attained post-secondary education	17.3%	24.4%	19.9%	23.0%
Year 2016				
Projected population	652,500	417,000	1,069,500	7,450,000
Proportion of population aged 65 and above	16.4%	10.7%	14.1%	15.2%

The figures exclude persons living on board vessels.

Data source: 2006 Population By-census, Census and Statistics Department, HKSAR.

Projections of Population Distribution, 2007–2016, Planning Department, HKSAR.

Source: Helping People Stay Healthy: Strategic Service Plan 2009–2012 (HA).

APPENDIX 5

Terms of Reference and Membership of Steering Committee

Terms of Reference

- To oversee the work of the Working Group and steer the strategic direction for the formulation of a Clinical Services Plan for the redevelopment of United Christian Hospital.
- To guide the development of a framework which maps out the current services, as well as the planned service configuration of United Christian Hospital, in 10 to 15 years' time.
- To receive the report from the Working Group and advise on the recommendations on the Clinical Services Plan for the redevelopment of United Christian Hospital.

*Membership*¹⁹

Co-Chairs

Dr S V Lo	Director (Strategy & Planning), HAHO
Dr Joseph Lui	Cluster Chief Executive, KEC / Hospital Chief Executive, UCH

Members

Mr John Li	Member of Hospital Governing Committee, UCH
Dr Tony Ko	Chief Manager (Strategy, Service Planning & Knowledge Management), HAHO (up to March 2011)
Dr Libby Lee	Chief Manager (Strategy, Service Planning & Knowledge Management), HAHO (from March 2011)
Mr Donald Li	Chief Manager (Capital Planning), HAHO
Dr M F Leung	Consultant (Medicine & Geriatrics) / Service Director (Community Service & Planning), UCH
Dr N C Sin	Assistant to KEC Cluster Chief Executive / Senior Manager (Cluster Operations)
Dr Rebecca Kwok	Senior Manager (Strategy & Planning), KEC
Mr Remus Au	Cluster General Manager (Administrative Services), KEC / General Manager (Administrative Services), UCH
Ms W K Li	Senior Nursing Officer (Planning & Commissioning), KEC

Secretary

Mr Patrick Ng	Cluster Manager (Planning & Commissioning), KEC
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¹⁹ Details as at May 2011.

APPENDIX 6

Membership of Working Group²⁰

Chairman

Dr M F Leung Consultant (Medicine & Geriatrics) /
Service Director (Community Service & Planning), UCH

Members

Dr N C Sin Assistant to KEC Cluster Chief Executive /
Senior Manager (Cluster Operations)

Dr Rebecca Kwok Senior Manager (Strategy & Planning), KEC

Dr M L Tse Consultant, Hong Kong Poison Information Centre, UCH

Mr Patrick Ng Cluster Manager (Planning & Commissioning), KEC

Ms W K Li Senior Nursing Officer (Planning & Commissioning), KEC

Ms Dodo Kwok Cluster Coordinator (Health Information & Records), KEC /
Administrative Manager (Health Information & Records), UCH

Ms Angela Liu Executive Assistant (Planning & Commissioning), KEC

Secretary

Ms Shirley Ngai Personal Secretary I (Service Directors), UCH /
Personal Secretary I (Quality and Safety), KEC

²⁰ Details as at May 2011.

APPENDIX 7

Stakeholder Engagement Process

Date	Events
8 Dec 2010	Kick-off Briefing Session on Clinical Services Plan, chaired by Cluster Chief Executive, KEC / Hospital Chief Executive, UCH (80 service heads and senior clinicians attended)
Dec 2010 – early Jan 2011	Questionnaire Survey distribution and return by UCH Departments (27 participating departments)
Dec 2010	Face-to-Face discussions with Clinical Teams and Departments (30 sessions, 182 staff participated)
21 Dec 2010	Update for UCH Medical Committee
5 & 7 Jan 2011	Visit to Prince of Wales Hospital: Clinical Oncology Department, Neurosurgical Department, Main Clinical Block and Trauma Centre
10 Jan 2011	First Steering Committee Meeting
20 Jan 2011	Meeting with Management of Haven of Hope Hospital
8 Feb 2011	Meeting with Management of Tseung Kwan O Hospital
10 Feb 2011	Pre-2nd Steering Committee Meeting
14 Feb 2011	Open Forum to all UCH staff (159 participants)
18 & 25 Feb 2011	Feedback sessions with departments (4 sessions, 105 staff participated)
23 Feb 2011	<i>Ad hoc</i> Hospital Governing Committee Meeting
23 Feb 2011	Second Steering Committee Meeting
Feb – Mar 2011	Draft Clinical Services Plan for UCH



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