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Carollyn Williams

Barwon Health, WISTERIA@BIGPOND.NET.AU

Ruth Melville

Sunshine Coast Hospital and Health Service, Ruth.Melville@health.qld.gov.au

Elinor Radke

Sunshine Coast Hospital and Health Service, Elinor.Radke@health.qld.gov.au

Sonia Griffiths

Sunshine Coast Hospital and Health Service, Sonia.Griffiths@health.qld.gov.au

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Author

Carolyn Williams
FACORN, FACN
Perioperative Nurse Consultant

Ruth Melville
FACORN
CNC Patient Safety and Quality –
Perioperative
Sunshine Coast Hospital and Health
Service

Elinor Radke
Clinical Nurse
Central Sterilisation Unit, Sunshine Coast
Hospital and Health Service

Sonia Griffiths
Clinical Nurse
Perioperative Services, Sunshine Coast
Hospital and Health Service
Coast Hospital and Health Service

ACORN Papua New Guinea ANGAU Memorial Hospital redevelopment clinical support program (Part 1)

This article is the first in a series that will describe ACORN's role in the redevelopment of the ANGAU Memorial Hospital in Lae, Papua New Guinea.

Background

The Australian Government Department of Foreign Affairs and Trade (DFAT) committed to funding the redevelopment of the ANGAU Memorial Hospital (AMH) in Lae, Papua New Guinea (PNG). DFAT engaged Johnstaff International Development (JID) as the Project Manager Contract Administrator for the AMH redevelopment project. JID are program management specialists who work with organisations that fund international programs in low- and middle-income countries to provide end-to-end project management and health advisory expertise.

The AMH is the second largest hospital in Papua New Guinea. It plays a fundamental role as the district hospital for 149 000 people in Lae, the provincial hospital for the 675 000 people of Morobe, and a regional referral hospital for the 1.9 million residents of the Momase region (Morobe, Madang, East Sepik and West Sepik).



ANGAU Memorial Hospital, Lae

Project outline

The Australian College of Perioperative Nurses (ACORN) was contracted by JID to be the expert body to advise on all aspects of perioperative care to enable the commissioning of the new operating room suite (ORS) and central sterilising unit (CSU) at AMH. ACORN provided an expert consultancy team known as the Perioperative Clinical Advisory Team (PCAT) to undertake the required work for the key deliverables that were aimed at ensuring a standard of care that will be safe for the patients undergoing surgical procedures provided by Morobe Provincial Health Authority.

The PCAT consisted of a perioperative lead and three perioperative nurse advisors with expertise in education, commissioning of a new ORS facility and sterilisation practices. The team had the cultural awareness required for the work as three members of the team had lived or worked in PNG, had collaborated with the PNG Perioperative Nurses Society (PNGPNS) and had knowledge of the hospital settings in Port Moresby and Lae. The fourth member had participated in the early development of the Pacific perioperative practice bundle (PPPB), a collaboration between ACORN and the Pacific Island Countries to develop and implement a bundle of infection prevention standards and practice audit tools to improve consistency of perioperative practice in the 14 participating Pacific Island countries.

The aim of the PCAT was to work collaboratively with key ANGAU multidisciplinary staff and national health stakeholders to ensure standards, guidelines, sustainable workflows and data collection was achieved to support the efficient management of the new ORS and

CSU. This aligned with an overarching aim of ensuring the community of Lae has access to safe surgical care as per the World Health Organization (WHO) target of universal health coverage. While the overall objective is the commissioning preparedness, the multidisciplinary approach was based on meeting identified key deliverables in sequence to enable the timely training, capacity and mentoring of the AMH staff to function within the new perioperative environment.

The project began in February 2021 with a completion date of 31st December 2021. However, the surge of COVID-19 within PNG saw the project timelines extend into 2023. This paper will describe the project aims and objectives, and the outcomes that have been achieved to date. A second paper will report on the overall outcomes at the conclusion of the project.

Scoping design

The current AMH ORS and CSU complex has a combined area with four operating rooms and inadequate sterilising and recovery areas. Only two operating rooms are in use with limited equipment and consumables, and staffing that does not meet PNG National Health Service Standards. The 24/7 staffing does not include staff for the recovery area and there are usually only two nursing staff with an anaesthetic assistant for each room. ORS and CSU staff do not have access to perioperative specialty training and most staff are trained on the job.

The new ORS has four operating rooms and a dedicated CSU. The new complex will provide a centre for surgical and procedural services that include planned day surgery, in-patient surgical procedures and emergency surgery. It will operate 24 hours a day, seven days per week.

Staff surveys identified that there were gaps in education and knowledge in clinical practice principles within the perioperative and sterilisation setting. Medical education was outside of the scope of the project. However, the governance, operational flows and ORS efficiency are all multidisciplinary and require collaboration from all teams with leadership from both nursing and medicine to succeed. Therefore, the primary educational focus was nursing with other deliverables aimed at the multidisciplinary teams.

The PCAT team were reliant upon in-country JID staff and meetings via Zoom using low bandwidth internet connection to gather information and data for a scoping report. The collection process was also difficult with the COVID-19 situation. The team used alternative communication processes like WhatsApp when internet connection was poor. These meetings faced various challenges from not only variable internet reliability but also inattendance of key nursing staff due to multiple factors (sick leave, workload, shift availability and COVID-19). However, once engagement was established at the local level the flow of information slowly increased as COVID-19 impacts decreased. The team was then able to identify the gaps in documentation, orientation, standard operating procedures, rostering and clinical practices, and make recommendations for the key deliverables of the project.

Key deliverables

Four key deliverables were identified:

1. Development of a monitoring and evaluation framework including a governance structure and risk management plan.

2. Implementation of perioperative and central sterilising unit standards for practice and an associated education program.
3. Development of guidelines and processes to support nursing management and leadership inclusive of workflows, emergency responses, staffing, data management and ORS activity indicators.
4. Development and implementation of standard operating procedures and procedures regarding the new furniture, fixtures and equipment.

The second deliverable listed above has largely been achieved through:

- the development of practice standards (the PNG Perioperative Standards for Practice), together with a sustainable education program relating to the standards
- the delivery of an education and training program
- operating procedures for the CSU (CSU Safety Operating Procedures) that relate to the standard for the reprocessing re-usable medical devices (RMDs).

PNG Perioperative Standards for Practice (PNGPSP)

PNG had no defined or endorsed national perioperative standards for practice. This project was an opportunity to improve perioperative practices in PNG with the implementation of national and endorsed perioperative standards for practice.

The PNGPSP were developed theoretically using the following resources:

- PNG *National Health Service Standards*

- PNG *National Infection Prevention and Control Guidelines for Health Services*
- WHO guidelines for safe surgery and decontamination and reprocessing of RMDs
- International Federation of Perioperative Nurses (IFPN) perioperative guidelines
- ACORN *Standards for Perioperative Nursing in Australia*
- Pacific perioperative practice bundle.

Seven standards were produced.

Standard 1: Perioperative attire

Standard 2: Aseptic technique

Standard 3: Surgical hand antisepsis, gowning and gloving

Standard 4: Skin preparation and draping

Standard 5: Accountable items

Standard 6: Safe perioperative environment

Standard 7: Re-usable medical devices

The draft standards were circulated to the perioperative nurses at AMH and, by the PNG Perioperative Nurses Society (PNGPNS), to perioperative nurses across PNG for comment. The feedback that was received enabled the PCAT to amend the standards so they were fitting to nursing practice in PNG and were within the scope of resources available.

The PNGPSP incorporates appendices that apply to:

- Pre-operative patient checklist
- Surgical hand scrubbing procedures (three- and five-minute)
- Surgical hand rubbing procedure
- Accountable items count sheet

- Papua New Guinea Surgical Safety Checklist
- ORS and CSU environmental cleaning audit
- Perioperative patient journey audit forms (measured against the standards)
- Perioperative safety guidelines (relating to positioning the patient, diathermy safety, pneumatic tourniquet safety, sharps handling and disposal, and specimen collection)
- WHO recommendations for staffing CSU

The count sheet and surgical safety checklist can be utilised across all perioperative environments in PNG, therefore, enabling a safe, consistent approach to perioperative documentation.

The PNGPSP was endorsed by the AMH Board of Management Safety and Quality Committee and the PNGPNS. Endorsement is now being sought from the PNG National Department of Health.

Education and training program

The education and training program comprised three components:

1. an online learning program
2. interactive workshops delivered virtually or face to face
3. mentoring and support for staff during an in-country visit.

The online learning program is complete. It was developed in collaboration with Catlapa, an international design and technology organisation that uses technology to make information accessible in low-resource countries. In PNG they have implemented micro learning via a mobile phone app at two major hospitals including AMH.



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OT Course 5 - Scrubbing, Gowning and Gloving



OT Course 6 - Skin Preparation & Draping



OT Course 7 - Accountable items



OT Course 8 - Safe Perioperative Environment



OT Course 9 - Reprocessing reusable medical...

Kumul Helt Skul (PNG Health School) is the app that provides professional development training for hospital staff to improve quality of care. The app's visual language was designed to represent PNG heritage and culture.

Nine courses were developed for Kumul Helt Skul for ORS and CSU staff. Two introductory courses, one for ORS and one for CSU, and seven courses relating to the seven standards in the PNGPSP. Courses contain a series of lessons with an ungraded multi-choice question at the end of each lesson. The courses relating to the standards also have a graded exam at the end of the course. The courses contain a discussion forum called 'talk to the team' where questions are posed and learners can discuss the topic with other learners.

Enrolments to the app and the use of the technology were logistically problematic for staff with low technology literacy skills. The aim was for all staff to complete the online learning program before commencing the interactive workshops where the standards would be further expanded upon. The workshops have commenced and are being delivered virtually. The workshops encourage discussion of practices and problem solving of issues relating to practice.

Central Sterilising Unit Standard Operating Procedures (CSUSOP)

The staff survey revealed that the current CSU accepted instrumentation already cleaned and wrapped from other areas of the hospital for sterilising. Therefore, CSU staff were not completing the entire process for reprocessing RMDs, which is best practice, and thus not meeting infection control

Kumul Helt Skul introductory screen



AMH staff undertaking Kumul Helt Skul courses. From left: Sr Julienne Pauliet, Community Health Worker David Waesa, Sr Elaine Kuresu

best practices. ORS staff were cleaning instrumentation in a corridor before taking it to CSU for processing. CSU staff also identified a lack of education and training in reprocessing RMDs as a significant gap for their practice. The AMH CSU nursing workforce data indicated a total of six staff for the CSU, including a nurse manager. The move to a larger, newly equipped CSU will mean an increase in staffing to undertake the multistep process that includes process control and monitoring to ensure the devices are safe for re-use. A recommendation has been made to implement significant training and support during commissioning of the new CSU and to explore ongoing access to education in sterilisation practices.

Standard 7: Re-usable medical devices is based on best practice according to the Standards Australia and Standards New Zealand AS/NZS 4187:2014 Reprocessing of re-usable medical devices in health service organisations. Information was also included from the WHO's

Decontamination and reprocessing of medical devices for health care facilities, and the PNG National Infection Prevention and Control Guidelines for Health Services.

The standard for RMDs required a companion operating procedure document with step-by-step details of the work-related tasks. This document will assist staff to understand what tasks need to be done, how to do the tasks and which tools and equipment are needed for doing the tasks. The operating procedures in the CSUSOP are designed to enhance performance, improve efficiency and ensure quality by enabling consistent practice. The CSUSOP includes detailed operating procedures for:

1. cleaning
2. packaging
3. sterilising
4. sterile storage
5. process control and monitoring, including validation.

These operating procedures are designed to be applied in CSUs across PNG.

The operating procedures were developed and based on Queensland Health, Oral Health Sterilising Practices that were referenced to AS/NZS 4187:2014 Reprocessing of re-usable medical devices in health service organisations and the National Health and Medical Research Council (NHMRC) *Australian Guidelines for the Prevention and Control of Infection in Healthcare*.

Continuation of the project

The next phase of the project is to oversee the completion of the Kumul Helt Skul courses and conclude the series of interactive online workshops that are already underway. There are two sets of workshops:

1. to further clarify the perioperative standards for practice and CSU operating procedures
2. to conduct question-and-answer sessions about the new equipment for the new ORS.

The final phase of the project is to conduct in-country visits to mentor and advise staff about the relocation to the new ORS and CSU. This will include supporting nursing management and leadership with workflows, emergency responses, staffing, data management and ORS activity indicators.

This article has described ACORN's role in the project's scoping design, the development of a set of standards and operating procedures and the development and implementation of education and training. A second article will report on the completion of the project and the evaluation data.