Quality and Safety

Annual Report 2018

醫院管理局
HOSPITAL AUTHORITY

Acknowledgement

This year, "Hospital Authority Quality and Safety Annual Report" has been revamped. Apart from incorporating the latest practices and prevailing issues in quality and safety of the seven clusters and the key initiatives by Quality and Safety (Q&S) Division of Hospital Authority Head Office (HAHO), we have invited other divisions, the Coordinating Committees (COC) and Central Committees (CC) to share with us their quality initiatives in 2018.

The dedication and diligence of our colleagues on the persistent improvement of quality healthcare services are our key assets to overcome challenges and to reduce risks ahead. We would like to express our appreciation to all colleagues for their endeavours in providing an efficient and safe service to our patients throughout the year despite the increased service demand and an overwhelming workload. Heartfelt thanks are also extended to the colleagues who have contributed their valuable input and feedback to make this publication a success.

Quality and Safety Division
Hospital Authority

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Opening Message

The Hospital Authority is made up of people. Ordinary people who come together and care for others. Ordinary people who are passionate about providing the best care they can to those in need. It is a source of pride to be working alongside these people every day.

Rising demand pressures, increasing public expectations and workforce shortages have become the norm, and the combined result on staff sentiment has not gone unnoticed. This report is an acknowledgement of the great care that our staff have continued to provide despite the challenging circumstances that they face daily.

In project management, a theme often discussed is how it is impossible to be 1) fast, 2) cheap and 3) good, all at the same time. One can supposedly only choose two out of the three. Is this always true? The Hong Kong health system has been identified as the most efficient health system in the world by Bloomberg, so let us presume we are starting from a decent base in terms of the first two domains.

At the same time, initiatives such as the Surgical Outcomes Monitoring and Improvement Program (SOMIP) show us what good can be when three key ingredients come together – driving our passion, knowing what we are good at, and translating this to how we can provide value to our community. Our surgeons have been passionate about the SOMIP initiative, as it strikes to the core of their profession and the quality of care they provide. In turn this has translated to better care for our patients over the years.

Similarly, other Coordinating Committees and Central Committees have travelled down the path of reviewing outcomes data of our patients, and developed initiatives for better care as a result. These initiatives should be celebrated, and thus for the first time, this revamped Quality and Safety Annual Report will include submissions from these committees. We hope to showcase the tremendous efforts our staff relentlessly provide and to share these stories with our community.

Finally, to our staff, we thank you wholeheartedly. In our quality improvement journey, you'll never walk alone.

K L Chung
Director of Quality and Safety

Hospital Authority Head Office

Clinical Effectiveness and Technology Management

Introduction

The Clinical Effectiveness and Technology Management Department is organised into two teams:

- **Clinical Effectiveness Section:** Research ethics oversight, innovation/invention management, clinical outcome monitoring, clinical audit and clinical indicator
- **Central Technology Office (CTO):** Healthcare technology management including planning, assessment and monitoring, medical device management, real-time integration of radiology images in supporting clinical procedures project.

The department also provides executive support for various committees in Head Office level, such as, Coordinating Committee in Radiology, Coordinating Committee in Pathology, Central Committee on Genetic Services and Central Committee on Transfusion Service, Radiation Safety Committee, Positron Emission Tomography (PET) Steering Committee and Point-of-Care Testing (POCT) Committee, etc.

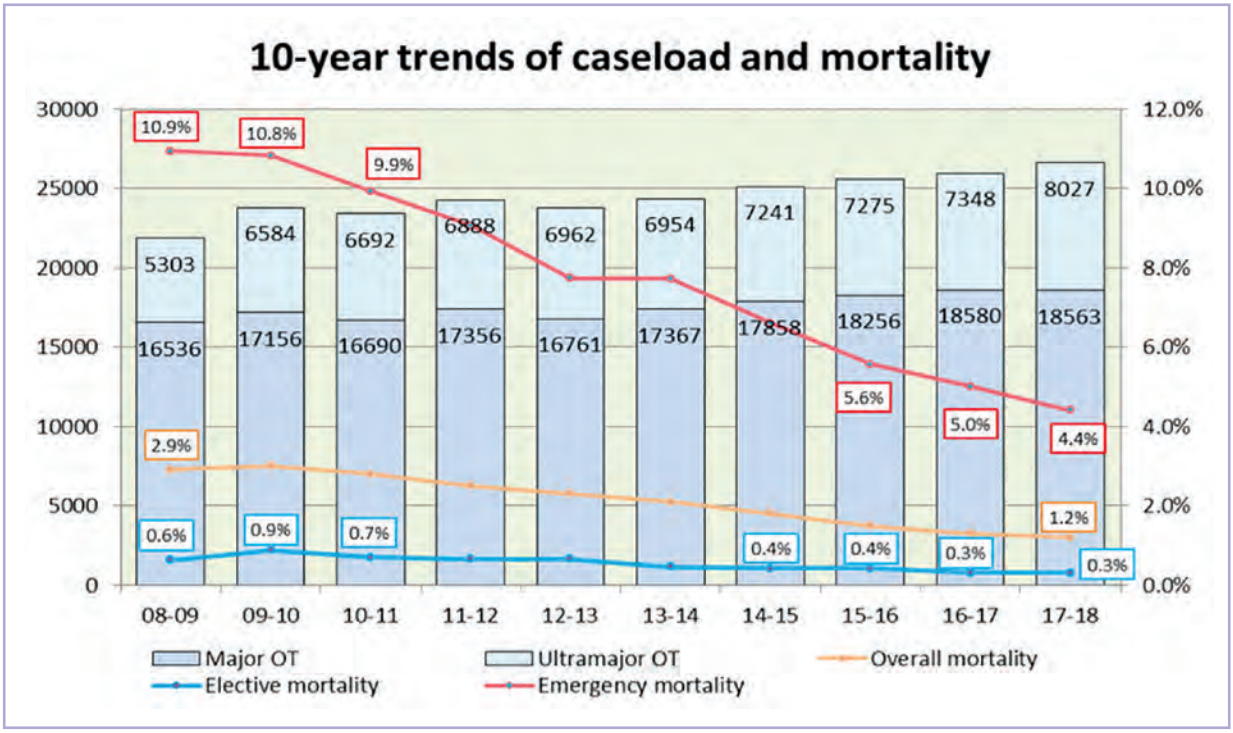
Surgical Outcomes Monitoring and Improvement Program (SOMIP)

A surgical service quality improvement program, led by clinicians (SOMIP Steering Committee), was launched in July 2008. It measured and compared the risk-adjusted patients' outcomes after surgical operations among different hospitals in HA. The outcomes included death and complications within 30 days after operation. Volume One of the annual report was issued in February 2010, and the latest version, Volume Ten, was issued in January 2019.

The 10th SOMIP report that covered surgical operations conducted between 1st July 2017 to 30th June 2018 went live on the eKG platform in January 2019. Out of the 20,776 elective operations and 5,814 emergency operations of major and ultramajor magnitude, further reductions of crude mortality for both elective and emergency operations were observed. The SOMIP team had organised visits to the 3 outlier hospitals identified in this report in December 2018 in order to discuss the mortality cases and assist surgical departments in identifying their unique set of systemic and surgical issues, and areas for improvement. The hospitals have been proactive in implementing measures and interventions to strengthen the pre-operative, intra-operative and post-operative care of patients.

Crude mortality trend of SOMIP

(1 Jul 2008 to 30 Jun 2018)



Crude mortality trend of SOMIP

SOMIP assembled experts from different disciplines to establish criteria for outcome measures. It adopted the most vigorous statistical analysis of data collected for risk adjustment, comparison and for identifying associated factors of the outcomes. Through multivariate analysis, possible factors that affect operative outcome could be identified. Recommendations for improvement were made to individual hospitals such as manpower and collaboration between different specialties in supporting patient care, etc. Experience-sharing forums by hospitals with good outcomes and hospitals that had improvement were conducted to illustrate good practice.

The impact of the Team's work was significant: as evident from its ten reports, there has been a continuous trend of reduction in both crude and risk-adjusted mortality after emergency and elective operations in HA surgical departments, and such improvements stood well on robust statistical analysis. It was obvious our colleagues have been working shoulder to shoulder to put their slogan into practice – 'Striving for Surgical Excellence'. Indeed, the most valuable part of SOMIP was the fraternity and cohesiveness it brought out among peers of all disciplines and specialties, between different hospitals and departments.

Supporting Early-Phases Clinical Trials in the Context of HA – Setting Up Phase 1 Clinical Trial Centres (CTC)

The Government had initiated the proposal of setting up Clinical Trial Centres capable of conducting Phase 1 clinical trials under a multipartite partnership between HA and the two Medical Faculties at the Queen Mary Hospital (QMH) and the Prince of Wales Hospital (PWH) in the 2011 Policy Address.

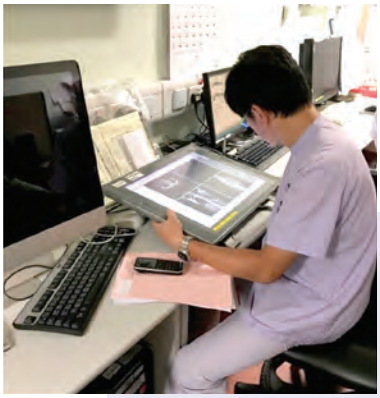
The research oversight mechanism for Phase III, IV trials was inadequate for Phase 1 clinical trials, which posed a much greater degree of risk and uncertainty as to their scientific basis. HA moved on with the project: 'to house the Phase I Clinical Trial Centres in HA hospitals but operated by the universities'. Working Groups on Institutional Arrangement and Research Ethics Oversight were set up to work on the establishment of facilities of the two CTCs and to enhance clinical research oversight respectively. Finally, HA and the two universities entered into a Memorandum of Arrangement ('MOA') in February 2014. The Government indicated a 5-year policy direction for HA to support the two CTCs by providing the necessary clinical and logistics support, such as emergency medical care and leasing arrangement. In 2018/19, the project achieved this milestone.

Phase 1 CTC in QMH

Phase 1 CTC in PWH

Real-time Integration of Radiology Images in Supporting Clinical Procedures (IntRI)

This is a 2-year (2018/19 – 2019/20) corporate-wide project, which aimed to improve and standardise the workflow of radiology image acquisition through an automated and secured approach to support clinical procedures. In 2018, planning workstations of all six HA oncology centres were connected to the central radiology image infrastructure. This set up improved and standardised the workflow of image acquisitions from radiology departments in HA, and those from Public-Private Interface (PPI) referrals through a corporate-wide, automated and secured approach. The oncology departments could retrieve the radiology images in a timely manner to facilitate planning of radiation therapy.



Way Forward

To sum up, the way forward of the three projects is summarised as below:

- With the impressive reduction of mortality rate (both crude and risk-adjusted) in the past years, the SOMIP team would now shift the focus to the reduction of complications or morbidities in relation to surgery. The Steering Committee would work closely with all the surgical departments and their surgical supervisors in coming up with constructive strategies for the betterment of surgical care and outcomes.
- The establishment of the CTCs is a milestone in developing Hong Kong into an international hub for clinical trials and translational research which helps to bring the pharmaceutical and biopharmaceutical industry and expertise into Hong Kong. With the ongoing support from the Government, HA would continue the necessary clinical and logistics support and leasing arrangement to the CTCs in the coming 5 years.
- IntRI program would connect all other advanced image processing systems that require acquisition of images from the central radiology image infrastructure, according to technical vetting, and devise an end-to-end framework to support future connection. The program would be completed by the end of 2019/20.

Health Informatics

Introduction

The Health Informatics Department focuses on taking the Hospital Authority's Clinical Management System (CMS) on a generational leap to the next level of computerised record system functionality to improve the already world-class facilities in the CMS for the documentation and effective management of diseases and care.

Health Informaticians work with the government and other healthcare stakeholders in Hong Kong to create a territory wide Electronic Health Record Sharing infrastructure as well as a Clinical Information Management System for the Department of Health. We are also actively involved in informatics research, education communities and international conferences to contribute clinical informatics from our locality.

Overview of the In-patient Medication Order Entry (IPMOE) system

IPMOE is a module in HA CMS. It is an in-house built IT system for in-patient medication management with the following benefits:

- Reduction of medication errors
- Improvement of efficiency
- Streamlining of workflow
- Integration of Medication Decision Support knowledge
- Standardisation of medication order line
- Enhanced communication between caregivers
- Improved medication documentation.

Three major stages of the IPMOE are:

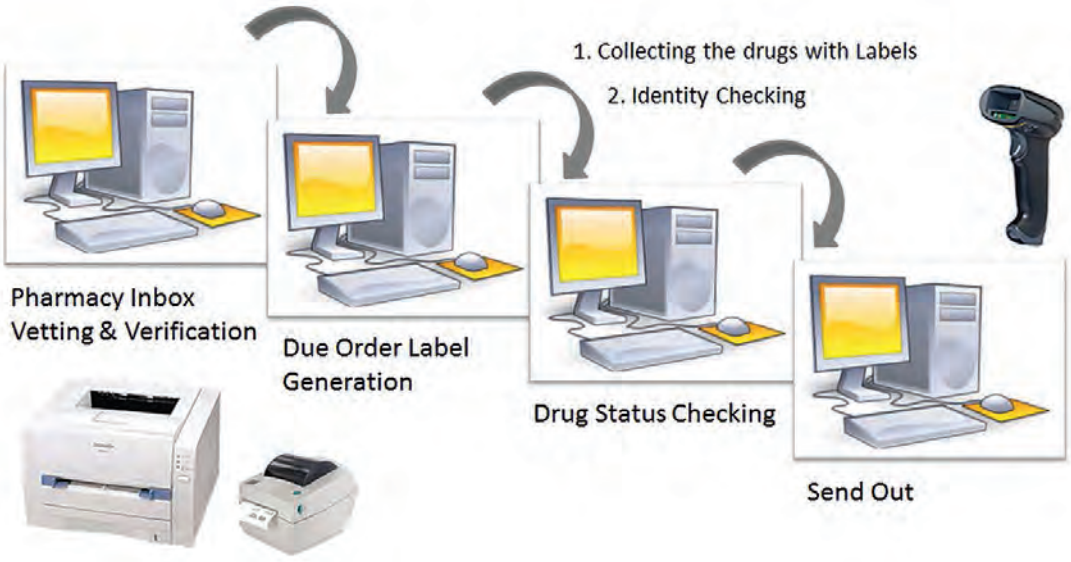
- Prescription of medications by medical practitioners
- Medication dispensing and verification by pharmacy staff
- Medication administration by nurses.

Mobile Devices and Workflow Modernisation

Frontline colleagues are able to access the IPMOE via the HA secured network from different channels, e.g. desktop computers, or mobile devices such as iPads and other wireless tablets. This allows real-time access to patients' medication profile, and also helps eliminate manual update by different professions/disciplines.

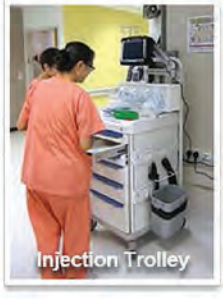
Pharmacists could interact with IPMOE through their desktop computers equipped with bar code scanners, printers and label printers.

Key Features



Introduction of Mobile Terminals in in-patient areas enables nurses to access the patient's record at point of care. These mobile devices minimise prescription and administration errors, and improve both patient and users' experience.

Mobile Devices



Toughpad

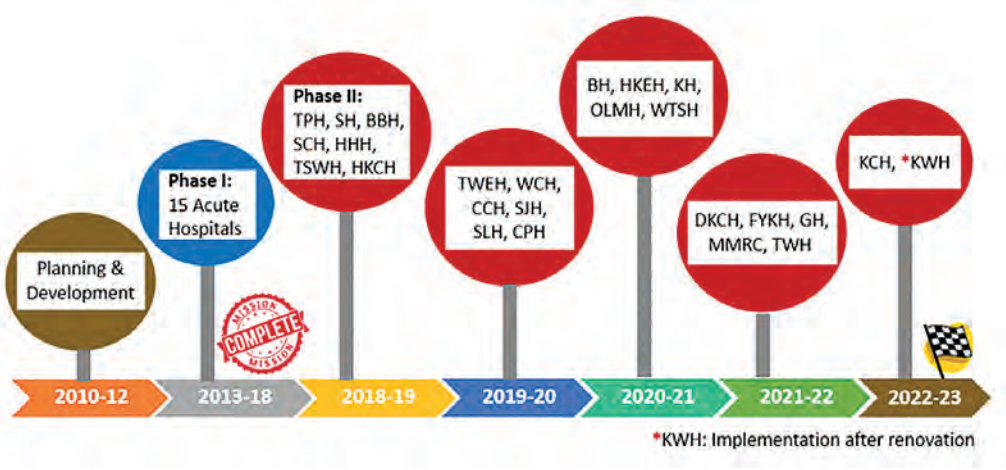
Scanner

Printer

IPMOE Implementation

Milestones

During Phase I, IPMOE was implemented in 15 acute hospitals. As of 31 December 2018, the following hospitals had IMPOE implemented:



- **Hong Kong East Cluster:** Ruttonjee Hospital (RH), Pamela Youde Nethersole Eastern Hospital (PYNEH)
- **Hong Kong West Cluster:** Queen Mary Hospital (QMH)
- **Kowloon Central Cluster:** Queen Elizabeth Hospital (QEH)
- **Kowloon East Cluster:** Tseung Kwan O Hospital (TKOH), United Christian Hospital (UCH)
- **Kowloon West Cluster:** Princess Margaret Hospital (PMH), North Lantau Hospital (NLTH), Yan Chai Hospital (YCH), Caritas Medical Centre (CMC)
- **New Territories East Cluster:** Prince of Wales Hospital (PWH), North District Hospital (NDH), Alice Ho Miu Ling Nethersole Hospital (AHNH)
- **New Territories West Cluster:** Pok Oi Hospital (POH), Tuen Mun Hospital (TMH)

IPMOE was also introduced and implemented in Tin Shui Wai Hospital (TSWH), and Hong Kong Children Hospital (HKCH) with the commencement of in-patient service.

Starting from 2018, phase II of IPMOE implementation would cover the non-acute hospitals as follows:

2018	2019	2020	2021	2022
NTEC & KEC	HKEC & NTWC	KCC	HKWC	KWC

In addition, a number of hospitals will implement the AED module in 2019.

Effect of IPMOE Implementation

After the implementation of IPMOE, there was a reduction of reported medication errors in the implemented areas. In 2018, the number of medication alert pop-ups in IPMOE and the acceptance rate were as follows:

Types of Alert	Alerts Accepted by Clinician	Total Number of Alerts	Acceptance Rate (%)
Drug Allergy Alerts	20,714	46,386	44.7%
G6PD Deficiency Alerts	773	1,703	45.4%
ADR Alerts	2,390	5,680	42%
Drug-Drug Interaction Alerts	15,207	33,929	44.8%
Pregnancy Contraindication Alerts	451	827	54.5%
Long Term High Dose Steroid Alerts	460	1809	25%
Total	39,995	90,334	

The above findings implied that the IPMOE helped prevent 39,995 potential medication incidents due to prescription errors in the year of 2018.

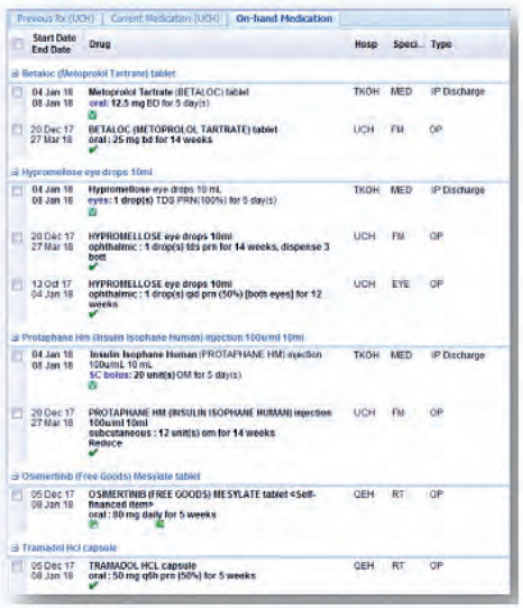
Continuous Improvement and Enhancement of IPMOE Features

To further improve the IPMOE to ensure medication safety, frontline feedback and requests were gathered and prioritised. Through deliberation at the IPMOE User Resources Group which comprised of clusters representatives, HAHO Q&S expert and IPMOE project team, feedback were consolidated for system enhancement. Below are some of the enhancements that aim to facilitate workflow and ensure patients' safety:

Prescribing Module

HA-wide On-hand Medications List

A list of patient's on-hand medications prescribed by different hospitals via CMS is currently available in the prescribing module, providing clinicians with a most recent list of medications for each patient:



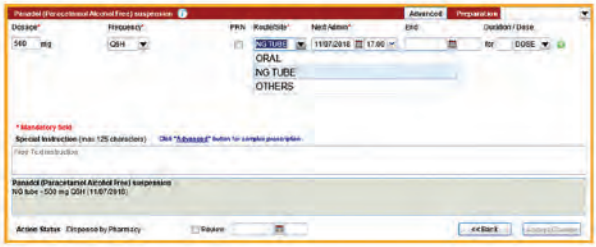
This system also provides a list of on-hand medications available in HA to facilitate an immediate medication decision support. It is particularly useful upon patient's transition of care, e.g. on admission or discharge.

Display of Patient's Allergy Information

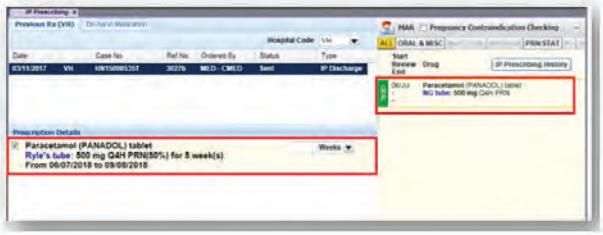
Previously, a patient's Drug Allergy/Alert/Adverse Drug Reaction (ADR) information recorded in HA would be displayed in the IPMOE Medication Administration Record (MAR). With the launch of Electronic Health Record Sharing System (eHRSS), the patient's allergy information is now shared between HA and private health care providers. Since 2018, a patient's eHRSS allergy information would be displayed on the IPMOE printout to facilitate communication among different caregivers:

Revision of Route: From "Ryle's Tube" to "NG Tube" in CMS

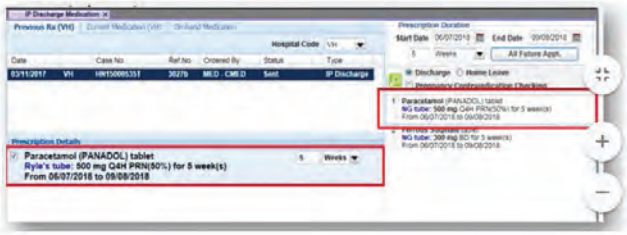
To reduce chances of error, the outdated term of "Ryle's Tube" was replaced by a self-explanatory term, "Nasogastric or NG Tube". To safeguard the patient, the system automatically replaces "Ryle's Tube" with "NG Tube" upon the doctor's next prescription of "Ryle's Tube" as the route/ site. The change is displayed in both the CMS Medication Order Entry (MOE) and IPMOE:



IPMOE- IP Prescribing:



IPMOE- IP Discharge Medication:

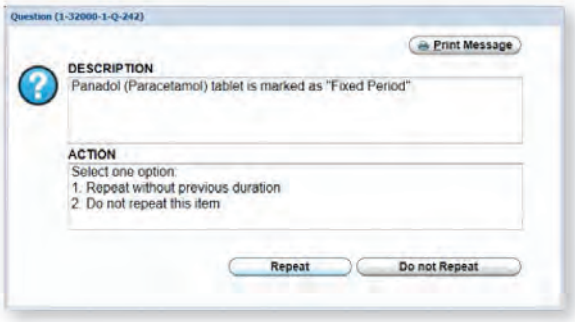


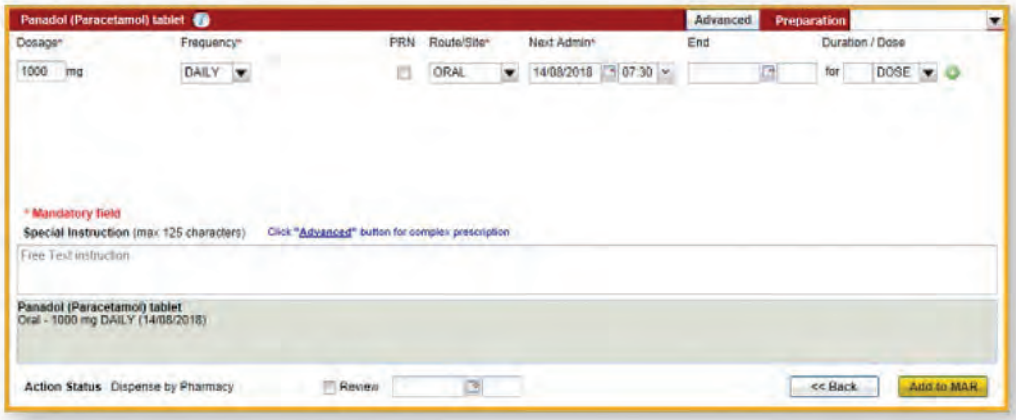
Repeat Prescription of "Fixed Period" and "Single Use" Medications

Repeating previous prescriptions marked with "Fixed Period" or "Single Use" was not allowed in the past. After this feature was enabled, a pop-up alert is displayed, and following the doctor's confirmation, the prescription could be repeated.

For **"Single Use"** prescription, a pop-up message would be shown. If [Repeat] is selected, the drug would be added to the patient's MAR.

For **"Fixed Period"** repeated prescription, a pop-up message would be shown including a selection of appropriate actions:





To avoid prolong prescriptions of a certain drug, a pop-up screen would remind the doctor to provide the expected duration of the prescription.

After confirming the prescription details, the medication would then be added to the MAR upon clicking [Add to MAR].

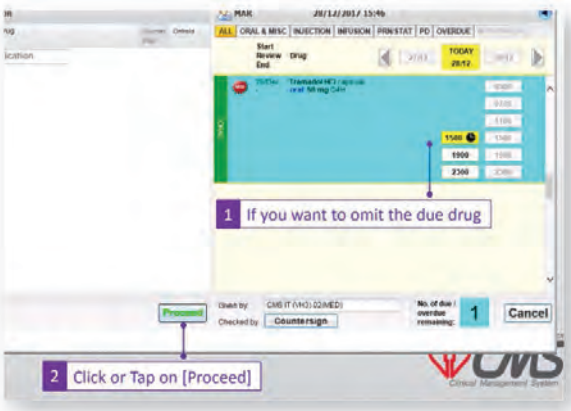
Drug Administration Module

Mark the Drug as "Omit" during Drug Administration

This feature enables a clear documentation and record when the patient is not fit for drug administration leading to a conscious withholding of a particular medication.

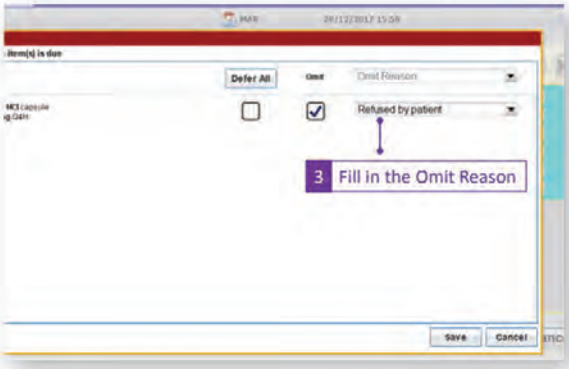
Step 1:

After clicking [Start Admin], it is found that the "Tramadol" is due for administration. However, the patient's condition changes or the medication is consciously withheld. The nurse could directly click [Proceed] without preparing the drug:



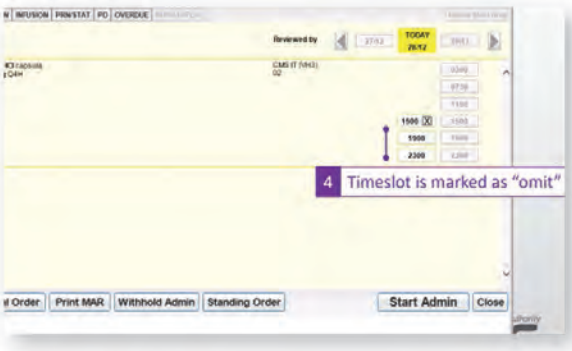
Step 2:

System will pop up the [Omit/Defer] option for the nurse's selection:



Step 3:

When the [Omit] option is selected, the schedule would be marked as [Omit] and displayed on the MAR:

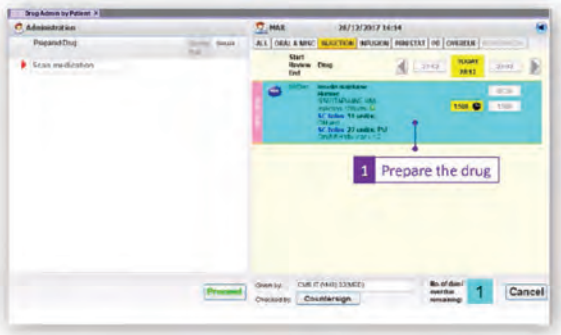


Alert to Prompt Nurses for Criteria-based Medication Administration

This feature provides a pop-up screen to remind nurses of criteria-based medication administration. The provided condition would be recorded in the drug administration record to support further clinical care or management:

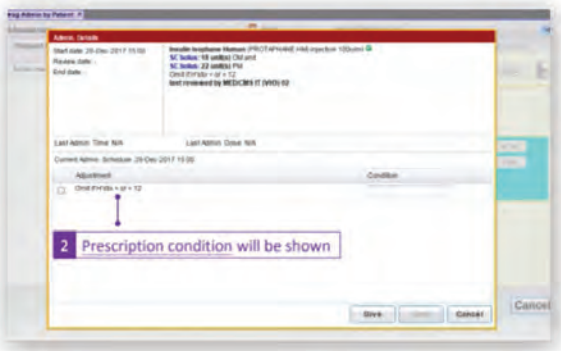
Step 1:

Nurses scan the barcode or prepare the medication



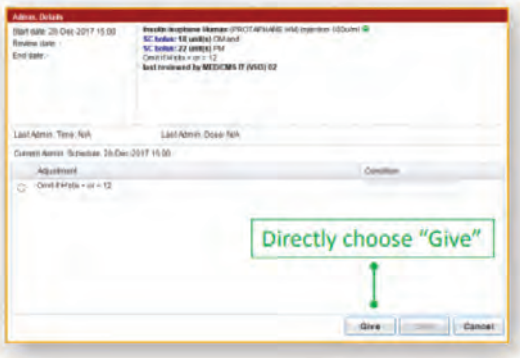
Step 2:

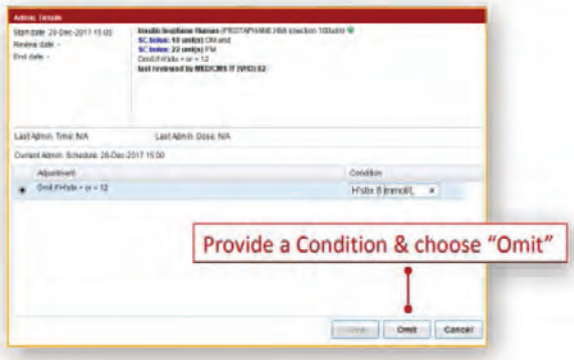
Prescription details and the condition would be displayed for decision making



Step 3:

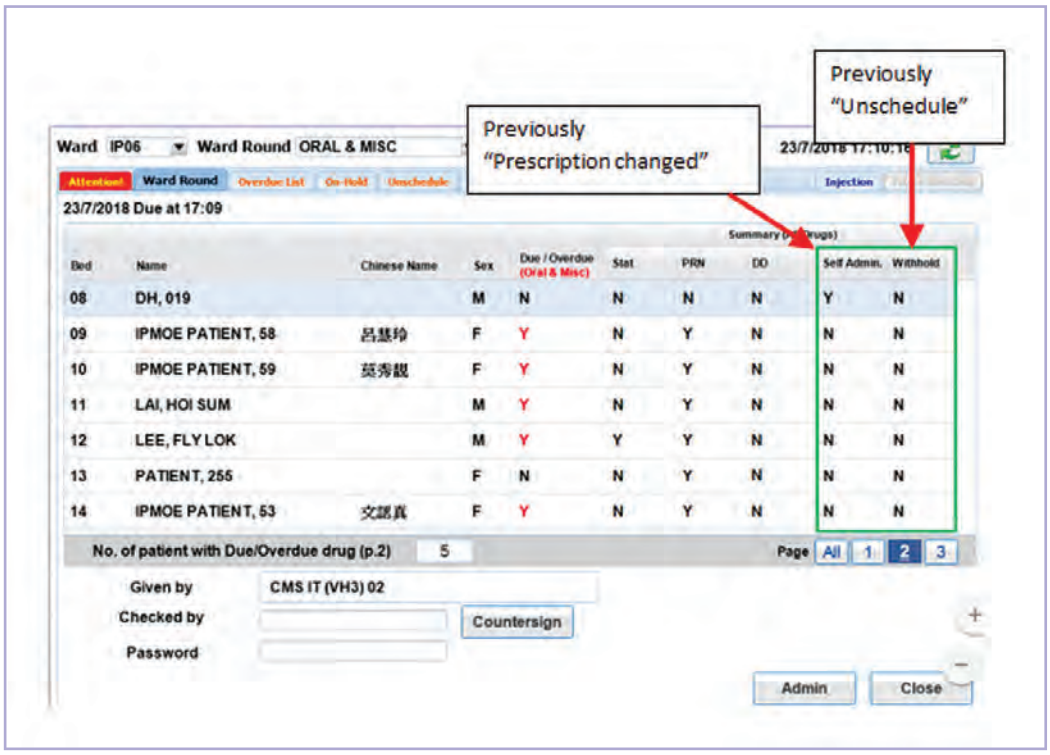
Decide whether the patient's condition is fit for drug administration





Revision of Drug Admin by Ward Columns:

During the implementation of IPMOE, frontline colleagues expressed a wish to enhance the IPMOE display on whether the patient has medications that are marked with "Withhold" or "Self-Admin". After deliberation, it was agreed to enhance the system by replacing the "Prescription changed" and "Unscheduled" column, with the "Withhold" and "Self-Admin" information which are more useful for frontline colleagues.



Infection, Emergency and Contingency

Introduction

The Department of Infection, Emergency and Contingency (IEC) endeavours to combat infectious diseases, coordinate emergency communication and response management, and enhance contingency planning and preparedness. The department is organised into three teams:

- **Head Office Major Incident Control Centre (HOMICC)** — Coordinates HA's emergency preparedness and response measures and acts as an information hub in relaying information during HA-wide major incidents or disasters.
- **Chief Infection Control Officer (CICO) Office** — Provides professional advice on infection prevention and control, and supports emergency response in infectious disease outbreak.
- **Corporate Clinical Psychology Services (CCPS)** — Promotes psychological well-being of staff so that they could provide high quality and person-centred services for our patients.

Enhancing HA's Preparedness for Major Incidents

Enhancing HA's preparedness for major incidents is a key strategic focus of IEC. Over the past years, a strong collaborative partnership on emergency preparedness and response has been built up amongst various stakeholder departments, both Head Office and Hospitals as well as external emergency response organisations.

In 2018, IEC handled over 300 incidents. HOMICC, as an information hub at corporate level, was activated to coordinate corporate response for major incidents, e.g. to facilitate casualty diversion in the Tai Po double-decker crash where there were a significant number of casualties, and to update the government during Super Typhoon Mangkhut which resulted in more than 450 injuries. IEC also supported HKSAR Government in contingency planning and situation monitoring for planned major events, e.g. Marathon 2018 and Formula Electric Racing.

Preparedness for Super Typhoon Mangkhut from frontline

Internal debriefing for Tai Po Double-decker Crash

In response to the invitation by Food and Health Bureau and Security Bureau, IEC provided support in the HKSAR Government's contingency preparedness for the Hong Kong – Zhuhai – Macau Bridge (HZMB) and Hong Kong Section of the Guangzhou – Shenzhen – Hong Kong Express Rail Link (XRL) in particular under the circumstances of mass casualty incidents. Both projects commissioned services in 2018.

HA Staff Participating in Emergency Response Operations Outside the Hong Kong SAR (EROOHK)

Despite no dispatch of HA support team in 2018, HA still needs to ensure a continuous support for the Government-led EROOHK and Hong Kong residents stranded overseas during disasters. We have structuralised a policy framework, including an enhanced insurance coverage and consistent participation of emergency physicians, nurses as well as clinical psychologists.

Drill and Exercise

Drill and exercise is an essential building block for training and system improvement. In 2018, IEC coordinated and participated in 19 internal and inter-departmental drills and exercises, which covered a wide spectrum of incidents nature, such as aircraft crash, vegetation fire and infectious disease outbreak.

HA participation in inter-departmental drill

Information Technology

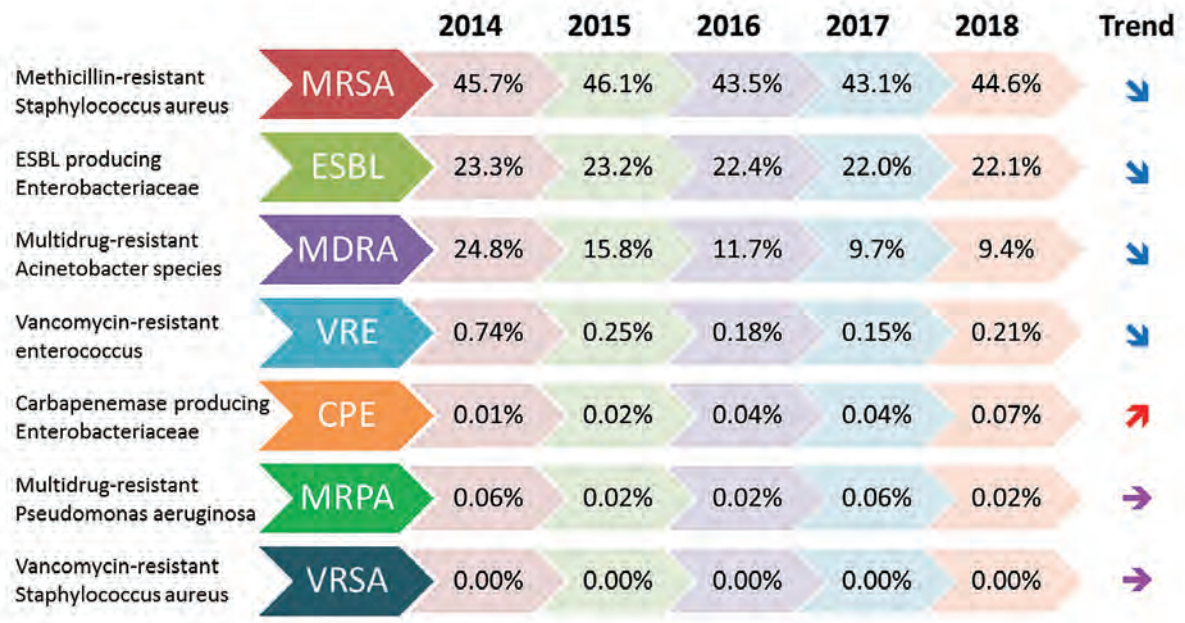
The Rapid Message Broadcasting system (RMB) was rolled out in March 2018. Together with the existing Rapid Communication System (RCS) and MICC Bulletin Board System (BBS), the RMB facilitates communication in the initial response phase between MICC and the Accident & Emergency Departments, reduces repetitive phone calls and improves coordination and response efficiency.

Strategies to Deal with the Global Threat of Antimicrobial Resistance (AMR)

To support the Hong Kong Strategy and Action Plan on AMR (2017-2022), HA has planned and implemented a series of actions to curb the growing threat of AMR in HA hospitals.

Multidrug-resistant Organisms (MDROs)

The MDRO rates in public hospitals have been closely monitored by HA over the years. Slightly decreasing or static trends have been observed for most of the MDROs. The improvement in staff awareness, infection control measures, hand hygiene and environmental hygiene have contributed to a significant decrease in multiple-drug resistant Acinetobacter species (MDRA), a cessation of vancomycin resistant Enterococci (VRE) nosocomial outbreaks in 2013 and a decrease in its incidence over the last few years.



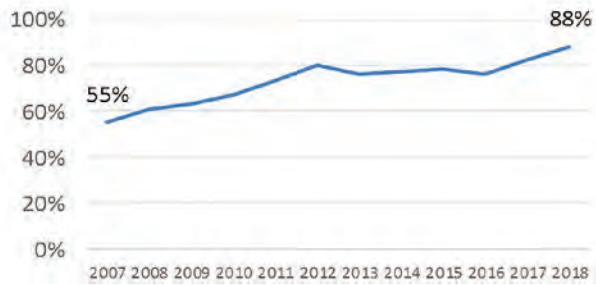
MDRO rates in public hospitals from 2014 to 2018

In response to an increasing trend of carbapenemase producing enterobacteriaceae (CPE), HA commenced a rapid molecular diagnostic testing (real-time polymerase chain reaction test) for the detection of CPE from 2018. It enabled an early case identification and initiation of corresponding infection control measures.

Hand Hygiene

Practicing hand hygiene is a simple yet effective way to prevent infections. In May 2018, a HA-wide hand hygiene campaign, "Your Health in Your Hands", was launched to educate patients on the importance of hand hygiene. With these ongoing efforts, healthcare workers' hand hygiene rates steadily increased from 55% in 2007 to 88% in 2018.

Promotional materials to encourage Patient Engagement in Hand Hygiene



Staff- Hand Hygiene Rates

Antibiotic Stewardship Programme (ASP)

Antibiotic Stewardship Programme (ASP) refers to coordinated interventions designed to promote the optimal use of antibiotics. It is a key strategy to overcome AMR. In HA, ASPs have been implemented in hospitals over the years. The hospital ASP team plays an important role in auditing infection cases, reviewing the appropriateness of antibiotic use and providing concurrent feedback to prescribing clinicians as appropriate. In 2018, the ASP's protocol was further standardised among hospitals. Moreover, laboratory support was enhanced with the introduction of procalcitonin test for guiding antibiotic use and the service was rolled out in October 2018. Audits showed that 87.6% of antibiotics used were appropriate while 86.7% of the concurrent feedback on antibiotic use was accepted by the prescribing clinicians.

Assessment of Antibiotic Stewardship Programme (ASP) in 2018

Coping with Challenges of Seasonal Influenza

Government Vaccination Programme (GVP)

Apart from proactively encouraging staff to receive vaccinations, HA has also been supporting the Department of Health to provide seasonal influenza vaccination to the eligible groups under the Government Vaccination Programme (GVP). In 2018, cluster GVP leaders were nominated to promulgate and drive vaccination amongst staff. With creative promotional measures and successful vaccination campaigns, the result was a remarkable uplift, with uptake rate of 57%, 34% and 39% for medical, nursing and allied health staff respectively (as at 30 December 2018), significantly surpassing the corresponding period of the previous year.

Promotion of seasonal influenza vaccination in 2018

Week 12 of GVP	2016/17	2017/18	2018/19	% of seasonal Influenza vaccination
Medical	42%	46%	57%	
Nursing	23%	24%	34%	
Allied Health	25%	26%	39%	

Uptake rate of seasonal influenza vaccination by HA healthcare workers

Enhanced Virology Services

To facilitate and optimise patient management decisions, HA enhanced the laboratory service during the influenza season since December 2017 by adopting a rapid testing platform for seasonal influenza, which catered for 7,000-8,000 test requests per week. Clinicians are able to request this test for patients with influenza-like-illness symptoms, and results are available within 24 hours, supporting clinicians to make timely treatment plans.

Infection Control Measures

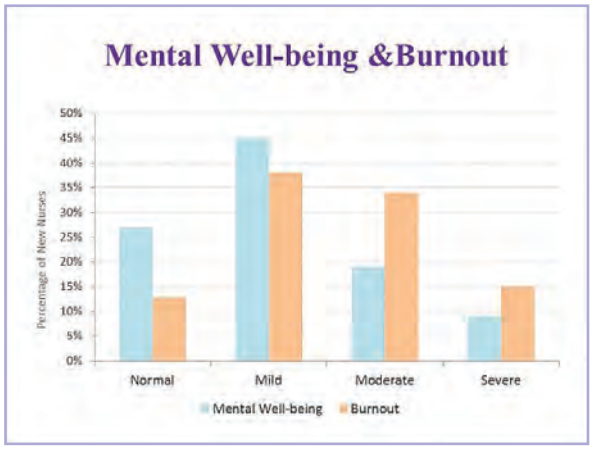
During influenza seasons, more stringent infection control measures are enforced in HA hospitals. All visitors and healthcare workers are recommended to wear surgical masks when entering patient care areas.

Posters on Infection Control Measures during Influenza Surge

Strengthening Prevention, Early Identification and Intervention Services of Stress and Burnout for HA Staff through Electronic Psychological Services

To meet the rising demand for psychological services (average annual increase of 18% in the past 5 years and a total 8,615 attendances in 2018) and to alleviate high stress levels experienced by healthcare workers, two new projects were launched:

- A mobile version of psychological wellness screening services for early identification of mental disturbances and burnout was developed. This project was piloted with over 700 staff. Individual and group follow-up services were also arranged for staff requiring early intervention. The pilot received great users' feedback, and this service will be rolled out to all staff progressively.



- Web-based self-help psycho-educational materials (e.g. on insomnia, stress management and positive psychology) and online pre-training reading materials (e.g. workplace violence, open disclosure and incident management) were developed for all HA staff. These have been made available to all staff via various HA platforms. To further enhance the accessibility and cost-effectiveness of staff psychological services, Electronic Psychological Services (ePS) such as online guided self-help for common mental issues are being developed.

Psychological Screening Assessment Report and Psychological Screening Assessment Website

Enhancing Psychological Support after Clinical Incidents

In response to the recommendations from the "Report of Review Panel on Sentinel Event and Serious Untoward Event Policy of HA", efforts between the hospitals and Head Office were made to strengthen the psychological support of HA staff involved in clinical incidents. A "Psychological Therapeutic Kit" with psycho-education materials, online self-assessment and adaptive self-coping strategies were developed to enhance staff awareness and management of common stress reactions. Training for supervisors on how to best support staff were also conducted.

Psychological Therapeutic Kit

Enhancing Offsite Psychosocial Service Coordination and Communication for Local Disasters

The Disaster Psychosocial Services Management System (DPSMS) was established by CCPS. It is an electronic management system for documentation and communication of information on disaster psychosocial services (DPS) among HA stakeholders, including HOMICC and DPS Teams (DPSTs) of 17 acute general hospitals. It is an internal system accessible through the HA intranet within hospital premises. To speed up the coordination and reporting of DPS in local disasters, a mobile version of DPSMS was launched on 5 September 2018. This enabled DPSTs to report, update and share their DPS with mobile phones conveniently anytime and anywhere. It also greatly enhanced the communication among different stakeholders for easy management and monitoring of psychosocial services for disaster victims.

Mobile version of the Disaster Psychosocial Services Management System

Way Forward

Enhancing the corporate preparedness for sudden-onset disasters and major incidents is imperative in view of an increasing demand for public healthcare services amidst population growth and ageing, as well as changing challenges in Hong Kong and around the world. Facing the threats of swiftly evolving infectious diseases, especially during outbreak situations, is one of the crucial challenges. Multi-disciplinary engagement with joint effort in early case detection, rapid isolation and prompt exchange of information plays a key role. With this in mind, IEC will stay vigilant and continue its efforts in supporting the planning, enhancing infection prevention and control, fostering relationship with stakeholders, facilitating timely response actions whilst strengthening staff resilience to crisis and adversity.

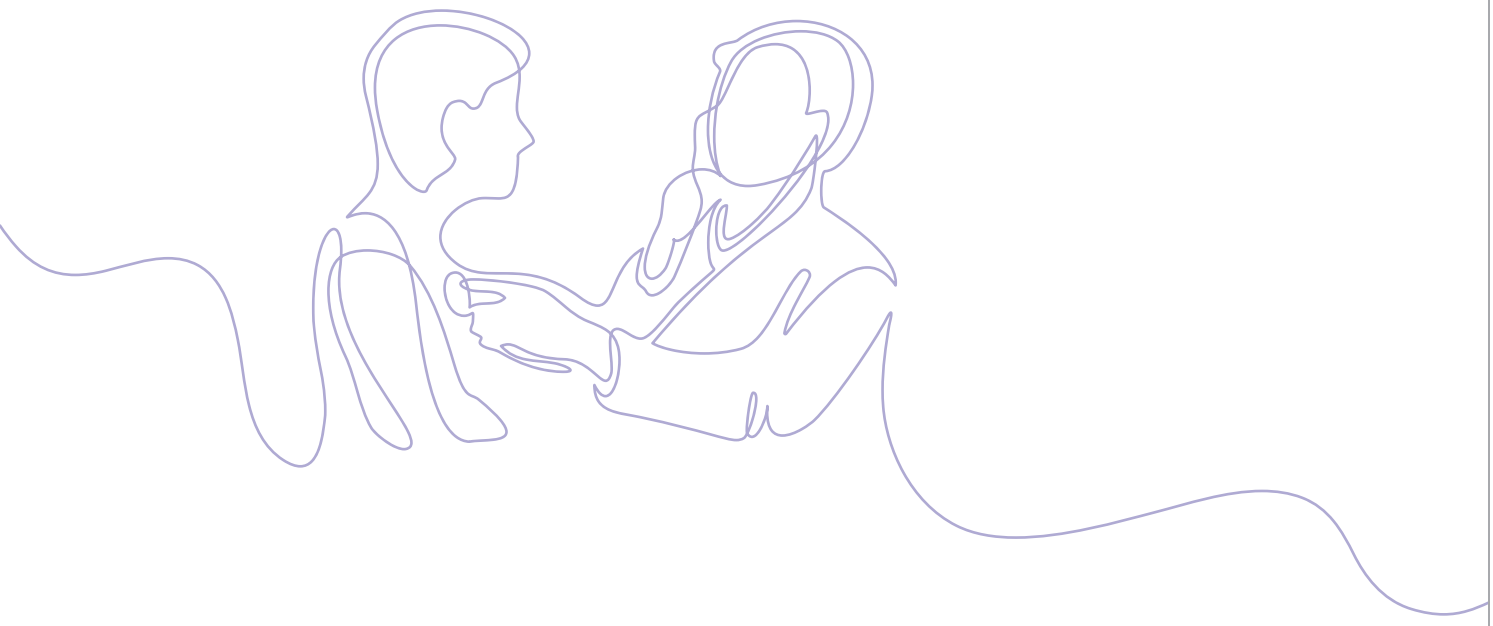
Patient Relations and Engagement

Introduction

Obtaining feedback from the service users is an effective way of enabling HA and its hospitals to achieve the objective of providing quality patient-centred healthcare services to meet the needs of the community. Complaints and appreciation serve as useful indicators of patient satisfaction.

Since its inception, HA has established a two-level system in handling public complaints with the aim to provide a readily accessible mechanism to deal with all complaints received from the public. All first-time complaints are handled by the respective hospitals or clinics. Complainants who are dissatisfied with the outcome of their complaints handled by the respective hospitals or clinics can appeal to the Public Complaints Committee (PCC) for a review of their cases. The PCC is established under the HA Board to independently consider and decide on all appeal cases. The Patient Relations and Engagement Department (PRED) of the Quality and Safety Division oversees the corporate complaints and feedback management. It also provides executive support to the PCC and the Central Committee (Complaints Management and Patient Engagement) (CC(CM&PE)).

The CC(CM&PE), comprising clinical leaders and management from seven Clusters, was established to enhance the overall management of patient relations. It advises on the strategic direction of complaints management of HA and is tasked to align the policies, standard and practices of various aspects of patient relations and complaint management of public hospitals.



Patient Experience Survey (PES)

In line with the international trend of employing experience/satisfaction surveys to measure and monitor patients' experience, HA commenced the first Inpatient Survey in 2010 using a validated tool, the first of its kind amongst any Chinese community in Asia. Significant progress has been made for systematic planning, development and follow-up on PES in HA. The following PES project and follow-up actions were undertaken in 2018:

PES on Inpatient Service

Following the Corporate PES Service Plan, the PES of Inpatient Service was launched in July 2017 and public reporting of the findings was conducted in September 2018. Covering more than 9,900 patients from 26 public hospitals with an encouraging overall response rate of 84%, the survey results were positive and encouraging. The overall score on the inpatient service was 8.1 out of 10, with outstanding performance on provision of clear and understandable explanation on how to take medication after discharge (9.8 out of 10), being treated with respect and dignity (9.6 out of 10) and privacy given and rehabilitation support (9.5 out of 10). Areas for service improvement identified included the use of call button and provision of contact information for post-discharge care.

The survey results have suggested sustained momentum with a high degree of engagement for both staff and patients towards PES and patient-centred care. Appropriate follow-up actions are in progress.

Future Corporate Survey Plan

To ensure a structured longitudinal monitoring of patients' views, HA will continue to conduct corporate-wide Inpatient Surveys at regular intervals. In between, there will be Surveys on Specialist Outpatient Service or Specialty-based service to address specific areas or issues.

Enhanced Follow-up Mechanism

At both the Cluster/Hospital and Head Office levels, structured mechanisms are in place to drive improvement action plans. The Applied Mediation Skills Training and Patient Discharge Information Summary are two important projects developed to address the consistent findings and patient feedback for want of "better communication with healthcare workers" and more "information giving upon discharge".

Enhancing Capacity and Staff Competencies in Conflict Resolution

For healthcare workers, complaints management is challenging as it requires competencies other than clinical skills. Training programmes and activities to enhance capacity and competencies in conflict resolution in 2018 were as follows:

Applied Mediation Skills Training for Front-line Healthcare Workers

Through collaboration with Human Resources Training & Development Department, the in-house management training curriculum has incorporated Applied Mediation Skills Training. In addition, PRED has commissioned training workshops for 680 front-line workers. Through case sharing and role-plays on real life scenarios of difficult clinical interactions, participants were equipped with essential mediation knowledge and skills in conflict resolution.

Complaint Management and Conflict Resolution Training

Complaint Management Seminar

To promote learning and sharing on effective management of patient relations and conflict resolution, a half-day seminar was organised in October 2018 for staff from clusters and HA Head Office who are handling patient relations and complaint management in their daily work. The seminar was well received by about 400 hospital staff with very positive feedback. Participants' feedback from post-seminar evaluation confirmed that the content had addressed their training needs.

Sponsorship Programme on 40-hour Accredited Mediation Courses

The objective of the training is to empower and sharpen the skills of front-line staff in conflict resolution at the point of care. In 2018, 94 healthcare workers received sponsorship to attend the courses organised by universities and tertiary institutes.

Commissioned Training on Conflict & Complaint Management for Paediatrics

To support the Coordinating Committee (Paediatrics) in promoting a mediation culture, PRED participated in the commissioned training in January 2018 through role plays and case sharing. Webcasts were arranged to facilitate participation by paediatrics departments of all public hospitals on mediation skills training.

Patient Engagement Forum in HA Convention

A patient engagement forum entitled “Difficult Conversation - Interactive Case Discussion and Use of Applied Mediation Skills to Resolve Conflicts in End-of-Life Care” was well received by an audience of over 600 in the Master Class on patient relations in HA Convention held in May 2018. Fruitful exchange and sharing with over 60 patient group representatives were conducted to explore ways to enhance communication and conflicts in difficult interactions.

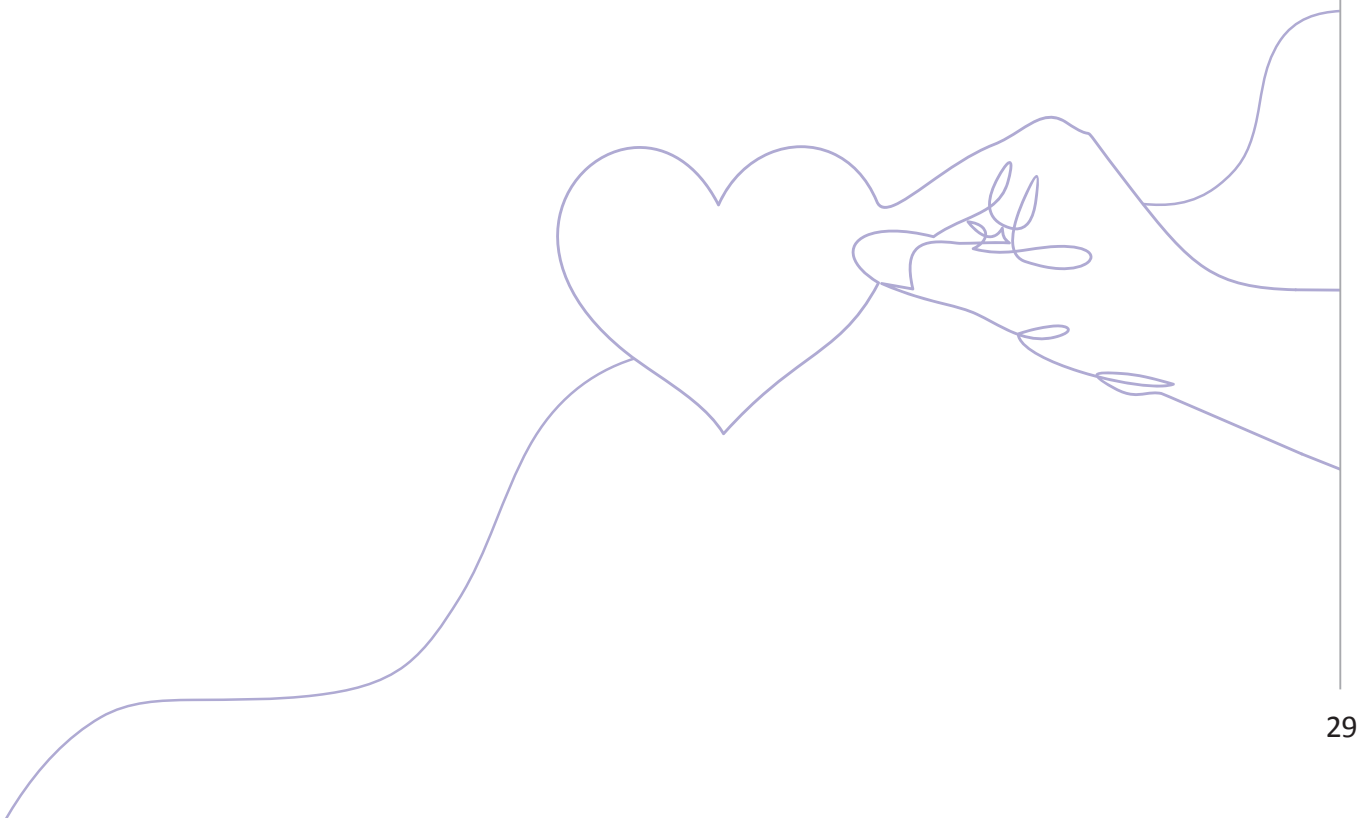
Complaint Management Audit

The audit on HA's Complaint Handling was conducted in 2017. The audit findings provided an independent assurance of the HA Complaints System and identified areas for improvement.

It concluded that adequate governance structures and internal controls were generally in place to enable efficient and effective handling of patient complaints. In 2018/19, actions have been taken to address the audit recommendations. These included, for example, the alignment of complaint definition for reporting purpose, and further enhancement of the electronic complaint and feedback management system.

Way Forward

A key element of good patient care is a good and harmonious Health Care Professionals (HCP) - Patient relation. However, with the current situation of the public healthcare system - the tremendous workload with over-stretched workforce to cope with the ever-increasing demand, inevitably, the HCP-patient relationship is challenging, if not at times, strained and difficult. Patient relations particularly complaint management has been playing a pivotal role in bridging the communication and resolving differences between the parties. Riding on the existing framework, continued efforts will be made to strengthen the two-tier complaints system, and engage patients and staff through Patient Experience Surveys for quality improvement. To ensure good succession and development of the future generations of competent complaint management personnel, there will be structured training courses and grade management to build a strong Cluster-based PRO workforce and HO complaint managers.



Patient Safety and Risk Management

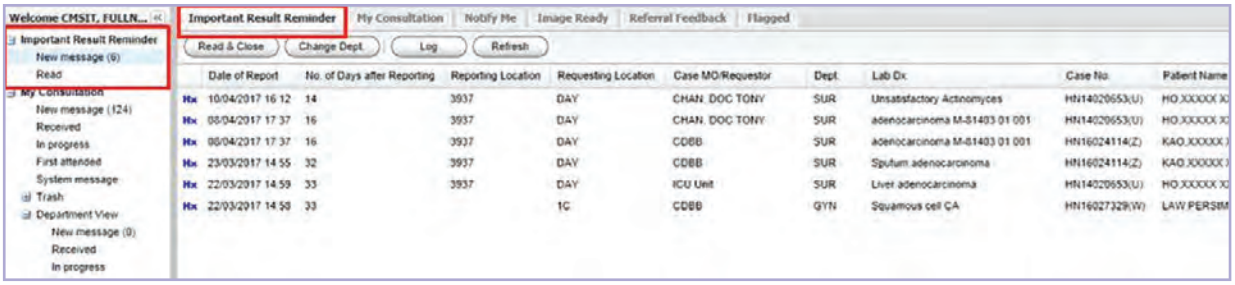
Introduction

The Patient Safety and Risk Management Department (PS&RM), formerly known as the Department of Quality and Risk Management, was established to improve patient safety and quality of care. Through analysing reported incidents, the department identifies risks in the patient care process, introduces various risk reduction measures and organises education programmes. Highlights of these measures are described below.

Diagnostics

Management of Important Histopathology and Radiology Reports / Images

To address the risk of delay in managing important histopathology and radiology reports (mainly malignancy) where positive test results were not communicated in a timely manner, HA set up a Task Force on Handover of Important Investigation Results. As an interim solution recommended by the task force, an Important Result Reminder (IRR) feature was added to the Clinical Management System (CMS). IRR at Clinical Inbox is a reminder for cancer-related histopathology results which is pushed to the department folder in the Clinical Inbox two weeks after the report is available.



As of 31 Dec 2018, IRR has been rolled out to 11 hospitals and the system will be made available to all HA hospitals in 2019. Concurrently, HA is working on long term solutions including a closed loop communications module which will be added to CMS IV and a patient empowerment project.

Going forwards, the IRR feature may be used to mitigate risks in relation to missed findings on radiological images.

Missed Findings on Chest X-rays

An investigation panel has been setup by HAHO to look at recent clinical incidents involving missed findings on chest X-rays. The panel was also tasked with providing recommendations on how to prevent recurrence in the future. The panel came up with five recommendations, which are as follows:

Recommendation 1 – To minimise perceptual errors in interpreting CXRs by frontline clinicians
Recommendation 2 – To utilise Artificial Intelligence Tools to support clinical decision
Recommendation 3 – Outsourcing CXR reporting of selected cases via teleradiology by overseas Radiology Service Providers
Recommendation 4 – To devise a long-term strategy of Radiologist manpower in HA
Recommendation 5 – To develop criteria for prioritisation in clinical decision support 'safety net'.

In response to the recommendations, a number of short, medium and long term measures are being put in place.

In the short-medium term, HA will ensure that all high risk CXRs are reviewed by senior medical practitioners. As an initial step, all patients with CXRs taken in A&E Departments and discharged home without being admitted, will have their CXRs reviewed by a senior A&E medical practitioner.

To reduce the risk of missed findings on chest X-rays in the longer term, three working groups have been formed.

The first working group will develop web-based training modules to decrease perceptual errors in interpreting CXR and embark on a HA-wide training for clinicians.

The second working group will conduct a feasibility study in incorporating the capabilities of AI in CXR at an appropriate site, and consider how AI can be integrated into frontline clinicians' workflow as a clinical decision support tool. It is understood that AI is not for making a radiological diagnosis at this current stage.

The third working group will explore the utilisation of overseas teleradiology reporting services for reporting or clinical decision support. This includes understanding the technological, financial, legal and stakeholder barriers to adoption.

Surgical Safety Revisited

The first "Surgical Safety Policy" came into effect 10 years ago. It was thus timely to undertake a review of the implementation of surgical safety. During the review exercise, two focus areas were identified for enhancing surgical safety:

Importance of the Surgical Safety Policy

With reference to the World Health Organization (WHO) framework of "Safe Surgery Saves Life", the HA launched a Surgical Safety Policy in 2009 and extended its application to settings outside the operation theatre in 3 phases, including:

- **Phase I** - "Surgical Safety Policy" was implemented in operation theatres on 1 June 2009;

- **Phase II** - "Interventional Procedure Safety Policy" was implemented on 1 October 2010 in interventional suites; and
- **Phase III** - "Bedside Procedure Surgical Safety" was effective since 1 March 2011. It emphasised on the implementation of safety checks for at least two bedside procedures, namely, "Chest tapping and insertion of drains", and "Insertion of intravascular catheter with the use of guide wire".

Being the tenth year since the rollout of the "Surgical Safety Policy", it was timely to perform an evaluation. Learning from the Sentinel Events (SE), especially in the cases of "Wrong patient/part" and "Retained instruments/materials", and upon further consultation with policy stakeholders, we recognised the importance of the processes of "SIGN IN", "TIME OUT" and "SIGN OUT" and how they safeguard our patients against adverse events.

A workgroup was formed to review the "Surgical/Interventional/Bedside Procedure Safety Policies" with relevant stakeholders to revisit the essential safety steps in the normal operative workflow and to ensure consistent application to critical processes. An updated policy was developed after consultation, with emphasis on the importance of the following:

i. The timing of "SIGN IN" and "TIME OUT";

ii. The need of checking relevant radiological images in the "TIME OUT" process; and

iii. The counting and checking of the completeness of instruments in "SIGN OUT".

The updated policies had been taken effect on 1 July 2018 and had been promulgated at various different platforms, including incident sharing forums, relevant COCs, CCs and Specialty Advisory groups. It had also been uploaded to HO Patient Safety & Risk Management Department Website for clinicians' easy access.

Risk Mitigation Strategy for Guide Wire Retention

A key initiative in 2018 was to mitigate the risk of guide wire retention in Central Venous Catheters (CVC). A taskforce with multidisciplinary experts was convened to review literature and local data, conduct a global market search for alternative products and strengthen education in the critical steps of insertion and removal of CVC. The taskforce produced an educational video to emphasise critical steps and to draw the learners' awareness of preventing guide wire retention during CVC insertion. This educational video has been uploaded to e-Learning Centre (eLC) for all staff.

Trusted by Patients

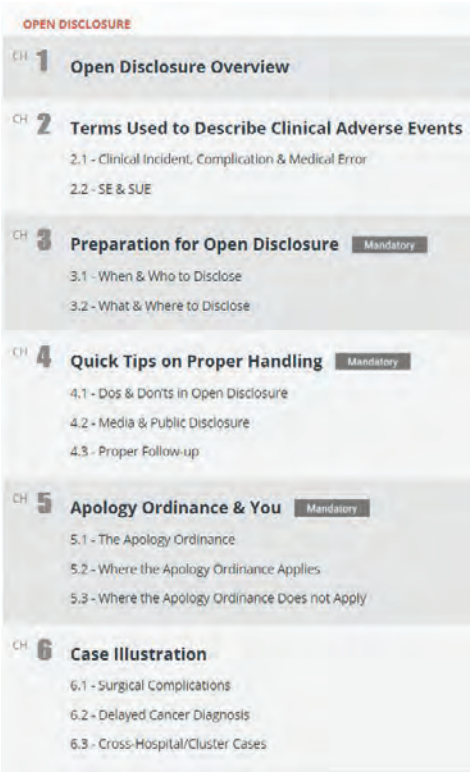
Maintain Honest Communication with Patients and Carers

Trust is a precious commodity that must be earned. To gain and maintain the trust between patients and HA, we try and maintain a timely and ongoing dialogue with our patients and their families whenever any health-related concerns arise in care processes. We recognise that transparency is a fundamental element of trust, so we make every effort to be transparent, open and accountable to our patients and to our staff.

In 2018, HA developed an "Open Disclosure Policy for Clinical Incidents", which supported the corporate value--"Trusted by Community", by emphasising transparent communication between patient/family/carers and healthcare providers. The purpose of the policy was to set the standard the community should expect of HA, to ensure that patients, families, carers and healthcare providers were communicating effectively when clinical incidents occur, and to align practices across the organisation.

While all healthcare providers have the responsibility to maintain open communication with patients the families when adverse events occurred, it is important for our clinicians to acquire the knowledge and skills of open disclosure. In October 2018, an online module on open disclosure was developed and introduced to all professional staff. The aim of this new module was to provide an electronic platform for knowledge-based education on "what is open disclosure" and "how to do open disclosure".

The importance of having good open disclosure processes is acknowledged, and simulation-based scenario training in open disclosure for key staff is planned for 2019.



Way Forward

In 2019, PS&RM will be supporting our frontline colleagues by providing further training in open disclosure and root cause analysis. There will also be a strong focus on reducing missed diagnosis on radiological investigations.

PS&RM will continue to work closely with hospitals to continue the journey of phasing out the re-use of single use devices, while also leading the development of advanced directive and advanced care planning in HA.

Quality and Standards

Introduction

The Quality and Standards Department is organised into two teams:

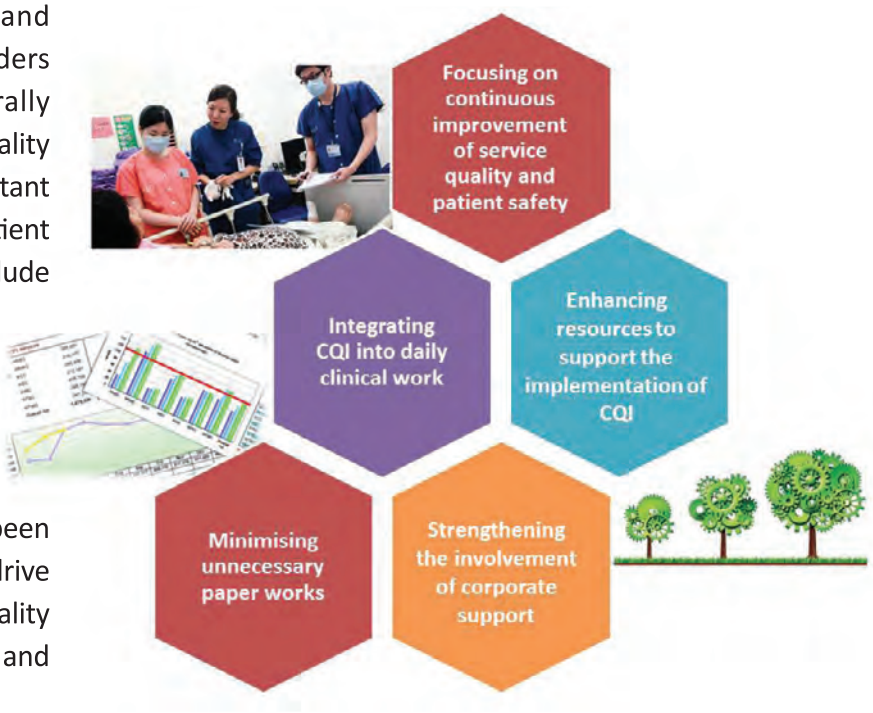
- **Quality & Standards** – Providing executive support for hospital accreditation, assessors' training, CQI system, credentialing, informed consent, patient discharge information system and document management
- **Quality & Performance** – Providing executive support for elective surgery waiting time, endoscopy services, OT utilisation, Quality Times, Specialist Outpatient Clinic (SOPC) waiting time as well as pain management.

The department also provides executive support for various committees in Head Office level, such as, Medical Policy Group(MPG), COC(Medicine), COC(Surgery), COC(Neurosurgery), COC (Anaesthesiology), COC(Otorhinolaryngology), Committee on Quality and Safety etc.

Review of Hospital Accreditation

The Hospital Authority (HA) kicked off the review of its hospital accreditation program in February 2017. The review aims to optimise the existing accreditation format to ensure optimal applicability to the local situation and clinical workflow. In July 2017, as part of a set of contingency measures to cope with the summer surge of patient activity, the hospital accreditation program was temporarily suspended to enable staff to focus on direct patient care. In March 2018, HA further suspended all surveys in 2018 to allow sufficient time to complete the review.

Upon a series of consultations and deliberations with relevant stakeholders during the review, it was generally agreed that having a continuous quality improvement (CQI) philosophy is important for improving service quality and patient safety. Some ideas on improvement include minimising unnecessary paperwork; embedding a CQI mentality into daily clinical practice; strengthening the involvement of corporate support as well as enhancing resources to support its implementation. A Taskforce has been set up to explore appropriate ways to drive quality improvement and provide quality assurance. Continuous communication and engagement of staff is underway.

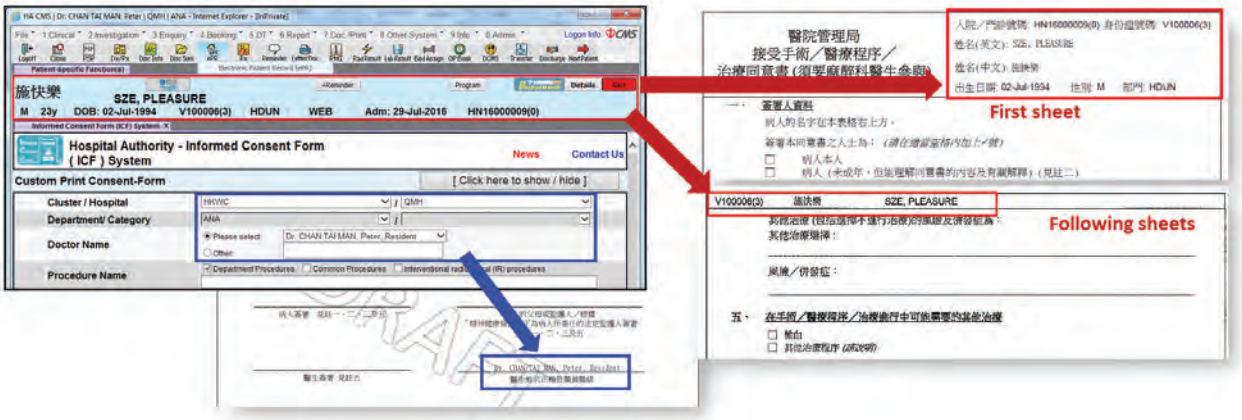


Informed Consent

Informed consent for medical treatment/procedures is part of quality care and also a legal requirement. Recently, HA has taken the opportunity to review practices and initiate improvements in response to changes from the HK Medical Council, recommendations by the Coroner's Court, hospital accreditation and Group Internal Audit. With strong support from management, the corporate "Web-based Custom Print Informed Consent Form (ICF)" System was launched which aims to standardise information in consent forms, reduce doctors' writing time and provide patients with more information in Chinese.

As of December 2018, over 2,600 procedures has been aligned in the database, including 352 corporate data from 11 clinical Coordinating Committees (COCs) of Accident & Emergency, Clinical Oncology, Ear, Nose & Throat (ENT), Internal Medicine, Neurosurgery, Obstetrics and Gynaecology (O&G), Ophthalmology, Paediatrics, Psychiatry, Radiology and Surgery. Over 2.5 million of consent forms were generated from ICF System, of which 94% were in Chinese.

In November 2017, the interface of ICF system with Clinical Management System (CMS) was launched, automatically linking the CMS login doctors' name as well as printing patient identification data on consent forms generated via CMS.



New functions of interfacing ICF system with CMS

As part of the CMS IV redevelopment project, another long term system enhancement of ICF is **"e-Consent"**, which has the following project focus:

- To accommodate consent workflow of both surgeon and anesthetist;
- To provide for electronic signatures of doctors and patients; and
- To develop an IT platform for consent data management.

Corporate Credentialing

Credentialing and defining scope of practice are important measures of clinical operations that aim to ensure the competence of professional staff, as well as the safety and quality of practice. In view of the increasingly complex and technology laden healthcare calling for sophisticated skills and competence to master them, HA has set up a governance structure and established a formal process of validating healthcare professionals' credentials and defining their scope of practice. The implementation of credentialing and defining scope of practice in HA is pragmatic and cautious.

As at December 2018, HA Central Credentialing Committee (CCC) had endorsed the credentialing requirements of eight procedures from six specialties as activities that require additional credentials.

Specialty	Name of Procedure	Status
Anaesthesia	Cardiac Anaesthesia (Adult)	Endorsed
Cardiac Services	Left Atrial Appendage Occlusion	
	Percutaneous Coronary Intervention	
	Transcatheter Aortic Valve Implantation	
Clinical Oncology	Intracavitary Brachytherapy for Cancer of Cervix Uteri	
Obstetrics and Gynaecology	Robotic Radical Hysterectomy	
Radiology	Hepatic Transarterial Chemoembolisation	
Surgery	Robotic Assisted Laparoscopic Radical Prostatectomy	
Otorhinolaryngology	Cochlear Implant Surgery	Under deliberation
Intensive Care	Venovenous Extracorporeal Membrane Oxygenation	
Cardiology	MitraClipTM Delivery System for the Treatment of Mitral Valve Insufficiency	
Surgery	Robotic Assisted Rectal Resection	

To further align credentialing procedures across HA, COC/CCs are invited to review and align the credentialing requirements of specialty-related credentialing activities so as to ensure safe and effective patient care.

With recent development of credentialing in specialty colleges under Hong Kong Academy of Medicine (HKAM), CCC has started exploring communication mechanism for following up of credentialing activities endorsed by HKAM, which aims to ascertain professional competence in both public and private healthcare settings.

Access Management - Specialist Outpatient Clinic (SOPC)

In 2018, HA continued with the implementation of action plans in response to the HA Review recommendations on Specialist Outpatient Clinic (SOPC) waiting time with good progress.

The mobile booking application "BookHA" has been further extended to cover bookings of Anaesthesiology (Pain Clinic) and Clinical Oncology specialties since Dec 2018. This application enables patients to make SOPC new case appointments anytime and anywhere with smartphones, in addition to coming to the clinics in person or sending in application by facsimile.

To provide patients with transparent waiting time information, and to facilitate informed decisions when considering whether they should pursue cross-cluster treatment, since 31 Oct 2018, HA has revamped its website to provide information on the number and percentages of new case bookings by different triage categories, median waiting time of new case bookings triaged as 'Routine', as well as the 90th percentile waiting time. The above information is also shared to the government's public sector information portal – **data.gov.hk**.

Home > Service Guides > Specialist Out-patient Clinics

Waiting Time for New Case Booking at Ear, Nose, Throat Specialist Out-patient Clinics

(1 January 2018 – 31 December 2018)

Specialist outpatient clinics have implemented a triage system to ensure patients with urgent conditions requiring early intervention are treated with priority. Referrals of new patients are usually first screened by a nurse and then by a specialist doctor of the relevant specialty for classification into **Urgent**, **Semi-urgent** and **Stable** categories. **HA's targets are to maintain the median waiting time of Urgent and Semi-urgent cases within two weeks and eight weeks respectively.**

In the past 12 months (1 January 2018 – 31 December 2018), there were 99,553 new case bookings in Ear, Nose, Throat Specialist Out-patient Clinics, with cases being triaged as follows:

	New case bookings		Waiting Time							
	Number (1)	Percentage		Hong Kong East	Hong Kong West	Kowloon Central	Kowloon East	Kowloon West	New Territories East	New Territories West
Urgent Case	15,375	15%	Median	Less than 1 week	Less than 1 week	Less than 1 week	Less than 1 week	Less than 1 week	Less than 1 week	Less than 1 week
Semi-urgent Case	19,101	19%	Median	5 weeks	5 weeks	6 weeks	7 weeks	5 weeks	4 weeks	4 weeks
Stable Case	65,063	65%	Median	41 weeks	26 weeks	51 weeks	83 weeks	65 weeks	37 weeks	58 weeks
			Longest (2)	59 weeks	85 weeks	94 weeks	91 weeks	94 weeks	67 weeks	69 weeks

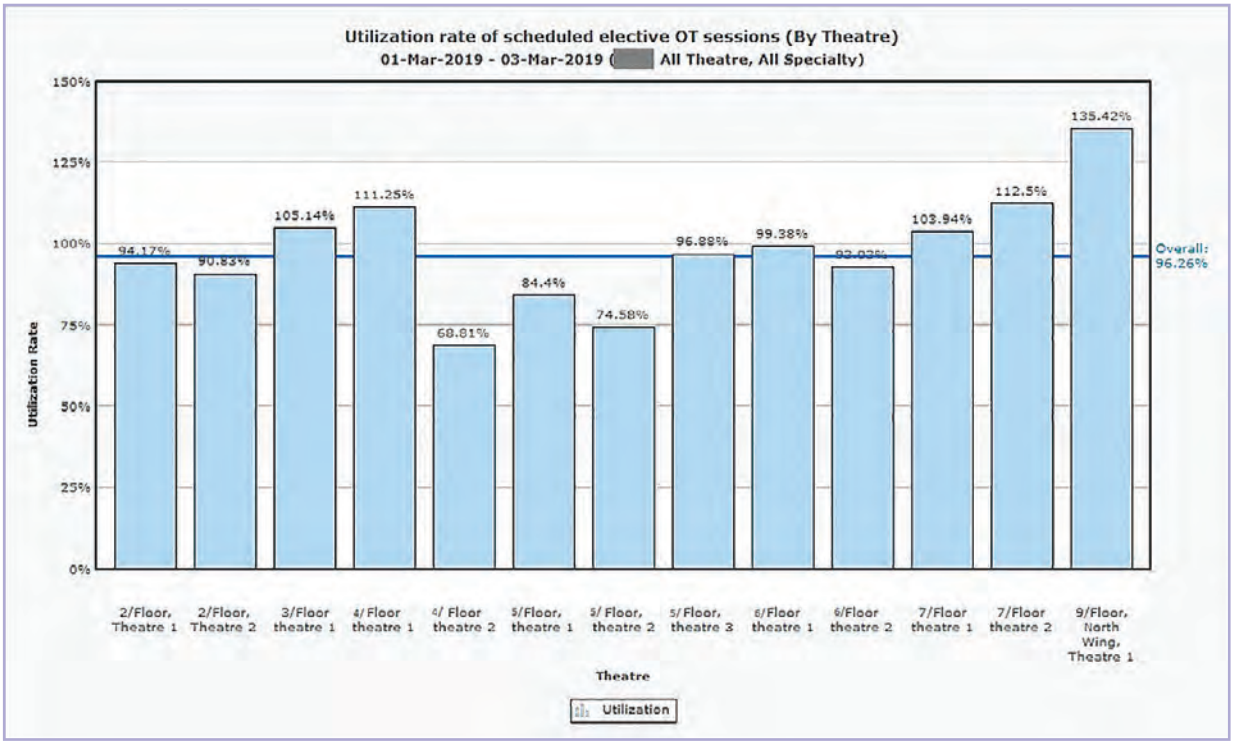
Apart from enhancing the access of information by the public, an analytical framework on SOPC service management has been formulated, comprising waiting time and waiting list KPIs, booking pattern, referral source, manpower resources deployment and case close information. The analytical framework, which will be incorporated in Management Information Portal (MIPo) to enable systematic and real-time analysis, will facilitate performance monitoring, capacity/demand gap identification and development of improvement measures by hospital/cluster management with a more comprehensive picture of SOPC service.

Development of Reports on OT Utilisation for Local Monitoring

Operating theatres (OT) are an expensive high-volume resource in HA. Its utilisation has a direct impact on many specialty services. Optimisation of the efficiency of OT services at individual hospitals will not only improve throughput and shorten waiting time, but can also enhance the patient journey and their outcomes.

The Key Performance Indicators (KPIs) on Operating Theatre services, namely "Ratio of scheduled to expected elective OT session hours" and "Utilisation rate of scheduled elective OT sessions" have been developed and their reports are accessible in both the Operating Theatre Monitoring and Reporting System (OTMR) and Clinical Data Analysis and Reporting System (CDARS).

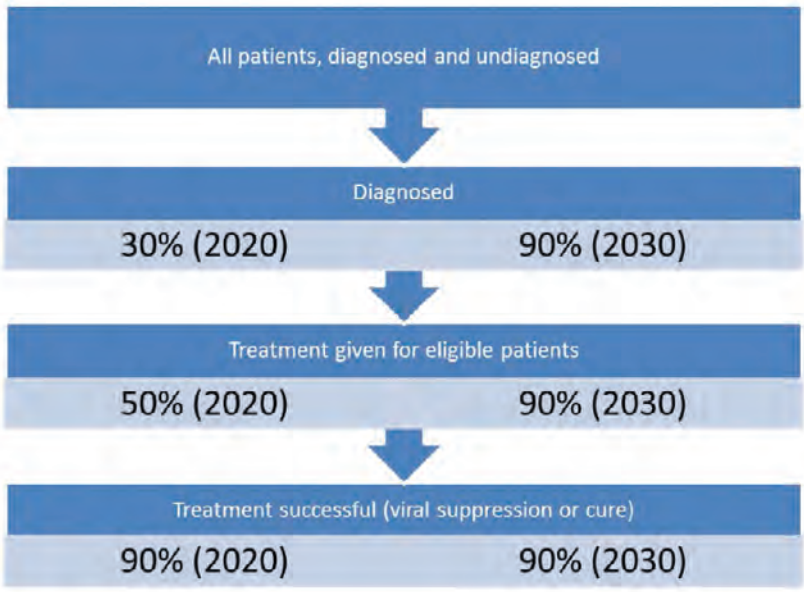
In 2018, in order to support multi-dimensional analysis on OT utilisation, the reports were further enhanced with breakdown by specialty, together with a two-way analysis table on case specialty versus host specialty of elective sessions. The file export function of the reports was also enhanced to enable exporting through graphs, data tables and case list. The improved graphical presentation together with data down to theatre/specialty level will further facilitate local monitoring of OT utilisation, service review and optimisation.



Viral Hepatitis Management

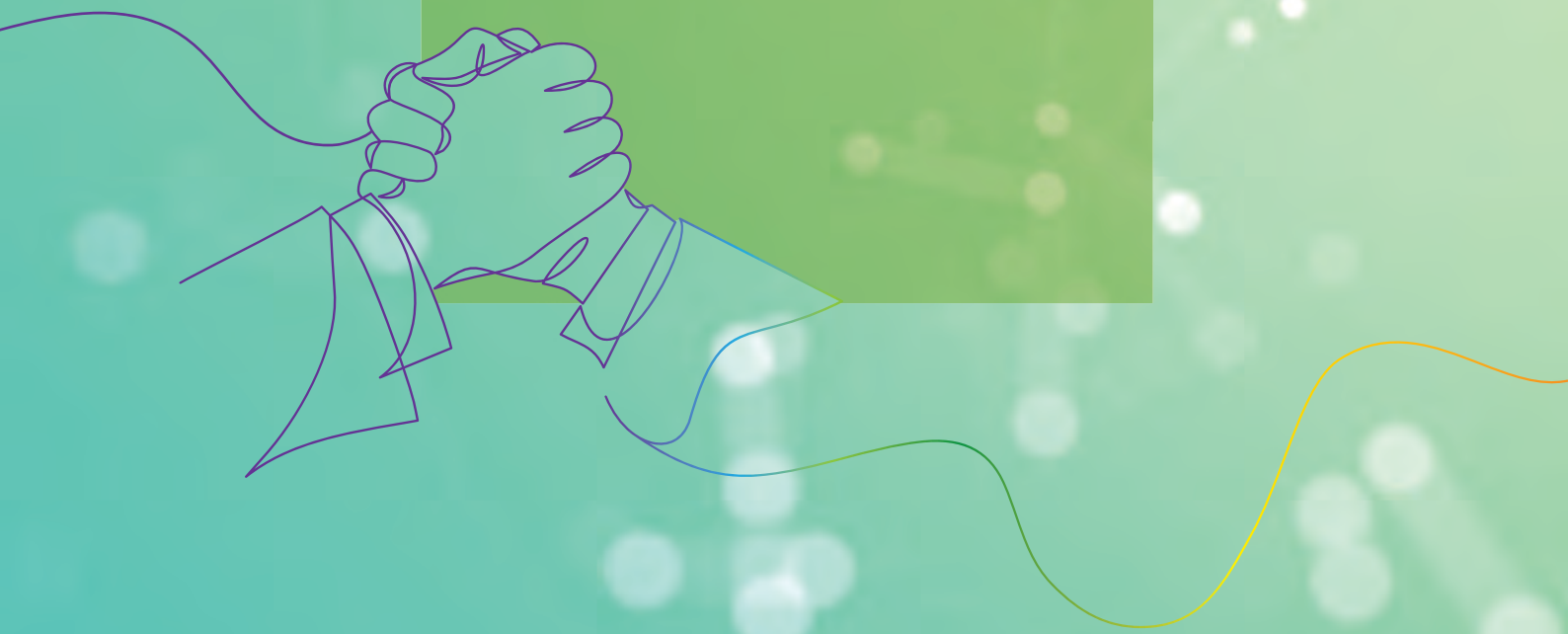
In response to the World Health Organization (WHO)'s recommendations on viral hepatitis management, the Chief Executive of the HKSAR announced a new initiative in her 2017 Policy Agenda to set up the Steering Committee on Prevention and Control of Viral Hepatitis (the Committee), co-chaired by the Chief Executive of HA and the Director of Health, to formulate strategies to effectively prevent and control viral hepatitis. In 2018, the Committee and two working groups, namely the Clinical Working Group (CWG) and the Public Health Working Group, led by HA and the Department of Health respectively, were formed. The CWG is responsible for implementing strategies set out by the Committee to achieve WHO's targets, in collaboration with DH where applicable.

During its second meeting in November 2018, the Committee supported the direction of two initiatives on prevention and control of viral hepatitis as proposed by the CWG. The two initiatives are i) preventing mother-to-child-transmission of hepatitis B virus (HBV) by providing mothers with high viral loads with an antiviral treatment option, and ii) eliminating hepatitis C virus as a public threat by adopting direct-acting antivirals in its treatment. To dovetail with the direction of the Committee, HA reviewed its service load and gaps in diagnosis, treatment and monitoring; and prepared proposals to strengthen related service provision and staff training for viral hepatitis. It is anticipated that drug funding and laboratory capacity for managing the target patient groups will be enhanced as part of the action plan. A nurse clinic model is also being explored to augment the SOPC capacity and alleviate pressure of liver clinics.



Treatment cascade for chronic viral hepatitis and WHO targets of 2020 and 2030

Clusters



Hong Kong East Cluster (HKEC)

Annual Continuous Quality Improvement Forum in Ruttonjee & Tang Shiu Kin Hospitals (RTSKH)

The theme of this year's forum was "From Risk Management to Quality Assurance". We shared innovative projects to improve work processes and health-care services with our patients, and received a record-high 43 contributed papers.

Keynote Speaker Ms. Sylvia FUNG from Tung Wah College and Senior Management Team (27 March 2018)

Falls Prevention

Lunch Forum to share falls risk factors and introduce the revised Guidelines on Falls Prevention (3 August 2018)

The HKEC Working Group on Fall Prevention devised a set of fall prevention strategies for both patients & carers, and standardised it across all cluster hospitals. Besides using the Morse Fall Scale to identify the general falls risk, the Working Group also identified department-specific & disease-specific risk factors (red flags) to recognise additional patients that are of a high risk of falls. Some strategies included devising methods to facilitate bedpan & urinal use at the bedside, stressing the appropriate use of diaper & weaning, using visual signage to alert all hospital staff regarding safe mobilisation during patient handling, adopting alarm pad to alert ward staff of the patient's movement in bed for fall prevention, and having hoists available for patient transport. Nurses were empowered to refer patients for physiotherapy for walking exercise. Regular training & refresher training courses were conducted for nurses & care-related supporting staff, and training materials were uploaded as on-line resources. With the concerted effort from various disciplines, the falls rate in HKEC is consistently lower than the overall falls rate of Hospital Authority (0.25 – 0.29 per 1000 in-patient bed-days occupied vs 0.43 – 0.46 from 2011/12 to 2017/18).

Appropriate Use of Diapers in HKEC

Using diapers unnecessarily affects the clinical course and deprives patients of dignity. Learning from the experience of Japan nursing homes, the Cluster Working Group on Appropriate Use of Diapers was established in Q2 2018 to tailor-design strategies for hospital settings and to reduce the unnecessary usage of diapers. A prevalence survey was conducted to study the use of diapers in PYNEH in October 2018, and concluded that in busy ward activities, with the shortage of nursing & supporting staff, adopting the "appropriate use" and "early wean-off" of the diaper was essential. The strategies require concerted multi-disciplinary effort to enhance patient's mobility and independence, fall prevention, good diet, adequate hydration and treatment of diarrhea, staff knowledge on continence care and incontinence products, and provision of patient transfer equipment and toilet facilities. It is essential to develop inclusion criteria and monitor adult diaper use in our daily patient care.

Lunch Forum to share the benefits and potential challenges of no-diaper's approach in PYNEH on 8 November 2018

Promotion of Awareness of the Use of Automated External Defibrillator (AED)

Hospital Visits to WCHH and TWEH 21 November 2018

There is strong evidence that patients with sudden cardiac arrest would have better health outcomes if the first defibrillation is administered within 5 minutes. Patients have suffered cardiac arrests outside hospital wards and within the hospital premises in the past. A Task Force on the promotion of awareness and use of AED in the HKEC was established in November. It comprised doctors, nurses and allied health staff and members conducted hospital visits across the whole cluster to review the location, signage and availability of AED in HKEC hospitals and general out-patient clinics. Further activities such as forums and practical workshops will be held in 2019 to further raise awareness among all clinical & non-clinical staff.

Patient Participation & Patient Experience

Collaborating with the Quality & Safety Office and the Health Resources Center, the Ruttonjee & Tang Shiu Kin Hospitals established local platforms and surveys to collect and review patients' feedback proactively. These platforms, which include Patient Focus Groups, Patient Forums and Patient Experience & Satisfaction Surveys, help to enhance hospital services with patient participation. A specific working group will be formed to review patients' feedback and implement improvement measures accordingly.

RTSKH Patient Focus Group

Medication Safety

The Tung Wah Eastern Hospital (TWEH) led a Task Force to coordinate the implementation of the In-Patient Medication Order Entry at four Cluster Hospitals (TWEH, Wong Chuk Hang Hospital, Cheshire Home (Chung Hom Kok) and St. John Hospital). Demonstration sessions were conducted with Drug Trolleys and Injection Trolleys. A local User Group will be set up to collect feedback from frontline users in order to perform an evaluation after implementation.

Task Force on HKEC 4 Hospitals IPMOE implementation (2 May 2018)

Establishment of HKEC Q&S Journal Club

Journal clubs are common in various clinical specialties. HKEC held its first monthly Q&S Journal Club on 18th July 2018. Topics are freely chosen and not assigned. Each presenter, a doctor, a nurse or an administrator, presents for 15 minutes, with 15-mins of discussion, followed by an hour of knowledge sharing in Q&S from different aspects. Attendees found this platform useful in both knowledge and social exchange. This is now held in a bigger venue because of the increasing number of attendees. All are welcome!

Fifth Journal Club (7 November 2018)

Integrated Quality Improvement Visit

The RTSKH commenced its 2nd round of Integrated Quality Improvement Visit by adopting a new methodology which includes a short introduction session of visited departments beforehand, as well as a debriefing session to share findings and come up with improvement actions.

Integrated Quality Improvement Visit Team visiting RTSKH Food Services Department

HKEC Lunch Forums

Cluster Q&S Office organises lunch forums on a regular basis.

2018		Q&S Trainings
12 Apr	Forum	HKEC Medication Safety Forum
16 Jul		HKEC Clinical Audit Sharing Forum 2018
27 Aug		Legal Essentials for Healthcare Professionals
07 Sep		Prevention of Patient Suicide
10 Sep		Pressure Injury
19 Sep		Post SE & SUE
27 Sep		Patient Blood Management
10 Oct		Trauma and Injury Prevention Program 2018: Motor Vehicle Crash – Road Safety
11 Oct		醫護人員怎樣照顧自己的身心靈
25 Oct		HKEC Medication Safety Forum (Fall 2018)
12 Nov		Pressure Injury Assessment & Documentation
13 Sep	Briefing Session	Workshop for Care-related Supporting Staff – Fall Prevention

Lunch Forum on Legal Essentials for Healthcare Professionals on 27 August 2018

Trauma and Injury Prevention Program 2018: Motor Vehicle Crash – Road Safe on 10 October 2018

Lunch Forum on "醫護人員怎樣照顧自己的身心靈" on 11 October 2018

Hong Kong West Cluster (HKWC)

HKWC Patient Safety Awareness Week

To enhance awareness of patient safety culture, the 2nd HKWC Patient Safety Awareness Week was conducted from 19 to 23 March 2018. The main theme of this year was Human Factor and Application of Crew Resources Management. The program included a scientific conference, workshops and a quality improvement program competition. The competition aimed to encourage innovative ideas with originality in order to enhance Safety Culture in HKWC. The Champion was Ms. Angela Lee, GH Clinical Pharmacist who developed “Warfarin Dosage Card”.

HKWC STOP Pressure Injury Week

The "STOP Pressure Injury Day" is an internationally recognised campaign held every November to promote pressure injury prevention.

The 2018 HKWC STOP Pressure Injury Week encompassing promotion booths, poster display, fun games, and workshops in various cluster hospitals was held from 14 to 19 November 2018. Our slogan of the year was "Say NO to Pressure Injury; Together We Can! ".

Staff Psychological Support Kit after Incidents

Critical Incident Psychological Services (CIPS) Centre's service aims at improving staff's awareness of psychological needs and accessibility of services by conducting psychological triage and providing counselling services, organising talks and groups, coordinating the provision of the crisis intervention service as well as managing resources library on psycho-educational materials.

To enhance the support after incidents such as Sentinel and Serious Untoward Events (SE & SUE) and Work Place Violence (WPV), psychological support kits are distributed to the affected staff and department. The support kit includes psychoeducational materials indicating the common psychological reactions after incidents, self-care tips and service information. Q & S forum was held on 5 June 2018 to introduce CIPS services. CIPS center delivered 43 (SE) & 97 (WPV) support kits to staff encountering in SE/SUE & WPV in HKWC since the services launched in 2018.

CPR Drills in HKWC to Enhance First Responders Skills and CPR Outcomes

Training on Crew Resource Management

The concept of "Crew Resources Management (CRM)" aims to enhance team communication and to eliminate or mitigate risks of human errors. Hong Kong West Cluster Hospitals started to organise CRM training class locally in 2018/19 with the support from the Program Director, CRM Classroom Training Program of Pamela Youde Nethersole Eastern Hospital. CRM emphasises on team work which encourages colleagues to see-it, say-it, fix-it and of course the speak up culture, to ensure that everyone is on the same page. The introduction of CRM culture in daily operations among healthcare teams can result in better teamwork and communication, reduce human errors and improve patient safety (as at Jan 2019, 352 colleagues in HKWC joined the CRM training).

Organized by HKWC: CRM classroom classes in 2018/19

DKCH-FYKH-MMRC Continuous Quality Improvement Forum

The Duchess of Kent Children's Hospital-Fung Yiu King Hospital-MacLehose Medical Rehabilitation Centre (DKCH-FYKH-MMRC) Continuous Quality Improvement (CQI) Forum cum Best CQI Project Award Contest was held for the second year on 29 January 2018 to continuously acknowledge the daily efforts of our colleagues in CQI.

Three teams had come in top and five were awarded with merits. All participants were excited to give their votes for the Most Popular Project Award winner. Professional adjudicators comprising quality leaders from DKCH-FYKH-MMRC as well as Queen Mary Hospital, Grantham Hospital and Tung Wah Hospital effectively facilitated inter-hospital learning and sharing culture of CQI in HKWC.

We were honored to have the Quality and Safety Service Director of NTEC, Dr So Hing Yu, to join us in this meaningful event. The keynote speech: "A promise to learn; A commitment to act" delivered by Dr So not only made the day for every participant, but also inspired us with new positive perspectives toward CQI.

Grantham Hospital (GH) CQI Forum

The GH Annual CQI Forum cum Presentation of the Best CQI Award was held on 26 February 2018 to foster a CQI culture and recognise colleagues' effort in improving service quality.

Mr Boris Ho, Loss Prevention and Training Manager of Hong Kong Electric Co Ltd, was invited to share their experience in Safety and Risk Management in their company. Posters display and oral presentation were also arranged in the event. Four teams were awarded for their successful improvement projects.

A "CQI Make Easy workshop" was organised on 26th October to allow colleagues to acquire the necessary skills to conduct a good CQI project.

Contingency Preparedness before Replacement of Uninterruptible Power Supply (UPS) at Tung Wah Hospital (TWH) C10 Operating Theatre (OT)

A number of incidents related to UPS breakdown which affected the electricity supply of C10 OT were reported. It was revealed that the current single-fed design of the UPS at C10 OT was outdated, and assurance on continuous supply of electricity was uncertain.

Taking into account our patients' safety, other feasible control measures were explored to tackle the possible breakdown of electricity supply in C10 OT before the replacement of the obsolete UPS.

As the electricity supply of the nearby recovery room would not be affected by the UPS, the contingency plan of getting temporary backup electricity from the recovery room to support the essential equipment was set up.

To test the feasibility of the contingency plan, an emergency drill with a multidisciplinary approach was conducted on 28 May 2018. The drill ran smoothly and it validated our contingency plan as far as reasonably practicable.

Team Briefing before drill

Preparation for the drill

Get ready

Noted Electricity Supply interruption in the theatre, contingency plan activated.

Kowloon Central Cluster (KCC)

Continuous Quality Improvement

QEH Q&S Bulletin

The Queen Elizabeth Hospital (QEH) Quality and Safety Bulletin was published monthly in 2018 to effectively promote the quality and safety issues among healthcare professionals in QEH. The topics of QEH Q&S Bulletin included the sharing of good practices and smart tips to enhance safety and risk management in hospital services.

Quality and Safety Forums

At QEH, Quality and Safety Forums were organised monthly that covered a broad range of topics from clinical services (e.g. clinical handover, medication safety, apology ordinance, etc.) to non-clinical services (e.g. practical communication skills, patient sharing, how to engage younger generations, etc.). Speakers from different expertise shared their valuable experience to hospital staff at the forum, which was video-conferenced to all KCC hospitals.

The Continuous Quality Improvement (CQI) Forum at Kowloon Hospital (KH) was revamped as the Quality & Safety Forum in 2018. The committees of KH were invited to introduce the committee functions and improvement to KH staff.

Quality and Safety Workshop

Q&S Workshops were conducted regularly for KCC staff on a variety of topics from English writing skills to lateral thinking. Staff feedback was encouraging, indicating that they could apply the knowledge, skills and attitude learnt in their daily jobs.

Auditor Training

Nurse auditor training was held in Kwong Wah Hospital (KWH) with role play on performing nursing audits in clinical areas.

Quality & Safety Week

Our Lady of Maryknoll Hospital (OLMH) organised a two-day Quality & Safety Week to raise staff awareness on the importance of quality and safety services for patients and their family members.

Risk Reduction by Proactive Management and Multidisciplinary Team Approach

Air-duct cleaning at a Tuberculosis & Chest Ward with a Risk Rating score of 15 was one of the Wong Tai Sin Hospital's (WTSH) Risk Register 2018. With the proactive arrangement of joint meetings to identify risks and related control measures, following HA Infection Control Guideline on planning of the project, close monitoring on compliance, communication and feedback with all stakeholders during project implementation, the project was completed uneventfully in the first quarter of 2018 with outcome Risk Rating 3 achieved.

Hong Kong Children's Hospital (HKCH) Q&S Office

HKCH Q&S Office was established in April 2017 and consists of three main streams: Quality & Standard, Patient Safety & Risk Management, and Patient Relations. To better standardise the practices under the hub-and-spoke model, the HKCH Q&S Office will develop service standards, common protocols and referral mechanisms; support the interface and smooth transition of patients between care settings; and continuously review and monitor the outcomes to improve the quality of services.

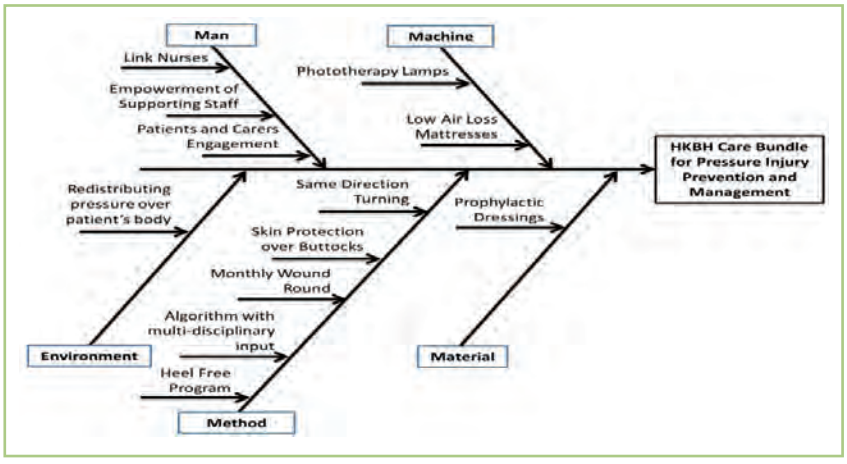
Kowloon Hospital (KH) Guide App

KH Guide App was developed to provide hospital information and location guide services for Kowloon Hospital, and is compatible with both Android and IOS mobile devices.

Multidisciplinary Care Bundle for Pressure Injuries

In order to enhance quality care to patients at high risk of developing pressure injuries, Hong Kong Buddhist Hospital (HKBH) adopts a multidisciplinary care bundle for pressure injury prevention and management. HKBH has been equipping nursing staff to become link nurses to assess and monitor wound status, and develop care plans for patients with pressure injuries in wards. Supporting staff have also been empowered by link nurses to further enhance their knowledge and skills in pressure injury prevention. A series of preventive strategies, including same direction turning, skin protection over buttocks, heel free program and monthly wound round, were rolled out by phases. Additional resources were allocated to tools for pressure injury prevention in HKBH. To prevent the formation of new pressure injuries, phototherapy lamps for controlling diaper associated rash and low air loss mattresses for regulating the skin microclimate were commenced for use in all wards. Prophylactic dressings were also introduced to patients with poor mobility in the Integrated Palliative Unit.

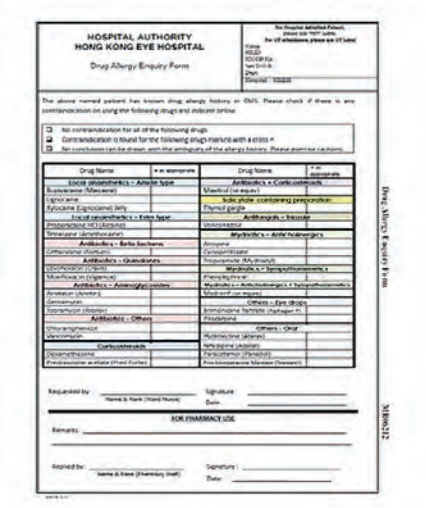
The National Pressure Ulcer Advisory Panel introduced five pressure injury prevention points, including Risk Assessment, Skin Care, Nutrition, Repositioning and Mobilisation; and Education. According to HKBH algorithm of pressure injury prevention and management, patient is assessed by a nurse, dietitian, occupational therapist and physiotherapist upon admission. A multidisciplinary care plan is then formulated and collaboration continues in the whole patient journey. Upon discharge, community services, information on nutritional supplement and pressure relieving device, and out-patient mobility training are offered and arranged for patients if needed. Education sessions on pressure injuries are organised for patients to empower and engage them in risk reduction interventions.



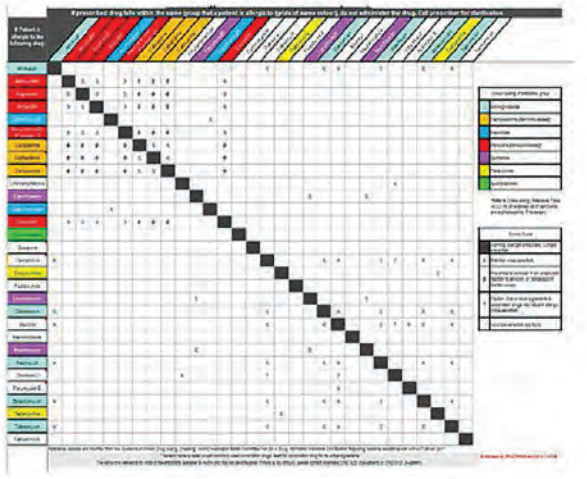
Medication Safety

At the Hong Kong Eye Hospital (HKEH), enhancements on prescription, dispensing system and drug allergy checking logistics were implemented to enhance medication safety. Concerning prescription safety, the Clinical Management System (CMS) medication prescription template was reviewed and updated by doctors. Prescription errors and near misses identified by nursing staff and pharmacy were trended and reviewed periodically. A new screen saver has been designed to remind staff about "correct patient" and "correct route" during medication prescription.

In terms of drug administration, a multidisciplinary cross-sensitivity work group was formed and a drug allergy enquiry form was designed to enhance the drug allergy checking before and during operation. HKEH Cross-allergy Reference Chart for Antibiotics and G6PD Deficiency Contraindication Checking Reference Chart were also formulated and updated for staff reference.

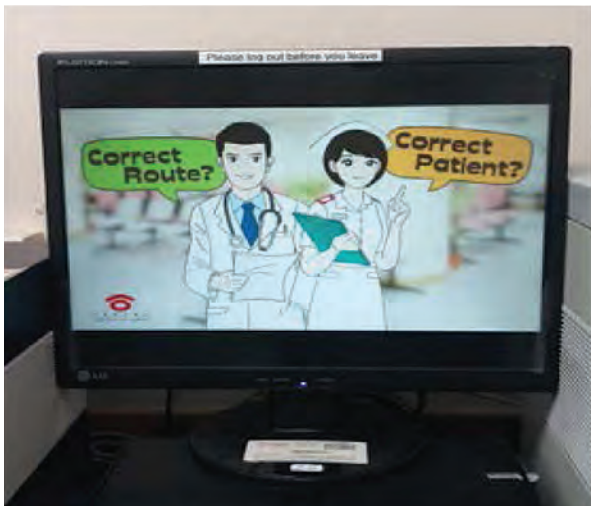

HOSPITAL AUTHORITY
HONG KONG EYE HOSPITAL
Drug Allergy Enquiry Form

Drug Allergy Enquiry Form



HKEH Cross-allergy Reference Chart for Antibiotics

For drug dispensing, the ticket matching function in Patient Management System III was activated to minimise the risk of issuing medications to a wrong patient. Workflows of Handling of Wrong Medication Order Entry (MOE) Prescription were developed to minimise patient's waiting time and reduce risk of workplace violence.



New designed screen saver

Ticket matching function in PMSIII

Sustainability of Blood Supply to Meet Demand in Hong Kong

In view of inability to meet the daily target of blood collection, the Blood Transfusion Service had phased in various measures including service hours extension in individual donor centres, enhancement of publicity and API exposure, implementation of mobile application and electronic appointment system. Mobile activities with various organisers to reach out for more donors and blood donations, including different government departments, have been organised. Moreover, enhanced publicity with the theme "donate blood before travelling abroad" was launched during the summer vacation.

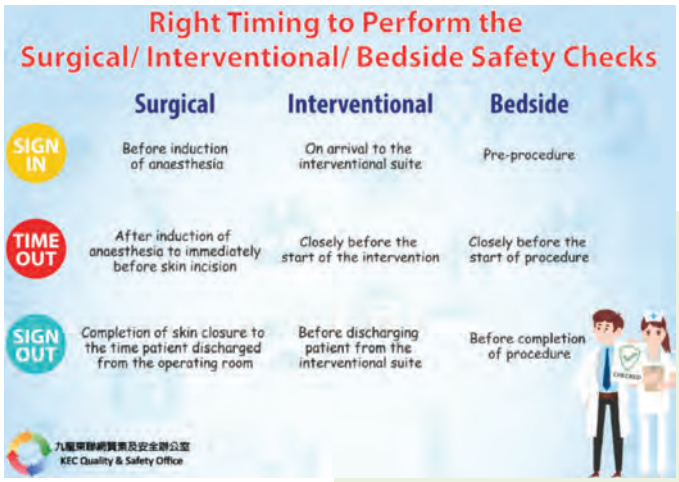
Kowloon East Cluster (KEC)

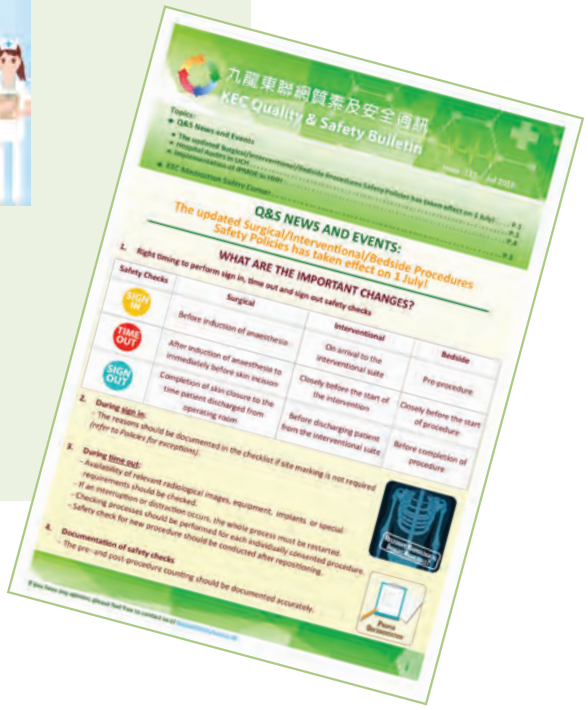
Surgical / Interventional / Bedside Procedure Safety

As a complement to the revision of the corporate Surgical/Interventional/Bedside Procedure Safety Policies (Policies), the KEC Q&S Office has coordinated a series of activities to promulgate the Policies and ensure smooth implementation.

Hospital/department checklists were reviewed and revised accordingly by stakeholders to facilitate staff in complying with the updated Policies. Demonstration sessions were conducted to further promote the correct use of this checklist. The gist of the recommended timing to perform various safety checks was summarised into one poster and disseminated to all KEC doctors, nurses and allied health professionals to enhance their awareness.

Demonstration session on checklists in HHH



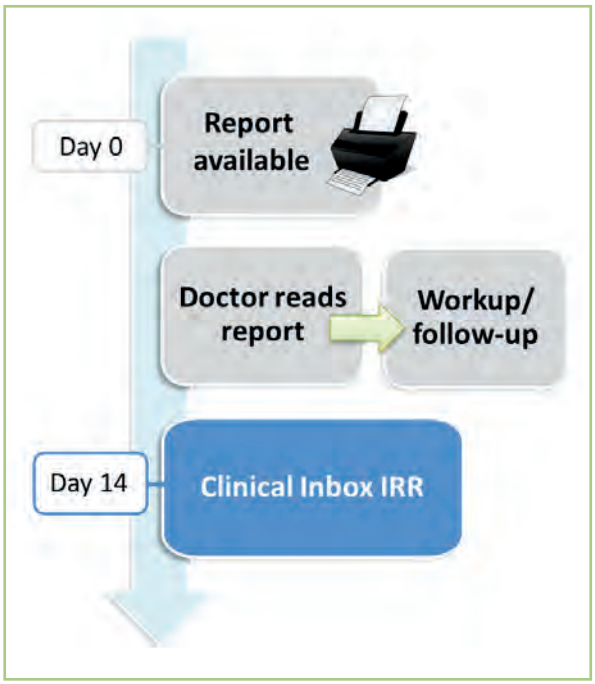


A KEC Q&S Seminar was arranged to communicate with frontline colleagues the important changes of various Policies. Over 200 colleagues from the cluster participated in the seminar. The information was also shared in the bi-monthly KEC Q&S Bulletin.

Implementation of Important Result Reminder (IRR) at Clinical Inbox

In view of incidents arising from delayed handling of histopathology reports, and with great support from the Chiefs of Services (COS), Working Groups were formed in KEC to formulate risk mitigation strategies and measures. The screening of histopathology weekly summary report was thus implemented as a short term measure in 2016-17 at KEC.

In 2018, an electronic platform "Important Result Reminder (IRR) at Clinical Inbox" was fully implemented in all 3 hospitals in KEC as a medium term measure introduced by the HA Task Force on Handover of Important Investigation Results. It alleviates the workload on manual screening process, enhances work efficiency of clinical staff and serves as an additional safety net to the existing workflow. Mechanisms on screening and escalation were also established in departments to facilitate timely acknowledgement and follow-up of important investigation results.

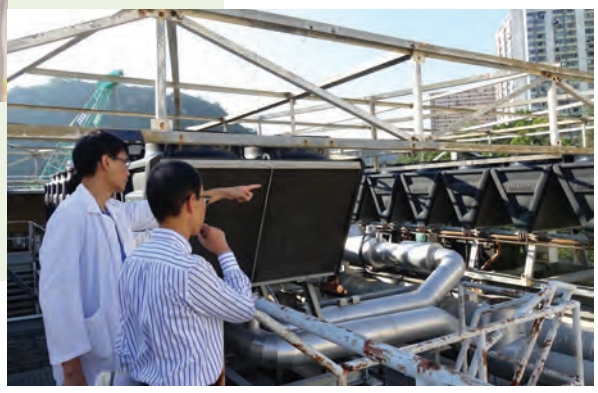


Hospital Safety Walkaround

Hospital safety walkarounds to various units in KEC were arranged to identify areas of concerns related to patient safety or quality of services. Both frontline colleagues and the management team appreciated the valuable opportunity to exchange views on quality and safety issues. Apart from regular walkarounds, walkarounds focusing on specific themes were also organised in the Cluster.

United Christian Hospital (UCH)

In collaboration with KEC Q&S Subcommittee on Prevention of Inpatient Suicide, a theme-based walkaround on prevention of inpatient suicide was arranged in November to review potential risk areas in environment and facility design. High risk areas including inpatient wards and roofs were visited with corresponding mitigation strategies formulated.



Tseung Kwan O Hospital (TKOH)

Hospital executives together with the Quality and Safety team conducted a safety walkaround in October 2018 to review the management of deceased bodies in the Mortuary, transportation by the transportation team and death documentation handled by the Death Documentation Office. Overall, the management of deceased bodies and death document is more than satisfactory.

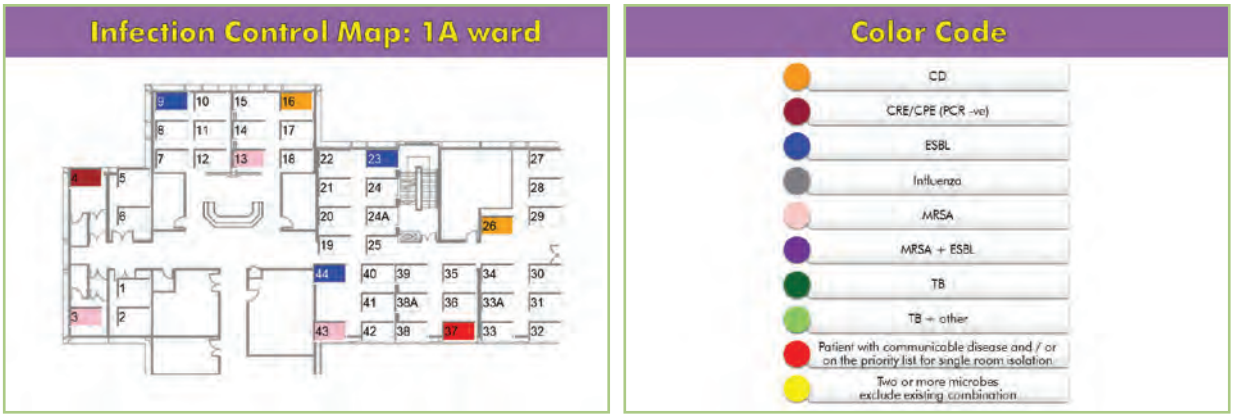
Haven of Hope Hospital (HHH)

HHH Q&S committee conducts hospital safety walkarounds quarterly. The main focus is on the clinical risks provided by each service and department as well as infection control.

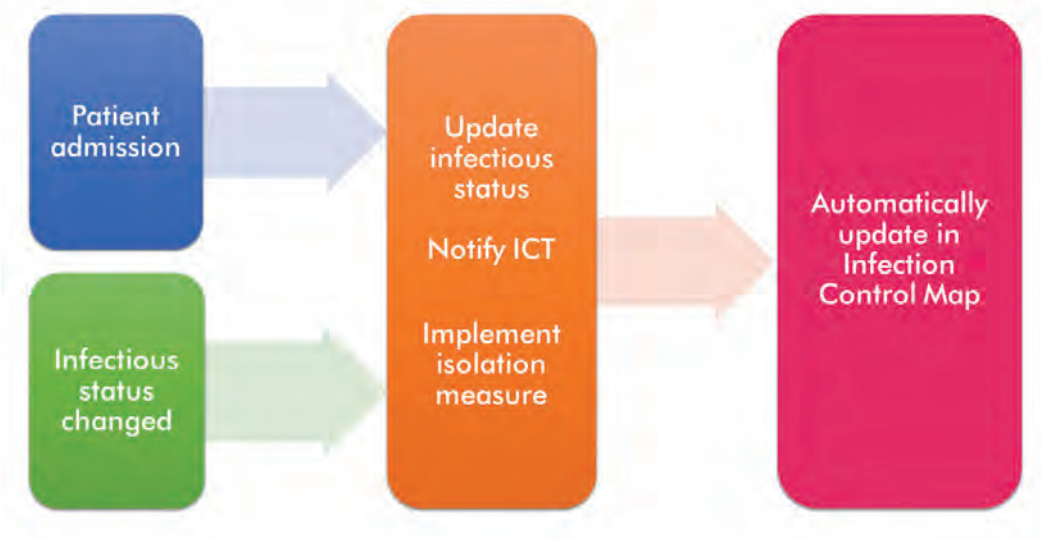
During the walkaround, staff's efforts on enhancing the safety and quality of service for our patients were acknowledged. For example, the pilot of placing fall-alarms at the nurse station has facilitated the prevention of patient falls. It was also a good opportunity to share the needs and challenges faced by frontline staff.

Infection Control Map

Hospital acquired infections (HAIs) is a major safety concern for both healthcare providers and patients. Bed assignment with consideration on patient's infectious status minimises the risk of HAI transmissions. To facilitate appropriate bed assignment, an electronic Infection Control Map (IC Map) was designed by the Information Technology Department to provide a real-time infection status of each ward at the HHH.



The IC Map provides a geographical view of each ward with patient infectious status and bed location for better visualisation. Ten common types of pathogens/diseases were selected and identified with different colors.



By integrating with the existing Electronic Care Organiser (ECO) system, patients' infectious status captured in ECO are automatically downloaded to IC Map. IC Map displays the real-time infectious status of patients and updates automatically whenever there is swapping of beds or changes in infectious status.

Through IC Map, the Infection Control Team (ICT) can monitor the real-time infection status of all wards and provide prompt infection control advice and support to clinical staff.

Infection Control On Case

Color	Bed	Pathogen / Disease	Infection Site
	3	MRSA	Sputum / TA
	4	CRE/CPE (PCR –ve)	Stool / rectal swab
	9	ESBL producing organisms	Urine
	13	MRSA	Sputum / TA
	16	Toxigenic CD	Stool / rectal swab
	23	ESBL producing organisms	Urine
	26	Toxigenic CD	Stool / rectal swab
	37	*Contact case of Carbapenamase Producing Enterobacteriacea detected (CPE, PCR +ve)	Stool / rectal swab
	43	MRSA	Wound
	44	ESBL producing organisms	Blood

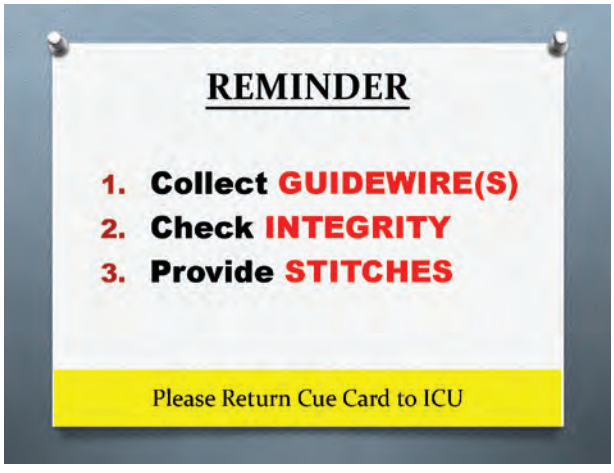
Bedside Procedure Safety in TKOH — Retained Guidewire

Throughout the years, retained instrument/material after surgical/interventional/bedside procedures had remained the top three most frequently reported sentinel events at the Hospital Authority.

There were 13 reported retained instruments/material from Q3 2017 to Q2 2018 which constituted > 40% of all reported sentinel events. Retained guide wire after central venous line insertion remained one of the common causes.

A series of measures have been implemented in TKOH to facilitate pre- and post-procedure checking after central venous line insertion which aims to minimise the chance of retained guide wire after central venous line insertion. These include:

1. Revised bedside procedure safety policy implementation and promulgation in July.
2. An online video demonstrating the correct procedure of CVC insertion and bedside procedure safety checking has been prepared and available for staff to review.
3. A "cue card" has been prepared and packed to the CVC instrument set which serve to remind the staff to take out the guide wire, and check integrity before the end of the procedure.



Implementation of IPMOE in HHH

Following the implementation of IPMOE at the HHH on 30 Oct 2018, KEC is the first cluster which has completed the full roll-out of IMPOE. To prepare staff for the change, the HAHO IPMOE team and HHH IPMOE Task Force carried out different training sessions for doctors, nurses, and pharmacy staff this year. HO Project Team colleagues also conducted a Walkthrough Session and Production Drill at HHH as well as a Downtime Contingency Drill in the Pharmacy Department and in one of the wards.

With the effort of the HAHO IPMOE team, HHH IPMOE Task Force and HHH pharmacists, the conversion process was smooth and successful. Debriefing meetings by IPMOE Steering Committee members were arranged on every conversion day. After-hours enquiry and support was also available to ensure the safe practice on a new mode of drug administration. The Nursing Subgroup also shared different scenarios that they encountered. We were delighted that most of our staff had positive feedback about the new drug administration system and were grateful for their enthusiastic participation in the implementation process.

Kowloon West Cluster (KWC)

KWC Quality and Safety Forum

The KWC Quality and Safety Forum was held on 24 January 2018 in Princess Margaret Hospital (PMH). The Forum consisted of Thematic Speeches, Continuous Quality Improvement Project Presentations and Posters Exhibition.

The theme of this year was "Reminiscence of the Healthcare System". Two renowned guests, Prof K Y Yuen (Henry Fok Professor in Infectious Diseases) and Prof Sylvia Fung (former Chief Nurse of the Hospital Authority) were invited to share on the topics of "From Philosophy to History: A HK Medical Academic's Perspective" and "Compassion as the Key for Quality & Safety of Care" respectively.

Crew Resources Management (CRM) Training

CRM Training is a training program for teamwork, communication, decision making and leadership. It encompasses a set of behaviours and strategies that have been proven effective in various high-risk industries, such as the aviation and energy industries. The objective of CRM Training is to prevent incidents related to human errors and to improve operational efficiency by recognising human limitations and promoting team performance. In 2018, six sessions of training were conducted successfully.

Incident Management Training

To enhance staff knowledge on incident management, open disclosure and root cause analysis (RCA), two full-day workshops and one half-day workshop were organised in 2018. Apart from lectures, practical exercise of RCA was also part of the training workshop to allow participants to practice incident investigation with the skills acquired during training.

KWC Orientation and Induction (O&I) Program for New Residents

The KWC O&I Program for New Residents was held on 19 and 31 July 2018. The program aimed to raise the awareness of residents on the common pitfalls and risks in clinical practice and strengthen their skills in managing incidents at the beginning of their careers. All new Residents attended the training sessions.

KWC Study Workgroup on Patient Fall

The KWC Study Workgroup on Patient Fall was established in Q3 2018. The Workgroup aimed to identify the variance in fall incidence across the cluster and provide targeted recommendations on fall prevention. The following initiatives were conducted to achieve the objectives.

Caritas Medical Centre (CMC) Patient Safety Day 2018

The CMC Patient Safety Day 2018 was held on 29 August 2018 to raise staff awareness on the prevention of patient falls, medication safety and correct patient identification through interactive games and activities. A total of 354 colleagues from different disciplines joined the event. Good feedback was received.

Staff Exit Action Notification System

The Staff Exit Action Notification System was developed and served as a communication channel for Human Resources Department and Clinical Management System (CMS) administrators to share information on staff movements. This prevented unauthorised access to Clinical Management System (CMS) by obsolete accounts in order to protect patient privacy. The system may be further deployed to other units to facilitate staff exit procedures.

Redevelopment of Kwai Chung Hospital (KCH)

The Phase I of KCH Redevelopment was completed in October 2018. The newly opened KCH Integrated Day Recovery Centre (IDRC) provides integrated day services and offices for Personalised Care Programme teams and HA Mental Health Direct teams.

The redevelopment of KCH would not only improve the hospital infrastructure, but also the service quality and patients' experience by optimising the service delivery process. As Phase II and III of the redevelopment commences, KCH will continue to provide integrated and person-centred psychiatric services to the community.

New Territories East Cluster (NTEC)

NTEC Quality and Safety Forum

This year, the NTEC Quality and Safety Annual Forum themed "Find Risk? Act WISER!" was held on 9 November 2018 at the PWH Auditorium. The forum featured a plenary session from Prof Hung Chi Tim on "How can we be WISER?" This 15th anniversary forum celebrated the cultivation of safety culture in NTEC since 2004 through the review of the past safety forums in the 'Memorial Ultimania' session. 7 teams from cluster hospitals presented their Continuous Quality Improvement (CQI) projects to compete for the most outstanding CQI project and most popular CQI project.

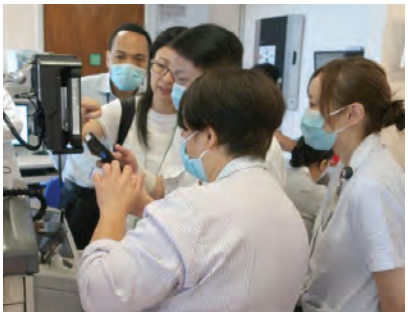
The NTEC WISER (We Innovate, Services Excel Regularly) Program

The 5th WISER course held in Q3 2018 had attracted 27 colleagues from 8 multi-disciplinary teams of various departments. They were trained through classroom teaching and project tutorials. The graduation ceremony was held in October 2018 at which all WISER teams shared their innovative quality improvement projects with colleagues in the cluster.

NTEC 5th Lean Leader Course 27/04/2018
Content
Introduction and Overview
D – Define – define a Problem SIPOC and CTQ, Project charter, Case study
M – Measure – map out the current problem
A – Analyse – identify the cause of the problem
IC – Improve and Control

Safety Management in Relation to IPMOE Implementation

After the successful launching of IPMOE at Prince of Wales Hospital (PWH), Northern District Hospital (NDH) & Alice Ho Miu Ling Nethersole Hospital (AHNH) in previous years, IPMOE Phase 2 was rolled out to Bradbury Hospice (BBH), Shatin Hospital (SH), Shatin Cheshire Home (SCH) and Tai Po Hospital (TPH) in 2018. Multi-disciplinary Workgroups were formed to manage potential risks proactively. NTEC would soon become a cluster with full implementation of the IPMOE system by the end of 2019.



Training on Risk Registry

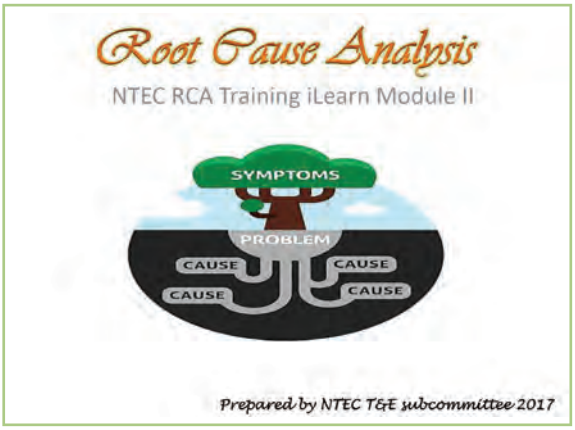
To ensure that the annual Risk Register formation was in line with the Hospital Authority Organisational Risk Management (HAORM) and NTEC Policy, a half day cluster wide Risk Registry Workshop was developed in February 2018. Colleagues responsible for Risk Register formation at departments were invited to join the workshop. They were trained through assignment to work in groups of virtual departments to derive their 'department risk register' through analysis of information provided in the department data base. Participants appreciated the experiential learning opportunities.

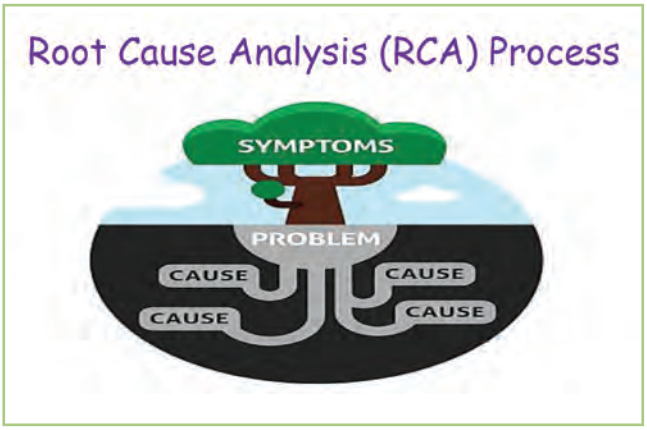
The Incident Management Workshop

The Incident Management Workshop which had been in place since 2012 was revamped to a scenario-based whole day workshop. Increased emphasis is placed on the immediate incident management including open disclosure, management of the reactions to mishaps and potential problems (media and legal) through discussion and role play based on a real incident.

The Root Course Analysis (RCA) Workshop

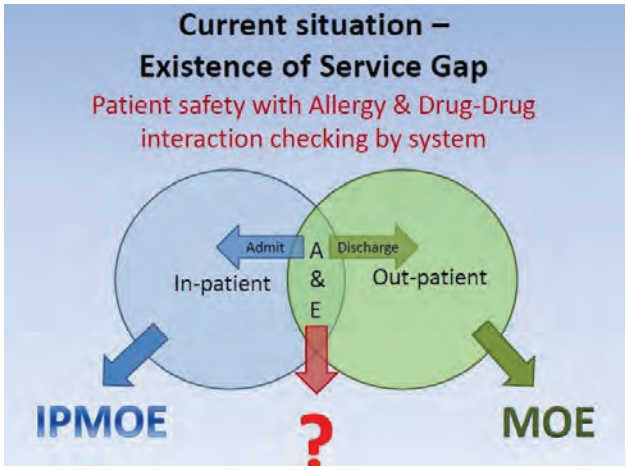
Two iLearn modules were developed and uploaded to iLearn to provide information and tips for colleagues who would become RCA team members. In the subsequent scenario-based whole day workshop, colleagues were invited to participate in the RCA procedures playing different roles to deepen their understanding through experiential learning.





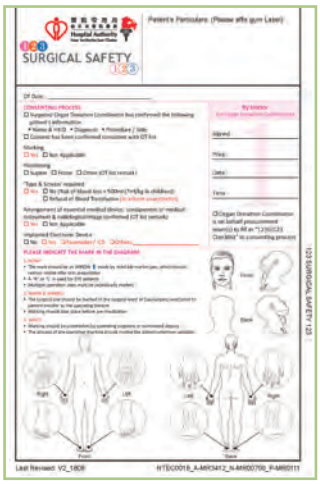
Pilot of Admission Medication Order Entry (AMOE)

To further minimise known drug allergy prescription, PWH Accident & Emergency Department (AED) staff had taken one step further from manual checking of the patients' allergy history. The intended prescription would be entered to the Medication Order Entry (OPMOE) system as stat order for system checking against documented allergy history. The prescription sheet thus generated will be printed out and kept in the AED file as indication to proceed.



Procedure Safety

The Surgical Safety Checklist 123 form was updated to incorporate the main changes in the 2018 HO Procedure Safety Policy. A series of road shows were performed across the cluster celebrating the culture of procedure safety since 2009 while promoting further enhancement through the refined checklist.



New Territories West Cluster (NTWC)

Governance Review of Risk-related Committees under NTWC Quality and Safety Committee (CQSC)

The CQSC is responsible for monitoring quality and safety issues at the NTWC, where specific risks are monitored by respective risk-related committees under the governance of the CQSC. These risk-related committees regularly report their work progresses and action plans to the CQSC. In 2018, a review of risk-related committees under the CQSC was conducted to strengthen the governance structure and operational efficiency.

After the review, the number of risk-related committees reduced from 28 to 24. The Laser Safety Committee was changed to report to other cluster committees, the Falls Prevention and Management Committee and Restraint Safety Committee were combined and the Chemotherapy Advisory Committee and Document Control Committee were changed from a committee structure into workgroups. Further, to enhance patient safety in tracheostomy care, a Tracheostomy Care Committee was formed in September 2018. Representatives from various departments including Departments of Ear, Nose and Throat, Medicine and Geriatrics, Surgery, Neurosurgery, Intensive Care Unit, Physiotherapy, Speech Therapy, Nursing Services Division and Quality and Safety Division were invited as members.

Enhancing Robustness and Effectiveness in Risk Registers Development

In 2018, the NTWC followed the recommendations from Group Internal Audit in the development of risk registers. The framework of risk register development in the NTWC was reviewed and workflows for endorsement of the risk register were developed. Under the new framework, risk registers at the hospital level were reported to the Hospital Management Committee and Hospital Governing Committee for endorsement. Work progress of planned risk mitigation measures was closely monitored by the respective risk custodians. In addition, 10 functional risk reports at the cluster level were consolidated by respective coordinators to address the risks, and the reports were submitted to the Cluster Management Committee for endorsement.

Since there was a change from financial year to calendar year, the NTWC had reviewed the timeline in the formulation of risk registers 2018. All risk registers at the department, hospital and cluster levels were completed in July 2018. The cluster risk report 2018 was also presented at the Senior Executive Round Table meeting in July 2018. For risk registers 2019, the Quality and Safety Division started meeting key stakeholders in September 2018 and all levels of risk registers were completed by December 2018.

Ensuring Safety in Patient Transfer

Patient transfer is a frequent activity in both inter-hospital and intra-hospital aspects at the NTWC. To enhance safety during patient transfers, the cluster management supported the provision of end-tidal CO2 monitoring by capnographs for transport of intubated patients in October 2018. Procurement was in progress and the products were expected to be received in 2019.

Further, the discontinuation to provide portable ventilator Oxylog 1000 by the manufacturer was discussed among the Cluster Resuscitation Committee, Quality and Safety Division, Accident and Emergency Department and Intensive Care Unit. Demonstrations of commercially available portable ventilators were conducted in November 2018. A replacement plan was developed and consultation process would be carried out accordingly.

HOSPITAL AUTHORITY
New Territories West Cluster

Checklist for Intra-hospital Transport of Critically Ill Adult Patient

For inpatient, please use "HN" label
For AE/OP patient, please use AE/OP label
Name:
HKID:
HN/AE/OP No.:
Sex/D.O.B.:
Dept.:
Hospital: * CPH / POH / SLH / TMH / TSWH
* Circle as appropriate

Please fill in the blanks and tick "✔" the ☐ as appropriate

Category of Patient (confirmed by doctor (Resident or above) Dr. (Name)________)
☐ 1. [Doctor-led] Airway intubated / ventilated / moderate or high dose of vasopressors[1]
☐ 2. [Nurse-led ± above] Non-intubated with hemodynamically unstable / low dose of vasopressors[1] / cardiac arrest, VF or VT within 48h / AMI or angina within 24h / invasive cardiac procedure within 30min / Altered mental status / Convulsion / Any high risk life threatening conditions as determined by doctor

Equipment Preparation (Yes / N/A)

Route: ______ → ______ → ______

O₂ cylinder (≥ 3/4 full)
☐ O₂ cylinder switch **fully open**
☐ Gas leak negative
O₂ mask ______% / nasal cannula ______L/min / Oxyvent ______L/min
Ventilator: set by **doctor** (name)______
• Pmax (____), Freq (____), MV (____), TV (____), FiO₂ (____), Mode (____), PEEP (____), Others ______
NIV set by **doctor** (name)______, Setting ______
Resuscitation equipment availability
☐ Manual resuscitator ☐ Resuscitation kit and medications ☐ Suction
☐ Defibrillator with electrode gel / multi-functional pad
Physiological monitor
EtCO₂
Electronic equipment fully charged
Other equipment *(if any)*______

Preparation team	Name	Signature
Doctor		
Nurse		

Before Departure

Departure Date: ______ **Time:** ______
Confirm O₂ cylinder switch fully open
Confirm ventilator is turned on
☐ Oxylog 1000: Psupply indicator in green, Paw alarm negative, chest movement
☐ Oxylog 3000 / Other models: Alarm negative, chest movement
Tracheostomy / ET tube secured with marking______cm
Vital signs with continuous monitoring
GCS E___V___M___(___/15), BP___/___mmHg, P___bpm, RR___bpm, Cardiac rhythm______, SpO₂______%, EtCO₂______, Pupil size *(as needed)* L___R___
IV infusion running properly, correct dosage, correct rate
Chest drain **unclamped**
Communicated with porter / receiving team (e.g. hold lift / infectious disease status)

Escort team	Name	Signature
Doctor		
Nurse		

En-route

En-route / In Diagnostic Suite / Round Trip
Monitor vital signs and ensure equipment functions
• Incident / condition deteriorated *(specify if any)*: ______
Round Trip: for return trip, check equipment and vitals, e.g. O₂ **supply & ventilator setting**

Arrival/ handover[2]

Arrival Time: ______
GCS E___V___M___(___/15),
BP___/___mmHg, P___bpm, RR___bpm,
Cardiac rhythm______, SpO₂______%, EtCO₂______
Pupil size *(as needed)* L___R___

Receiving team (if applicable)	Name	Signature
Doctor		
Nurse		

Checklist for Intra-hospital Transport of Critically Ill Adult Patient
MR 999116/NTWC

The NTWC Guideline for Intra-Hospital Transport and Escort of Critically Ill Adult Patients and its corresponding checklist were revised by the NTWC Intra-hospital Transfer Workgroup under Cluster Resuscitation Committee. The new checklist would be used in the cluster from January 2019. The Workgroup also conducted four Intra-hospital Transfer of Critically-ill Adult Patients workshops in 2018 with 78 staff completing the training.

With regards to inter-hospital transfers, the Workgroup on Inter-hospital Transfer regularly reviewed incidents related to inter-hospital transfer and transfer appropriateness including the escort arrangement of transferring-out patients and resuscitation workflow.

Establishment of NTWC Clinical Ethics Committee

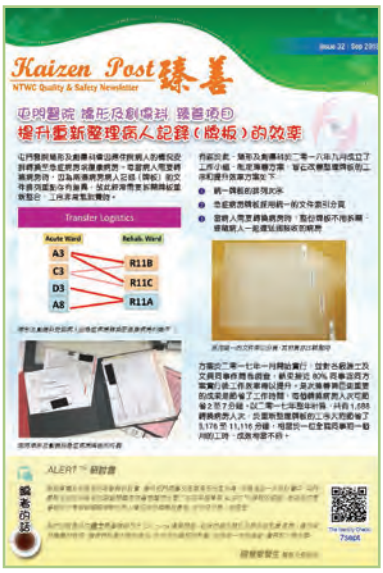
The NTWC Clinical Ethics Committee (CEC) was set up on 1 August 2018 to help resolve ethical dilemma, formulate policies and guidelines and provide ethical education to staff, patients and families. The Committee comprised of clinical representatives and non-clinical members including HGC member, chaplain, solicitor, social worker, etc. The CEC would directly report to the Cluster Management Committee.

The first Clinical Ethics Seminar was held on 16 Oct 2018 with over 200 staff participating. A pilot training for supporting staff was conducted with positive feedback received.

In addition, an Operational Guideline for Ethical Case Consultation was developed. The Committee would provide ethical case consultation service by giving advice in response to ethical conflicts and dilemmas in clinical situations in NTWC.

Sustaining Continuous Quality Improvement (CQI)

To sustain the good CQI culture at the cluster, CQI Forums were held monthly in 2018. These forums provided an interactive platform which allowed staff from different departments to share their ideas of quality improvement and good practice. Kaizen Posts were also published quarterly to update staff on the latest quality improvement information and share latest CQI projects. Further, a promotional video was produced to nurture staff that CQI could be implemented everywhere in their working environment.



In addition, a series of seminars and workshops on quality improvement was conducted. Consultants in healthcare services improvement were invited to share new approaches to improve patient safety, quality improvement and reduce staff work pressure. The new approaches were integrated with lean six sigma tools to identify the constraints which delay the throughput in our services and manage the constraints by using six sigma tools. Practical examples and successful projects were shared in the seminars. Nearly 200 participants joined the seminars with positive feedback.

Two training workshops for clinical professionals were also conducted. Eighty clinical staff including doctors, nurses and allied health professionals took part in the workshops. Quality tools for process improvement and risk identification with practical examples were introduced and explained. Positive feedback was received.

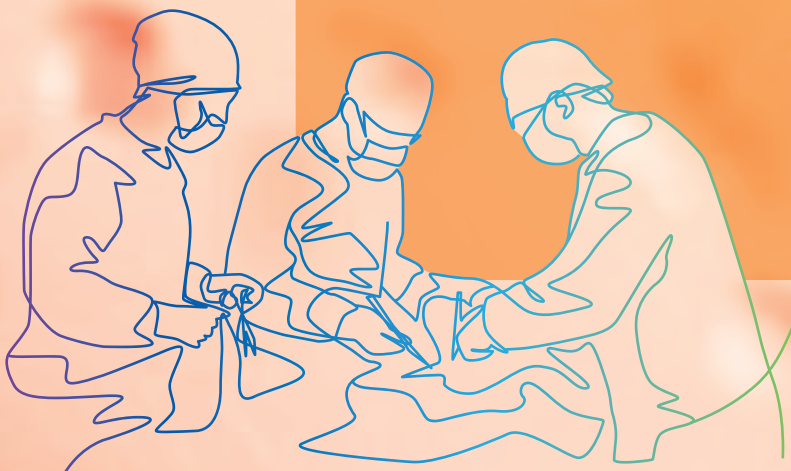
Promoting Patient Safety through NTWC Safe Practice Bulletins

To promote safe clinical practice and arouse colleagues' interest and discussion of various risks, NTWC Safe Practice Bulletins《安 • 心》with featured discussion on patient safety issues are published regularly.

The Bulletins, mainly written in Chinese, covered various patient safety topics. In the 3 issues published in 2018, the featured topics included the new Apology Ordinance, the updated HA Safety Policies on Surgical Safety, Interventional Procedures and Bedside Procedures and the risk mitigation actions in eliminating patient suicide risks in hospitals. Other topics like incidents and near misses with learning points were also shared. Practical clinical cases with expert opinions were also shared via the Bulletin. The Bulletins also took the opportunity to promote different risk-related committees under the Cluster Quality and Safety Committee. The work of the committees and action plans were shared.

To promote the Bulletins to various staff groups including the supporting staff, each issue was given a "QR" code so that staff can get access to the Bulletin via their mobile devices to facilitate reading and learning.

Specialties



COC (Anaesthesiology)

Overview on Prevention of Perioperative Hypothermia

Introduction

Inadvertent perioperative hypothermia is common for patients undergoing general or regional anaesthesia. The reasons include the loss of behavioural response to cold, impairment of thermoregulatory mechanism of the body during anaesthesia, and getting cold while waiting for surgery in a ward or in an operating theatre. Hypothermia can lead to various adverse outcomes, including coagulopathy, surgical site infection, postoperative shivering and dissatisfaction of patients. Therefore, to improve the surgical outcomes, COC(Anaesthesiology) has identified prevention of perioperative hypothermia as one of the important measurements of performance for all hospitals under Hospital Authority since 2015.

Temperature Monitoring Project

Since 2015, COC(Anaesthesiology) has regularly invited all Departments of Anaesthesia under Hospital Authority to record the temperature of patients on arrival to post-anaesthesia care unit after all procedures with anaesthetist in attendance at the completion of anaesthetic interventions. The data recorded were then summarised and reported to COC(Anaesthesiology) for comparison between various hospitals. A great achievement was shown as the overall hypothermia rate reduced from 9.01% in 2015-16 to 5.24% in 2017-18.

	2015-16	2016-17	2017-18
Participating Hospitals	24	22	23
Total Number of Patients	58,045	57,350	59,173
Temp 35-35.9°C	5,031 (8.67%)	3,671 (6.4%)	3,008 (5.08%)
Temp <35°C	196 (0.34%)	157 (0.27%)	91 (0.15%)
Total	5,227 (9.01%)	3,828 (6.67%)	3,099 (5.24%)

Generating a 'Warm' Culture

Simply by conducting the temperature monitoring project cannot result in such a great improvement in reducing perioperative hypothermia. It can only be done by generating a culture of warming patients throughout the journey among all stakeholders in the operating theatre. Over the years, surgeons, nurses and operating theatre assistants were explained to regarding the importance of hypothermia prevention. It was the most important step because staff cannot easily sustain their efforts without knowing the reason behind. On the other hand, essential equipment, including forced air warming devices and warming blankets, were purchased to improve equipment accessibility and organisational support. Behavioural interventions such as pre-warming before induction and use of warm irrigation fluid for all types of operation were encouraged. In this sense, with regular audits on hypothermia rates, the 'warm' culture can be formed to facilitate the improvement in performance.

WAY FORWARD

Three years is not a long period when considering a culture development. A sustained effort must be adopted to keep this 'warm' culture. We will continue to engage various stakeholders and get feedback from their perspectives in order to form an impression that more can be done. For example, the design of patient satisfaction surveys to measure their perceptions about measures to keep them warm, collaboration with surgeons to integrate the temperature monitoring project into their 'Enhanced Recovery After Surgery' program or even into the 'Surgical Outcome Monitoring and Improvement Project'. Furthermore, this type of local data can be valuable in providing information on risk factors and management of perioperative hypothermia. The monitoring of association between hypothermia with various complications can enhance collaboration with other departments, for example, working with infection control unit to minimise postoperative surgical site infections.

Last but not least, this project provides a valuable example showing that, to improve quality and safety, strategies must be developed aiming at firstly generating a suitable culture. In turn, this cultural change will greatly facilitate the subsequent improvements in patient safety.

Experience Sharing from Queen Elizabeth Hospital (QEH)

Introduction

At the start of COC(Anaesthesiology)'s Hospital Authority-wide audit of surgical patient temperatures, patients at Queen Elizabeth Hospital had a recovery room hypothermic (<36°C) rate of 17.2%. This spurred us to improve our care for our patients. The main factor for perioperative hypothermia is the anaesthetic drugs given for general or neuraxial anaesthesia. Anaesthetic drugs cause major drops in patient temperatures. Anaesthesiologists thus have the responsibility to prevent hypothermia and the increased risk of bleeding, transfusion, coagulopathy, lethal triad, mortality, increased cardiac and cerebral morbidity, infection, prolonged recovery and hospitalisation, and patient discomfort.

Team Work

The nurses and operating theatre assistants were key allies in helping us implement our improvement measures. From the arrival, patients were covered with warm blankets and their temperatures were taken, documented and communicated if there were any abnormalities. Active patient warming started along with the attachment of monitors on the patients in the initial period of being in the operating theatre. We also communicated the importance of normothermia to our surgical colleagues. As many ill effects of hypothermia surfaced post-operatively, surgeons were a major stakeholder to helping and facilitating efforts to keep the patients normothermic.

Improvement

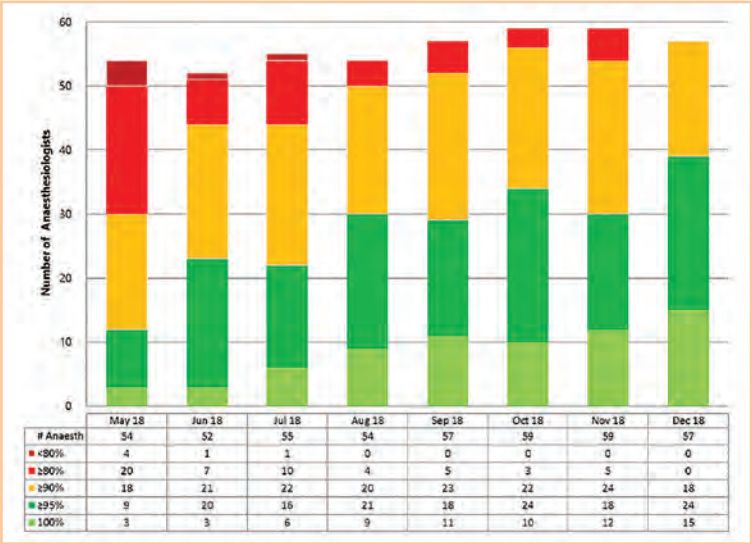
By the end of the first audit year 2015, QEH had improved markedly in maintaining normothermia for our patients. Steady improvements occurred over the subsequent audits.

	Q1 2015	2015-16	2016-17	2017-18
Total Number of Patients	3,360	7,101	7,378	7,365
Temp 35-35.9°C	543 (16.16%)	297 (4.18%)	307 (4.16%)	271 (3.68%)
Temp <35°C	34 (1.01%)	14 (0.2%)	10 (0.14%)	8 (0.11%)
Total <36°C	577 (17.17%)	311 (4.38%)	317 (4.3%)	279 (3.79%)

A simple method was identified as key to maintaining normothermia. Patients needed to be kept maximally wrapped with active warming in the early period after general or neuraxial anaesthesia drugs were given. Heat loss prevention by trapping heat and avoiding patient exposure during this initial 5 to 10 minutes maintained normothermia for patients. Subsequent exposure for patient preparation and positioning had slower heat loss that could be countered with smaller areas of skin active warming. The main barrier left was the culture change required.

Motivation to Reduce Variation

In our departmental Quality and Safety Committee meeting with our nursing colleagues, it was identified that there was variation in practices among the Anaesthesiologists. Nurses and operating theatre assistants deferred to the differing practices of different Anaesthesiologists with variable success rates. Motivation to improve our success rates was introduced in the form of a monthly 'Top Ten' list of the most successful Anaesthesiologists for the month. This simple competition helped further improve our patient care in keeping patients normothermic.



	May 18	Jun 18	Jul 18	Aug 18	Sep 18	Oct 18	Nov 18	Dec 18
# Anaesth	54	52	55	54	57	59	59	57
<80%	4	1	1	0	0	0	0	0
≥80%	20	7	10	4	5	3	5	0
≥90%	18	21	22	20	23	22	24	18
≥95%	9	20	16	21	18	24	18	24
100%	3	3	6	9	11	10	12	15

When the Top Ten list started in May 2018, there was a significant number of Anaesthesiologists who had a success rate of <80% or 80-90% (i.e. at least 1 in 5 patients or 1 to 2 in 10 patients were hypothermic on arrival at the recovery room). In May, only 3 Anaesthesiologists were able to achieve 100% success (i.e. all their patients arrived at the recovery room with normothermia). Three months later in August 2018, there were no longer any Anaesthesiologists who had a success rate lower than 80%. In September 2018, the Top Ten list was amended to Top 11 as eleven Anaesthesiologists had complete success in having normothermic patients on arrival to the recovery room. By December 2018, we were celebrating the Top 15 100% successful Anaesthesiologists and all Anaesthesiologists had a success rate of 90% or better. The lower success rates were for the first time eliminated since auditing began in 2015.

Way Forward

Audit has allowed objective measurement of the state of patient care. Continued measurement has also allowed the tracking of the effectiveness of strategies and to spur on continued improvement. Sharing of the measures of success amongst the team members encouraged and helped keep a steady improvement. Healthy competition has further motivated improvement and reduction of variation in the effectiveness amongst the team leaders in this area of patient care.

Patient temperature on arrival at the recovery room is a surrogate measure of the effectiveness of intraoperative strategies to avoid hypothermia. Focus should shift to mandating continuous monitoring and recording of patients' intraoperative temperatures, and how this easily overlooked intraoperative vital sign affects patient outcome.

COC (Intensive Care Unit)

Introduction

Intensive care is resource intensive, from personnel to equipment and medication. It is an integral component of the public health care system in Hong Kong (HK). Aging population, advances in medical technologies and increase of disease complexities potentially place a greater demand for critical care services in HK, and as such, timely, reliable and effective intensive care is mandatory to achieve better outcomes for critically ill patients. A thorough understanding of differences in case-mix of the patient pathway helps improve critical care delivery in different hospitals.

Extracorporeal Membrane Oxygenation (ECMO)

Continuous Renal Replacement Therapy

Objectives

Intensive Care Unit Outcomes Monitoring and Improvement Program (ICUOMP), which is commissioned by the COC in Intensive Care Unit (ICU), was first launched in 2016 to serve the above purposes. It is a continuous quality improvement programme with three prime aims to achieve:

1) to develop a reliable local contemporary clinical audit related to critically ill patients in HK ICUs,

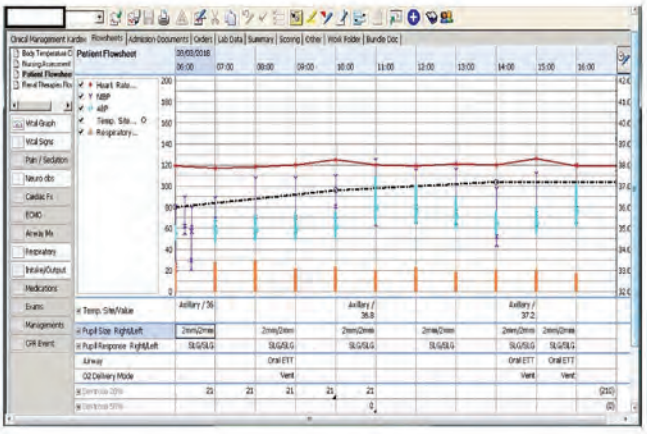
2) to measure, review and strengthen the quality of critical care service, and

3) to improve strategic planning of ICU services within HK health care system.

Coordinating Committee (COC) of Intensive Care Unit (ICU)

Methods

Well-trained independent colleagues were responsible for the collection of data accurately, consistently and concretely with reference to the data definition and operation manual of ICUOMP. Most of the variables were automatically collected from Clinical Information System (CIS) in our ICUs. Data was collected annually between January 1 and December 31 at ICUs or High Dependency Units (HDU) from 15 Hospital Authority (HA) hospitals operated by intensivists or critical care physicians. ICU care of critically ill patients were reviewed systematically and continuously with reference to explicit criteria from international audits and discussion in COC(ICU). With tremendous support and concerted efforts from different units, a well-refined risk adjusted and contemporary model was established to effectively benchmark the ICU performance in HK.



Clinical Information System (CIS)

Results

Part One of the report analyses the results of risk-adjusted mortality and ICU length of stay (LOS). Part Two of the report outlines demographic characteristics of these patients. Adjusted risk models for 30-day, 90-day, and hospital mortality and length of stay (LOS) were separately formulated for 4 groups of critically ill patients: 1) All patients 2) Emergency non-operative patients 3) Emergency post-operative patients 4) Elective post-operative patients. Models for elective non-operative patients were not formulated due to insufficient samples.

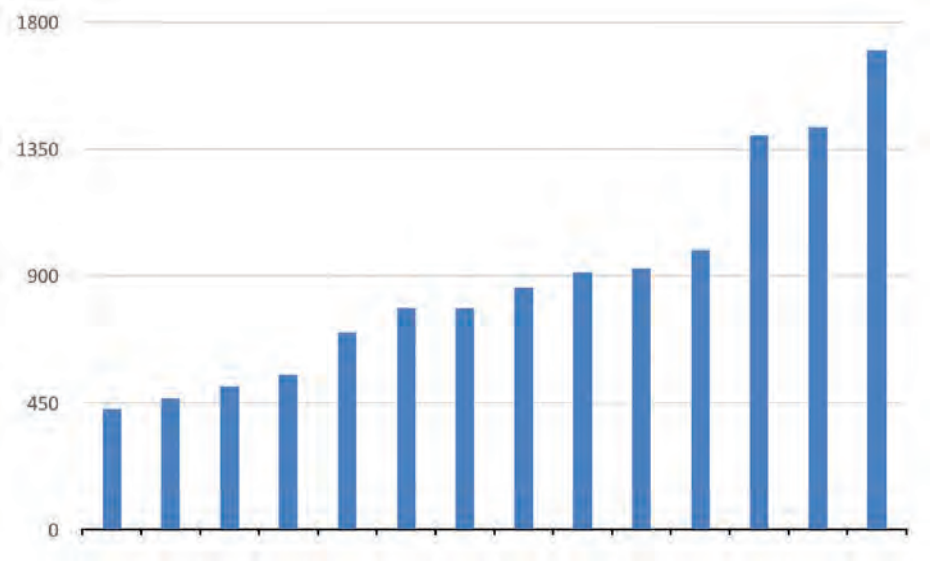
Based upon the preliminary data between January 2018 and June 2018, there were nearly 7,400 ICU or HDU admissions to 15 ICUs in HK, commissioning an annual increase of around 5%.

In the past years, low outliers and high outliers were identified from our risk-adjusted mortality model. Specific subgroups were identified to explain the results. ICUOMP investigated correlation between the outliers and possible variables through the post hoc analysis in ICU structure and process of care. These findings were reported to corresponding units, which will conduct evaluations and devise corresponding improvement plans. Our ICUOMP will continuously assess the response to the changes.

Length of stay is an integral measurement of performance in the ICU. It relates to the efficiency of the intensive care process, and serves as a marker of quality of care. The ability to predict the length of stay enables us to optimise the use of intensive care resources. Our model revealed large disparities in risk adjusted length of stay among ICUs in HK. Exploration into the differences between hospitals facilitates more efficient future use of ICU resources, their responses of which shall be constantly reviewed by ICUOMP.

Variable Number of ICU / HDU Admissions with Different Severity and Different Outcomes

How Can We Make Equivalent Assessment of the Performance ?



Wide Variation in Number of ICU Admissions

Conclusions

ICUOMP included patients from all geographical regions of Hong Kong, with units in teaching and non-teaching hospitals, and wide variation in the size of units. With accurate data collection, independent statistical analysis by biostatisticians and regular calibration of our models, we therefore believed our ICUOMP performed well within our local population. In the past two years, a total of 29,038 ICU admissions data were collected. Our ICUOMP provides valid, reliable and high-quality information on several aspects of ICUs in HK. It helps to improve professional care with better understandings of patient characteristics, severity of illnesses, outcomes, process of care, resource utilisation and capacity planning in the short and long term.

COC (Internal Medicine)

Introduction

Rheumatology is a medical subspecialty under Internal Medicine. During the establishment of Hong Kong College of Physicians (HKCP) in around 1995, there were fewer than 5 Fellow Rheumatologists. However, this number has grown to more than 85 in the year 2018, of which 52 Fellows are working in HA hospitals to provide services for patients suffering from different kinds of chronic rheumatic illnesses, e.g. rheumatoid arthritis, systemic lupus erythematosus, ankylosing spondylitis, psoriatic arthritis, systemic sclerosis, inflammatory myopathies and systemic vasculitides.

In HA, around 45 doctors are HKCP-qualified trainers of Rheumatology in 2018. The number of higher physician trainees in rheumatology has been increasing. Further training of rheumatology specialists in the areas including musculoskeletal ultrasound required by HKCP is recommended. Apart from scholarships from the Hong Kong Society of Rheumatology, Hong Kong Arthritis and Rheumatism Foundation and other sources, HAHO would provide central corporate scholarships to support rheumatology specialists to pursue training in musculoskeletal ultrasonography.

Recently, the revised Clinical Immunology curriculum has been endorsed by HKCP. Immunology training is currently under the governance of HKCP's Rheumatology/Immunology Accreditation Board. Despite nil qualified immunology training centres locally, HAHO provided extra resources to support doctors' overseas immunology training. To bridge the service gap, annual planning exercise was underway to support more residents to undergo clinical immunology training, especially on the disorders associated with hypersensitivity, allergy or/and primary immunodeficiency.

HA Rheumatology service is centrally governed by COC (Internal Medicine). Cluster Coordinators are nominated to evaluate the rheumatology service, manpower, mutual coverage and project service need, and to initiate resource bidding and facilitate rheumatology training within clusters. Despite no agreed key performance indicators in rheumatology for the time being, the Rheumatologists have already liaised with the Hong Kong Society of Rheumatology for a continuous audit on the use of biological and targeted disease modifying agents in patients with rheumatic diseases.

Accessibility To Service

A total of 36,000 patients with rheumatic diseases were being followed by the rheumatology teams in HA hospitals from April 2017 to March 2018. However, this could be an under-estimated number as some patients might attend the Advanced Internal Medicine (AIM) instead. A survey on the actual number of rheumatology patients was hampered by an incomplete diagnostic coding in Clinical Management System (CMS), particularly in the out-patient setting. In addition, not all HA hospitals captured waiting time statistics or separate data of individual subspecialty clinic of Rheumatology.

Emergency admissions of rheumatology patients comprised of 4-5% of all admissions to Medical Departments. The admission was usually due to complications related to disease activity, therapies or inter-current illnesses. The number of rheumatology patients followed up in the SOPCs is increasing in recent years because of the accumulation and availability of novel biological therapies. Referrals from primary care physicians and other specialists to Rheumatologists for assessment and treatment of various rheumatic symptoms are also on a rapidly increasing trend. In addition to the in-patient and out-patient service, most HA hospitals also provided day-patient rheumatology service. This included the administration of novel biological agents, assessment for subsidy under the Samaritan Fund (SF) scheme, follow up of complicated cases, and health education by specialty nurses.

Besides the novel and targeted biological agents, the diagnostics of rheumatic diseases has been advancing. Musculoskeletal ultrasound service is available in most rheumatology units in HA for patients with inflammatory arthritis, or to guide the intra-articular or soft tissue glucocorticoid injections.

Clinical Outcomes

With the assistance of the Hong Kong Society of Rheumatology for labour cost, an audit program on the use of biological agents in rheumatic diseases under SF scheme was initiated in 2009. From January 2013 to December 2018, 1,092 courses of biological/targeted disease modifying agents were initiated in 841 relevant patients (487 women and 354 men) under SF subsidy. These patients were mostly followed up in day wards or designated clinics. The mean age at the time of biological therapy was 49.4. The proportion of patients with rheumatoid arthritis, spondyloarthritis and psoriatic arthritis was 56%, 31% and 11% respectively. The commonest drugs used namely, Etanercept (24%), Golimumab (22%), Tocilizumab (18%), Adalimumab (19%), Abatacept (8%), Rituximab (4%) and Certolizumab (3%).

Among the courses of biological/targeted agents, 37% were discontinued. Selected reasons included lack of efficacy (54%) and serious adverse effects (24%). Clinical remission for 6 months or more leading to discontinuation occurred in 9.2% of patients, indicating that most of the patients required continuous treatment to maintain their clinical well-being. The main adverse effects leading to drug discontinuation included infusion reaction, allergic skin rash, tuberculous and non-tuberculous bacterial infections and occurrence of new malignancies.

Regarding the usage and adverse effects experienced by the patients treated with these novel agents, the detailed account was published biannually in the Hong Kong Bulletin on Rheumatic Diseases, an official publication of the Hong Kong Society of Rheumatology. Data would also be accessible to practicing rheumatologists and other physicians in Hong Kong. Adverse effects which are disproportionally high would be highlighted in the report.

Project Highlights

Specialty nursing service is an important development of rheumatology nursing in the past decade. Most HA hospitals now have rheumatology nurse-led clinics to enhance service quality. Their main duties include: Education on the disease and adverse effects of medications such as biological agents, patient empowerment on self-injection techniques, gauging disease activity of arthritis by performing joint count assessment, compliance monitoring to therapies and telephone hotlines service to resolve patients' queries. To enable earlier identification of patients with early rheumatoid arthritis, rheumatology nurses are involved in the triage of new case referrals to facilitate earlier disease-modifying drug therapy for the patients. Some trained specialty nurses would perform nail capillaroscopy to aid earlier diagnosis of systemic sclerosis and related disorders after interpretation by rheumatologists.

To help shorten patients' waiting time and to enable earlier identification of rheumatoid arthritis for earlier treatment and improving prognosis, rheumatology nurse triage clinics were first introduced in November 2018. Clinical assessment and protocol-based investigation and arrangement were initiated prior to rheumatologist's consultation. The purpose was to allow prompt identification of patients who fulfill the criteria of European League Against Rheumatism (EULAR)/American College of Rheumatology (ACR) for rheumatoid arthritis so that appropriate disease modifying therapy could be instituted earlier. The effectiveness of the triage clinics in reducing waiting time and early identification of rheumatoid arthritis would be reviewed periodically.

Way Forward

With increasing number of rheumatology patients strongly relying on long-term HA services, incremental manpower planning is essential. Through regular meetings with the Cluster Coordinators, it is hoped that to better reflect the quality of rheumatology service, consensus could be reached on certain key performance indicators such as waiting time to rheumatology consultation, hospital admission, quality of life, morbidity and mortality of patients.

COC (Neurosurgery)

Introduction

The COC (Neurosurgery) has been serving as an expert advisory body to the Hospital Authority (HA) on service development and other clinical-related matters. COC (Neurosurgery) is also tasked with overseeing the quality and standard of neurosurgical services provision in HA. The on-site service is currently shared by 7 hospitals from 6 Clusters in accordance with an established referral mechanism. The service networks are summarised as follows:

Cluster	Service Hospital/ Centre	Designated Hospitals Supported by the Network					
HKEC	PYNEH	CCH	RTSKH	SJH	TWEH	WCHH	
HKWC	QMH	DKCH	FYKH	GH	MMRC	TWH	
KCC and KEC	QEH	HKEH	HHH	KH	TKOH	HKBH	UCH
	KWH	OLMH	WTSH				
KWC	KWH	CMC (Stroke)					
	PMH	CMC (Trauma)	YCH	KCH	Lai King Building of PMH	NLTH	
NTEC	PWH	AHNH	BBH	SCH	SH	TPH	NDH
NTWC	TMH	CPH	POH	SLH	TSWH		

Since 2015, COC (Neurosurgery) has conducted 5 clinical audits and the results revealed that HA neurosurgery services was on a par with the international standard of practices and outcomes. The topics included Ventriculoperitoneal Shunting, External Ventricular Drainage, Decompressive Craniectomy for Supratentorial Ischaemic Stroke, Intra-arterial Thrombectomy for Ischaemic Stroke and Spontaneous Intracerebral Haemorrhage. The audits also led to services improvement, i.e. introduction of 5-Aminolevulinic Acid (5-ALA) drug on brain tumor resection, and drug impregnated ventricular catheters for Cerebrospinal Fluid (CSF) diversion for suitable patients.

Project Highlights

Deep Brain Stimulation (DBS) Programme for Parkinson's Disease

With two donations from Oriental Daily Charity Foundation in 1995 and 2000, the program was started in mid-1990s. The first DBS was carried out on a patient in his 60s in January 1997, and the treatment is still effective currently. Measures had been taken to ensure the safety and effectiveness of operation, and the formal funding support from HA. Up to present, 278 DBS implants were conducted for patients with idiopathic Parkinson's disease (50% in Prince of Wales Hospital, 25% in Queen Elizabeth Hospital, and 25% in Queen Mary Hospital/Pamela Youde Nethersole Eastern Hospital). From the year of 2018/19, a total of 18 new implants and 39 changes of exhausted batteries would be funded annually given that the demand always exceeds supply.

Epilepsy Surgery

Neurosurgery has a well-recognised role in the management of drug-resistant epilepsy, which accounts for over 10% of all patients suffering from epilepsy. In 2018, 30 patients underwent epilepsy surgery in HA hospitals. Half of them belonged to the Paediatric group, i.e. age ≤ 18. The current surgical approaches for drug-resistant epilepsy are as follows:

(a) Excision of an epileptogenic lesion;

(b) Disconnection of epileptogenic cortical regions or even half of the cerebrum (Hemispherotomy);

(c) Vagus nerve stimulation; and

(d) Deep brain stimulation.

Invasive monitoring procedures including subdural grids with/without depth electrodes and stereotactic electroencephalography techniques, to define epileptogenic foci before excision were also performed.

The length of hospital stay for different categories of epilepsy surgery was summarised in the following table:

Type of Epilepsy Procedure	Length of Hospital Stay (Days)	
	Range	Average
Craniotomy for excision or disconnection	4-37	13.4
Implantation of vagus nerve stimulator	3-7	4.6
Insertion of deep brain stimulator	6-10	7.7

There was no mortality or re-operation due to complications. The seizure control outcome, as reflected by a recent retrospective review on a cohort of paediatric patients at a HA hospital, was comparable to published international standard.

Teamwork and close collaboration among neurosurgical colleagues with adult and paediatric neurologists, radiologists, intensive care physicians, anaesthetists, pathologists, the Child Assessment Centre, and other colleagues have been essential to achieve the current good results. We will further enhance our services to provide epilepsy surgery for more patients suffering from drug-resistant epilepsy.

Way Forward

Update on Intra-arterial Mechanical Thrombectomy (MT) Service for Acute Ischaemic Stroke in HA

For individuals who have an acute ischaemic stroke (AIS), the key to effective treatment is early re-perfusion of ischaemic brain without causing adverse effects. To achieve reperfusion,intravenous thrombolytic therapy is recommended according to treatment guidelines. With concerted effort from all clusters hospitals, 24-hr intravenous recombinant tissue plasminogen activator (r-tPa) therapy has become a standard therapy for AIS in eligible patients.

However, many patients fail to respond to, or are ineligible to receive thrombolytic therapy. This can happen in patients who present late to the hospital, >4.5 hours after stroke onset or in patients whom r-tPa are contraindicated.

Mechanical Thrombectomy (MT) has become a treatment option for these patients. MT offers significantly superior post-stroke functional outcome when compared with usual care in carefully selected patients. Following favorable results from five recent randomised controlled trials (RCTs) and strong positive recommendations in international and local guidelines, stroke care pathways are rapidly being updated to incorporate MT as a treatment option. With strong evidence for superior clinical efficacy and cost benefits, MT has the potential to transform AIS treatment in Hong Kong.

Based on such strong evidence, there have been drastic re-organisation of acute stroke care models in developed countries. In the HA 5-year strategic plan (2017-2022), service coverage for life-threatening and time critical diseases such as stroke will continue to be enhanced where early detection, assessment and management of patients are essential to improve outcomes.

The CC (Stroke) is currently preparing a 12-hr day time MT service in all major cluster hospitals. To achieve this, overseas training of eligible doctors as the interventionists via central sponsorship has been provided. To upkeep the standard and safety assurance, a working group on MT credentialing has been working on a proposal of credentialing criteria for comments by relevant parties.

All in all, 2018 has been an exciting year. We have witnessed an urgency to change, to improve our capabilities and to provide MT therapy for stroke patients. Never has a therapy been proven unanimously so effective in treating stroke patients with large arteries occlusion. This was once a very dreadful disease which carried high mortalities and morbidities. Rapid re-perfusion using MT would render patients to walk out of the hospital with high spirit. This seems too good to be true but indeed it is.

Designated Radiosurgery Service in New Acute Hospital (NAH)

Stereotactic Radiosurgery (SRS) is a radiation therapy directed to the region of interest via a 3D coordinated system. The indications of treatment for central nervous system include oncological conditions, e.g. benign and malignant tumours, vascular conditions such as arteriovenous malformation (AVM) and arteriovenous fistula (AVF), pain conditions such as trigeminal neuralgia, epilepsy and movement disorder, etc..

In September 2011, a taskforce on the development of neurosurgery service under COC(NS) was formed to review the radiosurgery services in HA. Subsequently, in February 2012, a designated radiosurgery system for all HA neurosurgical patients was suggested. In the Clinical Services Plan (CSP) for the Kowloon Central Cluster (KCC) in 2016, it was also stated that the future New Acute Hospital in Kai Tak development area, as a tertiary and quaternary service, should be equipped with radiosurgery system to serve KCC and the neighboring clusters by shared use of high technology facilities. With this objective, a designated radiosurgery service will be established under the joint supervision of neurosurgeons and clinical oncologists in an open model.

Considering the service sustainability, the estimated case load would be around 280 patients per year, which is comparable to the current workload in all Clinical Oncology Departments with radiosurgery and stereotactic radiotherapy services. In addition, increasing service demand and widening indications for radiosurgery services would be anticipated in future, e.g. multiple brain metastases and functional radiosurgery cases.

The currently available radiosurgery technologies include modified Linac-based Stereotactic Radiosurgery System, Gamma Knife Radiosurgery System and Cyberknife Radiosurgery System. Each system has its own advantages and disadvantages. To safeguard the treatment modalities in the patients' best interest, the systems will be reviewed and suggested by a designated workgroup including representatives from COC(Neurosurgery), COC(Clinical Oncology), Medical Physicists and Central Technology Office (CTO). The proposal is already supported by COC(Neurosurgery). Apart from radiosurgery system, further discussion and consensus should be reached on the future service model and resources implications including manpower, equipment, accessory cost and maintenance cost.

COC (Obstetrics & Gynaecology)

Introduction

Obstetric statistics has long been recognised as a measure of the standard of health care. It has been a good tradition that individual hospitals providing specialist obstetric service compile annual statistics regarding the outcome of their deliveries and publish the results. With the development of HA Specialty Clinical Information System (SCIS) in Obstetrics & Gynaecology in 1995, the first "Annual Obstetric Report on all Hospitals under the Hospital Authority Year 1998" was published in year 2000. Not only does the report review the obstetrics practice in all HA hospitals, but also helps identify areas for improvement and serves as a benchmark for individual departments, as well as a reference for all maternity care providers and receivers. The latest report published in September 2018 for year 2017 assured that our obstetrics performance is up to international standard and that the perinatal mortality rate is among the lowest in the world.

With the leadership of the past chairman of the COC(O&G), Dr TH Cheung, several quality improvement programs had been implemented in the past few years.

Project Highlights

Universal Down Syndrome Screening

Antenatal screening for Down syndrome was implemented in July 2010. Throughout the years, almost all mothers received this screening in the antenatal period. Screening in the first trimester is suggested in view of a higher sensitivity. A sensitivity of around 90% is achieved and comparable to the performance of many other international centres.

First Trimester Screening	
Total no. of 1st trimester screening	**30,525**
Screen positive for T21,T18,T13	**1,658**
Screen positive for T21	**1,624**
Down syndrome detected prenatally	**57**
Down syndrome not detected by screening*#	**7**
Sensitivity	**89.1%**
False positive rate	**5.1%**

Second Trimester Screening (4 Markers^)	
Total no. of 2nd trimester screening	**2,794**
Screen positive for T21,T18,T13	**197**
Screen positive for T21	**192**
Down syndrome detected prenatally	**5**
Down syndrome not detected by screening*	**0**
Sensitivity*	**100%**
False positive rate	**6.7%**
Total no. of 1st + 2nd trimester screening	**33,319**
% of 1st Trimester screening	**91.6%**

Remarks:

** Of the seven Down syndrome pregnancies which were screened negative, three were detected after ultrasound abnormalities, three with intrauterine death (IUD)/ miscarriage, and one was high risk on Non-invasive Prenatal Test (NIPT).*

None were detected after birth.

 # Incomplete outcome data up to January 2019

^ AFP (alpha fetoprotein), free beta hCG (human chorionic gonadotropin), uE3 (unconjugated oestriol), inhibin A

Limitations:

About 5% of mothers would have positive results, and invasive procedure would be necessary to identify those pregnancies with Down syndrome.

Universal Prenatal Screening for Group B Streptococcus (GBS)

Before the era of universal prenatal screening, the number of early onset GBS infection in newborn was about 1 in 1,000 live births or 40 cases per year. Such infection carries a high mortality rate of 5%. Prevention was to give intrapartum antibiotics for high risk mothers (risk-based strategy). However, clinical risk factors only present in 12% of the mothers.

A working group was set up in HA in 2008 with representatives from COC (O&G), COC (Paediatric) and COC (Microbiology). Following the discussion in HA and Department of Health (DH) Liaison Committee on O&G services, a pilot study on universal screening programme for maternal GBS was successfully implemented in Queen Mary Hospital in 2009/10 with financial support from HA. Cost effectiveness analysis by the Department of Community Medicine using a prediction model showed that the universal screening program in HK likely costs more but probably avoids more cases of early onset GBS than the risk-based strategy.

In collaboration with DH, the screening program was started since January 2012. The following table illustrated a reduction on the number of babies with early onset GBS disease.

Mother	2017	2018
Total no. of mothers	37,308	35,025
No. of mothers with screening test	23,483	21,480
%. of mothers with screening test	62.9%	61.3%
No. of mothers with positive GBS result	5,893	5,569
% of mothers with positive GBS result	25.1%	25.9%
Baby		
Total no. of babies born in study period	37,874	35,025
No. of babies with early onset GBS disease [positive blood or cerebrospinal fluid culture (CSF)]*	9	7
Proportion (/1000) of babies with early onset GBS disease (positive blood or CSF)*	0.24	0.20

** All had positive blood culture, and none had positive CSF.*

To Increase Output of Hysterectomy Minimal Invasive Surgery (MIS) in Gynaecology

Since the introduction of MIS in late 80s and early 90s, it became the gold standard in surgery on benign adnexal pathology in the 2010s. However, majority of hysterectomies at that time were performed by open surgery. Only 10-40% of hysterectomies were done by MIS in various units among HA. The low percentage was due to long learning curve on technique, lack of expertise or appropriate equipment.

To increase the percentage of minimal invasive hysterectomy, an annual plan was commenced in 2013/14 for uterine size equal to or less than 10 gestational weeks for benign conditions. This five year program aimed to achieve 60% in the first year and 90% by the end of fifth year. For the year of 2017/18, MIS hysterectomy was performed in about 89% of suitable patients.

In addition, the program also involved equipment upgrade, i.e. up-to-date High Definition (HD) video system, advanced bipolar diathermy machines, consumables support in the form of single use device (SUD) for vessel sealing. The procurement was arranged in phases among different units in HA. With the collaboration of the IT Department, Operating Theatre Record System (OTRS) and Clinical Data Analysis and Reporting System (CDARS) were set up to collect hysterectomy data. The critical success factor was setting up a training programme in year 2011/12 for competent staff to perform Minimal Invasive Hysterectomy, especially in units with manpower constraint.

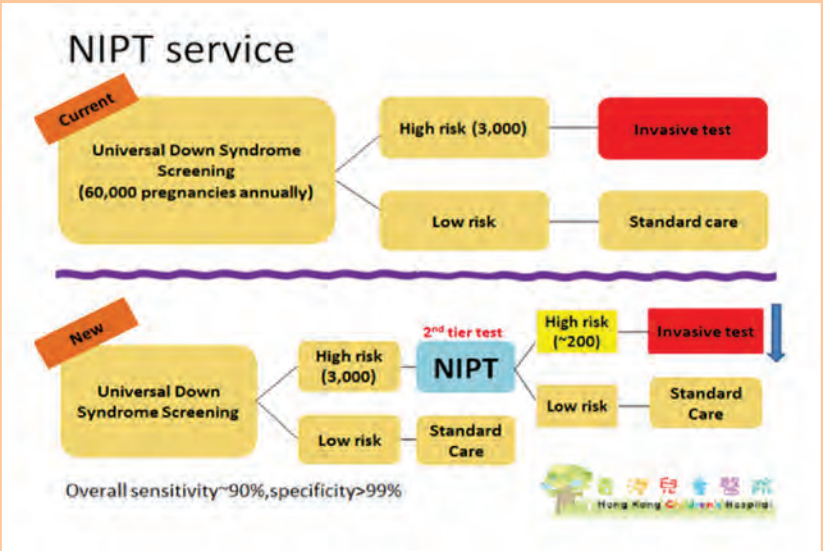
Quality improvement program might sometimes go beyond the usual three-year project cycle. Meticulous planning in advance and collaboration with relevant HA units and departments are crucial for the success.

Way Forward

HA will further enhance the prenatal testing services by introducing the following in public hospitals:

Non-invasive Prenatal Testing (NIPT) for Common Chromosomal Aneuploidies such as Down Syndrome

DNA Sequencing of Maternal Plasma (DSMP) is an innovative technology developed and patented by HK scientists. NIPT makes use of DSMP technique to analyse DNA present in pregnant women's plasma and has been successfully used in antenatal screening of common chromosomal aneuploidies such as Down Syndrome. Detection rate for Down Syndrome is 99.7% with only 0.1% false-positive. NIPT will be incorporated as the second tier screening in HA Down Syndrome screening program. HA strives to launch NIPT service in HKCH within 2019. With the new workflow, a reduction in invasive tests with its associated risks will be anticipated without affecting the overall detection rate.



Chromosomal Microarray

Chromosomal Microarray is a DNA-based method of genetic analysis, used for the detection of clinically-significant microdeletions or duplications, with a high sensitivity for submicroscopic aberrations (100kb vs. 5Mb by karyotyping). CMA also has a shorter turn-around time (1 to 2 weeks) as it does not require cell culture and can possibly be applied with nonviable tissue. HA plans to include Chromosomal Microarray test as a standard service in HA in 2019-20, which will enhance the accuracy of prenatal tests for detecting chromosomal abnormalities.

COC (Otorhinolaryngology)

Introduction

The Coordinating Committee in Otorhinolaryngology (COC(ENT)) has been serving as an expert advisory body to Hospital Authority (HA) on service development and other clinical-related matters. It comprises the Chiefs of Service and Professional Clinicians of the 7 ENT departments from 7 clusters, plus representatives from Allied Health Department and Quality & Standards Department of HA Head Office.

COC(ENT) is tasked with overseeing the quality and standard of ENT services provision in HA. The scope of specialty services is comprehensive to include Ear, Nose, Throat, Head and Neck Surgery and Facial Plastic Surgery accessible by the community, from acute in-patient to out-patient care throughout their episode of illness. Laryngology, Rhinology and Otology and Paediatric Otorhinolaryngology are available to ENT patients.

COC(ENT) also actively plans for clinical teaching and training to the clinicians and nursing staff in order to equip themselves with new and advanced medical knowledge, practice and technology. Continuous Quality Improvement (CQI) programmes are annually promulgated and launched to ensure the quality of healthcare to our ENT patients.

Accessibility To Service

Due to an ageing population, the demand for ENT services has increased in the past few years. Our Specialist Out-patient Clinic (SOPC) new case attendance increased from 64,221 in 2014 to 74,579 in 2018 (i.e. 16% increase). The 90th percentile of the waiting time for new routine cases also increased from an average of 70 weeks in 2016 to 84 in 2018. Various departments have taken measures including Special Honorarium Scheme (SHS), nurse clinic and etc. to manage the waiting time for new case bookings.

Project Highlights

In 2018, HA ENT has implemented a series of quality improvement programmes to enhance our service quality for Hong Kong citizens, especially in the areas of sub-specialisation development, standardisation of care model, day surgery and same day surgery.

Sub-specialisation

ENT departments of the 7 clusters have implemented sub-specialisation with different phases of development in 2018 to pursue a higher standard of healthcare for our citizens. The most well-organised sub-specialisation development was Head and Neck Surgery, which was in line with the developmental direction of the Hong Kong College of Otorhinolaryngologists. Head and Neck Clinics have been set up to centralise the management of all cancer cases. Head and Neck Combined Clinics aim at multidisciplinary management of difficult cancer cases. Tumour Board Meeting or equivalent provided a good channel of inter-departmental communication in cancer management. In 2018, over 1,500 intermediate and high skilled Head and Neck surgical procedures were handled by the Head and Neck Team of ENT departments of the HA (40% to 50% of our operation sessions done under general anaesthesia). The Head and Neck Surgery sub-specialisation was fully supported by our sustainable training system and strong specialty cohesion, as experienced in the inter-cluster intra-specialty collaboration between the Hong Kong West Cluster and the Kowloon West Cluster. Furthermore, it is strengthened by HA's 'Retire and Rehire Scheme', 'Honorary Appointment' and 'Part-time Recruitment' programmes, in which many highly skillful and experienced Head and Neck ENT surgeons could return and facilitate the continuous sub-specialisation development in Head and Neck Surgery. In 2019, sub-specialisation will be strengthened to enhance team stability and service by improving workflow logistics among different clusters.

Standardisation of Practice

Management of sudden onset sensorineural hearing loss varies among clusters in HA. Through a series of literature review and workgroup discussions, COC(ENT) arrived at a consensus to adopt a standard evidence-based guideline and principle in managing this ENT emergency. Through standardisation, patients could receive the highest quality and consistent management. To pursue quality improvement, our workgroup will continue to explore more evidence-based options to improve the efficacy of treatment. With the development of Hyperbaric Oxygen Therapy in the Hong Kong East Cluster, a research organised by COC(ENT) will be carried out to investigate the benefit of Hyperbolic Oxygen Therapy on sudden onset sensorineural hearing loss in 2019, which is expected to be beneficial.

Likewise, variations in pre-printed informed consent forms imposed quality variations, among different clusters in the past, in terms of presentation and indications for surgical procedures, and related complications. As pre-printed informed consent program was an important step forward to line up the standard of medical care, it is our responsibility to achieve standardisation in COC(ENT). Through the hard work of our COC Pre-printed Informed Consent Work Group, 38 COC(ENT) pre-printed consent forms were reviewed and the formats were aligned. Nowadays, they are available online on the HA intranet. For continuous quality improvement, our workgroup will have regular reviews and ongoing standardisation of newly added pre-printed informed consent forms to meet the surgical development.

Treatment Room for Hyperbolic Oxygen Therapy

Day Surgery and Same Day Surgery

The concept of ambulatory surgery serves the merits of maximising resource utilisation and minimising inconvenience and unnecessary complications, including unnecessary hospitalisation, hospital stays and hospital acquired infections. In 2018, ENT departments among the 7 clusters contributed significantly in these areas, with nearly 80% Day Surgery and Same Day Surgery done; whereas HA overall was 60%. With sub-group analysis, 25% of ENT operations in the HA are Day Surgery, as compared with HA overall of less than 20%. From a procedure perspective, ENT specialty has great potential to develop Day Surgery and Same Day Surgery in the future. Many intermediate operations, and even major operations, can be done as Day Surgery. With rough estimation, up to 50% of ENT procedures can be done as Day Surgery if the general health conditions of patients allowed, in the presence of skillful ENT surgeons and anaesthesiologists.

Way Forward

Cancer Survivorship Program

Patients with head and neck cancers including nasopharyngeal cancer (NPC) have long life expectancy after treatment. Thus quality of life in these cancer survivors are important. Unfortunately, complications related to treatment are significant, and their frequency and severity increase with time. Service demand for head and neck cancer survivors accounts for 30% to 40% of Specialist Outpatient Clinic (SOPC) sessions in Oncology and ENT Departments. To improve the life quality of these patients after primary treatment, the Head and Neck Cancer Survivorship Programme offers a timely management of their psychosocial stress and radiation-induced toxicities. Through implementation of workload sharing among ENT Specialists, Oncologists and Head and Neck Cancer Survivorship Coordinating Nurses, the care quality could be enhanced by initiating a fast track referral and coordination among specialists, nurses and allied health staff. A 50% reduction of SOPC workloads in both departments can be anticipated.

Elderly Hearing Screening and Rehabilitation

Presbycusis is an age-related hearing loss associated with ageing. With increasing demand related to an aging population, the waiting time for managing these cases is currently long and unsatisfactory. To speed up the management process, COC(ENT) has coordinated an annual plan program in 2020/21 on Elderly Hearing Screening and Rehabilitation based on an integrated model of Nurse and Allied Health Clinic in SOPD. Subject to the availability of resources and support, it is hoped that elderly patients in need could receive earlier hearing screening and rehabilitation.

COC (Pathology)

Introduction

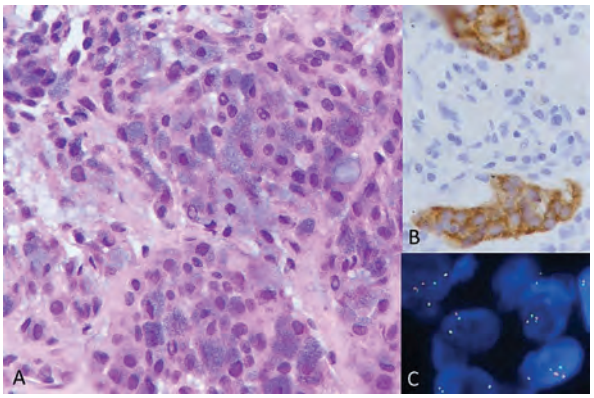
The COC (Pathology) advises HA and develops care standard and practice guidelines on all aspects of Pathology. The major areas include: Standard of clinical service and care, workforce and training, quality and safety, technology, therapeutics and information technology.

Project Highlights

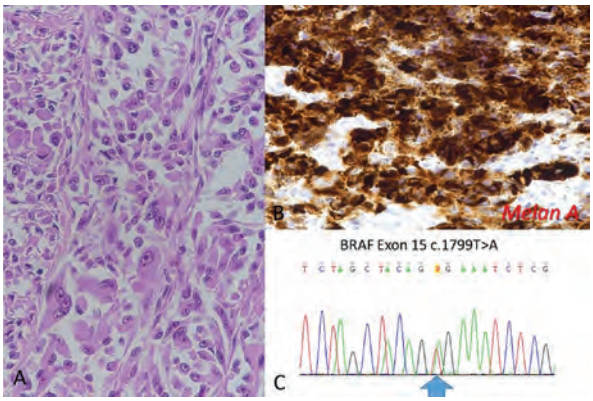
Anatomical Pathology

Expansion of Genetic Testing on Solid Tumours

Genetic testing on solid tumours is becoming more important in disease diagnosis and patient management. Not only is it helpful in confirming the diagnosis and giving prognostic information in some tumour types, but is also required for selecting patients for appropriate targeted therapy. HER2 testing for breast cancer, EGFR testing for lung cancer, KRAS/NRAS testing for colorectal cancer, and MGMT testing for brain cancer (glioblastoma) have been regular services in HA. Recently, ALK testing for lung cancer, BRAF testing for melanoma and KIT testing for Gastrointestinal Stromal Tumour (GIST) have also become available to all patients in HA. The test result will determine whether the particular patient will benefit from targeted therapy. There is continuous effort in exploring essential and cost-effective genetic tests for solid tumours.



A. Adenocarcinoma of lung with proven ALK rearrangement (Haematoxylin & Eosin). B. Adenocarcinoma of lung with ALK expression, indicative of ALK rearrangement (ALK immunohistochemistry). C. Adenocarcinoma of lung with ALK rearrangement, as demonstrated by the separated green and red signals in some tumour cells (Fluorescence in situ hybridisation with ALK break-apart probes).



A. Malignant melanoma with proven BRAF mutation (Haematoxylin & Eosin). B. Malignant melanoma with diagnosis confirmed by Melan A expression (Melan A immunohistochemistry). C. Malignant melanoma with BRAF mutation at exon 15 c.1799 T>A (V600E) as demonstrated by sequencing.

Chemical Pathology

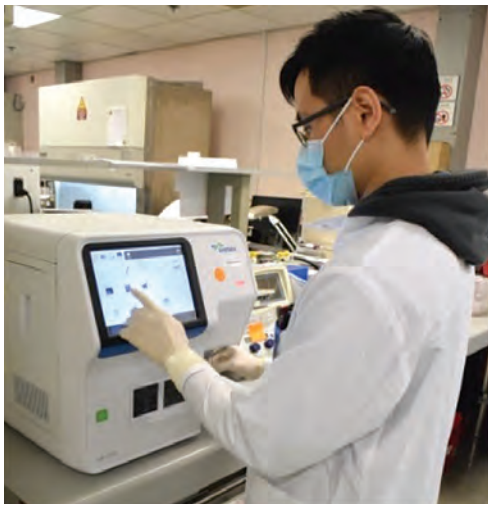
Setting Up of Reference Intervals through Structured Entry Format

The conventional reference interval setup process was a one-step process by only one technical staff. Transcription errors might not be detected easily. The above project was to standardise the reference interval entry format through a structured laboratory information system (LIS) methodology by two individual laboratory technical users at two separate occasions. Computerised matching would be performed as a double-checking procedure to validate the fidelity of the data entries using reference documents from instrument manufacturers and/or literature reports. Any data entry, verification, endorsement and re-checking procedures would be recorded in LIS.

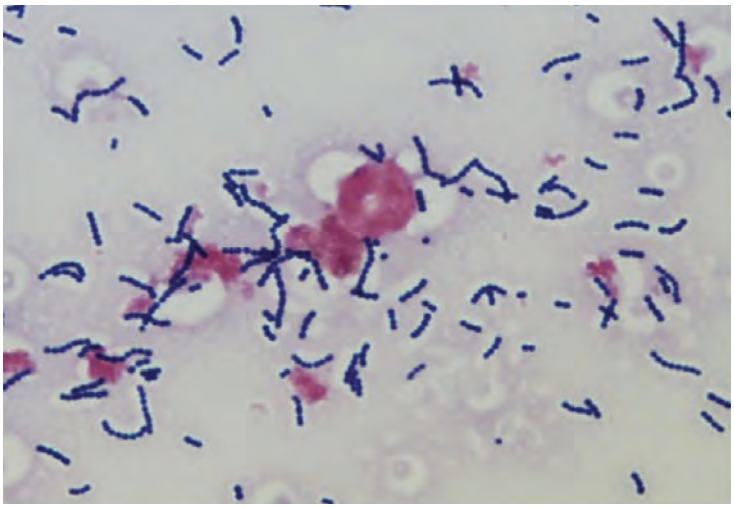
Clinical Microbiology and Infection

Provision of 24-hour Urgent Microbiology Service by Microbiology Trained Staff

Despite being given prior training, errors might occur when non-microbiology laboratory staff performs high-risk microbiology procedures during night shifts in urgent laboratories. To avoid negative impacts on patient management, a program was initiated to provide analysis of urgent samples (sterile body fluids and tissue samples) after office hours by microbiology trained medical technologists in three network centres. The aim was to improve the standard of care and thus, to reinforce the clinical risk management. The ultimate goal was to provide the service in all seven regional laboratories.



Testing of cerebrospinal fluid (CSF)



Microbial susceptibility testing (AST)

Automation in Anti-microbial Susceptibility Testing (AST)

AST of significant bacterial isolates is important for treatment of infections. The conventional disk diffusion method is labour intensive, and the results are investigator-dependent as it requires manual measurements and documentation. The implementation of zone size reading system provided automatic reading, documentation and data interpretation. It also improved the reproducibility and accuracy of results, reduced interpretation and transcription error, and facilitated data storage and traceability.

Manual measurement + transcription

Automation

Haematology

Investigating Haematolymphoid Malignancy: Diagnosis & Beyond

Apart from providing basic diagnostic service, a haematology laboratory plays an important role in generating results to adequately inform clinicians about disease prognosis, outcome and potential availability of targets for new drugs. Monitoring of disease nowadays goes beyond morphological assessment to measurement of Minimal Residual Disease (MRD).

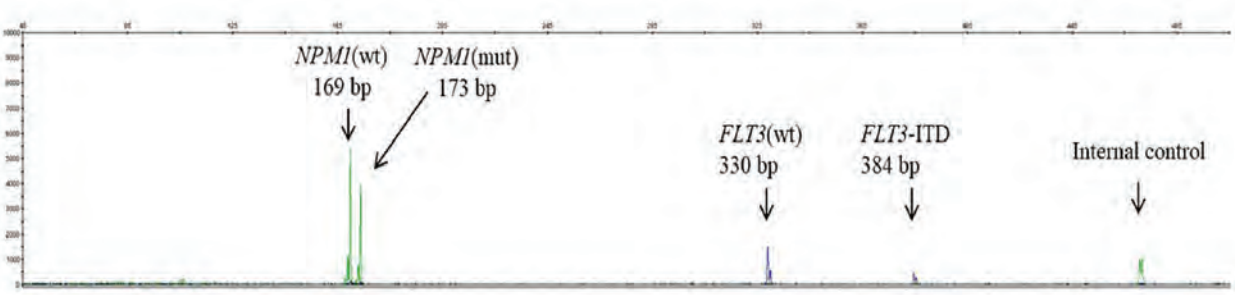


Figure 1. Detection of NPM1 (Nucleophosmin 1) and FLT3-ITD (FLT3- Internal Tandem Duplication) mutations by fragment length analysis. Midostaurin is now licensed for use in FLT3-mutant AML (Acute Myeloid Leukaemia), and several other FLT3 inhibitors are in phase III clinical trials.

A territory-wide cancer genomic testing service is currently available in HA. Apart from chromosomal analysis, various modalities of genetics and cytogenomic studies have been adopted to facilitate patient management. For example, the mutation status of two very important genes, NPM1 and FLT3, driving the occurrence of AML (Figure 1), are studied, and for patients with chronic lymphocytic leukaemia or plasma cell myeloma, a panel of DNA (Deoxyribonucleic acid) probes was applied to identify specific abnormalities (Table 1). The study of these genetic markers sheds light on the outcome of disease so that a more personalised treatment approach can be adopted to achieve optimal patient outcome.

Table 1: Detection of cytogenetic abnormalities in multiple myeloma by Florescence In-situ Hybridization (FISH)

Cytogenetic abnormality	Prognostic implication	Examples of FISH probe
del(17p)	Adverse	TP53/NF1
t(4;14)	Adverse	IGH/FGFR3
t(14;16)	Adverse	IGH/MAF
gain 1q, del(1p32)	Adverse	CKS1B/CDKN2C
del(13q)	Adverse*	DLEU/LAMP

**only when detected on metaphase cytogenetic*

A classical example of using molecular marker to monitor disease burden is the measurement of BCR-ABL1 transcripts level by a high-sensitivity quantitative Polymerase Chain Reaction (PCR) assay in chronic myeloid leukaemia (CML). The lower the level of transcripts (the deeper the molecular response) implies a better patient's outcome. Stable patients can be offered an option of treatment cessation under continuous and close surveillance of MRD status. Haematology laboratories designated to provide molecular monitoring for CML in HA have met international standards in terms of the highest level of sensitivity achievable, i.e., MR5 (Molecular Response > 5 log reduction) (Figure 2).

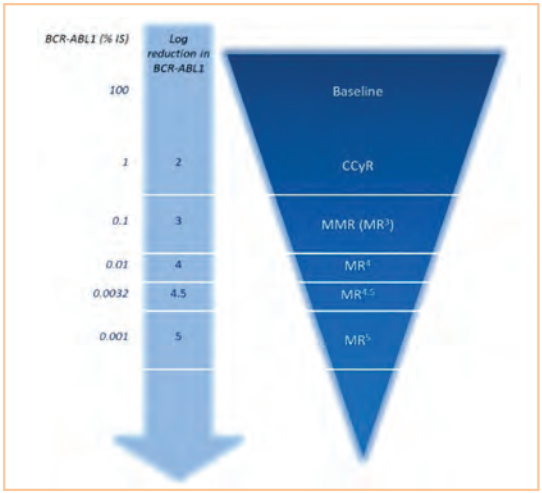


Figure 2: Quantitative Polymerase Chain Reaction (QPCR) monitoring of BCR-ABL1 transcript for CML.

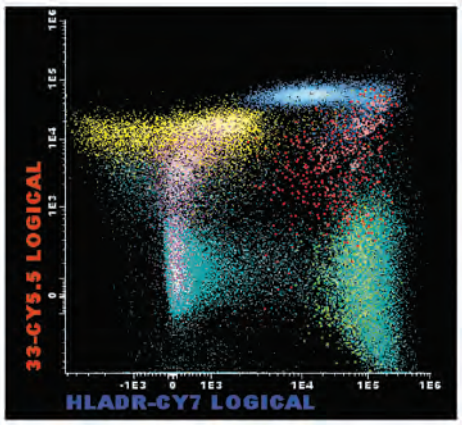


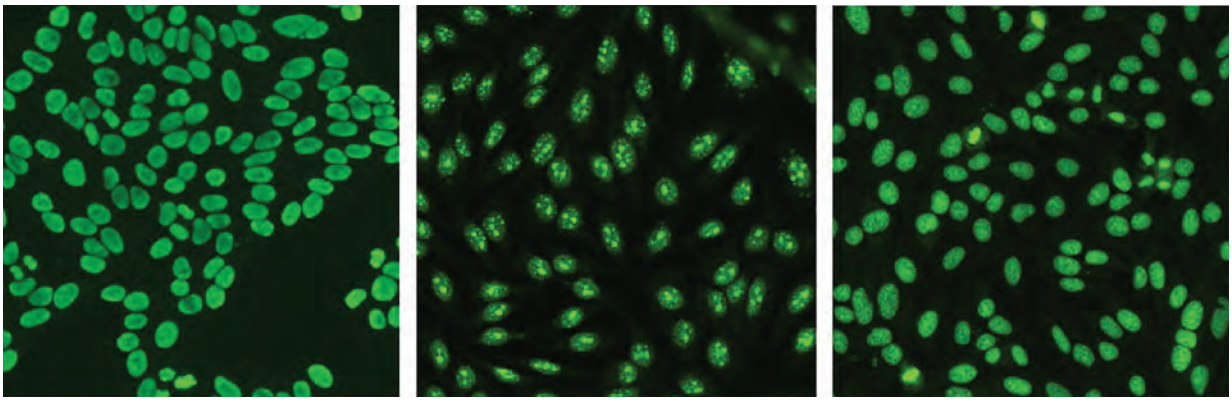
Figure 3: Identification of minimal leukaemic population by flow cytometry using special software

Apart from molecular methods, MRD measurement can also be performed by flow cytometry. This relies on the different expression of markers on the abnormal leukaemic population compared with the normal cells. This allows better risk-stratification for patients, e.g., with Acute Lymphoblastic Leukaemia (ALL). Hence, the decision on Haematopoietic Stem Cell Transplant (HSCT), a procedure that carries not insignificant mortality and morbidity, can be better rationalised.

Immunology

Standardisation and Harmonisation in Antinuclear Antibody (ANA) Test

Classification of antinuclear antibodies (ANA) is important for diagnosis of autoimmune diseases. However, ANA pattern interpretation and test turnaround time (TAT) varied among HA laboratories. ANA working group was formed to work on locally agreeable guidelines and recommendations, aiming at standardising and harmonising ANA test. International Consensus on ANA Patterns (ICAP) was used as a reference. An ANA pattern interpretation training program was conducted for all hospitals to standardise the reporting on ICAP ANA pattern.



In addition, timely ANA result reporting is essential for early patient management. TAT monitoring using the Decision Support System (DSS) provides source of benchmarking data for laboratories in setting target TAT goals. By implementing DSS in TAT monitoring of ANA test, systematic and objective comparisons between laboratories could be made in 2018 to enhance consistency and to benefit the patients.

Way Forward

Pathology supports every aspect of patient care, from disease prevention, diagnostic testing and treatment advice, to using cutting-edge molecular technologies to manage patients with life-threatening conditions. With the increasing demand of an ageing population, difficulties in recruiting medical and nursing professionals post further challenges to our healthcare service. Investment in advance technology and laboratory service could shorten the turnaround time of test results to enhance the overall clinical management and cut the duration of in-patient stay. This would provide a better outcome and experience for the patients, in addition to an overall cost saving. The COC(Path) will continue building on the strengths of existing programs to develop and provide sophisticated and quality diagnostic pathology services.

COC (Psychiatry)

Introduction

People with mental health illnesses have a substantially higher risk of suicide than those found in the general population. Literature shows that the risk of suicide is much higher in the earlier part of the acute illness and inpatient stay (Don et al., 2005; Hunt et al., 2013; Khanra et al., 2016). Studies have reported that the first week of admission is a time of particularly acute risk (Qin & Nordentoft, 2005; Erlangsen et al., 2006; Hunt et al., 2007).

Accessibility To Service

As at 31 December 2018, there were 80 inpatient psychiatric wards with a total of 3,647 mentally ill beds in both psychiatric hospitals and general/acute care settings of Hospital Authority providing specialised psychiatric inpatient care services.

Project Highlights

Strategies to Prevent Suicide in General and Psychiatric Wards

In HA, psychiatric hospital settings were changed significantly to improve patient safety and eliminate environmental hazards. This required a coordinated and integrated effort at all levels with strong clinical governance, improved treatment milieu and enhanced clinical observation of psychiatric in-patients.

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Qin, P., & Nordentoft, M. (2005). Suicide risk in relation to psychiatric hospitalization: evidence based on longitudinal registers. Archives of General Psychiatry, 62(4), 427–432.

Environmental Risk Mitigation in Inpatient Psychiatric Settings

Dormitory, Dayroom, Other Areas & Hallways

Doors –

(1) Anti-ligature design of door hinge and handle to eliminate anchor points for hanging

(2) Rooms are locked at all times when not in use

Windows –

(1) Shatterproof/double tempered glass windows to prevent hanging at window grill/bar/handle or jump from height

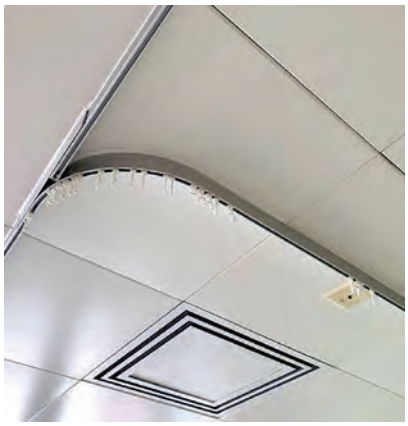
(2) No curtains to prevent hanging or strangulation

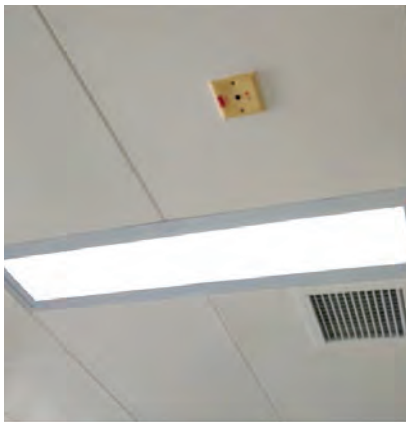
Ceiling –

(1) Flushed curtain rail to ceiling

(2) Sealed conduits to minimise supporting points for hanging

(3) Ceiling light cover



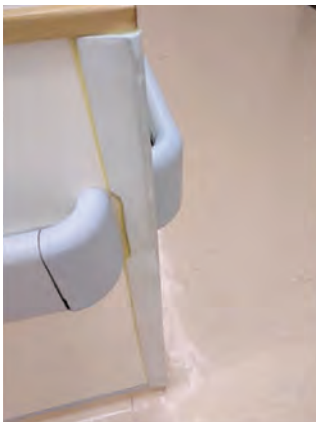


Corridors –

(1) No spaces between handrail and wall to eliminate anchor points

(2) Protective guard without sharp edges

(3) Convex mirror at blind spots for observation


Toilets & Bathrooms

Toilet facilities –

(1) Flushing button (instead of handle) and concealed flushing tank to eliminate achor points

(2) Lowered toilet door to facilitate easier observation and to maintain privacy

(3) Anti-ligatured door handle and door can be opened from outside

(4) Anti-ligatured basin with down slope tap

(5) Covered water pipes and inlets

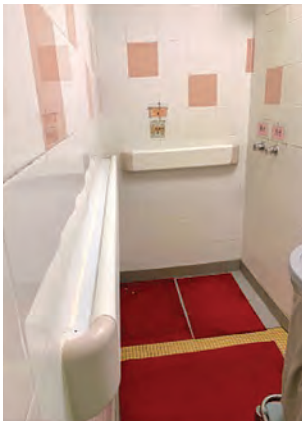



Bathroom facilities –

(1) Bathrooms are locked when not in use

(2) Anti-ligatured shower head and button (without hose)

(3) Covered and locked duct outlet



Other Measures

Dangerous articles are kept away from patients –

(1) Visitors notice: Prohibit bringing potentially dangerous item to patients

(2) Chemicals are locked

(3) Stainless steel covered electric sockets with lock and temper resistant receptacles

(4) Television set covered with shatterproof material and slope-design frames

Enhancement of Clinical Observation

Suicidal Risk Assessment and Observation

Medical and nursing staff would conduct suicidal risk assessment upon patient's admission/ transfer-in, discharge, and/on whenever necessary or clinically indicated. In addition, staff would usually adopt a broad-range approach in assessing patients' condition and information in order to identify their suicidal risks and need for appropriate intervention.

Apart from professional clinical judgement, a standardised suicidal risk assessment "The Nurses' Global Assessment of Suicide Risk (NGASR)" is adopted to assess and detect inpatients' suicidal risk in psychiatric setting. NGASR's results would be promptly communicated to medical staff and caregivers, followed by a regular review of suicidal risks, observation and engaging patient in activities according to the level of suicidal risk.

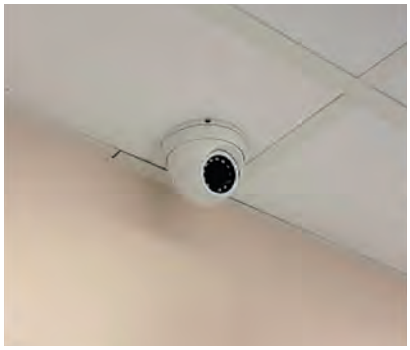
As patients are at higher suicidal risks during home leave and the first few days after discharge, comprehensive assessment on their risks and needs would be performed. Education on signs and management of suicidal risks would be provided to the patients and their carers before home leave or discharge, followed by ongoing follow up and support via telecare and community psychiatric services if necessary.

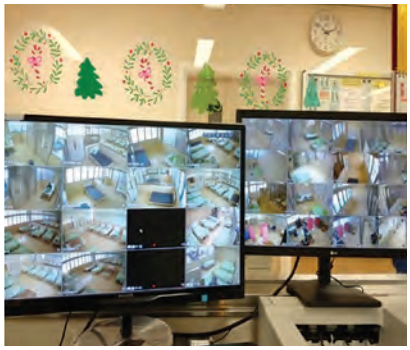
Ward Patrol & Cue Card System

Hourly ward patrol to high risk areas and vicinity of high risk areas of psychiatric inpatient wards, such as toilets, dormitories and blind spots etc. would be conducted by nursing or supporting staff. Any abnormalities detected would be promptly reported to the shift in-charge nurse. For high risk patients under close observation, cue cards, handover sheet, alert board were designed and used for clinical handover among nursing and supporting staff.

Closed Circuit Television (CCTV) Recording System

To facilitate observations on patient and workplace safety related events, CCTV cameras were installed in high risk area and its vicinity, e.g. corridor inside the ward area, day area and toilet entrance, etc. Consideration on clinical guidance and patients' privacy would be taken. CCTV monitors were installed in Nurses' Duty Room to facilitate easier observation.





Staff Training

Staff training is also essential in inpatient suicide prevention. In addition to orientation program to new staff, staff education regarding suicidal risk assessment and management is also provided.

With the continuous efforts mentioned above, the number of deaths from inpatient suicide in both psychiatric hospitals and general/acute care settings significantly decreased from the year of 2013/2014 to 2017/2018. It represented a significantly lower suicide rate of 0.6 per 100,000 inpatient admissions (Hospital Authority, 2018), as compared to that of 5 to 15 per 100,000 admissions reported in general hospitals of the United States.

Way Forward

Although evidence shows that modification of the physical hospital environment alone can reduce the risk of inpatient suicide, mental healthcare professionals have paid efforts on increasing compliance with suicide prevention procedures and therapeutic communication, so as to improve management and care of psychiatric inpatients and prevent them from committing suicide. The Coordinating Committee in Psychiatry will continue to monitor the standards of psychiatric inpatient services and enhance patient safety with a view to reducing the suicidal risk of patients in psychiatric inpatient settings.

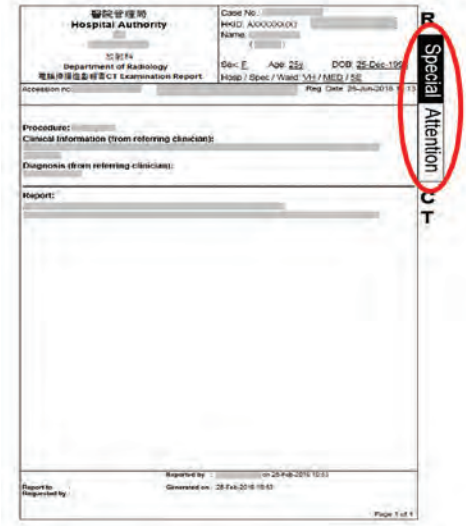
COC (Radiology)

Handover of Important Investigation Results – Implementation of "Special Attention" Reminder for Radiology Report

Radiological imaging is invaluable to facilitate clinicians in the course of diagnosis, formulation of treatment and follow-up plans. Mishaps due to missing or oversight of radiology results can lead to potential devastating clinical consequences. The "Urgent Attention" reminder on radiology report was implemented in 1999 to indicate cases requiring urgent attention. To further improve the communication between radiologists and clinicians via the Radiology Information System (RIS), the "Special Attention" reminder for computed tomography reports was piloted in the New Territories West Cluster (NTWC) in December 2016 to mitigate the risks involved. The pilot workflow demonstrated an effective enhancement of communication with clinical management teams and an increased awareness on important investigation findings. Evaluation conducted in NTWC revealed positive feedback that supports the "Special Attention" reminder to be implemented in all hospitals and extended to the other imaging modalities.

The COC (Radiology) collaborated with key stakeholders and frontline staff in different platforms. The new function of "Special Attention" reminder for radiology report was supported for implementation with unified indications adopted among all hospitals to focus on (i) new cases of malignancy; (ii) incidental case of suspicious lesion; (iii) follow up cases with suspected tumour recurrence for modalities including computed tomography, magnetic resonance imaging, ultrasonography, breast imaging, angiography, interventional radiology, fluoroscopy and general radiography.

After promulgation, the "Special Attention" reminder for radiology report was rolled out in phases since February 2018 and implemented in all Clusters in June 2018. At present, COC (Radiology) is working closely with different parties to prepare for the implementation of "Special Attention" reminder for enhancing the communication through "Clinical Inbox" in Clinical Management System (CMS), as an adjunct to the existing mechanism to facilitate timely handling of the results.



Radiology report marked with "Special Attention" reminder

COC (Surgery)

Introduction

The COC (Surgery) has been serving as an expert advisory body to HA on service development and other clinical-related matters. The composition comprises the Chiefs of Service of the 15 surgical departments, the chairman of the 5 specialty groups and the Director of Surgical Outcomes Monitoring & Improvement Program (SOMIP). Following the restructuring of Quality & Safety Division (Q&SD) in 2007, a new look was taken to realign the role and function of COC (Surgery). Among others, the chairmanship of COC (Surgery) is now assumed by clinicians in driving towards the direction of clinical leadership of COC.

COC (Surgery) is tasked with overseeing the quality and standard of surgical services provision in HA. There are currently 15 surgical departments delivering round-the-clock emergency general surgical services as well as elective services to the territory. There are also designated service centres for the provision of specialised services in Surgery. A summary of the existing service scope is as follows:-

Service Centres	HKEC		HKWC		KCC		KEC		KWC			NTEC			NTWC
	PYNEH	RTSKH	QMH	TWH	QEH	KWH (incl.	TKOH	UCH	CMC	PMH/ NLTH	YCH	AHNH	NDH	PWH	TMH/ POH
1. Emergency General Surgery	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Liver Transplant			✓												
2. Cardiothoracic Surgery			✓		✓									✓	✓
Heart and Lung Transplant			✓												
Emergency Adult Cardiac Surgery			✓		✓									✓	
Emergency Thoracic Surgery			✓		✓									✓	✓
Paediatric Cardiac Surgery			✓												
3. Paediatric Surgery			✓		✓			✓						✓	
4. Plastic Surgery (incl. Burn Service)			✓	✓	✓	✓								✓	✓
5. Urology Service	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓*	✓	✓	✓	✓
Renal Transplant			✓		✓					✓				✓	
Extracorporal Shock Wave Lithotripsy (ESWL)			✓							✓				✓	✓

** Elective OPD and Minor OT are provided by PMH Urology team. Emergency Urology Service is supported by KWC Urology call team.*

Accessibility To Service

Specialist Out-patient Clinic (SOPC) Waiting time

Despite the increase in new case number throughout the years with limited manpower, the waiting time at 90th percentile for new cases booking (routine) has been maintained at around 70 weeks in the past few years. In addition to adding new quota for surgery booking, the Surgery Departments in various hospitals have been working with different specialties such as Family Medicine to provide more treatment options for patients as well as to channel non-surgical cases for management under other specialists.

Elective Surgery Waiting Time Management

COC(S) has been monitoring the waiting time for selected elective surgery for about 10 years. Due to an ageing population, degenerative diseases such as Benign Prostatic Hyperplasia (BPH) has given pressure to our service. As such, COC(S) has followed the corporate direction to manage the waiting time of selected benign lesions. These measures include timely capture of waiting list and waiting time situation through the Clinical Data Analysis and Reporting System (CDARS) in the format of monthly waiting time report on 6 common benign conditions including gallstone, varicose vein, hernia, ureteral stone, renal stone and BPH. Besides, the waiting time for some critical diseases, such as, colorectal cancer and Coronary Artery Bypass Grafting (CABG) is also monitored as clinical indicators by respective specialty groups regularly.

Clinical Outcomes

Surgical Outcome Monitoring and Improvement Program (SOMIP)

The Release of the 10th SOMIP Report

The 10th SOMIP report that covered surgical operations conducted between 1st July 2017 to 30th June 2018 went live on the eKG platform. Out of the 20,776 elective operations and 5,814 emergency operations of major and ultra-major magnitude, we have observed a further reduction of crude mortality for both elective and emergency operations. Significantly, such reduction was statistically significant after risk-adjustment of patients' risks.

This report also identified 2 high outliers for emergency surgery and 1 high outlier for elective surgery. The SOMIP team has organised visits to these outlier hospitals in December 2018. The spirit of improvement was clearly visible. Through the help of multilevel analysis and discussion of mortality cases to fine granular details, surgical departments have identified their unique set of systemic and surgical issues and areas for improvement. The hospitals have been proactive in implementing measures and interventions to strengthen the pre-operative, intra-operative and post-operative care of patients.

Communication between major stakeholders in surgical care such as anaesthesia, intensive care, radiology, medical, nursing and hospital administration has been the key to success in improving surgical outcomes in outlier hospitals identified in previous SOMIP reports. By sharing of good practice and identification of systemic issues, we are confident about the effectiveness of the highlighted improvement measures.

With the impressive reduction of mortality rates (both crude and risk-adjusted) in the past years, the SOMIP team would now shift the focus to the reduction of complications or morbidities in relation to surgery. Parameters such as the occurrence of serious medical and surgical complications, the length of stay and re-admission would be closely monitored. In this regard, the Steering Committee would work closely with all the surgical departments and their surgical supervisors in coming up with constructive strategies in the betterment of surgical care and outcomes.

The SOMIP Forum on 19 January 2019

The 10th SOMIP Forum was held and honoured by the presence of Dr P Y Leung. The SOMIP team is grateful for Dr Leung's support for the past ten years. In the forum, Prof Paul Lai, Dr Sunny Cheung and Prof William Goggins provided the participants with highlights of the 10th report, the risk-adjusted analysis results as well as the statistical modelling of patients' data. Dr W C Yuen, the first director of SOMIP, recapped what SOMIP had achieved in the past ten years, and inspired the audience regarding future work to further improve the outcomes of surgical patients in HA.

In the second part of SOMIP forum, a panel discussion by Prof Francis Mok, Prof Enders Ng, Dr Kenny Yuen, Dr Fion Chan and Prof Paul Lai was held. A lively and informative discussion covered the use of enhanced recovery after surgery (ERAS) to reduce surgical complications and the management of frail patients. The participants also contributed their views and valuable comments.

In the closing remarks by Dr W Y So, colleagues were reminded that the critical success factor of SOMIP relied on the drive and hard work of healthcare professionals. Through multidisciplinary care, we have witnessed an improvement of surgical outcomes in the past ten years and the HA is very proud of such achievement.

The First Integrated Report on Cardiac Surgical Outcome by the Specialty Group in Cardiothoracic Surgery

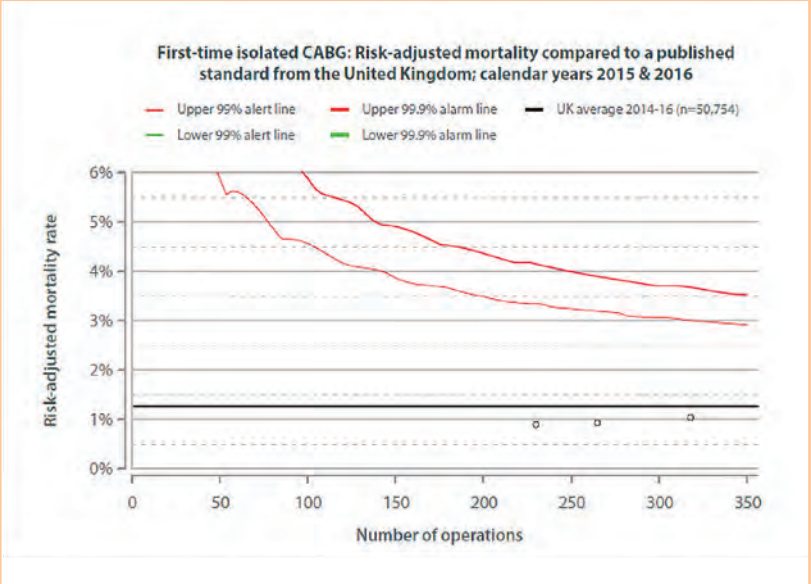
In 2018, the Specialty Group (SG) in Cardiothoracic Surgery (CTS) produced the first joint report on cardiac surgical activity and outcomes from the three centres providing cardiac surgical service. These included Queen Mary Hospital (QMH), Queen Elizabeth Hospital (QEH) and Prince of Wales Hospital (PWH).

Data on cardiac surgical activity and outcomes were collected in 2006 using a commercially available cardiac database system. It allowed integration with HA Clinical Management System (CMS) for sophisticated risk-adjusted outcome analysis. The project was piloted at PWH with start-up funding obtained from the Professional Development Agency of the Government of the HKSAR. This pilot was extended to all three units, where they use the same system with independent servers for data collection. The whole system and infrastructure have been designed so that we can move towards 'real-time' monitoring of outcomes, and outlying trends can be identified before they are clinically significant.

Working through CTS SG, definitions were aligned and agreed with appropriate risk-scores adopted. Following a validation of risk scores using Hong Kong population, the database validation exercise was performed. A 'feasibility' study was performed last year where the historical data of coronary artery surgery were independently extracted from our servers. The data were merged and benchmarked using risk-adjusted outcome from the United Kingdom (UK) Society for Cardiothoracic Surgery. This demonstrated a success in external benchmarking using an external collaborator whilst maintaining patient data confidentiality.

The crude mortality for Hong Kong was 4.8% for all cardiac procedures which is comparable with international standards. Risk adjusted the observed versus expected mortality (calculated using the EuroSCORE) was 41.6 versus 43.8. So overall, Hong Kong is performing as expected in terms of mortality related to the expected outcomes using our scoring model. For Coronary Artery Surgery overall crude mortality was 1.8% (798 cases). This is in line with international standards (UK mortality of 1.3%, in fiscal years 2014-2016, with 50,108 patients).

It was hoped that the next phase of outcome monitoring program would facilitate users to identify and correct deviations of performance at an early stage via an intrinsic system. Such report and our future plans should be able to reassure patients, clinicians, managers and commissioners that cardiac surgery program in Hong Kong is performing to international standards, and that the CTS SG is actively monitoring and improving its standards.

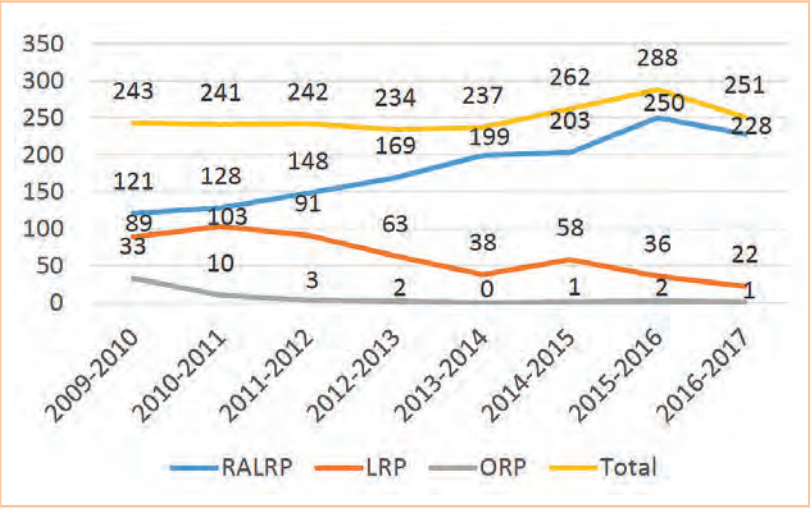


Project Highlights

Robotic Surgery

The first surgical robot, the da Vinci Surgical System, was approved for human use in 2000. In Hong Kong, Prince of Wales Hospital installed the system in 2005. Over the past 13 years with newer generations of the da Vinci Surgical System, a total of 5 systems had been installed in 5 different tertiary hospitals of 5 HA clusters respectively. More than 5,000 patients benefited from the minimal invasive surgery performed using the robotic system. Out of the different procedures done, robot assisted radical prostatectomy (RALRP) was the most common and the advantage would be discussed.

Data extracted from SOMIP report revealed that the percentage of prostate cancer patient operated using the da Vinci system increased from 50% in 2009 to >90% in 2017.

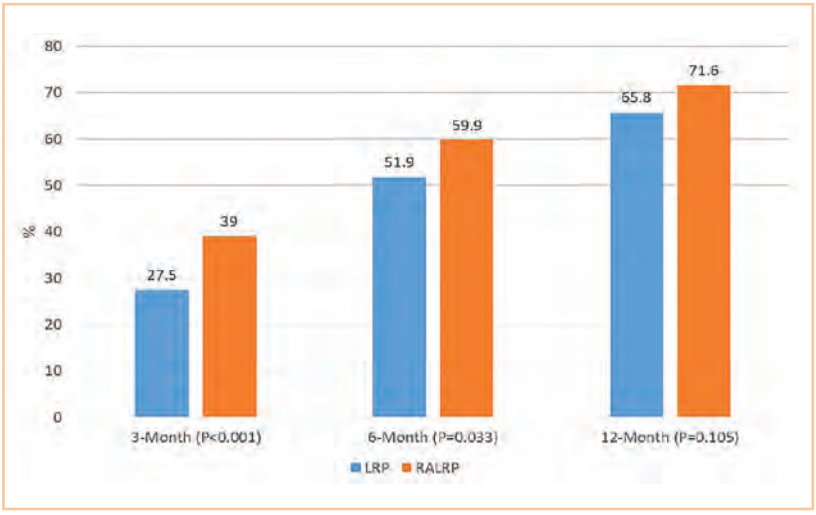


The Robotic Sharing Programme allowed all HA patients to access robotic surgery. Urologic surgeons from the centres without the robot system would be provided with training and mentorship by experienced robotic surgeons.

As compared to pure laparoscopic approach radical prostatectomy (LRP), the morbidity of RALRP via the da Vinci system was minimal. During the early learning phase, the operation time including the time for docking of the robot was slightly longer than LRP. Blood loss and transfusion rates were however, significantly lower in robotic surgery with less clinical or radiological urethral anastomotic leakage as compared to LRP.

The Length of stay (LOS) after RALRP was 5.7 +/- 2.6 days (2-21) while LRP was 9.1 +/- 6.2 days (3-55) and Open Radical Prostatectomy (ORP) was 11.1 +/- 6.5 days (4-35) ($P<0.0001$).

Patients were also able to achieve better continence control at 3 months, 6 months and 12 months after surgery.



With improved technique and experience, the operation time for RALRP are usually under 2 hours. In 2018, Prince of Wales Hospital achieved the benchmark of completing 100 RALRP cases.

The adoption of surgical robot is definitely a major breakthrough both locally and internationally. Other potential indications include robotic surgery for cancer of kidney, rectum, cervix, liver or pancreas. At present, there are new robotic systems being developed by different international companies. In the future, more patients would benefit from the development of new robotic systems with the competition amongst manufacturers driving the cost down.

Way Forward

Metabolic and Bariatric Surgery

Obesity and Type 2 Diabetes Mellitus (T2DM) is an ongoing health-care problem which is very difficult to be managed by current medical treatment. In Hong Kong, about 200,000 people have a Body Mass Index (BMI) over 30. More than 40,000 obese diabetic patients failed to achieve optimal glycemic control (HbA1c).

Bariatric surgery was first started in Prince of Wales Hospital as a research project by The Chinese University of Hong Kong in 2002. The number of metabolic and bariatric surgeries as noted from the SOMIP data was increasing, indicating more HA hospitals had started such operations. Noting an increasing demand and potential risk of the new service entity, a workgroup on "Development of Metabolic Surgery" was established by joint effort of COC(S) and Central Committee on Diabetes Service (CCDS). This workgroup aimed to estimate the service demand in HA, to formulate the service delivery model among HA hospitals, to establish the quality and standard of care of the service, and to monitor the outcome of surgery. It is hoped that this workgroup would provide a roadmap for the future development of metabolic and bariatric surgery in HA with a view to providing a safe, effective and sustainable surgical service for patients with morbid obesity and poor diabetes control.

Enhancement of Sub-specialty Training in General Surgery

History

In Hong Kong, General Surgical training is divided into three stages: basic training, higher training and post-fellowship sub-specialty training. After obtaining fellowship, a surgeon is expected to be able to take care of 90% of general surgical patients. Nevertheless, it would still be challenging to take care of patients with diseases of particular sub-specialties.

The idea of sub-specialty training in General surgery is not new. This idea was brought up in the College of Surgeons of Hong Kong (CSHK) back in 2003 by the College President Dr Samuel Kwok. A task force was set up and led by Prof C M Lo. Due to unforeseeable circumstances, the project was suspended for a few years until about 2010 when Dr H T Luk took the Presidency. The taskforce was re-activated the framework of sub-specialty training was established.

Need for Sub-specialty Training

The need arises from the advancement in surgical knowledge and surgical techniques, especially endoscopic and laparoscopic surgery. In the old days, all surgeries were done in an open manner with the dictum 'big surgeon makes big incision', and all operations could be finished with just a few types of instruments. Nowadays, surgeons need to adopt and adapt to new surgical instruments and technology which constantly change. New knowledge on diseases and new treatment modalities are coming out in faster pace. It becomes obvious that surgeons cannot be 'jack of all trades'. Indeed most surgeons now will have their own field of sub-specialty interest in their practices. Sub-specialty training is a way to ensure proper training of surgeons in the relevant field of sub-specialty.

Current Status

Seven sub-specialties in General Surgery are defined by the CSHK. Most of the surgical departments in HA hospitals are involved in sub-specialty training. To ensure that patients will receive similar standard of care in all clusters and to facilitate better manpower planning, the HAHO is taking stock of surgeons with sub-specialty interest and training in each cluster. For sub-specialties with small number of surgeons, e.g. vascular surgery, HAHO is coordinating the services with the hub-and-spoke model to ensure delivery of services to those in need.

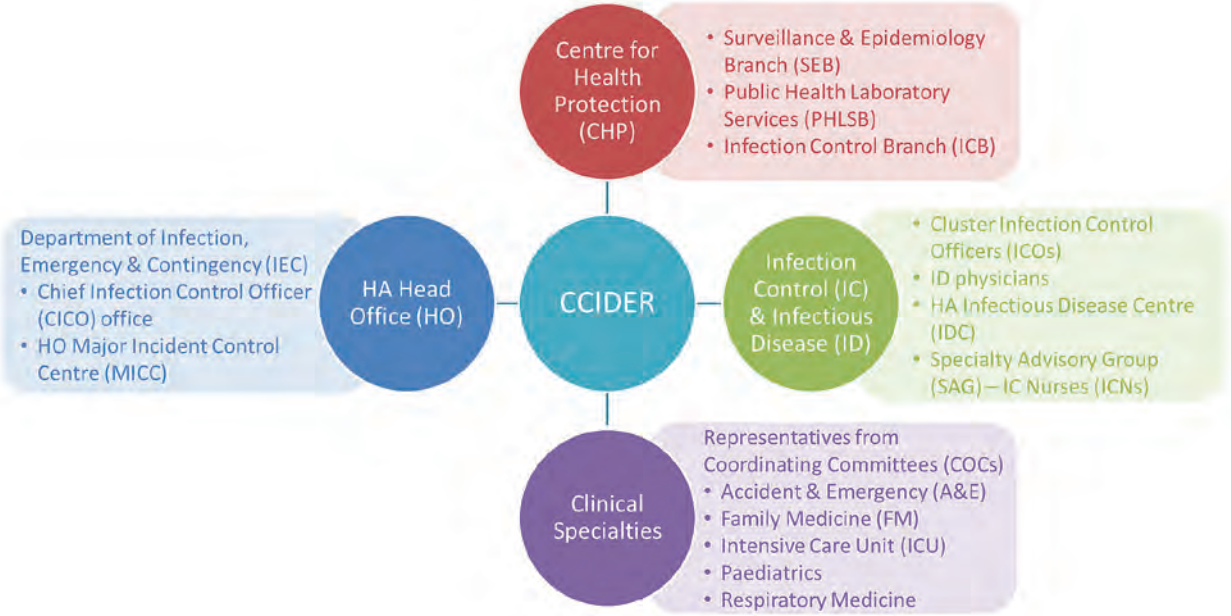
Way Ahead

We envisage that sub-specialty training will stay and change the way of surgical services delivery in HA. It is still unknown if different hospitals in a cluster would take up different sub-specialties, or whether cluster sub-specialty teams would take care of all patients in different hospitals in the cluster. Despite the General Surgery Specialty Group developing guidelines for the care of oesophageal cancer patients with cluster team model, little is known if this is the way to go. We think, only by monitoring the outcome of treatment, we can have the answer.

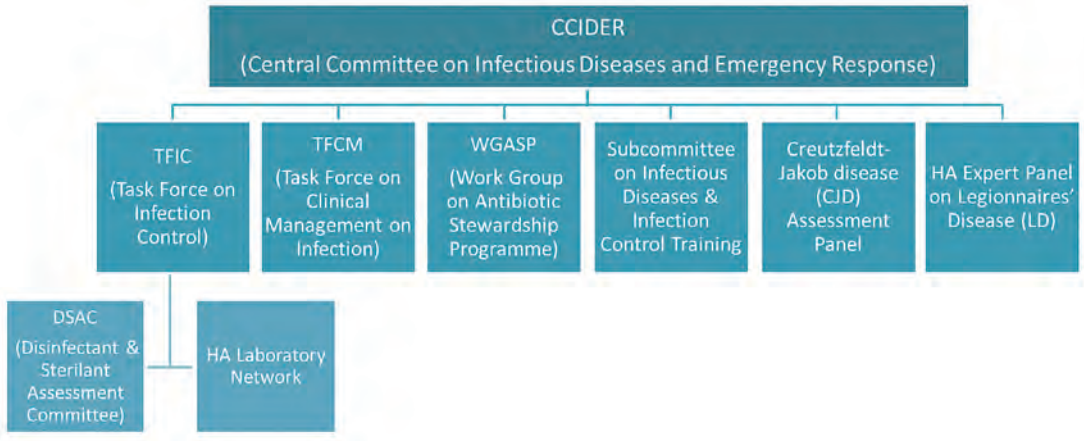
CC on Infectious Disease and Emergency Response

Introduction

The Central Committee on Infectious Diseases and Emergency Response (CCIDER) provides strategic advice on the management of infectious diseases (ID) and infection control (IC); it also leads and coordinates corporate responses to major ID outbreaks and crises. The chairman of CCIDER is the Director of Quality & Safety and the vice-chairman is the Chief Infection Control Officer (CICO). Several task forces and working groups are established under CCIDER to drive the operations on their respective aspects.



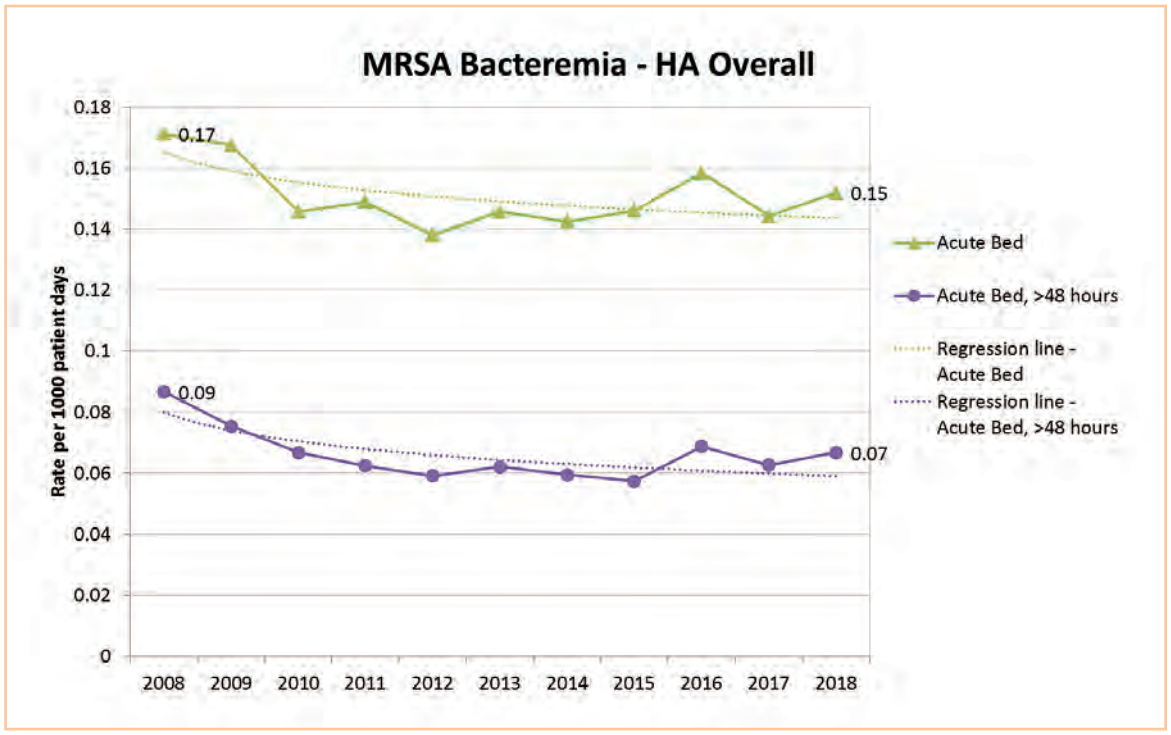
Membership of Central Committee on Infectious Diseases and Emergency Response (CCIDER)



Task forces and Working Groups under Central Committee on Infectious Diseases and Emergency Response (CCIDER)

Clinical Outcomes

Methicillin-resistant Staphylococcus aureus (MRSA) bacteraemia rate is a recognised cause of nosocomial infection associated with a potentially serious outcome. Following concerted efforts to improve prevention, the overall rate of MRSA bacteraemia identified from acute beds has decreased and remained static over the years.



Trend Monitoring of MRSA Bacteraemia in acute beds in HA (2008-2018)

Project Highlights

Local Dengue Fever Outbreak

In August 2018, a local dengue fever outbreak was identified with 29 local cases reported. In response to the emerging situation, a series of enhanced measures were activated.

Vector control

All hospitals enhanced mosquito control by increasing the frequency of inspection from weekly to daily. At construction sites of HA capital projects, application of larvicidal oil and fogging was performed twice and once a week respectively. In view of the clustering of cases in Cheung Chau, further enhanced measures were carried out in St John Hospital, e.g. installing doors with mosquito nets and mosquito screens at windows along verandahs, and setting up mosquito prevention stations to supervise the use of mosquito repellent.

Enhanced vector control in St John Hospital

Laboratory capacity

To cope with the increasing service demand, HA increased testing capacity in cluster laboratories by stockpiling around 7,000 rapid tests for dengue fever. To enable earlier identification of infected patients in the viraemic phase, HA extended the laboratory service to 7-day-a-week, with the turnaround time reduced to 24 hours. During the local outbreak, over 1,600 test requests were received.

Reduction in turnaround time (TAT) of rapid test for dengue fever

Timely communication

In collaboration with the Centre for Health Protection, HA activated the electronic platform "e-Dengue" to facilitate the reporting of suspected and confirmed cases for timely public health investigation.

Enhancement of Laboratory Service for Tuberculosis

In 2018, HA enhanced laboratory testing turnaround time (TAT) for the diagnosis of tuberculosis (TB) by installing additional Mycobacteria Growth Indicator Tuber (MGIT) machines for mycobacteria detection. All clusters started to provide rapid molecular detection of *Mycobacterium tuberculosis* complex and Rifampicin-resistance gene (rpoB gene) for all new cases with positive acid-fast bacilli smear. This enables identification of multidrug resistant *Mycobacterium tuberculosis* (MDR-TB) to be possible within 24 hours. The general patient care, optimisation of antimicrobials, infection control as well as public health can thus be significantly improved.

Reduction in turnaround time of negative culture

Training on Infectious Diseases and Infection Control

A recurrent funding is dedicated to the organisation of training on infectious diseases (ID) and infection control (IC) every year. The subcommittee on ID&IC training/the Infectious Disease Control Training Centre (IDCTC) is responsible for coordinating and organising related training activities, in collaboration with CICO office and HA Infectious Diseases Centre (HAIDC). It aims to maintain and enhance staff knowledge and expertise in ID & IC. In 2018/19, it is planned to conduct theme-based training workshops and short courses, IDIC preparedness training programs, and provide sponsorship for local and overseas training. From April to December 2018, a total of 17 courses/programmes were delivered to 469 participants.

From April to December 2018	Local	Overseas
No. of courses/programmes	6	11
No. of participants	456	13

Statistics of Training on Infectious Diseases and Infection Control in 2018

Way Forward

Infectious diseases continue to pose challenges to healthcare settings. Infection control is of utmost importance in hospitals to protect the patients, the staff and the public. CCIDER will remain vigilant and will continue to have close collaboration with CHP in monitoring the latest situation of different infectious diseases, and advise on management of infectious diseases, infection prevention and control and contingency planning for outbreaks.

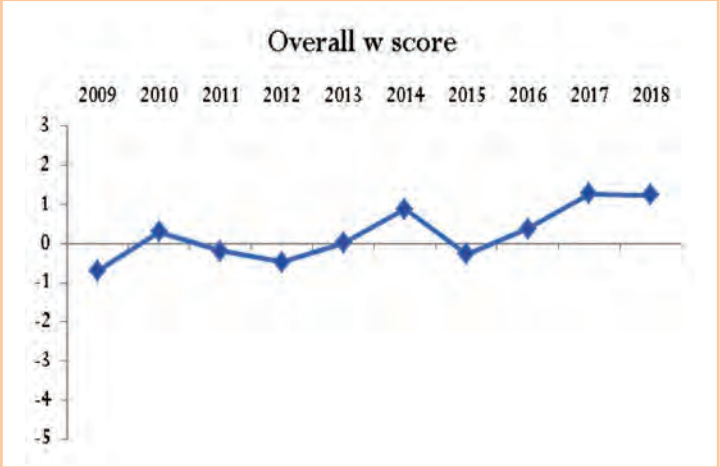
CC on Trauma Service

Introduction

CC (Trauma Service) provides strategic advice on management of trauma services in HA Trauma Centres in order to ensure the quality of services. It consists of representatives from HA Trauma Centres, and those from the COCs in Accident & Emergency, Anaesthesiology, Intensive care, Neurosurgery, Orthopedics & Traumatology, Radiology, and Surgery. CC (Trauma Service) also coordinates trauma care at cross-cluster and trans-disciplinary level, and plays a significant role to establish the related guidelines and audit performance, initiate training activities and direct trauma service development.

Outcome

In 2018, there were 3,905 reported major trauma cases, representing a 5% increase as compared to 2017. The mean age of trauma victims increased from 46 years old in 2011 to 51.7 in 2018. Low fall (falls within 2 meters), motor vehicle collisions incidence and stuck by or collision with object/ person were the three most common mechanisms of injury within the study group.



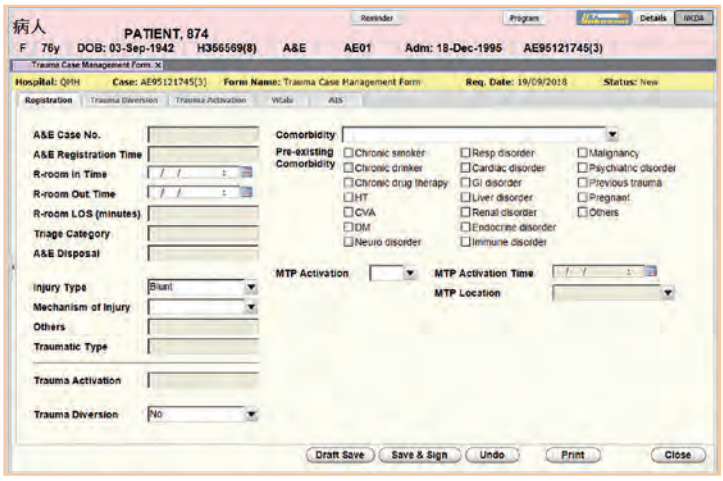
Referencing the American College of Surgeons Committee on Trauma, the Trauma and Injury Severity Score (TRISS) were used for benchmarking trauma outcome. A trend of progressive improvement since 2009 was shown. In 2018, there was about one extra survival than expected for every 100 patients treated under HA.

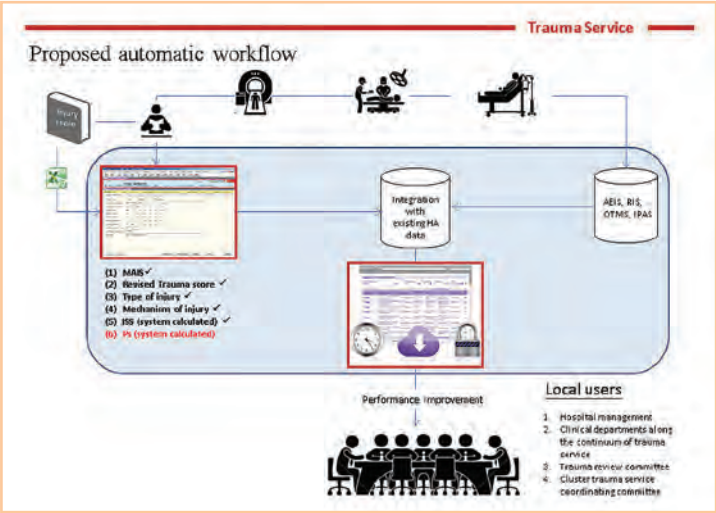
Trauma Centre Peer Review

In 2017, CC (Trauma Service) conducted the first Trauma Centre Peer Review in one of the Trauma Centres to identify gaps, lead training enhancement and increase resource provision. Following a SWOT analysis, the expert review team provided solid and useful opinions and recommendations. Along with the recommendations, the centre implemented targeted measures on potential aspects of improvement, e.g. strengthening the governance structure, revamping the trauma audit, implementing a newly-designed trauma management checklist, streamlining emergency operation booking logistics and workflow, expediting preliminary CT report for trauma, etc. Improvement in performance was reflected by a positive rise in "w score" (from negative to positive) in 2018.

Trauma Patient Database

Since 2017, a Trauma Case Management Form was developed to create a platform to collect trauma data. Subsequently, a Trauma Patient Database Working Group including all trauma services stakeholders and a representative from the Hospital Authority Information Technology and Health Informatics team was setup. A 3-year project of HA Trauma Patient Database was commenced to develop a comprehensive trauma case form with an aligned set of core data among all trauma centres. It could support multidisciplinary trauma review, process modification and performance improvement. We aim to implement the database in all trauma centres by 2020/21. In the future, we hope this would be a timely and usable data/report to support regular trauma review and ad hoc enquiry.





Commissioned Training

Central Commissioned Training Program was an annual activity under CC (Trauma Service). Referencing the annual report with a marked increasing trend on elderly trauma, the program theme of this year was “Enhancing Geriatric Trauma Management”.

Two speakers from USA and Canada, Prof Marie Crandall and Prof Camilla Wong, together with our local experts from Neurosurgery, Orthopedics, Geriatrics, Physiotherapy and Occupational Therapy were invited. They shared their valuable comments on geriatric trauma management. A total of 146 colleagues participated in this constructive inspirational event.

Pearls of Wisdom

It was a sunny morning during the week, when we stepped into Dr PY Leung's office for this interview. It was just a day after overseeing his last Hospital Authority Convention, and everyone was still on a high from the previous two day's activities, highlighted by PY breaking out into song during the opening ceremony, wishing the organisation well into the future. Many in the audience could not help themselves and joined in with the singing, and it brought tears to many a staff who reminisced about the challenges Hong Kong and the Hospital Authority had experienced throughout the years.

A few weeks ago we requested to have a chat with PY, who joined the HA as its inaugural Director of Quality and Safety, to share his views on the quality movement in the Hong Kong health system. It was a very candid conversation, and he shared his experiences and observations from the establishment of the Quality and Safety Division, to when he is leaving the organisation after nine years at the helm.

"During the time when Shane Solomon was Chief Executive of the HA, he saw the need to focus on service quality and patient safety. He commissioned a consultancy report that recommended the restructure of the organisation, with a view to improve clinical governance, and thus the Division of Quality and Safety was born." PY laughed when he reminisced, "It was an open recruitment, and as everyone knows, I was originally from the Department of Health. For me to join the HA, everyone was second-guessing my motives, including whether I was here to be a spy for the Department! In fact, when I was leading emergency responses at the Department, it dawned on me that inter-institutional collaboration and coordination was critical in our health system, and I wanted to develop this relationship and systems approach between the two largest public health organisations."

PY was very honest about his lack of understanding of quality and clinical governance, as back in the day, it was a relatively new concept. "The concept of clinical governance referred to in the consultancy aligned with publications that arose out of the UK's National Health Service, and I had to learn about what this was all about, before the interview as well as on the job!"

Beyond the coordination of emergency situations, PY observed that there were a few areas that required concerted efforts across HA, in particular patient safety through the management of clinical incidents, improving access and waiting lists, introducing new and most effective technologies into the organisation, as well as improving patient experience through their feedback. This gave birth to the Patient Safety & Risk Management, Quality & Standards, Clinical Effectiveness & Technology Management and Patient Relations & Engagement Departments in the Quality and Safety Division respectively.

It comes across obviously that PY holds patient safety in high regard, as he discussed the management of clinical incidents. "It does not matter that clinical incidents occur, whether they are Sentinel Events, Serious Untoward Events, or any other clinical incident. The reality is that they will continue to occur, and the most important thing is how we address them. If an incident occurs, we must acknowledge it and address it head on, by caring for the patient in front of us as best as possible, and then look at ways to ensure this never happens again to the next patient."

He goes on to address the occasionally contentious issue of public disclosure, "I tend to be proactive in the public disclosure of clinical incidents, as I believe this is an important way to demonstrate transparency to patients and relatives, and build trust with the public. Unfortunately sometimes our frontline staff see this as a slight on them, and it is critical for the hospital management to demonstrate that this is not about setting a blame culture, rather it stems from an accountability and willingness to address incidents that occur. Changing culture is not easy, and a balanced approach needs to be struck. With each incident that occurs, we must see it as an opportunity to remind ourselves of the importance of learning from it and driving change, while at the same time making sure that the right emotional and psychological support is provided to the staff involved."

We go on to discuss another political hot potato, which is the issue of accreditation. Accreditation in HA hospitals has been suspended indefinitely at this stage, with various interest groups claiming to be overburdened by documentation and paperwork. "The message is sometimes lost unfortunately." PY explains, "Accreditation is about demonstrating to the community that the organisation and the systems involved are robust and safe for our patients. It is similar to the credentialing of medical practitioners, but just for the larger system."

When asked about why it has been suspended, he explains, "Accreditation is conceptually sound, what we need to improve on is the implementation and the communication around its purpose." You can sense the tone of disappointment in his usually confident voice, "I have no reservations in saying that this is something we can, and should, improve on in order to lessen the burden on our frontline colleagues, while at the same time demonstrating the capabilities and positive work that each hospital does. We must develop better ways to ease this burden on our clinicians while achieving this aim."

The conversation soon starts to turn towards looking towards the future, and we ask PY to identify a focus area for quality. 'Leadership' came up without hesitation. He says, "It is critical that people who are leading quality of care demonstrate leadership traits, in particular situational leadership and awareness of the environment. This is often backed up by domain knowledge, experience, skills and abilities. Specific quality foci will always change with time, but improvement really depends on individual qualities of the people. That is culture. Good leadership and management need insight, to be willing to

listen, and to understand that leadership does not arise from position, but rather your credentials, both as a person and what you have achieved."

He explains his point using an analogy with a conductor of an orchestra, who actually does not produce the music, but can only try and understand where the off-key areas are, and then coordinate to help the performers shine even more. PY acknowledges that it is difficult, as leading change is never easy, and requires a long-term commitment. "I actually think this speaks to a person's professionalism, commitment and core values! Whether we can stay the course to continue to improve despite adversity. What is not done well today, can always be changed tomorrow."

Finally we asked him for a piece of advice he would like to give clinicians who want to contribute to improving quality of care, and he volunteered two. "Trust," PY says. "Building trust is one of the most important things in life. When people trust you as a person, it is a lot easier to change for the better. Build your personal qualities and attributes, as simply being in a senior position never changes practice or systems. You can learn everything else in management. The other thing is to never blame others. We must always consider the influence of ourselves, and reflect on how we could do better in a particular situation. It is hard to accept but it is actually the easiest thing to improve if you can bring yourself to accept that. We must continue to drive towards a no-blame culture." There have been articles about a no-blame culture in the media recently, and perhaps this may have struck a chord with PY.

As we conclude our interview, the whole singing scene at the HA Convention somehow drifts into mind. If we think through the entire performance, PY led the opening verses of the song from the lectern, and when people started joining in to sing, he stepped to the side of the podium and let the others take centre stage, all the way to the end. Perhaps this is what he means by leadership.

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