Abstracts

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Symposiums

S4.1 Advanced Care Planning and Elderly Services 09:00 Convention Hall B

Advanced Care Planning in the UK

Finlay of Llandaff I
House of Lords, UK

The UK has been rated first in the world in the Quality of Death index from the Economist's Health unit (supported by the Ling Foundation). Although the UK was the founding home of the modern hospice movement, yet there is more to be done in the UK to ensure that patients and their families have a dignified, comfortable, fulfilling time as life draws to a close.

Many major life-threatening illness follow a somewhat relapsing and remitting pathway, often leaving the patient depleted of energy after each relapse. Take the cancer patient who undergoes chemotherapy and or radiotherapy. Such treatments can feel punishing, resulting in fatigue and an inability to work. When the situation is palliative, a major challenge for families is how best to provide long term care during the weeks and months before the final phase of an illness.

For the patient, fears about their future can be magnified by the difficulties of adapting to living with uncertainty. Advance care planning rests on the legal frameworks in the Mental Capacity Act of 'Advance Statements of Wishes' and 'Advance Decisions to Refuse Treatment'. But many patients are reluctant to openly plan their final phase, changing their minds about their care preferences as unexpected events that arise.

The costs of social care can erode capital funds and continuity of care becomes increasingly important as a person becomes frailer. If support is inadequate the full burden falls on families.

initiatives in the UK include volunteers becoming increasingly important part of an informal support networks, through schemes such as 'Compassionate Communities' and 'Help Force' in hospitals, yet the greater number of people involved, the more crucial good information transfer becomes between all collaborators.

S4.2 Advanced Care Planning and Elderly Services 09:00 Convention Hall B

Achievements and Challenges in Elderly Service Development in Hong Kong

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Hong Kong is facing the full impact of "Silver Hair" boom in the coming two decades with the biggest hit on the healthcare and social welfare system.

Infrastructure building and service development for elderly care were high priorities of Hospital Authority (HA). Along the patient care pathway, there were: (1) Geriatrics support to Accident and Emergency Departments (pilots); (2) Inpatient care initiatives (10 Acute Care for the Elderly Patients) identification, liaison nursing, Comprehensive Geriatric Assessment pilots, inter-departmental collaboration, e.g. orthogeriatrics, frail elders pre-operative assessment; (3) Discharge planning and post-discharge support (Geriatric Day Hospital, Integrated Discharge Support Programme for Elderly Patients, Integrated Care Model for High Risk Elders, Medical-social Collaboration); (4) Outreaching and Community care (Community Geriatric Assessment Service (CGAS) + End-of-life (EOL) care, Dementia Community Support Scheme, Community Health Call Centre, Community Nursing Service); and (5) Patient empowerment (Smart patient website, Patient Discharge Information Summary, drug refill programme).

However, we have to increase our pace to move on because the older population expansion would soon outgrow (or has outgrown) our service capacity. The key direction is the collaboration with other partners like Social Welfare Department (e.g. enhanced CGAS, social infirmary, satellite health centres), Department of Health (elderly health centres/Residential Care Home for the Elderly (RCHE)/public education), private sectors/public-private partnership (e.g. doctors, RCHE transitional care places, pharmacy/drug delivery), Legal (EOL care at home/RCHE). Interdisciplinary collaboration within HA is crucial e.g. nursing, pharmacy, allied health and probably traditional Chinese medicine in the future. The challenge is about how to break the boundaries between institutions and disciplines and develop workable collaborative models.

Manpower development is also important. Besides the need to maintain a sizable pool of specialised professionals in elderly care, spreading of geriatric knowledge and skill to all clinicians and healthcare professionals in general is needed. The challenge is how to deliver these effectively and systematically.

Technological and IT development is rapidly changing the facets of clinical care. Our elders are more educated than before. The need to adopt geron-technological development and big data information into clinical care is imminent, e.g. e-health programmes, personalised medicine including frailty measures and functional profiles etc.

S5.1 Supporting Global Hepatitis Health Sector Strategy 09:00 Convention Hall C

Current Situation of Viral Hepatitis in Hong Kong

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Viral hepatitis is a major public health challenge. It caused 1.34 million deaths in 2015. Despite the success in lowering fatalities of many infectious diseases including HIV, the number of deaths resulted from viral hepatitis, primarily chronic hepatitis B (CHB) and C (CHC), is still on the rise. It was estimated that about 257 million people living with chronic hepatitis B and 71 million people with chronic hepatitis C globally in 2015.

In 2016, the World Health Organization has called for elimination of viral hepatitis as a public health threat by 2030, aiming to reduce new infections by 90% and mortality by 65%. In fact, implementation of hepatitis B vaccination in many countries has significantly reduced the transmission in children. A substantial reduction in prevalence of hepatitis B was also noted after the introduction of vaccination in 1988 in Hong Kong. The prevalence of hepatitis B surface antigen (HBsAg) positivity among new blood donors dropped from 8% in 1990 to 0.8% in 2016. The situation was even more prominent among the young donors aged 16-19 with a prevalence of only 0.3%. The HBsAg prevalence among the antenatal mothers was also lowered from 11.3% in 1990 to 5.2% in 2016. Higher prevalence was observed in pregnant women born in mainland China. The prevalence in high risk cohorts, like HIV infected patients, patients with tuberculosis infection and intravenous drug users, was still persistently higher than other cohorts.

Chronic hepatitis C infection, nevertheless, is not common in Hong Kong. It was found in only 0.04 to 0.1% of new blood donors. However, the prevalence could be more than 40% in intravenous drug users and more than 10% in patients with distant history of blood transfusion. The introduction of antivirals for the treatment of CHB and CHC has significantly reduced the incidence of late-stage cirrhosis and hepatocellular carcinoma. However, there are still major challenges on the road of hepatitis eradication. The local hepatitis registry is inadequate to anticipate the scope of the problems. All existing data are based on surveillance on different cohorts. Hepatitis awareness and screening need further boosting. Silent transmissions are still going on, especially in high risk individuals. The treatment policy for hepatitis is essentially resource-driven instead of being based upon scientific evidence. Assessment of the degree of liver inflammation and fibrosis may not be timely enough to justify early drug treatment, as a result of the limitation in resources and manpower. For the same token, some of the medications which have been obsoleted in many developed countries are still in use as the first-line candidate for the treatment of hepatitis.

Having said that, eradication of hepatitis B and C can still be achievable with determination of the government, as well as the facilitation and enhanced monitoring of both screening and treatment at different levels.

S5.2 Supporting Global Hepatitis Health Sector Strategy 09:00 Convention Hall C

The Future of Viral Hepatitis Testing: Innovations and Testing Technologies and Approaches

Peeling R
Clinical Research, London School of Hygiene and Tropical Medicine, UK

A large burden of undiagnosed hepatitis virus cases remains globally. Despite the documented 240 million people living with chronic hepatitis B virus (HBV) infection, 110 million identified as hepatitis C virus (HCV) antibody positive and 80 million with chronic viraemic HCV infection. The majority of the disease burden of hepatitis is in the developing world, where less than 1% of the population is aware of their infection. The World Health Organization (WHO) has set an ambitious set of targets to reduce the incidence of chronic hepatitis infection from the current 6–10 million cases to 0.9 million infections, and to reduce the annual deaths from chronic hepatitis from 1.4 million to less than 0.5 million by 2030. To reach these targets, countries will require a radical change in their hepatitis response, including strengthening health and community systems to deliver high-quality services to achieve equitable coverage, improved efficiencies and embracing innovation for acceleration.

In 2016, WHO developed testing guidelines for HBV and HCV. Advances in rapid detection technology have created new opportunities for enhancing access to screening and referral, as well as monitoring of treatment. This presentation examines a range of technological innovations associated with simplified and more affordable testing algorithms for HBV and HCV testing, including treatment monitoring, improved access to testing through self-testing of oral fluids, dried blood spots and point-of-care molecular assays. Multiplex and polyvalent platforms can be leveraged for use with HIV, HBV and HCV. Innovations in delivery through data connectivity and use of unmanned aerial vehicles to transport tests and dried blood spots and other supplies will allow expanded services to remote areas.

Symposiums

S5.3 Supporting Global Hepatitis Health Sector Strategy 09:00 Convention Hall C

Using Data Science to Find Weak Spots of Hepatitis C: Implications for Rational Vaccine Design

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An effective vaccine for hepatitis C (HCV) is still not available, although hope has emerged with the discovery of antibodies capable of neutralising diverse HCV strains. Nonetheless, HCV can evade known broadly neutralising antibody responses through mutation. To counter this challenge, an ideal vaccine would elicit antibodies that target those “weak spots” of the virus’s surface protein where mutations severely compromise the virus’s fitness.

In this presentation, a high-dimensional (or “Big Data”) data science approach rooted in machine learning will be described that allows estimation of the fitness landscape (fitness as a function of amino acid sequence) of the HCV envelope glycoprotein 2 (E2). We will demonstrate how the inferred landscape was validated through comparison with diverse experimental measurements, such as intrinsic fitness measurements performed in vitro and known antibody escape mutations. By mapping the fitness cost of mutations to the protein structure of E2, our model identifies regions that appear as “weak spots” associated with primarily high-fitness-cost mutations, and thus may serve as effective targets for eliciting a robust antibody response against. Moreover, integrating experimentally-determined binding information of antibodies with our model allows us to predict the effectiveness of antibodies in neutralizing diverse HCV strains. Altogether, our results can aid the rational design of an effective prophylactic HCV vaccine.

S6.1 Integrated Emergency Care for Older People 10:45 Convention Hall A

Identifying Frailty in Older Adults at the Front Door: Screening and Initial Assessment

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The initial evaluation of frailty proceeds in two related steps: screening, and assessment. Classically, screening happens when the condition being screened for is not rare, is serious, potentially can be ameliorated, and when intervention is less costly when done earlier rather than later. Each of these criteria is met in frailty screening. Screening tests typically are safe, simple, rapid and sensitive. Dozens of frailty screening tools exist, and often are interchangeable, when they meet these criteria and are feasible for local use.

Assessment tools aim to classify whether frailty is present. Some also aim to detect the factors contributing to frailty, classify the degree of frailty, and relate the presence of frailty to common frailty syndromes, such as delirium, immobility, falls, functional decline, social abandonment, and incontinence. This presentation argues for assessment methods which achieve each of these objectives. The reference criterion ("gold standard") of frailty assessment is the Comprehensive Geriatric Assessment. The goal of a CGA is a multidimensional care plan which, when enacted, has been shown in randomised controlled trials to offer benefit in terms of rates of people alive and at home at one year.

Many healthcare systems have failed to invest in physicians trained to conduct comprehensive geriatric assessments and formulate multidimensional care plans. In consequence, a central challenge now is how to use existing providers and information systems in ways that allow the benefit of this approach to be realised. Experience with systems such as an electronic frailty index, a frailty index based on common laboratory tests, and on having multiple providers collaborate to gather the information needed for a geriatric assessment will be reviewed. The emphasis will be on having as much of this information assembled as possible when patients first are seen for an adverse change in their health status.

S6.2 Integrated Emergency Care for Older People 10:45 Convention Hall A

The Silver Book – Quality Care for Older People with Urgent and Emergency Care Needs

Banerjee J
University Hospitals of Leicester NHS Trust, UK

The Silver Book represents a best practice guide for managing older people in medical crises in the first 24 hours of presentation irrespective of care setting. It was developed by 14 national organisations in England between 2010 and 2012. Since publication it has been downloaded over 200,000 times and cited in majority of national reports on care of frail older people in the National Health Service. The principles have been applied in many initiatives across the NHS and also formed the basis for a national quality collaborative to improve care in acute settings.

Symposiums

S7.1 Digital Connectivity in Healthcare 10:45 Convention Hall B

Social Media and Healthcare

Bevan H
NHS Horizons, UK

Social media has become an essential channel for healthcare leaders to learn, share and influence others. Every healthcare leader needs to invest in social media skills and prioritise time for social media in their schedules. We appreciate the increasing importance of social media but we also understand that globally, we are at the early stages of understanding the power and potential of social media to amplify change and improvement in healthcare. In this session, we will examine some of the most advanced social analytics currently available to see the potential of social media to be a catalyst for spreading knowledge and change in healthcare. We will consider the implications for our own social media practice. We will look at how successful healthcare improvement campaigns to have spread around the world and achieved maximum impact through the channel of social media.

Objectives

Participants will

(1) Understand the societal changes fueled by the digital revolution and social media

(2) Gain insight into the latest social media trends

(3) Appreciate the importance of influencing and connecting rather than broadcasting on social media

(4) Develop tips and tricks to enhance their influence and reach on social media

(5) Learn how to be a healthcare social media super-connector

Please bring your laptop, tablet or smartphone to this session so that you can participate fully in the interactive social media activities.

S7.2 Digital Connectivity in Healthcare 10:45 Convention Hall B

Virtual Services and Healthcare

Yip JWL
Academic Informatics Office, National University Health Systems Singapore, Singapore

Virtual healthcare services are an increasing phenomena in an app driven society. Teleconsult services are disrupting the traditional clinic appointment system in favour of an on demand model with televideo consults or telechats. The concept of a medical virtual store where appointments, medical reports, prescriptions, home nursing services and second opinions can be purchased from your mobile devices is fast becoming a reality. In Singapore, close to a million patient encounters have been scheduled using these platforms since its inception a year ago. Telemonitoring services where patients are monitored actively using internet enabled devices allow blood pressure medications and insulin to be titrated remotely are improving outcomes in specific patient groups. The sweet spot lies in the cost of deploying these technologies versus the measured benefits in helping to shape the future where the patient's clinic is the home.

S8.1 Bringing Changes to the Healthcare Services 10:45 Theatre 1

Capacity Issues, Models of Care in Northern Europe

Henriks G
Learning and Innovation, Sweden

During the 20th century, the Nordic countries, Denmark, Finland, Norway and Sweden, have realised four different but similar-looking welfare states, in which social services are distributed in an egalitarian and uniform way. The Healthcare systems have been hospital dominated but are now in a deep transition to more open and nearby service and delivery systems.

A number of new models of care that support local health communities dissolve these traditional boundaries and move towards a more integrated, patient-centred and sustainable delivery of care.

One of the models is “chains of care”, focusing on integrating process ideas, has been implemented over the past years. It focuses on two elements: patient-centredness and shifting care out of hospitals by strengthening the development of primary and preventive care; and reducing variations of quality of care across the country.

S8.2 Bringing Changes to the Healthcare Services 10:45 Theatre 1

Patient Centred Design (But Don’t Forget the Caregiver)

McConnell W
HOK, USA

The primary role of any healthcare institution, business or provider is care for the patient and to return them to health. As designers we can lose this prime directive in the course of designing and building hospitals and clinics for this purpose. Cost, complexity, time and multiple stakeholders can sometimes blur the vision which can result in a facility that fails to put the patient first.

Keeping the patient and their care as the primary driver of design will result in better outcomes, a more pleasant stay for the patient and their family. Through examples of design process, experimentation and built work it is my intent to share how patient centred design can provide a more healing environment that is supportive of the patient and family. Patient centred design will also create a facility with greater efficiency and support the care giver as well.

The examples will include built work in the United States and Asia. It will also include the evolution of the inpatient room and how through the construction of mock-ups and multi-generations of implementation have created a more efficient, pleasant and safe inpatient room. These examples will also show how patient centered design can drive the architectural form of the interior and exterior of the building thereby physically expressing this prime directive

Symposiums

S9.1 Hyperbaric Oxygen Therapy – Lesson Learnt 13:15 Convention Hall C

Hyperbaric Oxygen Therapy and How to Ensure the Success of Building a New Hyperbaric Oxygen Treatment Centre – The Australian Experience

Bennett M
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Introduction

Hyperbaric oxygen for therapeutic purposes (HBOT) remains a controversial modality. The primary challenge is one of skepticism. In effect hyperbaric physicians must make the case that they know something about how to treat their colleagues' patients that those colleagues cannot deliver. This is a delicate situation for a group pf practitioners who "own" a therapy rather than a suite of diseases. This presentation will outline the potential pitfalls when establishing a new service, along with strategies to deal with them.

Potential Pitfalls:

Plant and equipment: The chamber must be fit for purpose. This implies a rectangular treatment area with adequate room for the ingress of an Intensive Care Unit bed and equipment, two pressurised attendants and all the necessary monitoring. There should be room for multiple seated patients for routine therapy and adequate transfer lock area for emergency personnel and equipment. Ideally, at least one monoplace chamber should be available.

Personnel: The team must work closely and co-operatively. The facility will need physicians, nursing staff, clerical staff and technicians for the maintenance and operation of the hyperbaric systems.

Training: This is a highly specialised area of practice. All staff will need appropriate training, including regular updates. Any compressible staff will require monitoring of fitness to work under pressure, including monitoring for chronic effects of compression.

Patient facilities: It is common during planning to underestimate the facilities required for patient comfort as the service expands. Not only adequate changing and toileting facilities, but storage, waiting areas and access can be problematic. Of great importance is a clean and private wound care area.
Education: Both physicians and nurses will need to be articulate, respected and knowledgeable in providing information, encouragement and education to their peers outside the field.

Summary

There are unique challenges in establishing a new HBOT service. The initial investment is considerable and it is rational to invest sufficient time and money as to ensure appropriate use is made of these facilities.

S9.2 Hyperbaric Oxygen Therapy – Lesson Learnt 13:15 Convention Hall C

Hyperbaric Oxygen Therapy – Hong Kong's Experience

Leung J
Department of Accident and Emergency, Pamela Youde Nethersole Eastern Hospital, Hong Kong

Although Hyperbaric Oxygen Therapy (HBOT) is not a new modality of treatment, hospital-based facility has yet to be established in Hong Kong. A group of emergency physicians and intensive care unit physicians at Pamela Youde Nethersole Eastern Hospital has been working since 2010 to establish a new unit with Hyperbaric Oxygen Chamber on site. After years of preparation and planning, we shall have the first hospital-based Hyperbaric Oxygen Chamber in Hong Kong in 2018. In this presentation, some historical background, use of HBOT in different diseases in Hong Kong and our preparation and planning in setting up this new unit will be shared.

Symposiums

S10.1 Primary Care in Hong Kong 14:30 Convention Hall A

Vision and Future Development of Primary Care in Hong Kong

Lam C
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This year is the 40th anniversary of the Alma-Ata Declaration on Primary Health Care by WHO-UNICEF at the International Conference on Primary Health Care (PHC) in 1978 and the 10th anniversary of the WHO 2008 World Health Report "Primary Health Care – Now More than Ever. The Alma-Ata Declaration set the vision of health for all and identified PHC as the key to achieve this goal. The WHO 2008 World Health Report stressed the need of quality PHC that is equitable and responsive. Primary care in Hong Kong has come a long way since 1978 especially in the past decade since the WHO 2008 World Health Report coupled with the Hong Kong Healthcare Reform. Local research over the years has demonstrated primary care co-ordinated by the family doctor achieved the best outcomes in promoting a healthy lifestyle, access to primary care, reduction in accident and emergency attendance and hospitalisation, better patient enablement and more improvement in overall health condition. We have proven that multidisciplinary primary care can save lives as well as money in the care of chronic diseases. Quality primary care for all in Hong Kong should be our vision. To achieve this vision, we need to ensure everyone has a family doctor, every family doctor is enabled, empowered and engaged in providing best primary care, and primary care is adequately supported by the necessary multidisciplinary services and resources.

The Hospital Authority plays a key role in assuring quality primary care for all through the provision of sufficient family medicine training posts, inclusion of the personal family doctor in the care plan, leadership in service innovation, benchmarking performance indicators and being the safety net.

S10.2 Primary Care in Hong Kong 14:30 Convention Hall A

What Has Hospital Authority Achieved in Primary Care?

Chao DVK
Family Medicine and Primary Health Care Department, United Christian Hospital and Tseung Kwan O Hospital, Hong Kong

It has been two decades since the Hospital Authority (HA) embarked upon structured Family Medicine (FM) vocational training and developed primary healthcare services in the public sector in Hong Kong. Primary care services development within HA aimed at achieving seamless healthcare between hospital services and those in the community.

HA recruited a core team of Family Medicine specialists who were also accredited FM clinical supervisors. Planning of HA's Family Medicine training and related services were required following the formation of Central Coordinating Committee (Family Medicine). In addition to setting up FM and Primary Health Care Departments in all clusters, regular engagement of internal and external stakeholders including cluster and hospital management, as well as various specialty colleges, was crucial to the successful establishment of the FM training programme in HA.

Space, manpower and training capacity issues were major aspects in ensuring training and service developments on track. In the meantime, FM related primary healthcare services within HA were set up one by one, namely HA Staff Clinics and Family Medicine Specialist Clinics (FMSCs) to commence with, followed by the management transfer of General Outpatient Clinics (GOPCs) from Department of Health to HA, and development of new primary care programmes under the Government's Healthcare Reform Initiatives to enhance primary care. A basket of multidisciplinary services was launched successfully targeting patients with chronic diseases, especially those with hypertension and diabetes. In addition, a new concept of Community Health Centre was raised and supported by the Government, bringing together healthcare professionals from a different background to provide multidisciplinary services and patient empowerment at community level. With population growth and ageing related health issues, the demands for primary care and specialist services have been rising rapidly. FM has played an important gatekeeping role in enhancing the accessibility of public primary healthcare services and in relieving the burden of secondary care. GOPCs also have an important role in the public health arena, including government vaccination programmes and designated clinics activation against infectious disease outbreaks during public health crisis.

S11.1 Value Driven Healthcare 14:30 Convention Hall B

Better Quality through Leadership

Dennis C
Australian Council on Healthcare Standards, Australia

The importance of good leadership in healthcare quality improvement is acknowledged unquestionably.

However key findings following inquiries into high profile system failures, repeatedly raise issues about leadership and culture, accountability and responsibility and, systems for safety and quality. For example, Australia 2002: 'Lessons from the Inquiry into Obstetrics and Gynaecological Services at King Edward Memorial Hospital 1990-2000' identified that a lack of active involvement in important safety and quality issues at Board and hospital management levels had occurred over many years. The Hospital's leadership and management problems were evidenced by a negative work culture, non-existent effective support systems, inability to make important decisions affecting safety and quality and, non-compliance by senior staff with hospital policy.

Bundaberg Base Hospital (BBH) and Queensland Health made national headlines in May 2005 as a result of Dr Jayant Patel, a general surgeon employed at BBH, being named in Parliament by the local Member of Parliament, who was briefed by a whistle-blower. The inquiries and events that followed led to the resignations of the Queensland Minister for Health and the Director-General of Queensland Health; in BBH, the General Manager and the Director of Medical Services resigned, and the Director of Nursing was suspended.

In February 2013, the report of the independent inquiry by Robert Francis QC into events at Mid Staffordshire NHS Foundation Trust from 2005-2009, described leadership that was more interested in finance, targets and achieving foundation status – putting corporate self-interest ahead of quality care and patient safety.

The role of leadership in relation to instilling cultures of patient safety and high performance is critical. The presentation will explore this further in the context of high profile system failures and the lessons learnt and, sometimes not learnt, by health service leaders.

S11.2 Value Driven Healthcare 14:30 Convention Hall B

Delivering Value in Healthcare by Design

Yip JWL
Academic Informatics Office, National University Health Systems Singapore, Singapore

Incorporating value into healthcare begins design thinking principles of understanding the problem statement, defining the problem, ideating a solution, prototyping a solution and reiterative testing. Value-driven outcomes (VDO) seek to improve quality and outcomes for patients while rationalising the costs. Healthcare providers are used to the process of quality improvement but are seldom equipped with financial knowledge to drive cost optimisation. VDO sets up a framework to help organisation understand the drivers of cost in standardised procedures and to see variation among providers. It also creates a framework where quality is not only measured in terms of safety and appropriateness of care, but also puts patient's perception of experience and patient reported outcomes as a prime indicator of quality. The organisation needs to create an effective informatics solution to collect, aggregate and analyse patient data for measurement of financial and quality performance on a continuous basis and allow the clinical teams to embark on a virtuous cycle of continuous work improvement. In addition, cultural change management must occur as part of design cycle to ensure that these change processes are not punitive but positive motivators for self-improvement.

Symposiums

S11.3 Value Driven Healthcare 14:30 Convention Hall B

Quality Care while Managing Difficult Scenarios and Outcomes

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Miscommunication between patients and their healthcare providers is a well-recognised risk of poor quality healthcare services and medical litigations. Even experienced clinicians find it challenging to manage patients' unrealistic expectations and handle difficult communications after adverse scenarios and outcomes. The use of shared decision-making model and mediation (communication) skills to assist difficult clinical interactions has been advocated with encouraging responses. In the perspective of medical law and ethics, the movement towards open disclosure and the enactment of the Apology Legislation in Hong Kong may further enhance direct and candid communications following medical adverse events.

On the other hand, modern clinical management always involves multiple disciplines. In a mixed team of professionals, poor inter-professional communication is a definite risk to patient safety. By learning the experience from the aviation industry, the incorporation of standardised professional communication tools such as 'checklist' has been proven to improve clinical outcomes in high risks clinical practices.

S12.1 Engaging the Younger Generation 14:30 Convention Hall C

Using Technology as an Enabler for Learning

Tan R
Civil Service College, Singapore

The world now stands on the brink of the 4th industrial revolution that will fundamentally alter the way people live, work and relate to one another. The advance of technology is reshaping the world economy and jobs in its wake. In this context, technology advancements are also opening up pathways to cheaper, faster and more accessible learning for students and adult learners. Classrooms, lectures and textbooks are giving way to innovative new teaching methods enabled by technology. Mobile, bite-sized learning, virtual and augmented realities are but some of these new tools that are transforming the way people learn, work and perform. One of the major advancements is digital learning. Through digital learning, learners can experience more personalised content and enjoy greater access to quality content. Digital learning leverages on data analytics to measure a learner's performance in order to tailor learning content that is personalised to the individual. Digital learning, with its attributes of providing easy distribution and access of information, as well as the ability of aggregating and disaggregating content, can also support self-directed learning at work. This session features how the Civil Service College (CSC) of Singapore is leveraging on technology and digital learning to strengthen learning transfer and impact among the public officers in the Singapore Public Service. It shares the various applications of technology in adult learning in CSC. One specific example relates to the use of performance support tools such mobile learning app to curate micro-sized content for middle managers. The session also discusses the challenges faced by CSC in promoting technology-enabled learning in the Singapore Public Service context and suggests ways to overcome these challenges.

S12.2 Engaging the Younger Generation 14:30 Convention Hall C

How to Engage Younger Generation and How to Prepare Yourself for any Opportunities Arise

Chan B
Executive Council, The Government of the Hong Kong Special Administrative Region

In this presentation, the speaker will share his views on how to engage younger generation, with reference to his extensive public service experience in the past. The essence and gist on preparing oneself for opportunities in life will also be shared.

Special Sessions

SS4.1 Translational Nursing and Its Applications 09:00 Theatre 2

Expanding Nursing Research within Clinical Practice Settings: Partnerships between Universities and Hospitals to Improve Health

Saewyc EM
School of Nursing, University of British Columbia, Canada

University-based nursing researchers have often faced challenges in conducting clinically-based research with hospitals, in part because the demands for teaching and research take faculty away from regular practice within clinical settings. Similarly, nurses within hospital settings may struggle to conduct nursing practice-focused research, because they have expert clinical skills and important practice-based research questions, but may lack enough expertise in advanced research methods to be able to conduct clinically relevant research, or they do not have enough time in their role to dedicate to research. As well, nursing leaders in some clinical settings do not promote the importance of engaging in research for improving nursing practice, or administrative budgets do not support the staff in contributing to research. There is a growing call to address these barriers by promoting the development of clinician scientists, as skilled researchers embedded within clinical practice. But how do universities and clinical settings work together to achieve such roles, and promote nursing research involvement at all levels of healthcare within the clinical setting?

This presentation will describe several different strategies in Western Canada that have been used to foster an increase in nursing research capacity within hospital and community clinical settings, in partnerships with the University of British Columbia School of Nursing and different health authorities in British Columbia, Canada. These include: the development of a clinical “research challenge” approach that partners university researcher mentors, staff nurses and other health professionals in conducting small grant-funded research projects and pilots; creation of a clinician scientist university appointment track; and joint funding for clinically-focused nursing research professorships.

An Empowerment Programme on Self-management and Functional Recovery among Stroke Survivors: Empirical Effects and Translational Challenges

Sit J
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Background

Self-management (SM) after a stroke is a challenge as multi-faceted care needs and complex disabling consequences bring further hindrance to patient participation. A 13-week stroke patient empowerment intervention was implemented in an ambulatory rehabilitation setting to enhance their ability to participate in self-management for a better transition to community living.

Purpose

To investigate the effects of patient empowerment intervention on stroke survivors' self-efficacy in illness management, self-management behaviours and functional outcomes, and to explore their experiences and strategies used (if any) in participating stroke self-management.

Methodology

Two-phase sequential explanatory mixed methods design. Phase I (quantitative) assessed intervention effects on stroke participants' self-efficacy in illness management, SM behaviour and functional recovery, with participants randomly assigned to intervention (IG) or control (CG, usual rehabilitation programme) groups. Generalised estimating equations assessed between-group changes in outcome parameters over time at baseline (T0), three-month post-intervention (T1) and six-month post-intervention (T2). During phase two, semi-structured interviews (qualitative) explored stroke SM strategies and hindrance from participants' perspective.

Results

In Phase 1, a total of 210 (IG=105, CG=105) stroke participants (mean age = 69 years, 49% women, 72% ischaemic stroke, 89% hemiparesis and 63% tactile sensory deficit) enrolled in the study. Those in IG reported better self-efficacy in illness management three-month ($p=0.011$) and six-month ($p=0.012$) post-intervention; along with better self-management behaviours at all follow-up time points (all $p<0.05$). Those in IG had significantly better functional recovery (Barthel, all $p<0.05$; Lawton, all $p<0.05$), compared to CG. In Phase 2, content analysis revealed three categories of self-management strategies adopted, namely role perception, self-management strategies, and over-whelming and unpredictable experiences.

Conclusions

Stroke survivors could benefit from patient empowerment intervention which influences self-efficacy in illness management; improve self-management behaviour and functional recovery. Interview findings provide contextual information for a comprehensive understanding of stroke participants' experiences and strategies used in participating in stroke SM. Furthermore, patient empowerment intervention can be conducted in parallel with existing ambulatory stroke rehabilitation services and provide added value in fostering self-management of post-stroke and improve functional recovery in longer term.

Special Sessions

SS4.3 Translational Nursing and Its Applications 09:00 Theatre 2

A Transitional Care Programme on Self-care, Hospital Readmission and Mortality among Patients with Chronic Heart Failure: Empirical Effects and Translational Challenges

Yu DSF

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Aims

To determine the impact of nurse-implemented transitional care on readmission and mortality among Chinese patients with chronic heart failure (CHF).

Methodology

This randomised controlled trial recruited a total of 178 Chinese older patients hospitalised with CHF from a regional hospital in Hong Kong. The transitional care was conducted by a cardiac nurse, and included an in-hospital visit, two home visits and then regular telephone calls over nine months to provide tailored self-care empowerment, optimised health surveillance, prompt professional support and facilitation in community services utilisation. The control group received usual post-discharge care. Primary endpoints were event-free survival, all-cause hospital readmission and mortality during the nine-month follow-up. Secondary endpoints were length of hospital stay, self-care (maintenance, management, confidence and knowledge) and health-related quality of life (HRQL). Data were analysed using survival analysis with Cox regression and General Estimating Equations (GEE).

Results

The mean age of the subjects was 78.6±6.9 years, with 45% as male. There was no statistically significant difference in event-free survival, hospital readmission or mortality between TC and UC groups, although the reduced mortality risk in the TC group was close to reaching statistical significance [Adjusted HR = 0.45, 95% CI = 0.19−1.05, p=0.066]. Sensitivity analysis on the pre-protocol population regarding this primary outcome further suggested its survival benefit [Adjusted HR = 0.40; 95% CI = 0.17−0.93, p = 0.033]. The TC group was associated with a shorter median length of hospital stay [TC 7days (IQR=5−8 days) vs UC 13 days (IQR=7−18 days), p=0.006] and improved self-care and HRQL.

Conclusion

Despite no significant impact on event-free survival and hospital readmission, nurse-implemented TC demonstrated significant reductions in recurrent hospital stay and improvements in self-care and HRQL among Chinese patients with CHF. It may also have the potential to confer survival benefits.

SS5.1 Professionalism and Ethics 10:45 Theatre 2

Professionalism Teaching – from Medical School to the Hospital

Lau CS
Hong Kong Academy of Medicine, Hong Kong

The goal of medical education is to nurture the development of doctors with the professional attributes required for quality patient care. It requires the physician to serve the interests of the patient above his or her self-interest. Professionalism aspires to altruism, accountability, excellence, duty, service, honour, integrity and respect for others.

Cultivating professionalism, which may be dated back to the Code of Hammurabi (2,000 B.C.), is an important aspect of medical education. Much of this is to do with the high expectation that patients and the society have on the physician, but professionalism has been found to be associated with improved medical outcomes. Besides, the tenets of professionalism, focusing on desirable attributes to instil in practitioners, have been purposely devised strategies to re- invigorate medicine and increase public credibility.

A medical ethics and professionalism curriculum is most likely to result in sustained changes in reasoning and behaviour when it is longitudinal, such that early educational interventions are reinforced or advanced by subsequent exposures. Professionalism teaching begins in the undergraduate years and continues during resident and specialist training and beyond. It requires institutional leaders to authentically and publicly support such curriculum, with its cognitive base being taught explicitly. Learning environments and the expertise of faculty members, many of whom should be highly respected colleagues, should align with the institution's mission statement and professionalism precepts. Finally, a multitude of teaching and assessment pedagogies employed with particular emphasis should be placed on learning in the clinical setting, drawing on real day to day examples.

SS5.2 Professionalism and Ethics 10:45 Theatre 2

Training Strategy and Professional Development of Hong Kong Fire Services Department

Yeung AYK
Fire Services Department, The Government of the Hong Kong Special Administrative Region

The mission of the Hong Kong Fire Services Department (FSD) is to protect life and property from fire and other calamities. To better fulfil its mission to save those in distress and protect the community, the Department strives for continuous advancement in its services in the areas of firefighting, rescue, ambulance, mobilising and communication, and fire protection.

As society develops, fire service personnel encounters more challenging circumstances on all fronts such as conducting firefighting and rescue operations inside large-scale infrastructure, skyscrapers and underground facilities. To this end, the Fire and Ambulance Services Academy (FASA) was commissioned in January 2016 to provide comprehensive and sophisticated training to our firefighters, personnel of ambulance, mobilising and communications and workshop streams. FASA covers an area of about 158,000 square metres, and constructed at a cost of HK$ 3.5 billion. FASA marked a new era in the training development of the Hong Kong Fire Services Department.

To complement the commissioning of FASA, HKFSD also explores the establishment of a training accreditation mechanism for the knowledge and skills tailor-made for fire and ambulance services in Hong Kong. In moving forward with the departmental long-term training strategy, HKFSD also establishes a specialised and institutionalised Quality Assurance mechanism to set out clear and consistent Service Quality Standards and audit criteria, as well as enhancing the quality and standards of FS members.

It is hoped that the required skills and knowledge imparted to our members could meet the escalating operational and training needs. Our goal is to train those personnel as top-notch fireman and ambulanceman dedicated to serving the community and as a world-class exemplar of fire and ambulance training in future.

Masterclasses

M8.1 The Role of Family Medicine in Chronic Disease Management — 09:00 Convention Hall A

What Can Family Physicians Do in Managing Patients with Chronic Diseases in the Community?

CHAN AMW
The Hong Kong College of Family Physicians, Hong Kong

The knowledge of local community resources and versatility of family physicians are best suit to deal with chronic disease management in the community. Control of these non-communicable diseases relies on primary, secondary, tertiary and even quaternary prevention. Since the introduction of General Outpatient Clinic Public-Private Partnership Programme by the Hospital Authority in mid-2014, there is a gradual shift of chronic disease management from the public to private sector but the pace is slow. With an ageing population, the management of chronic diseases among the elderly in primary care setting will need appropriate resources allocation and manpower. The importance of primary care is undeniable in Hong Kong. However, less than 10% of local medical graduates have the opportunity to train in family medicine, well below the figure of developed healthcare systems in other countries.

M8.2 The Role of Family Medicine in Chronic Disease Management — 09:00 Convention Hall A

Disease Prevention in the Elders

Lee RSY
Elderly Health Service, Department of Health, The Government of the Hong Kong Special Administrative Region

Hong Kong is undergoing a demographic transformation with a significant increase in both the number and proportion of older people in the population. With an advancing age, the impact of non-genetic factors such as lifestyles increases. Many of these risk factors are potentially modifiable, either by individuals or change in their immediate environments. Therefore, preventive care especially health promotion is of paramount importance towards active ageing.

Older adults often have a wide range of healthcare needs which bring challenges to healthcare workers to develop integrated services. Family physicians, being the first point-of-contact, are in a prime position in preventive care for the elders. This includes health promotion, risk assessment, disease detection, follow-up care after medical conditions of patients are stabilised and after discharge from hospital. We are also coordinators to advise and direct patients for necessary and appropriate multidisciplinary and specialist healthcare services.

The Elderly Health Centres of the Department of Health aim to address multiple health needs of elderly by providing integrated primary healthcare services to them. Preventive, promotive and curative services are provided from a family medicine perspective using a multidisciplinary team approach. Elders aged 65 or above are eligible for enrolling as members of Elderly Health Centres. Enrolled members are provided with services of health assessment, counselling, health education and curative treatment. The Hong Kong Reference Framework for Preventive Care for Older Adults in Primary Care Settings published by the Primary Care Office of Department of Health also provides updated evidence-based recommendations with a view to enhancing the health of older adults. It provides a common reference to healthcare professionals in Hong Kong for continuing and comprehensive care for elders in the community.

M8.3 The Role of Family Medicine in Chronic Disease Management — 09:00 Convention Hall A

The Role of Family Medicine in Chronic Disease Management: What Can We Learn from Research Evidence

Wong SYS
The Jockey Club School of Public Health and Primary Care, The Chinese University of Hong Kong, Hong Kong

Hong Kong, like other economically developed regions, is experiencing population ageing. It is becoming common for people to have multiple chronic conditions with complex health needs. Therefore, there is an increasing role for family doctors to take the lead in looking after older adults with complex bio-psycho-social needs.

In this presentation, the epidemiology of multimorbidity and prevalent chronic conditions in Hong Kong from large population surveys will be presented.

The current health service utilisation and service gaps in health services for older people and among people with chronic conditions will be identified and compared with those of other developed countries using both quantitative and qualitative data. The current and potential future role of family doctors and healthcare models that integrate both social and medical care in addressing the identified health service gaps for older adults and people with chronic conditions will be discussed.

M8.4 The Role of Family Medicine in Chronic Disease Management — 09:00 Convention Hall A

The Role of Family Medicine in Chronic Disease Management: The Rising Importance to Healthcare

Liang J
Department of Family Medicine and Primary Health Care, Tuen Mun Hospital, Hong Kong

The role of family medicine is becoming more important in the modern days. Firstly, its role is changing rapidly in response to the challenges faced by all health services.

Secondly, the increasing prevalence of chronic diseases is one of the biggest challenges currently facing our health and social care systems. Owing to this, caring for patients with chronic diseases is essential in day-to-day practice of family physicians.

Family physicians have a vital role to play in supporting those living with chronic diseases because when many health professionals involved in providing support to patients with chronic diseases, family medicine can serve as a natural “home” ensuring continuity of care is maintained over time.

Family medicine’s holistic approach means that they are best placed to provide “whole person” care, taking into account patients’ social, mental, and physical wellbeing. As expert generalists, family physicians’ breadth of knowledge also means that they are able to support the increasing number of patients living with multiple chronic diseases.

Patients living with multiple chronic diseases mean more people are sick for longer and present more complex problems to their family physicians and primary care teams. This is rapidly becoming the norm among people with chronic diseases, especially in vulnerable populations.

Thus, family medicine will take an important role to combat chronic diseases as it provides a comprehensive approach to those with chronic diseases in the community. Family Physicians is working in multidisciplinary teams alongside secondary care, social care and others to deliver better patients outcomes.

In summary, care planning with stratification will be the norm: We move away from merely passively treating individual episodes of illness to better anticipating patients’ needs by planning and managing long-term care in the community. Care planning is the norm for all patients with chronic diseases. Most importantly, family physicians will focus on patients with several chronic diseases as it is rapidly becoming the norm among those with chronic diseases who are more in need for holistic person-centred care.

Masterclasses

M9.1 Clinical Genetics and Genomics – Application and Beyond 09:00 Room 221

Cost-effectiveness Analysis: Next Generation Sequencing versus Conventional Technologies

Wong KF
Department of Pathology, Queen Elizabeth Hospital, Hong Kong

The advent of next generation sequencing (NGS) or massively parallel sequencing technology enables us to interrogate the whole genome within a short period of time. It also allows prompt diagnosis of rare inherited diseases and rapid implementation of targeted therapy for cancers. It is now generally accepted that NGS can be used as a stand-alone test as the use of orthogonal validation assay (e.g. Sanger sequencing) as a reference may not be necessary because of the higher sensitivity and specificity of NGS. Still, it is important to examine the cost-effectiveness of such new technology before health policy makers can decide on how one should allocate limited healthcare resources to such emerging and ever-increasing demand for genomic test.

Cost-effectiveness can be defined by the mutation detection rate and how this will lead to a change in patient management such as the targeted therapy for cancer. It has been estimated that over 80% of sequenced cancer patients harboured at least 1 mutation, and 37% of them proceeded to receive therapy matching their genetic profile. The limiting factor is thus the availability of gene therapy for that particular disease based on patient's genomic information. It is noteworthy that the cost of treatment is often much higher than the cost of doing the test and thus may have an impact on the cost-effectiveness analysis. This may not hold true if NGS is used as a screening test for inherited diseases as the downstream cost is much lower.

NGS is an effective test for defining clinically actionable mutations in patients with poorly understood clinical disorders, rare inherited diseases and also in patients with cancers. It is, however, sometimes necessary to provide a multitude of tests, including standard karyotyping, chromosomal microarray and NGS, in order to end the diagnostic odyssey for both patients and clinicians.

M9.2 Clinical Genetics and Genomics – Application and Beyond 09:00 Room 221

Genetics and Genomics beyond Rare Diseases – The Future is Now

Chiu R
Department of Chemical Pathology, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong

Diseases caused by genetic or genomic abnormalities were once managed by rare individuals with highly specialised medical expertise. With the rapid expansion in knowledge in human genomics and the availability of powerful investigational tools, the use of genetic and genomic tests are now infiltrating many branches of medicine. For example, the risks of Steven-Johnson syndrome and toxic epidermal necrolysis could be mitigated by avoiding carbamazepine prescription in Asian individuals with HLA-B*1502 allele. Warfarin doses could be titrated according to the person's CYP2C9 and VKORC1 genotypes. Tyrosine kinase inhibitors are the first line drugs for patients with non-small cell lung cancer harbouring sensitising epidermal growth factor receptor mutations. Maternal blood DNA analysis allows for sensitive and specific, yet non-invasive, screening of fetal chromosomal aneuploidies. Non-invasive DNA-based screening of fetal single gene diseases which are individually rare but relatively common collectively, is now scientifically feasible and provides an opportunity for in utero or neonatal therapy. Circulating tumour-derived DNA testing has been shown in a prospective study to be effective in the detection of early nasopharyngeal carcinoma among asymptomatic community participants, with a demonstrable reduction in mortality. These are just some of the examples whereby DNA testing on relatively large target populations has demonstrable clinical benefits. Evidently, the incorporation of genetic and genomic information in medical care, aka. genomic medicine, is becoming a daily routine in many areas of medical practice now. How may we, as healthcare professionals, better equip ourselves to embrace this new paradigm?

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M10.1 Advances in Chronic Obstructive Pulmonary Disease Management 09:00 Room 423 & 424

Prevention of Chronic Obstructive Pulmonary Disease Exacerbations – International Guidelines and Local Applicability

Ko FWS
Department of Medicine and Therapeutics, Prince of Wales Hospital, Hong Kong

Chronic obstructive pulmonary disease (COPD) is a common disease worldwide with significant morbidity and mortality, and incurs an intensive expenditure of healthcare resources. Acute exacerbations of COPD (AECOPD) are defined by the Global Obstructive Lung Disease (GOLD) guideline as an acute worsening of respiratory symptoms that result in additional therapy.1 The GOLD guideline has provided a good resource for management and prevention of exacerbations. Infection and air pollution are some of the important causes of AECOPD.2, 3 According to the Hospital Authority statistical report 2015-2016, a total of 26,329 inpatient COPD-related discharges and deaths were recorded with 1,373 deaths.

While smoking cessation is the most important and effective intervention, other non-pharmacological interventions including disease-specific self-management, pulmonary rehabilitation, early medical follow-up, home visits by respiratory health workers, integrated programmes and telehealth-assisted hospital at home have been studied during hospitalisation and shortly after discharge in patients who have had a recent AECOPD.4 A local study on pulmonary rehabilitation programme for eight weeks for patients shortly after an exacerbation were able to lead to improvement in quality of life up to six months, but did not reduce health-care utilisation at one year.5 A randomised controlled trial in Hong Kong comparing comprehensive COPD programme versus usual care found that comprehensive COPD programme could reduce hospital readmissions for COPD and length of stay, in addition to improving symptoms and quality of life of patients.6

Pharmacological approaches to reduce the risk of future exacerbations include long-acting bronchodilators, inhaled steroids, mucolytics, vaccinations and long-term macrolides. Early treatment of long-acting anti-cholinergic agents for mild COPD may also help to decrease exacerbations.7,8

Further studies are needed to assess the cost-effectiveness of these interventions in preventing AECOPD.

M10.2 Advances in Chronic Obstructive Pulmonary Disease Management 09:00 Room 423 & 424

Update on the Use of Non-invasive Ventilation in Chronic Obstructive Pulmonary Disease

Chu CM
Department of Medicine and Geriatrics, United Christian Hospital, Hong Kong

Acute non-invasive ventilation (NIV) has been shown by multiple randomised controlled trials (RCTs) to improve arterial blood gases, reduce the length of hospital stay, Intensive Care Unit (ICU) stay, intubation and mortality in patients suffering from acute acidotic exacerbation of chronic obstructive pulmonary disease (COPD)1. NIV should be considered the firstline treatment in the majority of COPD patients presenting with acidotic exacerbation.

Other potential uses of NIV for COPD are as follows:

In intubated and mechanically ventilated COPD patients, NIV facilitates early weaning from mechanical ventilation, shorter ICU stay, reduced incidence of ventilator associated pneumonia and lower 60-day mortality2.
NIV may be used as the ceiling of treatment in COPD patients with acute respiratory failure who refused intubation, if the patients accept that they will have high rates of subsequent mortality and recurrent respiratory failure3. However, there is inadequate data to support its routine use for palliative intent at present.
Home continuous positive airway pressure reduces hospitalisation and mortality in the COPD/obstructive sleep apnea syndrome overlapped syndrome4.
NIV improves dyspnea and exercise tolerance when applied during exercise training5,6 by prolonging the duration of exercise-induced lactataemia7, and maybe a useful adjunct in pulmonary rehabilitation.

COPD patients who survive an episode of AHcRF due to COPD after treatment by acute NIV are characterised by high rates of readmission and life-threatening events8. There is conflicting evidence whether continuation of home NIV in this selected group of patients may reduce recurrent acidotic exacerbation9,10.

In severe COPD patients with persistent hypercapnia during stable phase (as an outpatient or after surviving an episode of acidotic respiration failure > two weeks), home NIV improves quality of life and survival when compared to medical treatment and oxygen11,12.

Masterclasses

M10.3 Advances in Chronic Obstructive Pulmonary Disease Management 09:00 Room 423 & 424

Update on Pulmonary Rehabilitation Programme

Wong WY
Department of Medicine, Haven of Hope Hospital, Hong Kong

Pulmonary rehabilitation (PR) is a comprehensive intervention that includes exercise training, education, and behavioural change, designed to improve the physical and psychological condition of people with chronic respiratory disease and to promote long-term adherence of health-enhancing behaviours. There is strong evidence that PR can improve exercise tolerance, dyspnea and health-related quality of life (HRQoL) of patients with chronic obstructive pulmonary disease (COPD). There is also evidence that PR can reduce hospital admissions and is cost effective. PR is an essential part of managing patients with COPD and the benefit of PR is observed in patients with mild to severe COPD. PR is also shown to benefit patients with other respiratory diseases including bronchiectasis, interstitial lung disease, pulmonary hypertension and lung transplantation. The international guidelines recommend that PR is delivered within four weeks of hospital discharge after an acute exacerbation of COPD (AECOPD). Early rehabilitation during AECOPD has been shown to produce short-term benefits. The low uptake and adherence to PR is a worldwide issue. Lack of public awareness and transportation are part of the reason. Alternative models of providing PR can be explored in order to increase the accessibility of PR. Studies on community-based and home-based pulmonary rehabilitation with varying degrees of supervision or support showed promising results. Tele-rehabilitation is also a promising way to deliver and improve the access to PR programmes. The benefits of PR often decline over 6 to 12 months, patients are encouraged to continue exercise after completion of PR in order to maintain the benefit. The efficacy of maintenance exercise training programme remains equivocal. Optimal model of a maintenance exercise programme is needed.

M11.1 Advances in Medicine 10:45 Convention Hall C

Update on Management of Idiopathic Thrombocytopenic Purpura

Wong RSM
Department of Medicine and Therapeutics, Prince of Wales Hospital, Hong Kong

Immune thrombocytopenia (ITP) is an immune-mediated acquired disease of adults and children characterised by a low platelet count (<100 x 109/L, transient or persistent) and an increased risk of bleeding. In the last decade, changes in our understanding of pathophysiology of the disorder have led to the publication of new guidelines for diagnosis and management of ITP and standards for terminology. Majority of patients may have the diagnosis of ITP established with a careful history and physical examination as well as review of the peripheral blood smear and minimal further testing. Corticosteroids, intravenous immunoglobulin and anti-D immunoglobulin have been the standard first-line treatment for many years and remain the recommended initial treatment for ITP in current practice guidelines but only a few patients have sustained response after cessation of treatment.

Splenectomy, other immunosuppressive agents (e.g. azathioprine, cyclosporin A, mycophenolate mofetil, rituximab) as well as thrombopoietin-receptor agonists (TPO-RAs) have been recommended for second-line treatment of patients with ITP. Splenectomy was the treatment of choice for decades, but the risk of infection and other post-operative complications should not be neglected. Rituximab has been used as an alternative to splenectomy but despite an initial response rates of about 40-60%, the long-term response rates have been limited. Long-term follow-up data on TPO-RAs have demonstrated good efficacy and safety in both adults and children.

M11.2 Advances in Medicine 10:45 Convention Hall C

Multiple Myeloma: The Past, the Present and the Future

Chim CS
Department of Medicine, The University of Hong Kong, Hong Kong

Multiple myeloma (MM) arises from neoplastic proliferation of plasma cells, and presents with hypercalcemia (C), renal failure (R), anaemia (A) and bone pain (B) or fractures (CRAB), hence a miserable disease. MM may be preceded by an asymptomatic stage, monoclonal gammopathy of unknown origin (MGUS). However, apart from MM, differential diagnoses of MGUS include solitary plasmacytoma, chronic lymphocytic leukaemia, lymphoproliferative disease and light chain amyloidosis, all of which carries different prognosis and requires different treatments.

The incidence of MM in Hong Kong is rising with >300 new cases/100,000/year. Transplant-eligible myeloma patients will receive induction, followed by autologous stem cell transplantation (ASCT), and then maintenance therapy. A decade ago, MM patients received induction with conventional chemotherapy, followed by ASCT with complete remission (CR) rate of 5% after chemotherapy induction, and 20% after ASCT. In the recent decade, major advances emerged with the advent of novel agents including proteasome inhibitor (PI) and immunomodulatory agent (IMiD). Induction with novel agent-based regimen generally comprises a triplet with a proteasome inhibitor (PI), an immunomodulatory agent (IMiD), and dexamethasone that results in a much higher CR rate of about 25% after induction, and up to 60-70% after ASCT. Moreover, the increase in CR rates translates into improvement of survival with median survival of about 10 years, compared with two to three years using conventional chemotherapy. However, despite a high CR rate, most patients eventually relapse. Active salvage therapy includes triplets composed of next generation PIs (carfilzomib or ixazomib), IMiD (lenalidomide or pomalidomide) and dexamethasone. On the other hand, monoclonal antibodies including daratumumab and elotuzumab are important breakthroughs in the treatment of relapsed MM. Besides, BCL2 inhibitors and exportin-1 inhibitor are promising new drugs. Furthermore, antibody conjugate (ADC) and bispecific antigen engager (BiTE) are also undergoing clinical trials. In addition, CAR-T cell has also been shown effective in advanced, refractory MM. Finally, minimal residual disease (MRD), a low level of cancer cells that escapes detection by conventional serological techniques, is being extensively studied for informing treatment strategies, or as a prognostic factor for survival. Therefore, with the advent of novel agents, antibodies, and cell therapy, MM is making great strides and the future is promising.

Masterclasses

M12.1 Management of Patients with Brain Metastases – A Paradigm Shift from Whole Brain Radiotherapy to Stereotactic Radiosurgery

10:45 Room 423 & 424

Development of the New Treatment Paradigm in Hospital Authority, Patient Profiles and Their Clinical Outcomes

Wong FCS
Department of Clinical Oncology, Tuen Mun Hospital, Hong Kong

The incidence of brain metastasis, either isolated or associated with disseminated involvement, has increased over time with the increase in the use of systemic treatment. Blood-brain-brain with poor drug concentration in central nervous system and ultimate drug resistance are the reasons for the former and latter, respectively. In the past, prognosis of patients with cerebral metastasis was extremely poor, with a median overall survival (OS) of 62 days in a local study performed in Tuen Mun Hospital (Wong et al, 2005). Whole brain radiotherapy (WBRT) has been the standard treatment for more than 40 years, and most patients were referred for best supportive care. With the progress in local treatment (including neurosurgery, and stereotactic radiosurgery (SRS)/radiotherapy) and a newer generation of systemic treatments, the intracranial control rate and survival have improved significantly. Median OS of patients treated with and without targeted therapies after SRS were 456 and 167 days respectively, according to a local review (Lam et al, 2015). Treatment decisions nowadays depend on prognostic factors. Assessment of performance status is the first step, as patients with poor medical conditions (and no druggable mutations) will not benefit from additional treatments besides best supportive care. The next step is staging or restaging, with biopsy or re-biopsy for selected patients. Local treatment is indicated for isolated brain "oliogometastasis" or "oligo-progression". The decision of neurosurgery or radiotherapy depends on the location, number and size of brain metastases. WBRT with systemic treatments is considered for disseminated involvement. The trend, however, is to avoid the former in order to reduce late toxicities in good prognostic group. The demand for imaging (in particular MRI brain and PET scan), histological and molecular tests, complicated neurosurgical and radiotherapeutic procedures, and systemic treatments to support the new treatment paradigm will be significantly increasing.

M12.2 Management of Patients with Brain Metastases – A Paradigm Shift from Whole Brain Radiotherapy to Stereotactic Radiosurgery

10:45 Room 423 & 424

Is It Cost-effective to Treat Brain Metastasis with Advanced Technology? Cost-effectiveness

Analysis of Whole Brain Radiotherapy, Stereotactic Radiosurgery and Craniotomy in Hospital Authority Setting

Lam TC
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Background

Brain metastasis is common among advanced cancer patients. Whole brain radiation therapy (WBRT) has been used as a standard treatment for decades to control intracranial disease; however, it is associated with poor overall survival outcomes and neurocognitive impairment. More aggressive focal therapies, including surgical resection or stereotactic radiosurgery (SRS), have been proposed for patients with good prognosis with superior outcomes in various randomised controlled trials. While these focal therapies are available in various Hospital Authority (HA) cancer centres, the complexity and high resources requirement of these therapies had raised concern on the cost-effectiveness of such treatment approach.

Methodology

A Markov model will be employed to evaluate the cost effectiveness of SRS, WBRT, and SRS+WBRT in patients with 1 or 2–10 brain metastases. Transition probabilities will be based on the JLGK0901 study and modified according to the recurrence rates observed in the Radiation Therapy Oncology Group (RTOG) 9508 and European Organization for Research and Treatment of Cancer (EORTC) 22952–26001 studies. The outcome of patients who received WBRT will be estimated on the data of Medical Research Council (MRC) QUARTZ study and local audit data. Costs of treatment will be based on the HA private patient charges which are on the gazette on 2013. Study end-points will include cost, quality-adjusted life years (QALYs), and incremental cost-effectiveness ratios (ICERs). The willingness-to-pay (WTP) threshold will be set at $87,362 per QALY (two times of GDP per capita of Hong Kong in 2016). One-way and probabilistic sensitivity analyses will be used to explored uncertainty with regard to the model assumptions.

Results

Study results will be reported at the Convention meeting. Cross comparison of QALYs and ICERs of other common cancer treatment regimes will be presented. The results will have important implications in oncology service planning, resources allocation and service efficiency audit.

M12.3 Management of Patients with Brain Metastases – A Paradigm Shift from Whole Brain Radiotherapy to Stereotactic Radiosurgery

10:45 Room 423 & 424

Filmless Operating Theatres Project: From Pre-operative Planning to Surgical Safety Enhancement in Hospital Authority

Yam KY
Department of Neurosurgery, Tuen Mun Hospital, Hong Kong

Stereotactic radiosurgery was introduced to Hong Kong in the mid-1990s. The adoption of this technology in Hospital Authority for the management of brain metastasis was not promising. The early radiosurgery systems were mainly adaptive devices like the cone arc or multi micro-leaves system; they worked as the second collimator of the linear accelerator. Physicists had to perform complicated quality assurance procedures after mounting the devices. The work was tedious and consumed loads of linear accelerator machine time. At the same time, radiosurgery had to be conducted as a frame base procedure. Patients were fixed by skull pins in a stereotactic frame before performing CT images. They had to bear the pain till the completion of imaging, radiosurgery planning and treatment, which might last for six to eight hours.

As more clinical evidence confirmed the safety and efficacy of radiosurgery on brain metastasis management, the demand increased and this triggered technological advancement.

Radiosurgery devices today are equipped with image guided radiation therapy (IGRT) capability. On board X-rays and/or cone beam CT of the linear accelerator provide confirmation of target localisation. The robotic couch allows fine adjustment and correction. Patients are immobilised by thermal plastic facemask and treatment becomes completely noninvasive. Latest planning software also allows simultaneously treatment of up to 10 metastases in a single radiosurgery session. Patients with multiple metastases can be managed by new technologies. The deleterious effect of whole brain radiation therapy can then be avoided.

We anticipate a significant increase in patient load in the near future as cancer incidence and cancer survivors are escalating. We shall discuss how our multidisciplinary team adopt and utilise modern technologies to provide a fast, safe, efficient and effective treatment paradigm for patients suffering from brain metastasis.

Masterclasses

M13.1 Advances in Intensive Care 13:15 Convention Hall A

How Can Information Technology Improve Intensive Care Unit Service Provision?

Chan KKC
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Proper intensive care of patient requires managing a high volume of data, arriving at high velocity, from various sources and with significant variability of noise in the data. Since the development of Intensive Care Unit (ICU) in the 1950s, various techniques have been employed to manage mass information. With the advancement of medical and information technology, sophisticated systems were developed to handle the increasing amount of information. The ICUs in Hong Kong are working towards a unified information system for managing ICU data. Through this system, we hope to generate descriptive, predictive and prescriptive intelligence for individual patient care and overall ICU management. This presentation will outline these possibilities using local and overseas experience.

M13.2 Advances in Intensive Care 13:15 Convention Hall A

Modern Blood Purification in Intensive Care Unit

Shum HP
Department of Intensive Care, Pamela Youde Nethersole Eastern Hospital, Hong Kong

The concepts underlying the pathogenesis of septic acute kidney injury (AKI) are complex. Continuous renal replacement therapy (CRRT) is commonly performed for patients with septic AKI in critical care settings. However, the use of low or normal volume continuous venovenous haemodialysis or haemofiltration failed to demonstrate any improvement of patient outcomes in severe sepsis. Extracorporeal blood purification therapies have been proposed to improve outcomes for patients with severe sepsis with and without AKI. The underlying principle is to remove excessive inflammatory mediators and/or bacterial toxins from the blood compartment in order to modulate inflammatory response. It involves various techniques including haemoperfusion/haemoadsorption, high adsorption haemofiltration, high volume haemofiltration, high cut-off membrane haemofiltration/haemodialysis, plasma exchange, and coupled plasma filtration adsorption. These techniques are gaining popularity in Europe and Japan. They are effective in clearing endotoxin or inflammatory mediators and are well tolerated. However, despite initial promising results, most blood purification techniques do not provide any sustainable mortality benefits. In severe sepsis, source control, early appropriate antibiotics and haemodynamic support are three most important treatment components. As a supportive treatment, blood purification techniques may not be able to significantly alter a patient's mortality. Since the outcome of septic patients has improved over time, much larger sample sizes will be needed to detect the relatively small effects of these new therapies on sepsis.

Designing a Modern Intensive Care Unit – from a Doctor's Perspective

Tsang HH
Intensive Care Unit, Kwong Wah Hospital, Hong Kong

Intensive care medicine emerged with the systematic management of poliomyelitis victims suffering from respiratory failure in the 1950s. Large numbers of patients had a life-threatening medical problem: acute respiratory failure, for which there was a high tech treatment strategy — the iron lung respirator. By placing these patients in a common hospital setting — among the earliest intensive care units (ICUs) — effective medical care could be administered more efficiently by experts using highly specialised equipment and providing comprehensive standardised care. Expansive open wards that housed the many poliomyelitis patients and their ventilators illustrated the systematic approach applied to the problem but these early "ICUs" bear little resemblance to modern ICUs.

Nowadays, ICUs are equipped with sophisticated life-supporting devices and specialists of multiple disciplines, where critically ill patients with multiple organ dysfunction are supported.

Designing a modern ICU is a time-consuming, complex, multi-phased, political, and costly exercise. Earlier ICU design placed substantial emphasis on monitoring and direct observation of patients in all ICU beds from a central station. Therefore, ICU beds were often in open areas separated only by curtains to be drawn as needed to provide privacy. This approach had clear trade-offs with patient privacy, comfort, and infection control.

In the modern era of critical care, more emphasis is placed on creating a healing environment of care. The form and function of the modern ICU room should be designed to meet the dual needs of effective patient care for life-threatening illness and injury and of a supportive environment for healing and well-being of patients, visitors, and staff.

The most substantial change in modern ICUs has been the progressive integration of information systems and the vast array of electronic devices. The goal is for comprehensive electronic integration of the patient with all aspects of care and transformation of patient-related data into useful and actionable information. Systems for data management and decision support of electronic medical record data are developed to enhance the quality and efficiency of patient care.

Masterclasses

M13.4 Advances in Intensive Care 13:15 Convention Hall A

Designing a Modern Intensive Care Unit – from an Architect's Perspective

Yam M
Simon Kwan & Associates Limited, Hong Kong

A primary objective of an Intensive Care Unit (ICU) design is to provide an optimal environment for healing, and an efficient and cost effective workplace.

Design guidelines provide a minimum prescriptive guidance for design requirements. Whilst this is important, enhanced department performance considerations are essential for a clinical best practice approach to design.

We believe that the physical environments we create and how they perform directly affect the physiology, psychology and social behaviours of those experience it, including:

- Patients – good healing environments will reduce the length of stay and improve outcomes
- Staff – an effective workplace will reduce medical errors, improve retention and efficiency
- Visitors – a supportive environment will encourage attendance and increase social support for patients.

The new ICU at Kwong Wah Hospital (KWH) is an example of modern healthcare delivery in a supportive and optimal physical environment. The ICU is located strategically on the 9th floor of a new 17-floor tertiary level hospital. It sits adjacent and has direct access to the Operating theatres. A dedicated hot lift is located adjacent to the ICU patient entry and connects it with departments within the hospital, while the Accident and Emergency Department just sits on the ground floor directly below the ICU. This gives rapid transfer of critically ill patients from other departments to the ICU.

The department consists of an ICU bed area containing 12 beds, including four isolation rooms. It sits with a High Dependency Unit for effective sharing of resources and support facilities between the departments.

Understanding workflow is critical to creating a clear functional design and locating traffic routes that are clear and direct for ease of wayfinding.

The KWH ICU department has been planned in four areas:

- The patient care zone
- The clinical support zone
- The Unit support zone
- The family/visitor support zone

Each of these zones shares common considerations:

- Infection control is prioritised, and infection risks minimised through good design principles.
- Flexibility for changing care practices and technology advances.
- Contained travel distances for different activities.
- Frequently needed spaces and equipment as close as possible to the site of use.
- Adherence to guidelines and codes, i.e. room sizes, fire exit requirements, travel distances, and smoke compartmentation.

M14.1 Evidence Based Perioperative Medicine 13:15 Theatre 2

Perioperative Medicine Service Model in a Local Teaching Hospital in Hong Kong

Ip KY
Department of Anaesthesiology, Queen Mary Hospital, Hong Kong

Conventionally, the care of patients who undergoes surgery has largely been confined to the surgical procedure and the disease being treated by that procedure. However, increasing evidence has shown that apart from surgical technique, there are many factors that could affect the occurrence and severity of postoperative adverse outcomes and organs dysfunction. So, the objective of perioperative medicine is to deliver the best medical practice to patients during the pre-, intra- and postoperative periods. This can be done by developing new clinical pathways or refining existing care pathways in different phases of surgery.

As anaesthesiologists, we have a central role in perioperative management of this patient group. Preoperatively, we can develop a proper risk stratification system and from the risk scoring system, we can identify important risk factors of adverse events and initiate both organ protection strategies and implement prohabilitation programmes for risk modification. Intraoperatively, we can continue to improve our care with best evidenced base practice. Postoperatively, we can take part in preventing and treating complications through developing different protocols according to the level of risks anticipated. These measures are especially important when we are facing an ageing population and the challenges that brought along with the older and sicker patients.

In this presentation, we will outline what perioperative medicine is and describe how the service is run in our hospital. We will also compare different models of care worldwide and finally hope to invite the audiences to discuss the future direction of development in this interesting and expanding subspecialty.

M14.2 Evidence Based Perioperative Medicine 13:15 Theatre 2

Patient Blood Management: Experience in a Regional Hospital

Wan RCC
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Patient blood management (PBM) is an evidence based, multidisciplinary approach to optimise the care of patients who might need transfusion. The various strategies in PBM can be categorised into three aspects – optimisation of red cell mass, minimisation of blood loss, and management of anaemia. Applying PBM in perioperative period can reduce the need for allogeneic blood transfusion, therefore reducing patients' exposure to associated risks. With less transfusion, the healthcare costs can be reduced and the shortage of blood products in Hong Kong can be alleviated. In this presentation, the experience of PBM in a regional hospital is discussed, with a particular focus on the use of intravenous iron in the management of pre-operative iron deficiency anaemia.

Masterclasses

M14.3 Evidence Based Perioperative Medicine 13:15 Theatre 2

Enhanced Recovery after Surgery in a Tertiary Cluster Hospital

Poon KS
Department of Anaesthesiology and Operating Theatre Services, Queen Elizabeth Hospital, Hong Kong

Enhanced Recovery After Surgery (ERAS) is a multimodal, multidisciplinary peri-operative care pathway designed to achieve early recovery for patients undergoing major surgery. It was initially developed for colorectal surgery patients, but its principles are now being applied to a wide range of surgical disciplines. The key elements of ERAS include optimisation of nutrition, avoidance of prolonged peri-operative fasting, standardised analgesic and anaesthetic regimens, and early post-operative mobilisation. These have been shown to reduce surgical stress response and end organ dysfunction, thereby resulting in major improvements in clinical outcome.

Benefits of ERAS can be clinically translated into reduction in surgical complications and shorter hospital length of stay without compromising patient safety. It has resulted in better health service utilisation as well as substantial improvement in overall healthcare cost. This presentation aims to review the best evidence of ERAS from the literature, covering the concept and its applications in general surgery.

M14.4 Evidence Based Perioperative Medicine 13:15 Theatre 2

Postoperative Troponitis – Can We Ignore a Rise in Cardiac Troponin after Surgery?

Chan M
Department of Anaesthesia and Intensive Care, The Chinese University of Hong Kong, Hong Kong

Postoperative myocardial injury represents a spectrum of etiologies that ranges from frank myocardial infarction to the more common, incrementally small, and isolated of postoperative troponin elevation. These small elevations, which exceed the 99th centile for a normal population, are commonly referred "troponitis". While myocardial injury is associated with increased mortality, it is unclear if "troponitis" also increases postoperative risks. The prevailing evidence would suggest that most physicians do not consider "troponitis" clinically important in that many of these patients lack an in-depth postoperative evaluation, treatment or follow-up. The purpose of this presentation is to review the implications of troponitis after major noncardiac surgery.

M15 Difficult Conversation – Interactive Case Discussion and Use of Applied Mediation Skills to Resolve Conflicts in End-of-life Care

14:30 Theatre 1

Difficult Conversation – Interactive Case Discussion and Use of Applied Mediation Skills to Resolve Conflicts in End-of-life Care

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End-of-life Care
Despite advances in medicine and enhanced care for patients, it is inevitable that there comes a time when end-of-life is reached when all appropriate curative therapies have been exhausted. This may not be a simple situation, regarding the timing and the decision on the appropriate end-of-life care. When is the beginning of the "end-of-life"? When is the end of "end-of-life" – the final weeks or days? It is important to provide appropriate and good end-of-life care, based on what is appropriate, feasible, and what matters most to the patient and family. End-of-life care is a continuous process, from the earlier stage to the final days. It may be a difficult and challenging process for healthcare professionals and patients and their family members.

Feeding
Of the many elements of end-of-life care, feeding challenges arise when oral intake becomes inadequate, or swallowing is unsafe. The usual options are to modify dietary texture or consider artificial nutrition and hydration. A competent patient can make an informed decision to refuse or consent to tube feeding. For those with advanced dementia, and lack of an advance directive, the decision burden falls on relatives and healthcare professionals to act in the best interests of the individual.

In Hong Kong, tube feeding is commonly chosen despite lack of evidence it confers benefits for survival or quality of life compared to oral feeding. It may relate to the widely held belief that providing nutrition is synonymous with caregiving and filial piety. To forego this is perceived as neglect and inducing suffering from hunger and thirst.

An alternative option is to provide comfort feeding through careful hand feeding. Comfort feeding means that oral feeding is only up to the point where it is not distressing to the patient. It also refers to a comfort-focused goal of care where the least invasive means of providing nutrition may be the most comfortable option. It avoids restraint use to prevent the feeding tube from being removed and allows tasting of favourite foods. Moreover, the act of feeding enhances the touch and bonding process between carer and patient. The quantity of food taken is not the prime focus.

Reframing the end-of-life discussion from foregoing actions such as "do not feed" or "do not resuscitate" to a positive framework for what can be done to improve quality of care not only broadens the conversation, but also aligns the goals of care, helps resolve conflicts and ethical dilemmas.

End-of-life Conversation
The conversation on end-of-life care is difficult – for healthcare professionals to initiate with the patient/family member and also between the patient and family members themselves. Often, the conversation is not conducted, and if conducted, it may not be timely, nor the contents are adequately covered.

End-of-life conversation should not occur just once but should be a continuous conversation with the patient and family to be revisited whenever the patient's condition or preferences change.

There is a need to enhance how healthcare professionals conduct end-of-life conversations with patients/family members and to assist patients/ families to come to terms with and to reach an agreement on appropriate end-of-life care.

Apply Mediation Skills
One can apply mediation skills to resolve conflicts that may arise when making end-of-life care decisions. The skill set includes nine elements under five key components:
Manage emotion: Empathy, anger management
Clarify issues: Active listening, questioning
Refocus issues: Reframe, paraphrase, summarise
Understand issues: Position and interest
Options on issues: Explore acceptable options by the parties.

Session content/format
Using a case scenario of a family with different views on "tube-feeding" for their father, the session will include (1) an interactive panel discussion on "End-of-Life Care and Conversation" including decisions about feeding problems and (2) a role play to introduce "apply mediation" skill to resolve conflicts.

Masterclasses

M16.1 Reduction of Perinatal Morbidity and Mortality 14:30 Theatre 2

Screening and Prevention of Pre-eclamptic Toxaemia

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Department of Obstetrics and Gynaecology, The Chinese University of Hong Kong, Hong Kong

There is now substantial evidence from the Aspirin for Evidence Based Preeclampsia Prevention (ASPRE) trial that the rate of delivery with preterm-PE can be reduced by >60% by aspirin started at 11-14 weeks' gestation in high-risk women. The ASPRE trial was designed to test the hypothesis that aspirin at a dose of 150 mg per night from 11-14 until 36 weeks' gestation, as compared with placebo, would result in halving the incidence of preterm-PE. In this multicentre, double-blind, placebo-controlled trial, women with singleton pregnancies identified as being at high-risk of preterm-PE, by means of the first-trimester combined test were randomised to receive aspirin (150 mg per night) vs. placebo from 11-14 until 36 weeks' gestation. Preterm-PE occurred in 1.6% (13/798) participants in the aspirin group, as compared with 4.3% (35/822) in the placebo group (odds ratio in the aspirin group, 0.38). However, there was no significant reduction in the rate of term-PE with the use of aspirin prophylaxis (odds ratio in the aspirin group, 0.95).

In a secondary analysis of data from the ASPRE trial, the effect of prophylactic use of aspirin during pregnancy in women at high-risk of PE on the length of stay in the neonatal intensive care unit (NICU) was evaluated. In the trial, 1,571 of 1,620 neonates were liveborn. The total length of stay in NICU was substantially longer in the placebo than aspirin group (1,696 vs. 531 days). This is a reflection of a significantly shorter mean length of stay in babies admitted to the NICU from the aspirin than the placebo group (11.1 vs. 31.4 days; a reduction of 20.3 days). In the total population, including those that were not admitted to the NICU, the mean length of stay was longer in the placebo than aspirin group (2.06 vs 0.66 days; reduction of 1.4 days). This corresponds to a reduction in length of stay of 68%.

Results from the ASPRE trial proves that effective screening for preterm-PE can be achieved with a combined test of maternal factors and biomarkers at 11-13 weeks and that high-risk women can take aspirin at 150 mg per night from the first trimester of pregnancy to significantly reduce their chances of developing preterm-PE, which is associated with a 70% reduction in the length of stay in the NICU for the neonates.

M16.2 Reduction of Perinatal Morbidity and Mortality 14:30 Theatre 2

Prediction and Prevention of Preterm Labour

Law LW
Department of Obstetrics and Gynaecology, Prince of Wales Hospital, Hong Kong

Preterm birth (PTB) with delivery before 37 weeks of gestation is one of the major causes of perinatal morbidity and mortality. In Hong Kong, the incidence of preterm birth is about 7 %. Among these preterm births, 70% to 80% are spontaneous, whereas the remaining 20% to 30% are iatrogenic either due to maternal or fetal health concerns.

Although the pathophysiology of spontaneous preterm labour or preterm prelabour rupture of membranes is complicated and diverse, multiple risks factors have been identified. Identification of patients at high risks of PTB before conception or early in pregnancy provides an opportunity for interventions that may help to prevent this complication.

Among those risk factors, maternal reproductive history including previous preterm labour and sonographic measurement of cervical length are two well recognised predictive factors. Various interventions like progesterone supplementation, cerclage pessary or surgical cerclage may help to prevent or delay preterm delivery in some of these high-risk groups. Multiple pregnancies are also more likely to have a preterm birth. Therefore, prevention and reduction of multiple pregnancies, particularly high-order multiple pregnancies, can also reduce the risks of preterm birth. A healthy lifestyle including cessation of smoking and drug misuse should always be stressed.

M16.3 Reduction of Perinatal Morbidity and Mortality 14:30 Theatre 2

Improved Management of Multiple Pregnancies

Leung WC
Department of Obstetrics and Gynaecology, Kwong Wah Hospital, Hong Kong

There is an increasing number of multiple pregnancies (mainly twins) over the decades, which is undoubtedly related to assisted reproduction technology. Hospital Authority (HA) territory-wide data showed 626 pairs of twins (1.6% maternities) in 2007, which was increased to 781 pairs (2.0% maternities) in 2016. The improved management of multiple pregnancies is best illustrated via the modern obstetric journey for twin pregnancy.

The new algorithms in prenatal diagnosis are also applying well to twin pregnancy. First trimester ultrasound to determine chorionicity is the most important starting point. For high order multiple pregnancies e.g. triplets, multifetal pregnancy reduction to twins can be offered to improve the overall pregnancy outcomes. Both the conventional 1st trimester Down screening (nuchal translucency for each fetus + maternal serum markers) and the contemporary non-invasive prenatal test with maternal plasma for free fetal DNA can apply to twin pregnancy. Routine fetal anomaly ultrasound around 20 weeks is essential although more time consuming for multiple fetuses. If one of the twins is affected by severe chromosomal or structural abnormalities, selective feticide with intrauterine intracardiac KCl injection, radiofrequency ablation, bipolar cord coagulation or umbilical cord ligation can be considered, depending on the chorionicity.

In general, twin pregnancy by itself is high risk – miscarriage, gestational hypertensive diseases, gestational diabetes mellitus, intrauterine growth retardation, preterm labour, fetal malpresentation at delivery, and others (except post-date). Specific complications in monochorionic twins include monochorionic monoamniotic twins (including the rare conjoined twins), twin reversed arterial perfusion sequence, twin-twin transfusion syndrome (TTTS), twin anaemia polycythaemia sequence and selective IUGR of one twin. Fetoscopic laser photocoagulation to divide the communicating vessels within the placenta for TTTS has been proven by randomised controlled trial. Special Twin Clinic is available in HA Obstetric Units to offer antenatal monitoring for these complications with corresponding prevention and treatment measures. The frequency of antenatal follow-ups plus ultrasound depends again on the chorionicity and the occurrence of complications, which also determines the gestation for delivery. Mode of delivery (Caesarean section vs. vaginal delivery) for twin pregnancy needs special consideration. Risk of postpartum haemorrhage is increased. Last but not least, breastfeeding should be encouraged.

M16.4 Reduction of Perinatal Morbidity and Mortality 14:30 Theatre 2

Improved Mortality, Morbidity and Early Neurodevelopmental Outcomes of Extreme-low-birth Weight Infants

Chee WYY, Wong RMS
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We studied the mortality, morbidity and early neurodevelopmental outcomes of the cohort of infants born with birth weight less than 1,000 grams born at Queen Mary Hospital from year 2008 to 2015. Perinatal and outcome data were collected from Vermont Oxford Network Database. Outcomes of neurodevelopmental assessment performed at Duchess of Kent Children's Hospital were retrieved from the Clinical Management System. A total of 217 infants were born during the eight-year study period, 176 survived and among them 143 infants underwent neurodevelopmental assessment at corrected age of 18-22 months. 40 (28.0%) of them has neurodevelopmental impairment, which was defined as either one of the followings: (1) cerebral palsy; (2) profound visual impairment; (3) profound hearing impairment; (4) Griffiths scale scores <2 SD overall or in any of the subsets. We compared these data with the published data from our earlier cohort of ELBW infants born from year 1993 to 2002. Overall survival rate has improved significantly from 71.4% to 81.1% (p=0.02) over these two periods with greatest improvement seen in infants with birth weight 500-750 grams. More infants received antenatal steroid in our current cohort and fewer infants were born with first Apgar score <3. There were significantly fewer infants with severe complications of intraventricular haemorrhage (grade 3 or 4) and necrotising enterocolitis. Duration of mechanical ventilation was also shorter and length of hospital stay dropped from average of 110 days to 82 days. More encouragingly, cerebral palsy rate has dropped significantly from 13.4% to 4.2% (p=0.01), visual impairment rate from 10.3% to 2.1% (p=0.01), rate of having overall Griffiths development score < 2SD from 16.7% to 7.7% (P=0.04). Our study has shown that over last 20 years with advancement of perinatal and neonatal intensive care support, both the survival and quality of survival of these ELBW infants has improved significantly.

Parallel Sessions

PS5.1 Use of IT to Improve the Quality of Healthcare 09:00 Theatre 1

Filmless Operating Theatres Project: from Pre-operative Planning to Surgical Safety Enhancement in Hospital Authority

Yam KY
Department of Neurosurgery, Tuen Mun Hospital, Hong Kong

Stereotactic radiosurgery was introduced to Hong Kong in the mid-1990s. The adoption of this technology in Hospital Authority for the management of brain metastasis was not promising. The early radiosurgery systems were mainly adaptive devices like the cone arc or multi micro-leaves system; they worked as the second collimator of the linear accelerator. Physicists had to perform complicated quality assurance procedures after mounting the devices. The work was tedious and consumed loads of linear accelerator machine time. At the same time, radiosurgery had to be conducted as a frame base procedure. Patients were fixed by skull pins in a stereotactic frame before performing CT images. They had to bear the pain till the completion of imaging, radiosurgery planning and treatment, which might last for six to eight hours.

As more clinical evidence confirmed the safety and efficacy of radiosurgery on brain metastasis management, the demand increased and this triggered technological advancement.

Radiosurgery devices today are equipped with image guided radiation therapy (IGRT) capability. On board X-rays and/or cone beam CT of the linear accelerator provide confirmation of target localisation. The robotic couch allows fine adjustment and correction. Patients are immobilised by thermal plastic facemask and treatment becomes completely noninvasive. Latest planning software also allows simultaneous treatment of up to 10 metastases in a single radiosurgery session. Patients with multiple metastases can be managed by new technologies. The deleterious effect of whole brain radiation therapy can then be avoided.

We anticipate a significant increase in patient load in the near future as cancer incidence and cancer survivors are escalating. We shall discuss how our multidisciplinary team adopt and utilise modern technologies to provide a fast, safe, efficient and effective treatment paradigm for patients suffering from brain metastasis.

PS5.2 Use of IT to Improve the Quality of Healthcare 09:00 Theatre 1

Digital Tools to Enhance Clinical Care: Today's Offerings and Tomorrow's Possibilities

Ho K
Faculty of Medicine, University of British Columbia, Canada

This presentation will highlight the rapid development of digital tools in health, and how physicians and health systems can take advantage of these tools to enhance patient care and outcome, and health system effectiveness and cost effectiveness. Participants will:

(1) Understand the general public's interests and desires of digital health tools.

(2) Identify ways that health professionals can use these tools for improved patient care.

(3) Conceptualise how policy makers and senior health administrators can leverage these tools for health system effectiveness in care and cost effectiveness.

(4) Explore ways to take action in introducing technologies into health system implementation.

PS5.3 Use of IT to Improve the Quality of Healthcare 09:00 Theatre 1

Big Data and the Future Hong Kong Healthcare Cloud

Cheung NT
Information Technology and Health Informatics Division, Hospital Authority Head Office, Hong Kong

We have all heard buzzwords such as Big Data, Mobile Apps, Cloud, Internet of Things and Smart City. These technologies are revolutionising many aspects of our lives, but how will they affect healthcare, and the Hospital Authority (HA) in particular? This presentation will try to shed some light on this question, discussing how the 2017-2022 HA IT Strategy will make use of such new technologies to improve healthcare delivery in Hong Kong.

Parallel Sessions

PS6.1 Leadership in Nursing 10:45 Room 221

Sharing on the Clinical Attachment at the Johns Hopkins Hospital in US

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Department of Surgery, Queen Mary Hospital, Hong Kong

Introduction
The Johns Hopkins Hospital, established in 1889, has been ranked number one in the United States. It is the only hospital in history to rank first in the nation for 22 years by the US News and World Report. The Johns Hopkins University School of Nursing (JHUSON) is part of the Johns Hopkins University. It is one of the nation's oldest schools for nursing education, ranking the second in the nation. The school's mission is to provide leadership to improve healthcare and advance nursing profession through education, research, practice, and service.

The Johns Hopkins Hospital was the first healthcare organisation in Maryland to receive Magnet designation for excellence in nursing practice from the American Nurses Credentialing Center.

Objective
To enhance leadership skills of managerial staff.

Methodology
Six nurses of managerial levels including Department Operations Managers, Senior Nursing Officers, Nurse Consultant and Ward Manager attended a 4-week Overseas Corporate Scholarship Programme for Leadership at the Johns Hopkins Hospital in Baltimore of United States in November 2015. There was an orientation programme on the first week, followed by two weeks of clinical attachment to individual interested departments/clinics/specialties. Luckily, we had a chance to attend a five-day Patient Safety Certificate Programme with many healthcare professionals from different countries attended. Each of us had to present and evaluate at the end of the programme.

After the four-week programme for Leadership at the hospital, we were happy to share what we learned with our colleagues and friends. In addition, we applied what we learned into our clinical setting in order to enhance our patients' safety.

Results
All of us successfully completed the programme with Certificate awarded. We thanked our shadows and organising committee for their positive feedbacks and unfailing support.

Conclusion
The four-week programme was very fruitful. It not only enriches our vision, but also empowers our networking!

PS6.2 Leadership in Nursing 10:45 Room 221

Leadership in Clinical Setting

Tsang LF
Nursing Services Division, United Christian Hospital, Hong Kong

Magnet hospitals associated with superior patient outcomes and higher job satisfaction have become a coveted honour that attracts nurses to work in The Mount Sinai Hospital, US. A total of four nurses from different backgrounds of various acute Hong Kong public hospitals visited the hospital between 31 October and 18 November 2016 to share their experience and wisdom as not just have a stable nursing workforce, but also attain excellence in nursing care. Through meeting with different nurse leaders and observation in clinical areas, some attributes of a successful leader can be identified such as being ready for striving changes with a transparent communication with subordinates and peers; being able to figure out directions and well utilise succinct policy to address the triggers from clinical problem and patient experience; with a caring mind in building a positive practice environment to staff and encouraging creative thinking; increased innovation in their clinical setting; and with the capability to influence others through tangible and intangible ways. These attributes of leader will bring about a prominent service and high staff satisfaction. Other areas such as quality and safety, communication, and staff professional development and training are also important to be adapted for local practice.

Experience at the Royal Free London National Health Service Foundation Trust

Ng SH
Department of Radiology, Tuen Mun Hospital, Hong Kong

The author attended the Overseas Corporate Leadership Training of Hospital Authority at The Royal Free London NHS Foundation Trust, London, United Kingdom, and was one of the delegates of the whole group consisted of eight nurse leaders including Department Operation Managers, Nurse Consultant and Ward Managers from various specialties and hospitals. The training period was from 10 October to 28 October 2016. The objectives of this overseas programme are to broaden the perspectives in healthcare system and to build up leadership competency for nursing leaders. The training also targeted on active participation in leadership and interdisciplinary collaboration to improve management and leadership in the department.

The Royal Free London NHS Foundation Trust is one of the UK's largest leading teaching and research hospitals and is a member of the world-renowned National Health Service (NHS). They have established programmes to ensure continuous quality improvement by setting up Quality, Innovation, Productivity and Prevention (QIPP) programme to enhance efficient and effective quality care in all fields and to eliminate financial burdens.

For staff development, there are different levels of programmes in different formats for staff at all levels to develop themselves. One of its renowned programmes is the leadership toolkit adopted from the London Leadership Academy, which rendered leadership training for different level of staff. The programme comprises a bundle of organised clinical observations, workshops and lectures.

After this training, all members of the Hong Kong delegates have learned tremendously through the on-site exposure, discussion with experts and sharing of updated knowledge.

Parallel Sessions

PS7.1 Facing the Challenges in Primary Care 13:15 Convention Hall B

Optimising Prescribing in Primary Care in the Face of Multimorbidity and Polypharmacy

Guthrie B
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Multimorbidity is increasingly common because populations are rapidly ageing in many countries, and because better healthcare has improved survival from acute conditions. Polypharmacy is also increasingly common, partly driven by clinical guidelines that typically make "whole population" recommendations for treatment which are individually rational but often cumulatively irrational in someone with multiple long-term conditions. Health services in most countries are dominated by specialist care which is often poorly suited to optimise prescribing in people with multimorbidity. Balancing benefits and risks of treatment in people with multimorbidity and polypharmacy is difficult because research commonly excludes this population, particularly clinical trials of treatment effectiveness. This presentation will describe the epidemiology of multimorbidity and polypharmacy, the problems this poses guideline developers and clinicians, and an approach to care drawing on the UK National Institute for Health and Care Effectiveness Multimorbidity clinical guideline.

PS7.2 Facing the Challenges in Primary Care 13:15 Convention Hall B

Bringing Health and Social Care together to Improve Health and Wellbeing

Wittenberg R
Personal Social Service Research Unit, London School of Economics and Political Science, UK

Many countries have been seeking to improve links between healthcare and social care. Care systems and definitions of services differ between countries, but the fundamental issue is similar. The challenge is to promote coordinated care across the spectrum of services concerned with the diagnosis, treatment and continuing management of health conditions and services concerned with helping people with personal care tasks so that they can live as independently as possible. In the UK we refer to the latter as social care.

There are two main reasons why bringing health and social care closer together is a policy priority. First, the wellbeing of service users who require both health and social care is best served if the care they receive is well co-ordinated and person-centred to meet their specific needs holistically rather than centred on the way the system is organised. Second, there is a strong belief that coordinated services are more efficient, especially in preventing or reducing need for long-term care and in reducing the number of avoidable hospital admissions and delayed hospital discharges.

There are several challenges to bringing health and social care closer. They may include: differences in formal accountability for healthcare and for social care, especially where responsibilities are divided between different agencies; funding systems which give healthcare agencies an incentive to shift costs to social care and vice versa; differences in professional culture and ethos between staff working in healthcare and social care.

A number of approaches can be adopted to address these challenges. Some relate to high level organisational issues around the planning and financing of services and others relate to frontline issues concerning the delivery of care to individuals. They span a range from improved dialogue through joint planning, joint funding and joint commissioning to fully integrated services.

The evidence on what works to achieve more cost-effective care systems through closer links between services is limited. There is a need for better evidence to inform policy on this topic.

PS8.1 Medical-social Collaboration 13:15 Theatre 1

A Paradigm Shift in Elderly Care – from Hospital to Community

Kng CPL
Department of Geriatrics, Ruttonjee and Tang Shiu Kin Hospitals, Hong Kong

Increasing life expectancy is a celebration of good health and social care. Yet these services have become increasingly burdened by the prevalent frailty and multi-morbidity which parallel ageing. Older person with complex needs often encountered with multiple providers are characterised by duplication and gaps in care. In times of need, it is daunting for the older person or their carer to navigate the maze of community services, and easier to rely on hospital services.

In this session, our long journey from a hospital-centric paradigm towards community-based person-centred care will be shared. The framework consists of community platforms led by clinicians with a shared vision for seamless care delivery. Within these platforms, partnerships are forged between Hospital Authority's clinicians, transitional care teams, community nursing, patient resource centres with external partners involving social and health sectors, non-governmental organisations and private operators. Platforms and structures provide opportunities for mutual information exchange, reducing duplication and filling gaps through a coordinated approach by different care providers.

Good elderly care has traditionally adopted an interdisciplinary team approach. To face the silver tsunami, great elderly care must further take on the challenge of embracing cross-sectoral partnerships for sustainable and holistic outcomes.

PS8.2 Medical-social Collaboration 13:15 Theatre 1

Medical-social Collaboration in End-of-life Care – The Hong Kong West Experience

Luk J
Department of Medicine and Geriatrics, TWGHs Fung Yiu King Hospital, Hong Kong

Older people tend to have multiple co-morbidities. One prospective study revealed that one-year mortality of older people with advanced dementia living in residential care homes (RCHEs) was 34%. In order to foster better end-of-life (EOL) care for older people living in RCHEs, the Hong Kong West Community Geriatric Assessment Team (HKW CGAT) piloted the EOL Programme for RCHE in collaboration with two RCHEs in 2009. In the programme, patients/family members could select one of the two pathways, specifically the Hospital Pathway and Accident and Emergency Department (AED) Pathway. In the Hospital Pathway, elderly would be clinically admitted to a geriatric step-down hospital (instead of an acute hospital) which was suitable for EOL care via an expedited route. In the AED Pathway, elderly would stay in RCHE as long as possible with support from the RCHE staff and EOL team of HKW CGAT. In October 2015, HKW CGAT was one of the four teams to implement the Hospital Authority programme "Enhanced CGAT Services for EOL care in RCHEs" in Hong Kong.

In this presentation, the experience of medical-social collaboration between HKW CGAT and RCHEs in the implementation of the EOL programme will be shared. The model of "12 Share" (12 S) in medical-social collaboration will be discussed. The 12S model includes share goals and values, share knowledge and information, share programme development, share governance, share manpower and resources, share care, share risk and responsibility, share training, share program promotion, share monitoring and auditing, share researches, share outcomes and rewards.

Parallel Sessions

PS8.3 Medical-social Collaboration 13:15 Theatre 1

Medical-social Collaboration in Supporting Carer: A Service Experience in Hong Kong East

Ma LH
Community Rehabilitation Network (Kornhill Centre), The Hong Kong Society for Rehabilitation, Hong Kong

It is a recent trend that development of medical and social collaboration in supporting carers and patients is considered in both healthcare and social welfare systems. Patients, carers, and healthcare system would be benefited from such kind of collaboration.

From 2011, a project on SMARTCare movement was launched by The Hong Kong Society for Rehabilitation. It was designed to improve the well-being of chronic illnesses carers and provide an early intervention support through medical and social collaboration since 2012. With strategic partnership and support from the Hospital Authority Hong Kong East Cluster, an early intervention support and referral system, a carer collaborative platform, and a Carer Community Empowerment Service were introduce to build up an effective network for carers in our community.

In this talk, our service experience in supporting carer through medical-social collaboration will be shared.

PS9.1 Innovative Nursing 13:15 Room 221

Transition Care for Paediatric Patients with Chronic Illnesses to Adulthood

Lau SL
Department of Paediatric and Adolescent Medicine, United Christian Hospital, Hong Kong

Adolescents with chronic illness face challenges in social adjustment, changes in life styles and disease self-management etc. Transition care is an important process to address their bio-psycho-social needs from child-centred to adult-oriented healthcare system. Poor transition results in suboptimal health outcomes. A Transition Care Programme has been in place since 2011 for patients with diabetes, Beta Thalassemia Major and is extended to patients with epilepsy in 2018.

Programme content includes ongoing assessment, counselling, peer group therapy and a post-transition phone evaluation. A Transition Assessment Booklet is used in individual interviews to evaluate skills in disease management and self-awareness of independence. The booklet is part of the patient record for continuity of care in adult service. An educational tool ''My Health Passport'' is tailored made for different diseases to facilitate patient's understanding of the disease through discussion with adolescent nurse. Patients and caregivers' perception of the usefulness of the individual counselling part were reflected by a questionnaire-based survey from 2011 till 2018.

A monthly peer support group was introduced as part of the Diabetes Outpatient Clinic to equip adolescents with skills and knowledge in negotiating the path from paediatrics to adult service. This support group led by nurse and actively participated by adolescents covers life skill issues such as stress handling, friendship etc. with reference to disease proper. A post group questionnaire-based evaluates the group effectiveness. A post-transition phone survey is conducted six months to one year after transition to explore their confidence in managing illness, treatment adherence etc.

Results of the questionnaire-based and phone follow up evaluation show positive feedbacks from adolescents and caregivers. This programme bridges the gap between paediatrics and adult service for patients with chronic illnesses.

PS9.2 Innovative Nursing 13:15 Room 221

Use of a Locally Developed Novel Silicone Cannulation Model to Enhance Patient Safety in Extracorporeal Membrane Oxygenation

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Introduction
Extracorporeal Membrane Oxygenation (ECMO) is a high risk life-saving technology. Physicians must be competent in ultrasonography-guided ECMO cannulation but the required skill is more advanced than that for usual insertion of central venous catheter. Any procedural error may result in fatal complications.

Methodology
We designed a prototype model for ECMO cannulation training in 2015. The cannulation model was made of platinum-catalyzed silicones. In 2017, an ECMO cannulation simulation system was created to enhance the simulated blood vessel anatomy, venous compressibility and product durability.

Results
Our model is the first and the only cannulation model in the world designed particularly for training of ultrasonography-guided ECMO cannulation. The model had been on trial in physician training courses in Hong Kong, Qatar, Japan and Singapore in these two years. 78 clinicians were trained in the courses in Hong Kong. Mean product evaluation rating among clinicians was 4.53±0.60 on a 5-point scale (high rate implied high realism). Mean perceived confidence score of participants before and after cannulation workshops were 4.3±2.4 and 7.1±2.1 on a 10-point scale ($p<0.01$). Mean perceived competency score of participants before and after cannulation workshops were 4.6±2.9 and 6.8±2.3 on a 10-point scale ($p<0.01$). For the intensive care units in Hong Kong which adopted its use in the training programme, major incident related to ECMO cannulation was reduced to zero. Based on unpublished ECMO data, we estimated that the relative risk reduction is 88.8% and the number needed to treat is 12.5 per year. The cost for each cannulation model was USD$100 and it could withstand multiple punctures with large bore ECMO cannulas.

Conclusion
Ultrasonography-compatible silicone ECMO cannulation model can replace animal model for physician training, skill enhancement and competency assessment. It can simulate various body sites and incorporate into different ECMO cannulation situations according to training needs. This technology is replicable, cost-effective and can significantly enhance patient safety.

Parallel Sessions

Horticulture Group to Enhance Psychiatric Rehabilitation

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Introduction

Horticultural activities provide positive benefits to psychiatric rehabilitation by improving patients' cognitive abilities and social skills, reducing their stress, and reducing their self-harming/violence behaviour tendencies. Recovery model is a collaborative treatment approach and targets both symptom remission and functional elements such as quality of life and social functioning. Recovery-oriented practice and person-centred approach are the main foci at the Shatin Hospital.

Objectives

To enhance the quality of life of psychiatric patients during hospitalisation; (2) to promote a sense of satisfaction, pleasure and social interaction; and (3) to promote in-reach services for psychiatric patients and volunteers.

Methodology

Project funding was supported by Hospital Authority Quality of Care Project. Horticulture activities for male adult psychiatric inpatients were conducted on weekends from 1 September 2016 to 31 December 2016, and each session was facilitated by at least one nurse and one supporting staff. Outcomes were assessed pre- and post-intervention via the Brief Psychiatric Rating Scale, individual care plan and a patient satisfaction form survey.

Results

67 patients from two male adult psychiatric wards were recruited to attend the horticulture group. Average BPRS were 29.6 and 23 in pre- and post-test respectively. The findings of the project demonstrated that all 18 items BPRS had significantly improved: average anxiety symptom significantly reduced from 2.6 to 1.7; average depressive mood reduced from 2.1 to 1.5. Individual care plan included patients' reasons for contents of participation, expectations and clinical progress.

Conclusion

Through horticultural activities the overall clinical outcomes of psychiatric patients undergoing rehabilitation were improved; it was in line with our pledge to enhance the quality of patient care and to instil hope, stabilise mood, promote empowerment, engagement and peer support through a holistic approach.

An Innovative Measurement in Musculoskeletal Rehabilitation Using 3D Motion Analysis

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Low back pain (LBP) is the most common condition referred to adult physiotherapy outpatient department (OPD). Movement analysis by therapists forms an integral part of our assessment, together with other primary outcome measures such as Numeric Pain Rating Scale (NPRS) and Roland Morris Disability Questionnaire (RMDQ). Clinical measurement of lumbar motion has traditionally been focused only on the range of motion (ROM). However, movement dysfunctions associated with LBP are more profoundly displayed in angular velocities and accelerations compared to ROM. Impaired movement pattern, especially manifests in decreased velocity in forward bending has been consistently found in various studies. Findings of a recent study conducted in our centre showed a significant reduction in velocity, aberrant pattern of centre of pressure (COP) and electromyography (EMG) of the lumbopelvic muscles in people with LBP when performing forward bending tasks. However, routine application using 3D motion capturing system (Vicon system) for objective movement analysis is practically difficult in demanding clinical settings. To overcome this challenge, we explored the applicability of a handy and portable industrial-grade tri-axial inertial sensors (the LORD micro-strain 3DM-GX5-25) in measuring the 3D-kinematics of lumbo-pelvic movement in healthy individuals and patients with LBP. Studies were conducted to examine the reliability of this clinic-based inertial sensor device for measuring ROM, angular velocities and accelerations when the LBP sufferers perform different functional activities. Results showed that the tri-axial inertial system is a highly practical tool which offers reliable and useful data for revealing the lumbo-pelvic movement impairments in demanding physiotherapy OPD setting. This approach is also proposed to be used in the rehabilitation of various musculoskeletal conditions involving peripheral joints.

Parallel Sessions

Innovating Robotic Assisted Gait Therapy in Hong Kong East Cluster Enhances Clinical Outcomes

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Introduction
Stroke is the most common cause of disability in the developed world and can severely degrade patient's walking function. Therefore, improving gait performance is one of the main goals of rehabilitation. In the past, manually assisted gait training was rather difficult due to patient's body weight, poor limbs control and high physical demand on physiotherapists.

Robotic Assisted Gait Therapy (RAGT) provides sufficient support for intensive training at a more physiological gait pattern which is coherent with the principles of motor learning. The sophisticated control strategies will further improve patients' balance, coordination, spasticity, muscle strength and gait symmetry. It also relieves physical demands from physiotherapists. Besides, RAGT could also enhance functional improvements for patients with incomplete spinal cord injuries. RAGT promotes supraspinal plasticity in the motor centres for locomotion. It is believed that the combination of both RAGT and conventional physiotherapy will result in the best functional outcomes. RAGT system was introduced in Hong Kong East Cluster since February 2016 as an adjunct therapy for conventional physiotherapy in neurological rehabilitation.

Objective
To evaluate the additional clinical benefits for neurological patients who received combined RAGT and conventional physiotherapy.

Methodology
Patients indicated for RAGT, who matched the inclusion criteria, such as impaired walking ability, adequate range of joint motions and sufficient cognitive ability were screened by trained physiotherapists. Patients selected for RAGT received 12 sessions of RAGT in addition to conventional physiotherapy. Outcome measures, such as Modified Functional Ambulation Classification (MFAC), Modified Rivermead Mobility Index (MRMI), Berg Balance Scale (BBS), Functional Independence Measure (FIM) for transfer, walking and stair climbing were assessed before and after 12 sessions of RAGT. Patients receiving conventional physiotherapy with similar demographic data were randomly assigned to the control group for comparison. Mann-Whitney U test was applied to compare the changes between two groups. A patient satisfaction survey was conducted.

Results
64 patients were recruited and assigned to the intervention group (n=32) and control group (n=32). Significant differences between the two groups were found in MFAC, MRMI, BBS and transfer and walking domains of FIM ($p \leq 0.05$). The results showed that combining RAGT with conventional physiotherapy lead to additional improvement in functional mobility and balance than conventional physiotherapy alone. 95 % of the patients agreed that RAGT improved their gait performance according to the survey.

Conclusions
RAGT combines with conventional physiotherapy resulted in additional clinical improvements in functional mobility and balance for neurological patients.

Public Health Implications
RAGT is an effective adjunct therapy to better improve functional outcomes for patients with neurological disorders.

PS10.3 Technology Advancement and Innovation 13:15 Room 423 & 424

Assistive Technology: Global and Local Interests

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The boundaries of Assistive Technology (AT) are vague, as any technology can be assistive. In recent years, most attention goes to highly innovative technologies, like robotics, virtual reality, 3D printing, information and communication technologies (ICT). However, the greatest demand is still in low-tech-low-cost devices. It is estimated that about one billion people require AT products ranging from $200 billion to $1 trillion in the market. Though the demand for AT products is huge, it is estimated that only 10% of the people in need could receive such products due to over-priced cost. Therefore, the World Health Organization had launched the Global Cooperation on Assistive Technology (GATE) project to involve different stakeholders to ensure more people could be benefited from AT. In the last few years, the China government had set national policies to help people with disabilities obtain assistive products and services. The "Global Conference on Assistive Technology and Industry 2017" was held in Beijing under the "One-Belt One-Road" umbrella. The China Disabled People's Federation had increased funding to provide AT to the people in need, as well as promote international collaborations. The work report of 2015 State Council proposed that modern manufacturing should combine with internet and concept, cloud computing, big data and internet of things. AGEWELL is a Canadian network and its name stands for "Aging Gracefully across Environments using Technology to Support Wellness, Engagement and Long Life". This acronym explains how important AT to an ageing population. The advances in ICT extend the accessibility and application of AT. There are Apps for general health as well as for rehabilitation. The Hospital Authority (HA) has started developed its own Apps for public education and rehabilitation. There is more robotic assistive technology being used in HA settings as well.

PS10.4 Technology Advancement and Innovation 13:15 Room 423 & 424

Apps Based Training via Technology – Application in Occupational Therapy

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In recent years, occupational therapists (OT) of the Hospital Authority (HA) have been using "Apps" to enhance home programme compliance. Some examples were: the "Breathe Right Apps" for chronic obstructive airway diseases; the "Support Employment Apps" for job matching; the "Wrist Sensory Cue Watch" as a reminder for stroke home programmes; the "Chinese Calligraphy Apps" to improve cognitive and emotional calmness of patients. There are also some ideas of cognitive Apps to support patients to develop a brain training habit to enhance cognitive function in handling daily functional tasks. However, these initiatives were ad hoc funded projects with difficulty to sustain, and the captured data were not connected to HA Clinical Management System (CMS).

In 2017, the Coordination Committee on Rehabilitation Service at HA coordinated a multidisciplinary group for a pilot run of mobile Applications. Allied Health Information Technology (AHIT) Committee, Information Technology and Health Informatics Team, OT and Clinical Psychologist (CP) of HA were invited to join the project. This is a big step that ideas of clinicians can be supported at HA level. However, further team work on clinical ideas, practical consideration of technology support, funding support will be needed to make our dream comes true – a one stop monitoring platform (CMS) in HA system for application of apps to improve clinical service.

Parallel Sessions

PS11.1 Evidence Based Nursing 14:30 Room 221

Evidenced Based Practice: Advancing Practice and Improving Outcomes of Care

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Evidence based practice (EBP), one form of nursing inquiry, arms nurses with the knowledge to influence quality/safety/cost of care, and can influence patient and organisational outcomes. Once EBP is integrated into the fabric of the organisation, expect that both patient and nurse outcomes will be impacted. For the patient, they benefit by reducing nurse practice variation, and utilisation of most up-to-date care. For the nurse, EBP increases their autonomy, strengthening their clinical judgment, and can re-invigorate practice. This presentation will describe the impact of EBP on nurse, patient and organisational outcomes, providing some examples of projects from the Johns Hopkins Hospital, Baltimore, MD, USA.

PS11.2 Evidence Based Nursing 14:30 Room 221

Optimisation of Enteral Nutrition in Intensive Care Units through an Evidence Based Approach

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Introduction
Nutritional support is essential for critically ill patients; and enteral feeding is currently considered the best option for providing nutrition. However, inadequate enteral feeding continues to exist in intensive care units (ICU) worldwide. Many factors affect enteral nutrition (EN) and may be resulted in suboptimal nutritional support.

Objectives
To develop an EN protocol that guides gastric residual volume (GRV) management; and (2) to minimise unnecessary interruption of nutrition delivery.

Methodology
A workgroup was formed in January 2017. Members involved representatives from five local ICUs. EN protocol was formulated according to Johns Hopkins Nursing Evidence Based Practice model. Alignment of practice across ICUs was attempted.

Results and Outcomes
Practice in nutritional intake calculation, EN commencement rate, GRV assessment frequency, GRV cutoff value and use of a prokinetic agent for intolerance were aligned across involved ICUs, but no consensus was reached for refeeding practice. 326 patients from a single ICU which piloted the protocol were studied (age=62.1±14.5; 74.8% mechanically ventilated; 56.7% surgical patients; 66.2% male). 156 patients received EN according to doctor's decision. 170 patients received EN according to an interdisciplinary protocol. No statistically significant difference in demographic data, mean ICU length of stay (9.08 days vs 8.11 days, P=0.50), mortality (18.0% vs 16.0%, p=0.64) and total EN delivery duration (6.82 days vs 5.43 days, p=0.29) was found between patient groups. Mean duration from EN commencement to nutritional target was 2.06 days. Daily calorie intake was similar between groups (18.03 vs 18.22, p=0.82). Both EN interruption due to high GRV and incidence of adverse events dropped from 16.7% to 12.9% and 8.3% to 5.3% after protocol implementation respectively.

The result was comparable with those ICUs which are already adopting EN guidelines. Protocol-driven EN delivery and GRV management can maintain nutritional target through a reduction in feeding interruption.

PS11.3 Evidence Based Nursing 14:30 Room 221

To Identify the Incident of Urinary Incontinence in Pregnant Women among Eight Hospital Authority Birthing Hospitals

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Urinary incontinence is a common problem which can affect up to 10 - 46% of women. This problem has been reported in 34% of women at three months postpartum, but the peak incidence is during pregnancy. A study had shown that 78.3% of local Chinese women did not aware stress incontinence was a disease entity, or were not willing to seek medical advice. In order to view the prevalence of local Chinese obstetric women with urinary problem(s) or incontinence during pregnancy, a one-week survey in December 2017 was conducted. Those pregnant women attended the first antenatal visit or Group B Streptococcus Screening in eight birthing hospitals of Hospital Authority during the study period were recruited. The two Chinese short-form questionnaires, Urogenital Distress Inventory-6 (UDI-6) and Incontinence Impact Questionnaire-7 (IIQ-7) were used as they are reliable and validated to assess the impact of the urinary incontinence in Chinese women.

Of 951 anonymous pregnant women completed the UDI-6 and IIQ-7, mean maternal age was 32.1±4.6 years old, gestational age was 22.8±11.5 weeks and parity was 0.7±0.8. The mean scores of UDI-6 and IIQ-7 were 38.17±9.70 and 11.1±17.01 respectively. 395 (41.6%) women indicated to have moderate to great bothered by the symptoms in UDI-6. Statistical calculation was performed to compare the parity with the symptoms in UDI-6 scores, significant differences were found in urine leakage related to physical activity, coughing or sneezing ($p<0.001$), but no significant difference in other symptoms in UDI-6 with parity. Results also showed significant differences when increased with gestation age as frequent urination ($p<0.001$), urine leakage related to feeling of urgency ($p=0.008$), urine leakage related to physical activity, coughing or sneezing ($p<0.001$), and pain or discomfort in the lower abdominal or genital area ($p=0.032$). Regarding the age group, a significant difference was only found in frequent urination ($p=0.005$) when increased of maternal age, but no significant difference in other symptoms in UDI-6.

When comparing the IIQ-7 scores with the parity, 61.3% (19/31) of women whose parity=1 stated that urine leakage had affected their ability to do household chores ($P=0.29$). There was no other difference found in other items in IIQ-7 with maternal age and gestation.

The survey concluded that local Chinese pregnant women with urinary problem(s) or incontinence were very common. The importance of early recognition and increase of awareness on the prevention of urinary incontinence should be iterated during antenatal period.

PS11.4 Evidence Based Nursing 14:30 Room 221

Developing a Clinical Practice Guideline in Preventing Diaper Dermatitis in Paediatric Patients

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Introduction
Diaper dermatitis (DD) is a common problem in paediatric patients, which not only causes pain in children and anxiety in parents, but may also have an impact on medical cost due to the increased length of stay and alteration in treatment regimen. There is no evidence based intervention(s) for the prevention and management of paediatric patients with DD and no standardised guideline/protocol among individual units and paediatric departments in Hospital Authority hospitals.

Objectives
To develop a clinical practice guideline with the best evidence in prevention of DD in paediatric patients for knowledge enhancement and change in practice among nurses and patient care assistants (PCAs).

Methodology
A systematic review of prevention of DD was performed using Johns Hopkins Nursing Evidence Based Practice model. English articles regardless of the year of publication were searched from electronic databases (e.g. OVID Multifile, CINAHL and EMBASE) using search terms including “sore buttocks”, “diaper dermatitis”, “nappy dermatitis”, “nappy/diaper rash” and “incontinence associated dermatitis”. Reference lists of the retrieved articles were also searched. Two independent reviewers assessed the studies for relevancy and level of quality by using appraisal tools from Johns Hopkins Nursing. A panel of experts translated the evidence into practice.

Results
A total of 42 studies were identified and summarised into an “ABCDE approach” clinical practice guideline – A: Assessment and Airing, B: Barrier protection, C: Cleansing, D: Diapering, and E: Education. Training kits were established to enhance knowledge of nurses and PCAs in prevention of DD. Cue cards for the change in practice and education pamphlet for patient and parents were developed.

Conclusions
The evidence based practice model is effective in appraising and utilising evidence into practice. A further pre-and post-test study shall be conducted to evaluate the effectiveness of the clinical practice guideline in the knowledge and behaviour of nurses and PCAs.

Parallel Sessions

PS12.1 Big Data Analytic 14:30 Room 423 & 424

Rapid Automated Evaluation of Computed Tomography Brain Scan and Prediction for Treatment Needs in Acute Ischaemic Stroke – A Collaborative "Big Data" Approach

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Endovascular mechanical thrombectomy is now an established treatment for acute ischemic stroke caused by large vessel occlusion (LVO). As the majority of ischaemic stroke patients would first undergo plain Computed Tomography (CT) brain scan, it is imperative that signs of LVO on plain CT scans can be identified quickly and reliably so to initiate confirmatory investigations, clinical referral and proper treatment. The objective of the present study is to develop a novel, rapid and automated computer algorithm capable of detecting and predicting signs and likelihood of LVO. The ultimate goal is to generate an effective, reliable and locally relevant platform for triaging acute stroke patients.

Clinical and imaging data are provided by the Hospital Authority. All patients with stroke-related admissions between 2016 and 2017 are included. CT scans of 300 patients are subject to initial screening by a clinical team of Specialist Neurosurgeons to determine the "ground truth" (i.e., the presence of absence of LVO in individual patients). Correlations are made with the clinical course and outcome of the patients in order to determine the actual severity of stroke and the eligibility/need for advanced treatment at the time of admission.

Relevant predictors of LVO including background risk factors, presenting symptoms, neurological assessments and dense MCA sign on CT were identified and fed to the machine learning algorithm for predicting the likelihood of LVO; validity testing will be performed on new dataset to determine sensitivity and specificity, taking into account other clinical parameters and variable. Here we present the developmental process of this novel and landmark collaborative platform as well as some of our preliminary findings.

PS12.2 Big Data Analytic 14:30 Room 423 & 424

Unlocking Evidence through Healthcare Text Mining

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Text is all around. Text fills up medical reports, consultation notes, and discharge summaries. These important clinician narratives are now routinely stored in Electronic Health Records (eHR); harnessing data by text mining could offer new opportunities for epidemiological research, clinical decision support, meta-analysis and observational research though advanced data analytics. We know that free-text narrative is invaluable clinical data, but its unstructured nature remains a key barrier for wide spread use in evidence based medicine.

In this presentation, we will review recent developments in applying text-mining in medical research, including automated harvesting of clinical concepts and events, clinical coding, and enhancing the accuracy and quality of other structured clinical data. We shall explore the potential to apply text mining to support clinical studies. We shall also highlight the main challenges, discuss our clinical-data scientist team approach in data and text mining, and our few attempts in free-text extraction using data captured for stroke outcomes and colonoscopy safety in the Hospital Authority Clinical Management System eHR.

C1.1 Medical Advancement and Innovative Technology 10:45 Room 428

Endoscopic Ultrasonography – Advanced Pancreatico-biliary Fellowship in the United Kingdom

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Endoscopic ultrasonography (EUS) is an established tool for the evaluation of gastrointestinal tract wall, pancreatico-biliary, mediastinal and para-aortic pathologies. It is also used in guiding tissue acquisition via fine needle biopsy or aspiration. Interventional EUS is used for transluminal drainage of pseudocyst or abdominal fluid collection, providing access to bile ducts or pancreatic duct and celiac plexus block and neurolysis in cancer patients. The demand for safe and high-quality EUS for patient-centred care is growing substantially. Thus, the clinical application of EUS has expanded significantly over the past decade. Furthermore, as more therapeutic procedures are done by EUS, a formal and structured training in high volume centre is essential.

Under the Medical Training Initiative (MTI) scheme offered by the Royal College of Physicians (RCP), the author underwent a six-months advanced pancreatico-biliary fellowship in the Freeman Hospital, Newcastle Upon Tyne, United Kingdom. This is the only tertiary referral centre for all diagnostic and therapeutic EUS in North East England – the unit performs in excess of 1,200 EUS annually and is one of the biggest units in the United Kingdom. The author acquired hands-on EUS training under the guidance and direct supervision of experienced consultants in the centre. EUS was performed for EUS guided tissue acquisition, acute or chronic pancreatitis, management of pancreatic pathology such as pancreatic cancer and pancreatic cystic lesions, as well as biliary lesions such as biliary dilatation or stricture, CBD stones and cholangiocarcinoma. Therapeutic procedures such as transluminal drainage of peripancreatic fluid collections and coeliac plexus block were also done.

In order to maximise training experience and exposure, the author actively participated in clinical audits of EUS and ERCP protocols, took part in research on EUS and ERCP topics, and presented the work in the 43rd Annual Meeting of the Pancreatic Society of Great Britain and Ireland. All these activities have widely extended the author's experience in the field.

With the availability of diagnostic and therapeutic EUS, better service quality can be provided. An alternative and safer way of tissue acquisition rather than surgical or percutaneous means can be achieved.

C1.2 Medical Advancement and Innovative Technology 10:45 Room 428

Sterile Supply Services Training in Eastwood Park

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Sterile Supply Services (SSS) is a unique unit in a hospital. The aim of SSS is to support patient care by providing reusable medical devices "fit for purpose", processed by staff well trained in decontamination practices. It is essential that those items required in a sterile condition have been decontaminated under properly controlled conditions by machines and systems.

To ensure SSS in the hospital, it is of paramount importance to address service quality. Due to the nature of service, it cannot be easily measured. The sterility of the product cannot be assured by the change of color in autoclave tape. It shall be assured by a bundle of practice like validation of machines, process control and assurance etc.

Eastwood Park Training Center has a rich heritage offering specialist SSS management since 1969. The decontamination and infection control courses reflect the latest British and European guidance and cater for delegates working in CSSD. Their decontamination portfolio reflects the guidance applicable across all UK health authorities including British and European requirements.

In order to build up clinical leaders' capabilities in health promotion and illness management, and providing care delivery in Hospital Authority's priorities, four weeks of theory, practice and clinical visit were included in this overseas training covering foundation and advanced knowledge and skills for CSSD development in the UK. Clinical visits were conducted for enriching the training that included offsite and hospital CSSD, factory tour and accredited Laboratory.

The following learning objectives were achieved for further development in our SSS services.
Competency in decontamination management
Implementation of Quality Management Systeml Validation of decontamination equipment
l Quality service enhancement and project development

Corporate Scholarship Presentations

C1.3 Medical Advancement and Innovative Technology 10:45 Room 428

Multicolour Flow Cytometry in Clinical Haematology

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Cellular immunophenotyping refers to the detection of molecules on the cell surface, within cytoplasm or intracellular organelles. Such molecules can be visualised by flow cytometry using fluorochrome-tagged monoclonal antibodies. Flow cytometers have the capacity to analyse multiple parameters on a single cell with high precision and throughput. Different cell populations can be graphically presented as distinct clusters. Subpopulations or minor events can be isolated and characterised by sequential gating strategies.

Application of flow cytometry in clinical setting requires knowledge of physics related to excitation and emission of fluorochromes from source of lasers at various wavelengths. Moreover, an adequate understanding of the biology of molecules and cell type is mandatory. In the recent decade, there are new combinations of fluorochromes and antibody conjugates that support robust multicolour flow cytometry assays including diagnosis of haematolymphoid malignancies and minimal residual disease (MRD) monitoring. The quality of data, however, depends on correct antibody panel design and instrument setup. The sensitivity and resolution also require optimal colour compensation to avoid spectral overlap.
A short turn-around-time (TAT) in one to three hours for the diagnosis of haematolymphoid malignancies according to World Health Organization guidelines can be achieved using multicolour flow cytometry. This is essential in order to initiate immediate treatment for acute leukemia and to triage cases for relevant molecular genetic testing. Laboratories also employ sequential staining with screening and confirmatory panel as a cost-effective approach. The technology of multicolour flow cytometry can provide information of antigen co-expression and thus can identify patient-specific immunophenotype for subsequent MRD assay. Moreover, the ability to work on lower sample volume has facilitated the analysis on paediatric and body fluid samples. The smaller number of assay tubes to handle also improves workflow efficiency.

Despite the emerging advancement of molecular technology, flow cytometry remains as an indispensable service in haematology laboratories.

C1.4 Medical Advancement and Innovative Technology 10:45 Room 428

Public Health and Pathology Service in Melbourne's Biomedical Community

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The redevelopment of Prince of Wales Hospital (PWH) has been announced and underway in full speed. Microbiology, as one of the stakeholder departments of PWH, receiving full sponsorship from the Overseas Training Programme for Senior Allied Health Professionals 2017/18, the speaker had an invaluable opportunity to study the overseas laboratory service mode, advanced technology and innovation in Australia. The internationally renowned Melbourne Biomedical Community or Melbourne Biomedical Precinct was chosen. It is made up of some 30 hospitals, research, teaching and biotechnology organisations mainly located at the north of Melbourne's Central Business District. It is also known to be one of the top biomedical precincts in the world, like Boston, Cambridge and San Francisco. What they are in common is the established reputation as a world leading biomedical services, research and teaching powerhouse.

The destinations of this laboratory attachment training trip primarily based at four biomedical and health institutions, including Royal Melbourne Hospital, Doherty Institute, Austin Health and Peter MacCallum Cancer Centre. In addition, with the special and kind arrangement by the Consultant Microbiologist of the Royal Melbourne Hospital, the Pathology Department of Monash Health and St. Vincent Hospital were included for the study of Total Laboratory Automation solutions. The Public Health Laboratory in the Doherty Institute also arranged a special visit to the clinic's laboratory in Melbourne Sexual Health Centre. With the laboratory attachment study in these institutions, the scope of the training was further extended. Overall, it was a fruitful trip to create a real vision with specific examples in the planning and design exercise of our future laboratory from software and hardware settings to the best practice of the professional encountered. This valuable experience will be shared in the presentation.

C1.5 Medical Advancement and Innovative Technology 10:45 Room 428

Rehabilitation Technology for People with Spinal Cord Injury in Japan

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This presentation will summarise the therapist's hands-on experience and reflections in the study trip that covers the most updated rehabilitation technology designed for people with spinal cord injury in Japan. The highlighted innovations include exoskeletons facilitating walking for people with paraplegia, such as the "Hybrid Assistive Limb" and the "Wearable Power-Assist Locomotor"; smart power wheelchairs that get around obstacles to make tight turns, such as the "WHILL Power Wheelchair"; robotically enhanced residential units for independent living, such as the "Robotic Smart Home"; personal protection devices that mitigate back pain risks for care takers, such as the "HAL Lumbar type for care support"; as well as social assistive robots that listen to and converse with people in social isolation, such as the "Palro". There will be video demonstration on how these technology can benefit people in need. The session will end with discussions about the ethical and social implications of the use of robots in rehabilitation practice.

Corporate Scholarship Presentations

C2.1 Rehabilitation and Community Care 13:15 Room 428

Ortho-geriatric Care for Elderly with Hip Fractures

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The Geriatric Teams of the Queen's Medical Center of Nottingham University and the Poole Hospital achieved excellent outcomes in their Ortho-geriatric services. The clinical attachment was a precious opportunity to learn about the management of elderly orthopaedic patients with fragility fractures and organisation of ortho-geriatric service.

C2.2 Rehabilitation and Community Care 13:15 Room 428

Sharing of Primary Healthcare in Inala Primary Care, Australia

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Hong Kong has been ranked the top of the most efficient healthcare system by Bloomberg. While Australia Health Care system is relatively more complicated in their governance and financial system, i.e. the Medicare, where most of it comes from high taxation of the residence there. However, there is always some room for improvement in healthcare services. The core value of this visit is to inspire the clinical leaders with new capabilities including innovative clinical initiatives with best evidence based practice for the way forward of primary healthcare delivery in Hospital Authority services. Areas with opportunities in the local context to be explored based on the insights from this visit in Australia. Answers of the following questions could be a guide to move forward.

(1) How should health services be provided across the continuum of care?

(2) How to build and extend primary care capacity to support and improve the integration with local secondary and tertiary healthcare?

(3) How can the primary care support hospital avoidance strategies?

(4) How to define and develop optimal models of care from the preferred patients outcomes which in turn determines the appropriate workforce supply and skill mix and identify future needs for professional and operational planning?

In conclusion, "vertically", the "beacon" model in up-skilling the primary care practitioners to specialist is one of the means in ensuring health services to be provided across continuum of care. Besides, by 'pulling' patients from acute sector and ensuring patients to remain as much and as long as possible at home, could support hospital avoidance strategies. Furthermore, in addition to expanding the existing chronic disease management services in terms of disease types and health risk factors (diabetes, hypertension, chronic obstructive pulmonary disease, mental health, wound care, SCCP, cardiac and etc.), extending the rehabilitation services of related disease from tertiary/secondary to primary level is also considerable. The primary care capacity is extended to support and improve the integration with local secondary and tertiary healthcare.

On the other hand, horizontally, in addition to improving public-private partnership, utilising community resources is also an option in maintaining a sustainable healthcare model in an ageing society. General Outpatient Clinics could act as a "hub" within the primary care level as well as between the secondary and tertiary level.

Finally, apart from establishing nurse clinic, providing the cultural based and patient-family-centred healthcare services as well as building up a healthy culture among patients are keys in delivering new primary healthcare services.

C2.3 Rehabilitation and Community Care 13:15 Room 428

Impression and Reflection from UK Training Experience on Integrated Care Nursing in the Community

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The experience of clinical attachment to the UK healthcare setting was valuable to enrich one's exposure to worldwide standard of care and to inspire one's mindset for better services. The author gained experience in a four-week attachment at a number of integrated care settings in UK in 2016. The integrated care and support service was person-centred and coordinated to meet the needs of individual, their carers and families. This more holistic approach enhances empowerment of people to manage their chronic diseases and health issues. The most impressive services provided in the community included the rapid response service from Croydon Community Health Service Center, which is a 24/7 intensive nursing and crisis management service for homebound patients; the intravenous therapy of the Haunslow and Richmond Community Center that aims at avoiding hospital admission; the nurse-led warfarin clinic in York Medical Practice Clinic exhibits the independent role of nurse practitioner and the House of Common and the Royal Star and Garter Homes for dementia people, which is a nursing home with five stars "luxury hotel setting" providing special elderly and dementia-friendly infrastructures tailored to the people with dementia. In Hong Kong, similar services had been established with encouraging outcomes. The author highlights the FLASH presentation on dementia care in acute ward setting being an innovation for educating dementia care knowledge to frontline staff at geriatrics ward.

C2.4 Rehabilitation and Community Care 13:15 Room 428

Community Psychiatric Nursing in Central and North West London NHS Foundation Trust, United Kingdom

Leung TCH
Personalised Care Programme (Wong Tai Sin District), Kwai Chung Hospital, Hong Kong

We have attended a 4-week overseas training from 21 November 2016 to 16 December 2016, with attachment to Central and North West London NHS Foundation Trust. It is one of the mental health trusts in United Kingdom which covers mental health services in Westminster, Kensington and Chelsea, Brent, Harrow, Hillingdon and Milton Keynes (out of London). The aim of this overseas training programme is to understand the structure and clinical care pathways of mental health services in Central and North West London NHS Foundation Trust, particularly to community mental health services and interventions, to the recovery model in mental health, arts therapies and new therapeutic developments in mental health in the community.

Corporate Scholarship Presentations

C2.5 Rehabilitation and Community Care 13:15 Room 428

Sharing on Overseas Corporate Scholarship Programme in Allied Health Professionals of Palliative Care Service with Multidisciplinary Approach

Lo JWY
Physiotherapy Department, Princess Margaret Hospital, Hong Kong

Objective and Purpose of the Overseas Training

The two-week training programme of Palliative Care (PC) Service with Multidisciplinary Approach in Australia enabled us to explore the contribution of allied health in the structure-process-outcome of PC; to explore the best use of the system infrastructure (including allied health) for provision of quality PC in both PC specialist and non-specialist settings; to scrutinize care model and pathway assisting interdisciplinary collaboration in end-of-life care; to comprehend community partnership in supporting patients and carers; and to learn the measurement outcome for PC.

Key Training Activities

10 allied health participants including speech therapist, dietitian, physiotherapists and occupational therapists participated in a three-day national palliative conference in Adelaide, attended a one-day outcome measure training workshop in Sydney, toured visits to various public and private PC clinical settings and research centres in these two cities.

Learning Points

The programme provided multidisciplinary approach PC service reference and model for allied health professionals. Allied health professionals were inspired to be involved in streamlined care model and pathway enhancement in end-of-life care. High quality PC operation should include conducting daily conference, enhancing referral system, endorsing blanket referrals for some allied health disciplines, introducing a shared care model of allied health consultation service, providing one-stop allied health consultative service, adopting multidisciplinary team (MDT) model and developing MDT symptoms management programmes. Recruiting skill-equipped voluntary groups to provide complementary therapies to patients and carers for improving quality of life and stress coping is advocated. Empowerment of volunteers to provide general caring to PC patients can be considered. Community allied health team should be set up to facilitate patient care in home settings. Further enhancement of PC Day Centres is suggested. Application of Palliative Care Outcomes Collaboration (PCOC) in Hong Kong is recommended for measuring outcomes, building up common communication language, monitoring patient status and carer stress, formulating care plan and triggering allied health referrals. There are needs to advance and enhance the capacity of designated allied health professionals through well-structured and advanced training to become PC allied health specialists. Overseas clinical attachment and e-course can be considered for upcoming advanced trainings. Generic PC training for non-PC allied health professionals and supporting staff is also indicated.

C3.1 Chronic Disease Management 14:30 Room 428

Frontotemporal Lobar Degeneration – An Under-recognised Condition and Its Significance in Treatment and Services

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Frontotemporal lobar degeneration (FTLD) is a pathologic endophenotype leading to three frontotemporal dementia (FTD) syndromes. FTD is gaining recognition as a clinically heterogeneous syndrome of progressive decline in behavioural, executive, language or motor functions associated with frontal and anterior temporal lobe degeneration. Psychiatrists often encounter the behavioural variant (bvFTD) and the two primary progressive aphasias (PPA) − the nonfluent-agrammatic (nfvPPA) variant and the semantic variant (svPPA). They had common molecular bases leading to pathological protein accumulation with overlapping microscopic findings but had unique neuroimaging patterns.

Epidemiologically, FTLD is the third most common cause of degenerative disorder with dementia after Alzheimer's Disease (AD) and Dementia with Lewy Bodies (DLB), accounting for 5 to 15% of confirmed cases and is the second most common cause of presenile (<65) neurodegenerative dementia. The onset age is typically in the 60, though subtypes may vary. The prevalence is similar in Asians, and FTD was indeed the second most common aetiology in early-onset dementias from the preliminary data of a Neurology study from The Chinese University of Hong Kong, echoing the worldwide picture. Reasons for misconstrued impression of FTD being uncommon include the clinical heterogeneity and the absence of standardised diagnostic criteria for detection and identification; and there has yet to be a recent study on its local prevalence.

The Memory and Aging Center (MAC) of the University of California, San Francisco (UCSF) is the world's leading centre specialising in FTD diagnosis and research, and its multidisciplinary team comprises experts responsible for proposing the new criteria on the diagnostic certainty for FTD variants in the 2011 international brain consortium. During the four-week attachment, the author had an ample opportunity to observe and learn from the MAC's multi-faceted care pathway and service delivery from suspecting to diagnosing clients with FTD. With the updated criteria, we are establishing an FTD registry in our unit to (1) elicit factors to design FTD protocols allowing for early identification, diagnosis and interventions; (2) enhance clinicians' understanding and awareness of FTD. As our existing services mainly catered for the needs of AD clients, this translates as service remodeling on assessment, diagnosis, treatment and caregiver support.

Corporate Scholarship Presentations

C3.2 Chronic Disease Management 14:30 Room 428

Overseas Corporate Scholarship Programme for Clinical Leaders in Gerontology Nursing – Inspiration from Bournemouth in Dementia and Delirium Care: Putting into Practice

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Aging population is one of the well-known global challenges faced by all healthcare professions. Bournemouth, one of the small aging towns in the United Kingdom (UK), is not an exceptional. In addition, due to the shortage of healthcare professionals, the situation is further aggravated, especially in dementia and delirium care. This is always a major issue focused by the geriatric team in Bournemouth.

As delirium is often under-diagnosed or mismanaged, all patients over 75 years of age admitted non-electively will be screened for delirium upon admission in Bournemouth. Appropriate management and education will be initiated to those diagnosed patients and their caregivers by delirium nurse specialists through a standardised care pathway. In addition, they also provide additional support and advice to those patients and their family when they return home so that it can facilitate early discharge and reduce re-admission.

As person-centred care is well developed and widely used in daily practice in UK, nurses and other allied health professionals pay a lot of time and effort on interacting with dementia patients and their caregiver, aiming at empower them to formulate a tailor-made care plan. Besides, a “life dairy” recording all the details of patients is well used to promote communication between patients and healthcare providers during hospitalisation.

In order to adopt those good practices from UK, we launched two clinical quality improvement programmes in this aspect. Firstly, a Delirium and Dementia Assessment Team was established which focused on early detection, early intervention and early discharge for patients with onset of cognitive change in acute geriatric setting. Secondly, a Delirium-caring Culture Nurturing Programme (DCNP) was optimised to strengthen the knowledge and awareness of nurses on delirium care.

C3.3 Chronic Disease Management 14:30 Room 428

Psychogeriatric Nursing in St Vincent’s Mental Health, Melbourne, Australia

Lee KC
Old Aged Psychiatry, Castle Peak Hospital, Hong Kong

The author is honoured to attend the Australian Overseas Corporate Scholarship Programme for Clinical Leaders 2016/17 in Psychogeriatric Nursing organised by St Vincent’s Hospital, Melbourne of Australia from 13 February to 10 March 2017.

Victoria has led the way in Australia for de-institutionalisation and development in community-based clinical and non-clinical mental health services.

(1) Several aspects will be shared in the presentation:Overview of the Victorian Mental Health Service System and Community-based Service Delivery

(2) Mental Health Act in Australia

(3) Aged Mental Health Services in Australia

- Acute inpatient unit which provides 20 beds and is divided into three wings to accomodate certain type of patients.
- Aged Psychiatry Assessment and Treatment. This is a specialist service for elderly people who live in the community to improve their mental health and wellbeing by providing home visits, conducting mental health assessments, developing caring plans, making referrals and providing follow-up support and consultation.
- Intensive Community Team which offers alternative treatment for clients in an acute inpatient unit and for clients who would prefer to have treatment at home.
- Residential Support Team and Behavioural Assessment and Specialist Intervention Consultation Service which provides programmes for elders aged 65 years or above with mental illness and challenging behaviours. It aims to enhance caring for clients/residents in more effective ways and to empower them to stay in their own accommodations to reduce actual admission.

C3.4 Chronic Disease Management 14:30 Room 428

Rehabilitation Nursing in St. John Rehab in Toronto, Canada

Lo JOY
Department of Geriatrics and Rehabilitation, Haven of Hope Hospital, Hong Kong

The Overseas Corporate Scholarship Programme for Clinical Leaders aims to build up clinical leaders' new capabilities in health illness and management, and care delivery in Hospital Authority service priorities. On behalf of Rehabilitation Nursing, four Advanced Practice Nurses (in two separate groups) were delegated to join a four-week international observership at St. John's Rehab (SJR) at Sunnybrook Health Sciences Center in Toronto of Canada in May and June 2017 respectively.

With the mission of rebuilding people's life and advancing rehabilitation science, St. John's Rehab, a 160-bed non-profit public facility, offers a continuum of care from in-patient to out-patient individually customised rehabilitation programmes for different conditions including amputations, burns, cardiovascular surgery, oncology, organ transplants, orthopaedics, stroke and neurological conditions, traumatic injuries and complex medical conditions.

Besides fruitful observation, learning and discussion, there are lots of impressed elements in SJR which helps us acquire different knowledge on rehabilitation nursing such as Person-centred Care (PCC), Interprofessional Collaboration (IPC) and discharge planning. PCC focus on person when providing care to patients, it encourages working collaboratively with patients and their families to promote their engagement on own health management. IPC is about shared goals – disciplines speaking together on a common goal to deliver the highest quality of care. It is non-hierarchical decision-making and promotes relationships among patients, their families and health professionals. For timely discharge to ensure appropriate use of resources, discharge planning strategies in SJR include the targeted length-of-stay, the estimated discharge date, revision of EDD through IPC meeting, best practice and tools on standardised discharge, and the Provincial Alterative Level of Care Policy for escalation of complex discharge cases.

This overseas observership provides an unforgettable exposure on the services of rehabilitation nursing in Toronto that certainly broadens our horizons. It is a valuable chance to equip ourselves for future challenges. Last but not least, patients in rehabilitation are often dealing with the biggest life changes that we can imagine. If we can bring a bit of change to their day, it is a great honor to us, as a rehabilitation nurse.

C3.5 Chronic Disease Management 14:30 Room 428

Renal Nutrition Care Overseas Experience

Leung E[1]
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The Overseas Corporate Scholarship Programme for Dietitians in Renal Nutrition Care is a 10-day training programme at St. George Hospital in Sydney, Australia. It aims to build up new competencies, enhance knowledge and disease management skills for dietitian in renal nutrition care.

St. George Hospital uses a strong multidisciplinary approach in renal patient care. They have multidisciplinary outpatient clinics that is composed of renal and palliative care physicians, nurses, renal dietitians, pharmacists and social workers. Studies have demonstrated that early referral of patient with chronic kidney disease (CKD) to a multidisciplinary renal clinic was associated with reduced rates of kidney failure decline, hospitalisation, morbidity and mortality. Timely nutrition interventions are vital for a healthy start to dialysis and may prolong pre-dialysis period.

Renal Supportive Care (RSC) is an alternative treatment pathway in advanced CKD. It is based on the principle of palliative care by focusing on patient-centred care, quality of life and symptom control. Nutrition intervention plays an important role to maintain patient's quality of life, physical functioning and to reduce symptom burden. St George Hospital has introduced a RSC clinic with a multidisciplinary team.

Validated tools such as Subjective Global Assessment and Integrated Palliative Care Outcome Scale were widely used by renal dietitians in St. George Hospital to measure nutritional status and symptom burden, respectively. The application of these assessment tools help monitor patient's progress and outcome. They also provide direction in nutrition intervention and to identify service gap.

The Attachment Programme for Dietitians in Renal Nutrition Care is a valuable training experience for a better understanding of the health delivery model for renal patients in another country. A strong multidisciplinary approach that is focused on monitoring and improvement of patients' clinical outcomes is highly beneficial to local renal services.

Corporate Scholarship Presentations

C3.6 Chronic Disease Management 14:30 Room 428

Pharmacist-managed Clinic Targeting Patients with HER^2-positive Breast Cancer: The Local and UK Experience

Yuen CM
Pharmacy Department, Queen Mary Hospital, Hong Kong

With the advances in understanding tumor biology, treatment paradigm for breast cancer has evolved significantly in the past few decades. Many novel agents, which have demonstrated survival benefits, have been developed. Among the breast cancer subtypes, human epidermal growth factor receptor 2 (HER2) positive breast cancers are accounted for about 20% of cases. With promising clinical outcomes and tolerable side effect profile of the new HER2 targeted agents such as Trastuzumab, HER2-positive breast cancer has become a chronic and manageable disease with durable responses for many patients.

As HER2 targeted agents have become the standard of care and have relatively long treatment duration, population receiving Trastuzumab is expanding. Considering the stable patient characteristics for this group, clinical pharmacists' input to reduce oncologists' workload, measures to streamline administration process and optimise patient care is seemingly beneficial. In the United Kingdom, for instance, the Trastuzumab homecare service has been piloted in the Royal Marsden Hospital to cope with the increasing population, reducing Chemotherapy Unit chair time and also enhancing the quality of care to patients.

In Hong Kong, multidisciplinary care in oncology has also been advocated and the setting up of Pharmacist-managed Clinics in Hospital Authority is one of such initiatives. In Queen Mary Hospital, the Oncology Pharmacist-managed Trastuzumab Clinic is established to target patients on adjuvant maintenance Trastuzumab therapy. The implementation of such service aims to enhance the safety and quality of adjuvant Trastuzumab therapy for patients with early breast cancer through the integrated care of oncologists and oncology pharmacists. The service will also shorten the waiting time for cancer patients and reduce the workload of oncologists.

Foot Involvement in Patients with Psoriatic Arthritis

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Introduction

Foot pathologies are often related to diseases elsewhere in the body. Due to the fact that the foot is most distal to the heart and constantly bears our body weight, it is often the first place where diseases manifest themselves. In patients with Psoriatic arthritis (PsA), foot involvement is not uncommon. PsA is one of the prevalent systemic inflammatory arthropathies associated with skin psoriasis (PsO), dactylitis, enthesitis and other comorbidities including diabetes mellitus, obesity and metabolic syndrome. PsO was estimated to affect 2-4% of the Western population, compared to a lesser extent of 0.3% in Hong Kong. Approximately 30% of PsO patients will develop arthritis in later life. Although foot involvement is very common among patients among PsA, it is often neglected by the patients and the physicians. Apart from the classical skin silvery plaque in feet, PsA can affect the feet in various unique ways, including dystrophic nails, toe dactylitis and Achilles tendinitis. Moreover, foot manifestation can be the first sign of PsA in which most physicians and the patients would not pay attention to. Early recognition of these foot features may aid making a prompt diagnosis of PsA. To our best knowledge, this study was the first in our locality and was one of a few worldwide studies of this type to describe the clinical features of foot pathologies in PsA.

Objectives

To describe the clinical characteristics of foot pathologies among PsA patients in order to gain a better understanding of their current status.

Methodology

From June to December 2017, subjects aged 18 or above who fulfilled the Classification Criteria for Psoriatic Arthritis (CASPAR) were consecutively recruited at the rheumatology clinics of Tsueng Kwan O Hospital (TKOH). Patients with either foot amputated were excluded from the study. Basic demographics including age, sex and body mass index (BMI) were recorded. Foot assessment was conducted by both rheumatologists and podiatrists in TKOH. Presence of callosity, psoriatic nail features and toe deformities including hallux abductovalgus (HAV), hammering, clawing, mallet or overlapping of toes and dactylitis in any of the toes were recorded. Moreover, presence of current foot pain was questioned. The validated Foot Posture Index (FPI) was adopted to assess foot type. Data obtained was analyzed by using the Statistical Package for the Social Sciences (SPSS) 17.0 for Mac (Chicago, IL, US). Descriptive analyses on demographic data were performed. All clinical and related parameters were expressed as percentages and mean +/- standard deviation (SD) unless specified.

Results

A total of 26 participants were recruited in the study. All participants were Chinese in ethnic. The mean age of the participants was 49.4 +/- 13.3, in which 65.4% were males and 34.6% were females. The mean BMI was 25.0, with 23.1% being overweight and 46.2% being obese. 57.7% of participants had pronated foot type (flatfeet) and 7.69% had supinated foot type (high arch feet). 61.5% of them suffered from at least one type of toe deformities including HAV, hammered or clawed toes. 46.2% complained of current foot pain. Foot callosity was found in 30.8% of the patients, with a majority of 75% located over the plantar metatarsal area (PMA) of the foot. Psoriatic nail features were identified in 42.3% of participants. Only 11.5% of patients had toe dactylitis. The present study demonstrated that a vast majority of PsA patients (96.2%) were suffering from at least one and varying degree of foot conditions. In view of the high prevalence of foot pathologies among PsA patients, a multi-disciplinary approach with involvement of podiatrists would be beneficial in the management of their foot disorders.

Service Enhancement Presentations

Application of Explanatory Sequential Design in Reconciling Qualitative and Quantitative Findings of Social Problem Solving in Substance Abuse Population

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Introduction

Substance abuse (SA) has been a problem with every society and across every generation. The increasing number of substance abusers in Hong Kong causes a huge impact to our healthcare system. Evidence showed that SA impacted both emotional and physical health (Yuen, 2001). With consideration in the complexity of psychosocial nature of this ever-growing group of population, the utility of mixed methods (qualitative and quantitative) has been increasingly accepted in health sciences (Creswell & Zhang, 2009). Nevertheless, substance abuse studies are yet to substantially benefit from such clinical research utilities (Castro, Kellison, Boyd & Kopak, 2010).

Objectives

This project is a local pioneer project in employing research with mixed methodologies for SA populations. The aim of this study is to gain more comprehensive understanding of how social processes and individual behaviours shape SA behaviour.

Methodology

Explanatory sequential design was employed to analyse 20 SA subjects. The first step is to collect quantitative data. Treatment Needs and Motivation Assessment (Texas Christian University, 2008) was used to examine their ability in problem recognition, desire in getting help, treatment readiness and their specific treatment needs. Drug Involvement Scale – DIS (Lam, Ng & Boey, 2002) was used to assess their problematic beliefs and values. To note for social problem tendency, the Chinese Social Problem Solving Inventory (Siu & Shek, 2005) was adopted to assess their orientation in social problem solving. The second step is to collect qualitative data, in which, the impact of social influence, peer influence and family influence were explored through individual semi-structure interview sessions,dby free-listing and pile sorts activities in qualitative focus groups. The final step is to interpret findings from these two subsets of quantitative and qualitative data.

Results

To assess treatment motivation and relapse correlates, multivariate regressions was employed. Correlation and regression analysis showed that significant effects of duration of SA, treatment needs and motivation, positive problem orientation of all SA subjects (- =.33, $p < .05$). To identify explanatory model of SA, grounded theory was employed. Alike the findings from Simpson & Joe (1993), motivation for treatment like problem recognition, desire for help and treatment readiness, is closely tied to positive problem orientation ($r=.68$, $p<.01$). Moreover, acknowledgement of personal and social problems (e.g., depression, anxiety, hostility, risk taking) is negatively correlating with stimulant relapsing ($r=-.32$, $p<.05$). To identify social meaning of SA, discourse analysis was used in qualitative findings. Stress from work / study yielded the most negative social problem solving orientation ($p < .05$) . Half of recruited subjects in the proximity matrix showed stress from peers is the most prominent single stressor, which yields similar findings as the combination of cross-product of stress from family and from work / study ($p > .05$). Results rectified social problem was one of the most prominent factors of substance abusers. With consideration of specificity in individual characteristics, different problem solving strategies should be tailored for different social stressors. After identifying individuals' specific needs, it is important to determine appropriateness for treatment with particular attention to bridgethe service gap between Hospital Authority and the community.

Clinical Whole Exome/Genome Sequencing (CWE/GS) for Undiagnosed Diseases

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Introduction

Diagnostic odyssey refers to an unexpected delay between disease onset and time of the final diagnosis. This is mostly due to diagnostic difficulties owing to the rarity of the condition. To-date, there are about 7,000 rare diseases affecting 300 million people worldwide. Nevertheless, the diagnosis of these diseases is challenging as most doctors have not been intensively trained to diagnose rare diseases. In addition, knowledge in advanced laboratory medicine is also required.

Objectives

We had encountered a number of rare diseases in Hong Kong over the past years and there is a strong need to provide diagnostic service for rare diseases. In this regard, we set up the first Undiagnosed Diseases Programme (UDP) in Hong Kong which aims to end the diagnostic odyssey. This programme was supported by the S. K. Yee Medical Foundation in 2014.

Methodology

Clinical Whole Exome Sequencing (CWES) and Clinical Whole Genome Sequencing (CWGS) were performed. Bioinformatics processing was based on our in-house filtering algorithm. The overall clinical interpretation was based on clinical presentation, laboratory findings, imaging results and pathomechanism.

Results

We had handled >100 cases and the disease entities were highly heterogeneous. Importantly, some conditions were potentially treatable, for example, Allan-Herndon-Dudley syndrome, benign recurrent intrahepatic cholestasis (BRIC), coenzyme Q6 deficiency-related nephrotic syndrome, coenzyme Q10 deficiency, osteogenesis imperfecta type VII, steroid-resistant nephrotic syndrome, X-linked adrenoleukodystrophy, etc. We also discovered novel treatment for GNAO1-related epilepsy. Using CWES/CWGS, we had discovered novel disease-causing genes, AK9 in congenital myasthenic syndrome (CMS) and EBF3 in Moebius syndrome. Our works had been presented in the Diagnostic Challenge Session in the American Society of Human Genetics (ASHG) 2016 annual meeting and also in a public lecture, Rare Diseases of the Newborn - Detection and Management (available online - https://www.hkpl.gov.hk/mobile/en/extension-activities/event-detail/88251/rare-diseases-of-the-new-born-detection-and-management).

A new diagnostic algorithm is proposed for diagnosing rare diseases. In the first tier, newborns should receive expanded newborn screening for treatable inborn errors of metabolism (IEM) in pre-symptomatic phase. In the second tier, NMR-based urinalysis, a 15-minute test which allows quantitation of >200 urine metabolites should be arranged for patients presented with acute metabolic decompensation. In the third tier, patients with undiagnosed disease for >three months should undergo CWES/CWGS. The clinical interpretation of CWES/CWGS is challenging, requiring in-depth understanding in both advanced laboratory and clinical medicine. The overall CWES/CWGS analysis and interpretation should therefore be handled by specialists with strong experience in clinical genomics.

Service Enhancement Presentations

F5.4 **Healthcare Advances, Research and Innovations** **09:00** **Room 421**

Application of New Technology to Enhance Efficiency in Prescription of In-patient Wheelchair Seating System

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Introduction

Wheelchair Assignment and Seating Programme is an in-patient wheelchair seating prescription programme. Occupational Therapists are prescribing tailor-made and adapted wheelchair with pressure relieving and postural support devices for patients to sit properly during their hospital stay. In late 2016, a service review has shown that only 42.1% of the requests were completed within two working days to meet the service pledge. The main reason of the delay was due to the communication time lag on the stock condition at time of prescription.

A newly designed web-based mobile equipment loan system was launched on October 2017 for enhancing equipment prescription and management process. The system consists of: (1) A comprehensive equipment data base; (2) a web-based operation system; (3) electronic equipment prescription module; (4) electronic equipment maintenance record module; and (5) mobile tablet computers for request and maintenance record entry. By using mobile tablet, Occupational Therapists can easily prescribe seating equipment with access to the real time available equipment stock without delay. In addition, the equipment condition and maintenance record were systematically managed in electronic records.

Objectives

The main objectives of the new web-based software module are:

(1) To reduce waiting time of wheelchair seating prescription;

(2) to enhance electronic maintenance and repair record;

(3) to generate monthly statistical report on equipment utilisation; and

(4) to improve staff communication.

Methodology

(1) Service efficiency was measured by comparing(1) waiting time of using old paper form workflow and new web-based system; and

(2) processing time of generating monthly statistical report and maintenance repair record with conventional manual counting method and the new system.

Satisfaction on using the new system was evaluated by the user evaluation survey.

Results

Starting from October 2017, the new web-based system, together with electronic maintenance and repair record, were implemented. For service efficiency, the first two-day completion rate improved from 42.1% to 84.3%, and the mean waiting time reduced from 3.7 to 1.8 days. The processing time on generating monthly report and maintenance record also reduced from 75 to 5 minutes (93.3%). All staff shown high satisfaction and reported better communication in the user evaluation survey. Overall, the new module has shown positive results in service efficiency, daily operation effectiveness and staff satisfaction.

Initial Experience of Faecal Microbiota Transplantation for the Treatment of Clostridium difficile Infection in Hong Kong

Lui RNS[1], Wong SH[1,2], Lau LHS[1], Chan TT[1], Lam KLY[1], Cheung KCY[2], Tang W[2], Ching JYL[2], Chan PKS[3], Wu JCY[1,2], Chan FKL[1,2], Sung JJY[1,2], Ng SC[1,2]

[1]Division of Gastroenterology and Hepatology, Department of Medicine and Therapeutics, Prince of Wales Hospital, [2]Institute of Digestive Disease, [3]Department of Microbiology, The Chinese University of Hong Kong, Hong Kong

Introduction

Clostridium difficile infection (CDI) is a leading cause of healthcare-associated infection with significant morbidity and mortality. In Hong Kong, the incidence increased from 15.41 to 36.3 cases per 100,000 persons from 2006 to 2014, representing an annual increase of 26%. Difficult-to-treat cases are associated with extended hospital stay and may result in widespread nosocomial outbreaks. By replacing the gut microbiota from a healthy donor, faecal microbiota transplantation (FMT) has been shown to be effective for the treatment of recurrent or refractory CDI.

Objectives

In close collaboration with the healthy donor stool biobank established by the Faculty of Medicine, The Chinese University of Hong Kong which employs rigorous donor screening, we initiated a pilot FMT service using infusion of fresh or frozen donor faecal suspensions via upper or lower gastrointestinal routes to patients with CDI.

Methodology

We retrospectively reviewed all cases with FMT done for CDI to assess the technical and logistical feasibility, as well as efficacy and safety of this intervention.

Results

A total of 26 FMTs were performed for the treatment of CDI since 2013. Four of 26 patients (15.4%) required a second FMT. The mean age was 64.3 years (Interquartile range 52.0-80.8) with males consisting 61.5% of cases. Resolution of diarrhea without relapse within eight weeks was achieved in 19 of 26 patients (73.1%), which was comparable with rates reported in the literature. No deaths occurred at 30 days. The procedure was generally well tolerated with no serious adverse events attributable to FMT. The most commonly reported side effects included abdominal pain, discomfort or bloating.

Conclusion

To the best of our knowledge, this is the first case series using FMT to treat CDI in Hong Kong. The delivery of FMT was shown to be feasible, safe and effective. FMT will likely play an important role in managing patients with difficult-to-treat CDI. The rapidly growing body of research suggests that timely use of FMT is associated with reduced mortality, shorter hospital stay and cost savings. We propose that a territory-wide FMT service is required to address the increasing clinical demand.

Service Enhancement Presentations

F5.6 **Healthcare Advances, Research and Innovations** **09:00** **Room 421**

The First ABO-Incompatible Kidney Transplantation in Hong Kong: Queen Mary Hospital Experience

Ma MKM[1], Hwang GYY[1], Leung R[2], Ma WK[3], Tsu HL[3], Chan G[2], Lam C[2], Choy BY[1], Lie AKW[1], Kwok JSY[2], Chan TM[1]
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Introduction

Organ donation rate is low in Hong Kong. Over 2,000 patients with end-stage kidney failure (ESKD) are waiting for kidney transplantation. There is a pressing need to develop novel means to increase transplant rate, as long-term dialysis is associated with inferior survival outcome and quality of life than transplantation. ABO-incompatible kidney transplantation (ABO-i KTx) is an established treatment option worldwide, and the patient and graft outcomes are comparable to conventional ABO-compatible KTx. With close collaboration between clinicians, laboratory and nursing staff from nephrology team, clinical haematology team, haemato-pathology and histopathology teams, urology team, Transplantation and Immunogenetic Laboratory, we successfully performed the first ABO-i KTx in Hong Kong in April 2017.

Objectives

(1) To increase kidney transplantation rate and improve outcomes of ESKD patient; and (2) to reduce healthcare cost incurred from long-term dialysis and its associated morbidity.

Methodology

A 39-year-old Chinese lady with blood group O RhD+ and ESKD due to unknown primary aetiology received a kidney from her younger sister whose blood group was B RhD+. Investigations prior to the transplant operation showed one-haplotype match with negative HLA crossmatch, and an IgG anti-B titre of 1:256 in the potential kidney recipient. The patient then underwent desensitisation which included four sessions of plasmapheresis and rituximab. After the desensitisation protocol the anti-B titre decreased to 1:8. Triple immunosuppression comprising prednisolone, tacrolimus and mycophenolate mofetil was commenced one week before transplantation. The patient also received Basiliximab on Day 0 and Day 4.

Results

The clinical course after transplantation was uneventful. She had immediate graft function which remained stable thereafter, with serum creatinine at approximately 100 μmol/L. The titre of anti-B antibody increased during post-operative monitoring and she had one session of plasmapheresis. Protocol allograft biopsy at three weeks post-transplant showed minimal C4d staining and no rejection. The patient is now more than eight months after transplantation. Our experience with the first ABO-incompatible kidney transplantation in Hong Kong shows that, as has been demonstrated in other countries, this is a feasible approach to increase the rate of kidney transplantation and improve patient outcomes.

Effective Strategy to Reduce Readmission to Intensive Care Unit: An Experimental Study with Historical Control Group

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Introduction

Intensive care unit (ICU) readmissions have been associated with increased length of stay, mortality rate and healthcare spending. Though various critical care outreach programmes have been developed and evaluated worldwide, heterogeneity in methodology and target population posed difficulty in identifying optimal model of care, especially when none have been done in a highly government subsidised healthcare system like Hong Kong.

Objectives

To evaluate the effectiveness of a nurse-led critical care follow-up programme on ICU readmissions and hospital mortality in ICU discharged patients with respiratory problem.

Methodology

An experimental study design with a historical control group was employed. The ICU follow-up programme incorporated structured follow-up visits at general wards, standardised vital signs monitoring, track and trigger system, bedside coaching of general ward nurses, and consultation. Follow-up visits started within 24 hours after a patient's ICU discharge to 72 hours post-discharge. The outreach team was led by a nurse consultant with involvement of an advanced practice nurse and senior ICU doctors. Patients with respiratory problem meeting the inclusion criteria were recruited. Both the intervention and control periods lasted for 13 months. The primary outcome was ICU readmission within 72 hours, and the secondary outcomes included all ICU readmission rate, hospital mortality, and 90-day mortality rate. Pearson Chi-square tests or Fisher's exact test was used to analyse outcome variables between two groups. Logistic regression analysis was used to determine the predictors for ICU readmission within 72 hours.

Results

A total of 369 participants (185 in the intervention group, 184 in control group) were recruited. A significant reduction in ICU readmission within 72 hours was observed in the intervention group compared to control group (9.2% to 1.6%. $p<0.001$), with an 84.2% reduction in risk of early ICU readmission (OR: 0.158, 95% CI: 0.041, 0.602, $p=0.007$). Significant reduction in all ICU readmission (9.7% vs. 23.9%, $p < 0.001$) and hospital mortality (17.8% vs. 26.6%, $p=0.042$), but not 90-day mortality rate (15.7% vs. 22.8%, $p = 0.081$) was also noted in the intervention group. This nurse-led ICU follow-up programme was shown to be cost-effective, saving an estimated HK$ 1,135,792 in a period of 13 months. The results of the study contributed to the database of an innovative follow-up programme to share the practice locally and worldwide.

Service Enhancement Presentations

F6.1 Enhancing Partnership with Patients and Community 10:45 Room 421

HApi Journey: An Obstetric App to Enhance Partnership with Pregnant Women

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Introduction

Pregnancy is a joyful, yet stressful, journey. Every year, thousands of women drive through similar paths, some with undue concerns, some with various individual needs arise in various stages. Obstetric units have a long-standing history of offering antenatal classes to prepare them, but many of them cannot attend. We believe that an app can provide needed information and useful tools readily accessible to them in a timely manner. Empowered pregnant women are more likely to enjoy a Happy (HApi) Journey with knowledge of pregnancy, childbirth and puerperium.

ObjectiveTo develop a comprehensive and user-friendly obstetric app.

Methodology

After obtaining an endorsement in the Service Management Meeting to empower pregnant women through internet, a working group was formed in July 2013. Members include obstetricians and midwives of eight Hospital Authority (HA) birthing hospitals, dieticians, occupational therapists, physiotherapists, and principal of the School of Midwifery. The group has been receiving secretarial, administrative and IT support from HA Head Office too.
In July 2014, a smartphone app offering readily accessible information, useful tools and personal records was believed to be more desirable than a website. With help from the Centre for Communication and Public Opinion Survey, The Chinese University of Hong Kong, a focus group forum was held in December 2014 to collect valuable inputs for brainstorming the design.

Numerous software developers were invited to present their designs in May 2015. In July 2015, the working group consolidated contents of daily message covering nutrition, exercise, screening procedures, infection, pregnancy disorders, delivery-related issues and breastfeeding. In October 2015, a developer was selected to collaborate with the group to optimise art design, interface, information display and create useful tools such as photos of the labour ward of the booked hospital, follow-up reminders, hospital bag checklist, uterine contraction timer, blood glucose and blood pressure monitoring.

Results

After several user acceptance tests, the app named HApi Journey was launched on 22 February 2017. This was the first clinical educational app developed by HA and it had received wide media coverage. Posters and leaflets were used to promote downloading. There are over 26,000 downloads in the first nine months. A focus group discussion was held in August 2017 to solicit user feedback to facilitate any future enhancement.

Effects of Multimodal Physical Training on Motor Performances and Cognitive Functions of Persons with Mild to Moderate Dementia in Hong Kong: A Multi-Center, Randomised Controlled Trial

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Introduction

Dementia is a debilitating disease resulting in progressive decline in cognition that subsequently leads to a gradual deterioration of physical, emotional, and social functioning. The loss of strength and balance may also induce a high risk of fall. Over time, it brings a high psychosocial burden and distress to caregivers in providing a high level of caring and support in this target group of persons.

Objectives

This study aimed to evaluate whether educational talks together with a well-structured multimodal physical exercise training programme can (1) promote motor performances (strength, endurance and balance control) and reduce risk of fall; (2) improve cognitive functions and depression; (3) maintain functional independence; and (4) reduce stress of caregivers of persons with mild to moderate dementia in Hong Kong population.

Methodology

An assessor-blind, randomised controlled trial was conducted. Ethics approval was obtained from research committee (KC/KE-14-0143/FR-2). 67 elderly with mild to moderate dementia whose Clinical Dementia Rating was 1 or 2 were recruited. They were randomly allocated into either interventional group (n=35) or control group (n=32) by blocked randomisation method. Subjects in the interventional group received 24 sessions of well-structured multimodal physical exercise training programme that incorporated all progressive resistance, aerobic, and dual-task balance training two days a week and 90 minutes a day for a total of 12 weeks. Subjects in the control group received home exercise programme on general stretching exercise and light intensity mobilisation exercise. Both study groups and their caregivers received two sessions of educational classes on disease management, strategies to delay symptoms of dementia, fall prevention and caring skills. Outcomes were measured at baseline, end of training and 12-month follow-up. Permission was granted in using Mini-mental State Examination (MMSE) by PAR for the current study. Statistical analysis was conducted using 2-way repeated measures ANOVA by an intention-to-treat analysis approach.

Results

Drop-out was 11.9% and 17.9% at end of training and 12-month follow-up, respectively. Upon completion of 12-week training, significant treatment effects (all $p<0.05$) were evident on motor performances health outcomes (improved quadriceps muscular strength, six-minute walk distance, timed up and go test and Berg Balance Scale [pre/post values of 15.4±4.7/16.8±5.5 kgf, 199.4±74.6/217.8±78.7 meter, 21.9±16.4/19.7±13.7 second, and 43.3±11.6/45.5±9.7 respectively]) while cognitive domains were maintained till one-year follow-up as compared with baseline (MMSE [17.4±4.9/17.7±5.2]; Montreal Cognitive Assessment [13.7±5.4/13.9±5.5]) in the interventional group. Disability Assessment of Dementia Scale was significantly higher while Zarit Burden Interview scores was significantly lower in the interventional group as compared with control group (71.9±19.4 vs. 66.8±24.1, p=0.002 and 25.8±15.4 vs. 30.9±15.3, p=0.027 respectively). Geriatric Depression Scale-Short Form and fall episodes did not demonstrate significant group or interaction effects between the 2 groups. Dementia is associated with multiple daily life challenges that significantly affect both the patients and their caregivers. Provision of multimodal physical training together with appropriate support and education helped to slow down the rate of disease progression and relieved the stress and burden of caregivers.

Service Enhancement Presentations

F6.3 Enhancing Partnership with Patients and Community 10:45 Room 421

User Experience in Using "BookHA" in Patient Journey

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Introduction

"BookHA" is the first interactive mobile application developed by the Hospital Authority (HA) to serve the public. It provides a simple and easy alternative for the public to submit booking request for new case appointments at Specialist Outpatient Clinics (SOPC) anytime and anywhere with a smart phone.

To ensure "BookHA" is a user-friendly mobile application and only necessary data would be collected for SOPC appointment booking, advice from external stakeholders (e.g. patient groups) and internal stakeholders (e.g. Corporate Communication Department, Legal Services Department, and Corporate Information Security and Privacy Office) were sought during development.

Soon after "BookHA" was launched at Gynaecology clinic in March 2016, positive feedback from the mass media and HA top management was received. The download rate and number of new case appointment submission had been increasing steadily. To collect feedback from the public and to identify areas for improvement, a public survey was designed and incorporated in "BookHA".

Objectives

A public survey on the users' experience in using "BookHA" has been launched since December 2016. The survey serves to confirm the position of "BookHA" as an alternate means for SOPC appointment booking – 'Simple and Easy', 'Anytime and Anywhere'. In addition, it helps to engage the public to provide their valuable opinion on the usability of "BookHA".

Methodology

From December 2016, persons who used "BookHA" to submit booking request would be directed to the survey form within the app.
The survey included six questions:

(1) "BookHA" makes submission of booking request easy and convenient

(2) I am satisfied with my experience in using "BookHA"

(3) I can complete booking request in a single attempt

(4) I submitted booking request for myself/other people

(5) I know about 'BookHA' from poster or pamphlet/hospital or clinic staff/HA electronic platform/HA referral letter/media, newspaper or magazine/others

(6) Other comments

Results

In a 13-month period (December 2016 to December 2017), a total of 25,500 surveys were collected, majority of respondents found "BookHA" easy and convenient, with an average score of 4.54 out of 5. 88% were satisfied with the experience of using "BookHA". 92% of respondents could complete the booking request in one-go. 35% of respondents were not patients but they helped the patients submit booking request. Last but not least, comments collected via the open-ended question were overwhelmingly superb.

Conclusion

"BookHA" is proven to be a user-friendly mobile application which meets the expectation of the public. The experience of planning, development, implementation and promulgation of "BookHA" set a good reference for upcoming corporate public mobile application projects.

Enhancement Project on Safe Specimens Management in Residential Care Homes for the Elderly

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Introduction

Over 4,100 elderly living in 41 Residential Care Homes for the Elderly (RCHEs) were covered by Yan Chai Hospital (YCH). Hundreds of specimens were collected and transported from RCHEs to hospital each month. Due to human errors of RCHE staff, however, a lot of incidents related to wrong specimen collection, management and transportation were reported leading to delayed treatment or irreversible consequences. Community Nursing Service (CNS) initiated this project to enhance safe practice in RCHEs.

Objectives

To ensure RCHE staff perform: (1) proper patient identification; (2) appropriate specimen collection; (3) effective specimen transportation; (4) prompt and precise treatment provided; and (5) correct spillage management of RCHE staff.

Methodology

In Jul 2016, CNS formed a workgroup to collect specimen handling problems during RCHE visits and analysed the root causes. To ensure RCHE staff understood the standard of specimen management and transportation: Specimen Collection and Management Manual, education video, photo guides (showing good practices) and tailor-made specimen container (keeping specimens in upright position in accordance with the laboratory standard) were developed and distributed to all RCHEs. Besides, on-site training was organised to coach staff. Skill and knowledge assessments were undergone before and after training. Furthermore, a self-checking system was established for RCHEs to guide and control the specimen transportation process.

Results

After data collection and analysis, the common specimen related problems in RCHEs were identified and grouped into five categories: Improper patient identification, inadequate patient preparation, unclear specimen collection process, incorrect transportation, and inappropriate spillage management. Having provided the standard items and on-site trainings to 39 RCHEs (224 staff) from August to September 2017, knowledge and practices were significantly improved (83% to 100%). For instance, almost all staff knew to mark collection date and time on specimens (Pre: 63%; Post: 99%). They understood sending specimens to hospital within recommended time (Pre: 60%; Post: 100%) and how to disinfect the container and spillage management (Pre: 76%; Post: 100%). Many RCHEs had adapted the self-checking system (over 91%) and specimen container (100%) for transportation.

For evaluation, the incident number and time spent on handling problems were significantly reduced from 20 to 7 cases (reduce 65%) and from 130 to 79 minutes (reduced by 39%).

Conclusion

The project demonstrated a concerted effort from YCH CNS and successfully enhanced safe practice of specimen management and self-checking system of specimen transportation. RCHE staff appreciated as it enriched their knowledge and skills a lot. The manual, education video, photo guides and specimen container were very useful which helped standardising their practices and different procedures as well.

Service Enhancement Presentations

F6.5 Enhancing Partnership with Patients and Community 10:45 Room 421

Breaking Down Work Silos between Hospital and Community
Medical Social Collaboration for Management of Work Related Low Back Pain

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Introduction

Work related low back injuries with pain is notoriously difficult to manage because of complex interplay between biological, psychological and social factors. In addition to medical problem, patient with work related low back pain is facing problem of liaison with employer for return to work, compensation, work settlement. These are considered as service gap of hospital-based service. Work rehabilitation in silo without community parties' input results in discontinuation of care, work disability and chronic pain.

To tackle this long standing problem. A Medical-social Collaboration (MSC) platform facilitating co-joined work rehabilitation service with input from social worker, was established since 2015 in Orthopaedic Ambulatory Care Centre. In addition to medical intervention, there is onsite counselling including psychological support, social support, experience sharing on handling of workers compensation for every clinic session from ARIAV .

Objective

To evaluate the outcome of MSC care model with respect to return-to-work rate and functional outcome.

Methodology

80 patients with work related low back pain on sick leave recruited (2015-2017) from the Specialist Outpatient Clinic waiting list which enrolled into the MSC programme was reviewed prospectively.

Results

59% of patients return to work within one year. Total number of sick leave days was 261.9. All of them attended counselling session on handling procedures of work injury. 74.6% and 60.3% of them received psychological support and consultation on legal issue respectively. 42.9% of them were offered employment counseling and job re-training courses for patient reintegration into society.

For functional restoration, significant improvement was shown in Roland Morris Disability Questionnaire mean score which was decreased from 16.09 to 11.82 (p value <0.01).

Our result reviewed that MSC model in work rehabilitation is feasible, this will be a potential solution to bridge the service gap of hospital-based service. Breaking down the work silo requires co-joined effort and communication to design a bio-psycho-social care model for transition of care. The effort is worthwhile to provide a comprehensive work rehabilitation that puts injured worker's benefits first.

Outcomes of Six-year Follow-up of a Cohort of Infants of Substance Abusing Mothers Showed that the New Community Paediatric Service Model Achieved All the Objectives of Comprehensive Child Development Service

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Introduction

Infants of substance abusing (SA) mothers were well known to have poor compliance to vaccination and health follow-up. According to the "Inverse Care Law", patients who default healthcare follow-up are of the highest risk that indeed need the most intensive and comprehensive service. Comprehensive Child Development Service (CCDS) was piloted in Princess Margaret Hospital (PMH) in 2005 using the strategy of community-based, child-centred, family-focused, integrated, multidisciplinary service, to serve infants born by mothers with high risk factors. Infants of SA mothers are one of the targeted groups with the highest risk.

Objectives

(1) Early identification of pregnant women with substance abuse habit and provide early intervention and support; (2) improve engagement in follow-up; (3) modify high risk behaviour of mothers and empower them for proper parenting; and with the ultimate objective of (4) improve the developmental outcome of infants of SA mothers.

Methodology

PMH CCDS applied the strategy of: (1) early identification of high-risk families in antenatal clinic; (2) community-based: outreaching paediatric clinic in Maternal and Child Health Centre (MCHC); (3) early engagement and counseling for the families by CCDS midwife, paediatrician and social worker; (4) integrated, multidisciplinary team: collaboration between Department of Obstetrics, Paediatrics, Psychiatry, MCHC, Family Social Worker and NGOs for substance abuse treatment. Efficacy of CCDS was indicated by: (1) attendance rate of CCDS follow-up; (2) nutrition and vaccination rate; (3) neuro-developmental outcome of the children; and (4) detoxification rate of the mothers.

Results

(1) Attendance rate of infants of SA mothers in PMH CCDS clinic in 2013/14 is 69.4%, compared with 46.8% before CCDS was established. (2) Cohort of infants of SA mothers born between 2011-2014 and follow-up at PMH CCDS was evaluated: total no. of infants is 193; vaccination rate is 100%; failure-to-thrive is 1%; borderline or delay in development is 17% (vs pre-CCDS is 25%, and cohort in 2006-2009 was 20%)(according to definition, 15% of general childhood population have borderline or delay in development). Attention Deficit Hyperactivity Disorder is 1%; Autism Spectrum Disorder is 1%. (3) 77% of the mother successfully detoxified.

Conclusions

According to the outcome of the cohort follow-up at PMH CCDS, the community paediatric service model has achieved all the objectives set out during the establishment of CCDS, and led to close-to-normal developmental outcome of very high risk infants.

Service Enhancement Presentations

F6.7 Enhancing Partnership with Patients and Community 10:45 Room 421

Enhancement of End-of-life Care @Residential Care Home for the Elderly in Kwai Tsing

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Introduction

In Hong Kong, there is about 8.5% of elderly living in Residential Care Home for the Elderly (RCHE). Frail residents with terminal illness suffered from multiple co-morbidities and repeated hospital admissions received prolonged life treatment. There are many barriers to deliver quality of dying for frail elders such as lack of end-of-life (EOL) care knowledge and skills either in hospital or RCHE; time constraint for healthcare professionals to discuss elders' advance care planning (ACP) during consultation; feeling anxious and stress for coroner procedure from RCHE carer and families if frail elders passed away in RCHE. In 2012, Princess Margaret Hospital piloted an "Elderly PEACE Programme" at two subvented RCHEs. With high commendations from patients, family and stakeholders in hospital and community, an enhancement of EOL care programme was supported by the corporate rolling out to other RCHEs in Kwai Tsing (KT) District in October 2017.

Objectives

(1) To enhance quality of EOL care and practice in RCHE; (2) to support frail elders/family developing ACP in RCHE; and (3) to empower RCHE staff/family on EOL care.

Methodology

PMH developed an infrastructure of EOL care model at KT in 2012 and its enhancement phase was commenced in October 2017. The Programme was a five-year service plan to be implemented in 41 elderly homes, and beneficiaries would be about 6,000 elders. Key strategies were: (1) a series of tailored EOL education and skills training to equip hospital and RCHE staff; (2) sharing forums to engage cross-sectoral stakeholders including public and private organisations obtaining their continuous support towards the Project; (3) medico-social shared care to identify frail elders who suffered advance chronic irreversible medical illness and families with will of comfort care at the RCHEs; (4) family conference(s) to discuss and confirm ACP and Do-Not-Attempt Cardiopulmonary Resuscitation (DNACPR) decisions; (5) tele-medico-consultation to support prompt symptom control and disease management as appropriate; (6) palliative care team supports complex case management and skill transfer on EOL care; (7) agreeable care protocols and structural administrative workflow to guide operations and practice across specialties and settings (12) regular meeting and feedback collection for performance review and quality improvement.

Results

Up till February 2018, 309 staff in hospital and RCHE and families received EOL training. 66 frail elders and families joined the Programme and confirmed their ACP at the RCHEs. The mean age was 89 (range from 61-108). 56% of them suffered from advanced dementia while 12%-18% were stroke, end stage organ failure and malignancy. They had 33% risk of hospital readmission according to Hospital Admission Risk Reduction Programme for the Elderly (HARRPE). 30% of them died within five months after recruitment. All of them had not received cardiopulmonary resuscitation or traumatic procedures as planned. On evaluation of the deceased patients, after joining the programme, the average A&E attendance (including the death episode) was 1.05 and their medical bed days were 2.72 days. Families and RCHEs' carers commented that the elders stayed more time in their familiar environment with their loved ones during the last life journey. Hospital staff also commended that the programme not only enhanced their EOL knowledge but also improved quality of dying experience for institutionalised frail elders in Hong Kong.

How to Help Our Supporting Staff to Cope with Stress in Their Workplace and Overcome Their Difficulties

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Introduction

Between 2008 and 2016, there were 8,387 deaths recorded in Cancer Palliative Ward in the New Territories West Cluster. Research found that working with grief and bereavement can put staff in touch with their own losses and heighten mutual empathy and identification. Patient Care Assistants (PCAs) are the life-blood of hospitals providing assistance to patients' daily activities such as bathing, feeding and toileting. Owning to the length and intensity of their interactions with dying patients and relatives who were highly emotional and stressful, PCAs could suffer from chronic work-related stress. As a result, absenteeism and turnover rates would increase.

Objectives

(1) To develop competencies of Patient Care Assistants in taking care of dying patients and their families; (2) to create a caring culture and enhance their motivation; and (3) to reduce absenteeism and turnover rates.

Methodology

Actions were taken at three different levels: primary, secondary and tertiary. The primary strategy changed conditions, secondary strategy managed stress and the tertiary strategy handled problems. Strategies at the primary level directly addressed the primary causes of stress in the workplace. 24 formal workshops were conducted covering workplace violence, suicidal ideation, communication with emotional relatives, symptom management, handling difficult patients and so on. They aimed at enhancing the skills and competencies of PCAs in facing daily challenges. PCAs were encouraged to take part in decision-making process to solve problems. Regular information sharing sessions consisting of a conversation between peers were held to gather suggestions and create a supportive culture. The secondary strategy aimed to reduce and relieve stress. A toolkit was designed for PCAs by a multidisciplinary team. PCAs could learn meditation, loving-kindness-breathing, contemplation, acupressure, massage, Baduanjin Qigong and so on. PCAs could develop their own resources for mental health. The tertiary strategy aimed at treatment and rehabilitation. This is a long-term personalised help to staff with difficulties in work. Individual interventions were provided by support group and companionship. Each PCA was supported by a designated APN who offered counseling services and facilitated their return to work if incidents occurred.

Results

According to the Staff Rostering System (SRS), the average number of sick leave days recorded per PCA per year in 2013 and 2016 were 15.94 days and 5.95 days respectively. The turnover rate in 2013 and 2016 were 17.1% and 9.5% respectively. Zero turnover was recorded in 2017. Lowering the absenteeism and turnover rates really helped to create positive externalities.

Service Enhancement Presentations

F7.2 Committed and Happy Staff 13:15 Room 421

Behaviour Based Safety Observation Proactive Approach for Promoting Safe Sharp Handling Culture in Operating Theatre

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Introduction

Sharps and needle stick injuries remain a significant threat to both healthcare personnel and patient with exposure to blood borne pathogens. Perioperative team members are at highest risk (59%) of sharps injuries in Operating Theatre (OT). From 2015 to June 2016, 26 cases related to needle stick injuries were reported. Most of these injuries were preventable when safe practice was reinforced through sharp safety programme and strengthening safe culture in department.

Objectives

(1) To reduce the rate of sharp injuries; (2) to enhance staff's awareness and engagement in safe sharp handling; and(3) to promote and sustain safety culture by reinforcing safe behaviour.

Methodology

Strategies including standardisation of current practice, structural training workshops and Behaviour Based Safety Observation (BBSO) are implemented to foster safety culture. A workgroup was established to promote the programme; sharp props production workshop, lecture, training workshop, slogan and posters design competition were organised to enhance staff skill, awareness and engagement. Photos of standard practices were promulgated to nurses and surgeons through email and notice board. Related video was uploaded to department website.

BBSO training workshop with emphasis on theory and feedback skill was arranged for OT subspecialty in-charges, surgeons and anaesthestists as trained observers to conduct observation for surgical team dynamic on sharp handling according to the critical items identified by the observers and agreed by surgical team partners. BBSO was conducted by random for continuous improvement through positive reinforcement on safe behaviour and evaluation of causes for unsafe acts. Data collected is communicated through conveying both safe and at-risk behaviour for staff alertness, and formulating strategies for removing behaviour barrier. Programme was evaluated by monitoring statistics on Injury-on-duty (IOD) and collecting staff feedback on a weekly briefing session.

Results

A remarkable reduction in sharps injury rate (50%) was recorded until September 2017 compared to that of last year. Safe behaviour index calculated from BBSO raised from 89.8% in March to 98.1% in September in 159 observations for seven months.The average safe behaviour index is 95.8% in 159 observations for six months.

BBSO programme initiates a safety partnership between management and staff with common goal in reducing incidents of sharp injuries. To achieve sustainable changes in behaviour, buy-in from all involved parties with continuous monitoring are motivators for staff to follow standardised safe practice and to build up a safety culture.

F7.3 Committed and Happy Staff 13:15 Room 421

Adopting a Scientific Basis to Tackle Slip, Trip and Fall in HKWC – Improving Safety of Staff, Patients and Visitors

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Introduction

The slip, trip and fall (STF) hazard has been causing a substantial number of safety, causing personal injury, loss in productivity, staff compensation, and civil liability. All staff, patients and visitors are at equal risk. In fact, the Hospital Authority (HA) injury-on-duty (IOD) report indicates that both IOD rate and sick leave rate of STF have been increasing since 2015. On average, the number of sick leave days per 100 FTE is 22, which is the second highest among all IOD types. The issue is of particular concern in historical buildings of HA such as Queen Mary Hospital (QMH). In QMH, the STF Prevention Programme has been managed by the Patient Journey Working Group since 2016. It is collaborated with the Hong Kong West Cluster (HKWC) Occupational Safety and Health (OSH) Team that has driven a scientific basis in strategy that is piloted in QMH.

ObjectiveTo improve the safety of staff, patients and visitors by eliminating slip, trip and fall hazard in HKWC.

Methodology

Risk Assessment

Previous injuries and near misses related to falls were reviewed and analysed. Wet floor surface of lobbies and corridors was identified as the significant contributing factor. Site inspection was conducted to rule out environmental factors such as adequacy of lighting, and to assess the specific quality of flooring surfaces of lobbies, e.g., evenness, polished or glazed, potential to slip when wet, and also the trembling walking movement of staff and visitors. The degree of slip resistance was measured under both dry and wet conditions by American Slip Meter 825A and expressed as the Coefficient of Friction (COF). An obvious difference of COF between dry and wet surface was observed.

Control Measures

The success of administrative control is variable. Engineering means such as applying anti-slip treatment to increase slip resistance should be the preferred measure to fix the problem. Traditional non-slip coating, however, is not suitable in the healthcare setting as it may wear off easily and hazardous chemical vapour is generated during application. After extensive sourcing in the market, a hospital grade acid “etching” agent was found. After applying this agent onto the floor surfaces by simple mopping, the surface of the tile will be transformed into microscopic pores and turned rougher, thus greatly increasing the level of friction. When the floor gets wet, it will then activate and instantly transform the millions of tiny pores into suction cups, gripping the bottom of shoes and increasing traction.

Results

The COF of the untreated floor surfaces on dry and wet conditions were 0.6 and 0.3 respectively. Only COF measured on dry floors complied with the relevant international standards such as American National Standards Institute (ANSI) A137.1 and National Floor Safety Institute (NFSI) B101.1, which recommend 0.5 on dry floor and 0.6 or above on wet floor. Although the COF of dry floors showed only 5% increase to 0.63, the COF of the wet floors showed a significant improvement to 0.87. All readings obtained from the treated floor surface met with international standards. Serial reassessments at three-month intervals were conducted from 2016 to 2017 to examine the durability of anti-slip effect. COF of the treated floor surfaces were shown to be of ‘High-traction’ over the period. The effectiveness of the treatment was also reflected in the decreasing trend of STF IOD rate from 0.82 in 2012 to 0.59 in 2017.

To design an effective STF injury prevention strategy, concerted effort from multiple stakeholders is required and a systematic multi-prong approach should be adopted. This non-slip enhancement measure has been extended to other HKWC hospitals. Other Clusters and private hospitals are also keen to adopt this. To maximise the benefit, coverage areas will be extended to tactile guide paths, patient toilet areas, etc. It is expected that safety of staff, patients and visitors can be much improved.

Service Enhancement Presentations

F7.4 Committed and Happy Staff 13:15 Room 421

Community Recruitment Campaign

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Introduction

Improving economic condition intensified competition of local workforce, recruitment difficulties and the issue of attrition of supporting staff. Effective strategies to promote available jobs, attract applications and recruitment are some of the key issuess to mitigate manpower risk. A Community Recruitment Campaign is hence initiated to deal with the critical situation.

Objectives

(1) To enlarge the pool of potential candidates and build a workforce pipeline; (2) to lower the risk of cultural and expectation mismatch to reduce the chance of “early attrition”; and (3) to promote meaningful career in HA to target groups.

Methodology

(1) Job openings are advertised in targeted districts/locations/buildings through (a) leaflet distribution to households; (b) posters and banners in hospitals and relevant training; and (c) advertisements in MTR stations and buses to attract local residents’ and visitors’ attention which encourage applications. (2) Specific Recruitment Days in community centres, training institutions and hospitals are organised in addition to normal recruitment exercises to facilitate local residents’ access to relevant job information and opportunities. Hospital representatives are present to communicate with job seekers/visitors, facilitating their understanding of the job opportunities, requirements, work environment, promotion opportunities, etc.; and addressing their concerns/clarifying their questions to reduce cultural/expectation gap. (3) Career talks are organised for graduates in selected institutions to enhance students’ understanding and appreciation of Hospital Authority (HA)’s “Vision, Mission and Values” and community role. The structure and career opportunities in HA are also delivered to arouse students’ interest in joining us and devoting themselves in a meaningful career.

Results

Through the Community Recruitment Campaign, public’s awareness and understanding of the concerned job openings in New Territories East Cluster has increased. About 40% of applicants knew our job openings through new promotion strategies. Average number of applicants per recruitment exercise for the concerned jobs before and after the Campaign was increased by 33%. Total no. of appointees was increased by 13%. The Campaign received positive feedback, in addition to attracting applications, the core values and social mission of HA were effectively propagated that helped establish the HA reputation through large-scale advertisements and promotion. As observed, the Community Recruitment Campaign has achieved the objectives and has positive contribution in alleviating manpower risk. Through promotions and local recruitment, it helps contribute to self-sufficiency in local communities, while professional image of HA was well spread.

Electronic Documentation of Patients' Records to Reduce Files Handling by Clerical Staff at Outpatient Physiotherapy Department of Pok Oi Hospital

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Introduction

Handwritten documentation of patients' physiotherapy records was a traditional practice in the past few decades. Our clerical staff had to sort out around 300 patients' files on physiotherapy appointment each day. They had to file back the patients' files after documentation done by the physiotherapists. This process was time-consuming and might induce repetitive stress injuries to the clerical staff during filing procedure. In view of the situation, electronic documentation of patients' records was implemented at the Outpatient Physiotherapy Department (OPD) of Pok Oi Hospital (POH) to reduce the daily number of patients' files being handled by clerical staff.

Objectives

(1) To evaluate the effectiveness of electronic documentation on handling patients' records by clerical staff; and (2) to report the compliance of electronic documentation by physiotherapists.

Methodology

Electronic documentation through Clinical Management System (CMS) has been implementing at the OPD of POH since 1 September 2017 for all individual cases. Only the daily new patients' files were sorted out by clerical staff for physiotherapists' recording. There is no need to sort out the patients' files with subsequent appointment. The number of patients' files being handled by clerical staff was compared before and after the implementation of electronic documentation. An audit on electronic documentation input was conducted to the nine full-time OPD physiotherapists after implementation of electronic documentation for one month. All attended cases of a randomly selected date were recruited for documentation audit. Each physiotherapist can audit the electronic documentation input of their peers except the cases of their own.

Results

Before implementation of electronic documentation of patients' records, clerical staff had to spend about 180 minutes to handle around 300 patients' files daily. After the implementation of electronic documentation, only the new patients' files have to be handled. Therefore, the number of patients' files being handled was reduced from 300 to around 40. The time required for files handling was reduced from 180 minutes to around 25 minutes. For the documentation audit, a total of 250 patients' records were evaluated. There were 248 cases with electronic documentation resulting in 99.2% of input in the CMS. It showed a high compliance rate of out-patient physiotherapists in using electronic documentation. Two cases were found to have missing sign off (that was incomplete documentation). The implementation of electronic documentation has reduced the number of patients' files handled by clerical staff. This improvement project was effective in minimising the stress and workload to the clerical staff. The time saved in files handling can be spent for other clerical work. On the other hand, regular documentation audit is recommended to ensure the quality of our service.

Service Enhancement Presentations

F7.6 Committed and Happy Staff 13:15 Room 421

Can We Improve the Influenza Vaccination Rate among Healthcare Workers by Addressing Their Concerns on the Vaccine When They Attend Staff Clinic?

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Introduction

Despite annual influenza vaccination is highly recommended worldwide as the first and best way to protect against influenza, the injection rate remains relatively low among healthcare workers (HCW). Finding out the underlying reason(s) of their refusal and addressing their concerns may enhance the vaccination rate of HCW. A pilot programme was conducted in a Hospital Authority staff clinic.

Objectives

(1) To explore the reasons that HCWs refuse to receive influenza vaccination; (2) to see if addressing these factors by their doctor could improve the vaccination rate.

Methodology

A pilot programme was conducted for one week period from 5 January 2018 to 12 January 2018. HCWs attending our staff clinic were invited to fill in a questionnaire concerning their flu vaccine status and the reason of refusing vaccination. During consultation, the attending doctor would examine the questionnaire, and explore the HCWs health belief and attitude towards vaccination if they had not received the vaccine. Misconceptions on vaccine would be corrected together with a take-home influenza vaccine information sheet highlighting their specific areas of concern.

Immediate on-site vaccination service was provided to the HCWs after consultation if they agreed while the information sheet would act as a reminder for those who could not decide yet.

Results

According to the questionnaire, the influenza vaccination rate of the HCWs attending our clinic during the period was 28.6%. 217 questionnaires were collected with a response rate of 71.9%, in which 203 were complete and valid. The baseline ad hoc vaccination rate from 15 December 2017 to 22 December 2017 was 1.3%, while that of the intervention period was 6.6%.

Fear of vaccine side effects was common among HCWs, which should be the area of focus on future promotion of vaccination. Experiencing adverse reaction ranked second, therefore, HCWs should be encouraged to report suspected adverse reactions after vaccination in order to clarify whether those were vaccine related or not.

The ad hoc vaccination rate significantly increased with this strategy comparing with the baseline before the programme. Further enhancement of vaccination rate is possible given some HCWs may change their mind later through education. Larger scale of this programme involving more HCWs is warranted to confirm the effectiveness of this approach in enhancing vaccination rate.

F7.7 **Committed and Happy Staff** **13:15 Room 421**

Cytotoxic Safety Programme for Nurses to Delivery Cytotoxic Drug in General Ward

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Introduction

According to the Hong Kong Cancer Registry, the number of new cancer cases in Hong Kong rose at an average annual rate of 2.9% over the past decade. In response to the increasing number of cancer patients, medical oncology service was established since 2016. The missions of the service were to manage systemic cancer treatment, to optimise co-morbid medical conditions before and during cancer treatment including chemotherapy, hormone therapy and immunotherapy, and to manage the medical complications arisen from the cancer itself and therapy. Nurses require to handle cytotoxic drugs frequently that can result in serious and even fatal outcomes if failure to deal properly and safely.

Objectives

(1) To provide a safe working environment to run the medical oncology service; and (2) to mitigate the risks of handling cytotoxic drugs.

Methodology

To prepare a new medical oncology service in 2017, a series of strategies were set out such as staff recruitment, operation guidelines review, staff training, competence assessments, and equipment preparation. (1) Staff recruitment: One advanced practice nurse and two senior registered nurses who have completed Post-registration Certificate Course C related to cytotoxic drug training were recruited in the medical oncology team. (2) Operation guideline review: We reviewed guidelines for storage, handling and disposing of cytotoxic drugs. The procedures of safe handling cytotoxic drugs including drug administration, disposal of cytotoxic waste and spill control were standardised. (3) Staff Training: According to the Hospital Authority Safety Manual, any person with responsibility assigned in the work procedures involving cytotoxic drugs should have received training. Therefore, lectures were provided by oncologist and medical oncology team members. Topics were related to cytotoxic drug safety, spillage and extravasation management, and chemotherapy assessment. A scenario-based spillage drill was implemented to enhance competence, knowledge and skills through practice. (4) Competence Assessment: Compliance with practice standards is essential to protect all personnel from the harm of hazardous drugs. Chemotherapy administration and spillage management audits were conducted regularly. (5) Equipment preparation: We designated a lockable cupboard and refrigerator with warning signage where cytotoxic drugs are stored. -Chemotherapy trolley was designed for administration of cytotoxic drug. It contains protective equipment, sharp box, and spillage kit to facilitate staff to administer treatment. Healthcare Assistance working in night shift was assigned to check the trolley monthly to ensure equipment available and functional. A warning label was designed to alert staff that all hazardous toxic waste should be placed in a sharp box and red bag with warning label, then put in the designed area.

Results

20 patients were admitted to ward 9B receiving medical oncology treatment without sentinel and serious untoward event reported. 100% compliance in chemotherapy audit was performed. All staff stated that they are more confident with increased awareness to handle cytotoxic drug and protect themselves.

Service Enhancement Presentations

F8.1 Young HA Investigators Session 14:30 Room 421

Improving Outcome with Implementation of the Use of Tranexamic Acid for Traumatic Brain Injury with Contusions or Traumatic Subarachnoid Haemorrhage in the Elderly

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Introduction

Fall with head injury is becoming an epidemic burden especially in the elderly population. One of the contributing factors for mortality and poor functional outcome in elderly's moderate head injury is development of cerebral contusion, i.e. delayed traumatic intracerebral haematoma, or traumatic subarachnoid haemorrhage. The implementation with the use of Transamin and outcome of this group of patients is not established.

Objectives

To investigate the implementation of the use of Tranexamic Acid (Transamin) in traumatic brain injury with contusions or traumatic subarachnoid haemorrhage in the elderly.

Methodology

This was a seven-year retrospective study of consecutive patients admitted for traumatic brain injury with contusions or traumatic subarachnoid haemorrhage at Queen Mary Hospital from 2010 to 2016. Primary outcome was the implementation rate of Transamin after adaptation of a new Neurosurgery Departmental Protocol in October 2011 at Queen Mary Hospital. Secondary outcomes included the rate of deterioration requiring operations and the survival rate without operations.

Results

A total of 651 consecutive patients were identified. 81 patients had Transamin (Transamin group) while 570 did not have Transamin (control group) during admission. The Transamin group was significantly older at 73.92 years old (95%CI 68.77-77.84 years old) versus 65.36 years old (95%CI 63.24-67.48 years old) for the control group (p=0.0062). The implementation rate had a strong positive correlation over time with a Pearson Correlation Coefficient of R2 =0.8336 which was significant. The rate of deterioration requiring operation in the Transamin group was significantly lower at 6.17% versus 16.3% in the control group (OR 0.337 95%CI 0.133-0.857, p=0.022). The survival rate with no operations in the Transamin group was significantly higher at 88.89% versus 77.89% in the control group (OR 2.270 95%CI 1.104-4.667, p=0.026).

ConclusionIn this study, patients in the Transamin group was significantly older than the control group. The rise in implementation was positive and strongly correlated with time. Transamin group had a lower rate of operation. With the use of Transamin, there were significantly more survivors without operations. Further studies are required to assess the impact of the use of Transamin on a territory-wide basis.

F8.2 **Young HA Investigators Session** **14:30 Room 421**

The Effect of Person-centred Diabetic Foot Care Education on Self-Efficacy and Foot Care Behaviour in People with Diabetes: A Randomised Controlled Trial

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Introduction

Diabetic foot care (DFC) education is the cornerstone of diabetic foot ulcerations (DFU) prevention. DFC education was provided by healthcare professionals with a long history, but the prevalence of DFU is still high. Reviews suggested that this may be due to the absence of individualised approach in scaffolding the contents. A new person-centred DFC education guided by health-belief model was therefore designed with its effectiveness evaluated.

Objectives

To evaluate the effect of DFC education programme using health-belief model on self-efficacy and foot care behaviour in people with diabetes.

Methodology

A randomised control trial was conducted in 288 diabetic patients who first attended Hong Kong East Cluster Podiatry Departments. Participants were randomly assigned to experimental (EG) or control (CG) group. Participants in EG received individual session on person-centred, health-belief model guided DFC education during their first podiatry appointment (T0). Their risk of DFU, barriers of performing DFC task were highlighted and resolved accordingly. Their home care plan in DFC were also monitored in two telephone follow-up sessions in week four and week eight. For CG, they received usual DFC education during their first podiatry appointment and two telephone calls in week four and eight in order to balance the psychological effects of professional contact.

Data collections were conducted before the DFC education of both groups (T0) and at 12th week after intervention. Sociodemographic data sheet and validated DFC efficacy and behaviour instruments were completed. Objective data in bilateral hallux length and thickness, callosity stiffness, severity of xerosis and tinea pedis were measured by independent assessors who were blind to group allocation.

Descriptive statistics and generalised estimating equation model were used for data analysis.

Results

231 patients completed the study (dropout rate was 19.8%). There were significant improvements between EG and CG in DFC self-efficacy ($p=0.001$), preventive behaviour ($p=0.001$), damaging behaviour ($p=0.018$) and bilateral hallux toenail length ($p=0.024$). There was no significant difference between EG and CG in other variables.

Diabetic foot care education using health-belief model was found beneficial to people with diabetes in terms of DFC efficacy and behaviours. Clinicians should review their current DFC education programme and consider to adopt person-centred approach to advocate the importance of DFC and DFU prevention.

Service Enhancement Presentations

F8.3 Young HA Investigators Session 14:30 Room 421

Long term effect of Steroid in Local Infiltration Analgesia after Total Knee Arthroplasty. A Paired-randomised Controlled Study

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Introduction

Total knee arthroplasty (TKA) is the most successful treatment for advance osteoarthritis; however, severe post-operative pain remains unresolved. Sufficient analgesia is important for immediate mobilisation and rehabilitation. Local infiltration analgesia (LIA) is effective in relieving pain after TKA, however, the optimal cocktail combination and its individual roles are unclear. Corticosteroid in LIA has shown to improve early rehabilitation outcomes, however, its long term effect and safety is uncertain.

Objectives

To evaluate the long term effects and safety of steroid in LIA.

Methodology

This is a paired-randomised controlled study approved by Institutional Review Board. Patients undergoing one-stage bilateral TKA were recruited. Peri-operative analgesics were standardised. LIA containing ropivacaine, ketorolac, adrenaline with or without triamcinolone was given. Each knee of same patient was randomised to receive LIA with or without steroid.

Primary outcome includes differences in complications and functional scorings (Knee Society Score (KSS) and Oxford Knee Score (OKS)) up to one year follow-up. Secondary outcome includes differences in Visual Analogue Scale (VAS) and rehabilitation parameters between both knees of same patient.

Results

45 patients (90 TKAs) were included. LIA with steroid knees showed significantly lower VAS at rest and during activity from day one to six weeks ($p<0.05$). Active and passive knee range was greater in steroid treated knee from day one to day seven ($p<0.05$). Time to active straight leg raise was shorter in steroid group ($p<0.05$). Up to one year follow-up, no infection, wound complications or tendon ruptures in all knees. KSS and OKS were comparable at one year.

Conclusion

Steroid in LIA can improve early pain control and recovery after TKR, while no increase in long term complications were found. It is effective and safe. This has important clinical significance in setting of fast-track arthroplasty.

F8.4 **Young HA Investigators Session** **14:30 Room 421**

Reduction of Radiation and Intravenous Contrast Doses in Triphasic Contrast Computed Tomography Abdominal Aortogram

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Introduction

Prolonged nature of imaging surveillance by Computed Tomography abdominal aortogram (CTAA) with triphasic protocols impose substantial radiation exposure and contrast doses to post-EVAR patients, who are at higher risk for renal impairment.

Objectives

To reduce both radiation and intravenous contrast doses of CTAA via implementation of new imaging protocol, while maintaining comparable diagnostic quality.

Methodology

A three-phase project from 1 April 2015 to 30 September 2017 was conducted, including consecutive patients who underwent triphasic CTAA in our department. In the second and third phases, urgent examinations were excluded. To benchmark baseline radiation doses, data from first phase (1 April 2015 – 31 December 2015) were retrospectively analysed. A new low-contrast low-kV protocol was implemented in second phase (1 March 2016 – 30 November 2016), in which tube voltage was reduced from 120kV to 100kV, and intravenous contrast (Omnipaque 350mg/ml) was reduced from 80ml to 60ml. Further refinement of protocol was performed in the third phase (1 January 2017 – 30 September 2017), tube current was adjusted to a low-dose protocol (SureExp 3D® Low Dose) in plain and arterial phases, and remained unchanged in delayed phase (SureExp 3D® Standard). Patient demographics and radiation doses in terms of dose-length products (DLPs, mGycm) of each case were collected. To ensure comparable diagnostic confidence, both quantitative and qualitative image quality assessment were performed. Quantitative parameters included aortic enhancement, contrast attenuation gradient, image noise and contrast-to-noise ratio. For qualitative parameters, visual assessment analysis was performed by two radiologists based on grading scale (noise 1-3, artefact 1-3, diagnostic quality 1-5).

Results

Mean DLP from baseline assessment of 55 patients (mean 78.5 years) was 2102.5mGycm. In second phase, all 35 patients (mean 79.5 years) received 25% reduction in contrast volume. Mean DLP was 1866.3mGycm, equivalent to 11.2% reduction. For image quality, all quantitative and qualitative parameters showed no significant differences. In third phase, 35 patients (mean 76.4 years) were included. Mean DLP was further reduced to 1721.0mGycm, equivalent to further reduction by 7.8% and overall reduction by 18.1%. Mild increase image noise in arterial phase from 12.8HU to 16.7HU was noted. However, there was no significant difference in qualitative image noise assessment, as well as other quantitative and qualitative parameters of image quality.

Service Enhancement Presentations

F8.5 **Young HA Investigators Session** **14:30 Room 421**

Pilot Study on Machine Learning for Bone Scan Classification

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Introduction

The performance of artificial intelligence in image recognition tasks has improved drastically over the past decade. This is mainly due to one form of machine learning algorithm called convolutional neural network (CNN). In this pilot study, we test the performance of a simple CNN on bone scan classification.

Objective

We test the performance of a simple CNN trained with a small dataset on the binary classification of bone scan images on whether bone metastasis is present or not.

Methodology

We constructed a simple CNN which has the structure of 4 convolutional layers followed by 2 fully connected layers. The input layer is a 512x512 single channel image. The final output layer is a binary classification of whether bone metastasis is present or not. The design of the network is an arbitrary balance between complexity and easiness on memory and processing requirements. Training was performed on a desktop PC with two GeForce GTX 780Ti graphics cards. We used TensorFlow as the deep learning framework. Our dataset consisted of 106 labeled anonymised DICOM images. Each image comprised an anterior whole body scan on the left side and a posterior whole body scan on the right side. Labelling was performed by a nuclear medicine specialist who has over 29 years of experience in bone scan interpretation. 48 images were labelled as without bone metastasis and 58 of them as with bone metastasis. One-third of the images were randomly set aside for testing while the remaining two-thirds of images were used for training and validation of the CNN model. Images used for training were augmented with random rotation, translation, zooming and occlusion.

Results

The CNN achieved 100% accuracy on the training images and >90% accuracy on the test images.

F8.6 Young HA Investigators Session **14:30 Room 421**

A Mixed Surgical Ward Case Management Platform to Reduce Hospital Length of Stay

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Introduction

The first mixed surgical ward in the Princess Margaret Hospital was opened in November 2017, which handled injuired patents involving orthopedic, neurosurgical and surgical specialties. In the light of enhancing patient management through effective communication, an electronic communication platform was setup to facilitate patient management under the multispecialty environment. From idea to delivery, a team of frontline colleague worked enthusiastically to develop an application aiming at facilitating daily operation with a common goal of reducing unnecessary length of stay (LOS) in hospital.

Objectives

To setup an electronic platform with the capacity of real time communication on patient's parent specialties and status of consultations under a multidisciplinary environment, aiming at reducing unnecessary hospital LOS.

Methodology

A task group was formed by young nursing colleague with an average experience of seven years. The user requirements were collected by individual discussion and communication through chat group in the web. The system was built on the web content management platform (SharePoint), which included a simple user interface for data entry, central hub of information update, real time displaying the status of inter specialty consultation and updated patient listing as a reminder for preparing patient discharge. The required information could be found not only on a large display at nursing station, but also assessed through mobile device outside the ward area while the patent's confidentiality was protected. After implementation for two months, preliminary evaluation was done on quantitative and qualitative perspective.

Results

After two months of implementation, positive comments have been received from users' interview. The main themes included well acceptance from medical and nursing colleague, high system ownership and incredibly easy to use. It was proved by providing an efficient platform for staff to update the multidisciplinary consultations of patients and remind the relevant parties to prevent delayed response to consultations. From initial estimation, the mixed surgical ward LOS was 5.5 days; SD 3.7 (neurosurgery 1.5 days; SD 0.84, hip fracture 8.41 days; SD 1.91 and surgery 1.86; SD 0.69) which is lower than the overall LOS of 6.8 days; SD 10.66 (neurosurgery 5.2 days; SD 14.51, hip fracture 11days; SD 7.42 and surgery 3.26; SD 6.24). Although the preliminary evaluation provided encouraging result, longitudinal evaluation of the impact on LOS would be continued in six months and 12 months' time.

Service Enhancement Presentations

F8.7 Young HA Investigators Session 14:30 Room 421

Validation and Development of a Modified Chinese Version Competency Scale in Demonstrating and Assessing Meter-dose Inhaler plus Whistle Mask Spacer Technique

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Introduction

Many children suffered from acute bronchiolitis or asthma with the problems of accepting a spacer. In the past, nurses learned a whistle sound from spacer which indicated poor inhalation technique. This could also cause a lot of anxiety to patients and parents. In United Kingdom, an app was developed integrated with the concept of play to children. The whistle sound emitted by the mask when the young user is breathing correctly with the spacer is capable of driving the "Rafi" robot through a series of challenges as it fights off the colorful cartoon-style baddies. It hopes that the children's anxiety will be reduced with this new device. Nurses could make use of the whistle mask and the app in patient education in order to enhance correct inhalation technique. The potential benefit of the game with the mask was reducing acute need through better adherence and compliance. However, nurses were lack of skill and knowledge in both demonstration and assessment of inhalation technique. Meanwhile, there is a lack of scale for use in clinical setting in measuring nurses' knowledge, attitude and practice on education of using Meter-dose Inhaler (MDI) in paediatric patients. As such, a Chinese version of competence scale of nurses was developed in order to improve their demonstration and assessment inhalation technique.

Objectives

(1) To develop and validate a modified Chinese version on competency scale which measures paediatric nurses' competency (knowledge, attitude and practice) in demonstrating and assessing MDI plus whistle mask spacer technique among paediatric nurses in Hong Kong; And (2) to assess psychometric properties of the instrument.

Methodology

This is a quantitative study quasi-experimental design without control group using pre- and post-tests measures. The English version of the tool was developed initially and then translated to Chinese version. Back translation was carried out afterward. Content validity was done by five experts in paediatric. Test and retest for reliability was implemented after the content validity in two weeks.

Results

The samples comprised of 38 paediatric nurses with a mean year of experience 9.71. The Content Validity Index was reported 0.939, the Cronbach's alpha was overall 0.926. The test-retest reported ICC 0.755 for overall scale.

Conclusion

The psychometric properties of the scale have been empirically tested in this study and showed adequate internal consistency, reliability and validity. Overall, the scale can be used in the Chinese society.