



QUALITY
IMPROVEMENT
AWARDS

QUALITY INITIATIVES

The 24th Annual
ACHS Quality Improvement
Awards 2021

Quality Initiatives – Entries in the 24th Annual ACHS Quality Improvement Awards 2021.

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Introduction

The 24th Annual ACHS Quality Improvement Awards 2021

The annual ACHS Quality Improvement (QI) Awards were introduced in 1997 to acknowledge and encourage outstanding quality improvement activities, programs or strategies that have been implemented in healthcare organisations.

In 2021, the 24th Annual ACHS QI Awards were open to submissions from all domestic ACHS and international ACHSI member organisations following the ACHS NSQHS (National Safety and Quality Health Service) Standards Program, EQuIP6 (Evaluation and Quality Improvement Program), Standards Program, EQuIP6 Day Procedure Centres, EQuIP6 Oral Health Services, EQuIP6 Haemodialysis Centres, EQuIP6 Aged Care Services, EQuIP6 Healthcare Support Services, and the ACHS Clinical Indicator Program.

Judging was conducted externally with separate panels of three judges for each of the QI Awards categories:

Clinical Excellence and Patient Safety: This category recognises innovation and demonstrated quality improvement in the delivery of safe, effective patient care.

Non-Clinical Service Delivery: This category acknowledges a demonstrated outcome of improvement and innovation in patient and/or consumer services and organisation-wide practice including services provided by community and allied health organisations.

Healthcare Measurement: This category recognises organisations that have measured an aspect of clinical management and/or outcome of care, taken appropriate action in response to that measurement, and demonstrated improved patient care and organisational performance upon further measurement. Healthcare measurement can include data collected from the ACHS Clinical Indicator program or other methods of monitoring patient care processes or outcomes. Both quantitative and qualitative data can be used, however this category must describe the initial measurement, the analysis of that measurement, the action(s) implemented, and the improved measurement(s).

Global Quality Improvement Award: The Global Quality Improvement Award recognises organisations that are using Australian healthcare standards to strengthen quality improvement frameworks internationally. ACHS has recognised the implementation of Australian healthcare standards internationally for many years, previously awarding Highly Commended Certificates.

The Global Quality Improvement Award is selected from all of the Submissions received by ACHS.

Each judging panel consisted of an ACHS Councillor, an ACHS surveyor and a representative from an ACHS member organisation.

Submissions were required to meet specific criteria that were weighted equally:

- Judges assessed all eligible submissions on the five (5) ACHS principles of: consumer focus, effective leadership, continuous improvement, evidence of outcomes and best practice;
- Judges assessed additional criteria: improvement in patient safety and care, measured outcomes, applicability in other settings, innovation in patient care and/or processes and relevance to the QI Awards category;
- The submission MUST relate to a period of up to no more than two (2) years prior to the year of entry.

Each winning submission in the ACHS QI Awards receives a Certificate of Acknowledgement, a QI Awards trophy, and a cash prize provided by ACHS.

ACHS publishes submissions from all participating organisations to share and encourage exceptional quality improvement strategies amongst the ACHS member organisations.

The electronic version of this document will be published on the ACHS website (www.achs.org.au).



Winner Submissions by Category

The 24th Annual ACHS Quality Improvement Awards 2021

CLINICAL EXCELLENCE AND PATIENT SAFETY

Illawarra Shoalhaven Local Health District, NSW

Emergency Services

Safer, better emergency nursing care for the Illawarra Shoalhaven Local District
with HIRAID: a proven, up-scalable emergency nursing framework

Kate Curtis, Belinda Munroe, Margaret Fry, Margaret Murphy, Julie Considine, Ramon Shaban, Hatem Alkhouri and Prabhu Sivabalan

Full submission page 6

NON-CLINICAL SERVICE DELIVERY

Liverpool Hospital, NSW

Speech Pathology Department

12 Books for 12 Months: Enhancing Early Language and Literacy Environments

Jessica Anton, Jennie Cusiter, Ellen Dunn, Brooke Butt, Kate Short and Tia Croft

Full submission page 29

HEALTHCARE MEASUREMENT

Prince of Wales Hospital, NSW

Pharmacy Department

Improving Access to Medication Review in High Risk Inpatients

*Adriana Chubaty, Carly Wills, Jessica van Schreven, Anne Steffensen, Elizabeth Browne, Elizabeth Mason,
Martin Mackertich and Christine Conn*

Full submission page 59

GLOBAL QUALITY IMPROVEMENT

Fresenius Medical Care Asia Pacific, Hong Kong SAR

Clinical Quality Asia Pacific

The Implementation of an Electronic Auditing Program Across 10 Countries

Lisa Webb and Wendy Khor

Full submission page 74

Hong Kong Baptist Hospital, Hong Kong SAR

Medical Imaging Centre

Key to Combat COVID-19 in Hong Kong Baptist Hospital: Agility, Dedication and Passionate Support from All
Staff Levels

Tony Ng, Cindy Wong, Catherine Yip, Grace Wong and Patrick Lau

Full submission page 87



Highly Commended Submissions by Category

The 24th Annual ACHS Quality Improvement Awards 2021

CLINICAL EXCELLENCE AND PATIENT SAFETY

Beechworth Health Service, VIC

Falls Prevention Working Group

Mobility and Independence at Beechworth. A replicable, scalable model for our highest clinical risk - Falls
Shell Morphy, Lisa Allen, Mark Ashcroft, Sharon Knowles and Julia Brisdon-Farr

Western Sydney Local Health District, NSW

Western Renal Service

From Standard to Incremental: Improving prescribing practice in peritoneal dialysis
Mary Ann Nicdao, Germaine Wong, Katrina Chau, Kamal Sud, Surjit Tarafdar, Martin Howell, Allison Tong and Karine Manera

Auburn Hospital, NSW

Maternity Services

Baby Steps

Helen Mou, Julianne Harvey, Tanja Nietlisbach, Lidiya Malinov, Heidi Engelbrecht, Ana Donnellan and Kate Murphy

Western NSW Local Health District, NSW

Virtual Clinical Pharmacy Service

A virtual pharmacy model of care improves the safe and effective use of medications at rural and remote hospitals
Brett Chambers, Shannon Nott, Cristen Fleming, Anna Packer and Louis Botha

NON-CLINICAL SERVICE DELIVERY

Redcliffe Hospital/Metro North Health, QLD

Redcliffe Hospital Pharmacy/Metro North Health Aboriginal and Torres Strait Islander Leadership Team

“No longer choosing between medicine and food”: The Better Together Medication Access program

Ann Whitaker, Kim Walker, Geoffrey Grima and Peter Coomber

Northern Sydney Local Health District, NSW

Mental Health Drug and Alcohol

Cultural engagement – Hey you Mob

Michelle Lawrence, Alice Lance and Andrea Taylor

Hunter New England Local Health District, NSW

Population Health

Cultural Governance of the COVID-19 public health emergency response

Kristy Crooks, Kylie Taylor, Belinda Tully, Tammy Buckland, Charlee Law and Katie Brett

Special Commendation – Initiative to Advance Aboriginal and Torres Strait Islander Health Outcomes

We Help Ourselves (WHOS), NSW



Administration and Head Office

ACHS and ATCA Partnership Initiative – WHOS Inaugural Double Accreditation February 2021

Garth Popple

HEALTHCARE MEASUREMENT

Women’s and Children’s Health Network, SA

Women’s and Babies Division

PerinatalCare QI: Preventing Perinatal Brain Injury in Preterm Infants (PINI) initiative

Amy Keir, Charlotte Groves, Angela Cavallaro, Fiona Margrie and Alice Rumbold

BreastScreen, ACT

Cancer and Ambulatory Support, Canberra Health Services

Pain management in the biopsy procedure

Julianne Solway and Debra Howse

Special Commendation – Initiative to Advance Aboriginal and Torres Strait Islander Health Outcomes

St John of God Health Care, WA

Hospital Management Committee

Partnership with Djaalinj Waakinj Aboriginal Ear Health Program

Helene Bordas and Sarah-Jayne Powell

GLOBAL QUALITY IMPROVEMENT

Hong Kong University Shenzhen Hospital, China

Reduction of incidence rate of Postpartum Hemorrhage within 2 hours after Vaginal Delivery and severe complications.

Wang Xue, Liao Shu Zhen, Qin Qiao Yi, Lin Jing Chun, Wu Ting, Xu Yue, Wang Xiao Xiang and Wang Jie

Hong Kong University Shenzhen Hospital, China

Thoracic Surgery

To make a high risk thymectomy for myasthenia gravis to be a routine operation by ERAS

Pang Da Zhi, Joe Fan, Li Jing Long, Zhang Ji Tian, Liu Ru Tai Yang, Liang Ya Nan, Xu Xue Bing and Tang Ying

Hong Kong University Shenzhen Hospital, China

NICU Team

Reduce the incidence rate of Ventilator associate pneumonia (VAP) in NICU

Yin Xue, QianShen Zhang, Liang Bing Wang, Na Zeng, Xiu hong Ou and Lu Wang

Hong Kong University Shenzhen Hospital, China

Total solution in quality management of medical equipment

Huang Feiyan, Guo Daiqi, HO CHI HIN, Chan Yuk Sim, Zhao hui, Mo Caiyan and Huang Zuoyun

Hong Kong University Shenzhen Hospital, China

Enhance outpatient experience through multi-dimensional patient-centered communication



Li Weijia, Tak Man WONG, Zhang Zeqian, Lin Jiaxin. Yu Mengyuan , Tan Liji and Ai Mei

International Medical Centre, Kingdom of Saudi Arabia

Infection prevention and control

COVID-19 Risk Assessment by Failure Mode and Effect Analysis

Nashaat Hamza, Omnia Ismail Hassan and Tasneem Abdulwahab Bogess



CLINICAL EXCELLENCE AND PATIENT SAFETY

WINNER

Illawarra Shoalhaven Local Health District, NSW

Emergency Services

Safer, better emergency nursing care for the Illawarra Shoalhaven Local District with HIRAID: a proven, up-scalable emergency nursing framework

Kate Curtis, Belinda Munroe, Margaret Fry, Margaret Murphy, Julie Considine, Ramon Shaban, Hatem Alkhouri and Prabhu Sivabalan

AIM

The aim of this project was to implement HIRAID into Emergency Departments in Illawarra Shoalhaven Local District (ISLHD) to test the hypothesis that HIRAID improves the quality of emergency nursing care, reduces patient deterioration and delivers cost savings to the health care system. HIRAID (History, Identify Red flags, Assessment, Interventions, Diagnostics, communication and reassessment: Figure 1) is the only validated educational emergency nursing framework that delivers a consistent and systematic approach to clinical care and professional development for emergency nurses.

SUMMARY ABSTRACT

Hospital Emergency Departments (EDs) are uniquely complex and challenging healthcare environments. In 2018–2019, Australia's EDs treated more than 8.4 million patients (23,000 patients per day) (Australian Institute of Health and Welfare, 2020). Despite this, the quality of emergency patient care is inconsistent and results in extended wait times, patient deterioration, poor pain management, poor nursing documentation, human suffering and patient dissatisfaction. These avoidable lapses in safety and quality have substantial costs, in terms of both the effect on people's lives and finances (Harrison et al., 2015). Standardised patient assessment during emergency care beyond the ABC of Airway, Breathing and Circulation is required.

Emergency nurses are responsible for the initial assessment, management and safety of critically ill and injured patients. They are the first and sometimes only clinicians that patients see, so the quality of their initial assessment and ongoing treatment is vital (All-Party Parliamentary Group on Global Health, 2016). This is especially true during this current COVID-19 pandemic, where nurses are being deployed to work in unfamiliar emergency situations. Emergency nurses need to be able to operate in a framework that authorises and empowers them to undertake comprehensive assessments and escalate care to meet the clinical needs of patients as required (Curtis et al., 2020a).

To date, it has been estimated that between 36%–71% of adverse events in the EDs are preventable (Munroe et al., 2016a). However, there is no standardised emergency nursing framework in use for the 29,000+ emergency nurses working in Australia's 287 EDs (Jones et al., 2015). What is lacking in emergency nursing clinical practice is: (1) robust evidence to enable consistent, high quality emergency nursing care; (2) tailored implementation solutions for different emergency care settings; and (3) sustained practice change in the complex ED environment. Moreover, for ED nurses on the frontline of the COVID-19 pandemic globally, nurses are dealing with a crisis like this for the first time, reinforcing the need for a universal and standardised nursing care framework to improve nursing care in these high-pressure environments.

In an effort to standardise emergency nursing care, an innovative multi-institutional research program was undertaken in collaboration with clinicians, health service providers and policy makers across Australia. The outcome of this collaboration was the HIRAID emergency nursing framework (Munroe et al., 2015). HIRAID (is the first standardised emergency nursing framework in the world that improves:

(a) emergency nursing assessment; (b) recognition and escalation of clinical deterioration; (c) pain management; (d) patient experience and (e) clinical handover. It is the only validated framework designed to enable emergency nurses



to systematically assess and manage ED patients (Munroe et al., 2013) and provides a clear pathway to reduce variation and deliver safe, quality, and consistent emergency care to all ED patients, and presentation types, in metropolitan, regional and rural hospitals in NSW.

HIRAID was developed with experts and its implementation tested in Illawarra Shoalhaven Local Health District (ISLHD) EDs (302 nurses) using a multi-pronged behaviour change strategy. The Illawarra Shoalhaven stretches 250 km², delivers care to 400,000+ residents and manages 170,000+ patients in its metropolitan, regional and rural ED's. Causal factors to all 920 deterioration events within 72-hours of ED departure were analysed. Cost savings were calculated via Ordinary Least Squares (OLS) regression (Curtis et al., 2021, submitted). As a result of HIRAID implementation, ED related deterioration halved (27% to 13%), as did treatment delays (28% to 15%) and failure to escalate when abnormal vital signs were identified (20.2% to 6.9%) (Table 1). Documentation was also significantly improved (Munroe et al., 2021, submitted). HIRAID has now been successfully implemented in a further 11 Emergency Departments (180+ nurses) in Southern NSW (March 2021) and has been integrated into a revised NSW emergency nurse career pathway as part of the NSW Agency for Clinical Innovation (ACI) 2022/2023 work plan. HIRAID implementation in ISLHD resulted in an exceptional return on investment through reduced costs associated with resources consumed from patient deterioration episodes (even when controlled for confounders such as Length of Stay (LOS), diagnosis and age). The estimated preliminary savings to ISLHD was \$1.9+ million with a payback period of 75 days (Table 2).

The implementation of HIRAID in the ISLHD achieved the NSW goal of Providing World-Class Clinical Care by delivering immediate, measurable and improved emergency nursing care to the 150,000+ ISLHD emergency patients that are treated each year. This multi-disciplinary collaboration not only changed policy and practice, but now, the Australian Commission on Safety and Quality in Health Care (ACSQHC), NSW (ACI), NHMRC and the NSW and Commonwealth Chief Nurses have partnered with the HIRAID Research Group to upscale HIRAID in another 32 EDs (1500+ nurses) across Australia.

The HIRAID pathway for translation and implementation in ISLHD was founded on five years of rigorous and original research, from concept to feasibility and efficacy studies to adaptability and effectiveness investigations by over 500 clinicians, from 19 hospitals and 6 institutions. This has been a significant achievement that has delivered an empowered and confident emergency nursing workforce and better patient care outcomes within safer hospital ED's.

REPORT

APPLICATION OF ACHS PRINCIPLES

1. Consumer Focus

Undetected clinical deterioration in Australian EDs (Scott et al., 2015) occurs in up to one in seven patients causing high-mortality adverse events (Dichtwald et al., 2009; Hogan et al., 2012) and in 2018, the Australian Institute of Health and Welfare (AIHW) reported adverse event rates for emergency admissions were more than double that of non-emergency admissions (Australian Institute of Health and Welfare, 2018). In NSW, most recent data reports 9500 adverse events in EDs; 50% of the most serious involved suboptimal nursing assessment, observations and monitoring; 71% of these patients died (NSW Emergency Care Institute, 2015). In 2019, the NSW Clinical Excellence Commission reported a 29% increase in adverse events as a result of poor assessment and monitoring (Clinical Excellence Commission, 2019). Yet, between 36% and 71% of adverse events in EDs are preventable (Considine et al., 2017).

In 2017–2018 only 59% of ED patients in NSW stated that their care was 'very good', which is lower than previous years (Bureau of Health Information, 2019): this is not good enough. Early recognition and response to deteriorating ED patients is primarily an emergency nursing responsibility (Considine et al., 2018b). It is well documented that unwarranted emergency patient care results in avoidable patient deterioration, poor pain management, poor nursing documentation, human suffering and patient dissatisfaction (Considine et al., 2017; Forster et al., 2007). Failure to comprehensively assess, accurately interpret assessment data, initiate appropriate management and escalate care when required can be catastrophic (e.g. Alex Braes, Broken Hill ED case). These avoidable lapses in safety and quality have substantial costs, in terms of both the effect on people's lives and finances (Harrison et al., 2015).



The development and testing of HIRAID in the clinical emergency setting centred on a robust randomised control design that incorporated consumers, implementation science, health economics, capacity building and translational principles. This multi- centre study provided the reliable and necessary evidence and pathway for embedding HIRAID into policy and practice for system- wide change. Emergency nursing and medical staff in the ISLHD reported HIRAID to be a valuable tool that improved consistency of detection of clinical indicators of urgency, prioritisation and initiation of treatment, clinical handover, reassessment and escalation of care to medical officers (Curtis et al., 2019). HIRAID reduced clinician anxiety and increased self-efficacy which were associated with better clinical performance (Munroe et al., 2016a). Using a human factors framework, HIRAID was shown to deliver a significant reduction in clinical deterioration related to emergency nursing care, alongside improved escalation by nurses to medical staff and a sustained improvement in nursing care for all ISLHD ED patients (Curtis et al., 2020b; Curtis et al., 2021).

2. Effective Leadership

HIRAID was conceived, developed, tested and implemented in partnership with emergency clinicians from EDs, eHealth, the ISLHD Performance Unit, NSW ACI and NSW Ministry of Health. The project was a challenging undertaking which required the navigation of healthcare systems, recruitment of personnel and multi-institutional engagement across four hospitals in the ISLHD. It would not have been possible without the vision, influence and leadership of Professor Kate Curtis, and her multidisciplinary team of internationally respected clinician practitioners, researchers and policy change makers.

Professor Kate Curtis is the Director of Critical Care Research for ISLHD, Clinical Director of the Centre for Health Research Illawarra Shoalhaven Population and Professor of Trauma and Emergency Nursing at the University of Sydney. Dr Margaret Murphy is a clinical nurse consultant and emergency nurse clinician at Westmead Hospital and Professor Margaret Fry is a clinician researcher and Director of Research and Practice Development at Northern Sydney Local Health District. Professor Julie Considine is Chair in Nursing Eastern Health, Deakin University. Together they conceived and tested HIRAID in a simulated environment, funded by their partner organisation the NSW Emergency Care Institute (ECI). This enabled capacity building in clinician research through Dr Belinda Munroe who completed her PhD as part of the project. Through collaboration and external engagement, this team led the development of innovative relationships with coalface clinical researchers and financial and performance transformation in health care with Professor Sivabalan of the University of Sydney Business School.

In the next step, the HIRAID implementation toolkit was refined and its usability tested in a pilot study in the regional NSW ISLHD setting (2020). This work was funded by the project's partners, NSW ACI and the Australian College of Nursing. At this point, Professor Ramon Shaban (Chair, Infection Prevention and Disease Control, Western Sydney LHD, University of Sydney) and Dr Hatem Alkhouri (Research Fellows, NSW Emergency Care Institute, NSW ACI) joined the team to refine the implementation toolkit and test the usability of HIRAID in a pilot study in ISLHD (Curtis et al., 2020b; Curtis et al., 2021). The implementation of HIRAID in ISLHD was a success and emergency nursing and medical staff reported that HIRAID was a valuable tool that improved the consistency of patient assessment, quality of documentation, clinical handover (Curtis et al., 2019), significantly reduced clinical deterioration related to emergency nursing care and improved escalation by nurses to medical staff (Curtis K et al., 2020). HIRAID led to improved openness, respect between emergency doctors and nurses improved (Curtis et al., 2020d), and medical staff reported increased relevance of nursing clinical handover information. Moreover, ED nurses were empowered with clear roles and responsibilities, and as one nurse stated "My responsibilities as an ED nurse are to accurately assess the patient, initiate appropriate treatment, escalate where required and communicate effectively. HIRAID provides a vehicle to facilitate all these aspects of patient care" (Curtis et al., 2020b). These are important outcomes that highlight the value of HIRAID in providing safer EDs for patients, founded on standardised and best practice nursing care. This is particularly important considering that EDs are fast paced, highly stressful environments where coherent information exchange is paramount for patient safety and a collegial working environment (Curtis et al., 2011).

3. Continuous Improvement

HIRAID is a comprehensive framework that was originally developed to provide novice nurses with a systematic approach to patient assessment as part of a university post graduate curricula (Curtis et al., 2009). However, since then, HIRAID has undergone several iterations informed by feasibility, efficacy and adaptability studies, and is now poised for scalability and monitoring.



HIRAID emerged from a multi-institutional collaboration involving clinicians, health service providers and policy makers across Australia based on the common observation that unwarranted variations in nursing care in Australian EDs was compromising the efficacy and efficiency of service delivery and patient safety. HIRAID was developed and tested (2013–2015) in a simulated environment, funded by partner organisation NSW ECI. Results showed that using HIRAID significantly improved nurse detection of clinical indicators of urgency, prioritisation and initiation of treatment, clinical handover, reassessment and escalation of care to medical officers. Using HIRAID also reduced clinician anxiety and increased self-efficacy which are associated with better clinical performance (Munroe et al., 2016a). These findings were used to develop an implementation tool-kit, informed by behaviour change theory, including a series of educational and implementation resources (including a 30 minute online e-Learning module, train the trainer workshops, local policy change and modification to the electronic medical record system) (Munroe et al., 2018a). The efficacy and effectiveness of HIRAID (2017–2019) was then tested under optimal conditions funded by partner organisations, NSW ACI and the Australian College of Nursing. In this scenario, the implementation toolkit was refined and its usability in a pilot study in ISLHD was successfully tested. Emergency nursing and medical staff reported HIRAID to be a valuable tool that improved consistency of patient assessment, quality of documentation and clinical handover (Curtis et al., 2020c). Using a human factors framework, a significant reduction in clinical deterioration, related to emergency nursing care, was observed alongside improved escalation by nurses to medical staff (Curtis et al., 2020b).

4. Evidence of Outcomes

The implementation of HIRAID reduced patient deterioration associated with care delivered in the ED by 50% [27% (n=101) to 13% (n=73), p<0.001, 95% CI (8.5% – 18.8%); Table 2]. This was despite 12,000 more ED presentations, a 6.3% higher admission rate and sicker patients in the HIRAID intervention period. The Human Factors Classification Framework for patient safety (Mitchell et al., 2016) showed that the implementation of HIRAID reduced treatment delays (28.3% vs 15.1%, p=0.041; Table 1) and failure to escalate (20.2% vs 6.9%, p=0.014; Table 1) (Curtis et al., 2021).

Nursing documentation describing all essential assessment components increased from 5% to 80% in an audit of 120 random paediatric and adult medical records for all presentation types. In particular, the quantity (completeness) and quality (completeness and linguistic correctness) of patient history and physical assessment per the validated D-Catch instrument.

In terms of economic gain to healthcare, HIRAID equivalent savings exceeded the costs of implementation. The estimated preliminary savings to ISLHD (through less deterioration) was \$1.9 million with a payback period of 75 days (Table 2). Conservative projections estimated a net benefit of \$1.8 million p.a. by 2022–2023, even when controlling for Length of Stay (LOS), diagnosis and age (Table 2; Curtis et al., 2021, submitted).

5. Striving for Best Practice

Removing inconsistent and low value care is a priority issue for health services across Australia. ISLHD (Wollongong Hospital in particular) lags behind most other NSW hospitals in their time-to-being seen by a medical officer. Time to treatment in all triage categories (2019, 2020) (Bureau of Health Information, 2021) is below the NSW average and in some months, ISLHD has experienced, the worst ED time-to-treatment in NSW in 2020/2021. Hence, many people, often in pain, may wait hours to be seen and treated by a medical officer. This is a major concern given that in 2020/2021, one third of the 16,908 ISLHD Aboriginal population presented to EDs in the district (5,681 people), with many presenting more than once (total 12,286 people) with painful conditions.

One of the key pillars of the HIRAID framework is worldwide standardised emergency nursing-practice that contributes equitable access and better value healthcare linked to the top Australian Emergency Research Priorities (Keijzers et al., 2014; Considine et al., 2018a), the ACSQHC actions and Quality Health Service Standards. The vision for HIRAID is that it becomes a universal tool, that can cross socio-economic boundaries and addresses the 72nd World Health Assembly resolution (WHA72/31): *Emergency care systems for universal health coverage...timely care for the acutely ill and injured... implementation of key processes and protocols...strengthen the evidence base for emergency care* (World Health Organization, 2019). Scaling up HIRAID meets clinician Australian emergency research priorities (Considine et al., 2018a) and actions of the ACSQHC that aim to reduce unwarranted clinical variation and to promote more equitable access to, and better value health care (Australian Commission on Safety



and Quality in Health Care, 2017). Scaling up of HIRAID also aligns with actions in the National Safety and Quality Health Service Standards which apply to more than 1300 facilities nationwide.

INNOVATION IN PRACTICE AND PROCESS

This project tested an innovative, practical solution developed by front line emergency nurses to reduce inpatient deterioration in patients admitted via the ED, which is more than double that of non-emergency admissions (Australian Institute of Health and Welfare, 2018). Emergency nurses are the first clinician patients see and patient safety is contingent on nurses' accurate assessment, interpretation of clinical data, intervention and escalation (Fasoli, 2010). Yet nurses' approach to the assessment of over 8 million ED patients treated per year across Australia is inconsistent. Traditionally taught and commonly used approaches to patient assessment, such as vital signs and body systems, are not evidence-based nor framed in patient safety (Considine and Currey, 2014). To address this major practice gap, the innovative emergency nursing framework HIRAID was developed for use in any patient presentation to standardise emergency patient care. HIRAID encompasses the known essential components of safe patient care (History, Identify Red flags, Assessment, Interventions, Diagnostics, reassessment and communication) (Munroe et al., 2015). With funding from the NSW ACI, HIRAID was validated and tested in a simulated environment. The results showed that HIRAID improved the detection of clinical indicators of urgency, reassessment and communication (Munroe et al., 2016b; Munroe et al., 2016a). HIRAID was then tested in four real world ED's. Factors influencing future implementation, ecological validity and usability to enable upscaling were analysed (Curtis et al., 2020d). This was done to ensure that HIRAID could be sustained through 'business as usual' ED training schedules (Munroe et al., 2018b) (funding NSW ACI, ACN, ISLHD).

To cement implementation and compliance, human behaviour through the Theoretical Domains Framework, that applies the science of intervention implementation (Atkins et al., 2017), was considered. Strategies included videos, education, electronic documentation templates and change champions (Munroe et al., 2018b; Curtis et al., 2020d). This project also fostered research upskilling of clinicians (output = PhD, 11 clinicians on publications).

APPLICABILITY TO OTHER SETTINGS

This project involved clinicians, health service providers and policy makers and it has changed policy and practice across ISLHD, NSW and in 2022, Australia. The ACSQHC, NSW ACI, NHMRC and the NSW and Commonwealth Chief Nurses have now partnered with the HIRAID Research Group to upscale the findings.

Locally, HIRAID is embedded in all EDs in ISLHD with 90% sustained uptake by 302 emergency nurses. In NSW, HIRAID has been successfully implemented in 11 EDs (180+ nurses) in Southern NSW (March 2021). The adaptability and replicability of HIRAID was also demonstrated in a rural/regional clinical setting where emergency nursing and medical staff reported HIRAID to be a valuable tool to improve consistency of patient assessment, quality of documentation and clinical handover (Curtis et al., 2019).

The implementation of HIRAID is now part of a revised NSW emergency nurse career pathway and part of the NSW ACI 2022/2023 work plan. The state-wide projected equivalent savings benefits of HIRAID equal \$227 million per annum by 2022/2023 (Table 1).

Within Australia, HIRAID will be formally adopted across a further 32 NSW/Victorian/Qld EDs (1500+ nurses) and rural Multi- Purpose Services (2022–23) and HIRAID is now incorporated in Australia's leading emergency nursing textbook *Emergency and Trauma Care for Nurses and Paramedics*.

HIRAID is a validated framework designed to provide emergency nurses with a structured and systematic approach to patient assessment and management. The use of HIRAID is associated with a reduction in clinical deterioration related to emergency care by enhancing nursing practice through increased escalation of patient deterioration. The reasons for this reduction can be explained by a reduction in the proportion of causal factors relating to nurse action, violation related errors (intentional failure to follow accepted work practices, guidelines, for example, where it has become routine to practice in a certain way), treatment delays and failures in escalation of clinical deterioration. The evidence-based nature of the HIRAID framework and implementation strategy means HIRAID is readily adaptable for implementation in other jurisdictions or contexts of practice (Curtis et al., 2021). Internationally, HIRAID train the trainer workshops have been held with colleagues in Fiji, Colombia, Nepal and Sri Lanka to enable the future adaptation



of HIRAID in these countries. The World Health Organisation Chief Nursing and Midwifery Officer has provided, in principle, support for the adaptation of HIRAID for Low-to-Middle-Income Countries through a toolkit.

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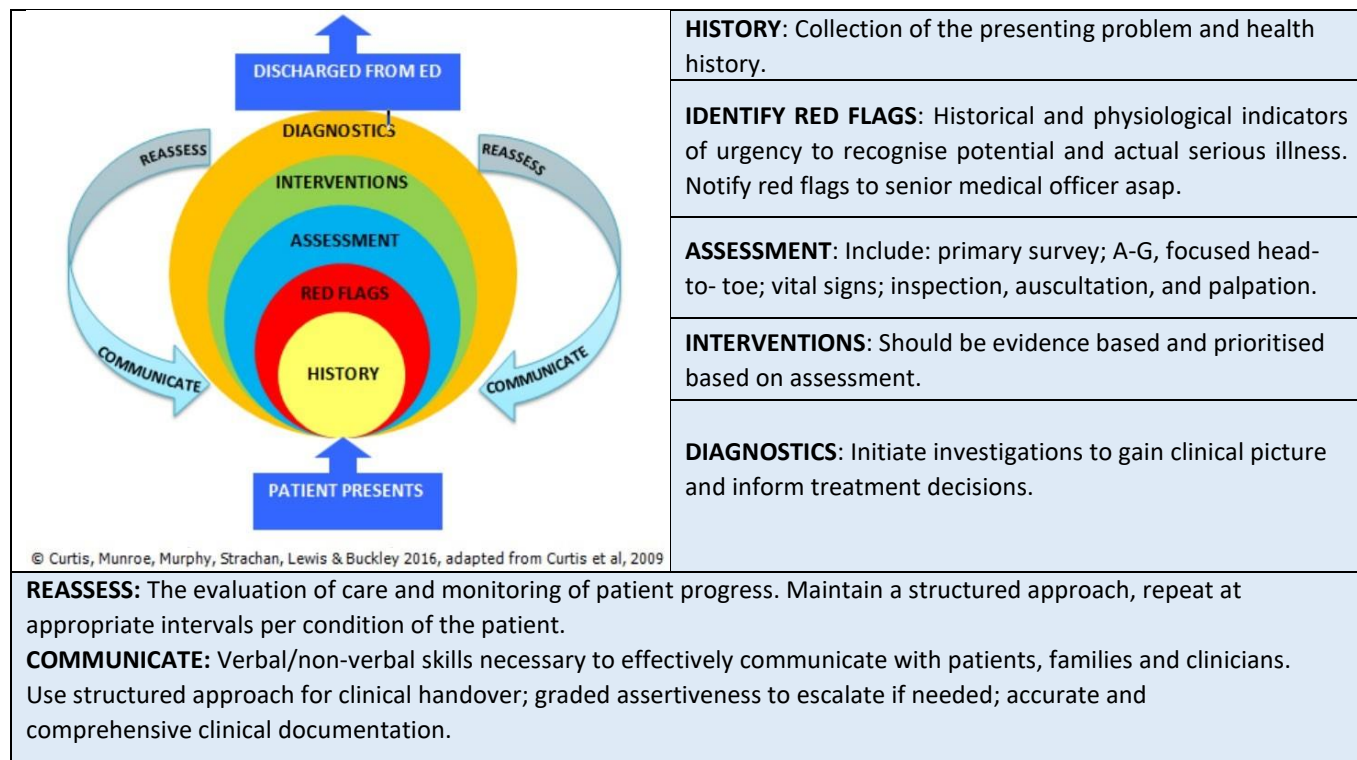
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APPENDIX

Appendix 1

Figure 1: The HIRAIID emergency nursing framework (Curtis et al., 2021)



Appendix 2:

Table 1. Causal factors of deterioration episode (Curtis et al., 2021).

ED problems	Pre	Post	p-value	Confidence interval of the difference in proportions (%)
WH ED problems (n deterioration <72hrs) Proportion	76 (758) 10.0%	54 (1141) 4.7%	< 0.001	3.0 – 7.6
SDMH ED problems (n deterioration <72hrs) Proportion	25 (316) 7.9%	19 (459) 4.1%	0.026	0.5 – 7.1
Overall ED problems (n deterioration <72hrs) Proportion	101 (374) 27.0%	73 (546) 13.4%	< 0.001	8.5 – 18.8
Equipment (n1=100, n2=73) – n (%)				
Equipment	9 (8.1)	8 (11.0)	0.521	-11.8 – 6.1
Medical Equipment	4 (4.0)	0 (0.0)	0.082	0.16 – 7.9
Medical Supply	1 (1.0)	0 (0.0)	0.389	-1.0 – 3.0
Staff action overall (n1=99 n2=73) – n (%)				
Staff action overall	95 (96.0)	68 (95.8)	0.952	-5.9 – 6.3
Recognition of red flags	20 (20.2)	16 (21.9)	0.785	-14.1 – 10.6
Delay in treatment	28 (28.3)	11 (15.1)	0.041	1.1 – 25.3
delay recognition of resuscitation plan	19 (19.2)	24 (32.9)	0.041	-27.0 – -0.4
Delay recognition to sepsis	12 (12.1)	10 (13.7)	0.759	-11.8 – 8.6
Communication - staff to patient	7 (7.1)	8 (11.0)	0.372	-12.7 – 4.9
Medical Management error	29 (29.3)	31 (42.5)	0.073	-27.6 – 1.3
Senior medical input	5 (5.1)	5 (6.9)	0.618	-9.0 – 5.4



Consultation requests	9 (8.2)	6 (8.2)	0.841	-7.6 – 9.3
Conflicting patient care	11 (11.1)	13 (17.8)	0.210	-17.4 – 4.0
Delay in diagnosis	15 (15.2)	3 (4.1)	0.019	2.6 – 19.4
Nursing Management error	23 (23.2)	23 (31.5)	0.226	-21.8 – 5.2
Misdiagnosis	8 (8.1)	1 (1.4)	0.051	0.7 – 12.7
Communication staff to staff	36 (36.4)	29 (39.7)	0.653	-18.1 – 11.3
Documentation – medical	26 (26.3)	24 (32.9)	0.345	-20.4 – 7.2
Documentation – nursing	20 (20.2)	10 (13.7)	0.267	-4.7 – 17.7
Monitoring of observations	7 (7.1)	2 (2.7)	0.207	-2.0 – 10.6
Delay or failure to escalate	20 (20.2)	5 (6.9)	0.014	3.5 – 23.1
Monitoring blood results	9 (9.1)	10 (13.7)	0.341	-14.3 – 5.1
Alternate chart commenced	4 (4.0)	1 (1.4)	0.303	-2.0 – 7.4
Which chart?	7 (7.1)	2 (2.7)	0.207	-2.0 – 10.6
Delays to transfer	8 (8.1)	4 (5.5)	0.508	-4.9 – 10.1
Organisational factors (n1=99, n2=73) – n (%)				
Supervision	0 (0.0)	1 (1.4)	0.243	-4.0 – 1.3
Work Practice related	4 (4.0)	4 (5.5)	0.658	-7.9 – 5.1
Policy/guideline not followed	6 (6.1)	10 (13.7)	0.088	-16.8 – 1.5
Policy/guideline unclear	22 (22.2)	25 (34.3)	0.080	-25.6 – 1.6
Staffing issues	4 (4.0)	1 (1.4)	0.303	-2.0 – 7.4
Delay in transfer	13 (13.1)	3 (4.1)	0.044	1.0 – 17.1
Individual factors (n1=99, n2=73) – n (%)				
Staff training	0 (0.0)	5 (6.8)	0.008	-12.6 – -1.1
Staff experience	6 (6.1)	3 (4.1)	0.570	-4.6 – 8.5
Staff stress	2 (2.0)	0 (0.0)	0.222	-0.8 – 4.8
Error (n1=99, n2=73) – n (%)				
Rule based error	55 (55.6)	51 (69.9)	0.057	-28.7 – 0.0
Knowledge based error	32 (32.3)	20 (27.4)	0.487	-8.8 – 18.7
Skill based error	6 (6.1)	1 (1.4)	0.124	-0.7 – 10.1
Violation error	64 (64.6)	19 (26.0)	< 0.001	24.8 – 52.4
Nil error	8 (8.1)	4 (5.5)	0.508	-4.9 – 10.1



Appendix 3:

Table 2. Analysis of savings and net benefits from prevention of clinical deterioration in ward patients during the early stages of emergency admission (Curtis et al., 2021, BMC Health Services Research – under review).

	2018–19	2019–20	2020–21	2021–22	2022–23
ED admission growth rate	3.34%	2.00%	2.00%	2.00%	2.00%
Projected ED admissions (352 AR-DRG)	2,189,030.92	2,232,811.54	2,277,467.77	2,323,017.13	2,369,477.47
	9	7	8	4	7
State-wide deterioration episode projection	81,143	82,766	84,421	86,110	87832
Expected equivalent savings (state level estimates)					
Conservative (\$1,936.22 per episode)	\$157,110,699	\$160,253,185	\$163,457,629	\$166,727,904	\$170,062,075
Expected (\$2,591.14 per episode)	\$210,252,873	\$214,458,293	\$218,746,630	\$223,123,065	\$227,585,008
Optimistic (\$3,246.06 per episode)	\$263,395,047	\$268,663,402	\$274,035,631	\$279,518,227	\$285,107,942
Net benefit (hospital level estimates): expected equivalent savings less HIRAID implementation costs					
Conservative (\$1,936.22 per episode)	\$1,798,748	\$1,835,537	\$1,872,325	\$1,909,113	\$1,947,837
Implementation costs (initial and ongoing)	-\$492,917	-\$134,077	-\$134,077	-\$134,077	-\$134,077
Net savings	\$1,305,831	\$1,701,460	\$1,738,248	\$1,775,036	\$1,813,760
Payback period days: (Inv. Outlay/Det. Savings) *365 days	100.02	26.66	26.14	25.63	25.12
Expected (\$2,591.14 per episode)	\$2,407,169	\$2,456,401	\$2,505,632	\$2,554,864	\$2,606,687
Implementation costs (initial and ongoing)	-\$492,917	-\$134,077	-\$134,077	-\$134,077	-\$134,077
Net savings	\$1,914,252	\$2,322,324	\$2,371,555	\$420,787	\$2,472,610
Payback period days: (Inv. Outlay/Det. Savings) *365 days	74.74	19.92	19.53	19.15	18.77
Optimistic (\$3,246.06 per episode)	\$3,015,590	\$3,077,265	\$3,138,940	\$3,200,615	\$3,265,536
Implementation costs (initial and ongoing)	-\$492,917	-\$134,077	-\$134,077	-\$134,077	-\$134,077
Net savings	\$2,522,673	\$2,943,188	\$3,004,863	\$3,066,538	\$3,131,459
Payback period days: (Inv. Outlay/Det. Savings) *365 days	59.66	15.90	15.59	15.29	14.99

*Hospital deterioration episode encounter projection is 465, a whole number average per hospital deterioration from the 929 deteriorations observed over the two sites.



CLINICAL EXCELLENCE AND PATIENT SAFETY

HIGHLY COMMENDED

Beechworth Health Service, VIC

Falls Prevention Working Group

Mobility and Independence at Beechworth. A replicable, scalable model for our highest clinical risk - Falls

Shell Morphy, Lisa Allen, Mark Ashcroft, Sharon Knowles and Julia Brisdon-Farr

AIM

To develop a replicable, scalable model focusing on the highest clinical risk at Beechworth Health Service (falls), that can be applied to other clinical risks, and is transferrable across other clinical settings.

SUMMARY ABSTRACT

Introduction: Arising as a key strategic aim from a corporate planning / community consultation, the project group was tasked with developing a model of system improvement that initially focused on the highest clinical risk (falls), and that could be replicated, applied to other clinical risks and transferred across clinical settings. The model, recognised the multi-factorial nature of many clinical risks, particularly falls, and thus sought to provide multi-factorial prevention strategies, rather than attempting to pre-determine a person's highest risk factors. The difference with existing risk mitigation strategies is that recognition is given to the changing nature of falls risk, being that a person's risk will vary across a day, dependent upon the environment, their physical condition, the activities being undertaken, and their level of interaction with others.

Method: The working group commenced by reviewing nearly 2000 patient resident falls over the past 8 years. One of the key findings from that review was that in nearly 80% of fall events the reporter indicated that the person was alone or unsupervised at the time of the fall. With that background knowledge, the working group then conducted true brainstorm sessions aimed at eliciting all possible falls prevention ideas for further discussion. The group then determined nine umbrella falls-prevention themes with a total of 32 detailed sub-programs. The nine themes were 1. Safety Huddle – Every Unit, Every Shift, 2. Mobility and Well-being – Maintaining mobility to prevent falls, 3. Falls-Free

Celebration - Promoting 'Just Culture' recognising everyone's contribution, 4. No-one Alone – Falls occur when people are alone, 5. Nothing Missed – Specialist review, 6. Nothing Out-of-Place – An environment free of hazards, 7. Rest and Revitalise – Good sleep for optimal functioning, 8. Symbols for Safety – Signage that simplifies decision making, and 9. Gaze Refresh – Bringing Life-Saving thinking to Beechworth Health Service (BHS). Existing falls prevention interventions were incorporated amongst the 32 sub-programs. Of note and for interest some of the more innovative programs included a planned redesign of a common area into a 'Community Street' to encourage interaction of patients, residents and community, including an activity walking path, to encourage ongoing mobility. Intergenerational programs had kindergarten-aged children interacting with elderly people. Celebration incorporated daily messages to staff highlighting and congratulating for the fall-free previous shift, 24hrs or week as appropriate. New communication smart phones were provided to all staff on duty to allow communication from the bedside. Automated referrals to physio, dietitian, speech pathologist, and podiatrist were developed to trigger, as required in the event of a fall. A consultation meeting between the working group, local partner hospitals, and Life Saving Victoria was organised to explore how the ways lifesavers prevent drownings could be applied to help health services prevent falls.

Results: The project ran over two years. In the first year, across three units, the health service demonstrated a 10 year-low in patient/resident falls, reducing fall incidents from an annual average of 246 to 197, a 20% reduction. In the second year, falls reduced again to 128, a reduction of 36% on the previous year and of 48% on pre-implementation averages. These results were shared with the clinical staff throughout the life of the project, importantly, celebrating with them particularly the numbers of falls prevented. This was around 10 fall events per month prevented, or around 118 falls each year, and across the two years, 167 falls in total.

Conclusion and future: The model has been shown to be successful in addressing falls risk and the next phase planned is to demonstrate its transferability to other areas of clinical risk. The working group has determined to focus next on reducing APINCHS medication errors.



Western Sydney Local Health District, NSW**Western Renal Service****From Standard to Incremental: Improving prescribing practice in peritoneal dialysis**

Mary Ann Nicdao, Germaine Wong, Katrina Chau, Kamal Sud, Surjit Tarafdar, Martin Howell, Allison Tong and Karine Manera

AIM

Project aim: From June 2019, 90% of new patients starting peritoneal dialysis (PD) within Western Renal Service (WRS) will be screened for incremental peritoneal dialysis (IncrPD) and those found suitable will be offered this model of care (MoC). The primary aim is to reduce patients' treatment burden while delivering safe, effective and high quality PD care. The secondary aim is to change PD prescribing practice from one that is focused on small solute clearances to a more holistic and patient-centred MoC.

Submission aim: To report on the preliminary findings of WRS' quality improvement (QI) project on IncrPD from June 2019-December 2020 for the 2021 ACHS Quality Improvement Awards.

SUMMARY ABSTRACT

Chronic kidney disease (CKD) affects more than 10% of Australia's population. In the most severe stage of CKD, patients require a kidney replacement therapy (KRT) in the form of dialysis or a kidney transplant to survive. In 2019, 13,399 Australians were receiving dialysis, of whom, 2,416 were receiving peritoneal dialysis (PD) (Australia and New Zealand Dialysis and Transplant Registry 2019).

PD involves the instillation of hypertonic glucose solution in the peritoneal cavity for removal of uraemic solutes and excess body water (Blake and Daugirdas 2015). Traditionally, incident patients receive a standard PD (StPD) prescription of 8 litres (L), delivered in 4 2-L manual or automated PD 'exchanges' a day, irrespective of patients' residual kidney function (RKF) at initiation of dialysis (Lee et al. 2019, Reddy and Mendy 2020, Sandrini et al., 2016, Sans et al. 2016, Viglino et al. 2008). Each manual 'exchange' takes 45 minutes to complete, before the dialysis fluid 'dwells' in the peritoneal cavity for 4-5 hours during the day and up to 12 hours at night. As a result, patients with preserved RKF often achieve higher than the recommended total urea clearance (Kt/V), as renal excretion of uraemic solutes continues after starting dialysis (Shafi and Levey 2017; Brown et al. 2020).

StPD prescribing is common practice despite reports from two large-scale, randomised controlled studies that there was no association between survival and increased solute clearances. Specifically, there was no difference in outcomes between patients with a Kt/V >2.0 and Kt/V between 1.7 and 2.09 (Panigua et al. 2001, Lo et al. 2003). Moreover, Kt/V is an imperfect marker of dialysis adequacy as it does not quantify patients' hydration status, nutrition or quality of life (QoL) (Shafi and Levey 2017; Brown et al. 2020), yet prescribing remains driven by solute clearance targets, and little attention is given to the impact of multiple dialysis exchanges or hours on PD on patients' QoL. While KRT can improve health outcomes and trajectories, patients with CKD undergo radical changes to their physical and mental well-being (Green et al. 2018). Many patients feel unprepared to manage their dialysis regimen and are particularly vulnerable when commencing treatment, hence, the repetitive and disruptive nature of PD may profoundly affect their QoL (Green et al. 2018). Furthermore, while PD is safe, prescribing more than the required dialysis dose may unnecessarily expose patients to dialysate glucose and glucose degradation products as well as incur unnecessary costs and environmental waste (Reddy and Mendy 2020).

As opposed to the 'one size fits all' method of StPD prescribing, IncrPD prescriptions are individualised to patients' RKF and clinical needs at initiation of dialysis. IncrPD maximises the contribution of RKF to the total solute clearances by prescribing only the required PD volume to deliver a urea clearance of 1.7 per week (Lee et al. 2019, Reddy and Mendy 2020, Sandrini et al., 2016, Sans et al. 2016, Viglino et al. 2008). IncrPD prescriptions are <8 litres per day and may range from 1-3 manual or automated PD exchanges daily or less than 7 days a week. Prescriptions are increased according to patients' RKF decline and to meet their changing clinical needs (Lee et al. 2019, Reddy and Mendy 2020, Sandrini et al., 2016, Sans et al. 2016, Viglino et al. 2008). Although randomised controlled trials are yet to be performed, IncrPD has not been associated with an increased risk of mortality from possible under-dialysis (Reddy and Mendy 2020). With fewer exchanges and extended periods of 'dry' peritoneum, IncrPD may be less onerous and less intrusive for patients starting dialysis as compared to StPD, and thus, may improve their acceptance of long-term dialysis. A number of observational studies associated IncrPD with enhanced clinical outcomes, including improved preservation of RKF, reduced risk of peritonitis, lower hospitalisation rate as well as cost-savings from less dialysate usage, when compared to StPD (Lee et al. 2019, Reddy and Mendy 2020, Sandrini et al., 2016, Sans et al. 2016, Viglino et al. 2008).



From June 2019, new patients commencing PD within WRS were screened for IncrPD based on their RKF and clinical needs at the start of dialysis. Out of the 147 new patients between June 2019-December 2020, 140 (95.23%) underwent screening, of whom, 96 (69%) were prescribed IncrPD (Table 1). Prescriptions ranged from 1-3 PD exchanges per day, as opposed to the 'one size fits all' StPD dose of 4 PD exchanges per day (Table 2), with total Kt/V ranging from 1.5-2.3 (Table 3). Those achieving <1.7 per week had their prescriptions increased as clinically indicated. Over that period, there were 20 hospitalisations among prevalent PD patients, of which, 3 could be attributable to inadequate dialysis. Only 9 (9.3%) patients required the full dose of 8 litres a day for PD adequacy after a mean period of 7.9 (+4.9) months. Patients on IncrPD saved 45-135 minutes/day of procedure time and 12-20 hours/day of dialysate dwell time (Table 4 & 5). Fewer exchanges and extended periods of dry peritoneum allowed for

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This QI initiative puts patients at the centre of care through shared decision-making and reduction of

treatment burden while delivering high quality care. Prescriptions are modified over time to meet patients' changing health conditions while allowing them maximum opportunities for life participation and improving their QoL. This QI initiative demonstrates effective leadership from project inception through to implementation and outcome evaluation. The project is evidence-based and was developed in consultation with medical, nursing and allied health teams. IncrPD MoC was implemented safely and successfully without additional manpower, and has become mainstream practice within WRS, consisting of Western Sydney and Nepean Blue Mountains renal services. The project has been presented in renal forums and expressions of interest for research collaboration from national organisations have been received.

Auburn Hospital, WA

Maternity Services

Baby Steps

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AIM

By December 2020, Baby Steps aimed to

1. Increase the proportion of women commencing antenatal care between 1-0-14 weeks gestation
2. Increase transfer of care from <19% to 50%
3. Increase percentage of referrals entered into iPM from 4% to 50% by August 2020, with a further increase to 100% by December 2020

SUMMARY ABSTRACT

AIM:

Baby Steps aimed to reduce risk and promote a positive pregnancy by providing timely access to antenatal care.

ISSUE:

The Auburn hospital antenatal clinics (ANC) provide antenatal services to pregnant women within the Cumberland Local Government Area in Sydney, New South Wales. On average, there are 1500 births per annum. However only 4% of women were commencing antenatal care by 14 weeks gestation, which is expected in line with contemporary best practice. This means 24

out of 25 mothers and babies were at an increased risk of a compromised healthy outcome. Key gestational milestones and diagnostic screening were missed and access to comprehensive care planning, intervention and psychosocial support delayed. One in two women were referred late. Women consistently reported feeling anxious and worried while waiting for an appointment.

Serving one of the fastest growing and most culturally and linguistically diverse regions in NSW, with total fertility rates well above both state and national levels, the local area hosts pockets of significant socioeconomic disadvantage. One in five women seen have gestational diabetes and two in five have a high body mass index, placing them at further risk during pregnancy.

Existing systems and processes, including bookings, referral management and communication with internal and external stakeholders, were not meeting the growing demand for antenatal services provided by Auburn hospital. An exciting opportunity existed to formally engage with service partners and consumers to redesign the service.

METHOD:

Using the Centre for Healthcare's Redesign Methodology, a robust approach was applied, in consultation with staff, patients and their families to understand and address issues preventing women from seeking pregnancy care sooner. Initiatives targeted more efficient referral, bookings and documents management processes and improved communication.



Using this methodology, the team (including consumer representation) identified issues and solutions (see below table).

Issue identified	Solutions Implemented
No communication between birth unit and ANC resulting in lost clinic capacity	Daily birth register checks and proactive cancellation of ANC appointments when care no longer required
Referrals - 60% of referrals incomplete and 50% of women referred late	Referral screening and acceptance procedure developed with incomplete referrals no longer accepted. Health promotion fliers were co-designed with consumers in 7 languages. GP information session held.
Triage and attendance management processes were unclear and the Australian College of Midwives' (ACM) National Guidelines were not utilised with low-risk women unnecessarily seen by a doctor.	New triage procedure established with clinically recommended time frames to be seen and the existing WSLHD attendance procedure adapted to suit pregnant women's needs. The ACM Guidelines were implemented with low-risk women managed sooner under midwifery-led model of care (MOC) (doctor's appointment omitted)

In addition to these solutions, other patient centric solutions were implemented. This included a promotional video with key messages delivered by the Obstetrics & Gynaecology Head of Department to promote urgency and demonstrate commitment to achieving project goals; engagement with the community through multi language health promotional fliers which were hand delivered by midwifery staff to local businesses and community organisations; engagement with general practitioners through a GP education evening to reinforce the need for early, quality referrals. The multifactorial approach of this project recognized the cultural and socio-economic factors that are strong determinants of the health behaviours of expectant mothers in the local community.

RESULTS:

Despite COVID-19, significant gains were made towards women having faster access to high-quality, woman-centred care earlier in pregnancy. Objectives were achieved on time and within budget:

- 1) Care by 14 weeks gestation improved from 4% to 20%. Women overall started care sooner. Late care commencement decreased.

- 2) Care transfer increased from 19% to 69%. In 12 months, 720 appointment were freed up for other women, enabling earlier access to care.
- 3) Referral entry increased from 4% to 100%. Referrals were easily trackable, reducing delay.

Other benefits:

- In 5 months, incomplete referrals reduced from 60% to 17%, leading to faster, more accurate triage, minimising waste in line with lean principles.
- In 11 weeks, doctor clinic demand reduced by 43%, equating to 13 patients less per week. Rapport was built sooner and doctors were freed up for more complex patients, sooner.
- Patient perception of time waiting for an appointment improved from 57 to 81 out of 100 in our My Experience Matters patient experience surveys.
- Improved NSW Health KPI performance for triage and scheduling was seen. During testing and auditing, the service consistently remained >98% for both measures (baseline 60% and 27% respectively), reducing delay.
- Calls to GP's were reduced by 43%.
- ALL strategies have been embedded into usual practice.
- Solution transfer to other outpatient clinics (specific and non-specific to ANC) is a future opportunity. Consultation and planning within WSLHD has commenced to scale these solutions to other Antenatal Clinics within the Local Health District.

Western NSW Local Health District, NSW

Virtual Clinical Pharmacy Service

A virtual pharmacy model of care improves the safe and effective use of medications at rural and remote hospitals

Brett Chambers, Shannon Nott, Cristen Fleming, Anna Packer and Louis Botha

AIM

The aim of the Virtual Clinical Pharmacy Service (VCPS) was to design and implement an innovative telehealth pharmacy model to rural and remote hospitals without an onsite pharmacist. The VCPS increases access to the specialist skills of knowledge of hospital pharmacists who work with the local healthcare team to reduce the risk of medication related harm and help to meet national accreditation standards for medication safety. Through this program the VCPS provides high-quality



patient care and improves patient safety while generating high quality, translatable research on the efficacy, acceptability, cost-effectiveness and scalability of such a service.

SUMMARY ABSTRACT

Medication-related incidents are the fourth most frequently reported incident in NSW hospitals and a leading cause of preventable morbidity and mortality in healthcare systems worldwide. However only 8 of 47 health services in Western NSW Local Health District (WNSWLHD) and Far West Local Health District (FWLHD), an area spanning almost 450,000km², have onsite pharmacists to support the quality use of medicines. An innovative solution was required to meet these challenges and a dedicated team reviewed existing services, previous telehealth pilots, literature and conducted stakeholder consultation to investigate solutions. A virtualised clinical pharmacy service model was chosen as it overcomes geographical barriers and small patient volumes at rural hospitals. Integral to the success of the VCPS was the leadership of a designated project manager role alongside service-specific pharmacist-lead roles. These positions drove project management, including the design of workflows, embedding change at local facilities and engaging both internal and external stakeholders.

The VCPS represents a change in practice and utilises recognised standards for hospital pharmacy practice which were adapted to the virtual environment. An interdisciplinary team including senior health administrators, doctors, nurses, pharmacists and health researchers with diverse skills and clinical experience collaborated to design the model. Clinical services, workflows, systems and technologies were reviewed with subject matter experts in the development of this model. By working collaboratively with telehealth and health information teams the VCPS was able to use existing supported technologies resulting in minimal additional implementation costs. The resulting model integrates virtual pharmacists into the healthcare team through the use of digital technologies such as videoconferencing and the electronic health record to deliver an entirely virtual service. One pharmacist is efficiently utilised to remotely service up to 30 patients spread across four hospitals. The VCPS model demonstrates a pharmacist can be part of the multidisciplinary healthcare team with onsite and other virtual health professionals. The model also demonstrates productivity and efficiency improvements by utilising telehealth technologies to minimise travel time, save healthcare costs and increase access to clinical services.

VCPS improves access to clinical pharmacy providing the 'Right Care, Right Place, Right Time', ensuring rural patients receive the same standard of world-class care they would expect in larger hospitals. The VCPS overarching aim was to provide patients with safe, people-centred, and efficient world-class clinical pharmacy services in rural and remote communities where there are no onsite clinical pharmacy services. The VCPS service enhances patient-centred care through structured MDT rounds which has significantly improved communication and discharge planning with the patient and the healthcare team. The VCPS has also improved transitions of care for patients through the provision of medication reconciliation, patient centered education, medication lists and liaising with community-based pharmacists to coordinate medication changes.

Continuous service improvement was seen as integral component of developing and refining the VCPS. A number of structures were imbedded in the model including a Patient Reported Experience Measures (PREM) Survey, staff focus group, KPI measurement and service rounding to facilitate continuous improvement. KPI's are addressed through regular service rounding with all levels of staff to ensure the provision of an effective holistic service. Indicators facilitate communication and a productive discussion on medication safety and also provides an opportunity to discuss medication incidents, antimicrobial stewardship, recognise successes and identify areas for improvement.

There is currently limited published evidence on the effectiveness of inpatient virtual pharmacy services. Outcome measures, process measures, descriptive data and qualitative feedback have been collected over 11 months from April 2020 to January 2021. This is part of a formal research evaluation to evaluate the efficacy, acceptability, and scalability of virtual pharmacy in rural and remote hospitals through a NSW Ministry of Health Translational Research Grant. Data collected demonstrates improvements in best possible medication history, medication reconciliation, detection of potential medication-related harms, VTE assessment and patient friendly medication lists on discharge (Appendix 1). The VCPS has provided over 3716 episodes of care and these activities improve compliance with National Safety and Quality Health Service (NSQHS) Standard 4 Medication Safety. Patient feedback suggests high acceptability, clinicians have reported increased confidence in medication management and safety due to the support provided by pharmacists, and the service has demonstrated scalability over multiple health districts and rural and remote facilities (Appendix 2).



Western NSW Local Health District (WNSWLHD) as the lead organisation, have collaborated with both academic institutions and health organisations including Far West Local Health District and Sydney Local Health District. WNSWLHD has partnered with the eHealth NSW, the Clinical Excellence Commission and the Agency for Clinical Innovation to ensure translation of the research and system wide learning. WNSWLHD is leading a research evaluation with academics from Central Queensland University, University of Sydney, University of Wollongong and the Hunter Medical Research Institute. The VCPS team intend to publish the model of care and outcomes in an academic journal so health professionals and health service planners can use

this information to improve access to clinical pharmacy services for patients locally, nationally and internationally. A number of health services across Australia have already reached out for information to assist in setting up similar services. The VCPS has been in operation for over 12 months and embedded the virtual model of care in eight hospitals in FWLHD and WNSWLHD. The VCPS has received wide spread organisational support and WNSWLHD has committed to expanding the service to an additional 25 hospitals.



CLINICAL EXCELLENCE AND PATIENT SAFETY

TABLE OF SUBMISSIONS

<p>National Capital Private Hospital, ACT Intensive Care/Quality #ProjectProphylaxis <i>Nate Gombach</i></p>
<p>Hong Kong University Shenzhen Hospital, China Improve the first case on-time starts (FCOS) in the operating room <i>Huang Jing, Wong Tak man, Guo Lin, Lu Zhen Quan, Liu Zhao Hua, Chen Zhuang Yuan, Wang Ying and Wei Long Li</i></p>
<p>Hong Kong University Shenzhen Hospital, China Improving safety, quality & efficiency of Infection Control in Emergency Department during the COVID-19 Pandemic <i>Abraham Ka-Chung Wai, Rong-Heng Lu, Yan-Li Wang, Jing Zhou, Chen-Shun Zhai, Yuan-Yuan Wang, Yuk-sim Chan and Rick Fei-Lung Lau</i></p>
<p>Metro North Hospital and Health Service, QLD Pharmacy Dept <i>Tim Dunn, John Willett and Nerys Brackman,</i></p>
<p>SA Health, SA Dental Service Improving Rates of Fluoride Application for High-Risk Children in SA Dental Noarlunga <i>Timothy Budden and Isaac He</i></p>
<p>Southern Adelaide Local Health Network, SA Women's and Children's Division SALHN: Ward 4C Acute Pain Management Chart Observation Compliance <i>Tracey McPhee and Emma Leske</i></p>
<p>Prince of Wales Hospital, NSW Aged Care Engaged Care <i>Sienna James, Laura Dalton, Tich Matenda, Ji-Hjennie Barryo Park, Danielle Clarke, Danielle Gately and Bill Ranieri</i></p>
<p>Prince of Wales Hospital and Agency for Clinical Innovation, NSW Emergency Department The Emergency Procedures App <i>James Miers, John Mackenzie, Michael Golding and Linda Soars</i></p>
<p>St. Paul's Hospital, Hong Kong SAR Department of Obstetrics and Gynaecology Application of Heated Disposable Blanket in Preventing Neonatal Hypothermia During Transportation <i>Wing Yi Kaness Ching, Kam Tak Camille Ho, Shun Kiu Margaret Cheung and Hoi Yi Wong</i></p>
<p>Far West Local Health District, NSW Clinical Governance Unit Far West Local Health District's PRE-HAPI Project - FWLHD's Prevent, Recognise and Manage Hospital Acquired Pressure Injury (HAPI) Prevention Project <i>Rekha Pillai and Megan Jordan</i></p>
<p>Sydney Local Health District, NSW RPA Virtual Hospital Enhancing patient outcomes and experience through virtual care <i>Miranda Shaw, Freya Raffan, Mickael Gieules, Dianna Jagers and Rajip Thapa</i></p>
<p>Chris O'Brien Lifecare, NSW Pharmacy and Acute Pain Service Opioid Stewardship at Chris O'Brien Lifecare: Promoting appropriate discharge opioid supply for opioid-naïve surgical patients <i>Kenny Kwon Ho Lee, Amanda Johns, Michael Soriano and Daniel King</i></p>
<p>John Hunter Hospital, NSW Cardiology, Division of Medical and Interventional Services Management of Rural Acute Coronary Syndromes (A randomised control trial)</p>



<p><i>Fiona Dee, Lindsay Savage, Olivia Watson, Conrad Loten James Leitch and Andrew Boyle</i></p> <p>West Gippsland Healthcare Group, VIC Consumer Engagement Consumer Stories: Narrative medicine principles for continuous improvement <i>Rosemary Joiner, Angela Greenall, Kira Hardy</i></p>
<p>Goulburn Valley Health, VIC Goulburn Valley Health Project ECHO® – Joint Addiction and Mental Health Sessions <i>Lisa Pearson, Edward Ogden and Ravi Bhat</i></p>
<p>Central Adelaide Local Health Network Trauma Centre, SA Blood at my fingertips – Improving access to blood products in the trauma setting of Royal Adelaide Hospital <i>Amanda Catherwood, Daniel Ellis, Helen Stathopoulos, Noel Garvin, Daniel Harris, Rick Tocchetti, Rowena Dixon and Susan Ireland</i></p>
<p>Townsville Hospital and Health Service, QLD Healthcare Standards Improving Nursing Bedside Clinical Handover <i>Melanie Taylor, Brenden Perrett, Toni McCormack, Samara Grumberg, Ramana Butters, Jacalyn Bates and Ashlee Eden</i></p>
<p>Ryde Hospital, NSW Ryde Hospital Falls Collaborative - Towards Zero Falls @ Ryde <i>Drew Hilditch-Roberts and Deb Stewart</i></p>
<p>WACHS Kimberley, WA Medical Department Code Who? MET calls at Broome Hospital <i>Corey Rosher</i></p>
<p>Premier Jatinegara Hospital, Indonesia The Role of Antibiotic Stewardship Committee in Selecting Antibiotic Appropriately in Order to Increase Patient Safety in Premier Jatinegara Hospital <i>Reila Sari, Susan Oktiwidya Ananda, Rianya, Winda Trisnawati and Sonia Pratiwi</i></p>
<p>Liverpool Hospital, NSW “We felt she was one of us”: Evaluation of a natural helper mentor program to support the management of CALD patients with musculoskeletal pain. <i>Bernadette Brady, Balwinder Sidhu, Justine Naylor, Matthew Jennings, Robert Boland, Geraldine Hassett, Natalie Pavlovic and Shaniya Ogul</i></p>
<p>WA Country Health Service, WA Population Health A clinical alert system to improve the safety and wellbeing of children at risk in country Western Australia <i>Sharon McBride, Gabby Dunn-Karakaya and Tonia Brockman</i></p>
<p>Illawarra Shoalhaven Local Health District, NSW Emergency Services Safer, better emergency nursing care for the Illawarra Shoalhaven Local District with HIRAID: a proven, up-scalable emergency nursing framework <i>Kate Curtis, Belinda Munroe, Margaret Fry, Margaret Murphy, Julie Considine, Ramon Shaban, Hatem Alkhouri and Sivabalan</i></p>
<p>Albury Wodonga Health, NSW Clinical Education Unit COVID-19 care for the Congolese community - Identifying and addressing the COVID-19 care needs of the Albury Wodonga Congolese community through culturally appropriate engagement and collaboration <i>Emma Horsfield</i></p>
<p>Perth Children’s Hospital and Curtin University, WA ESCALATION Project Team ESCALATION PROJECT: Development and trial implementation of a uniform evidence-based system for recognition and response to paediatric clinical deterioration in Western Australia. <i>Fenella Gill, Pania Falconer, Alannah Cooper, Gavin Leslie, Scott Stokes and Margaret Wood</i></p>
<p>WA Country Health Service Great Southern, WA Office of the Regional Director WA Country Health Service Great Southern Regional Safety Brief 10@10</p>



<p><i>Trisha Power and Karen Nicoll</i></p> <p>WACHS Great Southern, WA Great Southern Mental Health Service Albany Acute Psychiatric Unit Smoking Care <i>Phoebe Thornton, Mat Coleman, Kelly Ridley and Hanh Ngo</i></p> <p>Allowah Presbyterian Children’s Hospital, NSW Allowah Executive Leadership Team The Safety Pause – an all team approach to reducing harm <i>Ruth Bunby, Christine Towers, Elizabeth Maclean, Maura Hanney, Gillian Gilchrist and Jonathan Flick</i></p> <p>Royal Melbourne Hospital, VIC Quality Improvement and Patient Experience Team Right Patient, Right Care <i>Kaylene Bastin, Elizabeth Hickey, Laura Piu, Natalie Gaffy, Simone Taylor and Jackie O’Connor</i></p> <p>Western NSW Local Health District, NSW Virtual Clinical Pharmacy Service A virtual pharmacy model of care improves the safe and effective use of medications at rural and remote hospitals <i>Brett Chambers, Shannon Nott, Cristen Fleming, Anna Packer and Louis Botha</i></p> <p>Kyabram District Health Service, VIC Cancer Services Establishment of a nurse-led rural cancer service <i>Diane Roberts and Meredith Hodder</i></p> <p>Hollywood Private Hospital, WA Clinical Services Improving patient safety and achieving clinical excellence through the implementation of an integrated quality improvement system <i>Suzanne Craigie and Karen Gullick</i></p> <p>Western Health, VIC Department of Anaesthesia, Pain and Perioperative Medicine The introduction of perioperative guideline mobile app to improve perioperative care <i>Joshua Szentel, Gregg Miller and David Bramley</i></p> <p>Central Queensland Hospital and Health Service, QLD Rockhampton Hospital Emergency Department Implementation of the Emergency Department Sepsis Pathways in Rockhampton Hospital <i>Bree Walker, Alice Brandt and Naitik Mehta</i></p> <p>Hong Kong Baptist Hospital, Hong Kong SAR Nursing Department Improving Medication Safety Together, we can make a difference <i>HO Pui Cheung Gladys, TO Ka Wing, CHEUNG Ching Yee Cindy and LEE Wai Yee Susanna</i></p> <p>Royal Far West, NSW Paediatric Development Program (PDP) Paediatric Development Program Redesign <i>Tricia Linehan, Frances O’Loughlin, Kim Casburn and Caroline Harris</i></p> <p>Beechworth Health Service, VIC Falls Prevention Working Group Mobility and Independence at Beechworth. A replicable, scalable model for our highest clinical risk - Falls <i>Shell Morphy, Lisa Allen, Mark Ashcroft, Sharon Knowles and Julia Brisdon-Farr</i></p> <p>Royal Perth Bentley Group, WA Toxicity from recreational nitrous oxide inhalation – developing a clinical guideline and addressing an emerging public health problem <i>Owen McWilliam, Jessamine Soderstrom, Kerry Hoggett, Sophie Damianopoulos, Andrew Kozman, Julia George and Mohan Raghavan</i></p> <p>Calvary Public Hospital Bruce, ACT Perioperative Department Surgical Smoke Evacuation and Humidified Co2 Insufflation <i>Maninder Singh and Feby Daniel</i></p> <p>Ramsay Health Care, VIC</p>
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<p>Donvale Rehabilitation Hospital Measuring patient change during rehabilitation using a standard set of outcome measures to improve patient care <i>Amanda Timmer and Margie Schache</i></p>
<p>Western Health, VIC Best Care at Western Health <i>Narelle Watson, Alison Rule and Paul Eleftheriou</i></p>
<p>University of Hong Kong-Shenzhen Hospital, China Department of Surgery The establishment of regional trauma system as a leading trauma center in Great Bay Area <i>Lo Chung Mau, Joe King Man Fan and Zhang Guixi</i></p>
<p>South Metropolitan Health Service, WA Targeted falls prevention and falls rounding <i>Joanne Hughes and Madeline Shervill</i></p>
<p>Queensland Health, QLD Diabetes and Endocrine/ Townsville University Hospital Diabetes Dashboard Team <i>Ursula Togiailua, Dr Kunwarjit Sangla, Casey Thompson, Pierre Nicholas Boyer, Jenny Walsh, Jody Gallagher, David Hunter and Usman Malabu</i></p>
<p>Gold Coast Hospital and Health Service, QLD Anaesthesia Department Driving Gold Coast Anaesthesia Quality Improvement with Data <i>Rachel Bourke, Halia O'Shea, Patrick Glover and Rachael Arthur</i></p>
<p>Westmead Hospital, NSW WSLHD OACCP (Western Sydney Local Health District - Osteoarthritis Chronic Care Program) <i>Natalia Ghosn, Ken Cai, Nicole D'Souza and Kimberley Mulheron</i></p>
<p>St George Hospital and Clinical Excellence Commission, NSW Systems Improvement Antibiotic allergy de-labelling <i>Lolita Java, Suman Adhikari, Richard Sullivan, Orla Galvin, Sharon Robinson and Pam Konecny</i></p>
<p>Westmead Hospital, NSW Division of Women's and Newborn Health The Goldilocks Project: not too cold, not too hot <i>Vinayak Kodur, Smita D'Souza, Stephanie Bishop, Mariann Hennessy, Paula Valades, Moni Singh, Rajwinder Bawa and Pranav Jani</i></p>
<p>Prince of Wales and Clinical Excellence Commission, NSW Systems Improvement Automating Continuity of Medication Management - eMR Patient Friendly Medication List (PFML) solution <i>Jacquelyne Lam, Nina Muscillo, Lucy Nair and Kate Roper</i></p>
<p>Auburn Hospital, NSW Maternity Services Baby Steps <i>Helen Mou, Julianne Harvey, Tanja Nietlisbach, Lidiya Malinov, Heidi Engelbrecht, Ana Donnellan and Kate Murphy</i></p>
<p>Western Sydney Local Health District, NSW Western Renal Service From Standard to Incremental: Improving prescribing practice in peritoneal dialysis <i>Mary Ann Nicdao, Germaine Wong, Katrina Chau, Kamal Sud, Surjit Tarafdar, Martin Howell, Allison Tong and Karine Manera</i></p>
<p>Auburn Hospital, NSW Outpatients Department Hand in Hand: Growing Together Everyday <i>Tanja Nietlisbach and Sharmily Nagarsekar</i></p>
<p>Saint John of God Murdoch, WA St Michael's Ward Here We Go Your admission into hospital <i>Vanessa Herrick and Wendy Singleton</i></p>
<p>Lyell McEwin Hospital, SA</p>



<p>Obstetrics and Gynaecology Immediate Post-Partum Intrauterine device placement <i>Kate Walsh, Hannah Szewczyk, Martin Ritossa and Anupam Parange</i></p>
<p>Blacktown and Mount Druitt Hospitals, NSW Children's Ward (Department of Paediatrics) Kuddles – A Safety Huddle for the Kids <i>Christopher Yong, Llewella Butland, Nicola McKay, Belinda Jordan and Kate Lowe</i></p>
<p>North Eastern Community Hospital, SA Executive Office and Clinical Services Design and Implementation of a best practice Integrated Clinical Governance Framework <i>Michele Smith</i></p>
<p>Echuca Regional Health, VIC Dental and Community Services Effectiveness of targeted stakeholder engagement on oral healthcare presentations in rural socially disadvantaged antenatal women <i>Anjali Ragade and Cynthia Opie</i></p>
<p>Hong Kong University Shenzhen Hospital, China Reduction of incidence rate of Postpartum Hemorrhage within 2 hours after Vaginal Delivery and severe complications <i>Wang Xue, Liao Shu Zhen, Qin Qiao Yi, Lin Jing Chun, Wu Ting, Xu Yue, Wang Xiao Xiang and Wang Jie</i></p>
<p>Hong Kong University Shenzhen Hospital, China Thoracic Surgery To make a high risk thymectomy for myasthenia gravis to be a routine operation by ERAS <i>Pang Da Zhi, Joe Fan, Li Jing Long, Zhang Ji Tian, Liu Ru Tai Yang, Liang Ya Nan, Xu Xue Bing and Tang Ying</i></p>
<p>Hong Kong University Shenzhen Hospital, China Reduce the incidence rate of Ventilator associate pneumonia (VAP) in NICU <i>Yin Xue, QianShen Zhang, Liang Bing Wang, Na Zeng, Xiu hong Ou and Lu Wang</i></p>
<p>Clinical Excellence Queensland, QLD Healthcare Improvement Unit Promoting Value-based care in Emergency Departments (PROV-ED) Project <i>Louise Cullen, Andrew Hobbins King, Sarah Ashover, Tanya Milburn, Sara Berndt, Abigail Cliff and Danielle Deskins</i></p>
<p>International Medical Center, Kingdom of Saudi Arabia Infection prevention and control COVID-19 Risk Assessment by Failure Mode and Effect Analysis <i>Nashaat Hamza, Omnia Ismail Hassan and Tasneem Abdulwahab Bogess</i></p>
<p>Peel Health Campus, WA Dietetics Do Moulded Meals Served on Red Plates Yield Less Plate Wastage and Potentially Increase Oral Intake of Patients? <i>Josephine-Lee Oddo</i></p>
<p>Karitane, NSW Karitane Virtual Residential Unit <i>Angela Wood, Melanie Hughes and Grainne O'Loughlin</i></p>
<p>The University of Hong Kong-Shenzhen Hospital, China Department of Surgery, Division of Urology Multi discipline approach quality improvement of medical records <i>Richard Lo, Chen Yuchan, Lu Zhenquan, Jiang Yi, Cai Xinliang, Wang Mingchi, Feng Yonghong and Huang Meifeng</i></p>



NON-CLINICAL SERVICE DELIVERY

WINNER

Liverpool Hospital, NSW

Speech Pathology Department

12 Books for 12 Months: Enhancing Early Language and Literacy Environments*Jessica Anton, Jennie Cusiter, Ellen Dunn, Brooke Butt, Kate Short and Tia Croft*

AIM

'12 Books for 12 Months' is an innovative preventative language and pre-literacy program for Early Childhood Educators that aims to mitigate the negative long-term academic, employment and psycho-social outcomes for at-risk children who commence school with poor pre-literacy skills.

SUMMARY ABSTRACT

Introduction: Children with poor communication skills are at risk of poorer health and well-being in adulthood. Moreover, children from low socioeconomic areas are known to have disproportionately higher developmental vulnerability (Snow, 2020) and to be at higher risk for literacy failure at school (Longian, 2004). According to the 2018 Australian Early Development Census (AEDC 2018), children in the Liverpool area were more developmentally vulnerable overall (23.5%) and in the areas of communication (10.7%) and language (6.9%) than the NSW state averages (19.9%, 8.0%, and 5.2% respectively).

Current research demonstrates the development of complex oral language and early pre-literacy skills in preschool years is foundational for literacy learning (Nicolopoulou et al. 2015). Children who attend higher quality Early Childhood Education and Care (ECEC) services are more likely to commence school with better cognitive, academic and social skills (Burchinal et al. 2011). However, there continues to be a high variability in the quality of teaching practices and environments across the ECEC sector, especially in low socio-economic areas (Morrissey et al. 2014).

The National Quality Standard (NQS) provides a national benchmark for the quality of ECEC services relating to child outcomes. At the time of planning, 130 ECEC services within the Liverpool area were rated as 'working towards' or 'meeting' the NQS, indicating lower quality ECEC environments and teaching than those rated 'excellent' or 'exceeding'. These ratings reflect the evidence that ECEC programs in low socioeconomic areas tend to have comparatively poorer quality of care (Cloney et al. 2016).

Given that ECEC services play a significant role in closing the gap in skill attainment for vulnerable children, a need for high quality ECEC environments to mitigate this vulnerability in the Liverpool area was identified.

Current evidence supports the use of professional development (PD) programs for Early Childhood Educators (ECEs) to change teaching practices and enhance child learning. PD that focuses on knowledge and instructional strategies to develop vocabulary, alphabet knowledge and phonological awareness skills are evidenced to improve the ECEC environment and child language outcomes (Wasik & Hindman 2011). The use of diverse vocabulary, shared-book reading experiences and explicit pre-literacy activities result in improved child print awareness, vocabulary and language complexity (Dickinson & Porche 2011). Strong skills in these language and pre-literacy domains predict better language outcomes for school and in life.

Therefore the Liverpool AEDC working group aimed to enrich ECEC environments and teaching practices in the Liverpool area, to ameliorate the known negative short and long term outcomes of poor literacy.

Method: A literature review was completed to identify 1) target language and pre-literacy skill areas and 2) available ECEC pre-literacy training to inform the development of a language and pre-literacy focused workshop aimed at capacity building and up-skilling of ECEs in Liverpool. 130 centres within the Liverpool area who met criteria on their NQS ratings were invited to the workshop. However, only 12 educators attended due to significant access barriers reported by the



centres including ECEs were unable to leave the centre during work hours and had limited time outside of work for professional development activities.

To address these barriers, Liverpool Speech Pathologists involved in the AEDC working group created and disseminated 12 professional development resources to enhance the teaching practices of ECEs in ECEC services. Each resource contained language and pre-literacy teaching techniques, practical activities and instructional videos, referencing the Early Years Learning Framework. The targets included vocabulary, inferencing, print concepts, and phonological awareness. The pilot project recruited 25 ECEC services from the Liverpool area who were rated as “meeting” or “working towards” on the National Quality Standards (NQS) and located in a geographical area of significant socioeconomic disadvantage according to their Socio-Economic Indexes for Areas (SEIFA) ranking. The program was rolled out over 18-months (impacted by COVID-19 in 2020), with an initial evaluation after the first two resources were disseminated and a final educator experience and outcome survey at the conclusion of the program. Through rolling-recruitment, 115 ECEC services across SWSLHD were involved in the initial roll-out.

Results: Most educators reported changing their teaching and book reading practices because of the resource. Specifically, 100% of educators reported they learnt new vocabulary, language and play extension teaching techniques, 93% reported enhanced phonological awareness teaching practices, and 79% reported acquiring new skills to teach abstract thinking and print concepts.

Conclusion: These positive changes in practice support positive long-term child health outcomes. This pilot program provides encouraging evidence for broader roll-outs of professional development relating to language and pre-literacy areas of practice to improve child outcomes. It demonstrates promising transferability to other domains of professional development. Future roll-outs will aim to investigate 1) the impact of embedding coaching into professional development to facilitate significant change in ECE expertise and 2) change in child language and pre-literacy outcomes using direct assessment.

REPORT

APPLICATION OF ACHS PRINCIPLES

1. Consumer Focus

The ‘12 Books for 12 Months’ program has sought and integrated consumer feedback throughout the planning, development, implementation and evaluation stages. The formation of the AEDC working group itself, consisting of members from multiple organisations including Health, Council, Education and NGOs, is representative of the deep collective desire to enhance consumer engagement and responsiveness within the ECEC area. The program was collaboratively developed by Speech Pathologists from Liverpool Hospital*, Educators from Uniting Links to Early Learning, and Mission Australia 2168 Communities for Children and overseen by the AEDC working group. This group was instrumental in analysing the needs of the community and identifying the goals for the implementation phase of the program. The success of this project is founded in this immense community collaboration seeking to address a significant early education need and acknowledgement is given to all contributing partners.

Professional development of ECEs was identified as the priority method for improving the environment and teaching practices for ECEC centres. However with poor attendance at the professional development session, consumer feedback identified barriers in accessing the session and led to the AEDC working group proposing the development of 12 resource packs for dissemination to ECEC centres.

The resource packs developed by the Speech Pathologists and Uniting Links for Early Learning were largely consumer focussed as they were designed and tailored to specifically address the individualised needs of the target consumer demographics. The resource packs also aimed to improve access for the consumers by referencing the Early Years Learning Framework which is the educational guidelines all ECEC centres are required to follow. They were developed with practical language and pre-literacy teaching techniques, activities and instructional videos. Further consumer feedback was obtained through an initial evaluation following the dissemination of the first two resources and a final educator experience and outcome survey at the conclusion of the program.



* *Speech Pathology was partially funded by Mission Australia 2168 Communities for Children (C4C); an initiative of the Australian Government.*

2. Effective Leadership

Effective leadership, coaching and mentorship have been clearly adopted by the Speech pathologists involved in the development and implementation of the educational project, both amongst their peers within their local department and across the wider community. The project team led this capacity building initiative to equip ECEs with the required knowledge and skillset such that they can overcome challenges and support pre-literacy development. Consequently, this translated into effective leadership and improved long term outcomes for children.

Furthermore, targeted early intervention and high quality early childhood programs have a proven financial benefit for long term health care costs (Heckman et al. 2010). 12 Books for 12 Months is a unique early intervention resource that provides targeted preventative care in the community to improve long-term child outcomes. This innovative program aimed to provide evidence based strategies to targeted vulnerable populations to mitigate known negative risk factors for this cohort.

The resource was developed in consultation with key stakeholders in the community and was reviewed and evaluated throughout the development process. Consumers provided specific feedback on the content, accessibility and usability of the first 2 resources, which refined the completion of the remaining 10 resources.

The collaboration of Speech Pathologists from the Liverpool Speech Pathology Department in the development of these resources has positively influenced the approach and development of other parent and community education projects. In addition to this, the completion of the 12 Books for 12 Months resources and our involvement with community stakeholders through the AEDC working group, has led to funding opportunities to extend the current program to include coaching of ECEs in line with current evidence and to target other vulnerable populations within the Liverpool area (i.e. Aboriginal and Torres Strait Islander communities).

3. Continuous Improvement

The 12 Books for 12 Months program is steeped in evidence-based practice. Its concept and development was determined through community engagement, consumer feedback and current evidence and has included ongoing evaluation as the program has evolved. The '12 Books' resource packs have been designed to be replicable resources comprising of an introduction manual describing how to implement the resources, 12 pre-literacy education and activities and the accompanying 12 children's book. Whilst the provision of books requires ongoing funding, the pre-literacy resources containing evidence-based strategies and informed activities can be easily replicated and provided to any ECEC centre. The pre-literacy strategies can be adapted and used with any books, therefore the impact of the resources is sustainable and generalisable. The second roll out of the '12 Books' program in 2021 has been adapted to include pre- and post- outcome measures to better capture consumer feedback. Additionally, funding through the Department of Communities and Justice has been acquired to create a culturally responsive Aboriginal pre-literacy program with in-built ECE coaching (LEEEP). The framework for the LEEEP resources were based on the initial resources from the 12 Books for 12 Months program. Further grant applications have been sought to allow for child outcomes to be collected to further improve both the care and the results of the program and any future iterations.

4. Evidence of Outcomes

115 centres were involved in the initial roll out of the '12 Books' program across 2020 and received the evaluation survey, comprising of categorical data, 5-point Likert scales and open-ended responses. There was a 56% response rate: 48% educators, 39% ECEC Directors and 13% not stated. Figures 1 and 2 demonstrate educator's high use of the specific resources and their perception of their knowledge change across program target areas.



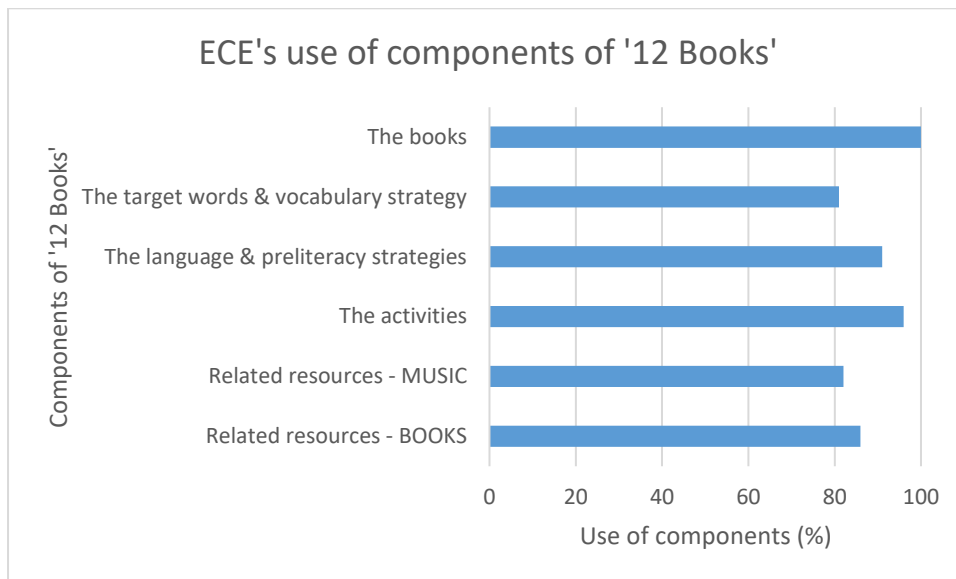


Figure 1: ECE's use of components of '12 Books'

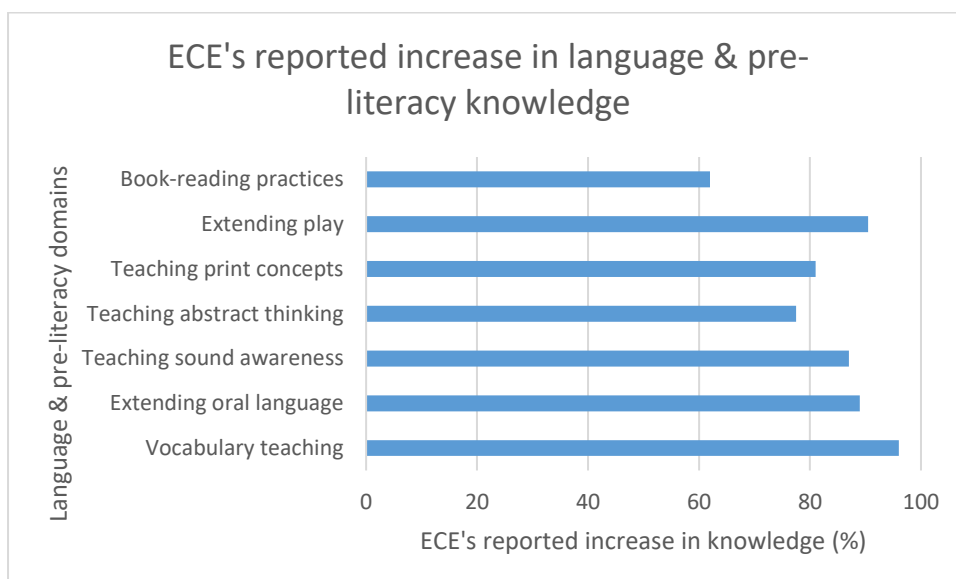


Figure 2: ECE's reported increase in language & pre-literacy knowledge

Overall, 62% ECEs reported the resources changed how they read books with the children. Most educators reported the resources were: easy to understand and use (98.2%); engaging for children (92.6%) and accessible (81.5%).

Overwhelmingly positive consumer feedback was received:

“We would love to have access to more if funding is made available. Numeracy packs, physical activity packs”

“I found it both useful and helpful for any educator to use the 12 books packs to prepare future learning experiences according to the learning and developmental needs of the children. It provides a lot of strategies to teach print concepts and vocabulary to children”

The quantitative and qualitative data reflects the positive impact of the resources on ECE pre-literacy knowledge and practices, along with the potential transferability of the '12 Books' resources to other health promotion (e.g. obesity) and educational areas (e.g. numeracy).



5. Striving for Best Practice

12 Books for 12 Months is a unique and innovative service model utilising tiered response to intervention practices. Due to the unique nature of this program, it was not possible to benchmark against any existing programs. However, each resource pack contained language and pre-literacy teaching techniques, practical activities and instructional videos, referencing the Early Years Learning Framework which all ECEC centres are required to follow. Through the use of this framework, and early targeted evaluation by consumers, we ensured consumer engagement and satisfaction, resulting in the development of relatable and applicable resources.

The content of the resources were developed in line with current evidence which supports the use of professional development (PD) programs for ECEs to change teaching practices and enhance child learning. PD that focuses on knowledge and instructional strategies to develop vocabulary, alphabet knowledge and phonological awareness skills are evidenced to improve the ECEC environment and child language outcomes (Wasik & Hindman 2011). The use of diverse vocabulary, shared-book reading experiences and explicit pre-literacy activities result in improved child print awareness, vocabulary and language complexity (Dickinson & Porche 2011). Strong skills in these language and pre-literacy domains predict better language outcomes for school and in life. Therefore the program targets included vocabulary, inferencing, print concepts, and phonological awareness.

The initial '12 Books' program has informed the second roll-out, with stronger pre-post outcomes and a funded extension of this program involving coaching, as current best practice highlights coaching as an integral element of successful PD.

INNOVATION IN PRACTICE AND PROCESS

This is an innovative, tier two public health program, involving collaboration between Health, Council, Education, NGOs and Early Childhood Education stakeholders to promote and support the enrichment of early language environments. '12 Books' was created to improve child language developmental outcomes through 1) addressing the known high levels of variability of quality in local ECEC services and 2) overcoming access barriers for ECEs to attend training by providing on-site, sustainable pre-literacy resources for ECEs to implement. It is a unique, targeted pre-literacy preventative program that is highly translatable and adaptable to larger scale roll-outs.

APPLICABILITY TO OTHER SETTINGS

The '12 Books' program has the ability to be rolled out to any ECEC centre immediately. It is currently being rolled out in its second phase at new centres with a comprehensive pre-post evaluation and amendments to resources following initial feedback. This pilot has also informed the development of a modified culturally informed pre-literacy resource for ECEs working with Aboriginal children. The modified version includes 6 children's book by Australian Aboriginal authors and/or illustrators and has embedded the Aboriginal pedagogical 8 Ways framework to increase the culturally responsive practices of ECEC services and ECEs supporting Aboriginal children in the Liverpool area. This program is currently being implemented and evaluated.

Broader clinical roll out including measures of child language and pre-literacy outcomes are pending, dependent on future funding. The framework and evaluation of the initial program has positively influenced the approach and development of other parent and community education projects within the Liverpool Speech Pathology team.

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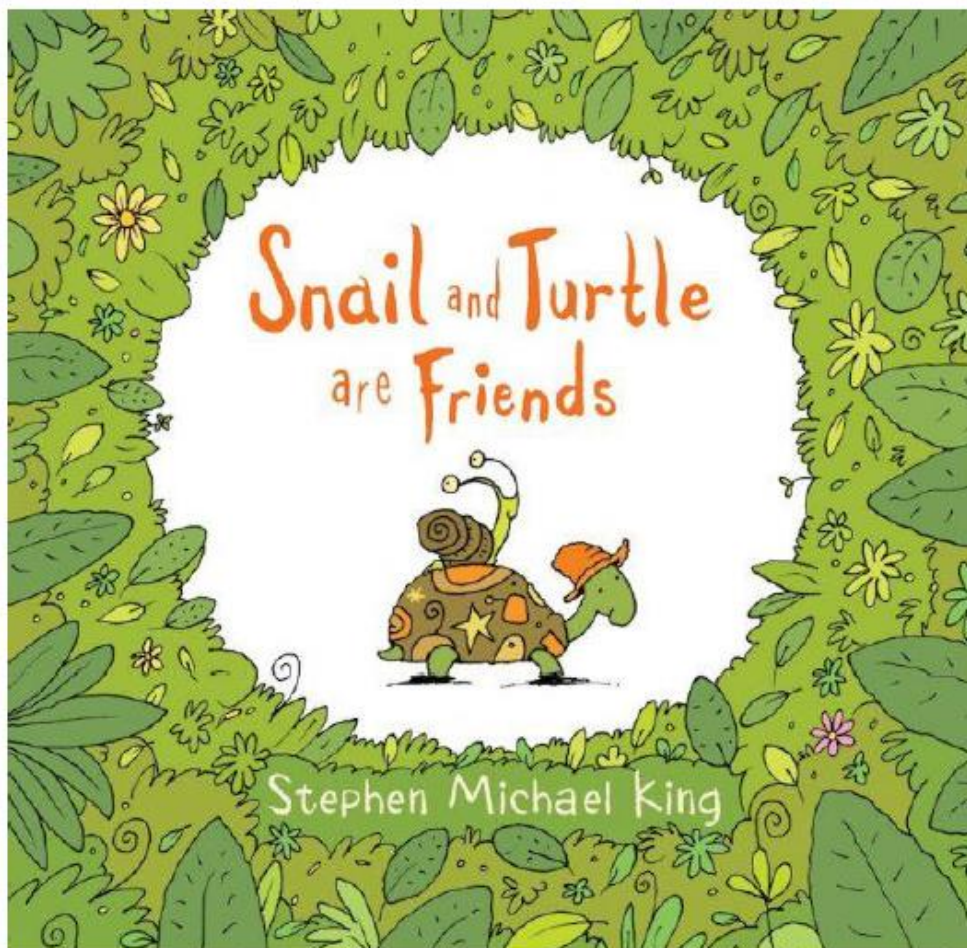
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APPENDIX



PRELITERACY TARGET: DEVELOPING LANGUAGE SKILLS USING TECHNIQUES RECASTING

THEMES COVERED IN THIS BOOK CENTRE AROUND FRIENDSHIP



CONTENTS

LEARNING OUTCOMES.....	3
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SPECIFIC VOCABULARY TEACHING ACTIVITIES	7
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LEARNING OUTCOMES

This resource continues to target the shared book reading strategy 'CAPTURE'. It focuses on the language stimulation technique, 'recasting'.

Recasting is a powerful technique for teaching children language. Recasting can be used to teach children new vocabulary and sentence forms along with correcting any sentence or word errors. Recasting can be used during interactive book-reading, everyday play, and conversations.

This book relates to the following AEDC domains:

LANGUAGE & COGNITIVE SKILLS

COMMUNICATION SKILLS AND GENERAL KNOWLEDGE

SOCIAL COMPETENCE



BOOK READING STRATEGY



The CAPTURE strategy (found on your bookmark) is explored in the following pages. This months resource will focus on the following components marked with a star ★ :

Comment

Ask questions

Pause for response

★ **T**alk about the story

★ **U**se new vocabulary (**LEARN**)

Repeat the same book

★ **E**xpand on what they say



VOCABULARY TEACHING

LEARN



Look and **L**isten for the new words in books.

Emphasise the word when reading and talk about what it means.

and then...

Repeat the word in many different sentences in a variety of activities.

Notice the children use the word

Vocabulary from the book to teach

Together Clever

Creative Early After

This book uses simple words and concepts. Not all books contain complex vocabulary. This means you need to use other techniques to increase language complexity. Check out **recasting!**



DEFINITIONS



Together – when you are with someone else or doing something at the same time

Page 6: "They enjoy being quiet together"

Snail and turtle like being quiet together, look they are both sitting together. They're not alone, they're together.

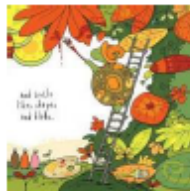


Clever– when you are very good at doing something

Page 10: "Snail and Turtle are clever at hiding".

They are very good at hiding, they're very clever. No one can find them because they are so clever at hiding.

Create – using your imagination to make something



Page 21: "Snail and Turtle are creative together"

Look how creative they are, they are painting the leaves. They are creating lots of colours and patterns on the leaves! I like to be creative with paints.

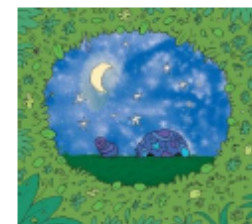
Early – happening at the beginning, or before the start

Page 15: "Snail likes early mornings after the rain"

Snail likes to go outside early in the morning. I like to get up early and play with my toys before I eat breakfast. Do you like to get up early or sleep in late?

Late – happening after it was meant to, or at the very end

Sometimes I am late to preschool. If I am late that means I miss out on saying hello to my friends and playing outside. I don't like to be late.



After – behind something, a later time

Page 15: "Snail likes early mornings after the rain"

I like to play outside after it rains too. After it rains there are puddles to jump in and mud to play in. After I play outside I like to have a warm bath.



TALK ABOUT THE STORY

'Snail and Turtle are Friends' is a book with short and simple sentences. To encourage children to say longer sentence talk more about the story and the pictures than just reading. Talk about the characters actions and feelings, the environment, any problems and solutions. Children will understand the story better and focus and attend more. Asking and answering difficult questions helps children hear how to answer more complex questions for themselves.

Here are some examples of using longer sentences and complex questions to talk about the story:

I can see some red stripes. What shapes do you like to paint?

Turtle is painting with a paintbrush. What else can we paint with?

Turtle likes to paint. He is painting the leaves with different colours and patterns.

and Turtle likes shapes and blobs.

Have you ever used a ladder? How else could he reach higher?

Turtle is painting outside. What will happen to the paint if it rains? It will wash away!

Do you remember when we painted at preschool? What did you paint?

Turtle is climbing up the ladder to paint. What would happen if turtle didn't have a ladder?



Here are some great sentence starters to help children relate the story to their own experiences:

HAVE YOU EVER...

REMEMBER WHEN...

WHAT DO YOU ...

HOW DO YOU



RECASTING

Recasting occurs in everyday conversations and increases a child’s knowledge of new words, sentences and ideas. Recasting is repeating what a child says and either

Adding more information OR **Fixing mistakes**

Adding more information:

Use longer sentences: *Check out these easy scripts*

Child Says:	Adult Says:
I am going to play	You are going to play in the sandpit
The snail is painting	The snail is painting the leaves.
I like apples	I like apples because they are crunchy
Where’s mummy?	Where’s mummy and what is she doing?
I am writing my name	I am writing my name with a pencil
The turtle is hungry	The turtle is hungry so he will eat some leaves.

Adding new words, changing old ones: *Recasting help’s children learn new ‘target’ words in everyday conversation.*

Target Word to Add: Together

Child: we are making a picture



Teacher: You are making a picture together!

Target Word to Add: Create: ask children – “What are you creating Mohammad?”

Child: I am making a turtle



Teacher: Oh, you are creating a turtle. I created a snail.



Target Word to Add: After; *look how ‘next’, an easy word, can be recasted to the more complex word ‘after’*

Child: I am next



Teacher: You are next Sam, you are after Marcus



Fixing mistakes

Repeat what the child says to fix any errors. This models the correct vocabulary and grammar to children to support the development of their language skills. This is a positive way to fix a mistake. The child doesn't have to repeat you and isn't told they've made a mistake.

In book-reading:

Child: "it rain"
Teacher: "It is raining!"

Child: "turtle dance"
Teacher: "The turtle is dancing!"

Child: "turtle got umbrella"
Teacher: "The turtle has an umbrella"

In play:

Activity: The great SLOW race



Split the children into two groups, snails and turtles. Talk about how each animal moves:

- Snails and turtles are slow
- Snails slide on their stomach
- Turtles crawl on four legs

Explain the aim of a slow race is to be the slowest animal. You have to move as slowly as possible but you can't stay still. One child from each group (snail and turtles) race each other at a time.

Here are some example sentences you may hear and how you could recast them:

Fix mistakes

Child	Adult
I snail	I am a snail
I go slow	I am going slowly
He go so fast	He is going very fast!

Adding information

Child	Adult
I am a snail	You are a very slow snail
I am sliding	You are sliding on my tummy!
The turtle is faster	The turtle is faster than the snail. The turtle is the fastest.



EXTENSION ACTIVITIES



LEAF PAINTING

Children collect leaves from the garden to decorate.

Materials: paint, glitter, pipe cleaners, pom poms, stickers, paper leaf cut-outs of leaves (if needed)

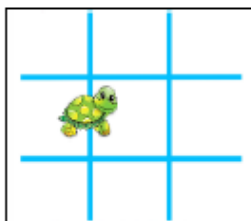


Vocabulary: create, creative

Recasting:

Child	Adult
I got a leaf	I found a crunchy leaf
I am making it	I am creating a colourful leaf!
I put on glitter	I stuck glitter on with glue

SNAIL AND TURTLE TIC TAC TOE



Explain the rules of 'Noughts and Crosses' and model playing the game.

Instructions: Each child/group has several of the same picture (snails or turtles). They take turns placing them on the grid. The aim of the game is to get three of the same symbol in a row (show the children the different rows – across, vertical and diagonal).

VOCABULARY: straight, line, diagonal, above, below, same, different

Recasting:

Child	Adult
It the same	They are the same.
I put them there	I put them in a straight line I put them in a diagonal line
I put the turtle there	I put the turtle above the snail

SIMILARITIES AND DIFFERENCES

- Snail and Turtle are friends but they are also different to each other.
- Help the children talk about how their friends are similar or different to them (eye/hair colour, height, number of siblings, pets, favourite foods/games/hobbies).
- After talking about the similarities and differences between friends, ask the children to paint or draw a picture of themselves and their friends.
- Educators, write a caption on the picture about the similarities and differences.



VOCABULARY: create, together, same, different (describe how pictures are different or the same by talking about the colours, sizes, other features)

Recasting:

Child	Adult
I made a picture	I created a picture
I drew a picture	I drew a picture of my friend.
We are different	We are different because ... (we have different coloured eyes)

WHAT I LIKE

- Go through the book with the children and write a list of activities and items that snail and turtle like to do alone and together.
- Brainstorm to create a list of what the children like to do.
- Children draw\paint a picture of what they like and educators write a related caption e.g. "Wendy likes to climb"

VOCABULARY: like, don't like, best, favourite, alone, together

The snail likes to	The turtle likes to	I like to
_____	_____	_____



Recasting:

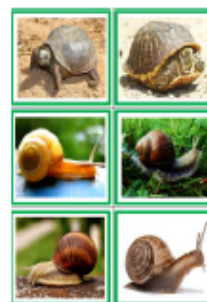
Child	Adult
I like drawing	I like to draw
I no like play lego	I don't like to play lego



The phrase like to is a good phrase to use in activities. It is a complex verb phrase.

SNAP

- Print multiple copies of the template provided (we suggest 4 sets) and play SNAP card game with small groups of children.
- *If the children need greater differences in the pictures using different animals instead.*
- Every player has the same numbers of cards and holds them face down in a pack.
- Players take turns turning the card over and placing on the centre pile.
- When 2 cards are the same the first to call SNAP and place their hand on the stack wins the stack of cards.
- The overall winner is the player who has all the cards



VOCABULARY: same, different



MEMORY GAME

- Using printed cards (see above) place pairs of cards face down on table.
- Children take turns to turn over 2 cards at a time.
- They keep any matching pairs and count pairs at the end of the game to determine the winner.
- If this is a new game being introduced to the group start with a small number of cards (we suggest 4 pairs).

VOCABULARY: same, different

Recasting:

Child	Adult
Same!	They are the same!
They're not the same	They're not the same. They're different.

SNAIL TANK

Materials: fish tank or plastic container, bark, leaves, grass, twigs, stones, snails (from garden), scrap book

- Create a snail home.
- Talk about the habitat that a snail likes.
- Encourage children to photograph, draw or paint what they see the snails (e.g. how they move, what they eat, how they look).
- Place the children's pictures in a scrap book.
- Educators write short sentences to describe the children's pictures.



VOCABULARY: trail, shiny, slide, nibble

Recasting:

Child	Adult
The snail eats leaves	The snail likes to eat leaves. It is nibbling the leaves.
Snail go up	The snail is going up!

WHERE IS SNAIL? (a teaching resource for positional (location) words)

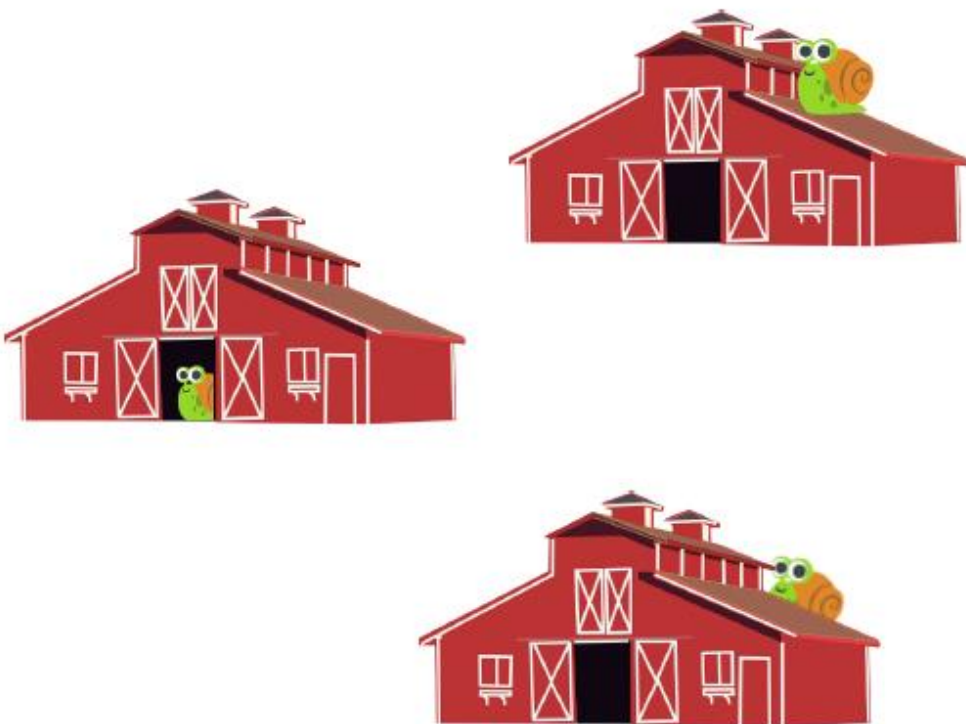
- Using the 2 resources provided, place the snail and turtle in a variety of places.
- This activity targets position words: above, on top, under, beneath, beside, behind, in front of, before, after.
- This activity can be done individually or with a small or class group. After teachers demonstrate this activity, children can have a turn hiding the snail/turtle and describing where they put them for others to find.





Recasting:

Child	Adult
The snail is there!	The snail is behind the farm
I put the snail and turtle down.	I put the snail down before I put the turtle down.
The snail is a front	The snail is in front
The snail on top	The snail is on top of the roof.
The snail is next to the farm.	The snail is beside the farm.



RELATED RESOURCES



Music & songs

There was a Little Turtle

<https://www.youtube.com/watch?v=gScCxYHc7Bk>

I Had a Little Turtle

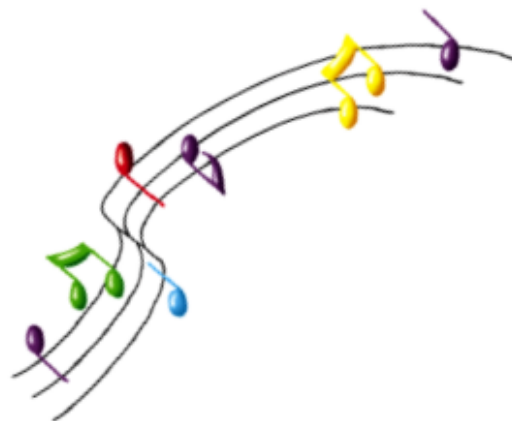
<https://www.youtube.com/watch?v=rmZySo00HIQ>

5 Little Turtles

<https://www.youtube.com/watch?v=RJGjLdRxIZQ>

Snail Song-Teachers video

<https://www.youtube.com/watch?v=dNAI6nrVkJc>



RELATED RESOURCES



Books & stories

One is a Snail, Ten is a Crab by April Pulley Sayre and Jeff Sayre

Fun to Learn

<https://www.youtube.com/watch?v=zDip7rTXtsk>

Turtles for Little Ones: Preschool Learning about Turtles ...

<https://www.youtube.com/watch?v=6vc3VShWTfc>

Are You a Snail by Judy Allen and Tudor Humphries

<https://www.youtube.com/watch?v=H5PiUuAPv4>

Snail Trail by Ruth Brown

<https://www.youtube.com/watch?v=XsCgl6DobN4>

The Snail and the Whale by Julia Donaldson

(This is part of 12 Books for 12 Months program)





This resource has been developed and delivered by the Liverpool Australian Early Development Census (AEDC) Working Group

The resource was developed in collaboration with SWSLHD Speech Pathology Department - Ready Set Go, Uniting Links to Early Learning and Mission Australia '2168' Communities for Children. Further administrative support for this resource has been provided by the members of the Liverpool AEDC Working Group.



This program is an initiative of the Speech Pathology department at Liverpool Hospital SWSLHD



This program is funded by the 2168 Communities for Children (C4C); an initiative of the Australian Government



Facilitation Project:
Fairfield, Liverpool,
Bankstown



NON-CLINICAL SERVICE DELIVERY

HIGHLY COMMENDED

Redcliffe Hospital/Metro North Health, QLD

Redcliffe Hospital Pharmacy/Metro North Health
Aboriginal and Torres Strait Islander Leadership
Team

**“No longer choosing between medicine and
food”: The Better Together Medication Access
program**

*Ann Whitaker, Kim Walker, Geoffrey Grima, Peter
Coomber and Edwin Cheung*

AIM

To improve discharge medication access and subsequent adherence for self-identifying Aboriginal and Torres Strait Islander consumers, by providing a co-payment subsidy program which addresses gaps in the national Pharmaceutical Benefits Scheme Close The Gap program.

SUMMARY ABSTRACT

Background

The national Pharmaceutical Benefits Scheme (PBS) Close The Gap (CTG) scheme, intended to improve the health of our Aboriginal and Torres Strait Islander population, excludes public hospital prescriptions and hospital pharmacies, thereby inadvertently creating barriers to medication access for this vulnerable group. To obtain subsidised medication on discharge, patients must attend a CTG-registered general practitioner and community pharmacy immediately upon discharge from hospital. The associated delays, with some electing not to obtain prescriptions at all, contributes to suboptimal medication management and increased health service utilisation, thereby impacting health for current and future generations.

Action

The Better Together Medication Access (BTMA) initiative, a co-payment subsidy program for hospital discharge medications, was implemented district-wide in Metro North Health on 1/10/2020. Implementation involved broad collaboration with Aboriginal and Torres Strait Islander staff and consumers, Pharmacy, Finance, IT/Health Information, and other teams locally, across the district, and at a statewide level. To improve staff ability to discuss BTMA and other health concerns with Aboriginal and Torres Strait Islander

consumers, roll-out education also included cultural capability improvement activities.

Being a novel program, a number of new processes and systems required development to support BTMA, including, but not limited to: specific enhancements to patient demographic databases and clinical handover software to capture and communicate patient identification status; modifications to statewide dispensing software to suppress patient invoice creation and track financial data to specific cost centres; and dashboards to monitor BTMA use. Significant liaison occurred with internal and external, local and state-wide stakeholders to design bespoke solutions scalable across Queensland.

Evaluation

As at 31/8/2021, there have been 1500 pharmacy occasions of service, from 4000 eligible self-identifying consumers who have discharged from a Metro North Health facility. 4200 medications have been supplied, with an average co-payment waived of \$23.80 per person, totalling \$34,400 district-wide. 28-day readmission rates for patients that accessed the program on a previous admission have dropped by 68% between October 2020 and June 2021. As unplanned hospital re-presentations and readmissions are multifactorial, further analysis of these figures is planned; nonetheless, this preliminary finding remains optimistic.

A post-implementation consumer survey for Aboriginal and Torres Strait Islander patients who had discharged from a Metro North Health facility (n=100) demonstrated overwhelming support for BTMA. A need for ongoing promotion within the hospital and community was identified, with only 56% recalling program discussion during admission. Of the 63% who were provided a discharge prescription, two thirds (68%) had it dispensed under the program with a variety of rationales provided by those who did not. Consumer comments included: “[I now] don’t have to pick food over medicine”, “[I] can’t always afford [medicines]”, and “[BTMA] was a relief”. (See Appendix 1 for further findings, including discharge medication acquisition processes prior to BTMA implementation) Staff engagement in Aboriginal and Torres Strait Islander health has improved, with enhanced working relationships developed between the multidisciplinary teams both on the floor (e.g. Pharmacy and Indigenous Health Workers), and at management level; these teams had not had significant interactions prior to BTMA’s implementation.

Discussion

BTMA program usage data, readmission data, and consumer feedback have demonstrated that BTMA has significantly enhanced Aboriginal and Torres Strait Islander patients' ability to access timely, subsidised discharge medications, improving ability to adhere with medication management plans. Staff cultural competency has also improved through enhanced relationships with Aboriginal and Torres Strait Islander staff and consumers.

Northern Sydney Local Health District, NSW

Mental Health Drug and Alcohol

Cultural engagement – Hey you Mob

Michelle Lawrence, Alice Lance and Andrea Taylor

AIM

To work in partnership with the local Aboriginal community, consumers, staff and stakeholders in order to move towards achieving equality in health, social and emotional well-being and life expectancy for Aboriginal Indigenous and Torres Strait Islander peoples who often find it difficult to access appropriate mainstream health care services.

The Mental Health Drug and Alcohol [MHDA] service, Northern Sydney Local Health District [NSLHD] will engage in a co-design process with the local Dharug, Cammeraygal and Gu-rin-gai communities to better understand the barriers they experience while accessing health care services. We will also work together to address health outcomes, build respectful and productive partnerships, create welcoming environments, train up culturally appropriate staff, encourage cultural education and awareness and enable access to holistic and discernable approaches to healthcare and the environment that meet the needs of the Aboriginal and Torres Strait Islander communities in NSLHD.

The most important step to commence achieving this aim requires the accurate identification of all Aboriginal people presenting to NSLHD health services.

SUMMARY ABSTRACT

The New South Wales Auditor-General, Margaret Crawford, released the *Mental Health Service Planning for Aboriginal People in New South Wales* (2019) which found that NSW Health is challenged in being able to form effective partnerships with Aboriginal communities to plan, design and deliver appropriate mental health services (p6). The report details challenges for the Aboriginal community to access

Promotion of BTMA through multimodal strategies is ongoing, and further evaluation into the clinical impact of the program is planned. Scoping is underway to assess potential BTMA program expansion to include outpatient hospital prescriptions, and provide further medication-related services. Statewide momentum for BTMA is also growing, and the implementation team are regularly called upon to provide guidance for other districts looking to implement similar programs.

culturally appropriate health care and the vast array of barriers including lack of cultural acknowledgement at the 'front door' of the health service followed by experiences of discrimination and racism.

Northern Sydney Local Health District (NSLHD) Mental Health Drug and Alcohol (MHDA) led by the Aboriginal Clinical Leader commenced a project to address the issues that had been previously identified and further raised following the release of the report. We undertook initial consultation with the local Aboriginal communities, (>200 hours) by attending Aboriginal women's groups, men's groups, youth groups, community events to hear firsthand from them on ways that our service could significantly partner better with the Aboriginal communities in order to improve the outcomes for them and their mob.

MHDA also consulted extensively with our large staff base on barriers commonly experienced, while working with people presenting for health care from the Aboriginal Community. This consultation was further supported by surveys, education sessions and focus groups. MHDA received consistent feedback from the Aboriginal Community that healthcare staff under-identified Indigenous people by making assumptions based on appearance, which led to indigenous people advising they were not feeling welcome or safe. Staff further identified that they were not comfortable in always asking the question about a persons Aboriginal or Torres Strait Islander status.

Improving the identification of Aboriginal and Torres Strait Islander people in the health service continued to be identified as a priority through all the consultations, noting that this had also been prioritised as part of the Australian Government's and all state and territory governments' commitment to Closing the Gap through the Council of Australian Governments and the National Indigenous Reform Agreement.

The "Ask the Question" animation was designed in partnership with the local Aboriginal Communities over a period of 12 months [APPENDIX A - Link 1 and Image 1]. The animation and its popularity led to



environmental changes within the health services. Various Aboriginal murals and cultural art was co-designed and painted by First Nations people, and people with a lived experience of mental health across different areas of the health services [APPENDIX A - Image 2, 3, 4 and 5]. Utilization of the local Dharug language in emails, Memos etc. were also introduced in regular correspondence to NSLHD MHDA staff.

MHDA NSLHD showed additional support to our Aboriginal clients by purchasing and distributing responsibly sourced Aboriginal work wear to our staff [APPENDIX A - Image 6]. This continues to be encouraged, and now is a part of our regular practice within executive, community and inpatient settings. This has created and implemented an environment welcoming our Aboriginal people into the health services.

Uniforms for our disaster response teams were changed to include Aboriginal art work, developed by our Aboriginal Clinical Leader. Staff wearing these uniforms while on deployment [Bushfire effected areas etc.,] will be able to better serve the communities they are deployed to, by breaking barriers, and creating an inviting, culturally safe and inclusive environment for

Aboriginal families and individuals already experiencing hardship [APPENDIX A - Image 7].

The characters on the “Ask The Question” animation have been utilized on posters, brochures and stickers which you will find across the whole of NSLHD for a range of health services [APPENDIX A - Image 8]. The “Ask The Question” animation was built by NSLHD so that other health services in NSW would be able to utilise it. It is freely available to all on Youtube, and many other health services including Primary Health Networks in Sydney and ACT have adapted it and used it for their services.

Surveys and data monitoring systems were identified on how this would make a difference and were base lined and implemented ensure that all people entering MHDA services are “Asked The Question” to ensure they are respected, acknowledged and if they wish, linked to Aboriginal staff to support them on their journey to through our health services for a better health outcomes. Asking the Question also enables MHDA to assertively follow up people who identify as Aboriginal and Torres Strait Islander that discharge against medical advice or did not wait for care.

Hunter New England Local Health District, NSW Population Health

Cultural Governance of the COVID-19 public health emergency response

Kristy Crooks, Kylie Taylor, Belinda Tully, Tammy Buckland, Charlee Law and Katie Brett

AIM

To reduce the risk of a public health emergency (COVID-19) for Aboriginal communities in Hunter New England.

Methods:

- Embed cultural governance within the Incident Command System
- Develop, lead and implement an Aboriginal Cultural Support process for COVID-19 case and contact management
- Establish and coordinate a district Aboriginal Governance Group on COVID-19

SUMMARY ABSTRACT

Local, state and national pandemic plans suggests that governance arrangements and partnerships between Public Health Units, Aboriginal Health Services and Aboriginal Community Controlled Health Services (ACCHS) are important for effective pandemic planning, response and management (NSW, 2019), but they do not say this should be implemented, how Aboriginal people could be engaged, nor is it clear how advice and decisions around COVID-19 public health response are governed or how local decision-making and action occur.

Aboriginal and Torres Strait Islander people (respectfully hereafter Aboriginal) were disproportionately impacted by the 2009 H1N1 pandemic and experienced higher rates of hospitalisation, ICU admissions, and complications from H1N1 influenza. Aboriginal people were excluded from pre-2009 pandemic plans in the development of culturally appropriate public health measures (Council of Australian Governments, 2006, Miller and Durrheim, 2010), and responses were not led by Aboriginal peoples. Engagement of Aboriginal people in health service planning and delivery is crucial to ensure healthcare is culturally safe and responsive. (Hendry et al., 2018) The National Safety and Quality Health Service Standards and associated User Guide for Aboriginal and Torres Strait Islander Health



suggests that health services work in partnership with consumers, and address the health needs for Aboriginal people through the implementation of appropriate governance structures where “Aboriginal...communities are involved in identifying priorities, targets, strategies and indicators of success...” (ACoSaiH, 2017, Institute., 2017) Governance from an organisational perspective is broadly defined as being responsible and accountable for delivering and monitoring outcomes of healthcare. Aboriginal governance however, focuses on culture, and processes that are based on the principles of self-determination, empowerment, decision-making and influence policy. (Hunt and Smith, 2018)

Hunter New England Population Health (HNEPH) is a unit of the government-funded public health organisation, Hunter New England Local Health District (HNELHD), covering a large geographical area of New South Wales, Australia, providing a range of public health services to approximately 912,352 people, including 64,333 Aboriginal people. (NMoH, 2020) The majority of the Aboriginal population reside in the Greater Newcastle region, however rural and regional areas have the highest proportion of Aboriginal people. There are eight ACCHS that provide outreach to eighteen communities. There are eight discrete Aboriginal communities across HNELHD.

To prevent a repeat of the exclusion of Aboriginal voices in the planning for the 2009 pandemic, HNE Public Health Aboriginal staff strategically developed and implemented a governance system and processes to manage the COVID-19 Public Health response, alongside non-Aboriginal health leaders and staff. Previous research suggests that a “one-size-fits-all” approach to pandemics is unlikely to work (Massey et al., 2009, Massey et al., 2011), and Aboriginal people should be engaged as equal participants in all aspects of the pandemic response. (Massey et al., 2011) Thus the response to this pandemic had to be different, with tailored approaches to public health governance and strategies to mitigate risks, and determined and led by Aboriginal people.

In February 2020, the Aboriginal Public Health Team Lead (KC), in partnership with the Public Health Controller, embedded Cultural Governance and an Aboriginal Public Health Team within the Incident Command System (ICS) to provide appropriate cultural governance for the COVID-19 public health response, as determined and guided by Aboriginal people. Embedding Aboriginal governance in the ICS ensured Aboriginal inclusion and allowed for planning and operations teams to seek advice to ensure the processes were culturally appropriate. The inclusion of cultural governance in the ICS structure had not been done

before at a state level and provided a strong Aboriginal voice in COVID-19 planning, response and management.

The Aboriginal Public Health Team also established an Aboriginal Governance Group on COVID-19 that included all eight ACCHS within the LHD. This strategic Governance Group guides local decision making and responses in relation to Aboriginal communities. The group also has a direct pathway to raise issues to the Public Health Controller and the HNELHD Health Services Functional Area Coordinator (HSFAC).

The Aboriginal Public Health Team provides a cultural lens, inclusion, and input into strategic COVID-19 decision-making through attendance and active participation at daily ICS – Incident Management Team meetings alongside leads from the Operations, Planning and Logistics teams. The Aboriginal Public Health Team strategically positioned the Aboriginal Operations Lead and Aboriginal Planning Lead positions to work within the existing Public Health Operations and Planning teams to provide cultural input to ensure the response is culturally inclusive and appropriate. Aboriginal Cultural Support Team Members are identified and selected from the HNELHD Population Health Unit, HNELHD Aboriginal Health Unit staff and Integrated Chronic Care for Aboriginal Peoples Program. This approach places value on providing a platform for Aboriginal people to raise issues, discuss solutions, and develop localised strategies that is culturally appropriate, and family-focused.

The Aboriginal Public Health Team developed and implemented an Aboriginal Cultural Support model to provide additional holistic care for COVID-19 case and contact management. This was embedded across the COVID-19 Public Health Response and did not replace usual public health follow-up but an additional service providing Aboriginal people with holistic care. Aboriginal people are more comfortable to openly share their experiences, challenges, or barriers with other Aboriginal people, without fear of judgement. The team partnered with the HNELHD Aboriginal Health Unit and Integrated Chronic Care for Aboriginal Peoples Program team to support the implementation of the model. A small team of Aboriginal staff was established to plan, prepare and support the overall management of confirmed cases/contacts who identify as Aboriginal. The model is supported by training and resources, strengthens the Aboriginal workforce, and strengthens relationships. This work is supported and endorsed by New South Wales Ministry of Health, and anecdotally the model has been replicated by other LHDs across the state.

The implementation of this model showcases the importance of Aboriginal leadership in developing a



culturally appropriate governance to a pandemic response. This includes actively engaging and partnering with Aboriginal stakeholders, providing a culturally appropriate service for Aboriginal people and aligns with principles of self-determination.

Special Commendation - Initiative to Advance
Aboriginal and Torres Strait Islander Health Outcomes
We Help Ourselves (WHOS), NSW
Administration and Head Office
ACHS and ATCA Partnership Initiative – WHOS
Inaugural Double Accreditation February 2021
Garth Popple

AIM

WHOS is a not-for-profit NGO that provides residential and day program services for members of the community affected by alcohol and other drug dependence and associated issues. In February 2021, a first for the AOD sector, both nationally and internationally, WHOS undertook and achieved accreditation under both the Australian Council on Healthcare Standards (ACHS) EQUIP 6 and Australasian Therapeutic Communities Association (TC Standard). High quality health outcomes, AOD treatment outcomes and quality assurance attained in WHOS therapeutic community treatment settings were recognised under these two separate accreditation programs, awarding WHOS dual accreditation.

WHOS provides residential and non-residential therapeutic community programs for people with alcohol and other drug dependence, incorporating harm reduction and co-existing physical and mental health initiatives.

WHOS offers several residential drug free programs utilising the Therapeutic Community (TC) model of care, which are both gender specific and mixed gender in The WHOS Therapeutic Community (TC) model assessed 2000 clients in 2020 and admitted 900 to their residential programs. The number of Aboriginal and Torres Strait Islander clients increased markedly from 7% to nearly 20% of current registered clients.

WHOS comprehensive suite of policies, procedures and guidelines that inform our quality assurance and TC model of treatment was critical in the achievement of

This process is led by the HNELHD Aboriginal Public Health Team and Aboriginal staff working in the response and is endorsed by the Hunter New England Public Health Controller and HSAFC.

ACHS (Australian Health Care Standards) and ATCA (Australasian Therapeutic Communities Association) Partnership awarded We Help Ourselves (WHOS) Dual Accreditation under both ACHS and ATCA TC Standards 2021 – a first nationally and internationally. A partnership of two accreditation standards in alcohol and other drugs treatment.

WHOS Psychosocial, Withdrawal Management, Residential and Day Rehabilitation achieve outcomes recognised by health care and therapeutic community standards in Australia.

SUMMARY ABSTRACT

NSW and Queensland. Programs are in metropolitan and regional areas.

WHOS also offers two Opioid Treatment Programs (OTP); an Opioid Substitution Treatment to Abstinence Residential Program (OSTAR) for individuals whose treatment goal is abstinence, and an Opioid Stabilisation Program offering residential stabilisation support to individuals on maintenance opioid substitution treatment who are experiencing difficulty (RTOD), both are provided utilising the TC model of care.

WHOS also offers Day Programs for individuals on OTP.

WHOS approach is based on the principles and the philosophy of the TC model of care, which is an evidence-based approach to AOD treatment.

Resident members progress through varying stages, roles and responsibilities in the treatment episode and collectively ensure day-to-day functioning of the community. Treatment episodes include group and individual sessions as well as community and personal chores, living skills and self-development.

dual accreditation by WHOS. The evidence that informs the clinical, support and corporate functions of WHOS for ACHS accreditation, was augmented by substantive evidence for the quality and efficacy of the WHOS TC model of treatment for achieving accreditation against the TC Standard, as a result WHOS successfully achieved accreditation under both ACHS EQUIP 6 and the TC Standard.



This is a ground-breaking achievement for Therapeutic Communities in general and for WHOS TC services in Australia, and internationally. Accreditation under both standards has provided improved opportunities for identifying the strengths and opportunities for WHOS continuous quality improvement initiatives.

Dual accreditation has improved our management processes, stimulating both quality improvement and performance management, increased our accountability to community members, stakeholders, and policymakers, improved our communication with the governing entities such as the Australian Government Department of Health, NSW Health and Qld Health.

Most important of all it has provided **public recognition of the achievement of dual accreditation under separate standards, demonstrated through independent external review of WHOS performance in attaining outstanding consumer health care and community outcomes in AOD treatment.**

The partnership of ACHS and TC Standard accreditation enables WHOS and other Therapeutic Communities to engage in service evaluation and quality improvement using methods and values used in health settings that reflect the TC philosophy working in tandem with a quality health care approach.

The dual accreditation has strengthened WHOS vision to be recognised nationally and internationally as the premier AOD organisation that promotes and provides AOD treatment within the TC model of care to the highest standard.

Dual accreditation also supports WHOS Mission Statement: To foster personal growth within an Alcohol and Other Drugs therapeutic program, incorporating Harm Minimisation and Co-existing Mental Health Initiatives. It supports the provision and attainment of excellent healthcare outcomes in a non-clinical therapeutic community model of care.

TC History “...they are called therapeutae and therapeutrides ... because they profess an art of medicine more excellent than that in general use in cities; for that only heals bodies, but the other heals souls which are under the mastery of terrible and almost incurable diseases, which pleasures and appetites, fears and griefs, and covetousness, and follies, and injustices, and all the rest of the innumerable multitude of other passions and vices, have inflicted upon them...” Philo Judaeus, Ca 25 BC-AD 45.



NON-CLINICAL SERVICE DELIVERY

TABLE OF SUBMISSIONS

<p>Northern Health, VIC Narrun Wilip-giin Aboriginal Support Unit Wominjeka: Northern Health's Journey towards cultural competence <i>Emiliano Zucchi, Karen Bryant, Briana Baass and Maree Glynn</i></p>
<p>Far West Local Health District, NSW Mental Health Drug and Alcohol Building the Future of Peer Work in the Far West <i>Chelsea Edwards</i></p>
<p>Hunter New England Local Health District, NSW Population Health Cultural Governance of the COVID-19 public health emergency response <i>Kristy Crooks, Kylie Taylor, Belinda Tully, Tammy Buckland, Charlee Law and Katie Brett</i></p>
<p>Bolton Clarke, VIC Bolton Clarke Research Institute Helping Others with Respect and Unity (HOW-R-U?) <i>Judy Lowthian, Marissa Dickins, Elizabeth Robinson and Lina Lad</i></p>
<p>Central Coast Local Health District, NSW Clinical safety, Quality and Governance Communicating Smarter with the Charter <i>Suzanne Lewis, Beverley Waters and Kylie Hayman</i></p>
<p>Macksville District Hospital, NSW Community Health / Retreat organising group Sister's Retreat <i>Carolyn Cross, Annette Heather and Andrew Bailey</i></p>
<p>Gold Coast Hospital and Health Service, QLD The implementation and impact of an Infusion Pump Connectivity project <i>Catherine Edmunds, Chris Hinde, Lauren Harvey, Faizah Baldonado and Trudy Teasdale</i></p>
<p>WA Country Health Service, WA Innovation and Development Everybody needs BACKUP! <i>Madeleine Connolly, Jenni Andrew and Tegan Reilly</i></p>
<p>We Help Ourselves (WHOS), NSW Administration and Head Office ACHS and ATCA Partnership Initiative – WHOS Inaugural Double Accreditation February 2021 <i>Garth Popple</i></p>
<p>South Western Sydney Local Health District, NSW Mental Health Service 'What do you know?' Empowering Mental Health Consumers <i>Amy Sieff, Rhian Davies, Chryssa Spiric, Daneeka Bertolissia, Sarah Hart, Charlotte Goko, Ashley Reynolds, Sanna-Leena Ovaskainen, Johnny Tsang, Jacqueline Soccio and Tracey Billett</i></p>
<p>South Eastern Sydney Local Health District, NSW Population and Community Health Leading by design: Establishing a new community dental establishment adopting the hub and spoke model for service delivery <i>Claire Phelan, Natasha Desai, Robert Benge, Maggie Ibrahim and Suzana Katkarovski</i></p>
<p>St Bart's, WA Services and Quality Team Quality Conversation Project <i>Debbie Zygadlo, Lena Hopkinson and Gayle Knight</i></p>
<p>Hollywood Private Hospital, WA Training and Development</p>



<p>Utilising technology: using an automated feedback manikin (QCPR™) to assess Basic Life Support (BLS) <i>Anne Green</i></p>
<p>Hong Kong Baptist Hospital, Hong Kong SAR Patient Relations Department Learning from patient complaints – training using role-play simulation to enhance the competencies of front line pharmacists in managing complaints from angry patients <i>YH Stone, CY Fan, Vickie WH Tong, Phoebe MS Lam, Vanessa WS Wong, Ivan IP Chan, Dennis KK Cheung, and David TY Lam</i></p>
<p>South Western Sydney Local Health District Clinical Informatics and Clinical Governance Unit Managing Deterioration (Between the Flags) v4 implementation – SWSLHD Clinical Informatics Approach <i>VinSTEIN Brillante, Andrew Ingersoll, Rosemary Beenie, Nicole Morrison, VinSTEIN Brillante</i></p>
<p>Northern Sydney Local Health District, NSW Mental Health Drug and Alcohol Cultural engagement – Hey you Mob <i>Michelle Lawrence, Alice Lance and Andrea Taylor</i></p>
<p>Sydney Dental Hospital and Oral Health Services, NSW “Imagine if I didn’t meet you” Social Work- Permanent position in public dental service – Sydney Dental Hospital <i>Cecilia Correy, Alex Holden, Shilpi Ajwani, Robert Town and Rhodora Evangelista</i></p>
<p>Hong Kong Baptist Hospital, Hong Kong SAR Key to Combat COVID-19 in Hong Kong Baptist Hospital: Agility, Dedication and Passionate Support from All Staff Levels <i>Tony Ng, Cindy Wong, Catherine Yip, Grace Wong and Patrick Lau</i></p>
<p>Hong Kong University Shenzhen Hospital, China Total solution in quality management of medical equipment <i>Huang Feiyan, Guo Daiqi, HO CHI HIN, Chan Yuk Sim, Zhao hui, Mo Caiyan and Huang Zuoyun</i></p>
<p>International Modern Hospital, Dubai UAE Quality/Housekeeping/Infection Control Preventing Infection through Cleaner Hospitals (PITCH): An Environmental Cleaning Bundle <i>Remya Venuqopalan, Gaurav Shrivastava and Mohammed Farooq</i></p>
<p>St John of God Murdoch Hospital, WA Quality and Risk AM I OK Day – A focus on caregiver wellbeing <i>Melissa Coventry</i></p>
<p>KIMSHEALTH, TRIVANDRUM, India Discharge Tracker (D Tracker) – An in-house developed web based software application to improve the patient discharge processes, thus reducing the turnaround time for patient discharge <i>Anil Attumalil Verghese, Sunil S, Richard KR, Shreesubha Kurup, Sheeja V Nair and Divya LS</i></p>
<p>The University of Hong Kong Shenzhen Hospital, China Enhance outpatient experience through multi-dimensional patient-centered communication <i>Li Weijia, Tak Man WONG, Zhang Zeqian, Lin Jiaxin, Yu Mengyuan, Tan Liji and Ai Mei</i></p>
<p>Sunshine Coast Hospital and Health Service, QLD Safety Quality and Innovation Unit Safe Care Foundations: Education for everyone <i>Megan Giles and Lauren Northey</i></p>
<p>Liverpool Hospital, NSW Speech Pathology Department 12 Books for 12 Months: Enhancing Early Language and Literacy Environments <i>Jessica Anton, Jennie Cusiter, Ellen Dunn, Brooke Butt, Kate Short and Tia Croft</i></p>
<p>Women and Newborn Health Service, WA Pharmacy Department Implementation of an electronic Controlled Medication discrepancy reporting tool to report and manage inventory discrepancies <i>Michael Petrovski, Lauren Burton, Stephanie Teoh, Nabeelah Mukadam and Tamara Lebedevs</i></p>
<p>Redcliffe Hospital/Metro North Health, QLD Redcliffe Hospital Pharmacy/Metro North Health Aboriginal and Torres Strait Islander Leadership Team “No longer choosing between medicine and food”: The Better Together Medication Access program <i>Ann Whitaker, Kim Walker, Geoffrey Grima, Peter Coomber and Edwin Cheung</i></p>



HEALTHCARE MEASUREMENT

WINNER

Prince of Wales Hospital, NSW

Pharmacy Department

Improving Access to Medication Review in High Risk Inpatients

Adriana Chubaty, Carly Wills, Jessica van Schreven, Anne Steffensen, Elizabeth Browne, Elizabeth Mason, Martin Mackertich and Christine Conn

AIM

The pharmacy department at Prince of Wales Hospital (POWH) undertook a clinical redesign of their clinical pharmacy services in an effort to prioritise medication review for inpatients most at risk of medication harm and ensure appropriate documentation of medication reviews. We identified that POWH had high rates of medication related harm: with medication related hospital acquired complications and adverse drug reactions rate double the rate of peer hospitals. There was a lack of systematic approach to patient prioritisation and delay in performing medication reviews which is predicted to result in an increased risk of medication harm. This project aimed to engage staff and identify the best process to ensure that available resources are targeted to optimise patient care and minimise medication related harm.

SUMMARY ABSTRACT

Medications are one of the most common and complex therapeutic interventions utilised by Australian hospitals. Their use is associated with a higher error and adverse event rate when compared to other interventions (Clinical Excellence Commission, NSW 2021).

Structured clinical pharmacist medication reviews can reduce the risk of medication related harm and mortality of hospitalised patients (Bond & Raehl, 2007). Organisations should ensure medicines use is optimised and medicine-related problems are minimised by conducting medication reviews and documenting the outcomes in partnership with patients (Australian Commission on Safety and Quality in Healthcare, Sydney 2017).

The National Institute for Health and Care Excellence, UK 2015 says medication reviews should be conducted with the objective(s) of:

- reaching an agreement with the patient about treatment
- optimising the impact of medicines
- minimising the number of medication related problems
- reducing waste

In NSW, medication and intravenous fluid related incidents account for 15% of all incidents (Clinical Excellence Commission, NSW 2019). A significant number of these result in patient harm (Roughead & Semple, 2009). At Prince of Wales (POWH), medication related hospital acquired complications (HAC) were occurring at double the rate of peer hospitals (SESLHD: Healthcare Improvement Analytics, 2015-2018). 2018 coding data indicated that 14% of hospitalised inpatients at POWH had a pharmacist review compared to 35% for the most well performing peers (SESLHD: Healthcare Improvement Analytics, 2015-2018).

Not every patient can be reviewed with available resources. The selection of patients for pharmacist medication review was ad-hoc and inconsistent. Pharmacists often reviewed patients for the first time right before discharge with pharmacists describing the workflow as reactive rather than preventative. Feedback revealed pharmacists felt there were inconsistent and unclear goals for service provision which was resulting in high rates of staff burn out and dissatisfaction.

The lack of a systematic approach to patient prioritisation and the delay in performing medication reviews is predicted to result in an increased risk of medication related harm and contribute to HAC rates. There was a need to identify the patients who would most benefit from a pharmacist medication review.



The project used the clinical redesign methodology to undertake a structured investigation and review to identify patients most at risk of medication harm and to develop local solutions that ensure timely and effective medication review using available pharmacist resources.

Through workshops, process mapping and interviews with pharmacists, nurses and medical officers, we identified key issues with medication review related to:

- **Clinical documentation.** Unclear definitions and expectations, Limited visibility of pharmacist medication reviews and large variability in pharmacist documentation practices.
- **Multidisciplinary collaboration.** Lack of integration within specialty teams, no clear referral pathways
- **Patient complexity/specialty.** Inefficiencies and difficulty completing medication reviews in outlier specialties, Mismatch in pharmacist skillsets and patient loads/complexity.
- **Patient prioritisation.** Standardised risk tools identified all POWH inpatients as high risk of harm; pharmacists were using more than 25 different criteria to prioritise patients and there was no organisational strategy for prioritisation.

Solutions related to these issues were brainstormed, developed and prioritised with key stakeholder groups. Prioritisation of patients needed to avoid manual risk assessment tools, be easy to adopt using face up information in the electronic medical system, support multidisciplinary collaboration, match pharmacist skillsets to patient complexity and integrate with all clinical pharmacist activities.

Clinical documentation needed to ensure visibility of pharmacist medication reviews, reduce variation between pharmacist practices and be easily monitored for quality improvement reporting.

In November 2019, the following developments were implemented:

- Learning packages on clinical documentation and medication review developed and completed by clinical pharmacists. These are now embedded into orientation program for new staff.
- Regular peer review of pharmacist documentation against learning package standards.
- Adoption of a prioritisation matrix by admission specialty using local indicators for medication harm to proactively receive clinical pharmacy services (Appendix 1)
- Development and implementation of eMR pharmacy consults for patient specialties in lower risk areas
- Development of quality improvement dashboard to automatically track medication related HAC and pharmacist intervention coding data
- Development of eMR reporting functions to monitor pharmacist documentation, medication reviews and utilisation of the consult feature.
- Utilisation of intern pharmacists in supervised clinical roles in core specialty areas of geriatrics, cardiology and surgery.
- Realignment of department structure and introduction of clinical lead pharmacist positions to promote specialist pharmacist care and mentoring of rotational staff.

The implementation of these solutions resulted in:

- Improvement in pharmacist's opinion that there were clear patient prioritisation processes improved 12.5% in agreeance pre to 82.9% in agreement post
- Clinical documentation includes patient centered content from 26% to 100%
- Overall compliance with clinical documentation standards from 62% to 92%
- A increase in days spent contributing to clinical service activities by intern pharmacists resulting in doubling of medication history and patient education activities in those areas
- Reduction in medication related HACs from averaging 20 per month to < 15 per month
- Improvement in coded pharmacist activity from
 - Overall increase from 140 per 1000 separations to 217 per 1000 separations
 - Increase from 200 per 1000 separations to 401 per 1000 separations in prioritised patient groups
 - Maintenance of pharmacist coded intervention in lower risk areas at 100-150 per 1000 separations.

The redesign of clinical pharmacy services means clinical pharmacist resources are being used where they are most needed, reduced risk of medication harm to hospitalised inpatients, increases integration of pharmacists into



multidisciplinary teams, reduces staff stress levels and provides pathways for referral of patients for a pharmacist medication review.

The learning packages, eMR functionality changes and reporting have been shared across the local health district. The processes and ways of working continue to be used in the pharmacy department at Prince of Wales. The project built in regular evaluation into business as usual and allows the department to perform continuous quality improvement. It has also enabled the department to adapt and respond to disruptions in patient care, in particular the COVID-19 pandemic. The disruptions of COVID in 2020 and 2021 which we continue to face have allowed the department to continue to provide care where it is most required and ensure safe and appropriate medication use.

REPORT

APPLICATION OF ACHS PRINCIPLES

1. Consumer Focus

As mentioned, medications are one of the most common and complex therapeutic interventions utilised by Australian hospitals. Their use is associated with a higher error and adverse event rate when compared than other therapeutic interventions. Patients coming to hospital expect their medication to be safe and appropriate and often do not think about the processes that occur behind the scenes to deliver appropriate and safe care. In our own experience, Prince of Wales pharmacists were seeing only about 14% of patients admitted to hospital. However 3 in 4 patients have a new medication prescribed during their hospital stay; 1 in 2 have a change in usual home medication and 1 in 2 are not sure which side effects to watch out for (POWH Pharmacy Patient Survey, 2019, March).

The project aimed to support patients and ensure those that required care by a pharmacist were able to see a pharmacist during their admission, at the time when it was required (not just on discharge). Implementing access to medication reviews in high risk inpatients also ensured patients were seen by the right person with the right expertise. Efficiencies have been gained by introducing specialty pharmacists that are integrated with the medical teams to proactively reduce the patient's risk of medication harm during the admission.

Implementing access to medication reviews in high risk inpatients have seen an increase in pharmacist medication reviews in the priority/proactive high risk patients without a decrease in pharmacist reviews in those in the referral specialties using existing resources.

The implementation of a training package and standardised expectations in terms of pharmacist documentation of medication review aimed to improve the culture of documentation in our department and increase the quantity and quality of documentation. In the process, we identified that documentation prior to implementation was patient centred only 24% of the time (appendix 4). In contrast after implementing the training package and peer review process, we saw this increase to 100% of pharmacist documentation considering the patient's needs.

2. Effective Leadership

The second edition of the Nation Safety and Quality Health Service (NSQHS) Standards introduced a new key criterion for medication safety - 'medication review' which would be included in public hospital assessments from January 2019. A gap analysis against the new criterion at POWH identified low rates of documented pharmacist medication reviews and limited compliance with the principles of medication review criterion.

POWH pharmacy participates in strategic planning each year in line with local, district and state wide priorities. Key components of POWH strategic plans include full compliance with NSQHS standards, safe person centred care and fostering research and innovation. Improving medication review for high risk inpatients was identified as a priority innovation project in a commitment to improving medication safety and innovation. The POWH pharmacy management and executive team supported the project with funding for project leads to attend the centre for health care redesign's clinical redesign program. The 12 month program provides a structured and robust framework to improve clinician capability in quality improvement and project management, enabling frontline staff to successfully redesign and improve service delivery across all aspects of the patient's journey.

Governance for the project was established in a multidisciplinary steering committee and approvals for implementation the change in prioritisation through the executive patient safety improvement committee.



Coordination of accreditation assessment requirements, workforce development and strategic planning enabled the successful completion of this project. A pre accreditation readiness assessment recognised the pharmacist prioritisation medication review process and improvements as meeting accreditation requirements.

3. Continuous Improvement

To support continuous improvement, the project developed dashboards and reports to collect and analyse coded patient data and electronic medical record data to be able to make timely decisions about patient care and ensure pharmacists were supported to provide care. Dashboards which are regularly monitored include:

- Coded data of pharmacist activity
- Coded data of medication related hospital acquired complications (HACs)
- eMR medication reviews and proportion of medication reviews that result in a clinical intervention

Coded data was initially set up to be viewed via the SESLHD Improvement Analytics Lightfoot Database, and later the Clinical Excellence Commission, QIDS Dashboard. After implementing the clinical redesign, we observed nearly a doubling of coded pharmacist medication reviews in all hospitalised patients which has been sustained. (Appendix – 2). In patients identified as highest risk for medication issues, medication review increased from 200 per 1000 separations to 401 per 1000 separations (Appendix 2(b)). Medication related HACs were also monitored, and since implementation, we have observed a reduction in medication related HACs from averaging >20 per month to <15 per month (Appendix 3). To ensure the department is focusing resources on patients at highest risk, these measures were fed back to pharmacists and reviewed to ensure the department was maintaining appropriate resource allocation.

The coded data provided information about number of patients reviewed by a pharmacist, but we also wanted to understand when patients were being reviewed, how often, and whether this resulted in clinical intervention. We developed an electronic method to capture and easily monitor this measure through the electronic medical record. At baseline, 42.3% of medication reviews resulted in intervention compared with 25-30% since implementation. Whilst we haven't seen an increase in the percentage of medication reviews with an intervention, subjectively staff felt they were involved in decisions closer to the time of prescribing resulting in proactive prevention of errors rather than intervention after prescription. In addition, at baseline, medication reviews were completed in 15% of patients within 24 hours of admission compared to 27% after the clinical redesign. More impressively, after the redesign, 95% of inpatients are reviewed by 7 days (compared with 34% at baseline). Although data not available at baseline, our dashboard allowed us to monitor and see that 80% of inpatients have had a pharmacist medication review within 72 hours of admission. We hypothesize that this is a result of the fact that pharmacists are only available Monday to Friday at POWH.

Other examples of continuous improvement in the project is the development of the documentation learning package with regular peer audit and review. All existing pharmacists were trained with the documentation package prior to go live. New pharmacists are trained and assessed within two weeks of commencing employment. All pharmacists take part in monthly peer feedback sessions where their documentation is assessed according to criteria and peer feedback identifies areas for improvement. Overall, since implementation of the peer documentation program pharmacists have increased their documentation, and it is written in a standard format (SBAR/SOAP) 92% of the time. (Appendix 4). Expectations and standards for documentation are consistent across the department. We evaluated pharmacist perceptions about the documentation program (Appendix 4) which demonstrated that pharmacists reported overall increased confidence, quality and quantity of documentation with participation.

The department is currently reviewing the patient impact associated with pharmacist medication reviews with a comparison of types and outcomes of interventions before and after implementation of the service redesign. This will be used to understand the clinical impact/outcomes of our service, support further training and development and allow us to further refine patient prioritisation.

4. Evidence of Outcomes

Prince of Wales Hospital employed specialist pharmacists in some clinical specialties include renal, haematology and oncology medicine wards. Prior to the implementation of a specialty based pharmacy service, approximately 5% of patient days and 12.5% of patients admitted to these specialties were reviewed when admitted to outlier wards. To capitalise on pharmacists' expertise and ensure medication review of patients admitted to these specialties, we matched inpatients admitted under these specialties to the specialist pharmacist regardless of patient location. Post



implementation 72% of patient days and 94% of outlier specialist patients were reviewed by a pharmacist.) This process informed the change of allocating all pharmacists according to speciality from November 2019.

Developing a prioritisation process, implementing a pharmacy service aligned to medical specialties and development of learning packages demonstrated:

- Increase in patient separations with an allied health intervention, pharmacist (coded) from 540 patients to 929 patients per month
- Increase in medication reviews from an average of 1300 per month (with 42% intervention) in early 2019 to over 3700 per month (with 25% intervention) in August 2021.
 - This equates to an increase in issues identified for resolution from 546 to 925 per month
- Decrease in medication related hospital acquired complications from an average of 20 per month to 15 per month
- Medication history taking in areas with interns increased 200% (Appendix 5)
- Patient education in areas with interns more than doubled (Appendix 5)
- 80% satisfaction from nursing and medical staff with project

Medical staff found it extremely useful to have a single pharmacist to interact with for all patients in a team. Pharmacists felt like they knew their team better, felt more valued, and felt more efficient in their day. Nursing, medical and pharmacy felt like the interventions lead to improved communication with the teams (both written and verbal).

5. Striving for Best Practice

Health round table data was used to identify gaps and goals for pharmacist intervention coding rates, and the project has now seen POWH improve to be within the 75th percentile compared to peers (previously in the lowest 25th percentile). A reduction in medication related hospital acquired complications has been achieved to improve our performance compared to peers and within the upper target limit.

In addition to initial objectives, the process enabled us to embed routine reporting within our electronic medication management system for real time monitoring and feedback on medication review rates by patient's specialty, pharmacist activity and peer review of documentation.

Additional benefits have been realised to our workforce by realigning to medical specialties. We have seen increased retention of specialist staff, and retention of specialist knowledge in the area by realignment of rotational positions to clinical lead positions; reduced variation of practice; increased clinical supervision of rotational staff and career opportunities for progression within the department. Pharmacists have become more embedded within multidisciplinary teams which has improved efficiency, reduced handover and improved multidisciplinary teamwork.

Ongoing quality improvement activities are planned and an evaluation of the impact of medication reviews is underway to review significance and impact of reviews for individual patient outcomes.

INNOVATION IN PRACTICE AND PROCESS

Utilising local indicators of harm for a risk matrix (Appendix – Figure 1) was a unique and local solution to make best use of the available resources and maximise effect on patient outcomes. Existing tools for patient prioritisation are available however within our acute setting, these were not able to provide prioritisation for our department. Utilising the redesign methodology enabled a structured review of the existing processes in our diagnostic phase and improve practice utilising existing resources. The framework allowed us to identify key issues, test best practice solutions and develop local solutions. The change management and implementation phase ensured effective communication of the change, planned implementation and ongoing monitoring to track progress.

The clinical redesign methodology provided change and project management skills development within the department and provided the development of these transferrable skills to the project leads to use in ongoing changes across POWH and the local health district. It has embedded redesign methodology and change management principles for use in future strategic projects.

APPLICABILITY TO OTHER SETTINGS



As a result of this project improvements to the electronic medical record are available across the local health district. The improvements related to standardised progress note titles, electronic consults to pharmacy and pharmacist medication review functions. The development of these was done in conjunction with other sites to ensure they were translatable to other pharmacy departments and also sustainable for use within our own department.

The use of local indicators of medication harm may also be considered by other pharmacy departments with limited resources, where standard tools are unable to differentiate and prioritise inpatients at the highest risk for medication harm.

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APPENDIX

Appendix 1 - Medication Review Prioritisation Matrix

Purpose: Identify highest risk patients to prioritise for medication review. All patients at Prince of Wales were identified as being high risk using existing prioritisation tools. The redesign project identified markers of medication harm and used these to identify highest risk specialties

Those at the top of the matrix will be prioritised (proactive) for medication review. The remaining specialty areas will have a referral based service (reactive service)

Explanation of methods: Medication related hospital acquired complications (HACs) (version 1.1): 2018 coding data of discharge specialty *Top 40% of instances (red = highest risk); Top 40-100% of instances (orange = moderate risk); No HACs in last 12 months (green = low risk)*

Pharmacist interventions (an indicator of medication errors/issue): 2-4 week snapshot of moderate to high impact pharmacist interventions.

Discharges (high risk transfer of care – up to 50% of discharge prescriptions have an error, therefore an important time for pharmacist intervention): 1 month snapshot of discharges dispensed from Prince of Wales Hospital Pharmacy

Adverse Drug Reactions: 2018 coding data (Y40-Y59) of discharge specialty *Top 40% of instances (red = highest risk); Top 40-80% of instances (orange = moderate risk); Lowest 20% of instances (green = low risk)*

Discharge Specialty	Medication HAC	ADR	Intervention	Discharge	
Geriatrics	red	red	red	red	Proactive/Priority Service
Respiratory Medicine	red	orange	red	red	
Cardiology	orange	red	orange	red	
Intensive Care	red	red	orange	green	
Orthopaedics	orange	red	orange	red	
Renal Medical	red	orange	orange	orange	
General Surgery/Upper GI	red	orange	green	orange	
Cardiothoracic Surgery	orange	red	green	orange	
Infectious Diseases	orange	orange	orange	orange	
Neurology	orange	orange	orange	orange	
Medical Oncology	orange	orange	green	orange	
Gastroenterology	orange	orange	orange	green	
Spinal Medicine Acute	orange	orange	green	green	
Psychiatry	green	green	orange	orange	
Haematology	green	orange	green	green	
Rehabilitation (Geriatric)	orange	orange	green	green	
Colorectal Surgery	orange	green	green	green	
Endocrinology	orange	green	green	green	
Acute Surgery	orange	green	green	green	
Neurosurgery	orange	green	green	green	
Vascular Surgery	orange	green	green	green	
Plastic Surgery	orange	green	green	green	
Oncological Surgery	green	green	green	green	
Ophthalmology	green	green	green	green	
Oral & Maxillofacial Surgery	green	green	green	green	
Radiation - Oncology	green	green	green	green	
Rehabilitation	green	green	green	green	
Rheumatology	green	green	green	green	
Spinal Rehabilitation	green	green	green	green	
Toxicology	green	green	green	green	
Urology	green	green	green	green	
Dermatology	green	green	green	green	
Ear Nose & Throat Surgery	green	green	green	green	
Neurointervention	green	green	green	green	
Emergency Medicine	green	green	green	green	
Pain Services	green	green	green	green	
Post Acute Care Services	orange	red	green	orange	

* Discharge specialty – Post Acute Care Service main referral specialties are infectious diseases, orthopaedics, cardiothoracics, respiratory (covered above)



Appendix 2 Proportion of patient separations that receive an allied health intervention, pharmacist, January 2018-June 2021

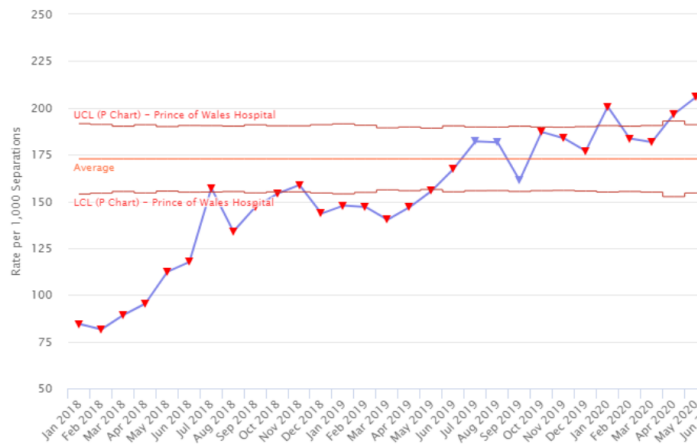
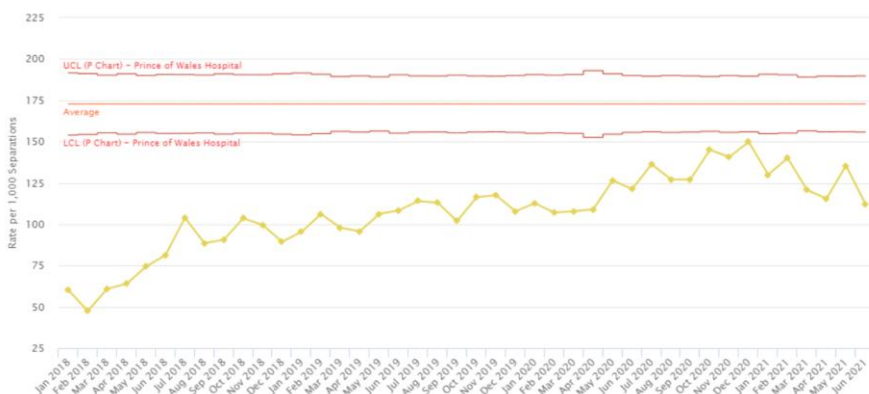


Figure 2(b)- Proportion of patient separations in prioritised, high risk specialties that receive an allied health intervention, pharmacist, January 2018-June 2021

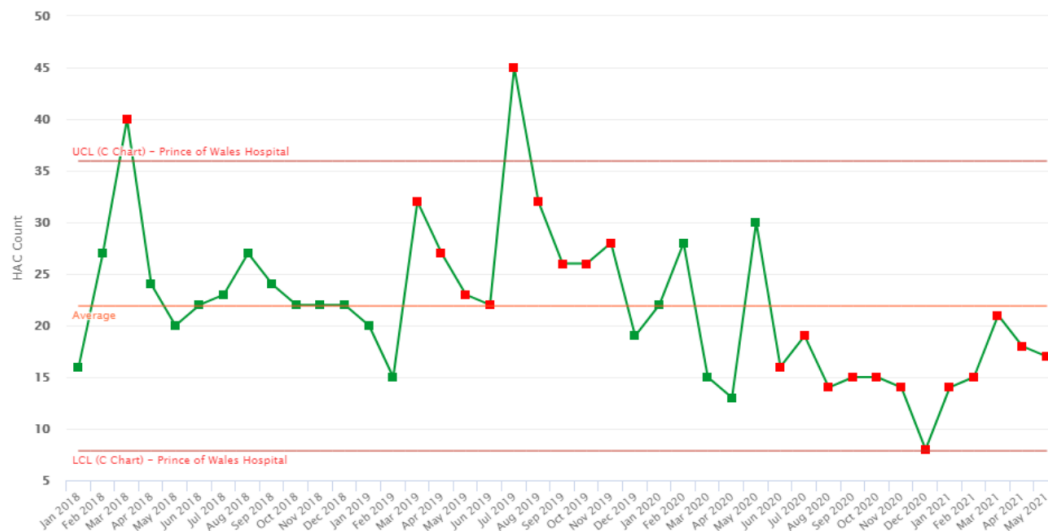


Figure 2(c) – Proportion of patient separations in referral specialties that receive an allied health intervention, pharmacist, January 2018-June 2021

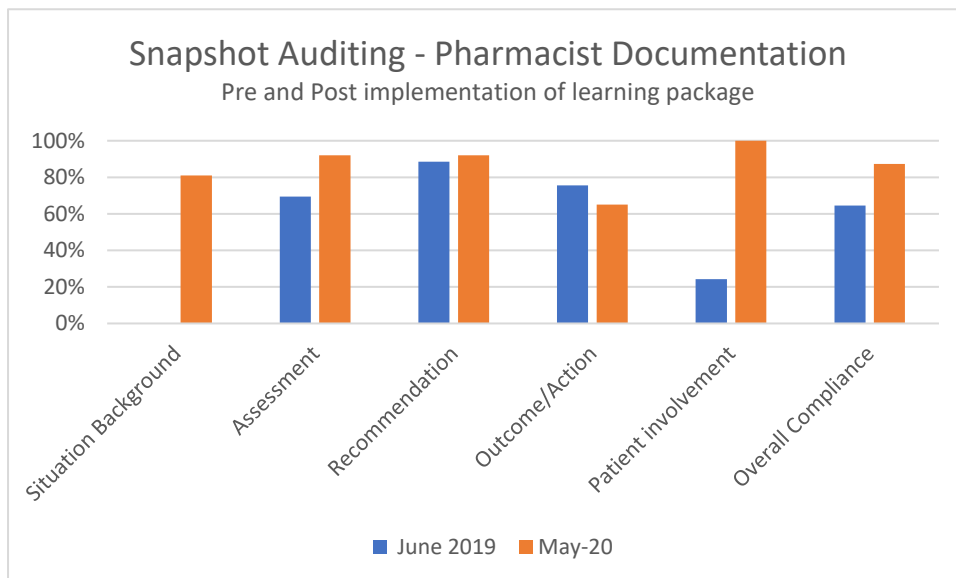


Appendix 3 – Number of medication related hospital acquired complications (HACs) v2.0, January 2018-May 2021

[HAC Version: 2.0 | Count Numerator by HAC Complication | Complication: 10. Medication complications | Diagnosis: 10.1 Drug related respiratory complications/ depression, 10.2 Haemorrhagic disorder due to circulating anticoagulants, 10.3 Hypoglycaemia, 10.4 Movement disorders due to psychotropic ...]



Appendix 4 Pharmacist Documentation auditing pre and post evaluation of learning package

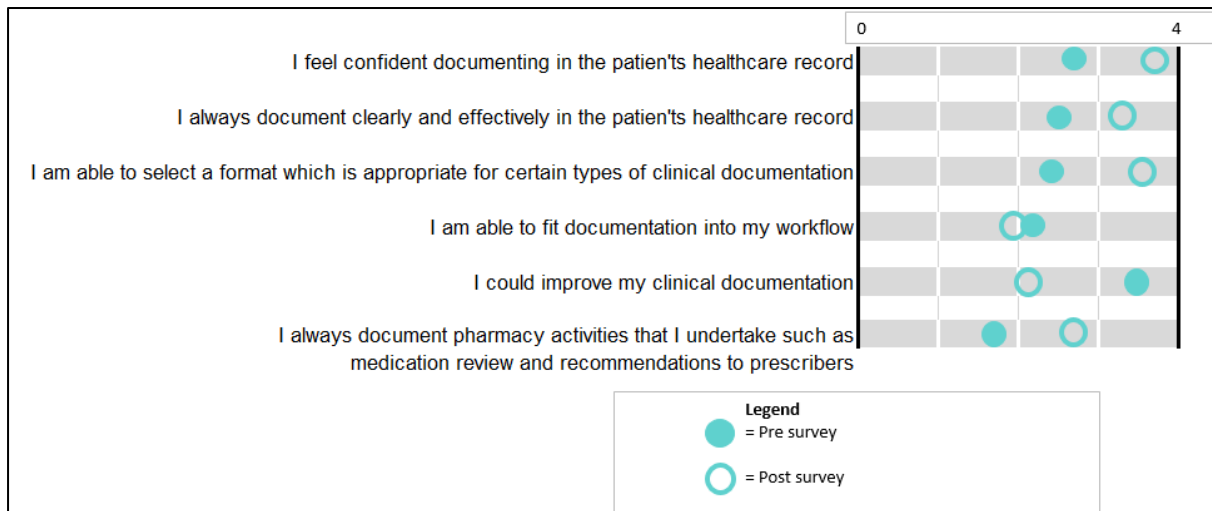


Notes

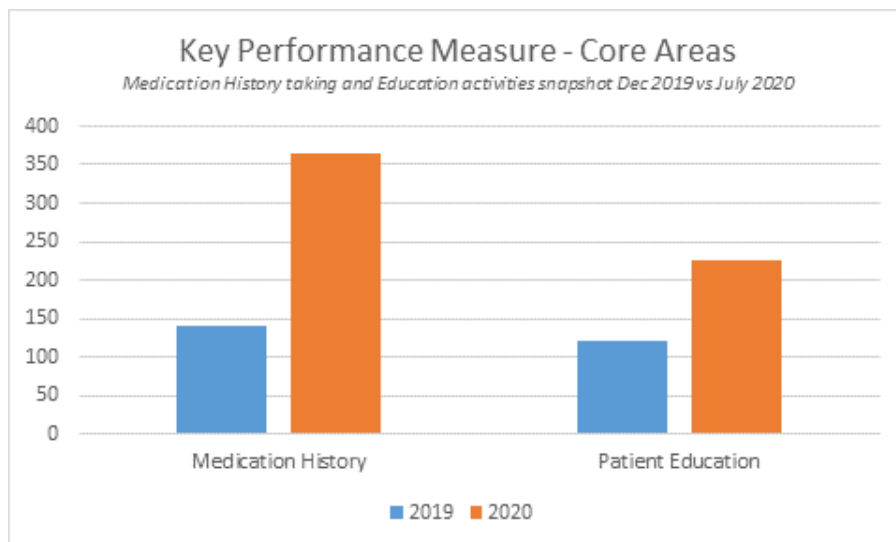
- Baseline information missing for situation/background as this was included as standard clinical documentation when developing the learning package.
- Overall the “Action/Outcome” documentation was lower post implementation. It was noted this is often included in subsequent documentation.

Pharmacist perception of documentation program, pre and post implementation of learning





Appendix 5 – Medication history taking and patient education in core clinical specialties before and after intern pharmacist realignment



HEALTHCARE MEASUREMENT

HIGHLY COMMENDED

Women's and Children's Health Network, SA

Women's and Babies Division

PerinatalCare QI: Preventing Perinatal Brain Injury in Preterm Infants (PINI) initiative*Amy Keir, Charlotte Groves, Angela Cavallaro, Fiona Margrie and Alice Rumbold*

AIM

Our PerinatalCareQI program aims to develop a frontline clinician and family-centred quality improvement program to implement evidence-based care practices to improve preterm birth outcomes.

The **Preventing Perinatal Brain Injury in Preterm Infants (PINI)** initiative is the first project in our **PerinatalCareQI program**. Our overall program aims to implement key evidence-based practices that, when used, are known to lead to improved outcomes for women experiencing preterm birth at <32 weeks (wks) gestation age (GA) and their infants.

ABSTRACT SUMMARY

Background: Preterm birth is a significant public health and social issue. Prevention of preterm birth remains elusive, yet decades of clinical research has identified a critical set of interventions that improve outcomes for babies born preterm. Despite this evidence, there is significant variation in applying these interventions in perinatal care across Australia. This is illustrated by data from the Australian and New Zealand Neonatal Network (ANZNN). From 2008-2017, only 50% of eligible women who delivered at <32 weeks gestational age (GA) received a complete course of antenatal corticosteroids. In 2017, only 51% of eligible women who delivered preterm infants (<32 weeks GA) received magnesium sulphate for fetal neuroprotection across the ANZNN. As a result, the millions of dollars of funding that have been directed towards world-class research projects have not been translated into better healthcare outcomes, either at all or in a sustained way.

Setting: The PINI initiative was conducted in South Australia at the Women's and Children's Hospital (WCH) within the Women's and Babies Division. It commenced in October 2018 and concluded in June 2021. The Division is a major provider of obstetric, midwifery, neonatal and gynaecological services to South Australia, the Northern Territory and far western New South

Wales and Victoria. Over 5000 babies are delivered at WCH each year. Within the Division is a Level 6 neonatal unit with 17 neonatal intensive care beds and 35 special care beds. The unit is responsible for providing care for inborn babies and outborn babies requiring transfer for specialist care. The unit averages 1400 admissions per year.

Intervention: Development of a clinician-led quality improvement (QI) program to implement evidence-based practices proven to improve preterm birth outcomes concerning perinatal brain injury.

Key evidence-based practices implemented included:

- (1) Magnesium sulphate for fetal neuroprotection (<30 weeks GA)
- (2) Antenatal steroids use (<32 weeks GA <1500 grams)
- (3) Deferred cord clamping (<32 weeks GA <1500 grams)
- (4) Prevention of hypothermia on admission (<32 weeks GA <1500 grams)
- (5) Prevention of late-onset sepsis (<32 weeks GA <1500 grams)

Model and measures: The Model for Improvement (www.ih.org) was used to develop and implement new processes to decrease variation in the management of women and their infants delivering at <32 wks GA. The use of a multi-faceted, multi-disciplinary QI team focusing on the use of Plan-Do-Study-Act cycles was the focus of our program model.

To measure the impact of each intervention, statistical control (SPC) methodology was used to measure compliance with the selected evidence-based practices and outcomes over time.

Results: Since the commencement of the PINI initiative in October 2018 and to June 2021:

- (1) Numbers of admission between cases of severe (grade ≥ 3) intraventricular haemorrhages increased from 6 (2017-2018) to 13 (2021): Appendix 1: G chart for rare events.
- (2) Use of magnesium sulphate has increased from a baseline of 63% (2014-2016) to a sustained 86% (2021): Appendix 2: P chart.
- (3) Before delivery, the receipt of any antenatal steroids increased from 83% (2017-2018) to 93% (2021). Appendix 3: P chart.
- (4) Deferred cord clamping increased from 10% (2018) to 75% (2021).



- (5) The proportion of preterm babies admitted within the normothermic range (36.5°C-37.4°C) has increased from a baseline of 44% (2014-2016) to a sustained >70% (2020-2021). The mean admission temperature has increased from 36.3°C to 36.7 °C throughout the initiative: Appendix 4: X chart.
- (6) Late-onset sepsis rates remained at 12% at both baseline and during the program (no change).

BreastScreen, ACT

Cancer and Ambulatory Support, Canberra Health Services

Pain management in the biopsy procedure

Julianne Solway, Debra Howse

AIM

The Pain Project aims to identify and address deficiencies in effective communication and management of pain during Breast Biopsy.

Through this, we will improve client biopsy experience, overall satisfaction with the service and maintain continued high standards of care.

SUMMARY ABSTRACT

Pain can be a defining experience which is magnified by uncertainty and fear. As Health Professionals, part of our role is to advocate for patients to minimize, wherever possible, harm and negative experiences in the healthcare setting.

Breast biopsy can be a confronting and fearful process.

By collecting data on key components of the patient experience during biopsy, BreastScreen ACT was able to compile several baseline measurements for client satisfaction around pain expectation, education and management.

Special Commendation – Initiative to Advance Aboriginal and Torres Strait Islander Health Outcomes

St John of God Health Care, WA

Hospital Management Committee

Partnership with Djaalinj Waakinj Aboriginal Ear Health Program

Helene Bordas and Sarah-Jayne Powell

AIM

Conclusions: The PINI initiative successfully established the foundations for a clinician and family-centred QI program to implement evidence-based care practices to improve preterm birth outcomes. Overall, we have increased and sustained the use of key evidence-based practices known to improve preterm birth outcomes through this QI program.

To support this, data was collected relating to the nursing/clinician explanation of the actions and effects of local anesthesia. The data provided evidence to enable assessment of whether the reality of the pain experience met client expectations.

Clinical team interaction and ongoing support was included in the evaluation. The degree to which a client felt empowered to speak up during biopsy if procedures were becoming unacceptably painful was also evaluated. This was seen as an important contributing factor to the efficacy of pain assessment.

By obtaining client feedback, we were able to determine that 1 in 4 clients were experiencing an unacceptable level of pain or discomfort during the biopsy procedure. We also learnt that in some types of biopsy procedures there has been less specific information provided about pain expectations and pain management.

As a result of this information we reviewed several of our core clinical processes and implemented changes. Within 6 months, after a second review, reported pain had been reduced from 1 in 4 clients to 1 in 10. Of these clients that reported pain/discomfort 5 out of 10 reported 10/10 satisfaction and the other 5 clients gave satisfaction levels of 8 to 9/10. This improved satisfaction outcome suggests improved efficacy of the identification and management of pain. Guidelines for sustained improvement in the future were also established.

St John of God Murdoch Hospital's partnership with the Djaalinj Waakinj Aboriginal Ear Health Program aims to provide early access to ear procedures for treatment of otitis media (middle ear disease) for Aboriginal children living in south metropolitan Perth. The partnership was initiated in response to research findings that Aboriginal children are disproportionately impacted by middle ear disease, with over 50 percent of Aboriginal children developing otitis media by 8 months of age. St John of God Murdoch Hospital provides high quality, holistic, compassionate care at no cost to Aboriginal children

who would otherwise face significant delays in accessing treatment where surgical intervention is required.

SUMMARY ABSTRACT

Djaalinj Waakinj, which means ‘listening talking’ in Noongar language, was initiated as a research project by Telethon Kids Institute focused on the burden of otitis media (middle ear disease) and hearing loss in young urban Australian Aboriginal and Torres Strait Islander (hereafter respectfully referred to as “Aboriginal”) children. The study took place in South Metropolitan Perth, which is St John of God Murdoch Hospital’s local community. The research found that Aboriginal children are disproportionately impacted by middle ear disease, with over 50 percent of Aboriginal children developing otitis media by 8 months of age¹. Previous studies have found high rates of otitis media (42%) in Aboriginal primary school children, which compares with a prevalence of bilateral otitis media of 11% in 5-7 year old children in the general population¹.

Hearing loss resulting from otitis media seriously impacts language development, communication skills, educational outcomes and quality of life¹. Due to

significant waiting lists, children in Perth can face treatment delays of over two years where surgical intervention is required. This has a significant detrimental impact for these children and their families.

In response to these findings, St John of God Murdoch Hospital has collaborated with several other organisations to provide access to services to Aboriginal children under the age of five with middle ear disease, who are able to access ear procedures free of charge at St John of God Murdoch Hospital if surgical intervention is required. Since the program commenced, and thanks to Paediatric Ear, Nose and Throat Surgeon Dr George Sim and St John of God Murdoch Hospital, 22 children have received access to free surgery with minimal wait times to ensure they receive crucial treatment as early as possible. Families whose children have benefited from the services have provided wonderful feedback.

St John of God Murdoch Hospital is extremely passionate about Djaalinj Waakinj and intends to continue this collaboration into the future.



HEALTHCARE MEASUREMENT

TABLE OF SUBMISSIONS

<p>Eastern Health, VIC Transfusion Clinical Nurse Consultants and Pathology Department Healthcare Measurement (Blood Management) <i>Petra Spiteri</i></p>
<p>Ternity Group P/L, VIC Being Sleep Smart- Improving Safe Sleep and Settling in Early Years Services <i>Cindy Davenport, Melissa Grant</i></p>
<p>Fresenius Medical Care Asia Pacific, Hong Kong SAR Clinical Quality Asia Pacific The Implementation of an Electronic Auditing Program Across 10 Countries <i>Lisa Webb and Wendy Khor</i></p>
<p>Prince of Wales Hospital, NSW Pharmacy Department Improving Access to Medication Review in High Risk Inpatients <i>Adriana Chubaty, Carly Wills, Jessica van Schreven, Anne Steffensen, Elizabeth Browne, Elizabeth Mason, Martin Mackertich and Christine Conn</i></p>
<p>Royal North Shore Hospital, NSW Pharmacy Department Reducing Hypoglycaemia by Eating A Chocolate Elephant <i>Jeffery Wang, Helen Ganley, Philip Hoyle, Jenny Crane, Fallon Grieve, SallyAnne Duke, Shejil Kumar and Harley Wang</i></p>
<p>Women's and Children's Health Network, SA Women's and Babies Division PerinatalCare QI: Preventing Perinatal Brain Injury in Preterm Infants (PINI) initiative <i>Amy Keir, Charlotte Groves, Angela Cavallaro, Fiona Magrie and Alice Rumbold</i></p>
<p>Townsville University Hospital, QLD Mental Health Service Group Medical emergency simulation training for doctors and nurses in psychiatry: a quality improvement study <i>Divya "Kiran" Sharma, Pallavi Dham and Brett McDermott</i></p>
<p>Peninsula Private Hospital, QLD Nursing Administration Implementing a best-practice response to clinical deterioration <i>Linda Jorgensen, Stephanie Fredrickson, Kelly Grant, Kym Eeles</i></p>
<p>St John of God Health Care, WA Hospital Management Committee Partnership with Djaalinj Waakinj Aboriginal Ear Health Program <i>Helene Bordas and Sarah-Jayne Powell</i></p>
<p>Western Sydney Local Health District, NSW Health Promotion Team, Centre for Population Health Is what we are doing working? Building the Health Promotion Team's planning and evaluation capacity <i>Louise Talbot, Natalie Virgona, Kate Kennett and Andi Andronicos</i></p>
<p>BreastScreen ACT Cancer and Ambulatory Support, Canberra Health Services Reducing our Carbon Footprint – Anaesthetic Gases <i>Julianne Solway and Debra Howse</i></p>
<p>Peel Health Campus, WA Theatre Department Reducing our Carbon Footprint – Anaesthetic Gases <i>Tracey Grantham, Chris Mitchell, Melissa Holloway, Karol Edge and Michelle Bissett</i></p>
<p>Karitane, NSW Design and Implementation of the Karitane Outcomes Framework <i>Karen Edwards, Melanie Hughes and Grainne O'Loughlin</i></p>



Hong Kong Sanatorium and Hospital, Hong Kong SAR

Infection Control and Quality & Safety

Compulsory COVID-19 Screening among Staff Member in HKSH Medical Group

*KWOK Lam Fung; KEE Ka Man; CHAN Wai Leng; YUNG Wai Hung, Raymond***Blacktown and Mount Druitt Hospitals, NSW**

Physiotherapy Department

BOOST: Boosting inpatient exercise after hip fracture using an alternative workforce: an implementation evaluation

*Marie March, Alison Harmer, Sarah Caruana, Sarah Dennis, Stephanie Polley and Bijoy Thomas***Hong Kong University Shenzhen Hospital, China**

Clinical Trials Center

Focus on the the rights and interests of subjects and reduce the incidence of clinical trial quality problems

Zhou Wen Jing, Lou Xiao Huan, Bai Yong Kun, Peng Rui Juan, Yu Man, Zhuo Bao Shan, Chen Xiao Wei and Ma Li

GLOBAL QUALITY IMPROVEMENT

WINNER

Fresenius Medical Care Asia Pacific, Hong Kong SAR

Clinical Quality Asia Pacific

The Implementation of an Electronic Auditing Program Across 10 Countries

Lisa Webb and Wendy Khor

AIM

The project involved implementing an electronic auditing program across 10 countries in Asia Pacific, it included the development of an Application (App) and web-based database called 'WeAudit' for staff to upload Clinical Quality Audits and undertake auditing on a hand-held device, across 290 hemodialysis centers. The raw data that is collected during the audit process is fed into the database to be queried and converted into a variety of formats such as reports, graphs and analysis of the audits undertaken. Previously the data collation and analysis processes were manual, resulting in a very inefficient labor-intensive system with inaccuracies that required extensive follow-up and delayed results back to countries. The project has facilitated identification of service gaps, compliance monitoring, resource planning and improving the quality of care for patients, whilst the application and database allows data to be more accessible, more accurate, timelier and is designed for all levels of user.

SUMMARY ABSTRACT

Clinical Quality Auditing is integral to all aspects of our service and care of patients. Auditing provides a tool to monitor compliance against regional and country directives, Country/State Legislations, Standards and Policies. They also identify conformities and service strengths, as well as gaps that require action resulting in Quality Improvement activities. Prior to the development of the electronic auditing program (WeAudit) quality audits and competencies had been manually undertaken across 290 hemodialysis centers in ten Asia Pacific countries. The data collation and analysis processes were very labor-intensive, slow and often inaccurate.

The manual auditing process included developing an Audit Calendar that was emailed out to all Country Managers advising them of the audits that needed to be undertaken in all of their centers over the ensuing 12 months. Audit Tools (as word documents) were then sent out to the country representatives for distribution to each dialysis center in time for the audits to be undertaken.

Completed audits and competencies were then returned via email to the regional office in either PDF/Word/photo, (as some clinics did not have access to a photocopier with capability to convert a document to a PDF) format. Every individual centre's audit was printed out and then saved into a set of folders & files. An Excel Spreadsheet for each audit undertaken was created for every country and every centre's audit response was then systematically manually entered against every question in the audit tool into the Excel spreadsheet and then graphed, analyzed and reported back to the country teams for discussion and actions locally. There was no automated process for the data to be collated into a database for data analysis and comparisons of dialysis centers against other centers and countries. Additionally, the manual process had other deficits including: illegibility of handwritten responses, slow manual data entry, language barriers, inaccuracy (human error with transcribing), poor timeliness (often required extensive follow up of results with countries), delayed results back to countries, data security issues and clinics with poor internet meant staff had to drive, and hand deliver the audit results to country teams.

The solution was to develop an Electronic Auditing Program, consisting of a web-based database and application (App) that could be downloaded to any tablet (Apple or Android) device, which would be provided to every dialysis centre across the region. The App would then be used to upload the audit tools from the database. Once uploaded to the App on the tablet, a credentialed staff member then undertakes the audit on the hand-held device, this is undertaken in every dialysis centre across 10 countries simultaneously. The content created through the App audits, is feedback into the database which converts the data into reports and graphs, depicting every clinic in each country compliance achievement for the audit undertaken.



Since implementation the project has provided many strategic benefits including staff efficiency improvements by saving time in manual data entry, saving time with legibility and language barriers, as well as no longer requiring photocopying and scanning and no need for staff to drive & hand deliver paper audits.

There has been expanded usage of handheld devices for staff and patient education programs, staff competency assessments, videoconference meetings & group discussions as well as photographs for dialysis access surveillance.

The electronic auditing program drives compliance and quality, as standards are monitored at every clinic for every activity audited. There is also the ability to identify and deal with issues quickly leading to greater accountability and quality improvements and also providing a GAP analysis for accreditation preparation and direction for countries to remediate and improve processes. The auditing program also recognizes areas of conformity and strength within services, leading to best practice sharing across countries. Additionally, auditing is used to analyze and evaluate quality improvements implemented for appropriateness and success.

The repository of audit data into a centrally managed information system facilitates the analysis of results into graphs and reports and provides opportunity to improve the quality of care in the centers through external and internal benchmarking (clinic against clinic and country against country). There are also the added benefits of guiding business objectives such as appropriate healthcare and financial planning to priority areas.

The project has also removed security weaknesses such as hard copy documents, scanning and photocopying, whilst making data more accessible, more accurate, of a higher standard, timelier, and it is designed for all levels of user. There are wireless internet options available, to facilitate auditing when unstable internet is a problem and there is multiple language support (multiple languages are provided in the web-based platform and mobile devices) ensuring there are no language barriers, the audits can be uploaded into different languages and all entries made by users are treated in their local language.

Prior to the WeAudit implementation all staff conducting the audits must undertake an education program with assessment to ensure they understand the importance and objectives of auditing, its role in quality improvement and process evaluation, as well as the need for accuracy. Once a staff member has met all of the assessment areas of the program including how to use the system, there are set key performance indicators that must be achieved annually, to remain certified.

The audit tool development included collaboration with country teams to ensure appropriateness for each setting, additionally the audit objectives are clearly specified on the audit tools with indicators, criteria and referenced standards according to researched literature, best practice guidelines and/or country legislative requirements. The audit tool topics are designed and planned according to identified needs, incident and risk investigation/management, legislative requirements and country request. Some audit tools include specific sample sizes such as medical record and documentation audits, to ensure an accurate cross section of data.

The audit results are discussed within country teams to develop strategies to implement changes and interventions to close identified gaps. Regional level services provide ongoing support to country teams, through general dialysis centre auditing which evaluates the effectiveness of changes introduced and best practice sharing for standardisation of services across the region.

REPORT

APPLICATION OF ACHS PRINCIPLES

1. Consumer Focus

The evaluation and improvement of care provided to our patients is of vital importance and an ongoing process. Clinical Quality auditing is a tool that supports this process as part of the quality improvement cycle (1,2). Our infection prevention and control (IPC) audit tools monitor the compliance against directives and also identify gaps for improvement, this includes not only nursing or clinical processes but also those which include patient participation. The IPC audit tools include observational audits of patients washing their hands prior to entering the dialysis clinical areas as well as cleaning of the dialysis access site. During the audit process if patients are not performing the IPC process correctly, the risk identified is automatically sent from the web based WeAudit system to the dialysis centres risk register for mitigation. Mitigation measures would include reinforcing the importance of IPC to patients and the role of Hand Hygiene in preventing infection, via individualized patient education programs. The auditing program also



includes the reporting of noncompliance or gaps regarding safety issues in the dialysis centres. Including patient falls risks, obstructions in hallways and environmental hazards such as chemical and waste storage methods. All gaps identified are reported into the centre's risk register and corrective actions implemented. Each risk is also evaluated as a country level risk and if relevant entered onto all country dialysis centres risk registers for management. This safeguards patients, visitors and all who work and visit our centres. Patient falls prevention in the dialysis centre is also part of the patient education program. The tablets provided to each dialysis centre to implement the WeAudit program are also used for patient education activities and taking photos of patient's dialysis accesses, which is uploaded to the patient medical record. The photo is updated every 6 months and provides an opportunity for early detection of infection, aneurysm formation and tracking fistula development.

2. Effective Leadership

Effective leadership was an important element and contributor to the success of this project. Regional and country leadership ensured that the WeAudit program was implemented successfully across 10 countries in Asia Pacific. The regional leadership group met regularly to monitor country feedback, address barriers, and ensure progression of the WeAudit implementation. Regional and Country managers and other senior level clinical staff played key roles in the WeAudit rollout.

Regional leadership: The regional quality team identified the gaps and limitations with the manual audit process, so sought approval for the web-based database and App development, and to secure funding for the purchase of tablets for each dialysis centre. A proposal was presented to the company executive, highlighting the gaps in the manual process, the opportunity for improved services and potential cost savings. The project received approval, and the regional quality team set about providing the project developers with the project scope including ease of use across 10 countries with multiple languages.

There were significant needs required for the system development including:

- Ensuring photographs could be included in the audit tools as evidence of compliance/ non-compliance
- Easy up loadable App on to an Apple or Android device
- Easily upload of a variety of Audit tools into the developed App
- Provide a process where responses to the Audit Tool Content questions is via a click of a colour coded button
- A calculated score related to the colour coded buttons e.g. Green for Yes response 1 point, Red for No 0 points
- Able to tally the above score and provide a percentage of compliance for each audit undertaken
- Ability to download individual completed Audit to a file format such as PDF for future reference
- Audit data converted to a program/database where it can be 'massaged'
- Provide a Risk Matrix to Risk assess all identified Incidents/Risks
- Link to the Risk Register for the Centre/Country and be rolled into a Report for regional level
- Review history needed to be traced.
- Preventive and Corrective actions to be implemented needed to be recorded and progress monitored.
- Quality improvements that result from risk identification and associated preventive and corrective actions must link to the Quality Improvement Register, available at all levels of the organisations i.e. centre, country and regional
- Multiple languages need to be supported
- Reports must be able to be customizable such as specific trends or clusters of risks down to the centre level.
- Reports can be exported in other formats e.g. Ms-Excel.
- Capacity – the system will be widely implemented across Asia Pacific countries and must have scalability in view of growing numbers of centres across the region.
- Ability to archive historical data.
- Capability of tracing changes made on existing or historical record (audit trail).
- The system needs to be available 24 hours a day
- System documentation such as database structure / Data dictionary are available
- Security
 - o Data security needs to comply with the company IT Policy.
 - o Encryption needs to be in place to ensure patient data confidentially during data transmission
 - o Capability to restrict user access on multiple or particular country and/or centre.

Following the programs development, a user manual and comprehensive training program was developed for all end users. The regional team implemented WeAudit and the corresponding training program across 10 countries, over a 2-year period. The ongoing role of the regional team is to ensure the system is upgraded as per need arises, develop/ review



audit tools in consultation with country teams, monitor compliance of audits in each country, identify regional risk areas, implement corresponding quality improvement activities and evaluate corrective actions.

Country leadership: Country leadership was critical to ensure that all dialysis centre staff were committed to the implementation of the WeAudit program. The WeAudit project offered countries an improved, more efficient auditing process; that facilitated more accurate, timely data to assist in improving patient outcomes. There was also the opportunity for countries to expand and develop their own audit tools specific to country needs.

Each country management team made a commitment to ensure the WeAudit project was facilitated across all centres, commencing with staff training and tablet issuing. The country team implemented the following processes to ensure success of the program:

- Each haemodialysis centre received an electronic hand held device with the WeAudit App available
- Each Centre Manager received 1-day WeAudit system training and understood their responsibility for the safe management of the electronic hand held device
- All audit staff were credentialled, by attending the regional education program (2.5-day training)
- Each trained Centre Manager undertook an audit session within one week of training and conducted assigned regional audits timely.
- If a Centre Manager is replaced or unable to undertake audits a replacement manager undertakes WeAudit training for that service
- Each country nominated a WeAudit resource person responsible for liaising with the regional Quality Team, provided trouble shooting for Centres and ongoing education as required
- Each country implemented a ‘mobile device’ tracking system to ensure device location, i.e. On 6 monthly basis, each centre takes one photo showing mobile device located in the centre with date and time on the mobile device screen and sends photo to the regional office
- Each country Manager was provided education on how to query the database and obtain reports for discussion at each clinic and the country Clinical/Medical Advisory Board/Committee and regional Clinical Quality Improvement Committee.
- There were staff available for the maintenance and updating of country databases
- Security tool and anti-virus software was installed on each mobile device to ensure data security and protection.

Country commitment to achieving the goal of implementing WeAudit has been defined by the successful implementation across 290 dialysis centres and 10 countries. Each centre is conducting regional audits annually and then using the analysis of this data locally to identify centres with gaps that require additional resources, education support and quality improvement activities. Additionally, 5 countries have developed country specific audits in line with local government regulations/ legislation whilst others are conducting additional regional audits to monitor IPC measures e.g. Australian centres conduct additional 3 hand hygiene audits as per National guidelines.

Dialysis centre managers reported that the WeAudit program was very effective in demonstrating gaps in service using the graphs in team/ country meetings and for benchmarking against similar centres, this facilitated effective collaboration among the centre team to implement appropriate improvements. The centre staff agreed that the audits not only illustrated gaps but also highlighted areas of strength which was recognition for their patient education, feedback/ reporting, and patient care.

3. Continuous Improvement

A pilot program was conducted in Singapore over a 3-month period as a Gap Analysis between system requirements and the completed WeAudit system, it included 22 dialysis centres and 30 staff. Following the pilot success, the WeAudit program was then initiated into 9 other Asia Pacific countries over a 2-year period. Throughout each implementation we consulted with the country teams to ensure any problems identified were closed and to continually improve the program. Some of the improvements included:

- In centres with unstable internet access, staff were instructed to download the audit tools onto the tablet when there was internet access and to upload completed audits to the database once again during good access. The tablets could support ‘off-line’ auditing, so once the audit was downloaded, there was no problem to conduct the audit
- To prevent audit completion timing issues, we extended the audit completion periods from 2 to 4 weeks. This ensured that centres could conduct the audits during ‘quieter’ periods, without being stressed to complete on time. Additionally, if there were extenuating circumstances the audit periods can be extended further e.g. during the COVID-19 pandemic when additional IPC measures were being implemented.



- As part of IPC practice, safe cleaning guidelines for the tablets in the centres were introduced, as they are shared between staff and patients for education and online meeting purposes.
- To ensure alignment with local regulations, some countries-initiated country specific audits, these were in addition to the regional audit program, including Australia implementing additional hand hygiene audits, Philippines implementing water treatment system audits and Taiwan included staff competencies regarding dialysis access cannulation.
- Audit tools are reviewed and updated annually to ensure they are in line with current best practice standards. As well 5 additional audit tools have been developed following country identified need and risk reporting. Such as water treatment system audits, which were developed to identify correct testing of reverse osmosis water treatment systems for dialysis treatment. Some audit tools have been updated to include specific sample sizes such as medical record and documentation audits, to ensure an accurate cross section of data is captured.
- Staff conducting the audits are now credentialed, an education program with assessment was implemented by the regional team. This ensured that staff conducting audits understood the importance and objectives of auditing. Once a staff member successfully completes the program, there are set key performance indicators that must be achieved annually, to remain certified.
 - o Undertaking their first audits within 2 weeks post the education Program
 - o Undertaking a minimum 50 Hand Hygiene audit moments within 6 weeks of initial training.
 - o Completing IPC, OHS and quality improvement eLearning Packages Annually
 - o Reporting audit results and identified gaps at staff meetings
 - o Implement Corrective Actions and Quality Improvement Plans and monitor results to reach target /goals / KPIs implemented
 - o Benchmarking between centres to identify support priorities
 - o Encourage partnerships between patients, their families and Health care workers (HCWs) to uphold safety principles including hand hygiene in health-care settings, falls risk and dialysis access care

The WeAudit program drives compliance and quality across the region, standards are able to be monitored at every site for a range of activities. The electronic auditing has resulted in efficiency improvements and cost savings by optimising nursing resources, reducing manhours in audit data collection, preparation of country regulatory reports, identification of potential risk areas reduces costs of remediation, while improved quality management is expected longer term, to reduce patient hospitalisation and associated revenue loss.

Early recognition of gaps through the WeAudit program - such as the identified need to upskill nursing staff on cannulation practices when cannulas are not tapped correctly (high risk if a cannula dislodges during treatment) - leads to greater accountability and quality improvement. Following staff education repeat auditing is conducted to evaluate the interventions and results directly fed back to staff. Continuous performance data continues to be collected via the WeAudit program with regular staff communication to ensure continuous improvement of care.

4. Evidence of Outcomes

The results of the WeAudit program implementation has seen many improvements:

- The WeAudit program facilitates virtually 'real time' data availability which is a significant improvement from the greater than 6-month turnaround of the manual process. (Figure 1).
- Since implementation there has been an increase in audits conducted across the region by providing increased opportunity for risk identification. (Figure 2)
- There has been a 40% increase in the number of audit tools available, this has resulted following incident and risk management in countries. A copy of the audit calendar in 2016 (manual audit) and 2021(WeAudit) shown in Figures 2 & 3 respectively.
- The depository of Audit Data into a centrally managed information system has resulted in audit data being analysed and available in the form of graphs and reports which is easier for staff to understand and provides opportunity for benchmarking clinic against clinic & country against country and external benchmarking. (Figure 4).
- There has been continued improvement each year on the audit outcomes. The improvements achieved by the WeAudit project have been sustained over the past 2 years. (Figure 5)
- The audits have included noncompliance or issues of concern by healthcare workers (HCW) and patients. Providing results of the audit to staff enables them to identify where improvement is needed. This is evidenced by the development of 25 staff education eLearning modules since the WeAudit project implementation. Topics include-Aseptic technique in dialysis, Vascular access care, Cannulation technique, Manual handling. (Figure 7).



- A regional Patient Education program has been implemented as a result of audit feedback, including Care of vascular access, Hand Hygiene, Falls Prevention. (Figure 8).
- The annual audit calendar for regional audits are annually updated, and new audits implemented according to risk assessment. Water treatment audits have been implemented following identification of water testing type and frequency risk. (Figures 2&3).
- Staff conducting the audits are credentialed and are expected to complete a set of key performance indicators annually, to remain certified, these outcomes are monitored at both a regional and country level to determine if repeat education is required. (Figure 10).
- The accuracy problems have been removed and photographic supportive evidence (conforming and non-conforming) is available for staff to utilize to support auditing outcomes and risk investigation (Figure 6)
- Improved Security – the program improves security weaknesses as data collection is automated/ electronic with password required for tablet or database use, and all data is encrypted to ensure patient and staff privacy. The manual process had security weaknesses such as transcribing, hard copy documents, scanning and photocopying
- Some audit tools include specific sample sizes such as medical record and documentation audits, to ensure an accurate cross section of data (Figure 9)
- The tool is also designed for all levels of users and has multi language support. (Figure 12)

5. Striving for Best Practice

The WeAudit project was implemented in line with best practice evidence. A literature review and evaluation regarding the use of auditing as part of clinical governance and quality improvement process was undertaken. It was clear that auditing as a quality improvement process that seeks to improve patient care and outcomes through the review of care and processes when compared with specific criteria and the subsequent implementation of corrective actions (2) Additionally at all times there was consultation with country staff (at all levels) to ensure the development and implementation of the project would realise the desired goals and meet the individual country needs. A collaborative approach ensured that specific country requirements were considered such as security issues, language barriers and internet connection availability.

The depository of Audit Data into a Centrally Managed Information System provides opportunity to improve the quality of care in the clinics, via internal and external benchmarking. The auditing program also recognizes areas of conformity and strength within services, leading to best practice sharing across countries and standardisation of processes.

The WeAudit system has removed security weaknesses identified with the manual system, including manual data entry(error), data transcription, legibility and language barriers, photocopying and scanning. Accuracy issues are removed ensuring a higher standard of data quality is available and photographic supportive evidence (conforming and non-conforming) is available for staff to utilize to support auditing outcomes and risk investigation (Figure 6) Additionally, the data drives compliance, and quality standards are monitored at every clinic for every activity, leading to greater accountability and risk management. The auditing system is also designed for all levels of users and has multi language support which improves accuracy and ease of use.

The auditing tools are updated and reviewed annually, to ensure they are in line with published best practice guidelines and new audit tools developed according to risk assessments, such as new water treatment system audits following identification of dialysis

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The auditing tools are updated and reviewed annually, to ensure they are in line with published best practice guidelines and new audit tools developed according to risk assessments, such as new water treatment system audits following identification of dialysis water testing risks. The regional audit program is planned according to the annual audit calendar, however adhoc additional audits can also be supplemented if compliance or risk priorities are determined during the year such as the additional COVID-19 audits conducted to ensure IPC compliance.

The auditing education program was implemented to ensure credentialled staff are conducting the audits. The program includes assessment on how to undertake an audit, to ensure staff conducting audits understand the principles and objectives of auditing. On completion staff are expected to complete a set of key performance indicators annually, to remain certified, these outcomes are monitored at both a regional and country level to determine if repeat audit education is required.

The effectiveness of country Infection Prevention and Control programs are reviewed at least bi-annually using the data from WeAudit. The audit results have been used to direct the IPC program to target successful interventions, such as patient education regarding washing dialysis access prior to cannulation, implementation of HH poster at each hand basin and ensuring alcohol based hand rub is available at every dialysis station to create a safer environment and to minimise the risk of healthcare-associated infections.

INNOVATION IN PRACTICE AND PROCESS

This project has demonstrated the successful implementation of an electronic auditing program across multiple dialysis centres in 10 Asia Pacific Countries. This project is innovative because it was introduced on a large scale across multiple sites and countries. The purpose was to standardise practice within one organisation across multiple sites, to close significant gaps identified with the previous manual auditing process, whilst most importantly improving patient care and dialysis services, through timely risk identification.

The electronic audit process allows real-time data collection across multiple countries which is unique and has been significantly important in recent months with checking compliance regarding the implementation of additional IPC precautions in all of our centres to manage the COVID-19 pandemic (figure11).

The program offers more than just auditing to identify gaps but the opportunity via the database to use the audit data for strategic planning, guiding business objectives such as appropriate healthcare and financial planning to priority areas, it also recognizes areas of conformity and strength within services, leading to best practice sharing across countries. The system efficiency identifies risks quickly, leading to safer and improved services for patients and staff.

The system's ability to include the uploading of photographs and documents, as evidence for audit criteria has led to improved accountability and a clearer understanding of individual service issues.

The electronic auditing program has also been innovative in providing efficiency improvements by optimizing resources such as:

- Staff efficiency improvements by optimizing nursing resources when compared to the manual auditing system
- Cost savings in reducing manhours in audit data collection, preparing regulatory reports
- Business benefits - cost savings from standardization of processes/ consumables.

There is also the Mobile device 'value added' use in the clinics, opportunity for expanded usage including:

- Upload of educational programs for clinic staff and patients
- Staff education programs and competency preparation
- Videoconferencing meetings & group discussions
- Photographs for dialysis access surveillance

APPLICABILITY TO OTHER SETTINGS



The WeAudit program would be easily transferable to any healthcare setting, and also has potential outside of the clinical setting. Currently the audits are haemodialysis centre specific, however the system is being expanded for use in the general hospital setting as well as biomedical engineering areas. The scope for the use of WeAudit program is vast, as the program can fit within any setting wishing to improve services through identification of gaps by auditing. WeAudit is valuable for providing efficiency improvements and proven ability to be implemented across multiple sites in multiple countries.

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2. Skull. S, (2020) "Embedding clinical audit into everyday practice", <<https://www.healthywa.wa.gov.au/-/media/HSPs/CAHS/Documents/Research/ResearchEducationProgram/ClinicalAuditJPCH15Sep20>>

APPENDIX

Appendix 1: Evidence of Outcomes

Figure 1: Manual collation data (2018), clinic by clinic, country by country, and plotted graph. There is missing data, inaccurate data, delay in publication and feedback to clinic and country, when compared to data from 2019-2020. [Insert text]

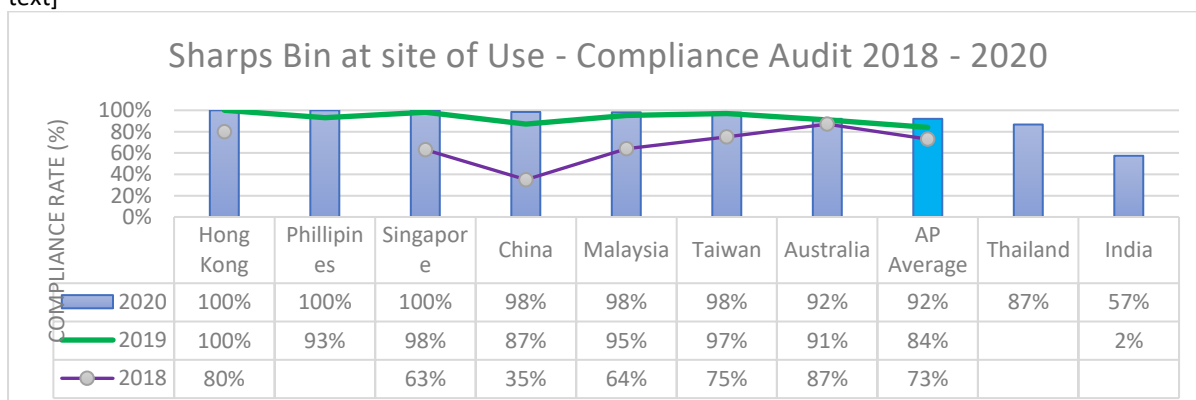


Figure 2: Published Audit calendar in 2016

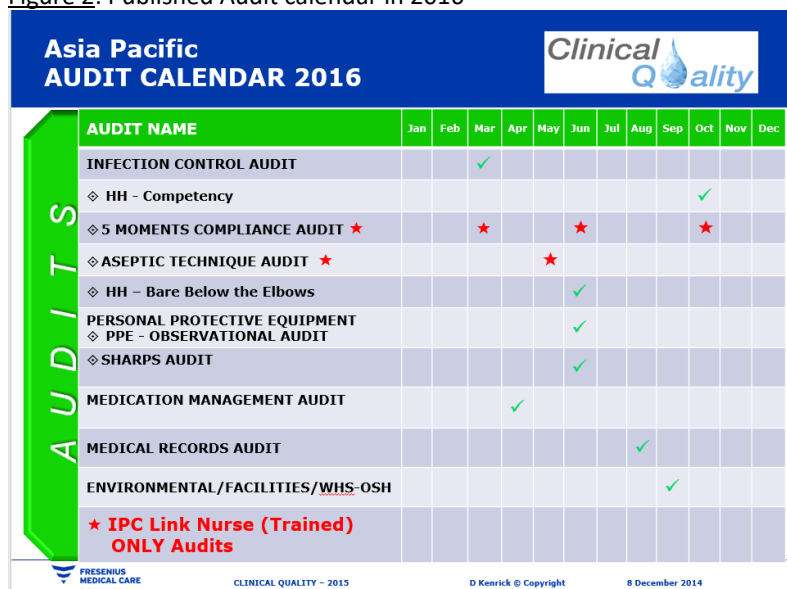


Figure 3: Published Audit Calendar in 2021

FME - ASIA PACIFIC AUDIT CALENDAR 2021 - GENERAL

Audit Names	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
INFECTION PREVENTION & CONTROL			x									
HAND HYGIENE - COMPETENCY							x					
BARE BELOW ELBOWS							x					
PERSONAL PROTECTIVE EQUIPMENT							x					
SHARPS MANAGEMENT							x					
MEDICATION MANAGEMENT (I)				x								
MEDICATION MANAGEMENT (II) *				x								
MEDICAL RECORDS MANAGEMENT *					x							
MEDICAL RECORDS MANAGEMENT (II)					x							
ENVIRONMENTAL SAFETY								x				
ENVIRONMENTAL CLEANING										x		
DIALYSIS WATER & MACHINE AUDIT											x	
OCCUPATIONAL HEALTH & SAFETY									x			

Note: * Required to conduct audit for a predetermined sample size, based on the total number of patients. Refer to individual audit tools for more details.

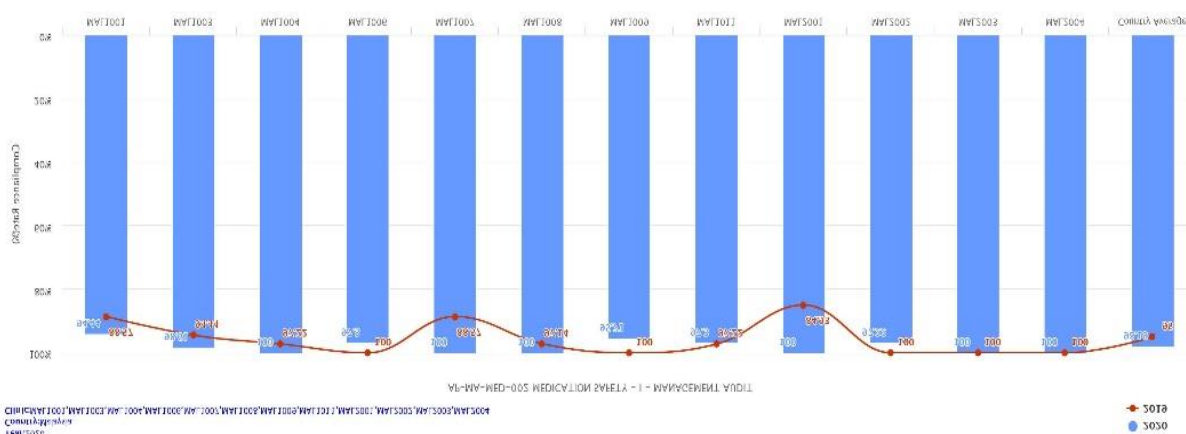


FME - ASIA PACIFIC AUDIT CALENDAR 2021 - ADDITIONAL

Audit Names	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Audit below ONLY for clinic with:												
CONCENTRATE MIXING			x									
DIALYSER REPROCESSING			x									
Below Audits ONLY for Trained IPC Link Nurses / Champions to undertake												
5 MOMENTS COMPLIANCE AUDIT Period 1 - 1 Nov to 31 March Period 2 - 1 April to 30 June Period 3 - 1 July to 31 October	Audit Period 1 starting Nov of pervious year		Audit Period 2				Audit Period 3					
ASEPTIC TECHNIQUE AUDIT							x					
ASEPTIC TECHNIQUE COMPETENCY (ONCE EVERY 3 YEARS)							x					



Figure 4 – System generated graph of clinics in Country



System generated report of Countries in the region



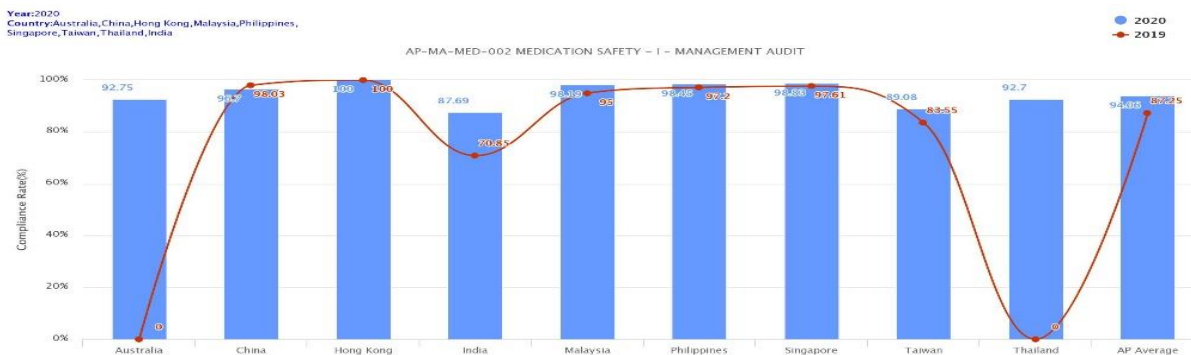


Figure 5: Continued improvement of audit findings example: Country manager can analyse the data by clinic and identify the gap in each facility.

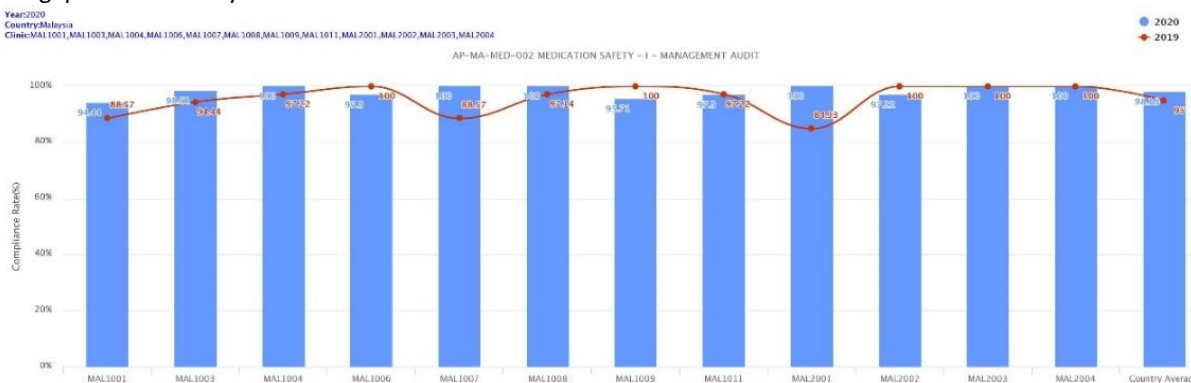


Figure 6: Direct input into the application, with the possibility of capturing photos as evidence. Staff could easily download the report from the system.

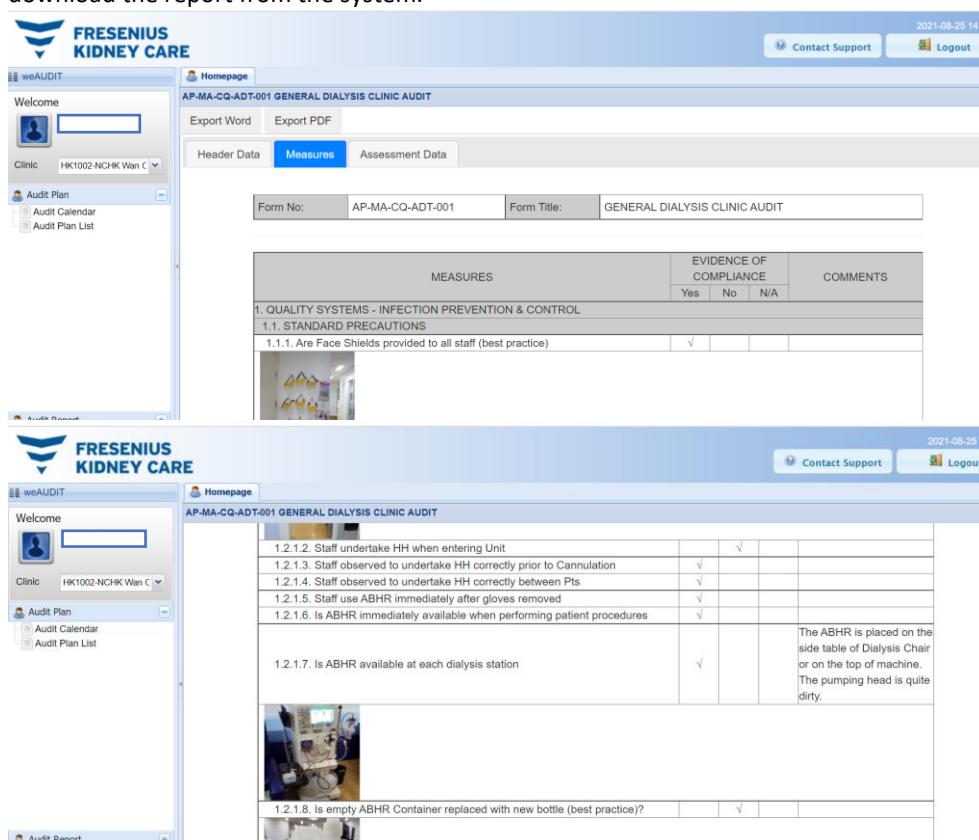


Figure 7: Fresenius Learning Centre, which is a web-based online learning platform for all staff.



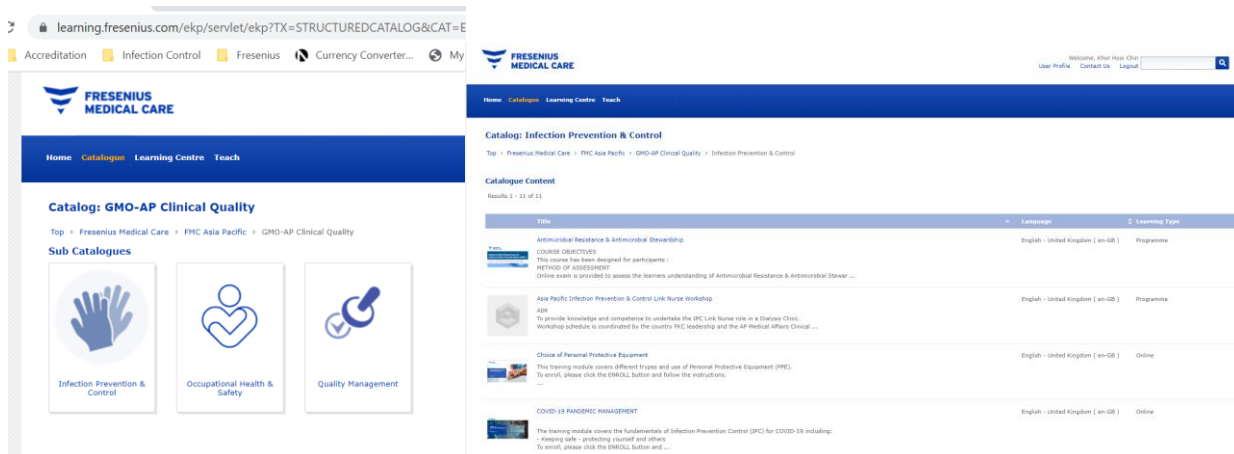


Figure 8: Patient Education tools that developed and published in the company intranet page.

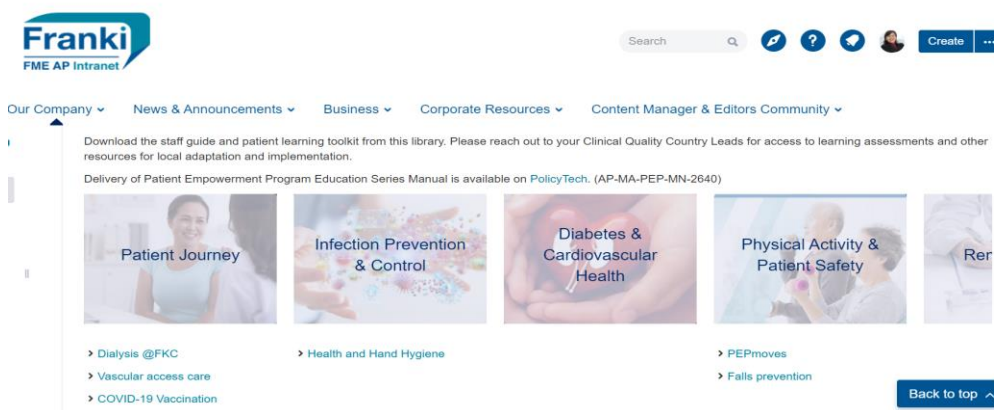


Figure 9: Audit tools being reviewed based on feedback from user

Manual Audit tool in 2017:

AUDIT INSTRUCTIONS	<p>To undertake the audit – observe the activities in the Dialysis Unit and then please simply place a tick <input checked="" type="checkbox"/> column with the most appropriate answer</p> <ul style="list-style-type: none"> • Yes (achieved) • NO (not done) <p>On completion of the audit,</p> <ol style="list-style-type: none"> 1. Send Audits to your country Quality Manager to collate 2. Collated country audits then EMAILED to AP- CQ Team CQ.Audits@fmc-asia.com 3. If there is no country Quality Manager send completed Audits directly to the Clinical Quality Team (CQT) Email: CQ.Audits@fmc-asia.com
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There were no clear instructions on how the audit is to be completed, or sample size, thus the audit tools has now been updated to include the audit instruction for the staff, and sample size.
Updated tool in 2019:

Audit Times(From - to)	
Audit Rationale	<p>To undertake a review of Dialysis Patients Medical Records</p> <ul style="list-style-type: none"> To identify potential areas for improvement To identify areas of non-compliance with Fresenius Kidney Care (FKC), Fresenius, State and Federal legislations, standards and policies.
Audit Instruction	<p>Required to have a sample size of at least 25% of the total patients (or maximum 25 samples).</p> <p>Fill in one observation for each record that is randomly selected. The results of the audit are calculated using the average from the total audits performed.</p>

Figure 10 - Qualified (credentialed) auditors

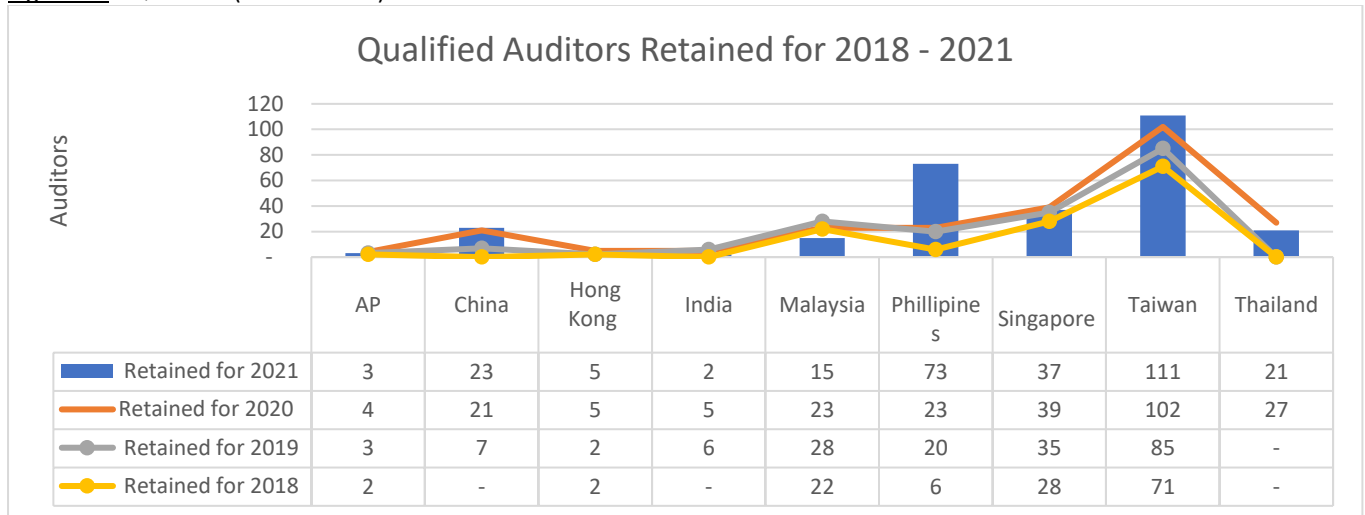


Figure 11- COVID-19 Compliance Audit results

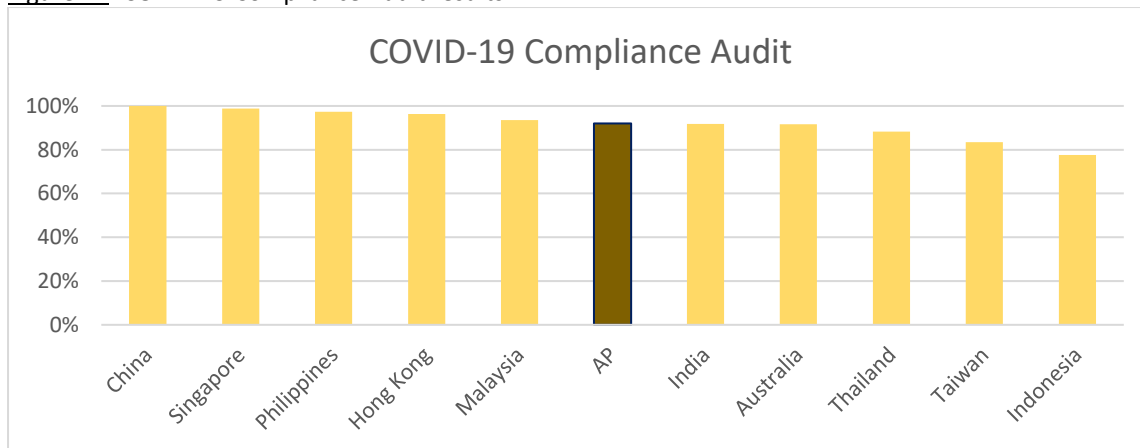
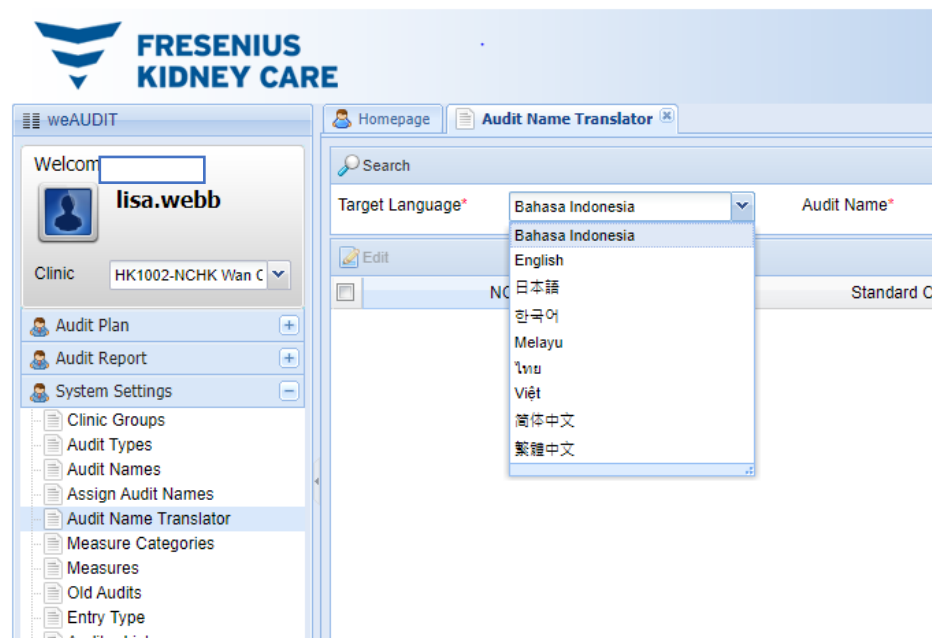
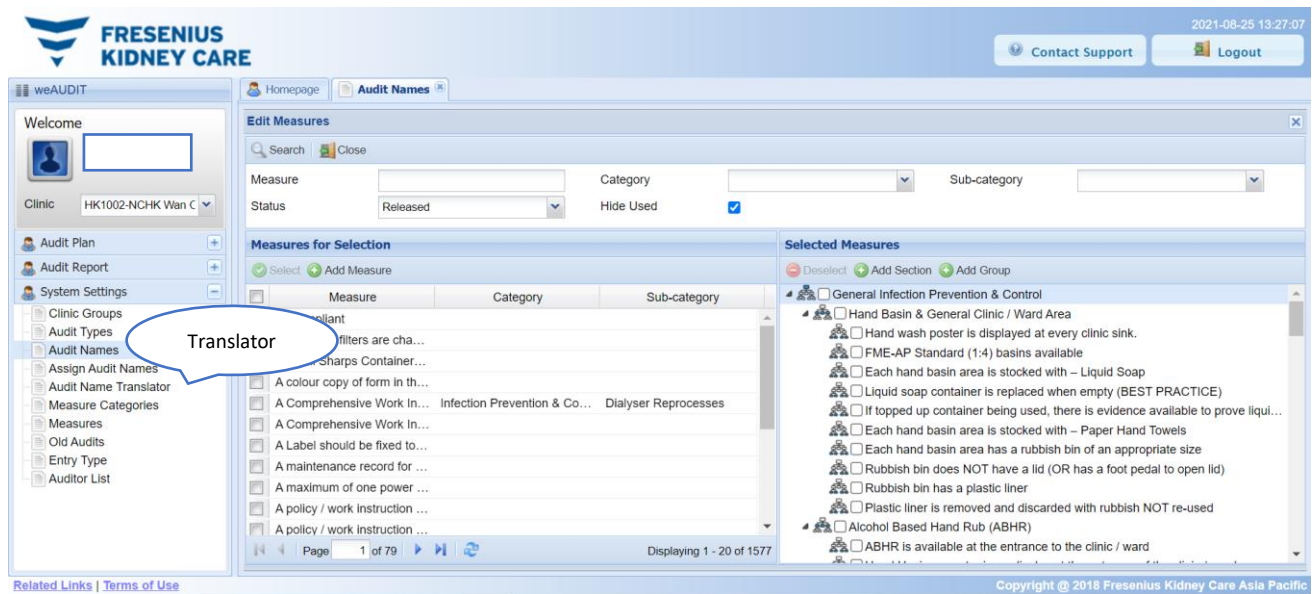


Figure 12- Different languages for available



GLOBAL QUALITY IMPROVEMENT

WINNER

Hong Kong Baptist Hospital, Hong Kong SAR

Key to Combat COVID-19 in Hong Kong Baptist Hospital: Agility, Dedication and Passionate Support from All Staff Levels

Tony Ng, Cindy Wong, Catherine Yip, Grace Wong and Patrick Lau

AIM

With the commitment of and strong support from hospital leaders aiming to implement various measures effectively and efficiently for protecting our patients and staff, maintenance of good teamwork and staff morale, Hong Kong Baptist Hospital (HKBH) can maintain smooth operations and provide healthcare service to patients in need during the difficult time of COVID-19 epidemic. The primary aim is to provide the best protection to our patients, staff and visitors, under the management philosophy of HKBH, i.e. "People / Staff is the asset and core of healthcare service".

SUMMARY ABSTRACT

The COVID-19 pandemic presented many unprecedented challenges to all countries and cities including Hong Kong. Hong Kong Baptist Hospital (HKBH), as a large private hospital with more than 800 beds and over 2,200 staff, has joined to fight a difficult battle with determination. Our goal is to protect our patients, staff and visitors against COVID-19.

Commitment and strong leadership is very important during emergency situations. In response to the rapidly evolving COVID-19 pandemic, changing healthcare environment, healthcare needs as well as patients' expectations, swift changes of service arrangement and acquisition of necessary items, and implementation of infection control programmes are all essential.

With strong leadership and effective communication, HKBH has responded fast to the changing conditions. Good staff moral and team spirit have been maintained because staff are confident that timely and effective hospital support is always available. A few key measures are highlighted for sharing.

1. Provision of Efficient and Convenient COVID-19 Testing Services

COVID-19 testing is important and in high demand during the early pandemic stage. To provide a more efficient COVID-19 test, Pathology Department with the full support from the Hospital Command Team (HCT) and multi-disciplinary hospital teams has purchased and installed various COVID-19 molecular testing systems (Xpert® Xpress system (Xpert); Luminex® ARIES® system (Luminex) in various stages since March 2020. Turnaround time was shortened to 2 hours only. With the support from HCT, further improvement was made by adding another molecular testing system (Cobas® LIAT® system (LIAT)) to further shorten the test turnaround time to 30 minutes.

The number of COVID-19 molecular tests increased from 443 in June 2020 before, to 3,579 in August 2020 after, application of the Luminex system by 15 July 2020, and the number further increased to 8,893 in September 2020, after full application of the Xpert system. An efficient COVID-19 testing means shorter waiting time for detection of suspected cases and for a pre-admission screening test.

Patients for elective hospital services are required to submit a self-collected early morning deep throat saliva specimen for COVID-19 testing before their attendance to hospital services. For the convenience of patients and to minimize the risk of attending patients acquiring or spreading COVID-19, HKBH has provided a free delivery and collection service of specimen bottles for 9 months starting Aug 2020. A work group was formed to coordinate the service employing a designated delivery service contractor for such purpose. It took only 8 days after urgent approval by HCT to actual provision of the new testing service arrangement. This arrangement has facilitated both the requirement of a mandatory pre-admission screening test as well as patients' safety and convenience.

2. Self-production of Surgical Mask

At the initial stage of COVID-19 pandemic, there was a worldwide shortage of all kinds of personal protective equipment (PPE). There was also a similar projection for local situation in Hong Kong. With the timely and full support from the hospital management, HKBH has reacted to set up efficiently a Surgical Mask Production Line to produce our own quality surgical masks, by adopting existing facilities of the accredited cleanroom of the Centralized Sterilized Supplies Department, to solve the potential supply problem, i.e. hospital stock of surgical mask was diminishing for supporting daily consumption but the supply in market was in severe shortage or at high price. By multi-disciplinary team efforts, the whole project was completed in just 3 months. The manufacturing machine was ordered and installed in June 2020, with the first HKBH own branded surgical mask produced in June 2020. These self-produced masks has also acquired ASTM Level 2 quality certification in August 2020, and then ASTM Level 3 certification in February 2021. A production team with deployed hospital staff was formed to operate the production line, resulted in a stable supply of surgical masks for regular use. HKBH is the only hospital in Hong Kong to pioneer a surgical mask production line.

3. Active Promotion of COVID-19 Vaccination to Staff, Patients and Visitors

Hospital top management strongly support COVID-19 vaccination. Various promotional programmes have been organized at different stages. Convenient vaccination location in the hospital and an online booking system was provided. Ad hoc walk-in requests for vaccination were also entertained. Resources were approved for various innovative incentives to promote staff vaccination (e.g. free hospital's self-branded surgical mask, post-vaccination leave, free meal coupons, cash awards, lucky draw etc.) Staff vaccination increased from 33.2 % in mid-June 2021 to 86.6% in mid-August 2021. By end of August 2021, 92.6% of HKBH staff has received COVID-19 vaccination. It was the highest among all private hospitals.

HKBH also takes an active role to participate in the promotion of COVID-19 vaccination to the public. A huge vaccination promotion banner was installed on the outer wall of the hospital building. Collaborating with local health authority, HKBH also deployed a professional team to operate a community COVID-19 vaccination centre. As at 31 Aug 2021, the hospital has administered a total of over 200,000 doses of COVID-19 vaccines to Hong Kong citizens including hospital staff.

With all these initiatives and improvement activities, HKBH has successfully achieved zero hospital acquired COVID-19 infections up to date. With the trust of our patients to HKBH, demand of hospital service increased drastically since March 2021 once local COVID-19 epidemic has been stabilized.

REPORT

APPLICATION OF ACHS PRINCIPLES

1. Consumer Focus

As early as the start of local COVID-19 epidemic in January 2020, Hong Kong Baptist Hospital (HKBH) formed the Hospital Command Team (HCT) to coordinate the hospital response plan. Headed by the Chief Hospital Executive with members including hospital senior executives, department heads and clinical specialists, HCT have met as frequently as biweekly and ad hoc to review, update and formulate various policies and measures for effective management of COVID-19.

With patients as our consumer of our healthcare services, we commit to provide, not just good quality professional healthcare services, but a safe environment and an efficient service delivery during COVID-19 pandemic. During HCT meetings, regular monitoring and review is made for all new measures and policies so that necessary adjustment and change can be made timely for continuous improvements to achieve our goal of patient-centred service. While pre-admission COVID-19 screening is one of the measures to protect patients from acquiring infections from other patients during their journey in the hospital, patient's needs and expectations is our priority for quality service. With a general local policy to require a negative pre-admission COVID-19 test to facilitate subsequent patient management in the healthcare settings, patients from private sectors would generally expect an efficient and convenient COVID-19 testing service. A determinative and prompt decision making to adopt new testing technologies available from the market is crucial to achieve a shortest turnaround time possible for the required COVID-19 tests.

COVID-19 is a highly transmissible disease. Hospital-acquired infections in patients and in staff are well reported (Zhou et al, 2020), especially if there is inadequate protective environment and personal protective equipment (PPE). Staff acquiring COVID-19 would mandatorily be quarantined, with contact tracing initiated, services interrupted, hospital premises closed, as well as generally posing a negative image of hospital to the hospital clients. Hong Kong Baptist Hospital uphold the principle that staff are our valuable essential assets in providing health care service even during



COVID-19 pandemic. Staff is our internal client and must be protected by all means. The internal client initiative (staff focus) in the whole management plan of the local epidemic is of utmost importance to ensure the continuation of quality service to our external customers, the patients.

Thus, to safeguard an adequate and sustainable supply of necessary PPE is important, as is the encouragement of staff COVID-19 vaccination. To achieve all these, hospital leaders play a key role through their commitment, active participation, prompt decisive making, and full support of the actual implementation of actions and policies adopted. During the HCT meetings, most resources and funding required were approved immediately, and the required actions promulgated through our enhanced communication channels which have been set up during the pandemic.

2. Effective Leadership

Collaboration from multiple teams is essential to plan and carry out efficiently and consistently prescribed actions during the pandemic. Sometimes, the logistics and changes in practices are complex and it involves all staff to work as a concerted whole.

The Hospital Management Team is committed to protect patients, staff and the hospital as a whole. Strong leadership is seen and felt in the battle of COVID-19. With the formation of Hospital Command Team (HCT) on COVID-19 chaired by the hospital Chief Executive Officer (CEO) and with senior executives including Director of Medical Services, Chief Nursing Officer, General Manager and Chief Financial Officer and the participation of various department heads (both clinical and non-clinical) as well as Infection Control Team as members, fast and clear commands and instructions have been given for execution. Report and updated information such as PPE daily supply and demand situation, hospital service levels and demand including COVID-19 tests, practices in other hospitals, new government requirements, worldwide pandemic trend, clinical updates and all sorts of useful information are collected for sharing at the meeting for monitoring and making necessary and effective change and adjustment timely. Up to July 2021, 71 meetings were held by the HCT (55 meetings in 2020 and 16 in 2021). Up to now, the meeting is still held regularly to monitor and review for making necessary change or adjustment.

The HCT with strong leadership, prompt decision making, commitment to full support and facilitation, plays a key role to set the model for teamwork in subordinate teams, to respond to the adopted policies and carry out actions effectively and efficiently. The progress of the action plan prescribed by HCT was constantly monitored through regular or ad hoc meetings. Members are empowered to raise issues or ideas on COVID-19 management for discussion. The hospital chief leaders including CEO will personally attend most functions, meeting and related activities to facilitate actualization of the action plans, announce hospital operational changes, walk through the hospital, or meet the staff and doctors casually, in order to demonstrate the hospital's endorsement and commitment for planned actions. The financial support on various measures is also crucial for the operational changes as well as materialization of acquisition of necessary equipment and facilities.

Hospital Command Team emphasized communication and staff education so that understanding and trust can be built up for execution of new practices and change smoothly and effectively. Infection Control Team (ICT), showing its agility and dedicated facilitation, take the lead in communication and dissemination of useful information on COVID-19 to all staff. The team working passionately with other departments has held 14 open staff forums on COVID-19 including educational talks delivered by specialist in infectious diseases or clinical microbiologist (8 in 2020; 6 in 2021), with a total attendance of 1,473. The forums are good communication platforms for providing explanation and updated information related to COVID-19 to all staff and at the same time, addressing staff queries on new or revised workflows for patient management and risk assessment.

Infection Control Team also use email and WhatsApp for efficient dissemination of updated information, alerts and important messages to staff. A "Quick Guide to Infection Control Management for COVID-19" (Quick Guide) in power point format, covering basic information, infection control measures, related hospital policies with respect to patient admission, visitors, screening test requirement or any statutory requirement, was developed, updated regularly, timely, and made easily accessible to all staff through hospital intranet. Staff can have useful information easily, e.g. updated compulsory requirement as stipulated by the local health authority for COVID-19 testing, human movement restriction or home confinement, reminder of staff vaccination deadline etc. All the information is useful for staff to understand the rationale of the measures and to comply to take actions accordingly. It is a useful tool for frontline staff for use at any time.



3. Continuous Improvement

It is an ever-changing scene for COVID-19 including PPE supply, new testing equipment with improving testing efficiency, patients' expectation of a faster and convenient service related to COVID-19, acceptance of people and staff towards COVID-19 vaccination, or the ever-emerging of variant COVID-19 viruses, etc. Hong Kong Baptist Hospital believes that continuous improvements are essential by learning from other hospitals and news, adoption of new and useful tools in the market and gaining knowledge and experience by any other means.

COVID-19 testing is important and in high demand during the pandemic. As early as in early April 2020, through the quick support from hospital management, HKBH has purchased and started COVID-19 molecular tests using the Xpert system which is an automatic hands-off rapid test. However, there was a general limitation of supply from the manufacturer till Sep 2020. To cater for the increasing demand of COVID-19 tests, the COVID-19 molecular tests were performed by our dedicated laboratory staff using existing in-house facilities of the laboratory. To provide a more efficient COVID-19 test, while waiting for the resumption of normal supply of test kits from Xpert, Pathology Department initiated to acquire an alternative testing system, Luminex, which has an acceptable quick test turnaround time of 3-4 hours, through the support of hospital management and HCT. It was put into service by 15 Jul 2020. With the resumption of normal supply of test kits from Xpert on 4 September 2020, the test turnaround time was then shortened to 2 hours again. With the support of HCT, further improvement was made to cope with the need of urgent cases by adding another testing system, LIAT, by 22 December 2020, to further shorten the test turnaround time to 30 minutes.

In addition to preadmission cases, patients of elective hospital services are also required to submit a self-collected early morning deep throat saliva specimen for COVID-19 testing before their hospital attendance. An enhanced online test booking system was set up. To further improve convenience for the patients, and to save patient's time of travelling, and minimize the risk of acquiring or spreading COVID-19 disease, HKBH provided a premium free delivery and collection service of specimen bottles for patients since 5 August 2020. A working team was formed with designated staff to contact the patient a few days before admission and a designated service contractor would deliver and collect specimen bottles from the patients. This arrangement has fulfilled both the requirement of a mandatory test according to the prevailing hospital policies as well as patients' convenience. This delivery service has continued for 9 months during the peak time of the local epidemic.

At the initial stage of COVID-19 pandemic, there was a worldwide shortage of all kinds of personal protective equipment (PPE). Hong Kong was no exception. Various actions have been initiated by the Hong Kong Government and other parties to safeguard the smooth supply of surgical masks. Hong Kong Baptist Hospital with the full and timely support from the hospital management responded efficiently to set up a Surgical Mask Production Line to produce our own quality surgical masks. By adopting existing facilities in the accredited cleanroom (ISO 13485 and ISO 14611-1 Class 8 standards) of Centralized Sterilized Supplies Department (CSSD), HKBH set up a Mask Production Unit to solve the supply problem by manufacturing our own quality surgical mask. By multi-disciplinary effort, the whole project was completed in 3 months. A production team with staff deployed from CSSD and Laundry Department was formed to learn and operate the machine, and to start making own-branded surgical masks. (Appendix 1: Photos and Certificates)

Hospital top management strongly support COVID-19 vaccination because it is generally believed that COVID-19 vaccination is useful in protecting people against COVID-19. To improve the vaccination rate among staff, various promotional programmes have been organized at different stages and communicated by various means to the public and all staff. These include various staff meetings, emails, hospital circulars, posters, hospital newsletters, mobile messaging applications, hospital intranet and etc. for staff communication. Vaccination promotion was also achieved through hospital website, social media, posters and banners within hospital premises. Convenient vaccination location in the hospital is provided with an easy online booking system. Ad hoc walk-in requests are also entertained. Hong Kong Baptist Hospital is the first hospital to introduce various incentive programmes to encourage staff vaccination, such as free box of own branded mask as gifts, additional post-vaccination day off, free breakfast and lunch coupons, cash awards, lucky draw for staff vaccines etc.

To help the government to promote vaccination to the public, HKBH has installed a huge promotion banner outside hospital building. A professional team have been deployed to support an off-site vaccination centre run by the government for providing COVID-19 vaccination service for the community.



4. Evidence of Outcomes

Using new equipment for a shorter testing time resulted in a decrease in patients' waiting time for the pre-admission COVID-19 test results, facilitating patient admission flow as well as reducing number of patients waiting in the holding areas before admission, hence reducing risk of cross transmission in case there was an unidentified asymptomatic COVID-19 case.

A total of 63,980 molecular tests for COVID-19 were completed up to July 2021 (38,268 tests in 2020 and 25,712 tests up to 26 July 2021). The number of tests increased successively from 443 in June 2020 before, to 3,579 in August 2020 after, application of the Luminex system by 15 July 2020. The number further increased steadily up to 5,803 in September 2020, after resumption of normal kit supply from Xpert. At the peak of test demand of 8,893 in December 2020, when the laboratory was then under great pressure due to the increasing demand, the LIAT system was introduced for urgent cases. (Appendix 2: Timeline and Data of Providing COVID-19 Molecular tests)

With the committed, timely and full support of top management levels and the leaders for provision of a more convenient test arrangement using free delivery services, it took only 8 days after the urgent approval by HCT to actual provision of the new sampling bottle delivery service to our clients. The premium free specimen delivery and collection service has also reduced the number of hospital encounters (when they have to come to hospital for at least one more time to collect or submit their specimen bottles). The premium service improved patient service in the sense of convenience and reduction of risk exposure to COVID-19 in the hospital setting.

With support of HCT and funding approval, the manufacturing machine was purchased and installed, with the first HKBH own branded surgical mask produced in June 2020. These self-produced masks are of high quality with ASTM Level 2 in August 2020 and later also Level 3 certification in February 2021. A stable supply of surgical mask was thus maintained for regular use. As far as we know, HKBH is the pioneer hospital with self-production of surgical mask in Hong Kong.

The staff confidence and reassurance for adequate staff protection was improved in an era of general PPE shortage, evidenced indirectly by the maintenance or increase of the stock level of the masks and good commentaries from staff. Since the production line set up in CSSD started production of quality HKBH surgical masks in August 2020, supply of surgical mask has been stabilised and secured. With safe stock pile, HCT approved selling HKBH mask at low cost to all staff in November 2020 with over 2,600 boxes sold soon after the announcement. With good reputation of HKBH surgical mask, HKBH has also supported the requests from other charity organizations and donated HKBH surgical masks for use by the needy since May 2021. (Appendix 3: Consumption and Stock of hospital surgical masks).

The COVID-19 vaccination uptake rate was only modest among the general population as well as among the staff of the hospital. The overall staff vaccination rate, and those among different staff categories and hospital personnel was under close monitoring by HCT and this was compared to the vaccination rate of the general population and other hospitals. The target of the staff vaccination rate was set to be at least 80% by end of August 2021. The outcome driven target serves to drive the motivation to receive vaccination among own staff. With all the efforts made, staff vaccination has a remarkable increase from 33.2 % in mid-June 2021 to 86.6% in mid-August 2021. (Appendix 4: Staff Vaccination Rate and Related Promotions). With strong leadership support for various promotional activities, the staff vaccination rate is 92.6% by 31 August 2021, highest among all private hospitals.

With trust of patients to HKBH, demand of hospital service increased drastically once COVID-19 has been stabilized since March 2021. Inpatient bed occupancy in 2Q 2021 was 49.1%, an increase of over 12% compared to 2Q 2020. Outpatient attendance in 2Q 2021 was over 53,000, an increase of over 31% compared to 2Q 2020. Other hospital services including endoscopy, surgical operation and imaging services all have increased from 37% to 55% in 2Q 2021 compared to 2Q 2020.

5. Striving for Best Practice

Our hospital is a private hospital which has committed to provide the best care and quality services, striving for recognition among peer hospitals locally and other healthcare providers worldwide. There have been many initiatives, measures, programmes and policies, in addition to those mentioned in this paper, which were actualized since the start of the local epidemic and pandemic worldwide, all with the full support from the hospital management. Among many things, adequate resource allocation, investments in technologies and adoption of innovative approach are the keys to success.



In addition to facilitating a convenient and efficient COVID-19 testing as mentioned, HKBH would like to strive for a recognized quality COVID-19 test service, and has successfully got the accreditation by the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for SARS-CoV-2 PCR test in July 2021.

Our hospital is the first hospital to introduce incentives to promote COVID-19 vaccination. The overall staff COVID-19 vaccination rate increases steadily and has achieved 92.6% by 31 Aug 2021, highest among all private hospitals.

Apart from provision of vaccination service in hospital, the hospital also supported the government by running an external COVID-19 vaccination centre for providing vaccination service to the community. As at 31 August 2021, the hospital has administered altogether a total of 213,528 doses of COVID-19 vaccines to the staff and the general public, thus helping the whole community to fight against this pandemic.

INNOVATION IN PRACTICE AND PROCESS

HKBH is the only hospital having self-produced quality surgical mask. The setting up of the mask production line is accomplished during the most difficult time of COVID-19 pandemic with severe shortage of supply of surgical mask in Hong Kong. With innovative ideas, new process can be accomplished even with existing facilities.

To further enhance the effectiveness of environmental disinfection, HKBH has pioneered, among few hospitals in Hong Kong, to adopt disinfection robots in actual practice, by May 2020 to supplement disinfection of the environment of clinical areas.

Communication is the key process for effective and successful implementation of all the above mentioned measures. Innovative approach for effective communication to staff was adopted. Hong Kong Baptist Hospital is one of the pioneers in using WhatsApp chat group, the most popular messaging communication tool in Hong Kong, for effective communication with staff during COVID-19. The chat group is open for joining by all staff for instant communication of urgent or updated information, and other useful information about COVID-19. New staff recruited are encouraged to join the chat group which can promote sense of belonging and facilitate staff to get useful information easily. Although the adoption of all these new testing technologies, customer-oriented services, self-production of PPE, various promotional and communication strategies can be regarded as innovative initiatives, the basic key to combat COVID-19 successfully is nothing new but the agility, dedication and passionate support from all levels of hospital staff. Although the adoption of all these new testing technologies, customer-oriented services, self-production of PPE, various promotional and communication strategies can be regarded as innovative initiatives, the basic key to combat COVID-19 successfully is nothing new but the agility, dedication and passionate support from all levels of hospital staff.

APPLICABILITY TO OTHER SETTINGS

As the COVID-19 pandemic is still not under complete control and variant virus is an additional threat, all the practices in use in HKBH for fighting the battle of COVID-19 and for protecting our patients and staff are applicable to other counterparts or settings. Our Hospital will maintain high vigilance in monitoring and management. We are confident that many of our practices in use are effective. Most important of all in handling emergencies are the strong support and commitment of the hospital top management, good coordination and motivation for team work, and setting clear and effective targets for execution and review efficiently and timely. We would continue our learning and sharing culture so that all can join force to win this COVID-19 battle in the near future.







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Zhou Q, Gao Y, Wang X, et al. Nosocomial infections among patients with COVID-19, SARS and MERS: a rapid review and meta-analysis. *Ann Transl Med.* 2020;8(10):629. doi:[10.21037/atm-20-3324](https://doi.org/10.21037/atm-20-3324)



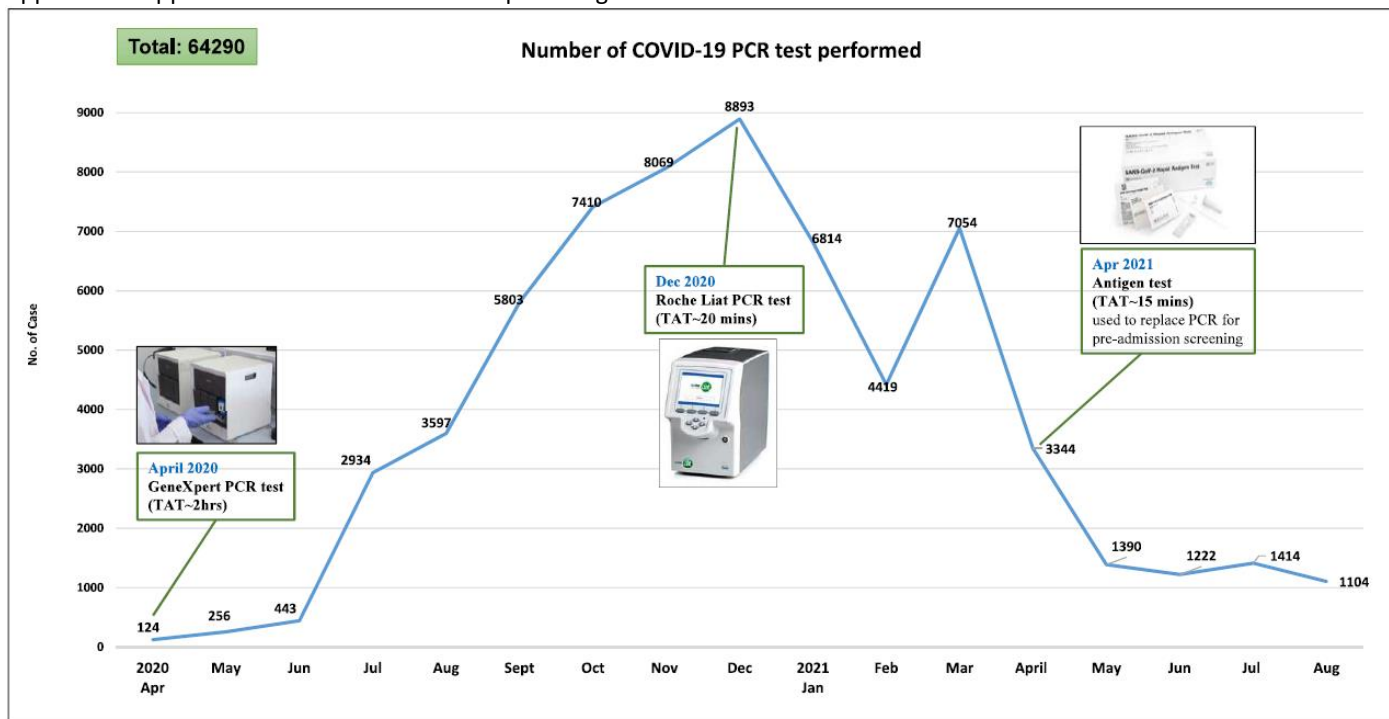
APPENDIX

Appendix 1: Photos and Certificates

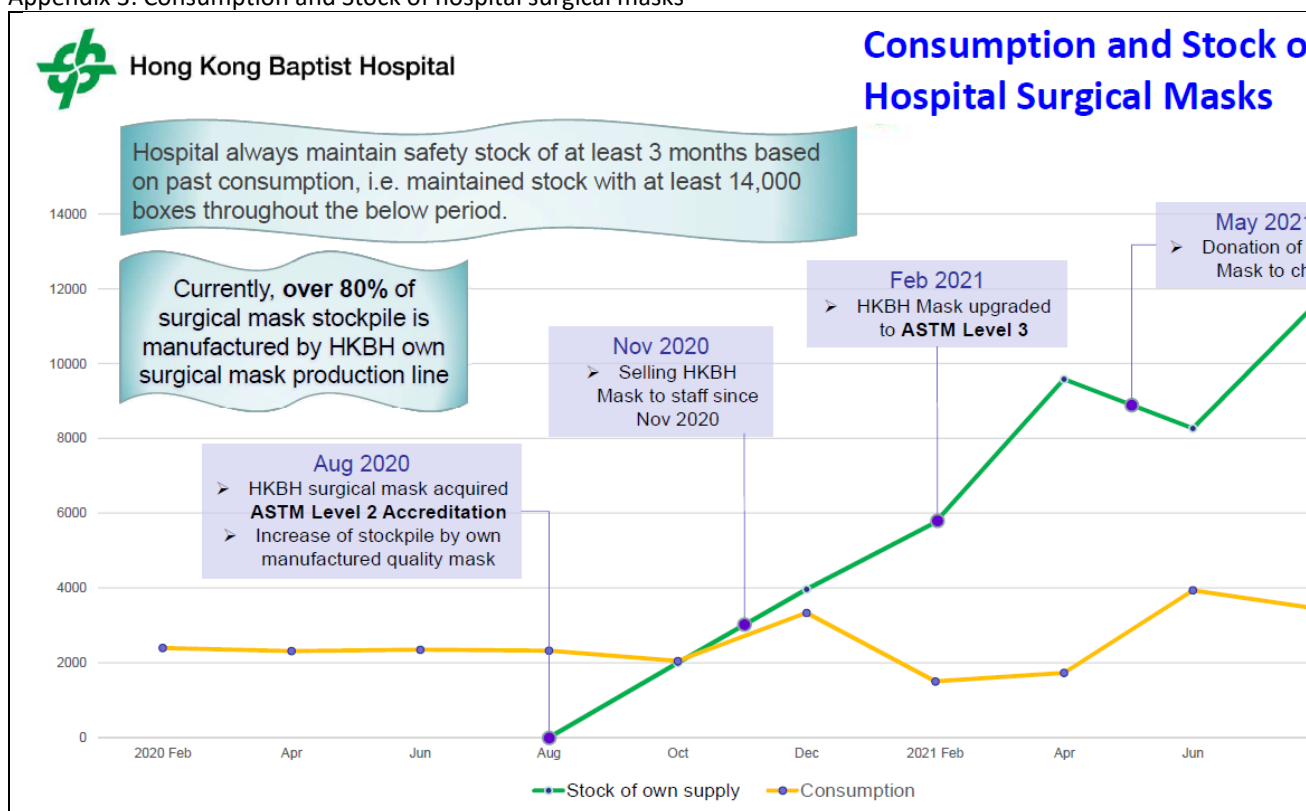
<p style="text-align: center;">Setting up Surgical Mask Production Line in CSSD</p> <div style="display: flex; align-items: center;"> <div style="width: 30%; background-color: #e0f0e0; padding: 5px; margin-right: 10px;"> <p>Production Machine in accredited cleanroom (ISO 13485 and ISO 14611-1 Class 8 standards)</p> </div>  </div>	<p style="text-align: center;">HKBH Surgical Mask</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>1st batch - ASTM Level 2</p>  </div> <div style="text-align: center;"> <p>2nd batch - ASTM Level 3</p>  </div> </div>																
<p style="text-align: center;">Quality Accreditation of HKBH Surgical Mask</p> <div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p style="text-align: center; font-size: small;">Acquired ASTM Level 2 in August 2020</p>  </div> <div style="width: 45%;"> <p style="text-align: center; font-size: small;">Acquired ASTM Level 3 in February 2021</p>  </div> </div>	<p style="text-align: center;">SARS-CoV-2 PCR test accredited by HOKLAS</p> <div style="display: flex; align-items: center;"> <div style="width: 30%; text-align: center;">  </div> <div style="width: 70%; padding-left: 10px;"> <p style="font-size: x-small;">Scope of Accreditation Registration No.: HOKLAS 844P Page 5 of 5 Issue Date: 28 July 2021 Ref: HOKLAS844P-4</p> <p style="font-weight: bold; font-size: small;">Hong Kong Baptist Hospital – Pathology Department 香港浸信會醫院·病理化驗部 102, Block D, Hong Kong Baptist Hospital, 222 Waterloo Road, Kowloon, Hong Kong 香港九龍彌敦道222號香港浸信會醫院D座地庫二層</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th colspan="4" style="text-align: center;">MEDICAL TESTING</th> </tr> <tr> <th style="width: 15%;">DISCIPLINE 學科範疇</th> <th style="width: 15%;">TEST AREA OR SAMPLE TYPE</th> <th style="width: 40%;">SPECIFIC EXAMINATION OR PROPERTY MEASURED 特定測試或量度指標</th> <th style="width: 30%;">METHOD OR TECHNIQUE USED 方法或技術說明</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="text-align: center;">This laboratory is accredited for performing examinations listed below.</td> </tr> <tr> <td>Method Genetics</td> <td>Molecular Genetics (microbiology) Nucleic acid (viral) and Nasal and throat swab</td> <td>Severe Acute Respiratory Syndrome (SARS-CoV-2) - detection by Real time Multiplex Polymerase Chain Reaction, qualitative (Target regions: N gene and ORF1ab gene) (Target region: E gene and S2 gene)</td> <td>Nucleic acid extraction, amplification and detection as documented in MP-SOP-SAM-COVID-19-LIAT Nucleic acid extraction, amplification and detection as documented in MP-SOP-SAM-COVID-19-SPERT</td> </tr> </tbody> </table> </div> </div>	MEDICAL TESTING				DISCIPLINE 學科範疇	TEST AREA OR SAMPLE TYPE	SPECIFIC EXAMINATION OR PROPERTY MEASURED 特定測試或量度指標	METHOD OR TECHNIQUE USED 方法或技術說明	This laboratory is accredited for performing examinations listed below.				Method Genetics	Molecular Genetics (microbiology) Nucleic acid (viral) and Nasal and throat swab	Severe Acute Respiratory Syndrome (SARS-CoV-2) - detection by Real time Multiplex Polymerase Chain Reaction, qualitative (Target regions: N gene and ORF1ab gene) (Target region: E gene and S2 gene)	Nucleic acid extraction, amplification and detection as documented in MP-SOP-SAM-COVID-19-LIAT Nucleic acid extraction, amplification and detection as documented in MP-SOP-SAM-COVID-19-SPERT
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<p style="text-align: center;">Quick Guide for COVID-19</p> <div style="text-align: center; padding: 10px;"> <p style="font-weight: bold; font-size: large;">HKBH</p> <p style="font-weight: bold; font-size: x-large;">A Quick Guide to Infection Control Management for COVID-19</p> <p style="font-weight: bold; font-size: large;">Version 5.2 24 August 2021</p> <p style="font-weight: bold;">Prepared by Infection Control Team</p> </div> <div style="text-align: right; font-size: x-small; margin-top: 10px;"> <p>Quick Guide for COVID-19 Available in intranet for easy reference by all staff</p> </div>	<p style="text-align: center;">Content of the Hospital Quick Guide on COVID-19</p> <div style="display: flex; align-items: center;"> <div style="width: 70%; padding-right: 10px;"> <p style="text-align: center; font-weight: bold; font-size: large;">Content</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>Part A. Basic information and case reporting</p> <ul style="list-style-type: none"> A1. Global and Hong Kong situation updates A2. Viral characteristics A3. Clinical features A4. Routes of transmission A5. Case reporting criteria <p>Part B. Infection control measures</p> <ul style="list-style-type: none"> B1. Reinforcement of personal infection control measures B2. Personal protective equipment (PPE) B3. Environmental management B4. Linen management B5. Waste management B6. Handling of dead bodies </div> <div style="width: 48%;"> <p>Part C. HKBH COVID-19 related policies</p> <ul style="list-style-type: none"> C1. Patient admission related policies C2. Visitor / Accompanying person related policies C3. Summary of Screening for Patients and Companions C4. COVID-19 affected staff related policies <p>Part D. Staff Communication</p> <ul style="list-style-type: none"> D1. Staff Communication </div> </div> </div> </div> <div style="width: 30%; background-color: #e0f0e0; padding: 5px; margin-left: 10px; text-align: center; font-size: x-small;"> <p>Content page of the Hospital Quick Guide on COVID-19</p> </div>																



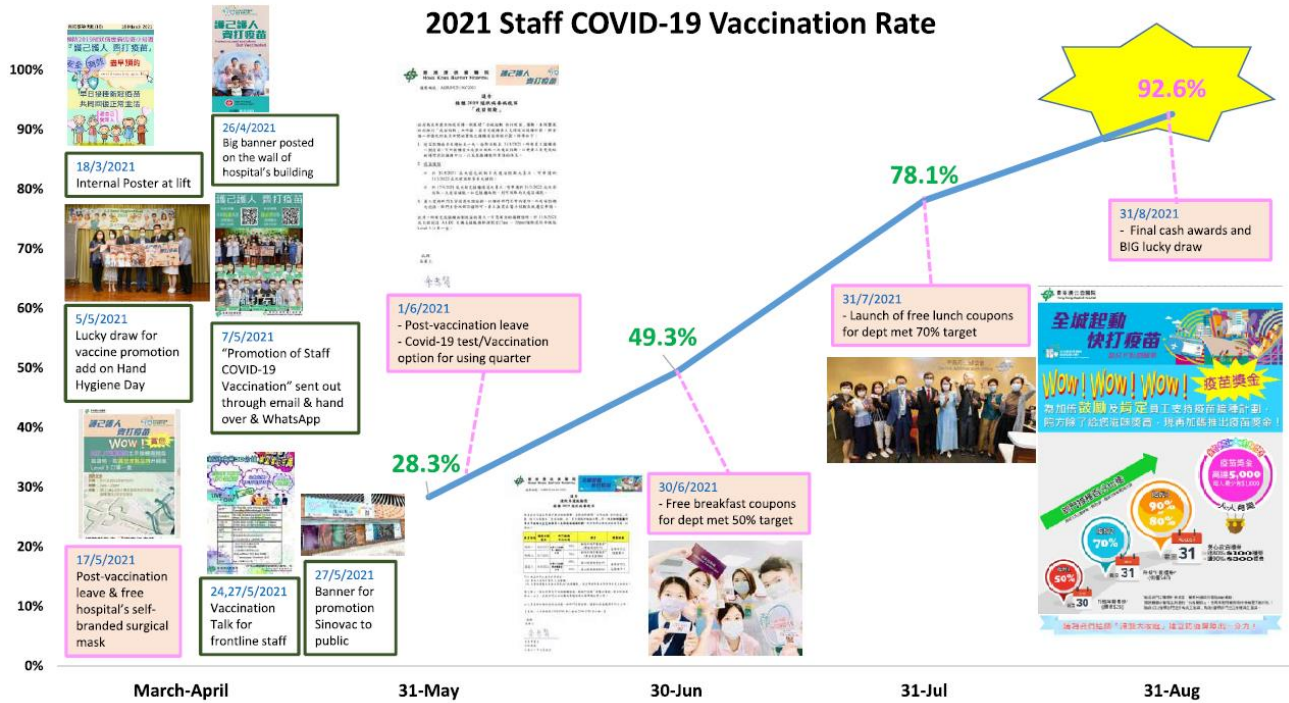
Appendix 2: Appendix 2: Timeline and data of providing COVID-19 Molecular tests



Appendix 3: Consumption and Stock of hospital surgical masks



Appendix 4: Staff Vaccination Rate and Related Promotions



GLOBAL QUALITY IMPROVEMENT

HIGHLY COMMENDED

Hong Kong University Shenzhen Hospital, China

Reduction of incidence rate of Postpartum Hemorrhage within 2 hours after Vaginal Delivery and severe complications

Wang Xue, Liao Shu Zhen, Qin Qiao Yi, Lin Jing Chun, Wu Ting, Xu Yue, Wang Xiao Xiang and Wang Jie

AIM

Our aim is:

1. To build a professional rapid response team of Postpartum Hemorrhage comprising experienced doctors, midwives, nurses and technical staffs from the Obstetrics Department, Anesthesiology Department, Hematology, Clinical Laboratory and Operating theatre.
2. To reduce the incidence rate of Postpartum Hemorrhage within 2 hours after vaginal delivery and the average incidence rate of Postpartum Hemorrhage.
3. To reduce complications of severe Postpartum Hemorrhage as well as emergency surgery and blood transfusion caused by severe Postpartum Hemorrhage.
4. To optimize the diagnosis and treatment processes of Postpartum Hemorrhage.

SUMMARY ABSTRACT

Postpartum Hemorrhage (PPH) is the most serious type of obstetric complication, occupied the leading cause of maternal death, which refer to the bleeding volume of vaginal delivery exceeding 500ml within 24 hours after the fetus is delivered, and approximately 80% of PPH occurs 2 hours postpartum.

According to the evaluation criteria from Shenzhen Maternal and Child Health Association(SMCHA), the calculation formula of the incidence rate of PPH within 2 hours after Vaginal Delivery referred to the number of PPH within 2 hours after vaginal delivery cases / the total number of vaginal delivery cases contemporaneously* 100%. To be so designated, the incidence rate of PPH should be under 3%.

In order to improve the team competence and capabilities in PPH procedures, the University of Hong Kong-Shenzhen Hospital started a CQI program "Reduction of incidence rate of Postpartum Hemorrhage within 2 hours after Vaginal Delivery" including build up a professional rapid response team for the handling of PPH. From 1/8/2019 to 31/1/2020,

our average incidence rate of PPH was 3.04%, which did not meet the accreditation criteria for SMCHA.

With the aim to reduce PPH incidence rate, we analyzed the collected data, draw Ishikawa diagram and continually embark on the Plan-Do-Check-Act (PDCA) cycle (Appendix I). Retrospectively we analyzed the cause of each postpartum hemorrhage case. It was found that uterine asthenia accounted for as high as 86.98%, which reminds us to focus on improving postpartum hemorrhage caused by uterine asthenia. We take improvement measures from the following four aspects.

- A. Establish the PPH risk assessment and early warning system to strengthen risk consciousness.
- B. Create the bleeding volume assessment worksheet in order to promote assessment efficiency and veracity of the bleeding volume.
- C. Develop a training group to enhance medical staff's knowledge and skills in handling of PPH.
- D. Standardize the rescue record form and the procedures for the treatment of PPH, aiming at improving treatment efficiency and accuracy.

From 1/3/2020 to 31/8/2020, our PPH incidence rate of PPH within 2 hours after vaginal delivery had been reduced to 2.04% and our average incidence rate of PPH had been dropped to 2.32%. The result has reached the requirement of the SMCHA. Nevertheless we will move forward to further reduce the adverse maternal outcomes caused by PPH. We set up a professional rapid response team in the handling of PPH, comprising experienced doctors, midwives, nurses and technical staffs from the Obstetrics Department, Anesthesiology Department and Blood Transfusion Department, and conduct a range of multidisciplinary simulation exercises to strengthen our ability in treating acute PPH patients.

In September 2020, we are selected as team member and joined the research project on prevention and control strategies of PPH in Chinese Maternal and Child Health Association.



Hong Kong University Shenzhen Hospital, China**Thoracic Surgery****To make a high risk thymectomy for myasthenia gravis to be a routine operation by ERAS**

Pang Da Zhi, Joe Fan, Li Jing Long, Zhang Ji Tian, Liu Ru Tai Yang, Liang Ya Nan, Xu Xue Bing and Tang Ying

AIM

1. Reducing the myasthenia crisis in perioperative thymectomy by performing Enhanced Recovery after Surgery (ERAS) to make a high risk thymectomy to be a routine operation.
2. To build a professional myasthenia gravis MDT treatment team and optimize the perioperative processes.
3. Shortened the hospital stay within 10 days and reduced the hospital costs to about 20,000 (¥).
4. To provide the best medical and nursing services for patients with myasthenia gravis to improve patients' degree of satisfaction.

SUMMARY ABSTRACT

Myasthenia gravis (MG) is a disorder of neuromuscular transmission, resulting from binding of autoantibodies to components of the neuromuscular junction, most commonly the acetylcholine receptor (AChR). The incidence ranges from 0.3 to 2.8 per 100,000, and it is estimated to affect more than 700,000 people worldwide.

Most MG patients are pathologically associated with thymus abnormalities (including thymic malignancy and thymus hyperplasia), which are responsible for auto-antibodies in the circulation. Thymectomy, demanding an en bloc removal of thymic tissues, has been known as the standard option to treat MG and reduces the generation of anti-AChR Ab. It is reported that the remission rate after thymectomy reached 80%. The multicenter, randomized, rater-blinded trial of thymectomy in MG (MGTX) enrolled patients younger than 65 years with AChR-positive (AChR-Ab+) generalized nonthymomatous MG of <5 years duration. Sixty-six subjects underwent extended transsternal thymectomy and received prednisone using a standard dosing schedule, whereas 60 subjects received the standardized prednisone dosing schedule alone.

After thymectomy, a rapidly deteriorating respiratory function may lead to postoperative myasthenia crisis

(PMC), which is due to sharp increase in respiratory secretions and presented as prolonged mechanical ventilation or re-ventilation after extubation. So it is a life-threatening complication and a major problem after thymectomy. The incidence of PMC ranges from 6.2% to 30.3%. Thymectomy is a high-risk operation.

To make a high-risk thymectomy to be a routine operation, we reduced the myasthenia crisis in perioperative thymectomy by performing Enhanced Recovery after Surgery (ERAS). Inclusion criteria: patients with myasthenia gravis type I-IVa in the US MGFA classification without thymoma have poor efficacy or recurrent disease after drug treatment. ERAS includes a full range of preoperative, intraoperative and postoperative treatment measures, especially the treatment of postoperative dyspnea is the core of ERAS for thymectomy.

Preoperation: Follow the original drug types, dosages, and frequency of administration for patients with myasthenia gravis, with

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Preoperation: Follow the original drug types, dosages, and frequency of administration for patients with myasthenia gravis, without changing their established drug rules. Instruct patients to effectively cough and respiratory function training. No need for routine administration of intravenous gamma globulin, high-dose hormone intravenous infusion and plasma exchange. No indwelling urinary catheter was routinely required.

Intraoperation: Thoracoscopic thymectomy is routinely used to completely remove the thymus and clean the mediastinal fat tissue during the operation. Avoid using anesthetics that aggravate muscle weakness. Do not routinely indwell a chest drainage tube by expanding the lungs to expel residual air in the chest cavity. Routinely remove the tracheal intubation in the operating room and return to the general ward.

Postoperation: The drug types, dosages, and frequency of administration for patients with myasthenia gravis are as the same as preoperation. Observation and treatment of postoperative dyspnea plays an important part of ERAS for thymectomy. The patients with myasthenia gravis often have explosive increases in respiratory secretions after surgery, causing respiratory obstruction and dyspnea, but the patient's respiratory muscles are strong. We always observe and record the state of saliva secretion and sweat secretion in patients, quickly identify the explosive increase of respiratory secretions, give atropine intramuscular injection at an early stage to quickly relieve respiratory obstruction and relieve breathing difficulties, and then take regular oral administration of 654-2, which can avoid tracheal intubation and mechanical ventilation.

To improve our ability in treating myasthenia gravis patients and become a national myasthenia gravis center, the University of Hong Kong-Shenzhen Hospital started a CQI program to "To make a high risk thymectomy to be a routine operation by ERAS". We build a professional myasthenia gravis treatment team up to an international advanced level, comprising experienced thoracic surgeons, neurologists, anesthesiologists, radiologists, surgical nurses, internal medicine nurses and technical staff from the A&E Department and Pre-hospital Emergency Team.

Hong Kong University Shenzhen Hospital, China

NICU Team

Reduce the incidence rate of Ventilator associate pneumonia (VAP) in NICU

Yin Xue, QianShen Zhang, Liang Bing Wang, Na Zeng, Xiu hong Ou and Lu Wang

AIM

1. Reduce the incidence rate of VAP to less than 7‰
2. Establish a clearly and feasible management standards for neonate with invasive mechanical ventilation in the unit
3. Decrease incidence rate of VAP more than 75% compared with the previous three quarters
4. Improve quality of care and patient safety

SUMMARY ABSTRACT

Reasons of CQI

According to The Center for Disease Control and Prevention (CDC), neonatal Ventilator associate pneumonia (VAP) accounted for 32.2% of hospital-acquired infections, increasing the length of hospital

stay by 6.1 days on average, and increasing The cost of each hospital stay by \$51,157[3]

The incidence rate of VAP in our department has increased significantly since 2019. We plan to carry out the CQI project to reduce the incidence of VAP in the neonatal Intensive care Unit (NICU) to reduce the incidence of VAP

Previous process/flowchart

Data collection and analyze:

- ①Period: 2018-2019
- ②Topic: incidence rate of VAP
- ③Result: incidence rate of VAP in 2019: 23.26 ‰ (benchmark in the Unit : 7‰[2]), incidence rate of VAP in Second quarter to fourth quarter in 2019 : 29.06 ‰ The incidence of VAP occurred 5 cases, and the total ventilator days was 172 days. The catheter utilization rate was 4.55%

Improvement measure

Established a multidisciplinary special improvement team together with the Nosocomial infection Control office 、clinical pharmacist :
Prevention and Control Measures for Ventilators Associated pneumonia infection in Neonatology:Use



practice checklist for every intubation case ; go through all the practice items in the ward round ; Infection control morning handover every day to follow every high risk patient; Improved the facilities of neonatal position management; Case Discussion and analyze: review VAP data monthly; discuss and analysis every VAP case to find out the key problem and determine improvement approach ; Hand Hygiene Management; Create a culture of positive motivation;

Outcome

① Compared with Q1-Q3 in 2020 and Q2-Q4 in 2019 (same time length), the incidence of VAP decreased

from 29.06‰ to 6.4‰, which was lower than the department benchmark by 7‰ .

② The incidence of VAP occurred once, and the total catheter day was 156 days. The catheter utilization rate was 3.43%

③ Compared with the previous three quarters, the incidence of VAP decreased by 77.97%, exceeding the improvement target of 75%.

④ This CQI also promoted the management quality of hand hygiene in the department, the compliance rate of hand hygiene in the department was continuously improved and kept at a high level around 96% when HKU-SZH Hand hygiene compliance rate in 2019 was 82%.

Hong Kong University Shenzhen Hospital, China Total solution in quality management of medical equipment

Huang Feiyan, Guo Daiqi, HO CHI HIN, Chan Yuk Sim, Zhao hui, Mo Caiyan and Huang Zuoyun

AIM

- To ensure patient safety by:
 - reduce the failure rate of medical equipment
 - fixed equipment maintenance schedule
 - ensure the proper use of medical equipment
- To increase clinical staff satisfaction rate by shortening the equipment “cannot use” time (due to maintenance and return of the equipment from supplier).
- Reduced costs.
- Save manpower and minimized missed items through the “Equipment Early Warning System”

SUMMARY ABSTRACT

The University of Hong Kong-Shenzhen Hospital (HKU-SZH) is a large comprehensive public hospital with 2000 beds that is fully invested by the Shenzhen Municipal Government of Guangdong Province, China. Has Central Government supported, HKU-SZH was the first public hospital that managed by Hong Kong health executives under the umbrella of Hong Kong University. The modern management model becomes a landmark in China. The hospital has been in operation since July 1, 2012 and now has 2,000 beds and medical equipment assets worth over 1 billion RMB. Medical equipment plays an important role in medical services, clinical diagnosis, treatment, research and teaching, and the safety and effectiveness of medical equipment use directly affects the quality of clinical work and even relates to the safety of patients' lives [1].

Previously, the maintenance of medical equipment in our hospital was in manual mode, which often resulted in untimely maintenance response, and lost orders, missed orders, and omitted follow-up. By 2015-2019 hospital established a basic electronic but stand alone system for repair, maintenance and inventory updated. Since 2020, in house team with participation of an IT programming company, the hospital developed a system with functions to achieve the record of the whole process management data, to achieve the quantifiable and traceable regulatory content, to ensure that there are traceable, evidence based, to achieve risk control. 2015-2019 years, the average annual failure rate of equipment close to 5%, long waiting time for maintenance, the average annual more than 15 days, seriously affect the clinical treatment order, clinical staff work was affected, and in some cases delay patient's treatment time.

In order to strengthen the quality control of medical equipment and improve the level of professional services, our hospital took the lead in Shenzhen to explore the construction of medical equipment "commissioned operation and maintenance + intelligent supervision" maintenance management, the establishment of this new model are all-rounded quality control, from routine maintenance, training, regular maintenance and overhaul, fault repair, equipment quality control, end-of-life identification and other aspects. In order to meet the requirement of the Australian Council for Healthcare Service Standards (ACHS) international certification, we need to establish a performance evaluation system and process in line with international standards, and innovatively uses information technology to achieve online traceability supervision and service evaluation, as well as intelligent operation supervision functions.

After more than one year of operation and practice, significant results have been achieved.



First, the maintenance cycle significantly shortened: the average annual maintenance cycle from an average of more than 14 days in the previous four years down to 1.6 days in 2020 and 0.9 days in the first half of 2021. Second, improve the medical equipment intact rate of 99%, higher than previous years. Third, to improve the efficiency of maintenance, reduce the interruption of clinical behavior caused by medical equipment failure, to ensure the quality of treatment and patient personal safety.

Fourth, the maintenance cost ratio (the ratio of maintenance costs to maintenance assets) has zero growth, which has been recognized by peers inside and outside the city and come to the hospital for site visits and exchanges, and has copied our hospital's model. It is an innovative practice that reflects the laws of health economics and has good promotion value.

Hong Kong University Shenzhen Hospital, China

Enhance outpatient experience through multi-dimensional patient-centered communication

Li Weijia, Tak Man WONG, Zhang Zeqian, Lin Jiaxin, Yu Mengyuan, Tan Liji and Ai Mei

AIM

1. To improve patient experience and satisfaction
2. To improve the efficiency of gynecology consultation and shorten the waiting time in order to increase the outpatient case volume
3. To enhance the team competence and capabilities in communication skills in order to reduce unnecessary miscommunication.
4. To promote health education and improve patients' cognition (awareness of diseases)

SUMMARY ABSTRACT

In 2019 hospital received the report from Shenzhen Municipal Health Commission related to patient satisfaction and ranking of public hospitals in the city in the second quarter of 2018. In the report our result was: outpatient satisfaction score was 86.961 which decreased by 1.47 when compared with 88.731 in the first quarter of 2018. As Outpatient Management Office has the role to provide good customer service and monitor the performance, the result was alarming, and the Outpatient Management Office team decided to kick off the improvement project.

Start with the Office formed a working group which led by Professor Wong (Head of the Office), with members of Senior Nursing Officer and Office Manager. The first step was to collect complaints and feedback from out-patients from January 1st to June 30th in 2018.

As preliminary statistical analysis, there were 525 complaints, and found that 200 cases were caused by poor communication, of which 52 cases (10% of total number) were complaints from Gynaecology Clinic. Within these 52 cases more than 50% of them were related to poor communication between healthcare workers and patients. In Gynaecology Clinic, all patients are female, and they are more sensitive and emotional. As gynecological diseases have longer treatment time, high recurrent episodes and usually involve privacy protection, medical staff should pay more attention to patients and their families.

With the captioned preliminary result working group conducted first meeting, all decided to go for a continuous quality improvement (CQI) project. At start, this project would roll out all-rounded interventions and rectifications in the Gynecological Clinic, subsequently would roll out to all clinics of different specialties. Target to drive the overall quality service of the outpatient service and comprehensively improve the patient experience.

First, the continuous quality improvement team were arranged to distribute 372 satisfaction questionnaires to the gynecological outpatients from 21st to 30th November 2018, and 328 questionnaires were collected. From the survey, the satisfaction rate of gynecological outpatients was 72%, and the dissatisfied contents include lack of patience from medical staffs, uncomfortable environment, failure to adhere to the opening hour of the clinic on time, unclear medical guidance, long waiting time of gynecological examination, insufficient health education, etc.

Then, the CQI team sorted out and analyzed the primary and secondary causes in the investigation report. The data analysis was shared to the medical staffs of Gynecological Department, they were encouraged to discuss, clarified the analysis, then formulate and work out implement improvement plans with the CQI team.

In Gynaecology Clinic, re survey was done after the full implementation of improvement actions. The satisfaction rate in the survey in 2019 was increased from 72% to 89%, the number of first visits increased by 2.87% and the total number of operations increased by 9.2% compared with the same period in 2018, and the number of appreciation letters increased from 14 to 25. With continuous effort to promote the relevant measures in the Outpatient Department, we got encouraging result: according to the satisfaction of public hospitals in 2019 and 2020 released by Shenzhen Municipal Health Commission, the outpatient satisfaction average scores of our hospital were 87.051 and 88.581 respectively, which was higher than the satisfaction scores of 87.44¹ in public hospitals in 2018.



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International Medical Center, Kingdom of Saudi

Arabia

Infection Prevention and Control

COVID-19 Risk Assessment by Failure Mode and Effect Analysis

Nashaat Hamza, Omnia Ismail Hassan and Tasneem

Abdulwahab Bogess

AIM

Overall goal of developing the Failure Modes and Effects Analysis (FMEA) is to have a comprehensive proactive plan to mitigate any risk that may occur during COVID-19 epidemic by implementing the element of WHO in the hospital readiness checklist to assure that we are in the right track to face the pandemic. Action plans are ongoing according to requirements and up to date. Main target is safety of patients, staff and community. Over the time, risk rate is improving. COVID-19 Survey which focuses on five commitments (mercy, team work, responsibility, measurement, and timeline).

SUMMARY ABSTRACT

The main primary factors that prompted the project Failure Modes and Effects Analysis (FMEA) are focused mainly on:

1. Having an effective way to manage the incident by formulating taskforces and having a rapid response teams to handle the COVID-19 cases by the outbreak committee.
2. The lack of infection prevention control including education for the staff, patients and community. Moreover, having a system to monitor the staff compliance with Saudi Ministry of health Requirements.
3. The early warning and monitoring, as the hospital should track the data related to suspected and confirmed cases of COVID-19.
4. Case management which is related to having a proper triage areas, managing the deceased bodies.
5. Human resource in lacking of an effective way to deal with COVID-19 staff and shortage of staff during the pandemic.
6. The laboratory services in case of the unavailability of basic laboratory tests.

Failure Modes and Effects Analysis (FMEA) was selected as the best approach to have a comprehensive, accessible, organized, and doable process to handle the pandemic. The project started in 27th of February by listing the primary factors (risks), prioritize them according to harm level and probability, the score is from 1 to 5. Scoring done in a brainstorming session according to the internal and external situation. Scope includes patient, staff and community.

- Objectives are formulating taskforces to manage the incident, surge management by dedicating a COVID-19 team, wards and technology,
- Implementing infection control guidelines, assuring effective communication through the internal and external channels, and having essential support services for example the Telemedicine is initiated to provide most of

needed service for patients' who tried to avoid hospital exposures.

Main challenges were related to actions' implementation,

1. One of the challenges was shortage of COVID-19 nursing staff which was mitigated by having a scheduled manpower plan.
2. Personal protective equipment (PPEs) control, which was mitigated by formulating the Personal protective equipment (PPEs) utilization committee to study the essential Personal protective equipment (PPEs) and get approvals on the budget in expedited manners.
3. Outbreak in few departments was a challenge, each case was discussed in the Outbreak Committee.
4. Lack of information in the beginning of the pandemic, many hospital's staff were worried about their safety and the safety of their families from hospital exposures.
5. Staff shortages, as many were stranded abroad during long periods of lockdown.
6. On the other hand, the management faced a challenge during this pandemic period with unexpected financial crises of maintaining the staff salaries as it is and work with all manpower with no cut cost.
7. Hospitals were unable to provide many of its regular services which created severe financial strains at the times of unexpected financial burdens to meet the new demands on Personal protective equipment (PPEs), ventilators, isolations rooms, etc.
8. With the increasing census of affected cases, the required negative pressure room's needs increased. A mobile units had been created to program and manipulate any room to a negative or positive room as required.

Failure Modes and Effects Analysis (FMEA) impact is measured through success of actions' implementation. The main COVID-19 indicators that were used include, the admission rate, transfer rate to non-medical accommodations (for stable patients) and those who were transferred to Governmental hospitals, the recovery rate, average length of stay and mortality rates. Other important indicators include, the number of diagnostic tests and its results, tacking the staff infection rates, isolation of the infected staff in hospital paid appropriate accommodations (staff quarantine, sick leaves, families contact) and compliance with COVID-19 clinical practice guidelines.

Our institution contribution in community services by:

1. Initiating a 24/7 free outpatient clinic (fever clinic) for triaging and screening all patients, visitors and staff who developed symptoms of possible Covid 19 infection according to the official case definition.
2. All patients were evaluated by a trained team (physical examination- chest imaging if needed) plus collecting appropriate specimens for testing (either at our certified lab or at the Governmental regional lab) free of charge.
3. Those who needed hospital admission were admitted to a specially designed hospital ward (single rooms) under appropriate percussions also free of charge complying with a Royal Decree of free services to all confirmed or suspected patients.
4. Establishing a testing center for asymptomatic patients/ airline travelers: our laboratory was the first private facility to certified for performing COVID-19 PCR testing
5. The Telemedicine program: a full protocol was developed by our institution and shared with the health authorities to be applied at other hospitals kingdom-wide (a new creative service out needs dictated b the crisis and the lockdown). We were the first facility in the kingdom to receive a licensee for a Telemedicine program.
6. Our pharmacy was authorized to deliver the medication ordered through the telemedicine interviews to the patients within 24 hours (maximum) and free of charge. We received warmth gratitude from our loyal patients for these creative and practical approach.
7. The COVID-19 vaccine center was established on March 2021, to provide the vaccination services to all eligible people in the community free of charge. This was a major undertaken that cost the hospital more than 3 million Saudi Ryals to create a state-of-the-art facility (please see the appendix). The infection control department is coordinating the efforts of many other department however the service was offered through a great volunteer-program. The Minister of health visited our center which as raked as one of the best in the country and he commended our support to the highly effective National vaccination program. Today we provided the highly organized- incidents free service to more than 110000 individuals. Thorough this program, our center was the first in the Kingdom to achieve 100% vaccination to our staff.



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