NCCTRC Regional Engagement Program Evaluation Report

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Prepared for the National Critical Care and Trauma Response Centre by

pandanus evaluation

Contents

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Acronyms and abbreviations

AME	Aeromedical Retrieval
AUSMAT	Australian Medical Assistance Teams
CDU	Charles Darwin University
DFAT	[Australian] Department of Foreign Affairs and Trade
ECC	Essentials of Critical Care
ED	Emergency Department
EMT	Emergency Medical Team
FEMAT	Fiji Emergency Medical Assistance Team
FNU	Fiji National University
FY	financial year
GOARN	Global Outbreak Alert and Response Network
HEOC	Health Emergency Operations Centre
HEPR	Health Emergency Preparedness and Response
HMIMMS	Hospital Major Incident Medical Management and Support
IPC	Infection, prevention and control
MEL	Monitoring, Evaluation and Learning
MELF	Monitoring, Evaluation and Learning Framework
MFAT	Ministry of Foreign Affairs and Trade, New Zealand
MIMMS	Major Incident Medical Management and Support
NCCTRC	National Critical Care and Trauma Response Centre
PNG	Papua New Guinea
PPE	Personal protective equipment
REP	Regional Engagement Program
RIDE	Rehabilitation in Disasters and Emergencies
SPC	the Pacific Community
SOLMAT	Solomon Islands Emergency Medical Team
TEMAT	Tonga Emergency Medical Team
VanMAT	Vanuatu Emergency Medical Team
WHO	World Health Organization

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Nea Harrison, Richelle Tickle and Stephanie Harrison

Executive summary

In 2015 and 2016 two of the most powerful and damaging tropical cyclones hit the Pacific islands of Vanuatu and Fiji respectively. In 2017, the National Critical Care and Trauma Response Centre (NCCTRC) and the Department of Foreign Affairs and Trade (DFAT) entered a 5-year funding partnership to enhance the alignment of Australia's emergency medical response capabilities with Australia's geographic, programmatic and policy priorities, and adhere to standards for child protection, gender, equality and disability. The grant is currently for $2.4 million and has been extended to 30 June 2023, with funds anticipated to be fully expended by end 2022.

A key outcome of the program is 'to increase skills and abilities within the Indo-Pacific region for local health systems to lead and deliver sustainable services and respond effectively to emergency situations in coordination with partners.' The Regional Engagement Program (REP) delivers on this outcome through training, education, mentorship and expert technical advice to specific components of the national health systems and emergency services. The partnership contributes to meeting Australia's international and Pacific regional commitments in relation to disaster risk reduction and recovery and humanitarian assistance goals.

This evaluation is the first conducted of the REP. It covers the period from the start of the grant (August 2017–June 2022). The evaluation assessed the REP's success in achieving its planned implementation, outcomes and benefits for participants and on identifying lessons to guide any future grants. The evaluation was conducted July–September 2022 using a mixed methods approach to data collection and included interviews with 57 key informants from Fiji, Samoa, Timor-Leste, Tonga, Vanuatu, DFAT, NCCTRC and key regional organisations. This report outlines the evaluation's findings and recommendations.

Findings and Recommendations

The REP built on existing positive people-to-people relationships with clinicians in the Indo-Pacific regional and the trust in the NCCTRC, as an Australian partner of choice in building stronger emergency health response capabilities. The findings and recommendations outlined below relate to the three areas of focus for this evaluation and provide lessons for future responses.

Program design

The REP is underpinned by a strong theory of change with evidence that the three key assumptions and causal links are accurate as outlined in the program logic.[1] The existing, and potentially increasing frequency of damaging climate-related disasters, disease and public health outbreaks highlights the ongoing relevance of efforts to strengthen local health system capacities to respond to such events and circumstances effectively. The progress achieved through the REP was possible as it leveraged existing NCCTRC staff and administrative systems funded through other sources. Progress achieved is more broad ranging than would have been possible if Australia's support focused only on building effective local Emergency Medical Team (EMT) capacity.

There is evidence of strengthening regional communities of practice and ongoing relationships of trust with the NCCTRC as an Australian entity. The REP scope encompassed the different needs of

[1] See Appendix 4: Regional Engagement Program Logic (2021/2022). This diagram outlines the planned outcomes and assumptions underpinning the program design. The program logic was developed in late 2021 with DFAT support. It is based on a theory of change which guided program activities from August 2017 that until then had not been articulated in these terms.

partners and successfully leveraged existing NCCTRC mandates and relationships. It improved the coordination and outcomes possible through individual training programs.

The REP adapted activities appropriately and continues to progress some outcomes despite changes in the context over the past five years, including the greater focus on strengthening health system responses to acute public health outbreaks. In part, this included more focus on specialist and critical care nursing skills.

Funding for the REP was almost entirely limited to costs to deliver specific activities. It included very limited funding for dedicated human resources and did not establish specific performance management systems including a performance framework. NCCTRC staff were responsible for program planning, facilitation and reporting as additional tasks. There was limited focus, from either DFAT or NCCTRC, or resources dedicated to developing REP specific management systems. In this context, data collection and analysis did not allow effective tracking and reporting on progress against implementation plans and towards outcomes. There was limited evidence of reflection or learning to improve program effectiveness and planning.

Program implementation and reach

Until the COVID-19 pandemic outbreak in early 2020, NCCTRC was delivering REP activities as intended in accordance with the theory of change, annual plans, and on budget. The program was delivering activities in the sequential manner intended and building sustainable local capacity. The most significant progress was evident in Fiji. In the final two years, most activities have been implemented as intended following the program's re-orientation of activities.

The program was increasing in pace, expanding the number of countries just as the pandemic was declared. The ambitious annual plan for FY20 was substantially disrupted.[2] More than 60 percent of planned activities for FY20 were deferred. Only 45 percent of the increased budget was expended.

In consultation with DFAT, NCCTRC re-orientated the program activities to continue to meet partner needs and DFAT priorities. The budget focus was re-orientated to supporting postgraduate academic qualifications in new courses with the Fiji National University (FNU) and Charles Darwin University. The content of each of the academic courses are directly relevant to increasing the skills and abilities of clinicians to improve local health systems' ability to lead and deliver sustainable effective emergency responses. The sustainability of the new postgraduate emergency nursing course is at risk if support for academic oversight and scholarships do not continue.

While REP in-country training was halted, operational and clinical capacity building support was provided on a 'just in time' basis during the separately DFAT-funded AUSMAT deployments and through support provided on request to meet specific needs quickly. REP engaged with broader regional efforts to strengthen health systems emergency response capabilities, partnering with WHO to deliver a series of webinars for EMT members and with the Pacific Community (SPC) to increase nursing critical care skills.

Ten of the target 11 countries have participated in REP activities and an estimated 1,035 people (540 women and 495 men) have been directly involved. The program has successfully identified leaders who have taken on leadership roles, in times of crisis and within their local health systems. More than 40 percent of MIMMS course participants and 20 percent of instructors are from organisations involved in responding to events and disasters outside hospitals. This is strengthening inter-agency communication and understanding of roles and responsibilities.

[2] Financial year (FY) refer to Australia's financial year periods - 1 July-30 June each year. FY20 refers to the financial year ending 30 June 2020.

Uncertainty about when in-country training could resume and difficulty in accurately budgeting for remote delivery of activities led to underspends in the final two years. DFAT agreed in April 2022 to slightly increase the budget and extend the duration for 12 months to 30 June 2023.

NCCTRC coordination and collaboration with DFAT in Canberra and in-country needs to continue to be prioritised. There are more opportunities to link with other Australian Government funded and national efforts to strengthen acute health care systems.

AUSMAT Team member training adheres to DFAT's Child Protection and Preventing Sexual Exploitation, Abuse and Harassment policies. However, there are some internal inconsistencies between AUSMAT training materials with NCCTRC policy documents and Codes of Conduct and DFAT's policies.

Progress towards outcomes

The evaluation assessed progress towards the following outcomes. Some of the outcomes shown in the REP Program logic (2021/2022) were outside the scope of this evaluation and were not assessed.

Immediate outcomes	Short-term outcomes (1–2 years)
1. MIMMS - improved systems and operating structure implemented for emergency responses 2a. Short courses – participants have increased knowledge and skills in critical care and rehabilitation 2b. Academic courses - participants have increased knowledge and skills in emergency care and critical care 3. Mentorship – participant empowered to improve the system they operate in[3] 4. EMT – increased knowledge about requirements and plan towards EMT development	1a. Interagency capacity building and disaster planning in both pre- and hospital settings 1b. Local capacity to deliver MIMMS training developed 1c. MIMMS systems implemented in response to emergency situations 2. Improved clinical skills shared in teams and applied consistently 4. EMT capabilities advance and progressing through WHO certification

The REP program has been highly successful in building national capacity to deliver MIMMS and HMIMMS training and in supporting the development of national disaster response systems. MIMMS training has increased hospital and interagency capacity to plan for and respond to disasters and has resulted in the development and activation systems that are successfully responding to emergencies. Across the board informants said that medical and non-medical emergencies services participating in training together built stronger networks and relationships that helped organise coordinated responses.

The number of MIMMS instructors in the Pacific region and Bali has doubled from 13 (five women and eight men) in September 2017 to its current 29 (11 women and 18 men) at July 2022. Flowing from this, alumni regional instructors have delivered 17 of 20 MIMMS and HMIMMS trainings in their own and in other Pacific countries since 2017. Combined with targeted clinical skills training and mentoring, HMIMMS training improved the clinical skills, coordination and preparedness of emergency teams.

The short courses and webinars have benefited participants and strengthened national emergency response capabilities. On-the-job-training and mentoring has provided tailored and timely in-situ and remote support. Three new short courses, COVID-19 and Critical Care, Essentials of Critical Care (ECC) and Rehabilitation in Disaster and Emergencies (RIDE) were developed in late 2020 and 2022. REP aims to tailor these programs to meet country specific needs and develop a train-the-trainer system to increase sustainability.

[3] The evaluators did not separately assess the short-term outcome connected to mentorship. We decided that the short-term outcome '3. Health systems will have capacity to function effectively especially in response to emergencies' was already covered in the other short-term outcomes.

The REP short courses especially in relation to critical care, including NurseTOK webinars, complement other efforts by WHO and SPC providing EMTs, emergency nurses and clinicians with remote access to professional development and resources. Online short courses and webinars helped maintain networks and facilitated new networks and communities of practice during the period when international travel was very restricted.

Mentoring support provided through REP was responsive to partner country requests and has supported country health teams develop and implement effective emergency response systems. Interviewees from each country appreciated the access to professional networks and timeliness of advice in response to specific enquiries.

The three academic programs are showing clear benefits for participants and for national emergency response capabilities. The scholarship support for all academic programs is a significant enabler for students and countries. The first cohort of nine graduates from the Diploma of Emergency Nursing at Fiji National University have continued to the Master program in 2022. Students report increased knowledge, confidence, and capacity in their roles as emergency nurses. The course is increasing participants' value in their workplaces, increasing their leadership capacity and increasing the quantity of research into emergency nursing in the Pacific. A second cohort of 10 Diploma students started in 2022.

Charles Darwin University's Graduate Certificate in Aeromedical Retrieval began in 2021 with three graduates proceeding to the Master in 2022 supported through the REP. Another two senior clinicians began the Graduate Certificate in 2022. The Graduate Certificate in Health Emergencies Preparedness and Response began in 2022. The REP is supporting one senior clinician to complete this course. Participants report finding the content stimulating and practical. The courses' online delivery modes are increasing the capacity of highly skilled emergency physicians and anaesthetists from Fiji, Tonga, Papua New Guinea (PNG) and Timor-Leste. The courses are targeted to the skills needed in the region and are valued by the participants and their workplaces. Participants are disseminating learnings through the development of procedural guidelines and training colleagues.

The REP collaboration with WHO has supported the establishment and development of national EMT. Six EMTs in the Pacific are recognised by WHO as National EMTs and Fiji has been verified for international deployment. Since 2019, national EMTs have successfully led domestic responses to 10-12 emergencies without the need for international assistance.

Strengths and unintended consequences

The evaluation has identified several unintended consequences, outcomes or results that were not anticipated and not included in the program logic. The REP has contributed to the development of a strong community of practice among emergency clinicians working throughout the Indo-Pacific region. Between August 2020 and May 2022 there were nine AUSMAT deployments to six countries[4] that provided practical support, mentoring and training and successfully maintained relationships established by the REP.

The collaboration between WHO and REP between 2020 and 2022 strengthened Pacific Island countries' COVID-19 response capabilities. The strength of existing relationships between the REP team and Pacific Island country health leadership and emergency clinicians meant that the REP was well positioned to switch to the provision of remote training and virtual operational support between 2020 and 2022. The re-orientation of activities to focus on preparedness and response to COVID-19, resulted in a greater focus on nursing clinical skills. An emerging community of nursing practice is developing through the Diploma and Master of Emergency Nursing course, REP and AUSMAT mentoring and training and the NurseTOK webinars.

[4] The six countries were: Papua New Guinea, Solomon Islands, Fiji, Vanuatu, Kiribati, and Timor-Leste.

Recommendations and opportunities for the next phase

The following recommendations are provided to strengthen the NCCTRC and proposed next phase of support. They focus on program design, policies and systems. Recommendations are outlined in more detail in the final section of the main report.

1. Design the next phase program plan and document the theory of change collaboratively with DFAT and key stakeholders. This will guide the program priorities, focus and delivery for the next phase.

2. Develop and implement a monitoring, evaluation and learning framework (MELF) and systems to improve data collection, analysis and reporting to DFAT, including in-country and to partner countries, on contributions to their priorities.

3. Provide dedicated program management resources and leadership within NCCTRC and explore processes internally to ensure all NCCTRC engagements with partner countries are to the best extent, coordinated within the organisation.

4. Develop multi-year country plans and establish systems and budgets visibility to increase local control of Program engagement in each country to meet their priorities. Re-invest in meaningful consultation with Ministries of Health and DFAT in target countries to ensure that activities contribute to national capacity plans and other implementing partners.

5. Develop an operational plan to guide program implementation to meet the strategic direction, design, coordination and MEL priorities and address risks.

6. Build the capacity of regional disaster response and Fiji as a training hub, particularly for MIMMS and HMIMMS training. See also Recommendation 15 in relation to continuing to build FEMAT capability as a regional response partner.

7. Consolidate online resources and systematically remind contacts what's available.

8. Strengthen NCCTRC's Child Protection and Preventing Sexual Exploitation, Abuse and Harassment approach and policies.

9. Continue to strengthen the involvement of rehabilitation professionals in emergency preparedness and response.

10. Continue to promote local leadership and delivery of foundational MIMMS and HMIMMS courses and as a regional network.

11. Continue support to FNU to effectively deliver and broaden the postgraduate nursing qualifications to reduce the cost and increase regional access to the course. Continue to support partial scholarships until the fees can be reduced.

12. Maintain focus on capacity building, service delivery strengthening and improving the quality of clinical and nursing care services.

13. Continue to foster a network of nurses across the region connecting more systematically to national nursing educators and local programs.

14. Explore exchanges as a capacity building approach. Exchanges to Australia help partners visualise what might be possible and on-the-job engagement quickly demonstrates and embeds improved clinical practices.

15. Continue to build the capacity and capability of FEMAT as a regional disaster response partner for other Pacific Island countries. See also Recommendation 6 in relation to building Fiji as a regional training hub for regional disaster response.

Introduction

This report documents the evaluation findings from the first external evaluation conducted of the NCCTRC Regional Engagement Program (REP). It covers the period from inception (August 2017–June 2022).

The evaluation assessed the REP's success in achieving its planned implementation objectives, outcomes and benefits for participants. The evaluation looked at the alignment of the REP with DFAT's policy priorities. It draws on the feedback from the evaluation informants and beneficiaries to recommend ways to build on program strengths, overcome the identified challenges and inform future developments.

The primary audience for this evaluation is the National Critical Care and Trauma Response Centre (NCCTRC) and DFAT. Findings from this evaluation will also be of interest to key stakeholders including WHO, SPC, Fiji National University (FNU) and program beneficiaries from around the Pacific.

Program context and overview

The Indo-Pacific region is one of the most vulnerable to disasters in the world. Climate-related disasters such as floods and storms and climate-sensitive disease outbreaks are becoming more frequent and causing more damage and undermining development.[5] Tropical Cyclones Pam in 2015 and Winston in 2016 were the largest and most powerful cyclones to have hit Vanuatu and Fiji respectively. Since August 2017 partners involved in the Regional Engagement Program (REP) have been affected by: floods in Timor-Leste and Fiji; earthquakes in Papua New Guinea (PNG) and Indonesia; five tropical cyclones have impacted Solomon Islands, Vanuatu, Fiji, Tonga; and volcanic eruptions have required mass evacuations in Vanuatu and Tonga. In addition, Solomon Islands has been affected by an oil spill and Samoa has been affected by an acute measles outbreak.

In 2015, Australia committed to the Sendai Framework for Disaster Risk Reduction 2015–2030[6] and in 2016 to the Framework for Resilient Development in the Pacific: An Integrated Approach to Address Climate Change and Disaster Risk Management 2017–2030. In accordance with these commitments, the Australian Government prioritises helping partner governments to improve their own local capacity to prepare for, respond to, and recover from emergencies and disasters to reduce undue human losses and suffering, and minimise adverse consequences for national, provincial, local and community economic, social and environmental systems.[7]

Also in 2016, the World Health Organization (WHO) launched the global Emergency Medical Team (EMT) classification initiative which set international minimum standards and principles for EMTs. The

[5] United Nations Economic and Social Commission for the Asia and the Pacific. 2018. Leave No One Behind: Disaster Resilience for Sustainable Development, Asia-Pacific Disaster Report 2017, p.2. https://www.unescap.org/sites/default/files/1_Disaster%20Report%202017%20Low%20res.pdf

[6] DFAT. 'Humanitarian preparedness and response'. https://www.dfat.gov.au/development/topics/development-issues/building-resilience/humanitarian-preparedness-and-response#4. Accessed 7 August 2022.

[7] Pacific Community, Secretariat of the Pacific Regional Environment Programme, Pacific Islands Forum Secretariat, United Nations Development Programme, United Nations Office for Disaster Risk Reduction and University of the South Pacific. 2016. Framework for Resilient Development in the Pacific: An Integrated Approach to Address Climate Change and Disaster Risk Management [FRDP] 2017–2030. https://www.resilientpacific.org/en/resources/framework-resilient-development-pacific.

Australian Medical Assistance Team (AUSMAT) was one of the first to be internationally verified as able to provide high-quality medical care as part of an outbreak or disaster response.[8] In 2017, Australia provided funding to WHO to support efforts to establish national EMTs within the Pacific.[9]

The NCCTRC is a key element in the Australian Government's disaster and emergency medical response to national and international disasters. It maintains a standing internationally deployable medical response capacity (AUSMAT). The NCCTRC provides clinical and academic leadership in disaster and trauma care, local response capability, and international education and training.[10] Through AUSMAT deployments and ad hoc training, NCCTRC had developed positive people-to-people relationships with some countries in the Pacific and maintained a long-standing relationship with the main Bali hospital. Dividends from this engagement were already evident. For example, in Fiji following Tropical Cyclone Winston in the type of international assistance Fiji requested and in the local capacity to respond.

> *Key people working at Lautoka Hospital had done MIMMS training by 2016. So, in response to Cyclone Winston, it kind of made things easy for us on the clinical floor to understand the operations and the command and control and how we were going to respond when patients came in. (Fijian informant)*

The NCCTRC Regional Engagement Program

The Regional Engagement Program (REP) came into effect with a 5-year funding agreement which commenced 30 August 2017. The REP leveraged and extended NCCTRC's existing mandate and relationships of trust in the NCCTRC to contribute to Australia's humanitarian assistance goals relating to disaster preparedness in a more strategic and coordinated approach.

The objective of the grant and partnership between DFAT and NCCTRC is to enhance the alignment of Australia's emergency medical response capabilities with Australia's geographic, programmatic and policy priorities, and adhere to standards for child protection, gender and disability.

In alignment with the grant's objectives, the REP provides education, training and mentorship support to specific components of the health care systems and emergency services so that they can function effectively and efficiently in times of disaster and emergency. Specifically, REP objectives are to:

- Identify and train key local personnel to act as leaders, coordinators, and liaison officers in times of crisis;
- Ensure that pre-hospital, trauma and critical care (where relevant) capacity is adequate;
- Ensure that identified hospitals have the capacity to function effectively in times of emergency and disaster;
- Develop sound and effective interagency communication practices; and
- Agree a policy framework and sound standard operating procedures to ensure that there are clear and agreed processes to be followed in times of disaster and emergency.

[8] World Health Organization. 'EMT Global Classified Teams'. Accessed 7 August 2022. https://www.who.int/emergencies/partners/emergency-medical-teams/emt-global-classified-teams.

[9] World Health Organization. 7 December 2021. 'Emergency Medical Teams (EMT) in the Pacific: Strengthening national capacity for health emergency response'. Accessed 7 August 2022. https://www.who.int/fiji/news/feature-stories/detail/emergency-medical-teams-in-the-pacific.

[10] See Appendix 1: Relationships and funding map for more detail on the range of NCCTRC functions.

To ensure alignment with Australia's foreign policy priorities, the grant includes additional objectives summarised here as:

- Collaborate with DFAT and key stakeholders to ensure that Program activities link to broader efforts to strengthen national and regional health systems and emergency health management initiatives;[11]
- Maintain preparedness to deploy a coordinated response and strengthen capabilities to adhere to DFAT standards and policies; and
- Engage internationally to improve global standards for emergency medical responses that benefit the Indo-Pacific region, including supporting regional partners in international forums.

When the REP began it focused support on eight countries: Indonesia (Bali), Fiji, PNG, Samoa, Solomon Islands, Timor-Leste, Tonga and Vanuatu. Initial consultations with Ministry of Health officials and hospital clinicians identified pre-hospital, hospital and operational and strategic needs. In addition to foundation specialist short courses, individual country needs were addressed through tailored 'mentorship' programs which involved a mix of placements in Darwin, education programs in-country and targeted skills development. To promote local sustainability, REP adopted a sequential staged approach, starting with foundational pre-hospital training and systems, then hospitals and hospital all hazard disaster planning and processes. REP sought to build capacity to deliver the foundational courses locally.[12]

Four amendments have been agreed to the funding and scope of the grant which is now $2.4 million for activities up to 30 June 2023. Grant amendments and approved annual plans expanded program activities to include:

- investments in postgraduate emergency nursing course; and
- expansion of activities to Kiribati, Nauru and Tuvalu.
- In response to changing partner needs and priorities and available delivery modalities due to the COVID-19 pandemic the scope was amended to:
    - increase support to WHO EMT initiatives including establishing and strengthening Pacific EMTs and remote COVID surge support for the Cox Bazaar Rohingya refugee camp; and
    - to provide remote support to Pacific partners to manage COVID-19 outbreaks as well as additional investment in online academic qualifications and scholarships.[13]

Program activities

The REP activities between 2017–2022 included:

- development and delivery of short course training;
- education including since 2021 postgraduate academic scholarships;
- 'mentorship' – both through more tailored professional development opportunities and support (pre-COVID) and remotely (post-COVID); and
- technical expertise and advisory support, including through webinars.

Short course training is a key element of the REP delivery. Table 1: Description of training courses and target groups provides an overview of each of the REP training courses.

[11] See Appendix 1: Relationships and funding map for more detail on key stakeholders and Program activities.
[12] See Appendix 9: REP staged approach
[13] See Appendix 2: Timeline of REP activities and events.

Table 1 Description of training courses and target groups

Name of Training	Training description	Target group, location and length of training
Major Incident Medical Management Support (MIMMS)	The internationally recognised 3-day course teaches a systematic approach to disaster medical management at the scene of mass casualty incidents. It is based on practical skills and is applicable and adaptable to health systems worldwide. It encourages cooperation and coordination across all agencies involved in managing disasters. The course consolidates skills in teamwork, triage, incident command and control, communications and safety. A manual and materials are supplied as part of this course.	Doctors and nurses, police, fire, paramedics and military or others in senior positions likely to take a coordination or command role in response to mass casualty events or emergency care.
MIMMS Team Member training	A 1-day course has also been developed and delivered in Timor-Leste, Fiji and for Pacific Anaesthetists. This course is provided as an introduction to MIMMS key concepts: teamwork, triage, incident command and control, communications and safety.	Doctors, nurses, first responders not yet expected to take coordination or command roles.
Hospital MIMMS (HMIMMS)	The internationally recognised 2-day course focuses on preparedness within hospital and emergency department contexts. The course explores the priorities and responsibilities of clinical and administrative responders facing a mass casualty incident in their hospital. An all-hazards approach is adopted while special incidents such as burns, and chemical hazards are also covered. The concept of the collapsible hierarchy is introduced as a fundamental concept in the hospital-based response.	Leading doctors, nurses and hospital administrators and management teams
MIMMS Generic Instructors Course	A standardised course that teaches the principles of adult learning - the knowledge and skills required to understand the nature of teaching and learning. To become a full instructor, on successful complement this course, candidates must deliver two courses within two years.	By invitation for candidates identified as having instructor potential during a MIMMS or HMIMMS course.
Health Emergency Operations Centre (HEOC)	The NCCTRC course builds the capacity of hospitals or Ministries of Health to establish an emergency operations centre in response to a disaster or outbreak. It includes information management and command and control structures to contribute to a coordinated national health emergency response.	Hospitals Department Heads and Ministry of Health staff
Trauma Team Training	The NCCTRC developed 1-day clinical skills short course is delivered through simulation-based scenarios. It adopts a structured team approach for early recognition and stabilization, effective team leadership and team interaction, skills for working effectively at an organisational level, and skills for safe practice and error minimisation.	Nurses and medical staff who respond to traumatic emergencies
Remote Area Trauma Education (RATE)	The NCCTRC developed 1-day course assists doctors, nurses and midwives safely assess and manage trauma patients in remote contexts until the arrival of the retrieval team. The emphasis is on practical skills, small interactive groups and relevant scenarios.	Nurses and medical staff who manage trauma patients in remote contexts
Surgical team training	The NCCTRC 4-day course provides training for disaster surgery and anaesthetics in the field. It exposes participants to a range of essential techniques and survival skills to manage successfully when deployed as part of an Australian Medical Assistance Team. It is delivered using a combination of classroom-style lectures and field simulation that includes an overnight field deployment.	This course is for senior surgeons, anaesthetists and theatre nurses
COVID-19 and Critical Care	The NCCTRC developed this course in 2020 in collaboration with Clinical Services Program, SPC. Critical care is a multidisciplinary and interprofessional specialty aimed at managing patients with a serious failure of a vital function or at risk of developing such a failure. Critical care is not limited to space of the Intensive Care Units but is an integral part of the heath system. It has been delivered online and in-country.	Heath care workers, focused on nurses
Essentials of Critical Care (ECC)	The NCCTRC developed 3-day course focuses on clinical and operational expertise at the bedside. It is focussed on nursing assessment, basic life support skills, recognising patient deterioration and managing oxygen therapy. It is practical and assumes delivering critical care within the limited resource settings of Indo-Pacific.	Nurses managing critically unwell patients in both critical care and non-critical care environments
Rehabilitation in Disaster and Emergencies (RIDE)	The NCCTRC developed course promotes the roles and increases the confidence of rehabilitation professionals in planning for and responding to disasters and health emergencies, with the goal of improving outcomes for people with injuries, illnesses and other pre-existing disabilities.	Allied Health staff (Physiotherapists and Occupational Therapists) and senior leadership staff in decision making roles

Evaluation purpose and scope

This is the first external evaluation conducted of the NCCTRC Regional Engagement program since its inception in 2017. The primary audience for this evaluation is DFAT and the NCCTRC Regional Engagement team. The evaluation report will also provide valuable information to regional partners and stakeholders.

The purpose of the evaluation was to review:

- the REP's success to date in achieving its planned implementation, outcomes and benefits for participants;
- the performance framework to assess if it is providing the information required;
- alignment of REP with DFAT's policy priorities; and
- draw out lessons to guide any future grants.

The evaluation focused on NCCTRC training and short courses; Pacific academic partnerships; acute care health systems responses; and engagement with Pacific WHO EMT initiatives. Interviews were conducted with clinicians, health officials and program stakeholders from five of the 11 target countries: Fiji, Samoa, Timor-Leste, Tonga and Vanuatu.

The evaluation scope was expanded during the data collection phase to cover short course training, education and mentorship activities focused on partner countries since REP began in August 2017 to end June 2022. The original scope which covered the period 2021–2022 did not enable effective consideration of the full range of program implementation and outcomes. The expanded scope enabled the evaluators to review agreements and examine program implementation before, during and after COVID-19.

Several REP activities funded since 2020 through budget savings were not within either the original or expanded scope of this evaluation. These include the Global Outbreak Alert and Response Network (GOARN), WHO Cox Bazaar Sub-Office surge support, or the Ministry of Health and Medical Services Fiji - Rapid Sero-Survey for COVID-19. These activities were not core to the program outcomes.

The evaluation sought to answer 14 key questions that address the following domains:[14]

- **Design**: Was the design appropriate and adequate to address the identified need?
- **Program Implementation**: Was REP administered and implemented as planned?
- **Outcomes and Impact**: To what extent did REP deliver the intended benefits to participants and health systems? and did the program result in any unintended consequences?

In late 2021, the NCCTRC articulated a program logic for the REP for activities planned in 2021–2022.[15] The program logic articulated REP's long-term outcome statement to increase skills and abilities within the Indo-Pacific region for local health systems to lead and deliver sustainable services and respond effectively to emergency situations in coordination with partners. It set immediate and short-term (1-2 years) outcomes. The evaluation assesses progress towards the outcomes stated in the program logic referring to relevant activities delivered since 2017.

[14] See Appendix 3: Detailed evaluation questions.

[15] See Appendix 4: Regional Engagement Program Logic (2021/2022).

Limitations

AUSMAT deployments are funded under different arrangements with DFAT and were not within the scope of this evaluation. However, for most informants, NCCTRC's engagement through the REP was not distinguished as a separate 'program' and many conflated all NCCTRC support with AUSMAT. This is particularly understandable when NCCTRC staff delivering the REP activities routinely deploy with AUSMAT in the region.

Since November 2019, AUSMAT has deployed multiple teams on 10 occasions into seven countries involved in the Regional Engagement Program.[16] For many informants, deployments were the most intense and impactful engagement with NCCTRC in recent years. Many informants spoke of the value to them of the on-site training, support to set up infection prevention control measures, patient flow arrangements, management committees and the clinical education provided during these deployments. While AUSMAT deployments contributed to achieving REP capacity building objectives while on deployment, they are not part of REP *per se* and data on training participants during deployments are not collected.

Similarly, for many informants, the overwhelming significance of preparing for and managing COVID-19 over the past two years meant it was sometimes difficult for interviewees to reflect on specific activities or REP support.

Evaluation methodology

This evaluation was utilisation focussed and placed emphasis on the usefulness of both the findings and the evaluation process to key stakeholders. It drew on the program logic model as the articulation of the program theory of change. The evaluation assessed the progress towards planned outcomes and tested the assumptions the NCCTRC and key stakeholders held about the REP.

The evaluation team used a mix of quantitative and qualitative methods to gather evidence to answer the key evaluation questions. They conducted a systematic review of 94 documents covering all countries; conducted 29 individual in-depth semi structured interviews; and nine focussed-group interviews from a purposive sample from five countries. The sample included countries that had a range of interactions with the REP between 2017–2022.[17]

The evaluation received feedback from 58 key informants, and 57 interviewees (56 percent women and 44 percent men) from Fiji, Samoa, Timor-Leste, Tonga, Vanuatu, DFAT, NCCTRC and key regional organisations.[18] To respect and protect participants engaged throughout the evaluation process contributions have been de-identified.

[16] AUSMAT deployed teams to: Samoa November 2019–January 2020 to support the Ministry of Health to respond to the acute measles outbreak, including supporting vaccinations; PNG in August–October 2020, March–May 2021 and September 2021 to manage COVID-19 outbreaks; Timor-Leste in April 2021 to support Ministry of Health respond to both floods and COVID-19 outbreaks and COVID-19 outbreaks again in September 2021; Fiji in June–September 2021; Solomon Islands and Kiribati in February 2022; and Vanuatu April–May 2022 to assist Ministries of Health to respond to COVID-19 outbreaks.

[17] See Appendix 6: Evaluation methodology for more detail on data collection, syntheses and verification processes.

[18] See Appendix 5: Evaluation informants for a full list of people consulted.

Ethical considerations

The evaluation was conducted in accordance with DFAT Monitoring and Evaluation Standards (2017), the DFAT Practise Note- Remote Monitoring and Evaluation (2021) and the Australasian Evaluation Society Guidelines for the Ethical Conduct of Evaluations (2013).

Evaluation findings

Program design

Summary of findings

The REP is underpinned by a strong theory of change with evidence that the three key assumptions and causal links are accurate as outlined in the program logic.

The REP adapted activities appropriately and continues to progress some outcomes despite changes in the context over the past five years.

The progress achieved by REP substantially leveraged existing and separately funded NCCTRC staff and administrative systems.

There was limited support from DFAT or within NCCTRC to establish REP specific management systems including performance framework, reporting and risk assessments. There was insufficient tracking and reporting on progress against implementation and outcomes.

The REP is underpinned by a strong theory of change with evidence that the three key assumptions and causal links are accurate as outlined in the program logic.[19] The existing and potentially increasing frequency of and damage inflicted by climate-related disasters and climate-sensitive disease outbreaks highlights the ongoing need to strengthen local capacities to respond.

The progress achieved through the REP is more broad ranging than would have been possible if support had focused only on building national EMTs. The MIMMS concepts and clinical training provided through REP complemented EMT capacities. There is evidence of strengthening regional communities of practice and ongoing relationships of trust with the NCCTRC as an Australian entity that would not have been possible through bilateral development programs.

The REP progresses recommendations included in a 2017, Office of Development Effectiveness evaluation of Australia's humanitarian response to Cyclone Pam that DFAT should continue to progress work to support nationally led responses and localisation and explore options for Pacific crisis response teams.[20]

The REP scope encompassed the needs of partners when it was set up. It reflected the different existing capacities and interests within the region while leveraging existing NCCTRC relationships. It provided an opportunity to improve the coordination and strategic intent of individual training programs and the opportunity to be more responsive to partner country needs.

[19] See Appendix 4: Regional Engagement Program Logic (2021/2022) for outcomes and assumptions underpinning the program theory.

[20] DFAT. February 2017. 'Briefing Humanitarian Assistance in the Pacific an Evaluation of Australia's Response to Cyclone Pam'. https://www.dfat.gov.au/development/performance-assessment/aid-evaluation/program-evaluations/evaluation-of-effectiveness-australias-response-cyclone-pam.

The REP adapted activities appropriately and continues to progress some outcomes despite changes in the context over the past five years. A key change was a greater focus on strengthening health system responses to acute public health outbreaks. In October 2020, NCCTRC was recognised as a partner institution in the Global Outbreak Alert Response Network (GOARN). The GOARN is focused on the control of disease outbreaks or public health emergencies. The REP financially supported NCCTRC to host the first partnership meeting in April 2021 and started complementary training of AUSMAT members to allow accreditation to build capability for GOARN deployments.

The increased focus on public health systems, has been reflected in recent responses to COVID-19. The REP partnered with the Pacific Community (SPC) to deliver a new SPC short course focused on COVID-19 and Critical Care skills. The REP's investment on improving nurses' critical care clinical skills included financial and technical support to launch Fiji National University's (FNU) new postgraduate Emergency Nursing course in 2021 and a closed Facebook Group and monthly webinar series called NurseTOK in January 2022.

The COVID-19 pandemic required significant changes to REP's delivery methods and activities. NCCTRC staff were strongly involved in domestic pandemic responses and international AUSMAT deployments. Partner countries' health workers were stretched to prepare for and then manage responses to COVID-19 outbreaks. Along with international travel restrictions and quarantine requirements, these workforce pressures meant all face-to-face training ceased between March 2020–March 2022. REP funded activities were re-orientated away from the original short courses to focus on online academic courses, WHO EMT international and Pacific initiatives. A pilot hybrid generic instructor course was piloted in late 2021 but not delivered twice as planned. NCCTRC staff provided lectures, on-the-job training and developed or collated resources for delivery while on separately funded AUSMAT deployments and made these available on request.

Recommendation 1. Design the next phase program plan and document the theory of change collaboratively with DFAT and key stakeholders. This will guide the program priorities, focus and delivery for the next phase.

Consultations with Ministry of Health officials and hospital leaders and assessments of acute care capacities identified agreed priorities and informed annual plans and the NCCTRC led the appropriate adaptation to continue to meet partner needs. REP funding was almost entirely limited to specific travel related costs to conduct activities. REP planning and facilitation leveraged existing NCCTRC staff and administrative resources covered by other sources of funding. There was limited REP specific human resources, systems or leadership within NCCTRC and limited support from DFAT to establish program management systems.[21] The monitoring and evaluation approach was inadequate to collect, analysis and report required data to track progress on delivering priority activities or towards outcomes over years. There was limited evidence of reflection or learning to improve program effectiveness and planning. Reports did not provide enough of the information required in a timely manner. There was limited or no evidence that NCCTRC undertook risk assessments for the program (beyond security assessment for NCCTRC staff travelling).

The increasing geostrategic competition within the Indo-Pacific region has increased the need to coordinate activities with other health systems strengthening initiatives and implementing partners. It also highlights the need to align with and better reflect DFAT priorities, including collecting and clearly communicating the benefits of Australian investments through reporting to partner governments and communities.

[21] DFAT provided guidance and support to NCCTRC in relation to program and performance management including to develop the Regional Engagement Program Logic (2021/2022) in Appendix 4.

Recommendation 2. Develop and implement a monitoring, evaluation and learning framework (MELF) and systems to improve data collection, analysis and reporting to DFAT, including in-country and to partner countries, on contributions to their priorities.

Recommendation 3. Provide dedicated program management resources and leadership within NCCTRC and explore processes internally to ensure all NCCTRC engagements with partner countries are to the best extent possible, coordinated within the organisation.

Program implementation

Budget and schedule

Summary of findings

Until the pandemic, REP activities were implemented as intended in accordance with annual plans and budgets.

The ambitious plan for FY20 was substantially disrupted by COVID-19 with more than 60 percent of planned activities for FY20 deferred and only 45 percent expended that year.

The REP re-oriented its investment focus on postgraduate academic qualifications relevant to increasing the skills and abilities of clinicians to improve local health systems' ability to lead and deliver sustainable effective emergency responses in the final two years.

Uncertainty about when in-country training could resume and difficulty in accurately budgeting for remote delivery of activities led to underspends in the final two years. DFAT agreed in April 2022 to a 12 months' extension to 30 June 2023. NCCTRC anticipates all remaining funds will be expended by December 2022.

Until the COVID-19 pandemic outbreak in early 2020, REP activities were implemented as intended in accordance with annual plans and budgets. Noting that scheduling of training and visits were negotiated directly with partner countries.

In the first two financial years, the NCCTRC averaged 98 percent expenditure of the available budget. Foundational MIMMS and/or HMIMMS training was delivered in each of the eight priority countries. NCCTRC also conducted introductory and scoping missions in anticipation of the expansion of program activities to Kiribati, Nauru and Tuvalu during FY19 with training planned to begin in 2020.

The budget for FY20 was 19 percent greater than the average of the previous two years. This was due to approved expansion of activities to the three microstates and the increasing tempo of activities, including plans to substantially increase the number of regional MIMMS instructors to 48. In accordance with the sequential approach to the program, hospital disaster plan reviews were planned with six countries in this, the third year of the program.

The ambitious plan for FY20 was substantially disrupted by the onset of the COVID-19 pandemic. More than 60 percent of planned activities for the financial year were deferred. This included at least eight training courses planned for delivery in partner countries; separate tailored mentoring programs for the Dili Ambulance Service and Solomon Islands Emergency Medical Team (SOLMAT)'s logistics lead; a joint exercise to test hospital disaster plans and response preparedness with Bali's Sanglah Hospital, and invitations for program partners to participate in AUSMAT surgical team training in Darwin. This inevitably resulted in a substantial underspend in FY20 with only 45 percent of that year's budget expended.

In consultation with DFAT, NCCTRC substantially re-orientated REP activities in the subsequent two financial years to respond to both partner country needs and DFAT priorities. The re-orientation included support for postgraduate academic qualifications relevant to increasing the skills and abilities

of clinicians to improve local health systems' ability to lead and deliver sustainable effective emergency responses.

Investments in postgraduate academic courses accounted for 72 percent of expenditure across FY21 and FY22 (noting course fees have been paid to end 2022). REP provided financial and technical support to FNU to launch its first postgraduate Emergency Nursing course and scholarships for regional specialists to undertake the new Graduate Certificate and Master in Aeromedical Retrieval and Graduate Certificate in Health Emergency Preparation and Response through Charles Darwin University.

The REP increased international WHO EMT engagement as a proportion of the budget. The increase related to remote support for the WHO EMT Cox Bazar Rohingya Refugee camp COVID-19 surge deployment response.

The uncertainty about when in-country training could resume, and remote delivery of activities made estimating costs in the last two financial years difficult. These budgets were consistently underspent. In anticipation of remaining funds, DFAT agreed in April 2022 to a 12 months' extension to 30 June 2023. The equivalent of 11 percent of the total grant funds were rolled into FY23. NCCTRC anticipates all remaining funds will be expended by December 2022.

Recommendation 4. Develop multi-year country plans and establish systems and budgets to increase local control and visibility of Program engagement in each country to meet their priorities.

Recommendation 5. Develop an operational plan to guide program implementation to meet the strategic direction, design, coordination and MEL priorities and address risks.

Activity implementation

Summary of findings

Until the pandemic, REP activities were implemented as intended in accordance with the theory of change and annual plans. In the final two years, most activities were implemented as intended, noting that remote support was provided on request. The most significant progress was evident in Fiji.

Coordination and collaboration with DFAT in Canberra and in-country needs to continue to be prioritised. There are more opportunities to link with other Australian Government funded and national efforts to strengthen acute health care systems.

AUSMAT Team member training adheres to DFAT's Child Protection and Preventing Sexual Exploitation, Abuse and Harassment policies. However, there are some internal inconsistencies between training materials and NCCTRC's policy documents and Codes of Conduct and DFAT's policies.

Between August 2017–February 2020, REP core capacity building activities were being implemented as intended. Noting that partner country sometimes requested deferral of activities while they managed the impacts of natural disasters, national elections or other priorities.

The program was delivering activities in the sequential manner intended, to build sustainable local capacity. In general, REP started building local capacities in pre-hospital through MIMMS training before moving to Hospital MIMMS (HMIMMS) and then hospital disaster planning and review. In consultation with partners, tailored mentorship programs and targeted skills training could be provided at any time, to continue to build sustainable capacity to develop teams and deliver training locally.

MIMMS courses were delivered at least once, in each of the initial eight target countries by February 2020. HMIMMS was conducted in Fiji, with Timor-Leste doctors, in PNG and Samoa. REP assisted Fiji to develop and implement health emergency operation management approaches in each Health Division. In response to Samoa Government requests, REP provided MIMMS and HMIMMS training

and assisted to develop hospital disaster plans in preparation for the South Pacific Games hosted in July 2019. The FY20 plan included plans to support development and review of hospital disaster plans in six countries.

Tailored mentorship programs to build the capability of Timor-Leste's ambulance service and to build Bali Mandara Hospital's emergency response began in 2017. Both were subsequently deferred at the partners' request.

Table 2: Progress of program delivery below summarises activities delivered in each of the 11 partner countries to end February 2020.

Table 2 Progress of program delivery to February 2020

Steps	Program delivery in each country
Assess and establish	**Kiribati, Nauru, Tuvalu:** assessed acute care capacities, identified potential partners and preliminary priority activities to start in early 2020. 2 Kiribati and 1 Tuvalu clinicians exposed to MIMMS training and Nauruan participation in EMT Coordination Cell training.
Implement	**Solomon Islands:** MIMMS training conducted in Nov 2019. Participated in EMT Coordination Cell training. NCCTRC provided technical advice to support establishment and deployment of SOLMAT. **Vanuatu:** MIMMS conducted in Port Vila and Northern Province hospitals trained 3 local instructors. Participated in EMT Coordination Cell training. NCCTRC provided targeted remote area trauma and surgical training and technical advice to support establishment of the VanMAT. **Timor-Leste:** conducted MIMMS and Hospital MIMMS with 2 local instructors, hospital planning, remote area trauma training and targeted mentoring in Darwin to support the establishment of the Ambulance Service. Participated in EMT Coordination Cell training.
Develop	**Bali, Indonesia:** Review and testing of hospital plan in 2017, conducted MIMMS training with 3 local instructors. Beginning engagement with 2nd referral hospital. **Tonga:** conducted 2 each of MIMMS and trauma team trainings and 8 local instructors including a Course Coordinator. Instructors delivered MIMMS training in Solomon Islands. Targeted clinical skills development through surgical and trauma team training. Participated in EMT Coordination Cell training. **PNG and Samoa:** conducted MIMMS and Hospital MIMMS and participated in EMT Coordination Cell training. Supported Samoa develop hospital disaster plans ahead of the South Pacific Games and via the AUSMAT measles deployment, the establishment of health emergency management coordination.
Consolidate	**Fiji:** conducted 2 of each MIMMS and Hospital MIMMS with 13 local instructors who delivered MIMMS Team Member training with limited Australian oversight by Sept 2018. Participated in EMT Coordination Cell training. Fiji is represented on the Australian MIMMS Working Group and Course Director and instructors delivered MIMMS training in other Pacific countries. Hospital disaster plans reviewed; health emergency operations strengthened through 2 HEOC trainings across divisions. NCCTRC providing ongoing technical support to FEMAT, which WHO verified for international deployment in 2019.

As Table 2 above shows the most significant progress was evident in Fiji. This is assessed as due to:

- the experience of Tropical Cyclone Winston and local commitment to improving health system preparedness and responses to future disasters;
- strong pre-existing personal networks between NCCTRC staff and Fiji clinicians developed through professional exchanges, training and AUSMAT deployments and in support of the establishment and WHO verification of FEMAT;
- experiences within the first 18 months of mass casualty events involving each of the three main hospitals and emergency services and seeing the benefits of applying MIMMS processes and concepts;

- the promotion of local MIMMS instructors into leadership roles and their continuing commitment to REP's objectives and approach in these new roles; and
- delivery of eight foundational short courses since 2017 and development of an independent local instructor capacity which reduced the reliance on NCCTRC staff availability and the cost of courses.[22]

This combination of pre-existing capacity, local demand and pace of delivery was not duplicated in any other country.

The number of MIMMS instructors rose quickly from 13 to 29 within the first year. The COVID-19 pandemic halted the plan to develop the pool of instructors from each country. No new instructors were trained between July 2018 and November 2021. Almost all informants requested reinvigoration of efforts to train and mentor local MIMMS instructors to enable more countries to be able to deliver the training and build local teams independently. This was a key strategy to build local sustainability of the core principles among local leaders across the region. It also increases the cost-effectiveness of delivering training by reducing international travel associated costs. Potential instructor candidates had been identified in earlier courses from eight countries.

Fiji has built its MIMMS Faculty to be able to deliver courses independently and has provided instructors on many other courses within partner countries.[23] Many informants spoke of the benefits of sharing learnings across the region. With Australian support Fiji has the capacity and willingness to assist other Pacific countries.

Recommendation 6. Build the capacity of regional disaster response and Fiji as a training hub, particularly for MIMMS and HMIMMS training. See also Recommendation 15 in relation to continuing to build FEMAT capability as a regional response partner.

All plans for in-country delivered training since March 2020 have been subject to NCCTRC staff and partner staff availability and ability to travel internationally. This resulted in more uncertainty in activity planning. In this context, most activities were implemented in accordance with annual plans and budgets. The first in-country REP training resumed in Nauru in April 2022, quickly followed by training in Fiji and Timor-Leste.

While REP in-country training was halted, operational and clinical capacity building support was provided on a 'just in time' basis during the separately funded AUSMAT deployments. The NCCTRC team collated and created educational resources to support deployments. These were made available to other regional contacts on request including via a Google file share. Some of these resources have been translated into Pidgin, Motu and Tetum. Some, but not all, of these resources are accessible through NCCTRC and NurseTOK Facebook pages and NCCTRC website. Informants confirm that NCCTRC staff responded quickly to requests for clinical and operational support and advice in relation to COVID-19 infection prevention control and patient management.

Recommendation 7. Consolidate online resources and systematically remind contacts what's available.

To further strengthen skills development based on needs identified through a SPC survey and during AUSMAT deployments, NCCTRC partnered with SPC to develop and deliver a new short course focused on COVID-19 and critical care clinical skills. NCCTRC staff went on to develop two more

[22] NCCTRC delivered two MIMMS trainings in Fiji in 2017 prior to the start of the Program.

[23] The term 'Faculty' is used in the context of MIMMS and HMIMMS. It refers to instructors. There are different levels of instructors within the Faculty and specific roles and responsibilities of Course Directors and Course Coordinators. The term 'instructors' has been used throughout this evaluation for simplicity. It is used interchangeably with 'Faculty'.

courses: Essentials of Critical Care and Rehabilitation in Emergencies and Disaster which were piloted in early July 2022 in Timor-Leste.[24]

There is good evidence that REP involves the right people from key institutions in many partner countries and that relationships with many individuals, particularly MIMMS instructors are based on understanding and respect. However, coordination and collaboration with DFAT in Canberra and in-country needs to continue to be prioritised. There are more opportunities to link with other Australian Government funded and national efforts to strengthen acute health care systems in some REP partner countries. There are also opportunities to more systematically connect all NCCTRC engagements with countries and beneficiaries.

Recommendation 3. Provide dedicated program management resources and leadership within NCCTRC and explore processes internally to ensure all NCCTRC engagements with partner countries are to the best extent possible, coordinated within the organisation.

AUSMAT Team member training includes modules on vulnerable populations and cross-cultural awareness that include behavioural and reporting expectations that adhere to DFAT's Child Protection and Preventing Sexual Exploitation, Abuse and Harassment policies. However, there are some internal inconsistencies between AUSMAT training materials and NCCTRC policy documents and the Codes of Conduct and DFAT's policies. There are opportunities to review NCCTRC policies and codes of conducts and ensure that they are understood to apply to all DFAT-funded activities, including considering the risks of these events and how they will be mitigated.

Recommendation 8. Strengthen NCCTRC's Child Protection and Preventing Sexual Exploitation, Abuse and Harassment approach and policies.

The REP has been developing women as leaders in emergency preparedness decision-making and capabilities. Gender equality principles guide identification of potential MIMMS candidates and scholarship awardees.[25] There are currently 11 women (38 percent) MIMMS instructors, including one of two Fiji Course Coordinators. Over half (52 percent) of the estimated 1,035 program participants have been women.[26] Given the feminised nature of the nursing profession, it is not surprising that 63 percent of participants in the FNU postgraduate emergency nursing course are women. These qualifications may lead to promotions and pay-rises, if so, it will contribute to these women's economic opportunities and empowerment. There is no evidence that risks relating to gender-based violence for participants are routinely considered during the planning and delivering of REP-funded activities.

The new short course on Rehabilitation in Disasters and Emergencies is designed to promote the role and increase the confidence of physiotherapist and Allied Health staff in planning for and mitigation of the impact of disasters on those with physical impairments. NCCTRC's involvement in the WHO Technical Working Group for Spinal Cord Injuries and Rehabilitation is also strengthening the consideration of people with disabilities in refining minimum standards and treatments. These issues were not covered in the WHO EMT webinar series.

Recommendation 9. Continue to strengthen the involvement of rehabilitation professionals in emergency preparedness and response.

NCCTRC has been actively engaged in developing and upgrading global minimum standards for EMTs. NCCTRC is Chair of the WHO Global EMT Initiative's Strategic Advisory Group and was the

[24] See Table 1, for description of training courses and target audiences.

[25] Two of the four women scholars subsequently withdrew from the courses in part due to the workplace pressures relating to COVID responses and serious internet connectivity issues.

[26] This estimate includes training provided up to 4 July 2022. Efforts have been made to reduce duplication, but it is possible that some people participated in more than one activity.

inaugural Chair of the Western Pacific Region group (2017–2019).[27] The program supports NCCTRC as members of Technical Working Groups addressing clinical, operational and policy gaps including in relation to: National EMT Capacity, Verification and Mentoring Program; Spinal Cord Injuries; Rehabilitation; Highly Infectious Diseases sub-group on Rehabilitation; and EMT Minimum Datasets. An updated Classification and Minimum Standards of Emergency Medical Teams was published in 2021 which included the updated minimum standards relating to Burns; and Maternal, Newborn and Child Health in which NCCTRC were involved as Technical Working Group members.

Program reach

Summary of findings

There is good evidence that REP involves the right people from key institutions in many partner countries across both hospital and pre-hospital settings and people in leadership positions or taking on leading roles in crisis situations.

The FNU postgraduate Emergency Nursing degrees are addressing the need for specialist nursing skills. The sustainability of the course is at risk without several more years of financial and lecturing support to embed the course in the region.

The NurseTOK webinars may have greater impact if they are directly connected to local continuing nursing education programs.

Plans to support the development of Fiji's FEMAT as a 'regional response partner for AUSMAT' via mentorship and training are ongoing and appreciated. They have been supported as well through AUSMAT deployments, equipment and other resources.

The FEMAT leadership is very supportive of continued NCCTRC support to develop it as a 'regional response partner for AUSMAT'.

There is good evidence that REP involves the right people from key institutions in many partner countries. In Fiji there is strong evidence but the pace and reach of activities in other countries is variable. At least one in-country activity has been delivered in nine of the 11 countries. Kiribati has been reached through the virtual COVID-19 and Critical Care course and has a student enrolled in the Diploma of Emergency Nursing. It is estimated that 1,035 people, (540 women and 495 men) have participated in REP activities.[28]

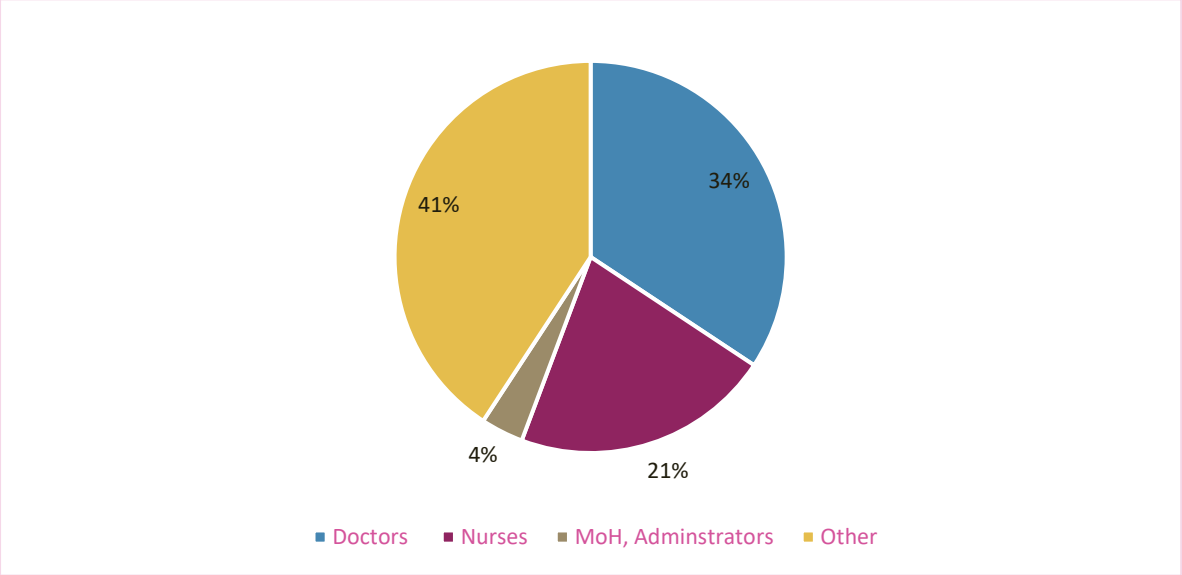
The program has successfully identified leaders who have taken on leadership roles, in times of crisis and within local health systems. National policy advocacy is left to local REP focal points and MIMMS instructors. This has been most successful where REP contacts have moved into leadership positions, as has been the case particularly in Fiji.

Substantial numbers of other professions (41 percent) have been involved in MIMMS training. Often these training sessions are the first time for clinicians and responders to train together. These connections have been demonstrated to strengthen the pre-hospital trauma responses particularly inter-agency communication and understanding of roles and responsibilities. MIMMS training has reached 365 participants (126 women and 239 men). See Figure 1: MIMMS training participants below for the breakdown by professions engaged. 'Other' includes paramedics, ambulance officers, Red Cross and other volunteer first responders, fire, police, logistics and defence personnel. In Tonga, it also includes personnel from the Airport.

[27] The Strategic Advisory Group has oversight over policy and strategic aspects at the global level.

[28] This estimate includes training provided up to 4 July 2022. Efforts have been made to reduce duplication, but it is possible that some people participated in more than one activity.

Figure 1: MIMMS training participants.



Key leaders, clinicians and/or management from key hospitals in seven of the initial eight partner countries' have been involved in the program.[29] MIMMS and/or HMIMMS has been delivered in each of the initial eight priority countries including in each of Fiji's three divisions, and Vanuatu's Northern Provincial Hospital. MIMMS and HMIMMS training delivered in Port Moresby involved clinicians from across many of its 22 provinces.

Each of Fiji's Health Divisions are 'doing exactly the HEOC approach'. Helping them to function effectively in times of crisis and disaster. Health Emergency Operation Centre workshops with all divisions in 2017 and 2018 provided guidance on information management and command and control structures to coordinate national health emergency responses.

Recommendation 10. Continue to promote local leadership and delivery of foundational MIMMS and HMIMMS courses and as a regional network.

The REP provided financial and technical support to Fiji National University to launch its Diploma of Emergency Nursing in 2021. Eight of the nine graduates are on track to complete their Master of Emergency Nursing by the end of 2022.[30] The second cohort of 10 Diploma students started in 2022. Only two nurses who initially enrolled in the course have withdrawn or deferred. This attrition rate, less than 10 percent, compares favourably to the 41 percent attrition of Pacific nurses from the Australian College of Nursing's online Graduate Certificate in Critical Care Nursing which also began in 2021.[31]

Ideally, more nurses from across the region will be able to attend. There have been two to date. Students work full-time while studying. However, nurses from the region currently need to live in Fiji for the first 12-months while they complete the Diploma course. Nurses from the Cook Islands and Nauru were not released to take up the course due to limited national nursing workforce. The course fees are high relative to nursing salaries. The REP scholarships do not cover living expenses.

The NCCTRC is supporting FNU to expand the stream of nursing specialisation and explore alternative approaches to clinical practice assessment to try and reduce the course fees and time

[29] In Indonesia, the Program worked with partners in Bali. The only country where the main hospital has not been directly involved is PNG.

[30] One Diploma graduate is completing the Master on a part-time basis.

[31] Australian College of Nursing, September 2022, 'ACN Partnering Pacific Island Nations to Advance Critical Care Nursing Education'. Meeting document for the 3rd Pacific Heads of Nursing and Midwifery meeting, Fiji 1-2 September 2022. Available from: https://phd.spc.int/meeting-documents.

away for regional students. All informed interviewees noted that the course needs several more years of financial and lecturing support to ensure that there is local capacity to maintain delivery and to embed the course within the region.

Recommendation 11. Continue support to FNU to effectively deliver and broaden the postgraduate nursing qualifications to reduce the cost and increase regional access to the course. Continue to support partial scholarships until the fees can be reduced.

The creation in 2022 of the NurseTOK Facebook group and monthly webinars targets nursing skills, aimed to increase networking and learning opportunities for nurses across the region. In the first five months 89 unique users participated in the webinars, of these 18 percent participated in more than one webinar. Identified participants were from Fiji, Nauru, Tonga, Solomon Islands and PNG. Invitations to webinars are issued through the NCCTRC and NurseTOK Facebook pages and through NCCTRC staff emails to personal and Ministry of Health contacts. Interviewees were supportive of persisting with online nursing training. To add value to these webinars, interviewees suggested directly connecting with nursing educators who might be able to make webinars available through the hospital and/or as part of local continuing education programs. This may also facilitate more active engagement as a national group rather than individuals.

Recommendation 12. Maintain focus on capacity building, service delivery strengthening and improving the quality of clinical and nursing care services.

Recommendation 13. Continue to foster a network of nurses across the region connecting more systematically to national nursing educators and local programs.

Interviewees agreed that increasing the systematic approach to retrievals across the region was very relevant. Doctors from four countries are being supported to take up postgraduate qualifications in courses offered by Charles Darwin University that provide sound foundations, knowledge and skills to introduce systems and processes to improve patient retrieval and emergency preparation and response. The fact that the course is delivered online means that clinicians are not ‘lost’ to their workplaces.

Three of the four countries prioritised for REP support – namely Tonga, Vanuatu and Solomon Islands have successfully established a national EMT. NCCTRC staff and AUSMAT members have provided technical advice, mentoring and other support including sharing examples of standard operating procedures and what experiences have helped shape them. The FEMAT leadership is appreciative and very supportive of plans to support the development of Fiji’s FEMAT as a ‘regional response partner for AUSMAT’. For example, in October 2021, they had offered to deploy to support PNG’s resurgent COVID-19 outbreak. Requests for assistance included mentorship, training exchanges, joint exercising opportunities as well as continued support to review and improve standard operating procedures procure equipment and other resources.

Recommendation 14. Explore exchanges as a capacity building approach. Exchanges to Australia help partners visualise what might be possible and on-the-job engagement quickly demonstrates and embeds improved clinical practices.

Recommendation 15. Continue to build the capacity and capability of FEMAT as a regional disaster response partner for other Pacific Island countries. See also Recommendation 6 in relation to building Fiji as a regional training hub for regional disaster response.

Progress towards outcomes

The evaluation found that the REP is on track to achieve its planned outcomes for beneficiaries despite the implementation challenges identified in the sections above. In Fiji, the REP has delivered outcomes in excess of those planned for its beneficiaries. There is clear evidence that the REP builds the capacity of partners and beneficiaries. Outcomes and results of the beneficiaries' engagement with the REP are evidenced in organisational practices and structures in all the counties examined by this evaluation, though to a variable extent.

The evaluation findings support the validity of the three key assumptions underpinning the program theory of change outlined in the Regional Engagement Program Logic (2021/2022).[32]

Assumption 1: Clinicians who attend a training session will change their clinical practice as a result of the training and mentorship.

The evaluation found clear evidence that many clinicians who attended REP training have changed their clinical practice because of the training and mentorship. This is particularly the case with MIMMS and HMIMMS when teams of clinicians working together attend training together and combined with targeted clinical skills training and mentoring. The evaluation found strong evidence that trained clinicians have led and coordinated improved practices and procedures for implementation within their local health systems. The evaluation also found that in countries that have received a combination of training and mentoring, clinicians working in health hospitals and staff within Ministries of Health have enhanced capacity to provide effective pre-hospital, trauma, critical care and rehabilitation services to meet routine and exceptional demands.

Assumption 2: Trained clinicians will lead and coordinate improved practices and procedures for implementation within their local health system.

The REP has increased skills and abilities within the Indo-Pacific region for local health systems to lead and deliver sustainable services and respond effectively to emergency situations in coordination with other national and international partners. The evaluation found strong evidence that trained clinicians have led and coordinated improved practices and procedures for implementation within their local health systems.

Assumption 3: Capacity of health facilities for pre-hospital, trauma, critical care and rehabilitation will be enhanced to meet routine and exceptional demands.

People involved in REP, particularly those mentored to become MIMMS instructors, have taken on leadership roles within their country's developing emergency responses and held leadership roles in times of crisis. This included leaders within hospitals, individuals who went on to form search and rescue non-government organisations, and people who took on leadership roles in establishing national EMTs, and in Timor-Leste the Ambulance Service.

[32] See Appendix 4: Regional Engagement Program Logic (2021/2022).

The progress towards outcomes findings are organised to address the immediate and short-term (1-2 years) outcomes sought in the program logic diagram for the Regional Engagement Program (2021/2022) shown in Table 3.[33] [34] While each of the immediate outcomes focuses on activities, progress toward short-term outcomes may result from the combination of multiple activities.

Table 3 Outcomes assessed

Immediate outcomes	Short-term outcomes (1–2 years)
1. MIMMS - improved systems and operating structure implemented for emergency responses 2a. Short courses – participants have increased knowledge and skills in critical care and rehabilitation 2b. Academic courses - participants have increased knowledge and skills in emergency care and critical care 3. Mentorship – participant empowered to improve the system they operate in 4. EMT – increased knowledge about requirements and plan towards EMT development	1a. Interagency capacity building and disaster planning in both pre- and hospital settings 1b. Local capacity to deliver MIMMS training developed 1c. MIMMS systems implemented in response to emergency situations 2. Improved clinical skills shared in teams and applied consistently 4. EMT capabilities advance and progressing through WHO certification

Immediate outcome 1. MIMMS - improved systems and operating structure implemented for emergency responses

Summary of findings

HMIMMS training has increased coordination and preparedness in hospital departments to deal with trauma and surge health emergencies.

MIMMS principles were applied in pre-hospital and hospital preparations and health crisis management coordination.

HMIMMS and other NCCTRC short course training has increased coordination and preparedness in hospital departments to deal with trauma and surge health emergencies. In Suva's hospital a Hospital Disaster Management Committee was established immediately following the HMIMMS training in 2017. Health Emergency Operation Centre workshops with all divisions in Fiji in 2017 and 2018 provided guidance on information management and command and control structures to coordinate national health emergency responses. Each of Fiji's Health Divisions were described as 'doing exactly the HEOC approach'.

MIMMS and other NCCTRC training have enabled key clinicians to confidently coordinate national responses in Vanuatu and to respond to emergencies in a timely manner. The training and mentoring have been applied in establishing Vanuatu's EMT (VanMAT) and provincial medical teams.

[33] Ibid.

[34] Some of the outcomes shown in the REP Program logic (2021/2022) were outside the scope of this evaluation and were not assessed. We did not separately assess the short-term outcome connected to mentorship. We decided that the short-term outcome '3. Health systems will have capacity to function effectively especially in response to emergencies' was already covered in the other short-term outcomes.

We have the confidence to be proactive and know the right things to do. We were able to set up a hospital emergency operational centre, link with police, fire, and maritime services. [Because of MIMMS training we all] understand the language used by the National Emergency Disaster Office and understand how medical and non-medical teams fit into the emergency response. (Vanuatu clinician).

Many informants reported how new skills built on the foundations of MIMMS concepts were applied to improve and manage coordinated responses at the scene of mass casualty incidents. Examples incorporating this immediate outcome are described in short-term outcomes, especially 1a; 1c; and short-term outcome 2.

Short-term outcome 1a. Interagency capacity built and disaster planning undertaken in pre- and hospital settings

Summary of findings

Senior managers who had participated in MIMMS Team Member training have increased understanding of how to develop disaster plans and of their roles and responsibilities in relation to the plan.

Interagency participation in training built stronger networks and relationships that helped organise coordinated responses to emergencies.

MIMMS principles were applied in disaster planning related to mass events such as the Pacific Games in Samoa.

Participants regard MIMMS highly as a program that can be adapted to Pacific contexts and ways of working. It provides an 'environment, structure and a language' for medical and non-medical teams to work together to coordinate and manage disasters and mass casualties. Across the board informants said that participating in training together built stronger networks and relationships that helped organise coordinated responses. Senior managers who participated in the 1-day MIMMS Team Member training increased their knowledge of the purpose of disaster plans and of their roles and responsibilities in relation to the plan.

… people who were not main players in terms of [coordination] who participated in the short form of MIMMS training … were able to understand when people put out a disaster plan. This is what our roles are supposed to be. This is what we should do in a plan and if they knew that something was not right, they were able to quickly respond and maybe give a better direction and advice. (Fijian informant)

Interviewees consistently identified the opportunity to meet and develop relationships with other emergency responders during training provided positive benefits to later coordination. A key benefit was the shared understanding of roles and responsibilities during crisis responses.

In Samoa, MIMMS training conducted in 2018 and 2019 was the first time Red Cross, fire service and hospital staff had trained together. The agencies developed 'a shared capability' across the pre-hospital emergency response. The experience of learning and practicing together was reported to be invaluable, and that collaboration continued after the course.

In Tonga, participation in MIMMS training has increased coordination and communication among hospital teams, police, fire and emergency services and first responders. It has improved planning and triage during mass emergencies. Informants said that the collaborative approach was helpful in implementing Tonga's National Emergency Management Committee COVID-19 response. The Tongan military participated in MIMMS training for the first time in 2019 and found it to be 'very relevant' for their work. They requested ongoing engagement to improve interoperability across Tongan responses and continue to build integrated national capacity to respond to emergencies.

> *The knowledge of different roles and responsibilities built during non-emergency times was able to be quickly reactivated in times of crisis. (Tongan clinician).*

In Fiji, the seniority of the fire, police, ambulance and military services personnel who participated in MIMMS training was reported as a significant factor in effective disaster planning. Participants in senior roles had the authority to make changes in their organisations by applying the MIMMS principles.

> *Before these leaders did the training, coordination in the pre-hospital system was basically non-existent. It's very important that recognised individuals who can influence change in their organisations [undertook training] and for them to be present when applying the MIMMS principles. We were able to identify emergency services that hadn't done the MIMMS training, and we could recommend they do the training which would help them function better.*
>
> *This year we were able to get a lot of non-health professionals who were influential in their positions, you could see they had continued to build that hype with other emergency services. Now we can stay in touch to discuss policy reform or how to get the MIMMS training embedded into their services. (Fijian informant)*

Interviewees from Fiji and Timor-Leste described their approach to strategically targeting whom to invite to MIMMS training to develop capacity of teams as well as leadership support in different areas including universities and hospital administrations. Timor-Leste MIMMS instructors invited key hospital and pre-hospital staff and representatives from each health district to the 2017 MIMMS Team Member training to ensure all parts of the health service developed a common plan and common communication strategy in the case of a major incident or disaster.

> *Part of our [MIMMS] selection process is to really pick key people that need to be identified by the different hospital services. When we send invitations out, we advise what kind of key people that we want like … We want senior managers from this position because we're looking not only for them to contribute to policies, but also to understand what people, how people work at the clinical operational points. So, they understand everybody's roles. (Fijian informant)*

The MIMMS principles were applied in planning and hospital preparations for Samoa's South Pacific Games in 2019. The Samoan Ministry of Health requested Fijian and NCCTRC MIMMS instructors to return and assist with medical planning and support during the Pacific Games.

Short-term outcome 1b. Local capacity to deliver MIMMS training developed

Summary of findings

The number of MIMMS instructors in the region more than doubled from 13 (five women and eight men) at the start of REP to 29 (11 women and 18 men).

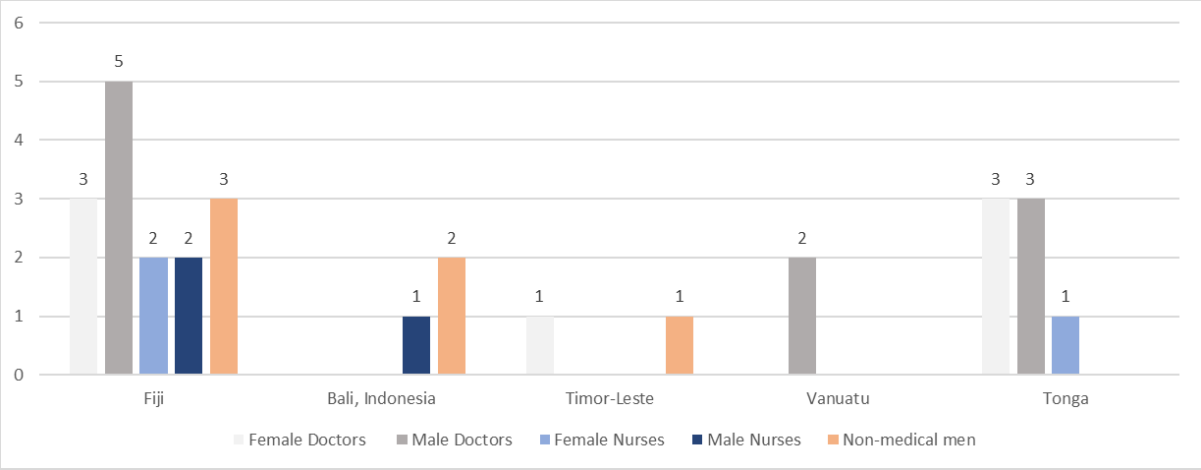
Regional instructors have delivered 17 of 20 MIMMS and HMIMMS training in their own, and in other participating countries since 2017.

The collaborative approach to delivering MIMMs has accelerated the accreditation of local instructors and supported the sharing of learnings between countries.

Training in Fiji has been coordinated and delivered by local instructors with minimal Australian instructor involvement since 2018.

The number of MIMMS instructors in the region more than doubled from 13 (five women and eight men) at the start of REP to its current 29 (11 women and 18 men).[35] Figure 2 shows the professional stream and gender of the instructors from each country.

Figure 2: Current MIMMS Regional Faculty by gender and professional stream



Regional instructors have delivered 17 of 20 MIMMS and HMIMMS training in their own, and in other participating countries since 2017. By 2020, instructors from Fiji and Tonga along with local instructors had worked with Australian instructors to deliver MIMMS training in Vanuatu, Samoa, Solomon Islands and PNG. This collaborative approach accelerated the accreditation of local instructors and supported the sharing of learnings between countries. A Fijian Course Director led the MIMMS training in PNG in 2018. This was the first MIMMS course run independently by a regional Course Director. Two local instructors and two Fijian instructors facilitated the MIMMS and HMIMMS training sessions in Timor-Leste in June 2022. Timor-Leste instructors and participants identified the participation of the Fijian instructors as a highlight of the training.

[35] There was a hiatus in instructor courses between July 2018 to November 2021. Three instructors accredited in 2018, are no longer instructors. Three new instructors from Fiji were accredited through the course in November 2021.

[Participants] appreciated the engagement of the Fiji instructors and the opportunity provided to build networks between countries. The Fijian instructors shared experiences of working in resource constrained contexts and of processes involved in establishing FEMAT with a similar level of resources. (Timor-Leste informant)

Training in Fiji has been coordinated and delivered by local instructors with minimal Australian instructor involvement since 2018. In 2022, Fiji delivered training on its own with a Fijian Course director, coordinator and instructors. The Fiji instructors adapted MIMMS training resources to meet the local context and developed some low-cost resources that can be used in other Pacific countries. For example, cardboard 'grey ladies' were developed for the fieldwork exercise. The Fijian Faculty includes instructors from a cross section of emergency service agencies.

Establishing a cross agency MIMMS Faculty

Six Fijian Faculty members are in the process of completing the requirements for full instructorship. They include a firefighter and a Fiji International Conservation Organisation scientist who is also a first responder. A Navy Search and Rescue Operations Information and Communications Technology consultant is one of two Course Directors. Two emergency nurses are Course Coordinators. A police inspector was identified during the May 2022 MIMMS training to join the Fiji Faculty. The Fiji MIMMS Faculty is building the team of instructors from diverse fields to strengthen and sustain its emergency response capacity.

Potential instructors have been identified in each course from which to draw when instructor training can resume. Almost all informants requested the reinvigoration of efforts to train and mentor local MIMMS instructors to enable more countries to be able to deliver the training and build local teams independently.

Short-term outcome 1c. MIMMS systems implemented in response to emergency situations

Summary of findings

MIMMS instructors have taken on leadership roles in developing their country's emergency response capabilities. They have provided leadership in times of crisis.

MIMMS principles were used to coordinate clinical and operational responses to large scale emergencies in Fiji, Indonesia, Vanuatu and Timor-Leste.

Interviewees provided many examples of people involved in REP, particularly those mentored to become MIMMS instructors, who have taken on leadership roles developing their country's emergency responses and who provided leadership in times of crisis. Leadership examples include clinicians working within hospital Emergency Departments, people who went on to form non-government search and rescue organisations, and people who took on leadership roles in establishing national EMTs. In Timor-Leste, MIMMS instructors helped establish the independent national ambulance service.

In Fiji, the MIMMS principles were used to coordinate clinical and operational responses to emergencies. These included Tropical Cyclone Winston in 2016, a fire at Lautoka hospital in December 2017, a fire at the Labasa sugar mill in 2018, a school bus accident in Sigatoka in 2019, and most recently in response to COVID-19. According to informants, applying MIMMS and HMIMMS principles resulted in responses that were quicker, better organised and better coordinated. Fijian informants outlined their improved responses in the case story below.

Ways MIMMS and HMIMMS training strengthened Fiji's emergency response capabilities

'The response to the Lautoka hospital fire in 2017 was a success. By this time, we were building our Faculty. We needed help to evacuate our patients and reset the hospital in an outside environment. We had people at different levels of commanding. We had people coordinating patients that were coming out from the hospital. We had people transporting patients, who were discharging at the same time during the night with help of police. We had our (all female) commanders – the Medical Superintendent, a hospital administrator and a nursing director and our senior ICU [Intensive Care Unit] consultant coordinating critical care. We had another nurse (who's actually an emergency nurse) coordinating emergency services out of the hospital setting. This was success in the training, like the principles that we were taught. We were applying the principles we learnt during the training at the clinical level [and] at the operational level as well.'

'There was an accident at Fiji Sugar Corporation mill soon after the MIMMS training. There was no panic. [The] hospital safely managed to treat everyone who was injured. Everyone knew what roles were required and there was good communication backwards and forwards.'

'[We] had another major 'special' incident in November 2019. It was a bus accident in Nabou, Sigatoka which included about 25 victims, the majority of them were high school children. It's classified as a 'special incident' because kids' needs are different. The training that we received helped us prepare for this kind of incident - especially with proper communication, command and control. Keeping the family up to date with information, coordinating other services…. [The training] really helped us, you know, deliver our services, and activate other specialty paediatric surgeons within the hospital.'

'And then COVID happened and now the people that are in different levels of senior management are people who had some form of training of disaster training that have gone through this program... they were able to understand when people put out a disaster plan. This is what our roles are supposed to be. This is what we should do in a plan and if they know that something is not right, they are able to quickly critique and maybe give a better direction and advice.'

In Indonesia, MIMMS principles were applied in response to the Lombok earthquake in August 2018. The medical team deployed by Sanglah Hospital to provide immediate aftermath response included a senior MIMMS instructor. The team set up a casualty clearing station at the severely damaged Lombok Hospital site within 24 hours of impact. Using MIMMS principles, the team rapidly and efficiently established triage and transport referral systems for all severely injured and existing patients.

In Bali, senior nursing staff, including a MIMMS instructor, were supported by the REP team to adapt their health service systems to meet COVID-19 related challenges and prepare and manage increased demands. This resulted in safe hospital care that was appropriately resourced within local constraints and was consistent with MIMMS principles.

In Vanuatu, the Ambae volcanic eruptions in July and August 2018 occurred soon after MIMMS training for Port Vila Hospital. The National EMT Coordinator and senior MIMMS instructor applied MIMMS principles to set up the casualty clearing station at the port, rapidly established triage and transport referral systems for vulnerable people including those with chronic disease and pregnant women.

In Timor-Leste, the MIMMS principles were applied during the April 2021 floods. A MIMMS instructor, at the time managing a medical warehouse, guided the evacuation of staff and salvaging of essential medical equipment, supplies, personal protective equipment (PPE) and oxygen plant.

Immediate outcome 2a. Short course participants have increased knowledge and skills in critical care and rehabilitation

Summary of findings

Over 170 nurses in Fiji, Kiribati, Nauru, Vanuatu and Tokelau attended the virtual COVID-19 and Critical Care training course between November 2020–November 2022, increasing the skills of nurses in the management of patients with COVID-19 and critical care. Standard operating procedures to support the response to COVID-19 have been developed in each of these countries.

Three new short courses were delivered to meet identified partner needs. Participants appreciated gaining new skills and knowledge relevant to disasters and emergencies.

NurseTOK webinars are being refined to enhance nurses' participation and meet learning needs.

This section focuses on the three new short courses, COVID-19 and Critical Care, Essentials of Critical Care (ECC) and Rehabilitation in Disaster and Emergencies (RIDE) that were developed by NCCTRC staff in 2020 and 2022.[36] More detail focused on trauma-focused and clinical skills short courses is included in section responding to short-term outcome 2.

The COVID-19 and Critical Care training course was developed by NCCTRC as part of the partnership with SPC and initially focused on ensuring that nurses and doctors from Fiji, Nauru and Kiribati could confidently use ventilators donated by the Government of United States. SPC and NCCTRC delivered the course virtually to more than 170 nurses in Fiji, Kiribati, Nauru, Vanuatu and Tokelau between November 2020-November 2021, increasing the skills of nurses in the management of patients with COVID-19 and critical care. In collaboration with SPC and the Nauru Ministry of Health, the REP delivered the course in Nauru April 2022. End of course evaluations from Nauru showed a high level of satisfaction with the course. Participants indicated the course improved their knowledge on wearing PPE, monitoring patients and how to treat patients holistically and their confidence in their professional ability.

Through the course, and in consultation with local clinical care specialists, standard operating procedures to support the response to COVID-19 have been developed in Fiji, Kiribati, Nauru, Vanuatu and Tokelau. To further support nurses to apply their learning into practice, mentoring programs have been set up in partnership with SPC in Fiji and Nauru.[37]

The ECC and RIDE courses were piloted in Timor-Leste in early July 2022. Although it is too early to assess progress towards outcomes, the course evaluations showed a high level of satisfaction with the courses. ECC participants found the practical component of the training very useful. Participants in the RIDE pilot course included rehabilitation professionals working in rehabilitation settings who are

[36] See Table 1: Description of training courses and target groups for detail on these courses.

[37] NCCTRC, September 2021, 'Sustaining critical care capacity in the Pacific'. Paper prepared for the Pacific Heads of Nursing and Midwifery meeting. Presented 2 September 2022. Available from: https://phd.spc.int/sites/default/files/p-related-files/2022-08/PHONM7.4 Sustain Critical Care - F.pdf

well positioned to support responses to major incidents, disasters and health emergencies. Participants enjoyed the practical content and interactive nature of the course delivery and appreciated gaining new skills and knowledge relevant to disasters and emergencies.

The NurseTOK virtual community of practice was launched in January 2022 and five NurseTOK webinars were conducted from January to June 2022. Webinar topics and resources covered Asthma, Oxygen titration, Covid Care, Patient Observations and Traumatic Brain Injury. Participants reported that the topics were useful, and the webinars were valuable for connecting nurses with peers in other countries. The Facebook group has 439 members by August 2022, but has facilitated limited engagement with members to date.

NurseTOK is still in its infancy and is evolving based on feedback and experience. The emergency nursing community of practice is small and developing. Several informants stated that cultural factors in place in the Pacific mean that virtual training and networking activities work best when relationships are already established. Where there is not a strong existing community of practice, as is the case for nurses, more targeted strategies are needed.

Immediate outcome 2b. Academic course participants have increased knowledge and skills in emergency care and critical care

Fiji National University, Diploma and Master of Emergency Nursing

Summary of findings

Master of Emergency Nursing Students have increased communication and assertiveness skills and confidence to lead as a result of their study.

Students have increased access to professional development opportunities including participation in MIMMS training usually limited to senior hospital staff.

Students have received more professional recognition of their ability and knowledge as specialists in their field, leading to opportunities for more responsibility and promotion.

They have established relationships and strengthened their networks with nurses working in similar settings.

The Fiji National University (FNU) Diploma of Emergency Nursing and Master of Emergency Nursing course is the first of its kind in the Pacific. The course contributes to Fiji's national efforts to strengthen its health systems and has the potential to contribute to strengthening regional health systems. The program introduces a new delivery model to FNU. It was designed to meet clinical needs and conditions and enables students to work and study concurrently. Support from the NCCTRC enabled the program to 'get off the ground'. It was reported that NCCTRC staff provide 'clinical credibility to the program' by teaching some of the clinical units. All nine students (four women and five men) who completed the Graduate Diploma program in 2021, continued to the Master program in 2022.[38] Ten students (eight women and two men) began the Diploma in 2022.

Students reported that the course has increased their knowledge of emergency care nursing. They talked about the value of being able to connect the training to 'real life applications' in the workplace.

[38] One student is completing the Master on a part-time basis.

The program gave so much in-depth knowledge of why we were doing a certain procedure. What the rationale, the reason is behind it. From procedures to any kind of diagnostics we are doing, this has given me such depth of knowledge.

Getting to do the program has been an eye opener for me. It has taught me to rationalise and reason out. Now I am able to understand why I am actually doing things, who it is going to benefit. For example, If I get a case ED [Emergency Department], I can understand a bit deeper why a patient is presenting this way. The course has allowed me to dig deeper. I can speak the same language as the doctors. Previously, there was nothing for specialising in emergency nursing. It has helped to bridge the gap [between doctors and nurses].

Prior to this program, I was dependent on doctors. Now I am able to rationalise things, [I know] why this order is coming from the doctors. It has made their orders more meaningful. And if I feel something is not necessary (e.g., overloading of orders) I can speak up.

Students have established relationships and strengthened their networks with nurses working in similar settings around Fiji and with their regional colleagues. A WhatsApp group was created that enables students to communicate, ask questions about their course and give one another emotional support 'to keep going' during their studies. All students identified the support network formed as a highlight of the course.

Working with classmates with lots of experience in emergency, working alongside them builds my confidence level and my experience in the clinical field and outside.

Students reported increased communication and assertiveness skills due to their study. Several reported they have increased confidence to communicate with doctors and other team members and to suggest improvements.

This program's really opened up opportunities for us. Another change I noticed [is] we can work with the trauma doctors now we work together as a team to achieve a common goal for the patients. We can rationalise with the doctors and can notice when something is missed by the doctors in patient care to point it out. We have the expertise to question them and work together to achieve better care for the patients.

[There is a] gap between doctors and nurses – doctors are more advanced with knowledge and skills. Nurses are always left behind. But now we are able to bridge that gap, as a team, as a department. [The course has] made us more confident to be assertive.

Students reported that their improved confidence has improved their leadership skills.

> *Now me and my colleagues are hoping to make changes in the department in the future. Now we can support each other, we're not just coming from the nursing side.*
>
> *I have learnt how to bring unity to the whole team, how I look to junior nurses, communication skills and when to be assertive.*

The course has provided students with professional development opportunities they have not been able to access before. The course includes trauma team training content and students identified participation in the MIMMS training as important recognition of their value. They reported that they were not previously invited to participate in MIMMS training prior to their study, as the training targeted more senior hospital staff.

One student described how participation in the MIMMS program has provided them with knowledge of how to organise an emergency system.

> *MIMMS has provided a knowledge. We can see things in a very diverse form. We can lead our team, the trauma team, as commanders. In [Name] Hospital, we are now looking to reorganise to have a separate area for trauma patients where we will have things arranged in the ABCD format. This will make responses more efficient as we will be better prepared.*

Students reported that they have received more professional recognition as specialists in their field. This has resulted in opportunities for more responsibility and promotion. One student has received a promotion during her study, and another has been given more responsibilities in trauma team leadership. Students reported sharing the knowledge gained in the course with their fellow nurses in their hospitals. One student said that she will be the highest skilled nurse on her [hospital] floor when she gains her Master's qualification.

Students reported that the course has increased awareness of emergency nursing as a specialisation in the hospital settings they work.

> *The training is getting positive feedback at our workplace. And our nurses are taking/showing an interest in emergency and critical care specialisation.*

The course has increased students' academic writing skills, increased the focus on emergency nursing research and contributed to improved clinical practice. For example, an audit of PPE supply undertaken by one student as part of her quality management subject resulted in the Emergency Department getting a better supply of PPE.

Final research papers from the first cohort of Master students (due in November 2022) will significantly increase the number of academic papers on emergency nursing in the Pacific. The research topics examine emergency nursing attitudes, practices and experiences. One looks at the prevalence and consequences of workplace violence against nurses. Another looks at patient satisfaction with emergency departments. Other research papers examine and provide guidance on

structured handover approaches and tools, effective communication and patient safety, and caring for patients with mental health conditions.[39]

The research papers are approved by senior health officials in each of the students' workplaces. One manager reported that the research paper they approved is 'very relevant to the country situation and will add to doing work at ED better – noting that ED performance is very important to patient trust'.

Charles Darwin University Graduate Certificate and Master in Aeromedical Retrieval (AME) and the Graduate Certificate in Health Emergencies Preparedness and Response (HEPR)

Summary of findings

Students in AME and HEPR find the course enjoyable, relevant, useful and applicable and value the online delivery mode that enables them to study and work concurrently.

They are training their work teams in the concepts learnt and are incorporating learnings into policies, protocols and standard operating procedures.

Six senior clinicians (2 women and four men) from Fiji, Tonga, PNG and Timor-Leste are undertaking the Graduate Certificate and Master in Aeromedical Retrieval (AME) and/or the Graduate Certificate in Health Emergencies Preparedness and Response (HEPR). These courses were developed to provide the knowledge and skills to introduce systems and processes to improve patient retrieval and emergency preparation and response.

The online delivery mode is highly valued by the health professional undertaking the program and their workplaces. It enables participants to continue working while upgrading their skills. Participants are not required to leave their families or the local workforce for long periods of time. The manager of one participant reported that she is very happy that the course is conducted online so that a key medical professional is 'not lost' to the country. This manager also reported that the course is very relevant to the country's context and that the new skills and knowledge will add value to the country's emergency retrieval system.

Participants in both courses provided feedback that the course content is enjoyable, relevant, useful and applicable. The learning environment provides valuable connections with others working on similar projects in other parts of the region.

> *The course is very helpful in the planning [of retrievals] … I am trying to write up protocols and policies on how we do the retrievals and getting the team and the nurses, teaching them, sharing what I've learnt [so we can get retrievals] organised [so we have] a quicker way to respond. Also, those people involved in the logistics, and the crew members of the airlines, whoever's involved. I think it is getting better this time with what I've learnt and sharing [that] with them, and also every time we go and experience and really improving on what we have. (Aeromedical Retrieval participant)*

Aeromedical Retrieval participants reported that increasing the systematic approach to retrievals across the region was very relevant. They also stated that the course has improved their knowledge

[39] See Appendix 10: Research topics for the first cohort of Master of Emergency Nursing Students.

of the key medical considerations during retrievals and has been valuable in providing guidance for other types of retrievals such as land and marine retrievals, common in some small island states.

> *In [my country], where we don't have specialised helicopters/planes for retrieval 'service' the experience is helping to understand both what is possible, but also in how to improve the use of existing resources. To address the challenges faced re healthcare available in outer islands. (Aeromedical Retrieval participant)*

The HEPR course focuses on structures and functions when planning a response to an emergency and setting up triage and structures in hospitals. Participants reported that the course provides valuable information on the global, national and local governance structures that come together to produce a health response. It includes camp planning, patient flow, pre-hospital mass casualty training, hospital mass casualty training.

Participants in both courses shared examples of how they were benefiting personally and sharing their learning with other colleagues. Participants are using course information to inform development of standard operating procedures including mass casualty incident guidelines and national and provincial hospital emergency plans.

Short-term outcomes 2. Improved clinical skills shared in teams and applied consistently

Summary of findings

129 clinicians (59 women and 70 men) from Bali, Fiji, Samoa, Timor-Leste, Tonga, and Vanuatu participated in trauma-focused clinical courses. Interviewees appreciated the access to professional networks, with the NCCTRC and other clinicians from the region.

Onsite training and mentoring provided during AUSMAT deployments improved the use of PPE and IPC practices.

NCCTRC clinical advice on infection control has resulted in improvements in the triage system and the IPC practices in Tonga.

Progress towards this short-term outcome results from REP delivering targeted skills training to complement MIMMS, HMIMMS and other training. Since 2017, 129 clinicians (59 women and 70 men) from Bali, Fiji, Samoa, Timor-Leste, Tonga, and Vanuatu participated in trauma-focused clinical skills short courses.[40] The Trauma Team Training, Rural Area Trauma Education and Surgical team training target doctors, anaesthetists, nurses and midwives involved in responding to traumatic emergencies, managing trauma patients in rural contexts and the essential techniques and skills for disaster surgery and anaesthetics in the field. Each course includes case simulation to practice skills.

Many informants said that all the training provided by the NCCTRC was extremely useful. A senior manager, who had not directly participated in REP training, reported how the concepts and skills had been applied to improve coordinated responses at the scene of mass casualty incidents. NCCTRC training led to the introduction of a 'trauma call' system to improve patient outcomes in Lautoka.[41]

[40] See Table 1: Description of training courses and target groups for an overview of these courses.

[41] The trauma call is activated when high risk patients are brought into the emergency department, or when the ambulance clinician notifies the emergency department, of the imminent arrival of such a patient.

MIMMS courses have brought about big changes in the way we manage, especially trauma patients. Before 2012, trauma or accident cases were left to the ED [emergency department] physicians, and there was no formal training for them either. Things have changed a lot in the last 10 years. There is more interdepartmental [coordination]. Whenever there is a trauma case, all the departments work together from the start. (Fijian informant)

Interviewees appreciated and recommended continued use of scenario-based capacity building approaches. Many interviewees appreciated the access to professional networks, with the NCCTRC and other clinicians from the region. One interviewee noted REP training provided exposure to clinical and emergency procedures.

The training provided a professional support network. I was able to communicate clearly and frequently and receive support and clinical advice from the Darwin team to get advice when I needed it. This feedback helps me make better decisions on the ground. (Vanuatu informant)

Continued access to the full range of NCCTRC short courses and professional mentoring were requested by interviewees from each country.

A key priority in response to the COVID-19 pandemic has been to improve the use of PPE and infection, prevention and control (IPC) practices. Interviewees noted that during AUSMAT deployments, teams provided guidance on how to organise with IPC in mind - and helped to set up IPC stations and PPE donning and doffing areas. It was reported that in Vanuatu doctors and nurses learnt 'within 30 minutes' how to do it by seeing how it was done in-situ and that 'these skills have improved practices in the emergency department'.

Since 2020, AUSMAT deployments have provided opportunities for the REP team to provide targeted 'just in time' on-the-job training, lectures, and to share educational resources. Informants reported that educational resources including posters and videos demonstrating donning and doffing of personal protection equipment, and a systematic approach to caring for COVID-19 patients using the 'POP O MOP' guide were extremely helpful for their COVID-19 responses.

Clinical advice on infection control from NCCTRC was favourably mentioned by multiple interviewees. Tongan informants reported that NCCTRC training and support has resulted in improvements in the triage system and the IPC practices in Vaiola hospital.

Immediate outcome 3. Mentorship - participants empowered to improve the system they operate in

Summary of findings

Mentoring support provided through REP has been responsive to partner country requests. It has supported 'good decision making on the ground' and specifically:

- foundations for Timor-Leste's independent Ambulance Service;
- the development of hospital emergency management committees and improved inter-agency communication practices in Fiji, Samoa and Tonga;
- government and hospital planning for COVID-19 responses in Tonga; and
- the development of a train-the-trainer program for COVID-19 education which has been delivered throughout the hospital in Nauru.

REP established a tailored ‘mentorship’ program to support the development of Timor-Leste’s ambulance service in 2017. The term ‘mentorship’ referred to a suite of professional development activities that could include placements in Darwin, education programs in-country and targeted skills development. The box below tells the story of the mentorship program for Timor-Leste’s ambulance service in the first year of REP.

Mentorship: supporting Timor-Leste’s ambulance service capability

To support the capacity of Timor-Leste’s ambulance service REP provided two visits involving 15 clinicians and emergency personnel to Darwin providing professional development opportunities and tailored practical support. This included 1-week visit in December 2017 for three Doctors who undertook the Rural Area Trauma Education course and spent time with NCCTRC cache, St John Ambulance, NT Fire Station and NT emergency operations centre. This was further supported in December 2017 by NCCTRC conducting MIMMS team member training with 74 clinicians and paramedics from each of Timor-Leste’s health districts to ensure all facets of the health service shared a common plan and common communication strategy in the case of a major incident or disaster.

Within six months, 12 more clinicians undertook a 3-day intensive visit to Darwin for ‘ride-along activities’ with St John Ambulance to further enhance the skills and capability of paramedical staff to build response capacity. NCCTRC provided technical and clinical advice on procedures, ambulance set up, station set up and communication processes.

Plans to continue to support the ambulance service response capacity were initially deferred due to Timor-Leste elections in 2018 and subsequently, changes in the health ministry and leadership. While continued REP support was reconfirmed as a priority in 2019, plans to recommence activities were disrupted by COVID-19.

In 2021, Timor-Leste formally established the Ambulance Service as a separate division under Ministry of Health. One of Timor-Leste’s MIMMS instructors is the founding Director of Operations while the second MIMMS instructor joined the independent Ambulance Service in early 2022 as the Head of Department of Standardisation and Improvement.

The term mentorship has evolved as REP moved to providing remote support to strengthen health responses, especially to COVID-19 and EMTs. Since the outbreak of COVID-19 pandemic, mentoring support provided through REP has been responsive to partner country requests. Interviewees from each country appreciated the access to NCCTRC professional networks and timeliness of advice in response to specific enquiries. Interviewees from several countries said that they regularly contacted the NCCTRC for clinical advice and support. One reported, ‘This feedback helps me make better decisions on the ground.’ This was a sentiment reflected by other informants.

Interviewees from Fiji, Samoa and Tonga reported the development of hospital emergency management committees and improved inter-agency communication practices which they attributed to NCCTRC advice and training through REP.

NCCTRC provided expertise and advice as part of COVID-19 readiness support led by WHO. An interviewee shared how on a weekly basis, over almost 2 months Tongan Ministry of Health Department Heads and National Emergency Coordinating Committee were supported through ‘table top’ scenario exercises to think through in detail different scenarios. These exercises allowed Tongan officials to think through the implications for: workforce; equipment and supplies; ventilation; patient flow; how and when to use what PPE; and how to control infection transmission risks. They were able to develop standard operating procedures in relation to identification, transport, public health and ventilation responses to these different scenarios.

Another interviewee spoke of the zoom sessions and lectures for anaesthetists that NCCTRC were involved in. These provided guidance and answering questions on setting up quarantine facilities, intensive care units, operating theatres and developing COVID-19 protocols for each of these settings. These sessions were ‘very helpful’ and the NCCTRC reviewed ‘very quickly’ protocols. The mentoring - technical advice and support - was appreciated as being ‘relevant, practical and resulted in improved patient management’ as the following case story shows.

Mentoring support to Tonga in response to COVID-19 outbreak

In 2020, in anticipation of a COVID-19 outbreak, Tonga developed standard operating procedures and prepared a quarantine facility - a ‘‘mini hospital’ - outside the capital to manage COVID-19 patients ‘outside the hospital’.

Tonga experienced its first COVID-19 case on 1 February 2022 with infections peaking about 7-8 weeks later.

Tonga’s experience was that in practice, the outside hospital approach was difficult to manage. It split healthcare workers across sites. As the number of cases needing admission increased, ‘it required much more than the capacity of that hospital’. The authorities made the decision to move back to managing cases in the hospital.

NCCTRC staff provided technical advice through zoom calls as Tongan clinicians planned and managed this process. NCCTRC worked closely with the Matron and infection prevention control nurses and ‘all of us’, to ensure that the COVID patients’ move back to Vaiola [main hospital] avoided cross-infections. This help was very well received ‘by all of us here’ and ‘we were very fortunate for [the REP team’s] help’.

NCCTRC developed and delivered COVID-19 and Critical Care training in Nauru virtually in February, October and November 2021 and in-country in April 2022. The REP and SPC collaboration provided theoretical and practical education and mentoring. NCCTRC staff provided theoretical sessions virtually and oversight as staff on the ground facilitated face-to-face sessions to apply new knowledge in isolation wards. The training fostered an ongoing mentoring relationship with Nauru's Principal Training Officer and the REP team. Regular email and social media communications, strengthened by in-person visits resulted in the development of a train-the-trainer program for COVID-19 education which has been delivered throughout the hospital.

The value of mentorship in building critical care capacity in the Pacific

As part of the partnership to build clinical skills in the Pacific, SPC and the REP team provided education and mentoring in Nauru via virtual education sessions from February 2021. In-country training was provided In April 2022. The team had planned to conduct education sessions for the other departments throughout the hospital as well. However, the arrival of the first COVID-19 cases in Nauru during the visit forced the REP team to restrict its movements between the Acute COVID ward and their quarantine accommodation. Therefore, the REP trainers worked intensely with the eight nurses and nurse aides (7 women and one man) and one doctor (male) working on the ward in anticipation of COVID-19 patients.

A REP team member has continued to mentor Nauru's Principal Training Officer since returning to Australia including as COVID cases surged in June 2022. Mentoring supported Nauru's Principal Training Officer to conduct a training needs analysis and audits and to develop templates for certifying COVID deaths. The mentoring also provided important morale support, 'helped me think through the cloud that was COVID'.

As a result of the ongoing mentoring relationship, since August 2022 the Principal Training Officer has run post-COVID surge debrief sessions and refresher COVID-19 response training throughout the hospital.

The Principal Training Officer and REP mentor presented on efforts to strengthen critical care nursing in Nauru at the most recent Pacific Heads of Nursing and Midwifery meeting held in Fiji 1-2 September 2022. The presentation illustrated the value of mentorship in building capacity in the Pacific.

Immediate outcome 4. EMTs have increased knowledge about requirements and plan towards EMT development

Summary of findings

The NCCTRC in collaboration with WHO has supported the establishment of national EMTs in Fiji, Solomon Islands, Vanuatu and Tonga. The NCCTRC provided technical advice to support EMTs develop standard operating procedures and review policies.

WHO EMT webinar series helped maintain networks among EMT team members.

The NCCTRC broadly, and REP specifically since 2020, has collaborated with WHO to support the establishment of national Emergency Medical Teams (EMTs) in Fiji, Solomon Islands, Vanuatu and Tonga. The NCCTRC team provided technical advice to support EMTs develop standard operating procedures and review policies. By June 2022 there were six countries with national EMTs recognised by WHO for domestic response purposes.[42] FEMAT was verified by WHO for international deployment (as a Type 1) in May 2019.

The REP was actively involved in WHO EMT webinar series which helped maintain networks among EMT team members. The series ran over 11 weeks from July to September 2021. Sessions were accessed by 'several hundred participants from almost every country in the Pacific at one point or another during the series'. According to informants the webinars provided a forum for EMTs throughout the region to share experiences and lessons learnt in establishing national EMTs.

[42] They are: VanMAT, TEMAT, SOLMAT, Cook Islands' KukiMAT, Commonwealth of the Northern Mariana Islands, and Palau's Team Klemat. EMTs are in development in Kiribati, the Republic of the Marshall Islands, Federated States of Micronesia, PNG and Tuvalu, Samoa and Timor-Leste.

NCCTRC experts and others talked about their deployment experiences and helped bring the 'purpose and practical requirements of EMTs to life' for webinar participants.

The EMT webinars were reported to be in some respects, more convenient, more cost efficient and enabled wider participation, than traditional training. They were reported to be successful because there is an existing EMT network in the Pacific, the people involved are typically highly educated and often have access to office computers and internet connectivity.

The following case story outlines the support provided to Tonga to develop its EMT.

NCCTRC support to help establish TEMAT

'The process to develop TEMAT started with a preparedness workshop and team member training in September 2018. These were aimed at increasing the understanding of what an EMT could do as first responders and building support for the idea of developing a national EMT. NCCTRC supported the workshop and training by providing the topics, operational manuals, example SOPs, technical advice and support. It continued to provide remote training support on request. A second team member training was held in 2019. Team member training included Tongan local instructor who introduced the MIMMS principles.

NCCTRC not only shared its SOPs, they [NCCTRC team] were available to talk through them in detail. What the SOPs mean - why they were developed, what problem did they resolve etc. so that people in Tonga without direct deployment experience could appropriately assess when and how to contextualise for Tonga noting local resources and capacities. How it worked in practice during deployments.

AUSMAT/NZMAT expertise and experience were valuable – telling the stories of how things worked in practice – helped to illustrate the rationale for and how the SOPs worked, - much more valuable than just sharing written documents and from a 'technical' perspective …

TEMAT was deployed for the first time in response to the volcanic eruption in Jan/Feb 2022 to evacuate outer islands. They did an initial assessment, provided trauma response, then developed the response plan. The CEO of Health was proud that TEMAT had been established in a timely manner and their response was 'a highlight' to the terrible experience (eruption). The Department of Health response got a lot of positive feedback and demonstrated 'Tonga's national resilience'. (Tongan informant)

Short-term outcome 4. EMT capabilities advanced and progressing through WHO certification

Summary of findings

National EMTs have meant they have led national responses to disasters and events without international assistance since 2019.

FEMAT is a highly effective operation, accredited by WHO for international deployment with the capacity and willingness to support other Pacific Island countries.

According to a well-placed informant, since 2019, national EMTs have successfully led domestic responses to 10-12 emergencies without the need for international assistance. These included FEMAT's deployment in response to the measles outbreak in 2019, multiple tropical cyclones, and leptospirosis, typhoid, diarrhea and dengue (LTDD) outbreaks in 2022 after the floods. FEMAT is also

deployed by the Fiji Ministry of Health in non-emergencies, to deliver specialised care and public health in outer islands that otherwise would not have access to these health services.

SOLMAT was deployed as part of Solomon Islands' national response to an oil spill (February 2019) and for COVID-19 at the national level. SOLMAT also participated in an international deployment to support Samoa's measles response. VanMAT led the health response to Tropical Cyclone Harold in 2020. Tonga's TEMAT and Cook Islands' KukiMAT supported national COVID-19 preparedness and response efforts, including for clinical surge, repatriation and quarantine support and vaccination.

FEMAT is a highly effective operation. In response to COVID-19 it deployed to Lautoka hospital (42 days) and led the response in Suva. FEMAT works closely with NCCTRC especially re. training and procurement. During the COVID-19 response, NCCTRC helped with procurement (e.g.: oxygen concentrators and oxyimeters), logistics and sent two AUSMAT teams in response to the second wave of COVID-19.

FEMAT is accredited by WHO as a fixed Type 1 hospital team. They are currently working to have FEMAT's mobile teams verified by WHO and the re-verification process is due in 2024. NCCTRC continues to support FEMAT as requested to review, update and develop standard operating procedures to meet or exceed EMT minimum standards.

With Australian support FEMAT has the capacity and willingness to assist other Pacific countries. One informant described this as a significant outcome: 'The Pacific helping the Pacific'. NCCTRC has supported the development of FEMAT as a 'regional response partner for AUSMAT' most recently through AUSMAT deployments to support the response to COVID-19 outbreaks and REP supported training. AUSMAT deployments continued the provision of mentorship and training exchange. They have provided opportunities for joint exercises and provided FEMAT with equipment and other resources.

Strengths and unintended consequences

Summary of findings

NCCTRC and its staff has established strong, enduring relationships and is seen as a trusted and responsive partner for Pacific health service leaders. These relationships enabled the REP to switch to the provision of remote training and virtual operational support in 2020.

The REP has contributed the development of a strong community of practice among emergency clinicians working throughout the Indo-Pacific region. It is helping build an emerging community of nursing practice.

AUSMAT deployments to six countries between 2020-2022 provided practical support, mentoring and training and successfully maintained and provided opportunities to build relationships with the REP.

The re-orientation of activities to focus on preparedness and response to COVID-19, resulted in a greater focus on nursing clinical skills.

The collaboration between WHO and REP between 2020 and 2022 strengthened Pacific Island countries COVID response capabilities.

Strong, enduring relationships between NCCTRC and its staff as a trusted and responsive partner for Pacific health service leaders was consistently identified by interviewees as the key strength of REP. The values of the NCCTRC and its staff and the respect they demonstrate with partners means relationships of trust have survived personnel changes within NCCTRC. Even in cases where there had been no in-country training, clinicians reached out to NCCTRC for technical advice and clinical support to support local COVID-19 operational responses.

The evaluation has identified several unintended consequences or outcomes that were not anticipated and not included in the program logic.

Development of a strong community of practice among emergency clinicians

The REP has contributed to the development of a strong community of practice among emergency clinicians working throughout the Indo-Pacific region. Delivering the same courses to multiple countries across the region introduced common core technical skills. Together, the REP sought to develop a shared community of regional practice and resources. MIMMS Faculty and Pacific Society of Anaesthetists are two groups who reference the NCCTRC as an important contributor to their development and effectiveness. An emerging community of nursing practice is developing through the Diploma and Master of Emergency Nursing course, the REP and AUSMAT mentoring and training and the NurseTOK webinars.

AUSMAT deployments provided mentoring, training and maintained relationships established by the REP

Between August 2020 and May 2022 there were nine AUSMAT deployments to six countries that provided practical support, mentoring and training and successfully maintained relationships established by the REP. The success of this was facilitated by the fact that those delivering REP activities were also part of AUSMAT deployments. Hospital emergency teams in Samoa, Vanuatu and Nauru reported the value of learning by observing and working alongside AUSMAT. In Samoa, AUSMAT deployments led to the development of structures for increased clinical coordination between the Ministry of Health and Hospitals in Samoa. This also meant that NCCTRC staff implementing the REP had a good understanding of the different contexts within each country and partners had a good knowledge of whom to reach out to for specific technical advice during COVID that was able to be provided remotely.

Existing relationships enabled REP to provide remote training and virtual operational support

The strength of existing relationships between the REP team and Pacific Island country health leadership and emergency clinicians meant that the REP was well positioned to switch to the provision of remote training and virtual operational support between 2020 and 2022. NCCTRC staff maintained informal communications with regional training instructors, previous course participants and contacts established during AUSMAT deployments on an ad hoc basis. Interviewees from each country appreciated the access to professional support and advice. Several informants reported the value of being able to ‘pick up the phone and talk to’ members of the REP team to discuss a course of action.

Re-orientation of activities to focus on preparedness and response to COVID-19, resulted in a greater focus on nursing clinical skills

The re-orientation of activities to focus on preparedness and response to COVID-19, resulted in a greater focus on nursing clinical skills. The MOU between NCCTRC and the SPC Clinical Support Program increased the skills of nurses Fiji, Kiribati, Nauru and Vanuatu to deliver COVID-19 and Critical Care. This training complemented the USAID-funded delivery of ventilators and equipment and increased the capacity of hospitals to manage COVID patients.

Collaboration between WHO and REP strengthened Pacific COVID-19 response capabilities

The collaboration between WHO and REP between 2020 and 2022 strengthened Pacific Island countries COVID-19 response capabilities. WHO coordinated responses to Tongan requests for specific support included experts from NCCTRC were ‘very responsive to Tongan needs.’

Recommendations for the next phase

The following recommendations are provided to strengthen the NCCTRC and proposed next phase of support. They focus on program design, policies and systems.

1. Design the next phase program plan and document the theory of change collaboratively with DFAT and key stakeholders. This will guide the program priorities, focus and delivery for the next phase. The plan will articulate clear end of investment outcomes and ensure activities contribute to agreed short-term, intermediate and longer-term outcomes. The GOARN related activities, while an emerging area of interest, may be more appropriately supported through alternative funding to maintain clear focus on the end of investment outcomes.

2. Develop and implement a monitoring, evaluation and learning framework (MELF) and systems to improve data collection, analysis and reporting to DFAT, including in-country and to partner countries, on contributions to their priorities. The MELF will guide the systematic collection of monitoring and outcome data, storage and reporting. It will include data collection tools, standardised reporting templates, and processes for regular assessment of progress and reflections to inform planning and delivery. The accompanying MEL system will enable effective data storage and retrieval for data analysis, learning and reporting. Build into the activity delivery processes to capture stories of change to share with partners.

3. Provide dedicated program management resources and leadership within NCCTRC and explore processes internally to ensure all NCCTRC engagements with partner countries are to the best extent possible, coordinated within the organisation. This will promote coherence and maximise the benefits of Australian support.

4. Develop multi-year country plans and establish systems and budgets to increase local control and visibility of Program engagement in each country to meet their priorities. Re-invest in meaningful consultation with Ministries of Health and DFAT in target countries to ensure that activities contribute to national capacity plans and other implementing partners.

5. Develop an operational plan to guide program implementation to meet the strategic direction, design, coordination and MEL priorities and address risks. This will incorporate risk management plans. Build into the operational plan processes to regularly coordinate with DFAT to maximise awareness of policy priorities, relevant stakeholders and potential opportunities for regional policy advocacy.

6. Build the capacity of regional disaster response and Fiji as a training hub, particularly for MIMMS and HMIMMS training. This might include for example, opportunities for national EMTs and/or AUSMAT to train together to build rapport, greater sharing of experiences, improve operational coordination and management before response. See also Recommendation 15 in relation to continuing to build FEMAT capability as a regional response partner.

7. Consolidate online resources and systematically remind contacts what's available, when and why it is useful, what's coming up. Newsletters / social media regular linkages for contacts.

8. Strengthen NCCTRC's Child Protection and Preventing Sexual Exploitation, Abuse and Harassment approach and policies. This will include:

- Conducting a review of all relevant documentation and ensure internal consistency within and across documents – including consideration of addition of child exploitation as well as abuse and reporting suspicions as well as disclosures of incidents;
- Documenting child protection and sexual exploitation, abuse and harassment risks during in-country training and ensure they are considered ahead of each training;
- Developing and providing training regularly to staff on these policies and ensure that staff, volunteers and contractors commit to comply with the policies at least annually and before overseas travel for DFAT-funded activities; and
- Documenting actions to promote child protection during recruitment process and what sanctions may apply in the event of an alleged incident and investigation process.

9. Continue to strengthen the involvement of rehabilitation professionals in emergency preparedness and response.

10. Continue to promote local leadership and delivery of foundational MIMMS and HMIMMS courses and as a regional network. Support the delivery of training through existing regional professional associations and forums, as was the case in through the Pacific Society of Anaesthetists.

11. Continue support to FNU to effectively deliver and broaden the postgraduate nursing qualifications to reduce the cost and increase regional access to the course. Continue to support partial scholarships until the fees can be reduced.

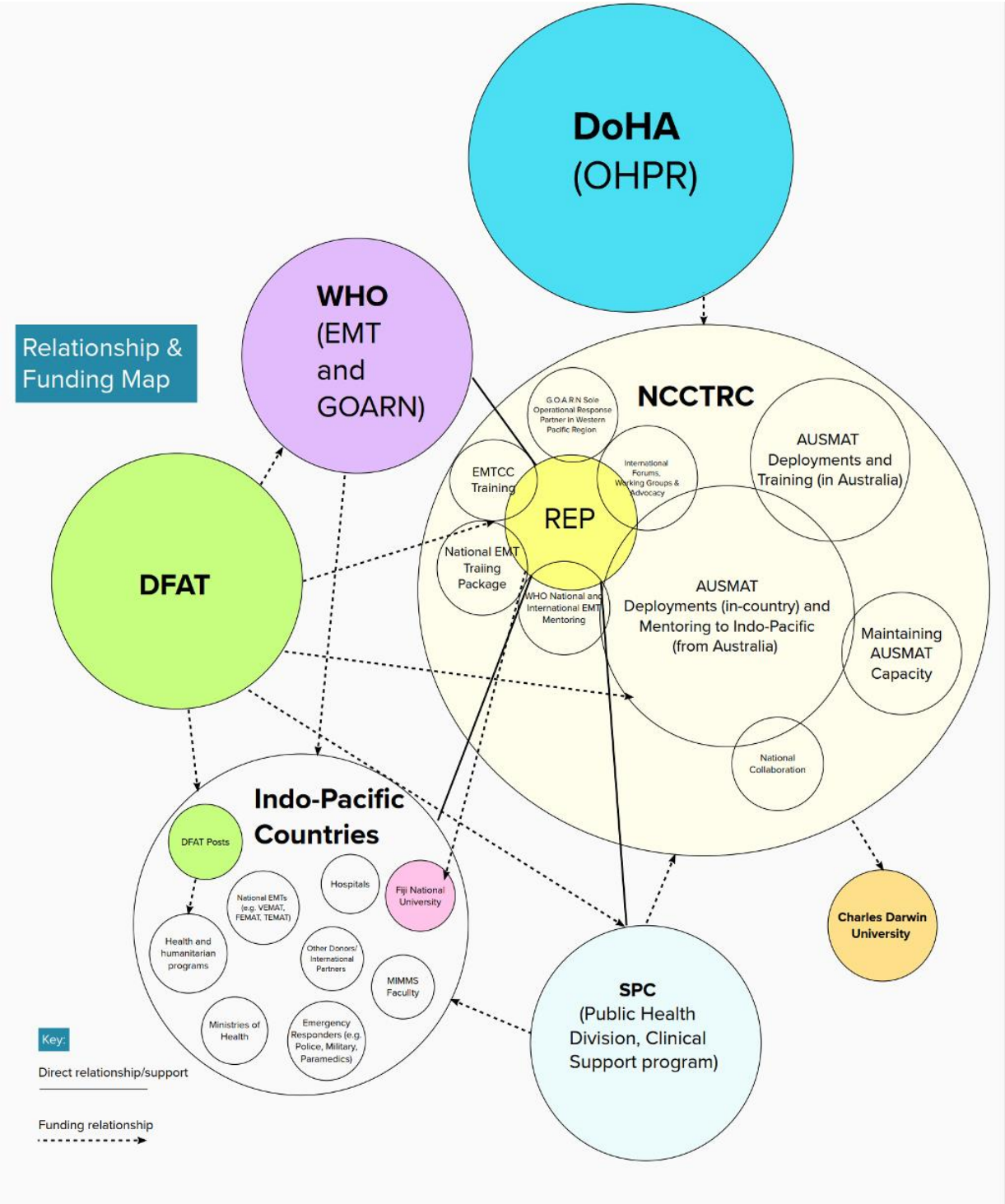
12. Maintain focus on capacity building, service delivery strengthening and improving the quality of clinical and nursing care services. Develop a training program that incorporates face-to-face learning, virtual learning, and with clinical support, as well as exchange programs and mentoring. Work with Nurse educators in hospitals to support nurses upgrade their skills. Look at opportunities to connect with volunteer programs to backfill nursing positions to support Pacific country nurses upgrade their emergency nursing skills and specialisation.

13. Continue to foster a network of nurses across the region connecting more systematically to national nursing educators and local programs.

14. Explore exchanges as a capacity building approach. Exchanges to Australia help partners visualise what might be possible and on-the-job engagement quickly demonstrates and embeds improved clinical practices.

15. Continue to build the capacity and capability of FEMAT as a regional disaster response partner for other Pacific Island countries. Continue to support FEMAT's capability growth, particularly in relation to logistics, equipment and data management systems. Pursue opportunities for FEMAT members or teams to deploy with AUSMAT. Identify opportunities for EMT members from different Pacific Islands to train together. See also Recommendation 6 in relation to building Fiji as a regional training hub for regional disaster response.

Appendix 1: REP relationship and funding map



Appendix 2: Timeline of REP activities and key events

Date	NCCTRC Activities	Events
2014 to Aug 2017	Ad hoc engagement in the region. MIMMS training: delivered in ▪ Fiji, Solomon Islands (2014), Tonga (2015), Vanuatu (2016) and Fiji*2, Bali, and Timor-Leste (2017) ▪ Hospital disaster planning with Bali, Timor-Leste	**2015** Tropical Cyclone Pam (Vanuatu) **2016** Tropical Cyclone Winston (Fiji)
Aug 2017 to Feb 2020	▪ MIMMS delivered in Timor-Leste, Bali, Tonga*2, Vanuatu*, PNG*2, Samoa, Fiji & Solomon Islands. ▪ HMIMMS delivered with Fiji*2, Timor-Leste, PNG & Samoa. ▪ HEOC training in Fiji*2 and hospital planning with Samoa. ▪ Surgical, Rural Area Trauma and Trauma Team training involved clinicians from Timor-Leste, Fiji, Bali, Tonga, Vanuatu & Samoa ▪ Mentoring program delivered for Timor-Leste regarding their Ambulance Service ▪ MIMMS Instructors trained from: Fiji, Timor-Leste, Bali, Tonga & Vanuatu ▪ Scoping Missions to Fiji National University for postgraduate nursing qualification, Nauru, Kiribati and Tuvalu ▪ EMT Coordination Cell training delivered involving: Fiji, PNG, Samoa, Solomon Islands, Timor-Leste, Tonga, Vanuatu, & Nauru ▪ NCCTRC engaging in WHO EMT meetings, 2*Technical Working Groups and Regional EMT Coordination Cell Training	**2017** Ambae volcanic eruptions (Vanuatu) **2018** Tropical Cyclone Gita (Tonga) Earthquakes (PNG & Indonesia) Ambae volcanic eruptions (Vanuatu) *APEC (PNG)* **2019** Oil Spill (Solomon Islands) *FEMAT WHO verified (Fiji)* *South Pacific Games (Samoa)* Measle outbreak (Samoa) Tropical Cyclone Sarai (Fiji) **2020** COVID-19 Pandemic declaration
Mar 2020 to Dec 2021	▪ Remote support and mentoring for operating guidelines for quarantine facilities with Samoa, Tonga, Solomon Islands, Bali ▪ With SPC, COVID-19 and Critical Care virtual training series with Fiji, Kiribati, Nauru, Vanuatu ▪ Remote COVID surge deployment to WHO EMT in Cox Bazaar Rohingya Refugee camp in Bangladesh ▪ With WHO EMT Webinars and mentoring with EMTs in Fiji, PNG, Vanuatu, Solomon Islands, Tonga ▪ MIMMS Instructors trained from: Fiji ▪ FNU Diploma of Emergency Nursing – Fiji & Tonga ▪ CDU scholarships for Graduate Certificate in Aeromedical Retrievals – Fiji & PNG ▪ Fiji Rapid Serological Survey technical support ▪ NCCTRC engaging in WHO EMT 4*Technical Working Groups and GOARN Partnership meeting	**2020** Floods (Timor-Leste) Tropical Cyclone Harold (Solomon Islands, Vanuatu, Fiji, Tonga) COVID-19 Outbreak, AUSMAT deployment (PNG) NCCTRC recognised as WHO Global Outbreak Alert Response Network (GOARN) Partner Institution **2021** Tropical Cyclone Yasa (Fiji) Tropical Cyclone Ana (Fiji) Floods (Timor-Leste) COVID-19 Outbreaks & AUSMAT deployments (PNG*2, Timor-Leste*2 and Fiji)
Jan to June 2022	▪ NurseTOK Facebook and webinar series ▪ Remote support and mentoring for operating guidelines managing COVID-19 outbreaks with Samoa, Solomon Islands & Vanuatu ▪ FNU Master of Emergency Nursing – Fiji & Tonga ▪ FNU 2nd cohort of Diploma of Emergency Nursing – Fiji & Kiribati ▪ CDU scholarships for Master in Aeromedical Retrievals – Fiji & PNG and 2nd cohort of Graduate Certificate – Fiji & Tonga ▪ CDU scholarships for Graduate Certificate in Health Emergency Preparedness and Response – Timor-Leste ▪ COVID-19 and Critical Care in Nauru ▪ Supported local delivery of MIMMS, Trauma Team and FEMAT team training in Fiji ▪ MIMMS, HMIMMS, Essentials of Critical Care and Rehabilitation in Disasters and Emergencies delivered in Timor-Leste	**2022** Volcanic eruption, tsunami and earthquakes (Tonga) COVID-19 Outbreaks & AUSMAT deployments (Solomon Islands, Kiribati and Vanuatu) Leptospirosis, Typhoid, Diarrhea and Dengue outbreak (Fiji)

Appendix 3: Detailed evaluation questions

Design (Relevance, Coherence)

- What was the nature, magnitude, and distribution of the opportunity that the initiative was designed to address?
- How did the landscape change from initial program inception to present date (pre/post COVID-19)?
- How does the Regional Engagement program plan address the identified need?

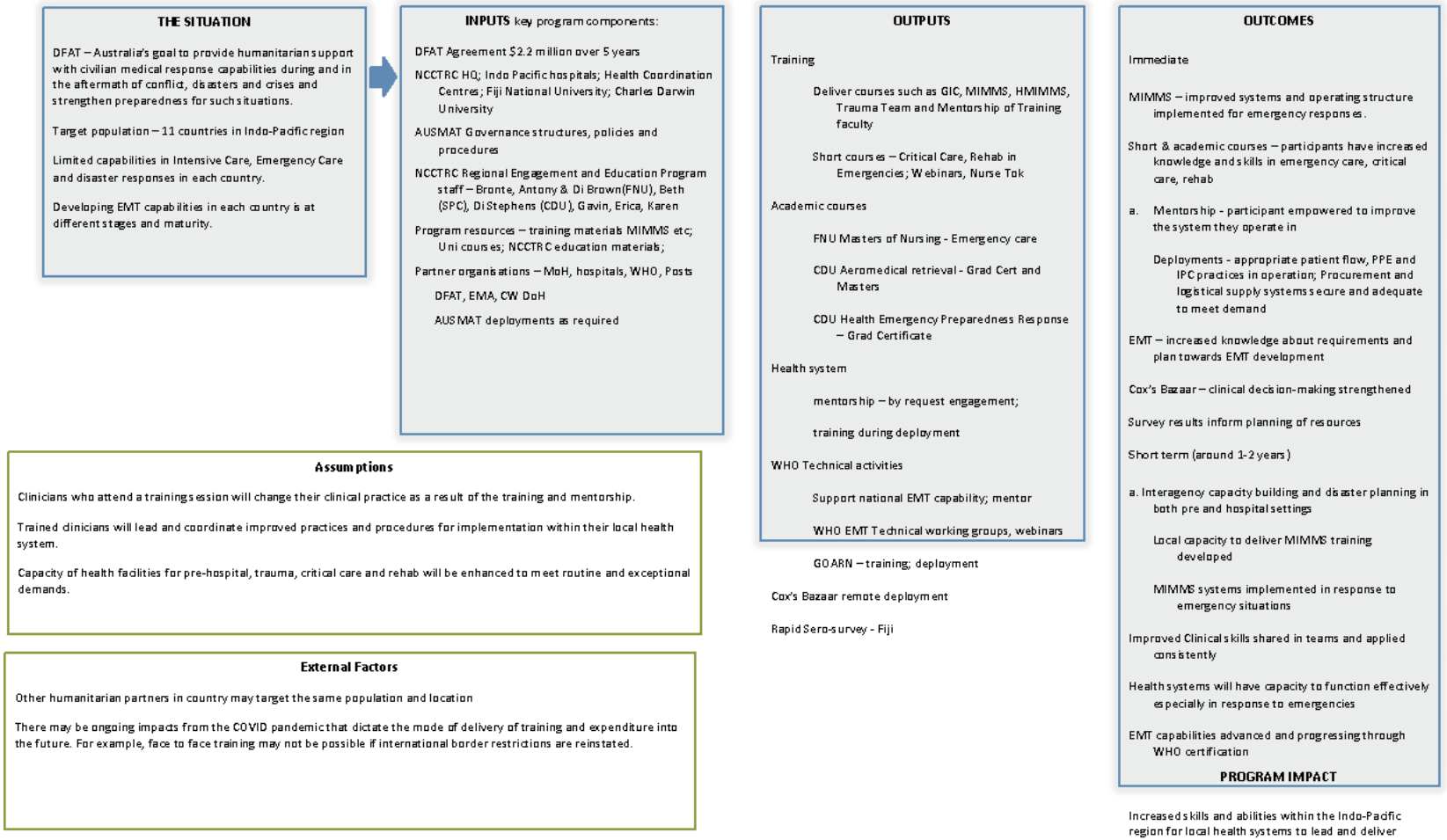
Implementation (Efficiency and Sustainability)

- Was the Regional Engagement delivered on budget and on schedule? If not, what were the key blockers?
- Have the program activities been implemented as intended? If not, what were the key blockers?
- To what extent is the program reaching intended recipients?
- Did the Regional Engagement Program scope meet contemporaneous needs (when stood up), and what are the new opportunities to broaden future programming scope?
- What were the strengths and opportunities to enhance DFAT and NCCTRC's guidance and delivery of the Regional Engagement?

Outcomes and Impact (Effectiveness and Impact)

- To what extent are MIMMS/HMIMMS courses being delivered locally and skills utilised?
- How has the short course and webinar program benefitted participants?
- How has the academic program benefitted participants and local health systems?
- To what extent is the program meeting the needs of participants and other key stakeholders in development of EMT capabilities?
- To what extent have personal protective equipment (PPE) and infection prevention control (IPC) practices improved?
- Did Regional Engagement have any unintended consequences, positive or negative?

Appendix 4: Regional Engagement Program Logic (2021/2022)



Appendix 5: Evaluation informants

Name	F/M	Organisation
Charles Darwin University		
Professor Dianne Stephens	F	Foundation Dean, CDU Menzies School of Medicine NCCTRC Academic Lead
Fiji		
Prof Dianne Brown	F	Clinical Lead Master of Nursing, Fiji National University
Priya Devi	F	Master of Emergency Nursing student
Monish Deo	M	Master of Emergency Nursing student
Dr Vimal Deo	M	Chief Health Inspector, Ministry of Health & Medical Services
Dr Emily Urvaru Fuakilau	F	Anaesthetist, Labasa Hospital
Dr Marica Mataika	F	Emergency physician, FEMAT Technical Working Group
Dr Kartik Mudliar	M	Sr Anaesthetist, Lautoka Hospital
Dr Luke Nasedra	M	Head of FEMAT and Medical Superintendent, Colonial War Memorial Hospital (Suva)
Ajnesh Prasad	M	Master of Emergency Nursing student
Shanistika Shivalni	F	Emergency Department Nurse, Lautoka Hospital
Kashmir Singh	M	Master of Emergency Nursing student
Keshni Singh	F	Fiji National University
Mamatuki Sosefo	M	Deputy Director of Nursing, Lautoka Hospital and Adjunct Lecturer for the Emergency Nursing Program with Fiji National University.
Ashita Ram	F	Master of Emergency Nursing student
Jese Vatukela	M	FEMAT Coordinator
Luisa Vodotagitagi	F	Master of Emergency Nursing student
Dr Mara Vukivukiseru	M	Director Anaesthetics & Intensive Care Unit, Lautoka Hospital
Samoa		
Natasha Mamea	F	Director of Nursing Tupua Tamasese Meaole (Samoa Hospital)
Matilda Nofoaiga	F	Senior Intensive Care Unit nurse, Tupua Tamasese Meaole (Samoa Hospital)
Dr Glen Fatupaito	M	Director Clinical Services, Ministry of Health
Timor-Leste		
Franscisco Borges	M	Head of Department of Standardisation and Improvement, National Ambulance Service: Serviço Nacional de Ambulância e Emergência Médica (SNAEM)
Dr Custodia Florindo	F	Director Operations National Ambulance Service: Serviço Nacional de Ambulância e Emergência Médica (SNAEM)
Dr Todinho de Jesus	M	Emergency Doctor, Hospital Nacional Guido Valadares (HNGV) Dili
Tonga		
Dr 'Ana Akauola	F	Director Clinical Services, Vaiola Hospital, Ministry of Health
Sione Manu Alalea	M	Master of Emergency Nursing student
Julie Bowen	F	Health Advisor, Ministry of Health
Dr Selesia Fifita	F	Chief Anaesthetician Vaiola Hospital
Sela Fusi	F	former WHO EMT Coordinator

Name	F/M	Organisation
Aspasia Katrina Vaka	F	Senior Tutor Sister, Vaiola Hospital
Vanuatu		
Dr Basil Leodoro	M	Surgeon, Northern Provincial Hospital, Ministry of Health
Dr Sereana Natuman	F	Acting Director of Hospital and Curative Services, Port Vila, Ministry of Health
DFAT		
David Hevey	M	Assistant Director, Humanitarian and Partnerships Division
Meg Northrope	F	Assistant Director, Humanitarian Response Planning Section
Mona Balram	F	Climate Change and Humanitarian Response, Fiji
Kenneth Cokanasiga	M	Climate Change and Humanitarian Response, Fiji
Margaret Vuiyasawa	F	Health Programs, Fiji
Patrick Chan	M	First Secretary, Health, Samoa
Shirley Vaafusuaga	F	Health programs, Samoa
Julia Wheeler	F	Former First Secretary, Health, Samoa
Aidan Goldsmith	M	First Secretary, Health, Timor-Leste
Julia Magno	F	Senior Health Officer, Timor-Leste
Kirsty Dudgeon	F	First Secretary, Health, Vanuatu
Ministry of Foreign Affairs and Trade (MFAT), New Zealand		
Martin Buet	M	Supporting MFAT Humanitarian Team in Tonga, Fiji and Cook Islands
NCCTRC		
Erica Bleakley	F	Allied Health & Rehabilitation Coordinator
Michelle Foster	F	Senior Director Operational Support
Bronte Martin	F	Director of Nursing (Trauma, Disaster & Education)
Kathleen McDermott	F	Acting Director of Disaster Preparedness and Response
Professor Len Notaras	M	Executive Director
Gavin O'Brien	M	Nurse Education consultant, MIMMS Pacific
Michelle Phillips	F	Director Corporate Services
Bethan Price	F	Pacific Critical Care Education Consultant
Antony Robinson	M	Fiji National University Program Supervisor
The Pacific Community		
Silina Motofaga	F	Director Clinical Services
World Health Organization		
Sean Casey	M	Emergency Medical Teams Focal Point, Western Pacific Regional Office
Philippe Guyant	M	Communicable Diseases and Emergency Response, Vanuatu

Appendix 6: Evaluation methodology

The evaluation used a mix of quantitative and qualitative methods to gather evidence to answer the key evaluation questions.

Document review

A systematic review of 94 documents was conducted covering all countries. These included the grant agreement and amendments, program plans and reports, training curriculum and policy guidelines, training records and beneficiary feedback, conference proceedings and reports and social media pages. A list of REP and other documents reviewed are included in Appendix 7.

Interviews with key stakeholders

Interviews were conducted with a purposive sample from five countries. The sample included countries that had a range of interactions with the REP between 2017–2022. Semi structured in-depth individual interviews were conducted with 29 stakeholders (17 women and 12 men). Interview questions were targeted to meet the individual circumstances of stakeholders and were conducted face-to-face and via Zoom, Phone or WhatsApp.

Nine focussed-group interviews were held. Group interviews were conducted with seven of the eight Fiji National University Master of Emergency Nursing students, DFAT teams from Fiji, Samoa and Timor-Leste and with national stakeholders from Fiji, Samoa and Tonga where this was the most convenient for them in terms of their time and online accessibility.

An information sheet containing an overview of the evaluation, interview questions and consent forms were provided to interviewees prior to the interviews and is provided in Appendix 8.

Data synthesis, analysis, rating and verification of evidence

Data collected from interviews and documents reviewed were summarised and entered into a data synthesis document for the first stage of data synthesis. Data was organised by interview question. Quantitative data was entered into an Excel spreadsheet organised by activity type, by participants, and by country. The quantitative data was transferred into the country workbooks in Excel for the second phase of data synthesis. This enabled data to be sorted by interview question, activity type, by country, or by year.

The evaluation team developed a rubric to guide their assessment. The rubric, shown on the next page, set out criteria and standards for assessing different levels of performance. It provided an evaluative description of what good, excellent (etc) quality; value or performance looks like in practice. It helped the evaluators synthesize the qualitative and quantitative data and guided their evaluative judgements about components of the program. Evidence was weighted according to the number of sources verifying the data. Because the evaluation sought feedback from informants on the value of program activities to them as individuals, we included these as examples of benefit. Where the evidence was not considered sufficient to provide an assessment, the evaluation team sought verification from other stakeholders or documents.

The evaluators recommended that a validation workshop be held following the provision of the draft report. The NCCTRC project manager, Program team, key stakeholders and interested program participants will be invited to attend. The workshop will provide the opportunity for key stakeholders to review and validate the key findings and recommendations. Pandanus Evaluation will incorporate agreed amendments into the final report.

REP Evaluation Rubric

Criteria / Standards	Excellent	Good (expected)	Poor (unacceptable)
Project Design	REP is underpinned by a strong theory of change with evidence that the assumptions and causal links are accurate	REP is underpinned by a sound theory of change with some evidence that the assumptions are appropriate	REP is not underpinned by sound theory of change
Adaptability	REP adapted quickly and continues to progress most if not all outcomes despite the COVID-19 pandemic	REP adapted activities appropriately and continues to progress some outcomes despite the COVID-19 pandemic	REP was unable to adequately support regional partners during the COVID-19 pandemic
Performance Framework	A comprehensive M&E system is established and implemented that enables the collection, analysis and reporting of required data and draws out learnings which informs activity planning and approaches	A M&E system is established and implemented that enables the collection, analysis and reporting of required data	M&E Plan is inadequate or not effectively implemented to enable the collection and analysis of required data
Risk Management	Strong risk management system in place that is regularly reviewed and updated as necessary	Processes are in place to manage risks and respond to challenges	Limited evidence of risk management plans or timely identification and or response to risks
Reporting	REP provides high quality reports with the required information on time including analysis and reflection	REP provides reports with most of required information on time	REP does not provide reports with enough of the required information in a timely manner
Policy Alignment	Australia's medical response capability and NCCTRC policies for REP adhere to DFAT's policy priorities	Australia's medical response capability or policies adhere to DFAT policies in general but not in all requirements	Australia's medical response capability or policies are not adequately aligned with DFAT's policy priorities
Process and Implementation: Efficiency	REP activities are implemented as intended, on time and on budget	The most REP activities are implemented as intended, in accordance with annual plans and budgets	Some planned activities are implemented as intended
Reach	Strong evidence that REP involves the right people from key institutions in each partner country	Good evidence that REP involves the right people from key institutions in many partner countries	Limited evidence that REP involves the right people from key institutions in most partner countries
Stakeholder Management	Relationships result in agreements on working together and shared activities	Relationships with key stakeholders are based on understanding and mutual respect	Relationships with key stakeholders are shallow and do not result in change or not based on mutual respect
Progress towards outcomes: Effectiveness	REP delivers outcomes in excess of those planned for its beneficiaries	REP is on track to achieve planned outcomes for its beneficiaries	Limited evidence of REP being on track to achieve outcomes for its beneficiaries
Influence and Leverage	REP adds value to other development initiatives and stakeholders in clearly identifiable ways	REP activities are well regarded by other development initiatives and stakeholders	There is limited evidence of the project adding value to development initiatives and stakeholders
Sustainability	REP builds the capacity of partners and beneficiaries, and outcomes and results are evident in organisational practices and structures	REP builds the capacity of partners and individual beneficiaries	Limited evidence of capacity improvements or changed practices of partners and beneficiaries

Appendix 7: List of documents reviewed

Documents reviewed	Source
Grant related	
Grant Agreement 73833 between DFAT and National Critical Care and Trauma Response Centre	NCCTRC
Grant Agreement 73833 Amendment 1 (November 2017)	NCCTRC
Grant Agreement 73833 Amendment 2 (March 2019)	NCCTRC
Grant Agreement 73833 Amendment 3 (June 2020)	NCCTRC
Grant Agreement 73833 Amendment 4 (April 2022)	NCCTRC
Annual Plans and related	
NCCTRC Regional Engagement Plan 2017 – 2018	NCCTRC
NCCTRC Project 63447 Expansion Proposal (2017-2018) Disaster Risk Reduction: Capacity Building in Acute Care [proposal incorporated into Grant 73833 Amendment 1]	NCCTRC
NCCTRC Regional Engagement Plan 2018 – 2019	NCCTRC
NCCTRC DFAT Agreement 73833 – Proposal for Additional Funding [proposal incorporated into Grant Amendment 2]	NCCTRC
NCCTRC Regional Engagement Plan 2019 – 2020	NCCTRC
NCCTRC Regional Engagement Plan 2021 – 2022	NCCTRC
Performance and Quality Reports	
NCCTRC Mid Term Performance and Quality Report July to December 2017	NCCTRC
NCCTRC Mid Term Performance and Quality Report January to June 2018	NCCTRC
NCCTRC Mid Term Performance and Quality Report July to December 2018	NCCTRC
NCCTRC Mid Term Performance and Quality Report January to June 2019	NCCTRC
NCCTRC Mid Term Performance and Quality Report January to June 2019	NCCTRC
NCCTRC Performance and Quality Report 1 July 2019 to 30 June 2020	NCCTRC
NCCTRC Regional Engagement Program: Mid-Term Summary 2020/2021	NCCTRC
NCCTRC Performance and Quality Report 1 July 2020 to 30 June 2021	NCCTRC
NCCTRC Draft Performance and Quality Report 1 July 2021 to 30 June 2022	NCCTRC
NCCTRC 6-Month Performance Report 1 January to 30 June 2022 (submitted to Department of Health)	NCCTRC
Country Health Capacity Assessments	
Kiribati Emergency Health Capacity Assessment 2018	NCCTRC
Nauru Emergency Health Capacity Assessment 2018	NCCTRC

Documents reviewed	Source
Tuvalu Emergency Health Capacity Assessment 2019	NCCTRC
Training Records and Reports	
HMIMMS Director Report Fiji 2019	NCCTRC
MIMMS Director Report Pacific Society of Anaesthetists 2019	NCCTRC
MIMMS Director Report PNG 2020	NCCTRC
NurseTOK attendance sheets 12 Jan, 16 & 23 March, 13 April, 9 June 2022	NCCTRC
COVID and Critical Care training Nauru attendance sheets and evaluation feedback forms 2022	NCCTRC
MIMMS Director Report Timor-Leste 2022	NCCTRC
HMIMMS Director Report Timor-Leste 2022	NCCTRC
Essentials of Critical Care course report Timor-Leste 2022	NCCTRC
Rehabilitation in Disasters and Emergencies course report Timor-Leste 2022	NCCTRC
Training transaction costs for MIMMS Fiji 2022 and MIMMS PNG 2020	NCCTRC
MIMMS Regional Faculty list	NCCTRC
Fiji National University Diploma and Master of Emergency Nursing 2021 and 2022 Enrolment data Master Research Topics	FNU
Policy related documents	
AUSMAT Deployees: 'To Sign' Package: Code of Conduct – Professional Behaviours – Child Protection DFAT Code of Conduct EMA – Appointment of a non-Commonwealth Employee Conditions Form 2021 NCCTRC – Code of Conduct for Overseas Service Social Media Policy and Guidelines – Exercises, Training and Deployment Statutory Declaration Child Protection and Criminal History Declaration	NCCTRC
AUSMAT Deployees: 'To Read' Package: Clinical Service Guide Deployment Information for Teams and their Families Child Protection Policy and Reporting Policy v3 Comcare Arrangements and Claim Procedures July 2017 Deployee Next of Kin policy Heat Acclimatisation preparedness information Response Psychological – Mental Health Considerations for Deployment	NCCTRC
2.6.14 AUSMAT Pre-employment Screening Police and Working with Children Checks	NCCTRC
2.6.18 DFAT Child Protection Initial Notification Form	NCCTRC
2.6.19 NCCTRC AUSMAT Child Protection Policy and Reporting Policy	NCCTRC
AUSMAT Poster Resources Disabled Toilet/Shower	NCCTRC
DFAT Guidelines – Taking Photographs of Children – A Public Diplomacy Practitioners Guide (Sept 2016)	NCCTRC

Documents reviewed	Source
DFAT Environmental Social Safeguard Policy, March 2019	NCCTRC
DFAT Preventing Sexual Exploitation Abuse and Harassment Policy, April 2019 Sexual Exploitation, Abuse and Harassment (SEAH) Incident Notification Form Preventing Sexual Exploitation, Abuse and Harassment: Risk Guidance Note, June 2019	NCCTRC DFAT Website
DFAT Child Protection Policy, January 2018 DFAT Child Protection Guidance Note Health Activities, January 2017 DFAT Child Protection Guidance Note Use of Images and Social Media, January 2017 DFAT Child Protection Guidance Note Child Protection in Emergencies, January 2017 DFAT Child Protection Guidance Note Reporting and Notifications, February 2018 DFAT Child Incident Notification form accessed 13 September 2022	DFAT Website
DFAT Gender Equality and Women's Empowerment, February 2016	DFAT Website
DFAT Development for All 2015–2020. Strategy for strengthening disability-inclusive development in Australia's aid program, May 2015 ** extended to 2021 DFAT Disability Action Plan 2017–2020, December 2016	DFAT Website
AUSMAT Team Member Training Report and Course Program 25-29 July 2022	NCCTRC
AUSMAT Team Member: Vulnerable Populations training curriculum and materials	NCCTRC
AUSMAT Team Member: Cultural Awareness training curriculum and materials	NCCTRC
Policy Frameworks	
The Pacific Community. 2016. Framework for Resilient Development in the Pacific: An Integrated Approach to Address Climate Change and Disaster Risk Management (FRDP) 2017 – 2030 Voluntary Guidelines for the Pacific Islands Region.	Resilient Pacific website
United Nations Office for Disaster Risk Reduction. 2016. Sendai Framework for Disaster Risk Reduction 2015-2030.	UNDRR website
Other	
NCCTRC created and collated Pacific COVID Care resources (https://sites.google.com/view/pacific-covid-care/home)	NCCTRC
NCCTRC and WHO Pacific EMT Summary 2023-25	NCCTRC
Memorandum of Understanding between The Pacific Community (SPC) and The Northern Territory of Australia through its agency the Department of Health represented by the National Critical Care and Trauma Response Centre (NCCTRC) (June 2021)	NCCTRC / SPC
Review of NCCTRC Facebook Page (for pre-Regional Program MIMMS training)	Web
Review of AUSMAT's Response to the Samoa Measles Outbreak 2019-20. Prepared for NCCTRC by Josie Flint and Kate Sutton, Humanitarian Action Group. October 2020	NCCTRC
Review of Australian High Commission and Embassy Facebook pages and media statements from Regional Engagement Program partner countries	Web
Other Research	
Advanced Life Saving Group 'ALSG courses in other countries' – process for delivering ALSG courses [ALSG owns MIMMS and HMIMMS training]	NCCTRC
DFAT. February 2017. 'Briefing Humanitarian Assistance in the Pacific an Evaluation of Australia's Response to Cyclone Pam'.	DFAT website
DFAT. 'How disasters impact our region'.	DFAT website
DFAT. 'Humanitarian preparedness and response'.	DFAT website
DFAT. Tropical Cyclone Winston – support to Fiji.	DFAT website

Documents reviewed	Source
Information on the partnership between the Tongan Ministry of Health and Rocketship Pacific Ltd regarding the Diploma and Master of Family Medicine with the Fiji National University.	Ministry of Health Adviser
Pacific Heads of Nursing and Midwifery Meeting 1-2 September 2022 documents: Australian College of Nursing, ACN NCCTRC, Critical Care	SPC website
United Nations Economic and Social Commission for the Asia and the Pacific. 2018. Leave No One Behind: Disaster Resilience for Sustainable Development, Asia-Pacific Disaster Report 2017.	UNESCO website
United Nations University Institute of Environment and Human Security. 2016. World Risk Report.	Web
World Health Organization. 2021. Classification and Minimum Standards for Emergency Medical Teams [Blue Book]	WHO website
World Health Organization. 'EMT Global Classified Teams'.	WHO website
World Health Organization. 7 December 2021. 'Emergency Medical Teams (EMT) in the Pacific: Strengthening national capacity for health emergency response'.	WHO website

Appendix 8: Information sheet and consent forms

National Critical Care and Trauma Response Centre (NCCTRC) Regional Engagement Program Evaluation Information Sheet

What is the purpose of the evaluation?

The Australian National Critical Care and Trauma Response Centre (NCCTRC) and the Department of Foreign Affairs and Trade have commissioned Pandanus Evaluation to conduct an external evaluation of the NCCTRC Regional Engagement Program. This is the first external evaluation conducted of the NCCTRC Regional Engagement program since its inception in 2017.

The evaluation will focus on program implementation, outcomes, and benefits for participants, and on drawing out lessons across the program of work that will provide guidance for the next grant period.

The evaluation will primarily focus on be on program activities conducted in 2021/22, including the training and short courses; Pacific Academic partnerships; Acute Care Health Systems Response; Pacific engagement in WHO Technical Networks; WHO Surge deployments and NCCTRC Regional engagement support to Pacific Island countries' Ministry of Health and health system leaders

Why have I been asked to participate?

You/your organisation has been identified as a key stakeholder who can provide valuable information about the Regional Engagement Program. The evaluators, Nea Harrison and Stephanie Harrison, would like to interview you and get your feedback on the Program. They are conducting interviews with key stakeholders and project participants during the months of July and August 2022.

How can I participate and what will I be asked?

If you are happy to participate, the evaluators will arrange to talk to you at a time that suits you and in the way that best suits you. Interviews can be either be conducted by phone or via video link using Zoom, Microsoft Teams or WhatsApp. They will ask you to share:

- your stories of how you have engaged with or been supported by the NCCTRC Regional Engagement Program
- your views of program successes and challenges including how the program has benefitted you or your colleagues
- your suggestions for ways the project could work in the future

Will my information be kept confidential?

The evaluators will keep your information confidential. They will not share the information you provide in a way that you can be identified without your permission. As well as taking written notes, the evaluators will ask your permission to record the interview. You will also be provided with a consent form to sign.

If the evaluators use a case story provided by you, you will be sent a draft to check and approve before including it. You can also ask for your contribution to be withdrawn at any time if you are not happy.

What will happen to the information I provide?

The information you provide will be combined with the information provided by others into a written evaluation report. The report will to be presented to the Australian Department of Foreign Affairs and NCCTRC Regional Engagement Team. Copies of the report will be made publicly available on the NCCTRC / DFAT Websites.

Who can I contact for further information?

If you have any questions or concerns about the evaluation, please contact Bronte Martin: Email: Bronte.Martin@nt.gov.au; Ph: +61 428 525 576 .

You can contact Nea Harrison by email: nea@pandanusevaluation.com; or Ph: +61 (0) 457 850 051.

About the evaluators

Pandanus Evaluation is an independent evaluation, planning and research consultancy providing high-quality services throughout Australia and the Pacific. We have over 30 years' experience in supporting government and non-government agencies, civil society and research groups to review and plan effective programs, policies and systems.

Nea Harrison is an evaluation and planning consultant, with over 20 years' experience specialising in supporting participatory program and policy design, evaluation and building evaluation and research capacity. Nea Has a background in research, management and program and policy development in the health, social development, education and law and justice sectors. She has worked in the Pacific Region since 2013. Nea holds a Master in Education (Honours) degree.

Richelle Tickle is an international development specialist with 20 years' experience managing Australian Government-funded programs and meeting the Australian aid program's quality and policy requirements in the Pacific Region. Richelle has programming experience across a range of sectors, including gender equality programming, law and justice sector, infrastructure and community development. Richelle holds a Master in International and Community Development degree.

Stephanie Harrison is a program planner and evaluator with 5 years' experience conducting evaluation in Australia and the Pacific. Stephanie has 15 years' experience working in the Creative Industries as a producer, educator, and music specialist. Stephanie holds a Master in Program Evaluation degree.

National Critical Care and Trauma Response Centre's Regional Engagement Program Evaluation Consent Form

I agree to participate in this interview for the Evaluation of the NCCTRC Regional Engagement Program.

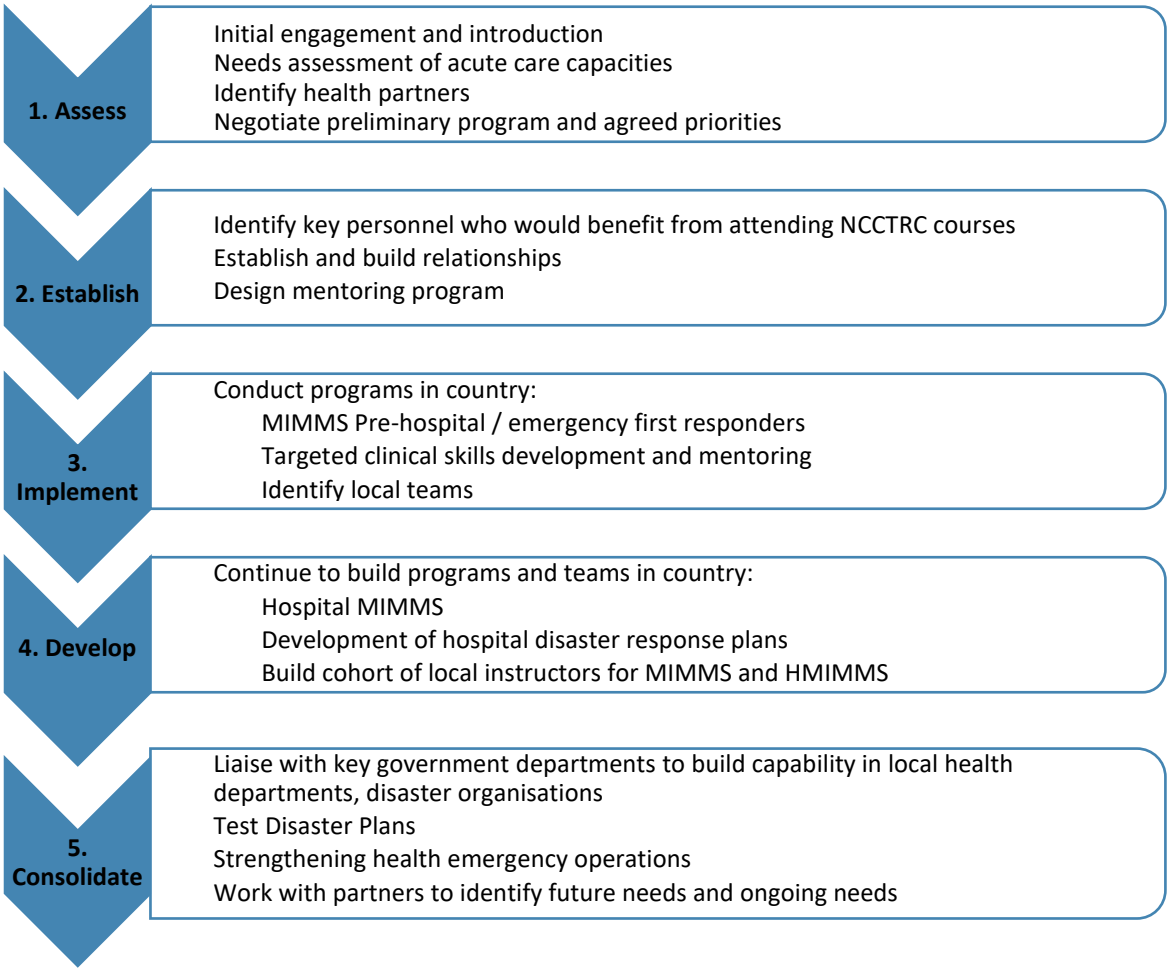
I understand that:

- My participation is voluntary, and I can withdraw from the evaluation at any time.
- I can determine who may be present during the interview.
- My decision to participate or not to participate in the evaluation will not affect any current or future relationships with the NCCTRC Regional Engagement Program.
- The evaluators will seek to keep my information strictly confidential. No information in the report will be attributed to individuals without written permission.
- I can request any information collected from me to be withdrawn at any time up until the analysis stage.
- If I withdraw, I can request that any information collected from me to be returned or destroyed.
- I have given permission for the interview to be recorded and it may be transcribed.
- Digital recordings, notes, and summaries will be stored securely with the evaluators and will not identify me.
- I have been given the opportunity to ask questions.
- I give my consent to participate in this interview.

Name: ……. Signature: ……..

Date: …….

Appendix 9: REP's staged approach



Appendix 10: Research topics for the first cohort of Master of Emergency Nursing students

Research Topics for the first cohort of Master of Emergency Nursing Students

Exploring the challenges faced by rural remote nurses in managing emergencies at Nursing Station level, Western Division, Fiji.

Perception of Nurses with their role in Emergency Nursing Practice at selected sub-divisional hospitals in Western division.

Patient satisfaction with the services provided at the Emergency Department, Lautoka Hospital.

Emergency Nurses, knowledge, attitude, and practices regarding disaster preparedness and management in Emergency Departments at the Northern Division, Fiji Islands.

Prevalence and consequences of workplace Violence against Nurses at the Emergency Departments in the Northern Division, Fiji Islands

The impact of a structured handover approach for nurses on effective communication and patient safety in the Emergency Department at the Colonial War Memorial Hospital in Suva.

The Prevalence of Burnout amongst Nurses working in the Emergency Department in Colonial War Memorial Hospital, 2022

A Descriptive Study of Nurses' Attitude, Knowledge and Skills in Caring for Patients with Mental Health Conditions at the CWMH Emergency Department.

The barrier and enablers of using ISBAR as structured tool during handing over in the Emergency Department at Vaiola Hospital.

ISBAR = identification, situation background assessment and recommendation