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PNG Maternal and Child Health Initiative

Phase II: Final Report

June 2016

Maternal and Child Health Initiative (MCHI) Phase II Monitoring and Evaluation (M&E) Report, 2015

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Note: This report is compiled from interviews, focus groups, surveys and other data collected between January 2014 to December 2015. Changes that may have occurred from the reporting period to the publishing of this report have followed the completion of the Maternal and Child Health Initiative.

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TABLE OF CONTENTS

SUMMARY OF MATERNAL AND CHILD HEALTH INITIATIVE PHASE II **1**

EXECUTIVE SUMMARY **2**
Monitoring and Evaluation 2
Maternal and child health workforce needs post-2015: Recommendations for the future 6

INTRODUCTION **9**
The Monitoring and Evaluation Framework 9

PHASE II MONITORING AND EVALUATION **11**

SUMMARY OF MCHI PHASE II OUTCOMES **13**
Outcome 1: Effective implementation of strategy, processes and personnel for delivery of the Initiative. 13
Outcome 2: Establish working relationships with NDoH and other stakeholders 15
Outcome 3: Increased learning opportunities for midwifery educators 18
Outcome 4: Increased midwifery educators teaching capacity 24
Outcome 5: Improved clinical education experience for students 28
Outcome 6: Increased quality and quantity of midwifery graduates 33
Outcome 7: Increased technical capacity of clinicians in participating sites 42
Outcome 8: Improved quality of the midwifery curricula 47
Outcome 9: Progress towards regulation of midwives 49
Outcome 10: Increased opportunities for key stakeholders and participating PNG clinicians to collaborate and strengthen skills 51
Outcome 11: Ongoing supportive environment for Clinical Midwifery Facilitators and MCHI Obstetricians 54
Outcome 12: Conduct Longitudinal Research of PNG Midwifery graduates 57

REVIEWING MONITORING AND EVALUATION PROCESSES **58**

RECOMMENDATIONS AND FUTURE DIRECTIONS **59**

APPENDICES **62**
Appendix 1: MCHI Phase II M&E Program Logic Model 62
Appendix 2: Data Collection Monitoring and Evaluation Plan 63
Appendix 3: PNG MCHI Phase II Monitoring and Evaluation Framework 64
Appendix 4: Progress on MCHI Recommendations from Phase I 72
Appendix 5: MCHI Phase II Case Studies 76
Appendix 6: Example of capacity building activities from the MCHI Obstetrician based at St Mary's Hospital – January to April 2015 79

ACRONYMS

AusAID	Australian Aid
CHW	Community Health Workers
CME	Clinical Midwifery Educator
CMFs	Clinical Midwifery Facilitators
CPD	Continuing Professional Development
DFAT	Department of Foreign Affairs and Trade
eMOC	Emergency Obstetric Care
FGD	Focus Group Discussion
HHISP	Health and HIV Implementation Services Provider
HIV	Human Immunodeficiency Virus
HPRS	Health Practitioner Registration System
HREC	Human Research Ethics Committee (UTS)
IUD	Intra Uterine Device
LSON	Lutheran School of Nursing
M&E	Monitoring and Evaluation
MCHI	Maternal and Child Health Initiative
MCHI SC	Maternal and Child Health Initiative Steering Committee
MRAC	Medical Research Advisory Committee (PNG)
NDoH	National Department of Health
O&G	Obstetrics and Gynaecology
PAU	Pacific Adventist University
PHDs	Provincial Health Districts
PMGH	Port Moresby General Hospital
PNG	Papua New Guinea
PNG NC	Papua New Guinea Nursing Council
RHTU	Reproductive Health Training Unit
SMSON	St. Mary's School of Nursing
SOM	School of Midwifery
TC	Teleconference
TOR	Terms of Reference
UoG	University of Goroka
UPNG	University of Papua New Guinea
UTS	University of Technology Sydney
WHO CC UTS	World Health Organization Collaborating Centre University of Technology Sydney

SUMMARY OF MATERNAL AND CHILD HEALTH INITIATIVE PHASE II

PNG Maternal and Child Health Initiative (MCHI) Phase II	
Commencement date	January 2014
Completion date	December 2015
Counterpart partner	PNG National Department of Health
Funding body	The Australian Government Department of Foreign Affairs and Trade (DFAT)
Logistical support	Health and HIV Implementation Services Provider (HHISP)
Sub-contractor	accessUTS: Contractual arm of UTS - Responsible for employment contracts, logistics, housing for CMFs and financial issues WHO Collaborating Centre for Nursing Midwifery and Health Development at the University of Technology Sydney (WHO CC UTS) – Responsible for recruitment and employment of the staff, Tri-annual Workshop for stakeholders, mentoring of MCHI team and other capacity building activities.
Monitoring and evaluation	WHO Collaborating Centre at UTS
Additional support	Faculty of Health UTS, WHO PNG

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EXECUTIVE SUMMARY

This final report evaluates the contribution of Phase II of the Maternal Child Health Initiative (MCHI) (January 2014 to December 2015) towards improving midwifery in PNG to ultimately address the high rate of maternal mortality. The Final Report from MCHI Phase I is available on request.

The Maternal and Child Health Initiative (MCHI) was a multi-stakeholder initiative, funded by the Australian Government, led by the PNG National Department of Health (NDoH) and supported by the WHO Collaborating Centre for Nursing, Midwifery and Health Development at the University of Technology Sydney (WHO CC UTS), accessUTS (the contracting arm of UTS) and the PNG Health and HIV Implementation Services Provider (HHISP).

Phase I of the Initiative was funded through AusAID from January 2012 to December 2013, and Phase II from January 2014 to December 2015 by Department of Foreign Affairs and Trade - Australian Aid under the partnership framework for improving maternal health care in Papua New Guinea (PNG): Capacity building in midwifery education and practice.

Ten clinical midwifery facilitators (CMFs) were placed in the five midwifery schools, with one clinical midwifery educator (CME) located at Port Moresby General Hospital (PMGH). These roles were designed to support PNG clinical midwifery educators and clinicians. Two obstetricians were placed in two regional hospitals to provide clinical care and teaching. The Initiative was overseen by the MCHI Steering Committee with representation from a range of stakeholder groups including NDoH, DFAT, WHO PNG, midwifery educational institutions and clinical training sites.

The MCHI brought together different stakeholders working to build capacity and improve maternal health outcomes in PNG, specifically national midwifery educators, obstetricians, course coordinators, clinicians and CMFs. The MCHI workshops were planned, developed and coordinated through the WHO CC UTS with support from the NDOH and other counterparts.

The WHO CC UTS undertook the role of support to the MCHI and the ultimate goals through workshops, assistance with ongoing regulation and process and support to midwifery educators and course coordinators, employment and management of MCHI staff (CMFs and obstetricians). The WHO CC UTS team provided mentoring, support and capacity building to the MCHI team and their counterparts, and undertook the monitoring and evaluation of the Initiative.

Monitoring and Evaluation

The MCHI aimed to contribute sustainably to a decrease in neonatal and maternal mortality rate in PNG through improved quality of essential maternal and newborn health care. Specific objectives of the Initiative were to improve:

- The standard of midwifery clinical teaching and practice in the five teaching sites;
- The quality of obstetrical care in two regions through the provision of clinical mentoring, supervision and teaching.

The Initiative aimed to contribute to the following long-term impacts:

- Decreased maternal and child mortality
- Improved maternal and child health indicators
- Increased capacity of quality and quantity (in line with other DFAT programs such as PNG scholarships) of midwives in PNG
- Increased quality of obstetric care in two districts
- Increased key stakeholder buy-in of maternal and child health issues in PNG.

Phase II of the MCHI built upon work and outcomes from Phase I listed below, incorporating lessons learned through monitoring and evaluation, while strengthening successful strategies already in place.

The M&E framework for both phases of the MCHI utilised an evidence-based approach incorporating multi-method data collection and analysis to monitor outcomes, evaluate program impacts and guide changes where necessary to steer the MCHI towards its objectives. Data collection methods during Phase II included interviews (63), surveys (293), focus group discussions (10), regular monitoring reports (38), minutes of Steering Committee meetings (5 meetings) and evaluations of workshops (9).

Key Findings and Lessons Learned

A summary of the key findings and lessons learned presented by the MCHI outcomes is found below. These have contributed to the future recommendations that follow.

Outcome 1 Effective implementation of strategy, processes and personnel for the delivery of the Initiative.

- Induction/orientation that was well-timed and relevant was critical for effective mobilisation of MCHI staff.

Outcome 2 Establish working relationships with NDoH and other stakeholders.

- Support and advice provided by the Steering Committee meetings was important for the achievement of Initiative outcomes, and for strengthening working relationships with NDoH and other stakeholders. Logistical support provided by HHISP ensured good meeting attendance and representation by all stakeholder groups.

Outcome 3 Increased learning opportunities for midwifery educators.

- The MCHI workshops throughout Phase II were evaluated positively by stakeholders, participants and educators involved, and were seen as valuable learning opportunities for PNG educators and clinicians, and beneficial for working relationships and for potential collaborations between NDoH, other stakeholders and the MCHI team.
- Mentoring and support provided by the CMFs/CME contributed significantly to the learning and development opportunities for PNG educators.

Outcome 4 Increased midwifery educators teaching capacity.

- Support provided by the MCHI in Phase II for the midwifery schools in terms of resources, and professional development opportunities for staff have been valuable and enabled increases in educator confidence and performance, and improvements in their capacity for midwifery education delivery.
- The importance of having adequate numbers of midwifery educators (on a staff to student ratio) employed to support the learning of students, in the classroom and the clinical areas is evident, and the identification of high-performing graduates as potential midwifery educators has been a successful small scale strategy in this area.

Outcome 5 Improved clinical education experience for students.

- The high quality, ongoing clinical support and supervision for PNG educators and clinicians provided by the CMFs and CME has had a positive effect on the clinical learning experience for midwifery students although at times supervision of students in the clinical setting is less than optimal.
- 'Respectful care' is being adopted by students, educators, graduates and in some cases, other clinicians and relationships between midwifery school educators and the leaders and clinicians in the clinical facilities have strengthened.
- The inclusion of clinicians in inservice training and workshops has contributed to their professional development and enabled them to better supervise and assess students in the clinical setting.

Outcome 6 Increased quantity and quality of midwifery graduates.

- Increased numbers of midwifery graduates and reported improvement in the quality of midwifery graduates suggests that the investment in midwifery education by the Australian Government combined with capacity building provided through the MCHI has been worthwhile, and reflects improvements in infrastructure including renovated classrooms, computer and clinical labs, new student and educator accommodation.
- There is a need for ongoing supervision and support for new graduate midwives linked if possible to their workplace and work in the clinical setting.

Outcome 7 Increased technical capacity of clinicians in participating sites.

- The MCHI obstetricians have had a positive impact on clinical and educational activities for clinicians and outcomes, including a decrease in neonatal and maternal mortality, increased referrals to hospital and in-service education opportunities.
- Role modelling of clinical practices and attitudes (such as 'respectful care') by the CMFs, obstetricians and CME has had a positive effect on work practices of clinicians and PNG educators.

Outcome 8 Improved quality of midwifery curricula.

- The review of the National Framework for Midwifery Education has been completed and its implementation with NDoH support and resourcing will be critical for midwifery education in PNG.

- The model for review of the PNG National Framework for Midwifery Education has been reported as effective and efficient, and may be utilised for urgently needed reviews of the Nursing and CHW curricula.

Outcome 9 Progress toward the regulation of midwives.

- The MCHI team provided support to the PNG NC and assisted with capacity building as required in relation to the regulation of midwives, facilitating significant progress in this area.

Outcome 10 Increased opportunities for key stakeholders and participating PNG clinicians to collaborate and strengthen skills.

- The MCHI through its workshops, inservice training, mentoring activities provided increased opportunities for stakeholders and PNG clinicians to work together and collaborate.
- Provision of support to the PNG Midwifery Society by the CME and CMFs has provided capacity building for the organisation and its members although this needs to be sustained.
- The final Stakeholder Forum and PNG Midwifery Society Symposium in November 2015 were well-attended events that provided opportunities for stakeholder engagement and collaboration and it is hoped these will continue in the future.

Outcome 11 Ongoing supportive environment for Clinical Midwifery Facilitators and MCHI obstetricians.

- The regular MCHI teleconferences were important in supporting MCHI staff working in-country, with mentors for the CMFs and obstetricians also played an important role. This helped to maintain a focus on the aims of the Initiative, and its capacity building nature.

Outcome 12 Conduct longitudinal research of PNG midwifery graduates.

- 90% of the 2012 and 2013 graduates surveyed were working in midwifery skilled positions, including and nursing midwifery education, across 21 of the 22 provinces of Papua New Guinea.
- The majority of graduates felt that they could perform the basic required competencies independently, but still required supervision with some of the advanced midwifery skills and ongoing professional development.
- Graduates have acquired skill and confidence, improved leadership in maternal and newborn care services and are providing respectful care to women through improved attitudes.
- Sandaun, Hela, Gulf and Southern Highlands have low supervised birth rates and would benefit from additional midwives, and Northern, Central, East Sepik, Enga and Madang Provinces had minimal graduates despite large numbers of childbearing women.

More detailed and specific *Lessons Learned* are found throughout the full report.

Maternal and child health workforce needs post-2015: Recommendations for the future

With the conclusion of the MCHI, continuing support and commitment from NDoH and DFAT is critical to ensure the achievements made during Phase I and II are sustained as this will be critical for the future of maternal and child health post 2015.

A number of recommendations are made at the end of Phase II for consideration:

1. Induction and/or orientation is important for staff employed on projects such as the MCHI, and should contain relevant and detailed information, and coincide with commencement of work. (Outcome 1)
2. High level stakeholder advisory groups such as the MCHI Steering Committee are essential to Programs such as the MCHI and must be established prior to project commencement if possible, to facilitate the development of collaborative relationships between key stakeholders, and to ensure stakeholder commitment and involvement. (Outcome 2)
3. Relationships with major stakeholders such as NDoH are critical to the success of a project such as the MCHI, and need to be initiated, developed and invested in from project inception. (Outcome 2)
4. Midwifery educators in midwifery schools need to be supported and provided with continuing professional development opportunities including further study and conference attendance to continue to improve the standard of midwifery education and maternal and child health care in Papua New Guinea. (Outcome 3)
5. Capacity building workshops should continue as valuable sharing and networking opportunities for the national midwifery educators, and this will require external support from the NDoH and other stakeholders. Future workshops should be planned and facilitated by the PNG midwifery educators with support and feedback from NDoH and WHO CC UTS if feasible. (Outcome 3)
6. A professional development strategy needs to be developed to address issues impacting teaching capacity such as resource availability, limitations of facilities including classrooms and accommodation, staff- student ratios for better clinical supervision and teaching. (Outcome 4)
7. Supervision of midwifery students in the clinical setting must be seen as a priority by educators and clinicians that enhances quality learning and the development of competent practitioners. Educators require adequate allocation of time and resources to undertake student clinical supervision. (Outcome 5)
8. A position such as the CME based at PMGH should continue to enable the provision of ongoing mentoring and professional support for clinicians, educators and students in the hospital setting. This is a model that could be applied for the provision of capacity building support for other hospitals in PNG in the longer term. (Outcome 5)
9. The midwifery student numbers should continue to increase to meet the need for more midwives. Consequently the number of midwifery education scholarships on offer need to be available proportionate to the number of students. (Outcome 6)
10. Combined investment in midwifery and nursing education, through the funding of scholarships and related infrastructure, with the provision of and support for educators capacity-building appears to be a successful model that should be considered for similar projects in the future. (Outcome 5)

11. To ensure adequate numbers of midwifery graduates and the viability of the midwifery program in PNG, nurses need to be attracted through improved advertising and communication, and with targeted incentives, particularly when required to work in rural locations. (Outcome 5)
12. Quality improvement policies need to be improved in all midwifery schools. This should ensure adequate resources and facilities are provided for program delivery. (Outcome 6)
13. The time allocated to the clinical component in the midwifery program needs to be increased, and continuation of rural placements ensured to facilitate a better clinical learning experience for midwifery students. (Outcome 6)
14. Strategies to support the clinical supervision of new midwives post-registration need to be explored to ensure consolidation of learning and technical skills in the clinical environment. These could options such as post-registration internships. (Outcome 6)
15. Capacity building and mentoring of obstetricians and other clinicians and health workers in the regional areas is still required. (Outcome 7)
16. Ongoing work and collaboration with the NDoH, and the PNG Medical Board and the PNG Obstetrics and Gynaecology Society may facilitate professional development opportunities for PNG clinicians including MCHI graduates. It is essential that such opportunities are made available and accessible, and require ongoing support and commitment from hospital management. (Outcome 7)
17. Implementation of the revised National Framework for Midwifery Education needs to occur as soon as possible and requires NDoH support and additional resources to be ready for commencement in 2017 and ensure the quality of midwifery graduates. (Outcome 8)
18. Nursing and CHW curricula require urgent review. (Outcome 8)
19. Implementation of the Building Faculty Capacity Program approved by DFAT will ensure that further educator capacity is built for midwifery, nursing and community health workers. (Outcome 8)
20. Further capacity building of the PNG Nursing Council is required to sustain progress made in relation to the regulation systems for midwives and other health workers, registration of graduates, and development of databases for management of graduate and registration information, including enactment of the Health Practitioners Bill which will improve legislative powers of health professionals regulation. (Outcome 9)
21. The PNG Midwifery Society requires ongoing professional support and mentoring to continue recent progress made and to rebuild capacity and ability to support PNG midwives. This has been provided by the CME until December 2015 and similar support is still required. Ongoing workshops and face-to-face support to assist the Midwifery Society to be able to fulfil their role as an advocate for midwives and a provider of ongoing education is needed. (Outcome 10)
22. Regular mentoring and support provided by a professional mentor or similar through teleconferences for the MCHI team and counterparts should be incorporated into design of projects such as the MCHI, with consideration given to participants/audience and issues for discussion, and maintaining a focus on project aims and outcomes. (Outcome 11)
23. Development of a long term workforce plan and an ongoing commitment to improving maternal and newborn is required by NDoH. This should include acknowledgement of the value and

importance of midwives and ensure the visibility of midwives in regulation, education, workforce planning and in service delivery. (Outcome 12)

24. Results from the longitudinal study will be of use by NDoH DFAT and midwifery schools to improve selection criteria, course content, areas of improvement for learning in the classroom and clinical settings. (Outcome 12)

INTRODUCTION

The Maternal and Child Health Initiative (MCHI) is a multi-stakeholder initiative, funded by the Australian Government, led by the PNG National Department of Health (NDoH) and supported by the WHO Collaborating Centre for Nursing, Midwifery and Health Development at the University of Technology Sydney (WHO CC UTS), accessUTS (the contracting arm of UTS) and the Health and HIV Implementation Services Provider (HHISP).

Phase I of the Initiative was funded through AusAID from January 2012 to December 2013, and Phase II from January 2014 to December 2015 by Department of Foreign Affairs and Trade - Australian Aid under the partnership framework for improving maternal health care in Papua New Guinea (PNG): capacity building in midwifery education and practice. A Final Report for Phase I was provided to AusAID and the NDoH in April 2014. This is the final report for Phase II.

Phase II of the MCHI built upon work from Phase I, incorporating lessons learned through monitoring and evaluation, while strengthening successful strategies already in place.

The MCHI has aimed to contribute sustainably to a decrease in neonatal and maternal mortality rate in PNG through improved quality of essential maternal and newborn health care. Specific objectives of the Initiative were to improve the:

- standard of midwifery clinical teaching and practice in the four teaching sites;
- quality of obstetrical care in two regions through the provision of clinical mentoring, supervision and teaching.

The Initiative aimed to contribute to the following long-term impacts:

- Decreased maternal and child mortality
- Improved maternal and child health indicators
- Increased capacity of quality and quantity (in line with other DFAT programs such as PNG scholarships) of midwives in PNG
- Increased quality of obstetric care in two districts
- Increased key stakeholder buy-in of maternal and child health issues in PNG.

The Monitoring and Evaluation Framework

The Monitoring and Evaluation (M&E) framework for both phases of the MCHI utilised an evidence-based approach incorporating multi-method data collection and analysis to monitor outcomes, evaluate program impacts and guide changes where necessary to steer the MCHI towards its objectives. The WHO CC UTS was responsible for the M&E component of the MCHI. The M&E processes aimed to track and influence the activities of the MCHI where necessary, to maintain their focus on short to medium outcomes and therefore contribute to the long term outcomes and overall goal of reducing neonatal and maternal deaths. Stakeholder involvement and engagement in both the design and implementation of the Framework has been consistent and essential. The MCHI M&E Program Logic Model is found in Appendix 1.

Monitoring & Evaluation Outcomes

In Phase II, the MCHI continued to build on the outcomes from Phase I. Three new objectives with outcomes were added to the Outcomes Reported by Category matrix at the commencement of Phase II (January 2014) to ensure monitoring of effective implementation (Phase II Objective 1), positive working relationships (Phase II Objective 2), and the Phase II longitudinal study research project (Phase II Objective 12).

Phase I Outcomes (2012-2013)	**Phase II Outcomes (2014-2015)**
1. Monitor increased learning opportunities for PNG midwifery educators.	1. Monitor implementation of effective strategy, processes and personnel for delivery of Initiative (new)
2. Increased midwifery educators teaching capacity.	2. Monitor working relationships established with NDoH and other stakeholders to ensure MCHI continues to increase opportunities for key stakeholders and participating PNG clinicians to collaborate to meet the goals of the Initiative. (new)
3. Improved clinical education experience for students.	3. Monitor increased learning opportunities for PNG midwifery educators.
4. Increased quantity and quality of midwifery graduates.	4. Increased midwifery educators teaching capacity.
5. Increased technical capacity of clinicians in participating sites.	5. Improved clinical education experience for students.
6. Improved quality of the midwifery curricula.	6. Increased quantity and quality of midwifery graduates.
7. Progress towards the regulation of midwifery.	7. Increased technical capacity of clinicians in participating sites.
8. Increased opportunities for key stakeholders and participating PNG clinicians to collaborate and strengthen skills.	8. Improved quality of the midwifery curricula.
9. Ongoing supportive environment for clinical midwifery facilitators and MCHI obstetricians.	9. Progress towards the regulation of midwifery.
	10. Increased opportunities for key stakeholders and participating PNG clinicians to collaborate and strengthen skills.
	11. Ongoing supportive environment for clinical midwifery facilitators and MCHI obstetricians.
	12. Longitudinal Research of PNG Midwifery graduates. (new)

Considerable external factors and constraints affect midwifery in PNG. Although many were beyond the control and scope of the Initiative, they are noted below:

- Limited baseline data
- Limited resources and effective support systems in the health sector
- Limited opportunity to capacity build
- Inequity of resources and lack of remuneration
- Complex partnership structure of MCHI
- Cross-cultural challenges in supporting evidence-based practice
- Philosophical differences
- A need for more time to ensure sustainability

This report summarises the findings from the monitoring of the outputs, outcomes and impacts of the MCHI during Phase II (2014 and 2015). It is recognised that the aims and objectives of the MCHI and its M&E framework can only be achieved in close collaboration with relevant stakeholders.

December 2015 saw the end of the MCHI. Therefore, this report also aims to suggest future directions for midwifery education in PNG following completion of the Initiative and its four years of operation.

PHASE II MONITORING AND EVALUATION

The M&E component of the MCHI in Phase II was undertaken by the WHO CC UTS with support from NDoH. Five underlying principles have informed and guided the M&E process - (1) multiple voice and sources of information, (2) collaboration, (3) ownership, (4) flexibility and (5) rigor.

The MCHI M&E Data Collection Plan details the participants involved, the purpose of each data collection activity and the data sources (Appendix 2). Data were collected through a variety of methods - interviews, surveys, focus group discussions, evaluation activities and regular monitoring reports, and minutes of Steering Committee meetings (Table 1 - Data collected for MCHI Phase II (24 months) for monitoring and evaluation purposes).

Table 1 - Data collected for MCHI Phase II (24 months) for monitoring and evaluation purposes

Data Sources	Number			Participants	Purpose
	2014	2015	Total		
Interviews	23	40	63	Stakeholders included PNG educators, obstetricians, CMFs, clinicians, students, WHO and NDoH staff	To explore perceptions of the strengths and weaknesses of the MCHI from different perspectives, the lessons learned and the future possibilities to improve midwifery education and maternal health.

Data Sources	Number			Participants	Purpose
	2014	2015	Total		
Focus groups	6 groups 39 participants	4 groups 31 participants	10 groups with 70 participants in total	Course coordinators, CMFs and MCHI obstetricians, midwifery students	To explore perceptions of the strengths and weaknesses of the MCHI from different perspectives, the lessons learned and the future possibilities to improve midwifery education and maternal health (as per interviews with different means of collection).
Monitoring Reports	18	20	38	Course coordinators and CMF from each midwifery school, and each MCHI obstetrician every 4 months.	To collect data for ongoing monitoring including number of students, attrition, teaching and learning plans, new and ongoing issues.
Rural Placement Reports	4	3	7	Each midwifery school (course coordinators and CMFs)	To collect data on the rural placement locations, student numbers, facilities, resources, activities, challenges and outcomes.
Surveys	4	9	13	Course coordinators	To collect data from different stakeholders using a self-administered format. Questions included the strengths and weaknesses of the MCHI, the contribution of the NDoH, Australian Aid (DFAT) and WHO CC UTS
	12	10	22	CMF and MCHI obstetricians	
	30	31	61	Clinicians and other key stakeholders	
	76	121	197	Current midwifery students	To collect data on the experience of students and the skills and confidence gained from their midwifery program

Three M&E in-country field trips were undertaken to PNG during each year of Phase II – six in total. These served to maintain existing relationships with stakeholders, undertake data collection and be a forum for exchange of information regarding issues associated with the ongoing capacity building in midwifery education and the progress of MCHI. The field trips comprised visits to the five midwifery

schools, clinical site visits, which included Port Moresby General Hospital (PMGH), Goroka Base Hospital (Goroka), Modilon Hospital (Madang), St Mary's Hospital (Vunapope), and with NDoH and other stakeholders.

The field trips were purposefully organised around the MCHI workshops and Steering Committee meetings where possible, and provided an opportunity to collect a large amount of data through interviews and focus group discussions. The evaluations and feedback from these workshops and minutes from meetings were also collected and analysed as an important part of the M&E data.

Monitoring Reports were completed by each midwifery school and MCHI obstetricians every four months to track critical data for each site including student enrolments and attrition rates, teaching and learning plans and activities, changes and achievements in work practices, challenges experienced, and heath data in the case of the obstetricians.

Each midwifery school completed a Rural Placement Report once the rural placements were complete each year. These included information on placement location, duration, number of students involved and supervision, student activities whilst on placement, achievements and challenges.

At the end of each year, national course coordinator and educators, midwifery students, clinicians, key stakeholders and MCHI team members were asked to complete surveys. These were self-administered and collected by educators and MCHI team members for the M&E.

Each data source was analysed separately and broad themes were drawn across all data, in-line with Initiative outcomes. Overlap was evident between some of the outcomes, and some themes were consequently relevant for more than one outcome.

The section below presents a summary of the findings based on the MCHI outcomes. At the end of each section a brief paragraph on Lessons Learned is presented and with brief Recommendations for the future.

SUMMARY OF MCHI PHASE II OUTCOMES

Outcome 1: Effective implementation of strategy, processes and personnel for delivery of the Initiative.

Thirteen (13) MCHI staff were deployed the eight site locations in PNG during Phase II of the MCHI and program implementation progressed in line with planned timeframes. Recruitment and deployment of staff was completed with the addition of a Clinical Midwifery Educator (CME) for PMGH who joined the team in January 2015. This was deployment of 100% of the MCHI Phase II team, and an increase of three members to the team from Phase I. There was a very low attrition rate for the MCHI team during Phase II (0%) with no resignations or changes to team composition.

The CMFs, CME and obstetricians were employed by the MCHI (accessUTS) and supported by the WHO CC UTS, in particular, the Director of the MCHI as their named employer. The CMFs worked alongside course coordinators, educators and clinicians across the midwifery school sites to strengthen the

midwifery workforce and establish a better clinical experience for students. The location of two CMFs rotated halfway through Phase II to accommodate personal requests. The two obstetricians provided clinical care and education in PNG's high-need areas. The obstetrician based at Mendi Hospital was transferred to St Marys Hospital in Vunapope, East New Britain and commenced work there in December 2014 to support the development of the 5th midwifery school.

The CME joined the team in January 2015 and was based at Port Moresby General Hospital (PMGH) for work with hospital clinicians, and staff in the PNG Midwifery Society office located there.

Table 2: MCHI-funded staff by location and discipline – Phase II

Location	Discipline and number
University of PNG (UPNG) and PMGH	2 Clinical Midwifery Facilitators
Pacific Adventist University (PAU) and PMGH	2 Clinical Midwifery Facilitators
University of Goroka (UoG) and Goroka Hospital	2 Clinical Midwifery Facilitators
Lutheran School of Nursing (LSON) and Modilon Hospital	2 Clinical Midwifery Facilitators
St Mary's School of Nursing (SMSON) and St Mary's Hospital	2 Clinical Midwifery Facilitators
Port Moresby General Hospital (Jan – Dec 2015)	1 Clinical Midwifery Educator
Kundiawa Hospital	1 obstetrician
Mendi Hospital (Jan – Nov 2014)	1 obstetrician
St Marys Hospital (Dec 2014 – Dec 2015)	1 obstetrician

Team Induction – Orientation

The ten staff recruited at the start of Phase II participated in a two week induction program held in January 2014 at the WHO CC UTS, and a subsequent in-country orientation program held in various sites in PNG for two weeks to one month in duration. Two additional CMFs joined the larger team in April 2014 (based in Goroka) and in September 2014 (based in Vunapope), and did not receive in the same two week induction program but still had the in-country orientation program in PNG. The CME who commenced work in January 2015 was previously employed in Phase I and had participated in an induction and orientation program at that time and so was familiar with counterparts, facilities and work practices to enable her to commence work following an informal orientation at PMGH.

Most MCHI staff reported that the induction prior to going in-country was useful as it provided a chance for them to see the larger context of the MCHI in PNG, identify key stakeholders, receive information on medical aid and assistance, and for the team to become acquainted with one another.

Feedback from previous interviews and surveys with the in-country team suggested improvements for the induction/orientation program for staff include:

- More information on day to day requirements when working in their roles in PNG;
- More information on the PNG midwifery curriculum – subject units, outlines, assessment;
- More PNG-specific cultural information such as retribution system, gender roles.

It was generally agreed that an induction - orientation for all team members at the beginning of their contracted work was optimal.

Lessons learned

- Induction/orientation is critical for effective mobilisation in this context. Induction and orientation needs to take place as early as possible from commencement of contracted work and should include out-of and in-country programs.
- Induction/orientation programs should incorporate information such as daily working requirements, country-specific cultural information and relevant policy and technical documentation.

Recommendation

Rec 1: Induction and/or orientation should be included for staff employed on projects such as the MCHI, contain relevant and detailed information, and coincide with commencement of work wherever possible.

Outcome 2: Establish working relationships with NDoH and other stakeholders

MCHI Steering Committee

The MCHI Steering Committee was established in Phase I to enable effective planning, implementation, communication and information sharing through capacity building in midwifery education and practice. There were varying degrees of success with the Committee in Phase I. The Committee was much more functional and effective in Phase II with dedicated support from HHISP to provide transport for members to attend and to ensure the telephone worked so that members could dial in. The Steering Committee had 17 core members representing a range of stakeholder groups (NDoH, DFAT, WHO PNG, midwifery education institutions, clinical training sites, WHO CC UTS).

The Steering Committee met five times in 2014, and three times in 2015.

Table 3: MCHI Steering Committee meeting attendance in Phase II

MCHI Steering Committee	Percentage of members attending
February 2014	82%
April 2014	77%
July 2014	47%
October 2014	59%
November 2014	47%
March 2015	58%
August 2015	71%
November 2015	88%

The MCHI Steering Committee provided an opportunity for working relationships to develop and strengthen between MCHI staff, PNG NDOH, educators, clinicians and other counterpart stakeholders.

Examples of collaboration facilitated by the Steering Committee in Phase II included the review of the National Framework for Midwifery Education, oversight of ordering and delivery of midwifery educational resources including midwifery kits and textbooks, guidance for workshop content and delivery, provision of support and advice for the Building Faculty Capacity Program proposal which was an ongoing issue since nursing school audits in 2021, instigation of the new CME position to work with and support clinicians at PMGH and the PNG Midwifery Society, and providing advice and support for the first National Midwifery Symposium.

The MCHI Steering Committee was supported by staff from the WHO CC UTS, with specific involvement from the Project Leader, M&E Officer and Midwifery Mentor. Most stakeholders including Steering Committee members (58%) surveyed at the end of Phase II indicated that the support received from the WHO CC UTS team was excellent with the average survey response by stakeholders being 'very good'. Quick response times, good monitoring and evaluation processes, and coordination and support for the MCHI workshops were appreciated by stakeholders.

Stakeholder Forum

The Phase II MCHI Stakeholder Forum was held in Port Moresby on 25 November 2015. The Forum was planned and organised by representatives from NDOH and the WHO CC UTS, with an aim for stakeholders to come together and reflect on the achievements and challenges of the MCHI over its four years, and to consider the way forward. It was a demonstration of the working relationships that had developed and strengthened during the MCHI.

Over 50 stakeholders attended with representation from NDoH, WHO PNG, Australian Department of Foreign Affairs and Trade (DFAT), Australia Awards, Deans/Heads of Schools, PNG Midwifery Society, PNG NC, Church Health Services, Susu Mamas, Reproductive Health Training Unit (RHTU), UNFPA, national midwifery course coordinators, midwifery educators, clinicians and the MCHI obstetricians, CME and CMFs.

Stakeholders attending the Forum shared knowledge and information on the MCHI and considered the way forward with each other and with NDoH. They also had the chance to discuss outstanding issues for the future of midwifery education, and look at ways to continue to develop the PNG midwifery workforce and ensure quality midwifery care in PNG. Informal feedback from attendees about the Forum was very positive.

Other opportunities for collaboration

All midwifery schools educators and CMFs/CME, and the MCHI obstetricians reported to have held meetings and/or inservice sessions with PNG clinicians from associated teaching hospitals, in addition to the regular informal mentoring that has taken place in clinical settings which developed and strengthened working partnerships. Course coordinators and hospital clinicians at two sites (Madang and Goroka) reported that regular meetings and inservice sessions held by midwifery school staff and CMFs has further strengthened relationships and dialogue between schools and hospital. Topics covered at these meetings included student performance, student assessment, and a variety of clinical practice

issues. The CME based at PMGH also helped to build and strengthen relationships with clinicians and the PNG Midwifery Society and associated organisations.

MCHI staff and PNG national educators, through their work with the midwifery program, developed collaborative relationships with various stakeholder groups to achieve Initiative goals. These collaborations with organisations including Reproductive Health Training Unit (RHTU - a public-private partnership between the NDoH, Oilsearch Foundation with funding support from the Australian Government), Marie Stopes, Susu Mamas and MSF, have led to valuable learning opportunities for clinicians, educators and midwifery students.

Each of the MCHI workshops in Phase II involved representatives from NDoH as participants and/or presenters, as well as an increasing number of PNG clinicians that also helped to build relationships, and provided opportunities for sharing of experiences and information, and collaboration.

Support from NDoH

As a key stakeholder, NDoH representatives took part in the design and implementation of the Initiative, chaired the Steering Committee, supported and facilitated the M&E process and taken part in MCHI workshops and other MCHI activities at times.

Stakeholders and clinicians surveyed at the end of Phase II were asked to rate support from NDoH during the MCHI. Their most common response was that NDoH support was 'average' (38%), with responses ranging from 'average' to 'good'. Comments about NDoH's involvement and support of the MCHI included difficulties with communication, lack of visibility and involvement directly with the midwifery program, lack of support for midwives in rural locations, and the need for NDoH to have adequate capacity to provide a commitment to the PNG midwifery education program in the future.

When national educators were asked to rate support from NDoH during Phase II, responses ranged from 'poor' to 'average' (37%) to excellent (37%). Educators commented that more support and visibility of commitment is required by NDOH for midwifery, although some NDoH leaders were commended for their work in this area. It was recognised that limited human resources in the NDOH diminished their capacity to be fully effective.

The PNG Nursing Council (NC) is the regulatory organisation overseeing nursing and midwifery registration, education and scope of practice, sitting in the NDoH. Most midwifery schools reported having an improved and positive relationship with the PNG NC since the start of the MCHI, and appreciated the Council's involvement with midwifery students to inform them of regulation and registration requirements and processes, and recent improvements made in the areas of midwifery registration and associated records and data management.

Challenges

Intermittent and unreliable internet access in the NDoH and at many of the clinical sites continued to hamper effective communication.

Some CMFs, CME, obstetricians and national educators suggested that working relationships with some areas of PNG NDoH and the Provincial Health Districts (PHDs) could be improved.

Ongoing commitment from NDoH, perhaps with assistance from WHO PNG and others, is essential for the work of the MCHI to continue in the future, including areas of continuing professional development for midwives, implementation of the revised midwifery curriculum, review of curriculum for other health workers such as nurses and community health workers (CHWs), and registration.

Lessons learned

- Support to attend the regular Steering Committee meetings has been effective and important in strengthening working relationships with NDoH and other stakeholders and for the successful functioning of the Committee.
- The assistance of HHISP with the provision of meeting venue, catering, and transport for participants to and from the Steering Committee helped to ensure good meeting attendance and representation by all stakeholder groups.
- The MCHI workshops and inservices have been beneficial for working relationships and for potential collaborations between NDoH, other stakeholders and the MCHI team.

Recommendations

Rec. 2 High level stakeholder advisory groups such as the MCHI Steering Committee are essential to programs such as the MCHI and must be established prior to project commencement if possible, to facilitate the development of collaborative relationships between key stakeholders, and to ensure stakeholder commitment and involvement.

Rec 3. Relationships with major stakeholders such as NDoH can be critical to the success of a project like the MCHI, and need to be initiated, developed and invested in from project inception where possible.

Outcome 3: Increased learning opportunities for midwifery educators

The MCHI has continued to provide PNG midwifery educators with increased learning opportunities to improve their ability to deliver quality midwifery education. These opportunities included:

- Attendance and involvement in the regular MCHI Phase II workshops:
    - Port Moresby, March 2014 – 11 educators;
    - Goroka, July 2014 – 9 educators;
    - Kokopo, November 2014 – 15 educators;
    - Sogeri, March 2015 – 11 educators;
    - Madang, September 2015 – 11 educators.
- Working closely with the CMFs/CME which enabled sharing of new teaching and learning strategies and activities, effective communication strategies and resources;
- Occasions to collaborate with other key stakeholders during professional development activities and in the clinical setting that strengthened formal and informal networks and facilitated a broader understanding of maternal health care in PNG, and;

- Attendance and involvement of some of the PNG educators at national and international midwifery forums and/or conferences which has provided further professional development opportunities for networking and learning with colleagues.

Many of these learning opportunities for PNG educators were reported by course coordinators, CMFs and other stakeholders to have had a positive impact on midwifery educator's teaching capacity.

MCHI Workshops

Five capacity building workshops were held in Phase II of the MCHI – Port Moresby (April 2014), Goroka (July 2014), Kokopo (November 2014), Sogeri (March 2015) and Madang (September 2015) and all were reported to be extremely beneficial by participants including PNG midwifery educators.

The workshops brought together relevant stakeholders, including midwifery educators, clinicians working in rural areas, clinical colleagues, CMFs and obstetricians and key MCHI Stakeholders from WHO PNG and NDoH. PNG Course coordinators worked to ensure all of their staff attended when possible.

Table 4: MCHI workshops in Phase II – venue, numbers attending and focus area/topics

Venue	Number attending and discipline	Focus area or topics
Port Moresby (total 29) March 2014	11 midwifery educators; 7 midwife clinicians; 4 doctors; 7 CMFs from 5 provinces.	Family planning (included training for 10 clinicians in insertion of implants)
Goroka (total 29) July 2014	9 midwifery educators; 10 midwife clinicians; 3 doctors; 7 CMFs from 6 provinces.	Clinical teaching and rural placement
Kokopo (total 36) November 2014	15 midwifery educators; 8 midwife clinicians; 3 doctors; 10 CMFs from 6 provinces	Newborn care
Sogeri (total 22) March 2015	11 midwifery educators; 5 midwife clinicians; 1 doctor; 4 CMFs; 1 CME, from 5 provinces.	Teaching antenatal care and strengthening competency assessment skills in midwifery education
Madang (total 22) September 2015	11 midwifery educators; 6 midwife clinicians; 4 CMFs; 1 CME, from 5 provinces.	Midwifery Leadership and Management

Participants were asked to complete an evaluation form after each workshop and evaluations were received from at least 80% of participants. Evaluations from all workshops were extremely positive with 95% or more agreeing that workshops addressed the needs of educators and clinicians, teaching methods were appropriate, and the workshop provided an opportunity to share experiences, gain new knowledge and update skills. The teaching and midwifery resources received at the workshops were also reported as being extremely useful and informative.

All educators surveyed had attended MCHI workshops during Phase II, and reported to find them useful for a variety of reasons such as information sharing, updating skills and knowledge and networking. Comments from the workshop evaluations included:

> *I have picked up a lot of things from this three workshops which I must say I have actively used in my teaching and it was a great success when I used that information, it really helped.* (Educator E1 Nov 2015)

> *I think they (*the workshops*) were very, very helpful. We got a lot of information which we'll share, and I also felt it was good for the educators and the coordinators, and even including those from administrative…I hope it's going to continue* (CMF CM7 Nov 2015)

The workshops were also reported by participants to help build relationships and networks, as explained in the comment:

> *Those workshops were very helpful, beneficial, and also created network, communication, and not only for the universities, but the clinical areas as well… to discuss what's going on in the clinical areas, what's going on at the universities. We should do more of that.* (Educator E1 Nov 2015).

The provision of regular workshops was reported as essential by over 90% of respondents at each event, as they were seen as a forum for continuing communication, collaboration, discussion, learning and strengthening midwifery education in PNG. In Phase II, PNG educators and clinicians determined the content of all MCHI workshops and increasingly planned, coordinated and facilitated these events.

Workshop participants thanked the Australian Government and the workshop organisers for the opportunity to attend the workshops, and requested unanimously that workshops continue in the future.

Working with MCHI staff

PNG midwifery educators have continued to benefit from the mentoring and support of the CMFs and both in the classroom and clinical setting, and also with the CME in the clinical setting throughout Phase II. This has been reported in surveys and interviews by educators, course coordinators and other stakeholders. This concurred with data from surveys and focus groups with educators and course coordinators.

All educators (100%) surveyed at the end of Phase II felt that the CMFs had been able to transfer knowledge and skills to themselves, colleagues and students. Many cited increased confidence in their work, knowledge of evidence-based practice and the sharing of information and resources to be positive outcomes of these relationships and for their midwifery teaching.

The few negative comments associated with the CMFs related mostly to differences in professional practices such as lack of respect for protocols, and limited clinical skills in a few sites. Seven of the nine educators (78%) agreed that they had received sufficient teaching and learning support from the CMFs

during Phase II particularly in the areas of clinical skills, research, different ways of teaching, leadership and personal development. Eight of the educators (90%) felt they were able to share their views and ideas and ask for support when required.

In most midwifery schools, a CMF was attached to each PNG midwifery educator for classroom teaching, and clinical supervision. Course coordinators commonly reported enjoying seeing the CMFs and educators working together as this had benefits for overall staff development and teaching practices.

CMFs commented on their ways of working with the educators:

> *We spend time with all of them doing that, and sitting in on their sessions, and you know, helping them prepare, critiquing what they've done, being in the classroom with them. (*CMF CM3 Sept 2015)

> *Knowing your resources and giving them out has made a bit of a difference. I did an activity with [PNG midwifery educator] and she just loved it, and she said, I'm going to use this next year. So providing things that help them… is a good way to get their support.* (CMF CM9 Nov 2015)

Comments made during interviews with national educators were generally extremely positive when asked about their learning with the CMFs and the opportunities brought about through the MCHI:

> *For me it's very helpful seeing others, and learning from others about the knowledge and the skills, those are the things that I've never before known about. I've learned so much, especially in the research and the books, updated technologies, and what they've brought….I've learned so much.* (Educator E8 Nov 2015)

> *The CMFs have been like a human resource. And we have learned so much from them, in rural placement, when we go out together, rural areas, health centres or hospital. Even in the wards here, or in the nearby clinics, and we work together. And from this, I have learned so much from them.* (Educator E14 Nov 2015)

> *I've learned a lot working side by side with them, talking things through and me learning - they talked about evidence-based practice, which when I was doing masters I kind of learned that. I didn't quite put it into practice, but when they came, it was like my opportunity to talk with them and practice it.* (Educator E7 Nov 2015)

CMFs from each midwifery school, sometimes with educators, also conducted inservice training for hospital staff. This encouraged educators to assist with clinical teaching for their students and other hospital clinicians in the clinical setting and it is hoped this will continue.

Most midwifery students felt the CMFs had helped support learning, particularly in the classroom, which has brought benefits to both educators and students through formal and informal learning opportunities and mentoring.

Other opportunities

During Phase II of the MCHI, some educators attended national meetings and international conferences that included the:

- PNG Midwifery Symposium, PNG Nov 2015;
- Australian College of Midwives National Conference, Australia Oct 2015;
- Pacific Society for Reproductive Health Conference, Fiji July 2015;
- Australian College of Midwives National Conference, Queensland 2014;
- International Council of Midwives 30th Triennial Conference 2014.

Educators continued their professional development through the experiences of presenting research, sharing information and networking. Educators were encouraged by the CMFs and schools to take part in these events as they were often seen as a valuable professional development activity:

> *Going to conferences and presenting…. you know, presenting is a skill, isn't it…and public speaking. And they've all got that now. (*CMF CM3 Sept 2015)

Course coordinators also acknowledged the benefits of attending external professional events:

> *Now that they've gone to these conferences which are organised by midwives or neonatal nurses, they see things differently, and they comment about it. I think this was one of those major positive impacts.* (Educator E1 Nov 2015)

There have also been opportunities for some PNG educators to study to obtain education qualifications relating to their work and some educators commented that they were now aspiring to this, seeing these as valuable:

> *Most of our midwifery educators have never had any continuing professional development or education opportunities.* (Educator E6 Nov 2015)

Educators generally felt supported by their school/university during the MCHI, with 88% rating their school/university as 'very good' or higher in providing support. Opportunities to attend workshops, conferences and availability of information were appreciated, although a few educators felt that their schools were under-resourced and under-paid some staff which influenced their performance, and fewer opportunities were made available to them.

Challenges

Limited numbers of midwifery educator staff and their capacity to provide supervision in clinical areas has at times affected the ability to utilise learning opportunities. Some educators reported that they have to work additional hours to take advantage of these learning opportunities due to their heavy workload.

Lack of preceptorship training also presented challenges. Some clinicians and educators expressed resistance to changes in practice due to lack of knowledge in the clinical care, lack of updates and

education opportunities for midwives and doctors in clinical areas and lack of ongoing professional development opportunities for all staff.

Some CMFs noted that, at times, they felt educators needed more ongoing support to put their learning from professional development activities into practice:

> *Sometimes it's a bit difficult when they (*educators*) come back to see any changes, you know, as a result of having obtained more knowledge, skills, attitude and stuff.* (CMF CM6 Nov 2015)

> *There's been a lot of challenges. Like, sometimes when we cannot process new things and we're trying to adapt to new ways of doing things, so I think there's been some sort of challenges along the way. But, it's how we tackle each challenge (*Educator E9 Nov 2015)

Lessons learned

- The MCHI workshops throughout Phase II were valuable learning opportunities for PNG educators and clinicians. Workshop evaluation feedback from stakeholders, participants and educators involved was extremely positive with all respondents requesting that workshops such as these continue and include as many educators and clinicians as possible in the future.
- Future workshops should be planned and facilitated by the PNG midwifery educators with support and feedback from NDoH and WHO CC UTS if feasible.
- Timely collaborative discussions and planning between PNG NDOH and other MCHI stakeholders may help with workshop planning and coordination, and hopefully ensure that the achievements of the MCHI and its workshops are sustained for the benefit of midwifery education in PNG in the future.
- Mentoring and support provided by the CMFs/CME contributed significantly to the learning and development opportunities for PNG educators.
- Some PNG midwifery educators had professional development opportunities or undertake further formal studies to increase knowledge, skills and teaching capacity.
- Most CMFs reported that they also had significant learning opportunities and benefitted from working closely with the national educators.

Recommendations

Rec. 4 Midwifery educators in midwifery schools need to be provided with continuing professional development opportunities including further study and conference attendance to continue to improve the standard of midwifery education and maternal and child health care in Papua New Guinea.

Rec. 5 Capacity building workshops should continue as valuable sharing and networking opportunities for the national educators, and this will require external support from the NDoH and other stakeholders. Future workshops should be planned and facilitated by the PNG midwifery educators with support and feedback from NDoH and WHO CC UTS.

Outcome 4: Increased midwifery educators teaching capacity

Phase II of the Initiative has worked to increase the teaching capacity of midwifery educators. This is seen through:

- reported increases by educators and CMFs in skill and confidence levels of the PNG educators in relation to teaching and learning in the classroom and clinical setting;
- support and mentorship provided by CMFs to their PNG educational counterparts to improve the delivery of midwifery education in the teaching sites, including the use of new teaching, learning and assessment strategies;
- self-reported increases by educators in their levels of teaching capacity facilitated by opportunities and resources provided by the MCHI.

Working with MCHI Staff

Educators reported positive interactions and relationships with CMFs generally, and appreciated their assistance with aspects of their work that has improved their teaching capacity. When interviewed, educators gave examples where they had directly benefitted through working with the CMFs included:

- lesson planning and preparation;
- provision of information and research articles from the internet, and other books and resources to benefit their teaching practices;
- evidence for the need to change some practices in the clinical setting.

CMFs commented on positive changes observed in their educator colleagues:

> *Those systems that you put in place, and then also testing out, … they're actually owning them now. That's all part of their capacity-building- so it's not just their teaching skills or that sort of thing. It's a lot of organizational stuff as well.* (CMF CM3 Nov 2015)

> *I think there has been capacity building that will continue to be evident in changed practices, in changed teaching modes, but I think there probably might be a few backward steps, as well.* (CMF CM2 Nov 2015)

Many new methods for student teaching and learning and assessment were introduced by educators with support from CMFs. These included new activities, new video material, use of scenarios and role plays, videoing of students and playback of role play activities for reflection and critique, greater use of models and simulations, moderation of exams and assessments.

CMFs gave examples of new classroom activities and learning introduced and utilised by educators which supported their teaching capacity:

> *We write quizzes and we had balloons, and we had slogans on the wall, and we made it into something a bit different, and we put them in teams. So in the last two years we've had family planning champions, and they're the team that gets the high score on the quizzes, by the end of the week*. (CMF CM3 Nov 2015)

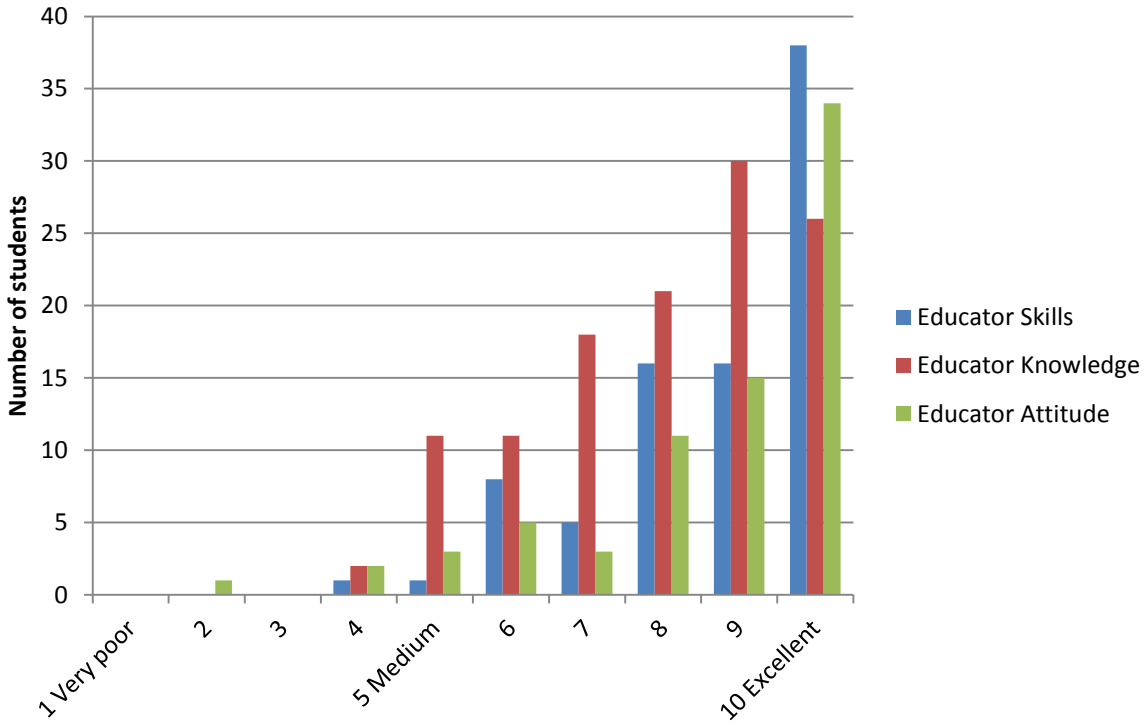
There's been lots of stuff that they are learning like lesson planning, teaching in a different way other than that didactic standard, stand at the front, showing a PowerPoint and teaching, a lot of team teaching, lots of developmental games and ideas or activities – that sort of thing. (CMF CM2 Nov 2015)

Most educators (67%) reported that their greatest achievement as a midwifery educator was improved confidence and teaching skills. Personal growth and development of students was also seen as an achievement by almost half of the educators (48%). All educators surveyed indicated that their achievements in these areas had a positive effect on their individual teaching ability and capacity.

Staffing, resources, followed by teaching methods, and clinical experience were rated as important for sustaining the improvements in midwifery education.

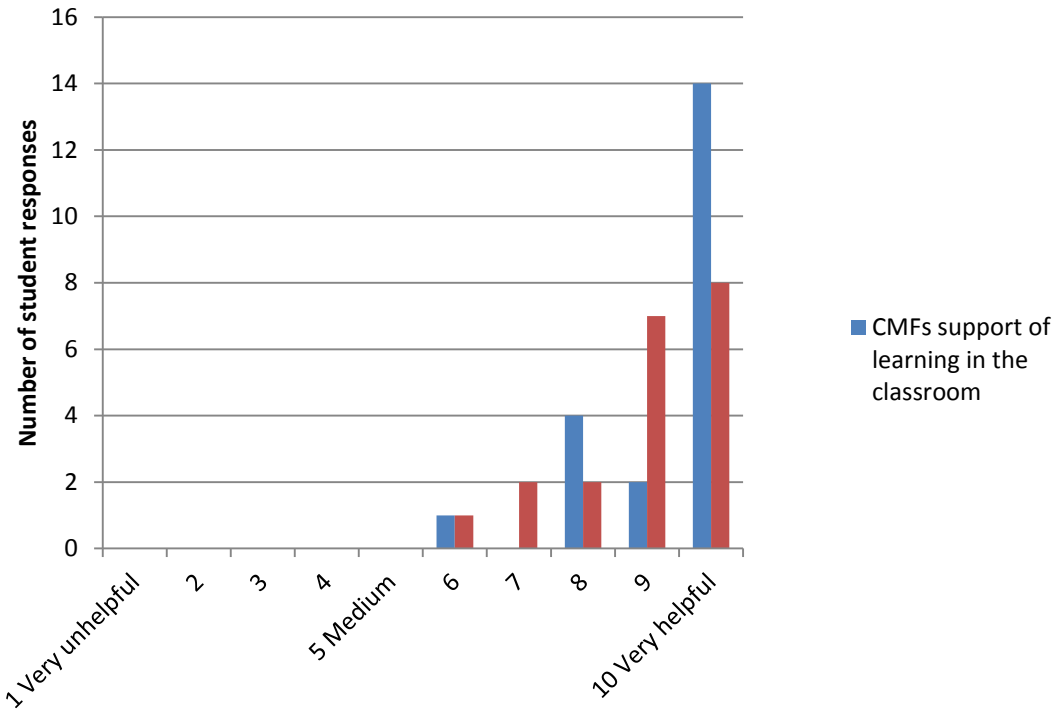
When midwifery students were surveyed in 2014 and 2015, the majority (80% in both years) consistently rated the knowledge, attitude and skills of the PNG midwifery educators towards teaching and assisting students as 'very good' or higher.

Figure 1: Skills, knowledge and attitudes of PNG Educators as rated by midwifery students in 2015



The majority of midwifery students surveyed reported that the CMFs had been very helpful (85% in 2014; 94% in 2015) in supporting learning in the classroom. This support was seen to benefit both educators and students, through formal and informal learning opportunities and mentoring. Through supporting learning in the classroom the teaching capacity of the educators was reported by students to be improving.

Figure 2: Support of learning provided by CMFs in the classroom and in the clinical area as rated by midwifery students in 2015



Almost half of the educators surveyed in 2015 (44%) reported that the resources provided through the MCHI improved their ability to do their work thereby increasing teaching capacity. Before the MCHI, educators reported having very few resources or opportunities for continuing professional development. It was difficult for them to find information and evidence to support their teaching and also to justify changes to resource expenditure. Support provided by the MCHI helped them to become better, more confident educators:

> *I've gained new capabilities and among clinicians I'm doing much better teaching, especially with CMF [named removed]. She taught me how to prepare a lesson plan, and how to present, and even simple things like anything that needs to be improved. She's always by my side to assist me, so I feel next year I will be confident and I can teach.* (Educator E3 Nov 2015)

> *Especially for the educators - it's really helped us so much in terms of classroom teaching. Many of the methods that we have used they (*the CMFs*) have told us about, and said, "You could do this, or you could do that." So it's really good for the educators.* (Educator E6 Nov 2015)

> *In the past, I used to think I'm scared, but now I feel really confident that I can get it here. I'm really happy about it. (*Educator E14 Nov 2015)

Over half of educators surveyed in 2015 (55%) indicated that continuing professional development opportunities were necessary for the provision of quality midwifery education in the future, post-MCHI. An example of one of the comments:

> *The MCHI and workshops gave me an opportunity to meet with colleagues from other schools, and discuss issues affecting midwifery education. It gave me the opportunity to learn from others, take part in facilitating group activities and also helped me to develop confidence.* (Educator survey Nov 2015)

Resources

Midwifery students in Phase II received midwifery kits and a set of textbooks for their course to ensure quality education. These resources were supplied by DFAT and WHO PNG, with the content of the kits and books identified by the local educators, and CMFs.

Resources including text books were reported by educators interviewed as assisting greatly in their work. They were also rated as important for ensuring that their school could continue to provide quality midwifery education in the future by 44% of educators surveyed toward the end of Phase II.

Challenges

The MCHI has helped to improve the teaching capacity of PNG educators however some constraints still exist. Many of these are beyond the scope of the Initiative. Examples reported include:

- limited appropriate classroom facilities and space has limited the number of students that can be accommodated each year;
- less than optimal staff-student ratios due to a lack of PNG educator staff has meant limited clinical supervision in practice and compromised classroom teaching;
- limited accommodation for staff and students restricted the numbers of students;
- challenging working relationships with CMFs and educators can impact negatively at times on an educator's performance and was a barrier to capacity building. Inappropriate delivery of feedback and differences on decision-making were given as examples of these relationship challenges;
- limited time available for PNG midwifery to take advantage of learning opportunities – some educators reported working extra hours in order to improve their teaching capacity.
- Recruitment of educators with no educational background may mean it takes more time for them to become competent midwifery educators.

Lessons learned

- Support provided by the MCHI in Phase II for the midwifery schools in terms of resources, professional development opportunities for its staff has been valuable and enabled increases in educator confidence and performance, and improvements in their capacity for midwifery education delivery.

- Discussions between the schools, NDoH and hospitals are needed to ensure that adequate numbers of midwifery educators (on a staff to student ratio) are employed to support the learning of students, in the classroom and the clinical areas.
- The identification of high-performing graduates as potential midwifery educators has been a successful small scale strategy for succession planning, however adequate time and support is required.

Recommendations

Rec. 6 A continuing professional development strategy needs to be developed to address issues impacting on the teaching capacity of national educators such as resource availability, limitations of facilities including classrooms and accommodation, staff- student ratios for better clinical supervision and teaching.

Outcome 5: Improved clinical education experience for students

A major focus of Phase II of the MCHI was improving the clinical education experience for midwifery students as this was a critical part of their course, comprising approximately 60% of overall course time. It was generally reported by educators, clinicians and students that the student clinical education experience had improved over the course of the MCHI. This was seen through evidence that included:

- positive clinical experiences reported by most midwifery students;
- improvements reported by educators themselves and CMFs of educator's clinical supervision and assessment skills and confidence levels of the PNG educators in teaching and supervising in the clinical setting;
- support and professional development provided by CMFs and MCHI workshops for PNG counterparts working with midwifery students to improve teaching and supervision in the clinical setting, including the use of new learning and assessment strategies;
- improvements reported in the quality of clinical teaching including supervision by clinicians working with midwifery students and graduates in the clinical setting;
- positive evaluation of rural placement experiences for midwifery students.

Of the 80% of midwifery students surveyed in Phase II, most felt positively about their clinical education experience and the knowledge, skills and attitudes of their PNG educators towards teaching and supporting students in the classroom and clinical setting. Over one third of students surveyed (39%) felt the clinical component was the best part of their midwifery education.

Clinical experience was seen by most students as beneficial and at the end of Phase II, 82% responded that the quality of their learning in the clinical area was' very good' to 'excellent', although at times the level of supervision was limited. Levels of supervision were reported to improve in the second half of Phase II for students from four out of five midwifery schools. The majority of students surveyed (86% in 2014 and in 2015) indicated that the supervision they received had supported their learning, but clinical supervision was not available at all times.

Most students (93% in 2015) felt their learning experience in the clinical area could be improved and comments on this issue included:

> *Not all of the students were assisted or were supervised due to shortage of staff.*
>
> *Due to the shortage of lecturers and preceptors, I am sometimes alone to do a few difficult procedures.*
>
> *Supervision should be at every shift when students are rostered to each section. More supervisors needed for students.* (Student survey results 2015)

The constant supervision by educators reportedly gave students the confidence to put into practice what they have been taught in the classroom. Clinicians and educators agreed on the importance of students applying what they have learning in the classroom in the clinical setting prior to graduation.

The amount of supervision by educators and CMFs in the clinical setting varied between schools and was generally seen to improve during Phase II. Improvements in clinical supervision were observed by clinicians and CMFs, for example:

> *Most of the time they (*the educators*) are with us when the students are out in the clinical rotation. They have helped us a lot in supervising the midwifery students. Most of the time they are with them. It's really better for us in the clinic when I'm on by myself. There's not enough time, not for supervision done for the students.* (Clinician C8 Nov 2015)
>
> *There's been opportunities working alongside them (*educators*) in clinical areas as well, because I think that was one of the things that was really obvious was that a number of our national counterparts did not really have confidence and lot of experience with a clinical setting, and that was a disadvantage for them when they were supervising students. Or they just didn't supervise them at all*. (CMF CM2 Nov 2015)

Changes in attitudes of educators toward the improved supervision of the students in the clinical setting was reported to bring many benefits, for example:

> *There's a lot of teaching opportunities within the clinical area that sort of micro-teaching, you know where you can actually work alongside a student one on one and teach them things that they might have covered in the classroom but now were actually applying these things to real people, real women and babies. So there's lots of opportunities for that kind of teaching, which I think is sometimes- Well, it's not more valuable, but it's equally valuable as learning something in the classroom.* (CMF CM2 Nov 2015)
>
> *And then when the students are out on the wards, we are always there. It's one good thing about this program, that when they (*the CMFs*) came, it was like, when they're on the wards, we must be there. So we don't have a choice. We have to be there. (*Educator E8 Nov 2015)

Feedback from students surveyed on a range of clinical skills was generally very positive, with most students feeling they could perform the majority of the skills learned independently at the end of their program of study. Educators also noted that students were taking a more woman-centred and respectful care approach to women during labour.

The majority of midwifery students surveyed reported that the CMFs had been very helpful (69% in 2014; 96% in 2015) felt that the CMFs had been helpful in supporting their learning in this area.in supporting learning in the clinical area. This impacted positively on the clinical education experience for students, and potentially the teaching capacity of educators and clinicians through mentoring and role modelling:

> *There's a definite change in this hospital in attitudes to women.* (CMF CM3 Nov 2015)

Most clinicians interviewed felt that students were generally supervised by CMFs and/or their educators whilst in the clinical setting which was seen as positive, however some concerns were expressed that educators may rely too heavily on CMFs providing student supervision.

Generally in all clinical settings, clinicians and educators appeared to be working together to supervise and support the student clinical learning experience. Clinicians reported that regular meetings took place between PNG educators and clinicians in at least three of the teaching hospitals to discuss progress and performance of students in the clinical setting.

Some clinicians explained that differences in practice did sometimes occur between those currently practised in the hospital, and those being taught to students in midwifery schools. This caused some difficulties with student supervision at times although seemed to improve with time during Phase II. Some clinicians reported learning new ways of doing things from the educators which then were reinforced with students.

Comments from clinicians included:

> *We had bit of problem, or no proper understanding between the CMFS and the clinical nurses in the hospital. There was a bit of friction, and then for the first year. Now I think we come to know them, why they are here and what they have been doing. So there is no more difficulty.* (Clinician C8 Nov 2015)

> *The students are learning a lot of confidence, because there are some challenges because of hospital setting where they cannot really practice what they learned in class. And the practices in the hospital are sometimes different - they have been doing that and want to change into a new evidence-based practice. It's sort of a challenge for us.(*Educator E2 Nov 2015*)*

> *I have learned mother-to-child breast feeding and those latest practices, like the resuscitation of the newborn and some of the evidence-based teaching that they've done. I feel it's okay to help the students follow what they've been taught. When they are around me, (I) make sure that*

what they've been taught in the school, they should implement in the labour ward. (Clinician C11 Nov 2015)

Length of clinical education

In focus groups, interviews and when surveyed, students generally commented that the overall midwifery course length was too short, including the clinical component. Educators also expressed concerns of the length of the current midwifery program, with many recommending that it be extended to 18 months if possible.

Most clinicians interviewed or surveyed commented that midwifery students would benefit from longer exposure in the labour wards and the chance to work independently so they feel confident when they graduate. Concerns were expressed about the length of the clinical experience component of the midwifery course in general and some suggested that an extra six months of student time in the clinical area would be beneficial.

> *I think they should have more (*clinical experience*). After training, they have to come back, at least six months to do practical in here, then they go back to the health centre.* (Clinician C9 Nov 2015)

> *Effectively I would have to say not really (enough clinical experience for students). I wish that we extend some time for them to really gain the skills. One year is not enough. I think that we are pushing for the 18 month course*. (Educator E7 Nov 2015)

> *I learned to be a confident midwife, I need a lot more clinical hours to be able to be competent and to go out there and treat and then go out into the clinical, feel like to be able to tackle things head-on I need more time*. (Educator E9 Nov 2015)

Rural Placements

All schools organised and conducted rural placements with each cohort of midwifery students in Phase II. Placements took place usually over one to two weeks in a variety of locations in the following provinces: Eastern Highlands, East Sepik, Madang, Milne Bay, Oro (Northern), Simbu (Chimbu).

Students were accompanied on placement by CMFs and/or midwifery educators although at times they relied on supervision by local staff. Generally rural placements were seen as successful and a valuable experience by students interviewed, that met their aims and objectives. Educators generally reported rural placement clinical experiences to be an excellent opportunity for student learning, which highlight the importance of competency in rural settings. Rural placements were reported as positive learning experiences by students and educators, although the sites utilised need to ensure the provision of enough clinical experiences with appropriate supervision.

Many logistical and educational challenges accompany the rural placement experience, such as lack of electricity, fresh water, transport difficulties and a review of placement locations is suggested on a yearly basis to improve the rural placement experience for midwifery students in the future.

The CME role

The introduction of the CME at PMGH in January 2015 was reported by clinicians based at the hospital to have improved their capacity to do their work, including the supervision of midwifery students in the clinical setting. Through inservice training, mentoring and support with the CME, clinicians have learned supervision and assessment skills, as well as some new evidence-based clinical practices in-line with the theoretical learning. As well as contributing to the professional development of the clinicians, this was seen to have been of benefit to students and their clinical learning experience at PMGH as clinicians become better supervisors in the workplace, and role models.

Challenges

Students reported that some clinicians in the hospitals were not helpful at times, and work practices that differed from those students had been taught could put students in a difficult position. In particular, the students were taught contemporary evidence-based practice but this was very different to what is practised in the clinical workplace. Difficulties were reported to arise at times in all clinical teaching settings between educators and clinicians, usually focussed on differences in clinical practice between clinicians and evidence-based practice by educators (skin to skin, episiotomy, upright position for labour and birth). This could cause confusion in the clinical setting and detracted from the learning of the students.

Almost three-quarters (73%) of students surveyed reported that their learning experience in the clinical area could have been improved with more educators and teachers available. Some concern was expressed by clinicians in some hospitals that a significant amount of student supervision in the clinical setting was undertaken by the CMFs. Although it is not always the case, it is hoped that the national educators will ensure adequate supervision of students occurs in the absence of the CMFs post-Phase II.

As mentioned previously, the current length of the midwifery program was of concern to educators, students and clinicians who commonly felt that an extension to the time in the program that students spend in the clinical setting would be beneficial.

The main challenges reported by the schools whilst undertaking rural placement in priority order were: lack of intermittent electricity supply; lack of running water in the health centre and the student/staff accommodation; road transport and accessibility; adequate supervision of students when educators not present; lack of equipment and medication; lack of knowledge of health centre staff; funding and organisation by Australia Awards; access to appropriate accommodation, food and sanitation; lack of family planning availability and acceptability (in sub-health centres administered by Catholic Health Services).

Lessons learned

- CMFs and the CME have provided high quality, ongoing clinical support and supervision for PNG educators and clinicians, which has had a positive effect on the clinical learning experience for midwifery students.

- CMFs and the CME have taught and role modelled 'respectful care' which is being adopted by students, educators, graduates and in some cases, other clinicians.
- Formal and informal meetings held on a semi-regular basis between midwifery school educators and the leaders and clinicians in the clinical facilities have strengthened relationships whilst ensuring that midwifery students have adequate clinical supervision in the clinical setting.
- The inclusion of clinicians in inservice training and workshops, including those with the CME, has contributed to their professional development and enabled them to better supervise and assess students in the clinical setting.
- Supervision and support of midwifery students in the clinical areas is often less than optimal. As the number of students increases and the CMFs are no longer employed, the number of educators available to provide clinical support has not increased accordingly in many settings.

Recommendations

Rec. 7 Supervision of midwifery students in the clinical setting must be seen as a priority by educators and clinicians that enhances quality learning and the development of competent practitioners. Educators require adequate allocation of time and resources to undertake student clinical supervision.

Rec. 8 A position such as the CME position based at PMGH should be resourced to enable the provision of ongoing mentoring and professional support for clinicians, educators and students in the hospital setting. This is a model that could be applied for the provision of capacity building support for other hospitals and other midwifery clinical teaching settings in PNG in the longer term.

Outcome 6: Increased quality and quantity of midwifery graduates

Quantity of midwifery graduates

The number of midwifery students in the five midwifery schools has increased since the start of the MCHI. A fifth midwifery school at SMSON in Vunapope commenced its midwifery program in July 2015 and boosted student numbers in Phase II. The majority of midwifery students were women as is usual in midwifery education globally. From surveys of the midwifery students in 2015, 64% of respondents trained in nursing between 2002 and 2013, and 32% were working in areas of maternal health prior to midwifery study. Midwifery student enrolments in 2015 were similar to those in 2014, with the exception of UPNG and SMSON.

Table 5: MCHI Phase II Midwifery students by five midwifery schools

	UPNG	UOG	PAU	LSON*	SMSoN	TOTAL
2011	16	7	13	13	NA	49
2012	21	18	20	14	NA	76
2013	22	32	27	25	NA	110
2014	17	30	18	22	NA	87
2015	35	30	21	21	22	129
Total	111	117	99	95	22	451

*LSON – can only take 22 due to the small size of the classroom. This is a long term constraint raised as a problem by the MCHI Steering Committee. ** SMSON – 2015 students graduate in July 2016.

The student attrition rate during Phase II for all midwifery schools was around 1%, which is very low. Examples of comment of the number of graduates during the MCHI:

> *The number of midwives that have actually been trained in the time of the MCHI is fairly impressive. I mean, the numbers when we came into the country- I think there were less than 200 registered midwives, and I think that we've probably… more than doubled that number. So I think that's a very positive step. (*CMF CM5 Nov 2015)

> *The one big achievement I think is the graduation of so many student midwives in the life of the project.* (CMF CM6 Nov 2015)

Scholarships

The Australian government through Australia Awards provided funding for scholarships for students studying midwifery with complementary infrastructure activities since 2012. This funding and investments have successfully increased enrolments for subsequent midwifery programs across PNG.

In Phase II, a minimum of 95% of midwifery students surveyed each year received scholarships to study midwifery, and 68% in 2014, and 78% in 2015 found this financial support to be adequate. 80% of all students surveyed felt they would not be able to study midwifery without the financial support of a scholarship.

Towards the end of Phase II some midwifery course coordinators expressed concern that the number of scholarships available for midwifery students in 2016 may be reduced by the Australian Government. This caused significant concern as schools felt that this may result in reduced student numbers, and therefore a reduction in the number of educators required, inability to utilise purpose-built facilities earmarked for midwifery and so on. The consequent reduction in graduate numbers would also impact the number and distribution of midwives working in PNG and ultimately the health of mothers and babies.

When surveyed, half of the educators (54%) indicated that they felt scholarship funding was important for sustaining midwifery education in PNG, post-MCHI.

> *We spend all this money setting all that up and then completely underutilise it when we're desperate for midwives. The schools have the same issue - they have the training places, they have all the applicants, but they're not going to have the students.* (Clinician C13, Nov 2015).

> *We've started it all. We've been preparing for this, so we are happy. But the thing is the scholarships. All these buildings and new structures, classrooms, lecture theatre, all the resources for teaching and learning. If there are no students, then who will use these things?* (Educator E1 Nov 2015)

> *For all of the schools, the scholarships help to convince the schools or universities to keep the educators. So if you've only got 15 students, most schools would say well you only need 2*

educators. You don't need any more than that. You can't say 4. How can you have 4 educators for 15 students? It's unjustifiable. (CMF CM8 Nov 2015)

Some suggested that the reduction in the number of scholarships offered for midwifery could have a positive effect:

*If they have to sponsor from their own pocket, maybe they (*students*) will feel this responsibility of learning as much as possible. (*Clinician C3 Nov 2015)

I think part of the upshot of the scholarship has been is that sometimes you get people who are not necessarily there for the right reasons. (CMF CM2 Nov 2015)

So although it is sad to hear that scholarship numbers may decrease, but I think it is good also for Papua New Guinea now to realize that you have helped us, it's now our turn to help ourselves. (Educator E1 Nov 2015)

Some suggestions were also made that funding for individual applicants may become available from Provincial Health Authorities or church organisations.

Educators, stakeholders and most clinicians interviewed felt that the number of midwives needed to increase in PNG, particularly those servicing rural and remote areas. It was suggested that this may be achieved through advertising, improved communication and targeted incentives for nurses to become midwives.

The number of midwives is[number removed to protect anonymity]I would like that number to increase. Like, here in the hospital, we have only six midwives working. The ratio is one to five or six. It's not enough. (Clinician C11 Nov 2015)

*Training more and more (*midwives*), yes. Train more and more, improve the facilities here, too, and build more hospitals in the rural places so we'll place all the midwives there.* (Clinician C8 Nov 2015).

Quality of midwifery graduates

Changes in the quality of midwifery graduates were ascertained through interviews and surveys with national educators, CMFs, clinicians, students and other stakeholders. Results suggest that the new midwives have been able to improve their midwifery practice.

Improved academic and clinical skills and competencies of graduates throughout the MCHI were reported by both by educators and clinicians. At the completion of Phase II, the feedback through interviews and surveys from both midwifery educators and CMFs was generally encouraging regarding the quality of midwifery graduates, in particular relating to the improved ability of students' capacity to think critically, problem solve and understand the theoretical underpinnings of good midwifery care.

Educators and CMFs reported that generally midwifery students taking part in the program were of an adequate standard for acceptance into the course, with most being competent in the areas of computer, writing and communication skills:

> *There were only two in the whole group who had never touched a computer, which was amazing, because previous groups, it's been a much higher number.* (CMF CM3 Nov 2015)

All educators (100%) surveyed felt they had seem positive changes to the quality of midwifery education in PNG as a result of the MCHI. Some educators had heard positive comments about their graduates in general, including good feedback about the clinical skills of the midwifery graduates, their theoretical knowledge and practice in the clinical environment.

Most educators reported that they could see definite improvements in the quality of the midwifery graduates since the commencement of the MCHI. They noted some variation in quality of graduates from year to year but generally the quality is now seen to be good to very good.

Educators and CMFs commented that graduates they had come into contact with in the field often reported feeling that they were well-prepared for their future work:

> *When I've been out in rural placements and I've come across students who are now graduated and are midwives working in their own places – when you talk with them about the training and whether it equipped them to cope and deal with the complications and the things that they see in their settings, they are all very positive about the fact that they feel much better equipped to cope with those things*. (CMF CM3 Nov 2015)

It was generally reported that midwifery graduates find employment easily and are very employable, which may also indicate favourable quality of graduates. Preliminary evidence from the longitudinal study shows that all 180 graduates from Phase I of the MCHI are working as midwives when surveyed up to two years later. Graduates performing well in the clinical area were often identified as potential educators or targeted for professional development opportunities by educators and clinicians.

Results from surveys of clinicians and stakeholders in 2015 showed that 93% of respondents believed the midwifery program under the MCHI has produced high quality graduates. Graduates were generally seen to capably manage maternal and health problems. Very few negative comments were made and these mentioned individual student differences and concerns about student attitudes and experience. Clinicians interviewed felt that the MCHI has done well to increase the number of midwifery graduates that are working in rural health facilities however there were some concerns. Generally clinicians were happy with the performance of new midwifery graduates however the lack of clinical experience and limited time students spend in the clinical area was expressed. One clinician questioned some of the referrals received from newly practising midwifery graduates, indicating that they may not be clinically experienced enough due to a lack of clinical supervision or limited time in practice.

Although variation between individuals was acknowledged, many clinicians were very positive about the new midwifery graduates. They were also seen to have a positive teaching effect on other new midwifery students with whom they were working in the clinical setting:

*They [midwifery graduates] are a good quality. They have good work output and work ethics, as well. (*Clinician C10 Nov 2015)

*A couple of our students who have graduated and become midwives actually work here in the labour ward, so that's been a really great thing as well. They're very supportive of the program. They really work well with the new students, because their knowledge is fresh and new, they're young, they're motivated. (*CMF CM2 Nov 2015)

*I'm very impressed with how they (*the graduates*) perform out there, and I think this is because of this—I believe it is because of this MCHI project, because having that aid, having this knowledge and the skill set to do it, they feel like they're ready to go out and perform.* (Educator E6 Nov 2015*)*

Some educators and clinicians expressed concern that the practices of graduates may change once they entered the workforce. As the outcomes for the midwifery program sometimes differed to those employed in the workplace, clinicians, educators and CMFs felt that it may be difficult for some graduates to maintain practising what they have learned.

*It's when they (*the students*) leave us that I think that the big problem is. You know, we can control them while they're here – we can say you must do it this way, that way. And they want to, you know, and they're happy to do it. But then as soon as they're gone, they go back to their own context, even here, this hospital. They are influenced by what's going on and the actual practices aren't maintained. We know that some of our graduates are actually getting in trouble for using different practices and being told that they're wrong.* (CMF CM3 Nov 2015)

Those ones that have already graduated and went back to their own regions, their own centres, I see that there's areas where they're going back into the old ways – even their attitude goes back again into the same old system that's there. (Educator E8 Nov 2015)

One school has set up a Facebook page and developed a mobile telephone application to help graduates stay in touch and to give them an avenue for support. The positive effect of graduates in their new workplace was also noted from educators, CMFs and some clinicians where new students were starting to effect change:

The good work is coming through the new graduates getting into the labour word, and they're slowly making some changes. (CMF CM9 Nov 2015*)*

I was a midwife for 21 years but I'm coming in again to do my Bachelor [degree] because I see most of the things that the current Bachelor students are doing are different from what I was taught. .. What is really best that I've seen is the evidence-based and then my approach towards the patient because when we attend to patient, it has to be complete care. (Student – Clinician C17 Nov 2015)

Student midwifery skills

When surveyed at the end of Phase II, midwifery students were asked to rate how they felt about the skills they had learned in their midwifery studies. Of the 50 skills listed, 36 were able to be done independently by the majority of students. Essential skills that students surveyed in 2015 at the end of their program felt the required more training or would like more supervision to be competent were:

- HIV counselling and treatment (53%)
- Recognising high risk pregnancy (28%)
- External cephalic inversion (75%)
- Vaginal examinations (25%)
- Care for obstructed labour (47%)
- Managing breech births (70%)
- Vacuum extraction (71%)
- Managing shoulder dystocia (58%)
- Managing multiple births (53%)
- Manual removal of placenta (58%)
- Giving magnesium sulphate (48%)
- Resuscitation of mother (52%)
- Resuscitation of neonate (36%)
- Inserting IUD (81%)

Many students interviewed felt that their confidence levels in their ability to perform clinical skills had improved with more time in the clinical area. Students often supported a 'respectful care' approach to midwifery as modelled by the CMFs.

Student facilities and resources

Facilities and resources available to students were seen to have some impact on the quality of midwifery graduates. Most students surveyed reported that the facilities at their place of study (library, computers, accommodation and classrooms) met their needs (63% in 2014, 58% in 2015), although almost half of students surveyed at the end of Phase II felt that their school's library was not well-equipped, and other comments focussed on substandard accommodation problems, and lack of computer and internet access.

Most students surveyed at the end of Phase II (78%) felt that the resources at their school, such as textbooks, midwifery kits and equipment, met their needs. They generally had very positive responses regarding resources which contributed to their midwifery education as follows:

> *They were wonderful gifts that I need for my training as well as work.*
>
> *The midwifery kits provided were really helpful in our learning in theory and practice. (*Student focus group 3 2015)

Opportunities for graduates on completion of their studies

Students surveyed at the end of Phase II were asked where they plan to work after finishing their studies – 48% planned to work in an urban location; 46% in a rural location with the remainder uncertain. This was dictated by current contracts with employers (37%), and the perceived need to improve PNG's maternal mortality rate and care for women and babies (38%).

Students surveyed were asked to give examples of things that they will do differently on their return to work. The most common responses were practice evidence-based care (61% of those surveyed), have an improved attitude to patients including respectful care (28%), train colleagues and village birth attendants (24%). When asked where they imagine themselves to be working in five years time, 36% hoped to be working in a rural community setting, and 34% indicated they would be undertaking further study. Comments included:

> *When I graduate, my plan is when I go back, I have to start supporting the T-O-T trainees in giving in-services on the staff* (Student MS 4 Nov 2015)
>
> *I chose midwifery because after nursing I lived in remote places and I came across many complications especially obstetric complications, sometimes beyond my understanding to manage them so I plan to take my Midwifery course and I'm going back there*.
>
> *I'm happy because now that I can do after treating emergencies, I can be able to manage obstetrics emergency services, something that I was very incompetent at, and that was the only reason that made me to come in (for midwifery). Since we've gone through it and done practicum in the beginning I can go back and at least I can manage obstetrics complications. I like that part.*
>
> *(*Student focus group 2 Nov 2015)

Respectful Care

Significant improvements in the area of respectful maternity care were reported among midwives working in the clinical areas with MCHI educators, CMFs and students. Recent attention in PNG concerning the negative attitudes of health staff to women, particularly in labour has been found to impact the woman's desire to attend facilities for birth which then increases morbidity and mortality by delayed responses to emergencies[1].

Woman-centred respectful care is one area in which it appears the MCHI and the midwifery graduates are making a difference. This can be seen as an example of the quality work practices and attitudes possessed by graduates during the MCHI as reported by educators and clinicians.

[1] National Department of Health (2009) *Ministerial Taskforce on Maternal Health in Papua New Guinea*, Port Moresby, Government of Papua New Guinea.

Positive changes with students in relation to respectful care were reported by clinicians, educators and CMFs with comments including:

> *When we first walked in there was yelling, there was abuse, there was hitting of women. That doesn't happen. I hope it doesn't happen when they're not there either, but it's a bit hard to say. So that's definitely a change.* (CMF CM3 Nov 2015)

> *Overall, we have seen good outcomes – one is not screaming at mothers. They don't do that anymore. When I first came here in 2012, yes there was screaming at the mother and abusing them, actually,… but after we've gone through, no, I don't hear it anyone scream at anyone, or do anything, so they're providing improvement in maternity care. (*Educator E3 Nov 2015)

> *I think there is a move onwards much more respectful care of women. It's not powering along like a steam train exactly, but there is certainly some movement along that road. It is the same kind of respect that you bring to relationships with the women that we care for. It's about respectful kind of space. (*CMF CM2 Nov 2015)

Some educators and CMFs did express concerns that attitudes of respectful care may diminish when they were not present in the clinical setting. However, some clinicians reported that they had changed their behaviour toward patients as a result of seeing how the educators and CMFs were expecting the midwifery students to behave in the clinical setting:

> *The way they (*midwives*) talk to the patients or they shout at the patient. They don't have time for the patient. With them coming… we feel what we're doing is not right. We used to be rough... Some of the changes that they have taught us have helped us to mend our relationship with mothers when in labour. (*Clinician C11 Nov 2015)

Some educators noticed more permanent changes in behaviour of clinicians in the hospital setting:

> *They don't scream at the patients anymore, like they do before. I think they observed us, and I think they have changed. (*Educator E7 Nov 2015)

Challenges

Adequate clinical supervision is necessary for quality graduates. Limited clinical education was reported to have a negative effect on quality of students although this has been improved with CMF support in clinical supervision.

Many students surveyed (58%) reported that some textbooks were outdated or in limited supply. Timely delivery of midwifery kits and other resources could also be improved. Accommodation issues and lack of availability of computers and reliable internet access were reported by students surveyed to be ongoing issues that need addressing.

Lack of academic performance and motivation of some students was noted by some educators who suggested stricter selection criteria for students applying to study midwifery may be required in the future.

Many stakeholders, clinicians and students felt that increasing the length of the midwifery program would enhance the clinical experience for students.

Many students surveyed in the Longitudinal Study were concerned about the lack of ongoing supervision they received in their workplaces. The issue of support for newly graduated midwives is important due to the limited length of their course, and limited experience in the clinical setting. Some graduates reported being located in a workplace that is isolated, or with staff following outdated practices that may have a negative impact on their learning.

Significant concerns were voiced from clinicians, educators and CMFs regarding the possible reduction in the number of scholarships being offered to midwifery students by Australia Awards in 2016. These focussed mainly on the possible retrenchment of educators that had been capacity built under the MCHI, underutilisation of facilities built for midwifery during the MCHI and resources and equipment that had been supplied.

Lessons learned

- The increase in number of midwifery graduates and reported improvement in the quality of midwifery graduates suggested that the investment in midwifery education by the Australian Government combined with capacity building provided through the MCHI has been worthwhile.
- Improvements in infrastructure including renovated classrooms, computer and clinical labs, new student and educator accommodation, have contributed to the increased number and improved quality of midwifery graduates.
- Preliminary results from the longitudinal study tracking the employment, retention and experiences of graduates from the 2012 and 2013 midwifery programs may be of use to improve selection criteria, course content, areas of improvement for learning in the classroom and clinical settings.
- Respectful care of patients by midwifery graduates is changing the environment for patients in some clinical settings and this behaviour is noticed and adopted by some clinicians.
- There is a need for ongoing supervision and support of new graduate midwives linked if possible to their workplace and work in the clinical setting.

Recommendations

Rec. 9 Midwifery student numbers should continue to increase to meet the need for more midwives. Consequently the number of midwifery education scholarships on offer need to be available proportionate to the number of students.

Rec.10 Combined investment in midwifery education, through the funding of scholarships and related infrastructure, with the provision of and support for capacity-building appears to be a successful model that should be considered for similar projects in the future.

Rec.11 To ensure adequate numbers of midwifery graduates and the viability of the midwifery program in PNG, nurses need to be attracted through improved advertising and communication, and with targeted incentives, particularly when required to work in rural locations.

Rec. 12 Quality improvement policies need to be improved in all midwifery schools. This should ensure adequate resources and facilities are provided for program delivery.

Rec. 13 The time allocated to the clinical component in the midwifery program needs to be increased, and continuation of rural placements ensured to facilitate a better clinical learning experience for midwifery students.

Rec.14 Strategies to support the clinical supervision of new midwives post-registration needs to be explored to ensure consolidation of learning and technical skills in the clinical environment. These could options such as post-registration internships.

Outcome 7: Increased technical capacity of clinicians in participating sites

Increased training opportunities for clinicians and other health care professionals by the CME, CMFs, PNG educators, obstetricians were reported widely by clinicians and other key stakeholders. These opportunities have occurred through informal mentoring support on a daily basis, more formal inservice training sessions, and participation at MCHI workshops. The provision of these professional development training opportunities was also reported to have strengthened relationships between schools, and hospitals and provincial health centres.

Survey data showed 96% of clinicians and stakeholders surveyed felt the MCHI CMFs, CME and Obstetricians had been able to successfully transfer knowledge and skills to their PNG colleagues. This was supported by anecdotal interview evidence.

Learning opportunities with obstetricians

The two MCHI Obstetricians, based at Kundiawa Hospital (PNG Highlands) and Mendi Hospital (until November 2014) and St Mary's Hospital in Vunapope (East New Britain) from December 2014, have continued to build on their achievements in Phase I. They have consistently reported on improvements in various clinical and educational outcomes, including a decrease in neonatal and maternal mortality, increased appropriate referrals to hospital and in-service education opportunities. The most significant input has been the sustained level of formal and informal clinical teaching and mentoring to hospital staff, and also for staff in many of the outlying provincial health centres.

During Phase II the MCHI obstetricians have instigated and been involved with many initiatives including:

- Training sessions in the proper use of the partogram for fetal monitoring during labour;
- Introduction of a chemotherapy unit for cancer treatment in one of the hospitals;
- Training in fistula repair surgery
- Support for the provision of family planning services

- Involvement on the CHW training programs
- Establishment of a family planning service and regular inservice training for staff;
- Lobbying for funding in renovation activities;
- More independently practising registrars due to being up skilled.

An example of an in-service training schedule is found in Appendix 6.

Data from clinician surveys and interviews were generally very positive about their learning from the MCHI obstetricians. Generosity with time and resources, effective learning in the clinical area through regular inservices, introduction of family planning, and case reviews were appreciated and seen as beneficial. Negative comments were few and focussed on time constraints of the MCHI team, and sustainability of this learning after the MCHI.

> *They have imparted to us many new skills and knowledge in terms of teaching us, connecting us and demonstrating to us.* (Clinician survey, 2015)
>
> *Obstetrician [name removed] has been training doctors in our post graduate programs when they were attached to his unit has collaborated with me to run four CHW Upskilling Programs and he's done it in a way that now the province just wants to keep going. They're convinced that it's a program that they want to support and the fact they're trying to funding it... So it's on-going - sustainability in PNG is a rare thing.*
>
> *He's made a big difference with regards to the reach of the O&G service. Kundiawa has really become a centre for the highlands for difficult gynaecological problems including fistula repair. (*Clinician C13 Nov 2015).

Both obstetricians have been actively involved with the MCHI workshops whenever possible, leading clinical sessions and providing support and advice to other participants as required. They have also encouraged and supported clinicians with whom they work to attend the MCHI workshops.

Both of the MCHI obstetricians expressed some satisfaction in the decreased maternal and neonatal morbidity rates in their hospitals and recognised the successes in other areas such as training and up skilling of their colleagues. The obstetrician based at Kundiawa has now accepted a local contract of employment to continue his work there. This has enabled continuity of support, training and capacity building of local staff and sustainable gains from the MCHI.

Learning opportunities with the CME

With commitment from NDoH through PMGH, the MCHI CME commended in January 2015. Office space was provided for the Midwifery Society office and small staff including the new Midwifery Educator role at PMGH.

The CME conducted regular inservice training for clinicians once each week at PMGH with additional sessions as required, which were supported by hospital senior management and clinical staff. Attendance at these sessions was been consistently favourable and as the relationship with the CME

developed, clinicians were been encouraged to identify topics for inservices, and encouraged to present them which reportedly worked well.

> *She's been running training…, and in the clinical areas supervising. Some of the problems that she fixed up are when midwives are not doing something correctly. Then she corrects it. Then on that she runs a training session. She thinks about all the things she needs to teach us, and she runs a training session afterwards… She puts a notice up one week prior to the training. And then a lot of us are coming, the midwives coming.*
>
> *We have our in-house trainings – we have all the wards then so we have to pick a problem in our ward and we need to teach the others (about it)….we need to do group presentation. We have research journals that I do in clinical ward. (*Clinician C14 Nov 2015*).*

In addition, the CME has been involved with informal training taking place on the wards with clinicians and midwifery students, and some educators also when they are in the clinical area. Students and clinicians interviewed found this to be a very beneficial type of learning.

Midwives supported through work with the PNG Midwifery Society

Support for the PNG Midwifery Society is important as strengthening associations is one of the three pillars to strengthen midwifery in every country. Associations play an important role in advocacy and the provision of support for midwives and educational opportunities and facilitates professional collaboration. Despite support provided to the Society by the MCHI in Phase I, additional resourcing was required to work with members to maintain a functional membership database, coordinate annual general meetings, a newsletter and maintain the twinning relationship with the Australian College of Midwives.

The CME played a vital role in coordination of the first PNG Midwifery Society's Symposium held in November 2015. Over 260 midwifery clinicians attended this two day event with presentations from senior leaders in NDoH, midwives and other health professionals, technical learning sessions, opportunities for networking and relationship-building for the midwives of PNG. The MCHI has provided ongoing support of the PNG Midwifery Society, through the work of the CME and supported by the CMFs.

Learning opportunities with educators and CMFs

All schools reported that inservices were conducted by educators and/or CMFs with clinicians with whom they work. Topics covered in the inservice training for hospital clinicians and other health care workers included neonatal resuscitation, skin to skin (Kangaroo Mother Care) and eMOC training with RHTU. Subsequent changes in practice were also reported by educators, clinicians and the CMFs and CME.

Most clinicians felt that overall there are positive, open relationships between clinicians and the CMFs from the Initiative which have strengthened during Phase II. They have improved ways of working together, helping with teaching and changing some ideas and practices. Skills transfer in a variety of

areas from CMFs to clinicians working in the hospital was reported by clinicians and senior hospital staff, with some working practices changing as a result (for example skin-to-skin). Through informal training and inservices, the CMFs have helped to consolidate the knowledge and practices of the clinicians involved.

> *We are open minded - we go along with the CMFs that we learn from. In our own meetings, we encourage our staff that we have to learn, and we have to adapt to changes... Whatever our sisters are showing us we go with the change.*
>
> *It's up to us now to take over from here. What they taught us, we have to continue that and teach our young midwives to be good examples in the clinical areas…they'll be coming to us and then we can continue to teach them what we have learned from the CMFs and CME and then we can hold together to strengthen midwifery in the future. (*Clinician C14 Nov 2015*)*
>
> *Evidence-based practice, new changes in the care, is what we've learned now - there are many new things that we are learning. We are improving our management care of the mother and baby now*. (Clinician C8 Nov 2015).
>
> *In the setting that I'm working I see changes occurring, changes in practice - mothers and babies staying together more, support people in the labour ward, the delayed cord clamping, first embrace …- which has the capacity to improve the maternal mortality down the track. (*CMF CM2 Nov 2015)

Senior hospital staff were generally supportive of the involvement of midwives and obstetricians in the MCHI workshops and any other training available. Many clinicians felt that the MCHI has helped them in the wards as they are encouraged to practise with the obstetricians, CMFs and students and have active involvement with student evaluation.

MCHI Workshops

Each capacity building workshop in Phase II was attended by at least five clinicians (see Table 4 – MCHI Workshops in Phase II) and the number of clinicians participating has increased in Phase II from Phase I. All Phase II workshops were reported to be extremely beneficial by the clinicians who attended.

Clinicians evaluating workshops generally found the topics relevant, learning opportunities very good and frequently requested that their clinician colleagues be involved in future workshops whenever possible.

Building effective professional relationships

CMFs and MCHI obstetricians interviewed found that building relationships with stakeholders and members of school and hospital staff was key to improving outcomes in health, in addition to training and up skilling.

Most midwifery schools reported that they continue to work to build better relationships with the hospital and clinical staff. Some educators facilitated this through holding meetings/ discussion sessions

with clinicians to discuss clinical teaching issues and student assessment. On occasion this has developed into inservice sessions for students and clinicians, which was reported to have a positive impact on the capacity of clinicians involved.

The successful outcomes achieved by both obstetricians appear to have been facilitated by their involvement during Phases I and II of the MCHI which has enabled them to build and strengthen relationships over a four year period.

Respectful Care

Some clinicians reported that they had changed their behaviour toward patients as a result of seeing how the educators and CMFs were expecting the midwifery students to behave in the clinical setting. They reported that their attitudes towards the woman have changed and feel that they are providing better quality midwifery care as a result:

> *The way they (*midwives*) talk to the patients or they shout at the patient. They don't have time for the patient. With them coming… we feel what we're doing is not right. We used to be rough... Some of the changes that they have taught us have helped us to mend our relationship with mothers when in labour.(*Clinician C11 Nov 2015)

Some educators noticed more permanent changes in behaviour of clinicians in the hospital setting:

> *They don't scream at the patients anymore, like they do before. I think they observed us, and I think they have changed. (*Educator E7 Nov 2015)

Challenges

The direct engagement of CMFs in the clinical area has been beneficial in most sites, but challenges were evident as they introduced practices not currently accepted or being practiced in PNG. Comments were made by some clinicians that these practices need to slowly change and CMFs need to understand this although this appeared to occur less frequently toward the end of Phase II. Despite this, it is difficult for CMFs to support practices that are clearly not based on evidence and may well be contributing to poor outcomes for mothers and babies.

Meetings and inservices coordinated by educators with clinicians in some instances were not sustained. This was reported to be due to difficulties with staff availability due to rosters, and for political reasons including strikes and industrial action in one site that made it difficult for these events to continue and then they lost impetus.

The MCHI aimed to address the reported general lack of awareness about “good quality health care” through informal and formal training with clinicians and hospital staff and improvements were noted in areas of some technical practices including the level of hygiene and infection control awareness.

Lessons learned

- The MCHI obstetricians have worked hard to have a positive impact on clinical and educational activities for clinicians and outcomes, including a decrease in neonatal and maternal mortality, increased referrals to hospital and in-service education opportunities.
- Support from the MCHI has enabled educators and CMFs to have a more visible presence in clinical areas to support the clinical learning of hospital clinicians.
- Role modelling of clinical practices and attitudes (such as 'respectful care') by the CMFs has had a positive effect on work practices of clinicians and PNG educators.
- It is important for clinicians to continue to have professional development opportunities such as the MCHI workshops that are supported by hospital management or Provincial Health Authorities (PHAs).

Recommendations

Rec. 15 Capacity building and mentoring of obstetricians and other clinicians and health workers in the regional areas is still required.

Rec. 16 Ongoing work and collaboration with the NDoH, and the PNG Medical Board and the PNG Obstetrics and Gynaecology Society may facilitate professional development opportunities for PNG clinicians including MCHI graduates. It is essential that such opportunities are made available and accessible, and require ongoing support and commitment from hospital management.

Outcome 8: Improved quality of the midwifery curricula

Improvements in quality of the midwifery curricula at local and national levels in PNG were evident during Phase II of the MCHI. Positive changes were made in-line with national needs, global midwifery standards, and followed appropriate processes of curricula review, and processing and approvals with the PNG NC.

At the midwifery school level, work was undertaken by the five schools particularly in the first half of Phase II, to have the midwifery curriculum accredited, with assistance from the CMFs. Each school's midwifery curriculum received accreditation from the PNG NC by 2015. The CMFs have made substantial contributions in working alongside their PNG midwifery counterparts to support this activity. The Registrar for the PNG NC has worked with a consultant to streamline processes, improve data collection and management, and facilitated communication between the universities and the NDoH.

At the national level, the current midwifery curriculum in PNG, known as the National Framework for Midwifery Education, was developed after a review of midwifery education undertaken in 2006. From this review, a draft curriculum was developed in 2007 and the Draft National Framework for Midwifery Education was finally developed in late 2008. Evaluation data from the MCHI consistently identified problems with the curriculum and length of the program, prompting the MCHI Steering Committee to initiate a review in 2014 as part of Phase II of the MCHI.

The review of the PNG National Framework for Midwifery Education was funded by DFAT and supported by the MCHI through HHISP during latter half of 2014. The review aimed to amend and adapt the Framework to ensure that midwifery educators in PNG deliver programs that address the needs of PNG, address the key educational and clinical practice requirements and the minimum length of time required to train a midwife, and further develop and clarify the core competencies required for midwifery practice in PNG, especially considering the high proportion of rural practice required.

Feedback regarding the curriculum during Phase II from midwifery students, educators and clinicians reiterated that the current length of the midwifery program (12-months) was too short. Ultimately, the review identified that an 18-month program was ideal in the short- to medium-term. It was hoped that a longer program will allow for more time for students to practise and develop the wide range of clinical skills, academic writing, research and computer skills and allow subjects such as family planning and public health to be taught in greater depth. It is hoped that this will also improve the confidence of graduates returning to work especially in the PNG context where many graduates will work in isolated settings. It is also hoped that this review and subsequent implementation of the revised curriculum would facilitate networking between schools as they worked together with a common focus.

> *Students have learned a lot, and are changing…but the difficulty, especially for this year, that we are observing is it's very difficult for these people to grasp all of these things in 12 months.* (Educator E1 Nov 15)

> *The two things I want to happen is the schools working closely together, …to coordinate together an 18 month curriculum. And then with the MCHI project, it made it possible for this to happen.* (Educator E2 Nov 14)

> *I wish that we could extend some time for them to really gain the skills. One year is not enough…We are pushing for the 18 month course.* (Educator E1 Dec 2014)

An Advisory Group was established in 2014 and held three face to face meetings (August, September and December 2014) and a national workshop (40 participants) in October 2014. This process engaged midwifery schools, clinicians and other key stakeholders. Further consultation on the revised curriculum took place at the MCHI workshops in August and November 2014. The final report and revised curriculum was delivered and presented to the PNG NC in December 2014 along with an Implementation Plan for this work. The PNG NC approved the curriculum at this time. The revised National Framework is currently awaiting approval from the NDoH National Curriculum Advisory Committee (NCAC) before implementation can commence.

NDoH Challenges

It appears that the necessary approval process for the revised midwifery curriculum has delayed implementation and at the time of writing, no timeline for implementation of the revised curriculum has been set. Approvals are still required from NDoH NCAC, Department of Higher Education Research Science and Technology (DHERST) and the Secretary of Health.

The Implementation Plan needs resourcing to ensure that it can support this process. Planning for a transition to an 18 month curriculum also needs to commence once approval has been finalised.

Lessons learned

- The work completed by the Schools of Midwifery with the NDoH and the PNG NC to develop an implementation plan for the revised National Framework for Midwifery Education will be critical for midwifery education in PNG.
- Support of the PNG NC by the WHO CC UTS and the CMFs has been effective and assisted with capacity building in this area.
- NDoH support and resourcing for implementation of the approved revised curriculum is essential. This will dictate when implementation can occur. Present delays indicate that the revised National Framework for Midwifery will not occur until 2017 at the earliest.
- The model for review of the PNG National Framework for Midwifery Education has been effective and efficient, with the process reported as positive by those involved.
- There is an urgent need for reviews of the Nursing and CHW curricula which could utilise the model employed for the midwifery curriculum review. A stepping stone approach from CHW certificate, to diploma and degree nursing programs, with links to post registration programs that lead to bachelor qualifications could be developed to enable a better career pathway for practitioners working in maternal and child health (MCH).

Recommendations

Rec. 17 Implementation of the revised National Framework for Midwifery Education needs to occur as soon as possible and requires NDoH support and additional resources to be ready for commencement in 2017 and ensure the quality of midwifery graduates.

Rec. 18 Nursing and CHW curricula require urgent review using the process employed for the Midwifery curriculum.

Rec. 19 Implementation of the Building Faculty Capacity Program approved by DFAT will ensure that further educator capacity is built for midwifery, nursing and community health workers.

Outcome 9: Progress towards regulation of midwives

Progress toward the regulation of midwives is ongoing with significant achievements made in this area in Phase II. The CMFs assisted their respective schools to have their curriculum approved by the PNG NC, by supporting their national colleagues in development and refining the curricula documents. Five Bachelor of Midwifery programs are currently accredited with the PNG NC and this has enabled all the outstanding midwifery graduates to be registered.

Following earlier back logs in the registration process, 315 midwife graduates were registered with the PNG NC in 2014, with a further 91 registered in 2015. This has more than doubled the number of registered midwives in PNG. Graduates from the 2015 midwifery cohort will be registered at the beginning of 2016, further increasing registration numbers. A review of the Health Care Practitioners

Registration System is continuing to focus on the number of registered midwives in PNG. However, as they were previously registered as Specialist Nurses it is taking some time to review the data of the 16,000 registrants on the system. This work needs to be completed in collaboration with the PNG Medical Board. An upgraded to Health Practitioners Registration System (HPRS) records midwives and has aligned Specialist Nurse Midwifes to Midwifery to be able provide ongoing assessment on number of Midwives. The CMFs have supported the process of registration by assisting with the graduate documentation required.

It is envisaged that this progress will continue post-MCHI as relationships with relevant stakeholders are strengthened. A graduate database that has been developed and includes midwives will be maintained.

There are signs of effective collaboration between the schools, educators, NDoH and the PNG NC through increased formal and informal meetings, and regular communication. There has been an increase in accreditation audits across PNG during Phase II, and the PNG NC has held roadshows in all but one province across PNG for information sharing on regulation and accreditation issues.

It was suggested by some educators and CMFs that a workshop specifically addressing issues of regulation and registration would be helpful:

> *A workshop might help everyone really understand differences, what does council do, what's its role, and how they can help counsel.* (CMF CM6 Nov 2015)

Challenges

The double major has been an issue as graduates from this earlier unaccredited program were unable to be registered causing a backlog of 216 individuals since 2004. However there has been some progress in this area with a process to enable registration. A preceptorship and assessment process has been designed by NDoH. Assessors have been trained by NDoH and all relevant documentation can now be found on the PNG NC website. PNG NC has registered the first five double major graduates. The CMFs assisted in the assessment process and circulation of the assessment documentation.

Lessons learned

- The MCHI team provided support to the PNG NC and assisted with capacity building as required in relation to the regulation of midwives, facilitating significant progress in this area.
- A graduate database for registration has been developed and includes midwives.
- There has been an increase in accreditation audits across PNG during Phase II, and the PNG NC has held roadshows in all but one province across PNG for information sharing on regulation and accreditation issues.
- Progress has been made with registration of double major graduates as evidenced by the training of assessors by NDoH and placement of relevant documentation on the PNG NC website, and registration of five double major graduates to date.

Recommendations

Rec. 20 Further capacity building of the PNG Nursing Council is required to sustain progress made in relation to the regulation systems for midwives and other health workers, registration of graduates, and development of databases for management of graduate and registration information, including enactment of the Health Practitioners Bill, which will improve legislative powers of health professionals regulation.

Outcome 10: Increased opportunities for key stakeholders and participating PNG clinicians to collaborate and strengthen skills

The MCHI continued to facilitate opportunities for key stakeholders to collaborate during Phase II, through its Steering Committee, work with NDoH, workshops and other inservice opportunities.

MCHI Steering Committee

As explained under Outcome Two, the MCHI Steering Committee met regularly during Phase II and functioned well providing an opportunity for collaborative working relationships to develop and strengthen. Australia Awards PNG and DFAT were key members of the MCHI Steering Committee.

Examples of collaboration facilitated by the MCHI Steering Committee include the review of the national Midwifery Curriculum, oversight of ordering and delivery of midwifery educational resources, guidance for MCHI workshop content and delivery, instigation of the proposed CME position, and support of the Building Faculty Capacity Program. This latter Program builds on recommendations from the Australian Aid Nursing and CHW diagnostic audits (2012-2013).

National Department of Health

The importance of relationships among MCHI staff, educators, other stakeholders and NDoH, and their ability to impact on the effectiveness of the Initiative was evident. At times, these relationships have been challenged due to the complex nature of the structure of the MCHI partnership. Communication problems with email, internet access and telecommunications in PNG could also impact negatively on relationships due to miscommunications and delays in response.

The support and commitment from NDoH throughout Phase II of the MCHI helped to make opportunities for PNG clinicians, such as inservice training and the capacity building workshops, possible. Ongoing challenges were experienced with obtaining 'invitation/request for attendance' letters that need to be signed and distributed from NDoH in time for participants to attend the workshops. Despite trying to have this done some time in advance, for a range of reasons, this was not always been possible. In some instances participants were unable to attend these capacity building activities for this reason.

Some clinicians reported that the MCHI had strengthened relationships between the hospital and the midwifery school although more interactions were required to facilitate collaboration in this area. In most sites educators also reported that the relationship between the midwifery schools and the hospitals with which they are affiliated was positive and constructive. Positive relationships were also

reported to have often developed between MCHI obstetricians and clinicians working together in the regional hospitals.

When surveyed at the end of Phase II, inservices, training and professional development opportunities were the most often reported opportunities through the MCHI to collaborate with other stakeholders and/or clinicians.

MCHI capacity building workshops

One of the strategies used to create opportunities for clinicians and PNG stakeholders to collaborate was to include them both in the MCHI workshops wherever relevant and possible, and this has continued in Phase II. The rural midwives and other clinicians participating in the MCHI workshops have provided insights into the needs of remote areas. All national educators surveyed saw the MCHI workshops as an important opportunity for stakeholders to collaborate with PNG Clinicians.

Inservice opportunities

Many clinicians reported an increase in professional development opportunities at their facilities due to the presence of the CME, CMFs and MCHI obstetricians. Collaborative communication and strengthened relationships between educators and clinicians in the clinical setting was also reported. NDoH and provincial health districts have generally supported the involvement of staff in these professional development activities during the MCHI, by releasing staff when possible, and promoting inservice training opportunities available.

The MCHI obstetricians reported that their professional networks with the respective provincial health districts and healthcare facilities strengthened in Phase II. Strengthening of these relationships resulted in the delivery of more training sessions by the obstetricians and their staff that have benefited the local community and boosted the skills in the rural health facilities. Examples include the fistula repair work undertaken by the obstetrician based in Kundiawa, family planning work championed by the obstetrician in Vunapope, and involvement of both MCHI obstetricians with the PNG Medical Symposium in September 2015. An example of inservice training offered by the obstetrician based at St Mary's Hospital is found in Appendix 6. The obstetrician based in Kundiawa continues his work on a local employment contract allowing for continuing collaboration post-MCHI.

Other training opportunities

Most midwifery students benefitted from training sessions arranged by their schools with various stakeholder organisations and non-government organisations. These sessions included clinicians where possible. These organisations involved with training delivery have included Reproductive Health Training Unit (RHTU - a public-private partnership between the NDoH, Oilsearch Foundation with funding support from the Australian Government); World Vision, Marie Stopes International, Care International and Susu Mamas. Their specific expertise and programs were seen as valuable resources for students, educators and clinicians to utilise. This has led to networking opportunities and the proposed one week student attachment with some of these stakeholder organisations to improve their clinical skills in the field.

If for instance students go out with Marie Stopes, they will observe how they do their family planning counselling, how to put in an IUD, how to put in an implant, what to offer to who, pros and cons of the different kinds of family planning. And yes, they will probably get an opportunity to actually do some implants and put some IUD and take pap smears and … hands on stuff. (CMF CM8 Nov 2015)

RHTU… came here for emergency medicine at DWU, …she's done training two times already. The midwives here learned neonatal resus, EMOC, with the students, and midwives, and the CHWs. (Clinician C8 Nov 15)

PNG Midwifery Society

A significant part of the CME's role was to capacity build the PNG Midwifery Society, along with increasing professional development opportunities for PMGH clinicians. The CME, CMFs and staff from the WHO CC UTS have worked closely with the President of the Midwifery Society and its members to promote the Society to increase membership.

The Midwifery Society brings together clinicians and relevant key stakeholders through training and networking opportunities, and events such as the National Symposium and International Midwives Day, and this has been facilitated by the CME.

Challenges

There has been mixed reaction from some stakeholders and clinicians about the overall levels of support able to be provided from the NDoH for the MCHI and other programs with which they are involved. This reflects the lack of staff and resources in some areas of NDoH which restricts the capacity for support of activities such as training across PNG.

The complex structure of the MCHI partnerships along with communication problems with email, internet access and telecommunications in PNG has at times put pressure on working relationships with NDoH.

Demanding staff workloads have at times limited availability for release for professional development activities therefore affecting the development of collaborative relationships.

Lessons learned

- The MCHI through its workshops, inservice training, mentoring activities has provided increased opportunities for stakeholders and PNG clinicians to work together and collaborate.
- The role of the WHO CC UTS as Secretariat of the MCHI Steering Committee is working in assisting with the channels of communication, coordination and ongoing collaboration.
- Provision of support to the PNG Midwifery Society by the CME and CMFs has provided capacity building for the organisation and its members although this needs to be sustained.
- Building and maintaining collegiate relationships with NDoH staff across all levels and directorates in the NDoH is essential for constructive collaboration with the MCHI.

- The Stakeholder Forum and PNG Midwifery Society Symposium were well-attended events that provided opportunities for stakeholder engagement and collaboration and it is hoped these will continue in the future.

Recommendations

Rec. 21 The PNG Midwifery Society requires ongoing professional support and mentoring to continue recent progress made and to rebuild capacity and ability to support PNG midwives. This has been provided by the CME until December 2015 and similar support is still required. Ongoing workshops and face-to-face support to assist the Midwifery Society to be able to fulfil their role as an advocate for midwives and a provider of ongoing education is needed.

Outcome 11: Ongoing supportive environment for Clinical Midwifery Facilitators and MCHI Obstetricians

The lack of turnover in the CMF and obstetrician roles is evidence that the support provided enabled them to remain in post for the duration of their contract. MCHI in-country personnel had access to regular mentoring and professional supervision to reflect on challenges, share ideas and have an opportunity to build and sustain professional networks with other CMFs and obstetricians. This was an important part of the MCHI design and let to the high rates of retention.

The Midwifery Mentor provided mentoring and support to the in-country team through regular teleconferences, informal communication by telephone and email, and during field visits. This gave MCHI staff and PNG educators regular opportunities to liaise with the Midwifery Mentor and each other, which is vital when many are working in environments that are challenging, under-resourced and geographically isolated.

Teleconferences were held regularly as facilitated sessions of 'clinical supervision' based on Proctor's group supervision model[2] with its potential to maintain high morale and work satisfaction; positively influence self-awareness; decrease burn out and build supportive networks with others.

Teleconferences

During Phase II, 22 teleconferences were held in 2014 – 15 with CMFs only, four with CMFs and national educators and three with CMFs and Obstetricians. In 2015, 17 teleconferences were held with CMFs only. This was 80% of the planned teleconferences for Phase II. The number of teleconferences decreased slightly in 2015, due to greater time spent in-country by the Midwifery Mentor who could liaise face-to-face with MCHI team members, workload issues for CMFs, educators and obstetricians, and also because the expressed need was less once Phase II work was established and underway.

[2] Proctor B (2008) *Group Supervision: A Guide to Creative Practice* (2nd Edition). Counselling Supervision Series Edited by Michael Carroll and Elizabeth Holloway Sage Publications, London 2008.

When surveyed at the end of Phase II, CMFs rated the support from the Midwifery Mentor and staff of the WHO CC UTS as 'very good'. The teleconferences were reported by the majority of CMFs as useful (60%), and were seen as an opportunity for the midwives to share information and experiences, problem solve and obtain support from their colleagues. The teleconferences were also important for de-briefing and receiving support and empathy when CMFs were experiencing challenging situations.

PNG educators were invited to attend the teleconferences to discuss logistical issues when a representative from HHISP is present, along with other issues, and the MCHI obstetricians were invited to attend monthly to contribute and participate. The midwifery educators reported that joining the teleconferences assisted networking and communication between the different schools and ensured that the educators received support. The involvement of educators and obstetricians decreased during Phase II however, due to workload, technical and logistical problems.

Support for MCHI Obstetricians

Professor Mola was appointed as the Obstetric Mentor for the MCHI and as such provided support, supervision and advice for the two MCHI obstetricians throughout Phase II. This was achieved through field visits and regular telephone and email communication with the obstetricians at their respective hospitals (Kundiawa and Mendi) in April 2014, and in Kundiawa and Vunapope in 2015.

Both MCHI obstetricians reported that they appreciated this ongoing support and contact with a senior healthcare professional who is familiar with their professional and personal requirements. Support from the Mentor and WHO CC UTS staff was rated by the obstetricians as 'very good' and 'excellent' respectively.

Field Visits

Regular visits to PNG and MCHI sites by the WHO CC UTS team, usually in conjunction with workshops and other Initiative-related activities, provided opportunities for meetings with CMFs and MCHI obstetricians, NDOH staff and other stakeholders, which has strengthened and consolidated relationships. As some of these visits have been part of the monitoring and evaluation process of the MCHI, focus groups and face-to-face interviews have also been conducted opportunistically during these visits. This has provided the CMFs and obstetricians with an opportunity to discuss the challenges and successes that they have experienced in their professional roles.

Other mentoring and support

The WHO CC UTS through the Midwifery Mentor and other team members provided one-on-one mentoring and support to the in-country team which has been taken up by the CMFs. This level of support has perhaps contributed to the very low attrition and personnel turnover rate in Phase II of the MCHI (0% attrition).

CMFs also provide mentoring and support for the 17 midwifery course coordinators and educators (15 females, 2 males) on an ongoing daily basis.

The MCHI workshops held three times a year have also provided opportunities for MCHI staff to connect both professionally and socially.

The WHO CC UTS has provided the MCHI team with resources to support their capacity building work including electronic and hard copies of relevant clinical journal articles, DVDs for teaching purposes, Global Midwifery Education and Standards material, including curriculum guidelines, WHO Reproductive Health Library resources, and curricula outline and lesson plans.

Challenges

Difficulties with teleconference attendance were occasionally reported and related to limited staff availability and IT connections which are needed for phoning into teleconferences. This was particularly evident with attempts to involve national educators and the MCHI obstetricians in the teleconferences. Decreased teleconference attendance during the second year of Phase II limited some of the benefits seen previously when the calls were well-attended, such as providing a focus for issues at hand and reminding personnel of the purpose of the Initiative.

Some CMFs reported sharing personal hardships as sometimes difficult. Technical difficulties with the teleconferences were also reported as frustrating at times. One CMF (8%) saw teleconferences as a waste of time and not of practical value.

Lessons learned

- The regular MCHI teleconferences were important in supporting MCHI staff working in-country.
- The coordination of the teleconferences by the WHO CC UTS was helpful to ensure regularity of teleconferences between the MCHI team members, educators and other stakeholders.
- The mentors for the CMFs and obstetricians played an important role in supporting MCHI team members professionally and personally as required.
- The background of teleconference participants was important in determining issues discussed and to what extent these issues were explored.
- Regular attendance and active participation in teleconferences reduced the snowballing of issues as often intervention could occur in a more timely manner.
- The teleconferences and additional support provided to the in-country team helped to maintain a focus on the aims of the Initiative, and its capacity building nature.
- All CMFs surveyed at the end of Phase II recommended that regular teleconferences were an important part of sustainability.

Recommendations

Rec. 22 Regular mentoring and support provided by a professional mentor or similar through teleconferences for the MCHI team and counterparts should be incorporated into design of projects such as the MCHI, with consideration given to participants/audience and issues for discussion, and maintaining a focus on project aims and outcomes.

Outcome 12: Conduct Longitudinal Research of PNG Midwifery graduates

The MCHI longitudinal study of midwifery graduates was conducted during Phase II, exploring the experience and outcomes of the graduate midwives who commenced their education program in 2012 and 2013. This is the first time a study has examined the workforce experiences and outcomes of midwifery graduates in PNG. The study looked at workforce participation and experiences in PNG midwifery graduates who commenced training in 2012 and 2013 during the first phase of the MCHI, their preparation for practice, professional outcomes and experiences, career progression and professional development issues.

Ethics approval was granted for the study by UTS Human Research Ethics Committee (January 2014) and the PNG Medical Research Advisory Council (December 2014) and a program manager appointed.

Data collection was completed in April 2015 and qualitative data was analysed by the project manager and with five members of the MCHI Research Team that included representatives from NDoH, UoG and UPNG who also assisted with some writing of the final report. The final report for the study was presented to the NDOH and other stakeholders at the Stakeholder Forum held in Port Moresby in late November 2015.

Challenges

As graduates were working in 21 of the 22 provinces of PNG with many living and working in rural and remote locations, communication was often difficult. Making contact with graduates was also often a challenge as details were obtained through course coordinators in the absence of a national database for midwifery graduates or registrants.

Opportunities for face-to-face surveys and interviews were limited as towns and villages were visited where it was thought a cluster of graduates were living (e.g Kokopo, Mendi, Kundiawa (&Mingende) , Goroka, Alotau and Port Moresby). The remainder were contacted by telephone.

Increased resourcing for the longitudinal study could have increased the number of supervisors interviewed or led to the development of a competency assessment tool or similar.

Key findings/Lessons learned

- Of the 174 graduates of 2012 and 2013 cohorts, 138 (79.3%) were contacted and consented to participate in the study.
- 90% of graduates were working in midwifery skilled positions, including and nursing midwifery education
- Graduates were working in 21 of the 22 provinces of Papua New Guinea (none in Manus)
- Some provinces seemed to have minimal graduates despite large numbers of childbearing women. Particularly Northern, Central, East Sepik, Enga and Madang Provinces.
- Sandaun, Hela, Gulf and Southern Highlands have low supervised birth rates and would benefit from additional midwives to reverse this trend.

- 36% of graduates were working in rural areas, with the majority of those in urban areas working in Port Moresby and Goroka.
- The majority of graduates felt that they could perform the basic required competencies independently, but still required supervision with some of the advanced midwifery skills
- The length and quality of the midwifery course seemed to be a major concern for most graduates. With the majority stating that the course needed to be longer in both theory and practical sections in order to develop confidence.
- The lack of professional support and development offered to graduates was stark. 55% had received no opportunity for professional development since graduation.
- A number of areas have been identified as requiring attention. In particular, the length of the midwifery course, the quality of clinical practice time and experiences in rural areas, the designation of midwifery positions and clarity about the scope of practice of a midwife in PNG is needed.
- The establishment of a national research team with senior counterparts from NDoH and the PNG NC indicates their commitment to the study.
- Identification of co-investigators from PNG educators worked to build capacity through professional development and research experience.
- Graduates have acquired skill and confidence, improved leadership in maternal and newborn care services and are providing respectful care to women through improved attitudes.

Recommendations

Rec. 23 Development of a long term workforce plan and an ongoing commitment to improving maternal and newborn is required by NDoH. This should include acknowledgement of the value and importance of midwives and ensure the visibility of midwives in regulation, education, workforce planning and in service delivery.

Rec. 24 Results from the longitudinal study will be of use by NDoH, DFAT and midwifery schools to improve selection criteria, course content, areas of improvement for learning in the classroom and clinical settings.

REVIEWING MONITORING AND EVALUATION PROCESSES

Monitoring and evaluation was a major part of the PNG MCHI and has provided evidence for required changes or amendments to objectives, inputs and activities throughout the life of the Initiative. The MCHI through the WHO CC UTS conducted its own internal M&E through regular reporting, program and workshop evaluations, focus groups and interviews with a variety of stakeholders, and surveys. Monitoring and evaluation of each objective of the MCHI has informed progress of the Initiative and its outcomes, and highlighted revisions or changes required to project and activities.

The M&E activities for Phase II were conducted in accordance with the MCHI M&E Plan and schedule with completed Monitoring Reports received from all sites every four months, evaluation of the Orientation and Induction Programs and five workshops completed, interviews and focus groups conducted, annual surveys distributed and collected and data analysis and reporting completed.

Key issues with data collection, analysis and reporting were as anticipated. Limited resources and support systems in the PNG health sector were addressed in part through assistance from the WHO CC UTS, and mentoring and professional support by the CMFs and Midwifery Mentor which has been an integral part of the Initiative. The constraints of a complex partnership structure, cross-cultural challenges and differences encountered through this work were overcome through developing and maintaining collaborative relationships - working closely with counterparts from the NDoH, PNG educators and clinicians, and other staff associated with the MCHI. Flexible attitudes and working arrangements helped to overcome difficulties encountered, and time and logistical constraints.

RECOMMENDATIONS AND FUTURE DIRECTIONS

The MCHI in Phase II contributed to improving midwifery education and quality obstetric care in PNG. Findings from the M&E have shown positive results for all outcomes, with significant achievements in the target areas of the Initiative.

Positive changes to the teaching capacity of PNG midwifery educator's teaching capacity and their learning opportunities are evident, and substantial progress has been made towards review of the midwifery curriculum and in regulation. Increases in the number and quality of midwifery graduates, and improvements in the technical capacity of clinicians have also been achieved. Professional development support for clinicians in regional hospitals by the MCHI obstetricians has contributed to improvements in capacity building and health outcomes.

It is important these gains by the MCHI continue to build, be sustained and further expanded to achieve their full impact. Continuing support and commitment from NDoH is now more critical than ever with conclusion of the Initiative in December 2015. Capacity building will need to continue to be strengthened through a longer-term engagement of NDoH and commitment from PNG counterparts.

RECOMMENDATIONS

With the conclusion of the MCHI, continuing support and commitment from NDoH and DFAT is critical to ensure the achievements made during Phase I and II are sustained as this will be critical for the future of maternal and child health post 2015.

A number of recommendations are made at the end of Phase II that require consideration and action:

1. Induction and/or orientation is important for staff employed on projects such as the MCHI, and should contain relevant and detailed information, and coincide with commencement of work. (Outcome 1)
2. High level stakeholder advisory groups such as the MCHI Steering Committee are essential to Programs such as the MCHI and must be established prior to project commencement if possible, to facilitate the development of collaborative relationships between key stakeholders, and to ensure stakeholder commitment and involvement. (Outcome 2)
3. Relationships with major stakeholders such as NDoH are critical to the success of a project such as the MCHI, and need to be initiated, developed and invested in from project inception. (Outcome 2)

4. Midwifery educators in midwifery schools need to be supported and provided with continuing professional development opportunities including further study and conference attendance to continue to improve the standard of midwifery education and maternal and child health care in Papua New Guinea. (Outcome 3)
5. Capacity building workshops should continue as valuable sharing and networking opportunities for the national midwifery educators, and this will require external support from the NDoH and other stakeholders. Future workshops should be planned and facilitated by the PNG midwifery educators with support and feedback from NDoH and WHO CC UTS if feasible. (Outcome 3)
6. A professional development strategy needs to be developed to address issues impacting teaching capacity such as resource availability, limitations of facilities including classrooms and accommodation, staff- student ratios for better clinical supervision and teaching. (Outcome 4)
7. Supervision of midwifery students in the clinical setting must be seen as a priority by educators and clinicians that enhances quality learning and the development of competent practitioners. Educators require adequate allocation of time and resources to undertake student clinical supervision. (Outcome 5)
8. A position such as the CME based at PMGH should continue to enable the provision of ongoing mentoring and professional support for clinicians, educators and students in the hospital setting. This is a model that could be applied for the provision of capacity building support for other hospitals in PNG in the longer term. (Outcome 5)
9. The midwifery student numbers should continue to increase to meet the need for more midwives. Consequently the number of midwifery education scholarships on offer need to be available proportionate to the number of students. (Outcome 6)
10. Combined investment in midwifery and nursing education, through the funding of scholarships and related infrastructure, with the provision of and support for educators capacity-building appears to be a successful model that should be considered for similar projects in the future. (Outcome 5)
11. To ensure adequate numbers of midwifery graduates and the viability of the midwifery program in PNG, nurses need to be attracted through improved advertising and communication, and with targeted incentives, particularly when required to work in rural locations. (Outcome 5)
12. Quality improvement policies need to be improved in all midwifery schools. This should ensure adequate resources and facilities are provided for program delivery. (Outcome 6)
13. The time allocated to the clinical component in the midwifery program needs to be increased, and continuation of rural placements ensured to facilitate a better clinical learning experience for midwifery students. (Outcome 6)
14. Strategies to support the clinical supervision of new midwives post-registration need to be explored to ensure consolidation of learning and technical skills in the clinical environment. These could options such as post-registration internships. (Outcome 6)
15. Capacity building and mentoring of obstetricians and other clinicians and health workers in the regional areas is still required. (Outcome 7)
16. Ongoing work and collaboration with the NDoH, and the PNG Medical Board and the PNG Obstetrics and Gynaecology Society may facilitate professional development opportunities for PNG clinicians including MCHI graduates. It is essential that such opportunities are made available and accessible, and require ongoing support and commitment from hospital management. (Outcome 7)

17. Implementation of the revised National Framework for Midwifery Education needs to occur as soon as possible and requires NDoH support and additional resources to be ready for commencement in 2017 and ensure the quality of midwifery graduates. (Outcome 8)
18. Nursing and CHW curricula require urgent review using the process employed for the Midwifery curriculum. (Outcome 8)
19. Implementation of the Building Faculty Capacity Program approved by DFAT will ensure that further educator capacity is built for midwifery, nursing and community health workers. (Outcome 8)
20. Further capacity building of the PNG Nursing Council is required to sustain progress made in relation to the regulation systems for midwives and other health workers, registration of graduates, and development of databases for management of graduate and registration information, including enactment of the Health Practitioners Bill, which will improve legislative powers of health professionals regulation. (Outcome 9)
21. The PNG Midwifery Society requires ongoing professional support and mentoring to continue recent progress made and to rebuild capacity and ability to support PNG midwives. This has been provided by the CME until December 2015 and similar support is still required. Ongoing workshops and face-to-face support to assist the Midwifery Society to be able to fulfil their role as an advocate for midwives and a provider of ongoing education is needed. (Outcome 10)
22. Regular mentoring and support provided by a professional mentor or similar through teleconferences for the MCHI team and counterparts should be incorporated into design of projects such as the MCHI, with consideration given to participants/audience and issues for discussion, and maintaining a focus on project aims and outcomes. (Outcome 11)
23. Development of a long term workforce plan and an ongoing commitment to improving maternal and newborn is required by NDoH. This should include acknowledgement of the value and importance of midwives and ensure the visibility of midwives in regulation, education, workforce planning and in service delivery. (Outcome 12)
24. Results from the longitudinal study will be of use by NDoH DFAT and midwifery schools to improve selection criteria, course content, areas of improvement for learning in the classroom and clinical settings. (Outcome 12)

The monitoring and evaluation activities of Phase II of the MCHI confirm that the Initiative has continued to build on achievements from Phase I and strengthened in its second phase, as relationships continued to develop and strengthen between the MCHI staff and their PNG counterparts.

Improvements in learning opportunities and teaching capacity of PNG educators is encouraging, as is the increasing number of midwifery graduates and their quality of practice, and positive changes in technical capacity of clinicians involved with the MCHI. This evaluation indicates that the MCHI has made significant achievements and positive progress towards its various outcomes.

There is significantly more that needs to be done as indicated by the points for ongoing consideration and recommendations highlighted above, particularly in relation to improving health management systems, and addressing the shortage of health workers and facilities for healthcare in PNG.

APPENDICES

Appendix 1: MCHI Phase II M&E Program Logic Model

The Program Logic is outlined with: Outputs, short- and medium-term outcomes to achieve the overall goal of the Initiative. The short term outcomes have been numbered so the corresponding Monitoring and Evaluation Plan can be tracked against them. This Initiative covers the following major target areas: gender, equity, disability, maternal, child health, governance and HR (Training). These are reported on in the quarterly reports.

MCH Initiative Phase II Goal (health impacts)

Contribute to the decrease in maternal mortality rate in PNG in a sustainable manner through improved quality of essential maternal and newborn health care.

MCH Initiative Phase II Objectives

- To improve the standard of midwifery clinical teaching and practice in the five teaching sites.
- To improve the quality of obstetrical care in two regions through the provision of clinical mentoring, supervision and teaching.

Contributing to long-term impacts

- Decreased maternal and child mortality
- Improved maternal and child health indicators
- Increased capacity of quality and quantity (in line with other AusAID programs such as PNG scholarships) of midwives in PNG
- Increased quality of obstetric care in two districts.
- Increased key stakeholder buy-in of maternal and child health issues in PNG

Contributors

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Appendix 2: Data Collection Monitoring and Evaluation Plan

Multiple data collection tools are being used to collect both qualitative and quantitative data. These include:

- Interviews with key stakeholders including course coordinators and key stakeholders in both the university and clinical setting, NDoH, Department of Foreign Affairs and Trade, and key WHO PNG staff.
- Focus group discussions (FGD) with course coordinators, educators and MCHI staff (clinical midwifery facilitators and obstetricians) and current midwifery students.
- Written evaluation from the workshops (three conducted per year).
- Annual surveys (qualitative and quantitative data) distributed to
    - Finishing midwifery students
    - Course coordinators
    - MCHI obstetrician supervisors
    - MCHI clinical midwifery facilitators and obstetricians
    - Key stakeholders in universities and clinical areas
- Four monthly written Monitoring Reports submitted by each midwifery school (collects qualitative and quantitative data on student numbers, retention, teaching and learning strategies and initiatives and any challenges)
- Data from the National Health Plan - Sector Performance Annual Review (National Department of Health, 2012)
- Local clinical outcome data
- Longitudinal follow-up of midwifery graduates

Appendix 3: PNG MCHI Phase II Monitoring and Evaluation Framework

MCHI M&E Objectives	Medium-term Outcomes	Short-term activities	Outputs	M&E data collection methods
1. Monitor implementation of effective strategy, processes and personnel for delivery of Initiative (new)	MCHI CMFs and Obstetricians mobilised with effective partnerships with stakeholders developed and maintained. Ongoing effective Steering Committee with proactive engagement with stakeholders. Ongoing effective Working Group and Management Committee. Marketing resources developed, distributed and utilised by stakeholders and partners.	1.1 MCHI staff recruited. Processes established to employ MCHI staff.	• All proposed MCHI CMFs and obstetricians recruited and employed by March 2014.	Induction evaluation. Orientation evaluation. MCHI Coordination Group Meeting minutes.
		1.2 Logistics for set-up for MCHI staff mobilization conducted	• Logistical issues for staff mobilization identified and reported to accessUTS, HHISP. • All logistical issues managed and addressed in a timely manner	MCHI Coordination Group Meeting minutes.
		1.3 Induction (in Australia) of CMFs and MCHI Obstetricians conducted covering employment, insurance, and in-country arrangements	• All MCHI staff inducted and insured. accessUTS and HHISP provide induction and insurance information package and contacts database	Induction evaluation.
		1.4 In-country orientation (in PNG) coordinated by NDoH, conducted for MCHI staff.	• All MCHI staff mobilised at project site by April 2014. • Additional staff mobilised as required - 1 CMF at SMSON by mid-2014; 1 CME at PMGH by Jan 2015.	Orientation evaluation.
		1.5 Liaison with HHISP regarding logistics, security arrangements, clarification of roles and responsibilities undertaken.	• MCHI Coordination Group established and meetings conducted inline with scheduled (bimonthly for first 6 months, every 3 months after 6 months). • Actions developed, delegated and completed.	MCHI Coordination Group Meeting minutes.

		1.6 Strategic Group members confirmed (NDoH, DFAT, HHISP, UTS WHOCC) plan meetings with individuals and groups as required. Note This has become the MCHI Steering Committee which is meeting every 2 months. Individual meetings occur as required on a formal or informal basis.	• Steering Committee established, meetings held every 2 months. • Minutes and attendees reported. Actions developed, delegated and completed.	MCHI Steering Committee TORs, Meeting minutes including Actions.
		1.7 UTS WHO CC MCHI Working Group established, meeting schedule set and meetings held according to schedule.	• UTS WHO CC Working Group established, meetings held 6 monthly. Minutes and attendees reported.	WHO CC MCHI Working Group meeting minutes.
		1.8 UTS MCHI Management Committee reestablished, meeting schedule set and meetings held as scheduled.	• UTS MCHI Management Committee established, meetings held every 3 months.	UTS MCHI Management Committee meeting minutes.
		1.9 Marketing resources developed including MCHI newsletter/brochure, brief and other communication activities. Knowledge of MCH issues and DFAT Initiative increased for all stakeholders.	Communication products produced: • - MCHI Phase II brochure • - MCHI photographic booklet • - Workshop briefs • - Online educational materials • - Video stories	MCHI Phase II brochure. Briefs for Workshops One, Two and Three 2014. Briefs for Workshops One and Two 2015. Evaluations for Workshops One, Two and Three 2014. Evaluations for Workshops One and Two 2015.
2. Monitor working relationships established with NDoH and other stakeholders to ensure MCHI continues to increase opportunities for key stakeholders and participating PNG clinicians to collaborate to meet the goals of the Initiative (8)	Effective collaborative stakeholder relationships for effective implementation of the Initiative.	2.1 Effective discussions commenced and ongoing with National Department of Health (NDoH) on formal and informal levels, in line with MCHI Steering Committee.	• Protocols of communication with NDOH defined. • Key NDOH personnel identified and communicated with.	Communication protocol with NDOH. Interviews – NDOH, stakeholders. Surveys – NDOH, stakeholders. Monitoring reports.
		2.2 Correspondence and liaison with key stakeholders in all five teaching sites and two regional hospitals.	• Key stakeholders identified in all teaching sites and briefed about the MCHI. • Contacts database developed	Interviews – NDOH, stakeholders. Surveys – NDOH, stakeholders.

		2.3 MCHI Steering Committee established, WHO CC UTS Secretariat role agreed, review TOR, set meeting schedule, meetings held.	• MCHI Steering Committee established, membership refined, TOR and attendance reviewed. • MCHI Steering Committee decisions influence workshop content, location and invited participants. • MCHI Steering Committee leads strategic planning for the Initiative.	MCHI Steering Committee TORs. MCHI Steering Committee meeting schedule. MCHI Steering Committee Meeting minutes. Stakeholder interviews

3. Monitor increased learning opportunities for PNG midwifery educators.	PNG midwifery educators and clinicians participation in informal and formal mentoring and learning opportunities.	3.1 Mentoring, supervision and teaching provided to midwifery educators by CMFs.	• Midwifery educators in five SOM provided with mentoring from CMFs
			• Bimonthly TC with CMFs to review processes of capacity building with the PNG educators and the MCHI more generally
			• Midwifery educators have opportunities for mentoring:
			  ○ MCHI workshops
			  ○ Other training (eg RHTU)
			  ○ Conference attendance
				Interviews – educators, CMFS, Obstetricians
				Surveys
				Monitoring Reports
				FGDs
				TC questionnaire reviewed

		3.2 Professional development support provided by clinical midwifery facilitators and obstetricians.	• Midwifery educators have opportunities for ongoing CPD:
			  ○ MCHI workshops
			  ○ Other training (eg RHTU)
			  ○ Conference attendance
			• Localised training provided by CMFs and O&Gs, for example:
			  ○ Family planning training
			  ○ CHW up-skilling
			  ○ Neonatal resuscitation
				Interviews – educators, CMFs, obstetricians
				Surveys
				FGDs
				Workshop evaluations
				Monitoring Reports
				interviews with stakeholders - WHO

		3.3 Resources provided to PNG educators at workshops from various sources.	• Resources supplied to PNG midwifery educators in each MCHI site. ○ Midwifery textbooks	
4. Monitor improved PNG midwifery educators teaching capacity (2)	Increased teaching capacity of PNG educators, and increased involvement in professional development activities.	4.1 MCHI SC with UTS WHO CC as Secretariat to plan, develop and prepare for workshops.	• Workshop program developed with PNG midwifery educators from each teaching site. • Number of participants at the workshops as planned • Evaluations reviewed for Steering Committee to inform future workshop content	Workshop evaluations. Workshop brief.
		4.2 Mentoring, supervision and teaching provided for PNG midwifery educators	• Regular TC with CMFs and PNG educators to review issues related to teaching and learning and support ongoing development	Interviews – educators, CMFs, obstetricians Surveys Monitoring Reports. FGDs.
5. Monitor improved clinical education experience for students (3)	Improved clinical education experience for midwifery students.	5.1 Mentoring, supervision and teaching provided by MCHI CMFs and MCHI obstetricians for PNG clinicians in participating hospitals.	• Regular involvement by clinicians with midwifery student teaching. • Training (formal and informal) provided for PNG clinicians. • Rural placements with students undertaken • Clinicians and other stakeholders supported by CMFs and MCHI obstetricians	Monitoring Reports. Surveys – MCHI obstetricians, clinicians, stakeholders. Interviews – clinicians, stakeholders. FGDs.
		5.2 Obstetric mentoring, supervision and teaching in two hospitals.	• Regular mentoring, supervision and teaching of PNG clinicians by obstetricians. • Regular contact between MCHI obstetricians and senior PNG obstetrician	Monitoring Reports. Surveys –MCHI obstetricians, clinicians, stakeholders. Interviews – clinicians, stakeholders. TC questionnaire review

6. Monitor increased quantity and quality of midwifery graduates (4)	Improved quality of midwifery education through new teaching techniques.
	
	Increased numbers of enrolments, midwifery students and graduates.
		6.1 Professional development support provided by clinical midwifery facilitators and obstetricians.	• Evidence of increased numbers of graduates
			  ○ Numbers of midwifery students commence
			  ○ Number of midwifery students complete
			  ○ Number of graduates registered with the PNG NC
			• Liaison with Australian Awards to assist with scholarship planning and recruitment for the next year
			  ○ Australian Awards invited to MCHI SC to provide input.
				Monitoring Reports.
				Surveys – course coordinators, educators, CMF, obstetricians.
				Interviews – course coordinators, educators, CMFs, obstetricians.
				FGDs.

		6.2 Resources provided to PNG educators at workshops from various sources.	• Resources developed and distributed to PNG educators at each workshop.	

7. Monitor increased technical capacity of clinicians in participating sites (5)	Mentoring, supervision and teaching provided by WHO CC and CMFs for PNG midwifery educators: obstetric mentoring, supervision and teaching in 2 hospitals
	
	Improved technical capacity of obstetricians in participating sites.
		Provision of mentoring and support to clinicians by CMFs and MCHI obstetricians	• CMFs attend clinical sites to provide mentoring and support to students and staff
			• CMFs and obstetricians provide teaching session to clinicians
			• Clinicians have opportunities for ongoing professional development
			  ○ Formal courses
			  ○ Local training
			  ○ Conference attendance
				Surveys – course coordinators, educators, CMF, obstetricians.
				Interviews – course coordinators, educators, CMFs, obstetricians.

		7.2 MCHI SC with UTS WHO CC as Secretariat with key stakeholders - plan, develop and prepare for workshops.	• Workshops undertaken in line with Steering committee strategy • Increased number of educators and clinicians in attendance at workshops.	Workshop evaluations. Surveys – course coordinators, educators, CMF, obstetricians. Interviews – course coordinators, educators, CMFs, obstetricians.
		7.3 Delivery of three workshops each year including UTS WHO CC, CMFs, MCHI obstetricians, midwifery educators, key stakeholders and clinicians (2-3 days 3 times a year).	• Three workshops delivered in 2014. • Two workshops and one stakeholder forum delivered in 2015.	Workshop evaluations. Surveys – course coordinators, educators, CMF, obstetricians. Interviews – course coordinators, educators, CMFs, obstetricians.
8. Monitor improved quality of the midwifery curricula (6)	Midwifery curricula reviewed and recommendations made for implementation and accreditation.	8.1 MCHI SC with UTS WHO CC as Secretariat to work alongside the PNG NC to establish protocol for review and accreditation of midwifery curricula.	• Protocol for review and accreditation of midwifery curricula developed and implemented. • Midwifery curriculum review undertaken	Interviews – stakeholders, course coordinators. Surveys – stakeholders, course coordinators. Midwifery curricula review report
		8.2 MCHI SC with UTS WHO CC as Secretariat to work alongside the PNG NC to establish protocol for review of double major graduates to enable them to register as midwives.	• Protocol for review of double major graduates to enable them to register as midwives developed and implemented. • Midwifery programs accredited with the PNG NC	Interviews – stakeholders, course coordinators. Surveys – stakeholders, course coordinators. Accreditation of midwifery schools
9. Monitor progress towards the regulation of midwifery (7)	Progress towards regulation of midwifery.	9.1 Re-establish relationships and activate communication strategy with relevant stakeholders.	• Communication strategy developed and implemented, and relationships reestablished with relevant stakeholders.	Interviews – stakeholders, course coordinators. Surveys – stakeholders, course coordinators.
		9.2 MCHI Steering Committee with UTS WHO CC as Secretariat to work with new acting PNG NC Registrar to establish protocol for regulation of midwifery.	• Midwifery graduate database developed. • Midwifery graduates registered with the PNG NC.	Interviews – stakeholders, course coordinators. Surveys – stakeholders, course coordinators. Registration numbers

10. Monitor increased opportunities for key stakeholders and participating PNG clinicians to collaborate and strengthen skills (8)	Key stakeholders and PNG clinicians participation in professional development activities.	10.1 Work collaboratively with stakeholders MCHI Steering Committee to coordinate workshops.	• Workshops held three times each year with support and commitment from stakeholders including NDOH and MCHI Steering Committee.	Workshop evaluations. Surveys – course coordinators, educators, CMF, obstetricians. Interviews – course coordinators, educators, CMFs, obstetricians.
		10.2 Regular teleconferences and day-to-day follow up with key stakeholders, with support by UTS WHO CC UTS.	• Teleconference schedule developed and distributed to relevant parties. 80% participation.	Interviews – stakeholders, course coordinators. Surveys – stakeholders, course coordinators.
		10.3 Work with NDoH, key stakeholders and clinicians to determine professional development requirements to inform workshop content.	• Professional development requirements for clinicians identified and developed with NDOH and MCHI stakeholders.	Interviews – stakeholders, course coordinators. Surveys – stakeholders, course coordinators.
11. Ongoing supportive environment for clinical midwifery facilitators and MCHI obstetricians (9)	Provision of support to MCHI in-country staff – clinical midwifery facilitators and MCHI obstetricians.	11.1 Appoint Midwifery and Obstetrician Mentor to facilitate Induction, Orientation and for ongoing support to MCHI staff.	• Midwifery Mentor and Obstetrician Mentor employed. • Support provided to MCHI staff by Midwifery Mentor and Obstetrician Mentor through regular scheduled teleconferences and informal communication.	Surveys –CMF, obstetricians. Interviews –CMFs, obstetricians. Monitoring Reports. FGDs.
		11.2 Plan, schedule and conduct meetings and teleconferences to provide ongoing support and advice to in-country MCHI staff including face to face support.	• Teleconference schedule developed and distributed. • Teleconferences held as scheduled. • Problem solving opportunities identified in teleconferences	Surveys –CMF, obstetricians. Interviews –CMFs, obstetricians. Monitoring Reports. FGDs.
		11.3 Obstetrician Mentor to visit regional hospital sites at least two times per year	• Visits by Obstetric Mentor conducted to hospital sites (Mendi and Kundiawa in 2014; Vunapope and Kundiawa in 2015).	Monitoring Reports. Surveys –obstetricians, mentor. Interviews – obstetricians, mentor. Monitoring Reports.

12. Monitor Longitudinal Research of PNG Midwifery graduates.	Results from longitudinal research on PNG Midwifery Graduates contributes to improvements in midwifery education.	12.1 Recruit Project Manager Undertake ethical approval processes, design questionnaires and develop qualitative methods including trigger questions.	• Project Manager employed. • Ethics approval obtained by UTS HREC and PNG MRAC. • Project design, methods finalized, research materials developed. ○ Number of graduates identified ○ Contact details for graduates sought and database developed ○ Questionnaires developed and pilot tested ○ Data collected using phone interviews ○ Analysis undertaken	Interviews – stakeholders, mentor. Questionnaires
		12.2 Identify the graduates locations.	• Database of graduate locations and contact details complete.	Interviews – stakeholders, mentor.
		12.3 Project Manager to contact all graduates to commence data collection.	• Data collection complete.	Interviews – stakeholders, mentor.
		12.4 Data collection and analysis – phone, email, face to face (yet to be determined but travel will be required).	• Data collection complete.	Data collection complete.
Review M&E framework, activities and data collection tools, and plan and implement the revised M&E strategy.		Review M&E framework.	• Revised M&E framework finalized.	M&E framework document.
		Planning and review of tools for data collection.	• Data collection tools revised and administered.	Monitoring Reports. Surveys. Interviews.
		Collect, analyse and report on project data.	• Project data reports complete.	Monitoring Reports. Surveys. Interviews.

Appendix 4: Progress on MCHI Recommendations from Phase I

Recommendation from Phase I	Progress in Phase II	Recommendation still relevant?
Increase learning opportunities for midwifery educators		
1.1 The NDoH and Deans of the Nursing Schools to continue to assist midwifery educators to engage in professional development opportunities, faculty development activities or further formal studies to increase knowledge and further up skilling.	This did occur to some extent in Phase II through participation in MCHI workshops, attendance at conferences, symposium.	YES
1.2 Midwifery educators be supported by the CMFs in Phase II to further develop their skills to present at workshops and conferences.	Educators were generally well supported by CMFs in these areas.	NO – CMFs no longer in-country however midwifery educators still require support.
1.3 Midwifery educators be further supported by the CMFs in Phase II to further develop their strategies for teaching and learning, in both the school and clinical areas.	Educators were generally well supported by CMFs in these areas.	NO – as above.
1.4 Midwifery educators have their own workshop alongside the MCHI workshops to facilitate sharing and of new teaching strategies and skills and to problem-solve common issues facing all schools.	MCHI workshops were designed, coordinated and facilitated by educators in 2015 and were requested to continue post-MCHI.	YES
2 **Increase teaching capacity of midwifery educators**		
2.1 The NDoH and WHO PNG continue to support the midwifery schools in terms of resources, professional development opportunities for its staff, in particular the further higher education for staff members.	This did occur to some extent during Phase II and needs to continue post-MCHI.	YES
2.2 Formal faculty development programs for all midwifery educators needs to be considered as part of the long-term strategy for supporting quality midwifery education.	Proposal was approved by DFAT but yet to be implemented.	YES
2.3 The Deans of the Nursing Schools to ensure that adequate numbers of midwifery educators (on a staff to student ratio) are employed to support the learning of students, in the school and the clinical areas.	This improved in most midwifery schools in Phase II however this remains an issue for one or two institutions.	YES – dependant on student numbers in 2016.
2.4 The Schools of Nursing develop a strategy to identify high-performing new graduates as potential midwifery educators in order to succession plan.	This strategy was in place in most schools during Phase II.	YES – dependant on student numbers and number of educators needed.

3 **Improve clinical education experience for students**		
3.1 Communication networks between NDoH, School of Nursing and the provincial health authorities be improved to assist procuring appropriate sites for rural placement including consideration of safety issues, transportation, accommodation and financial arrangements.	Procuring sites for rural placement was improved in Phase II due to assistance from NDOH, PHAs and local health centres. Financial arrangements may still be an issue for some schools.	NO
3.2 Formal meetings be held with the Schools of Nursing and the leaders in the clinical facilities should occur to: 3.2.1 facilitate the operationalizing of the Memorandum of Understanding that is required by the NC to be in place between the schools and the clinical areas; 3.2.2 to ensure that midwifery students have sufficient clinical supervision to build their clinical capacity and competencies; 3.2.3 consider the introduction of a preceptor at each site to support clinical learning; 3.2.4 ensure that the midwifery educators are a visible presence in the hospitals as this not only helps with supervision but builds rapport between the staff and the 2 institutions.	Meetings between senior staff from the midwifery schools and leaders of clinical facilities were held in all MCHI sites during Phase II to address 3.2.1 to 3.2.4. It is unclear how regularly these meetings occurred and if they will continue. These issues are ongoing and directly affect the midwifery student clinical experience.	YES
3.3 CMFs have a more visible presence in the clinical areas to support the clinical learning of students.	Educators and clinicians in all clinical teaching sites reported that CMFs were consistently visible to support the clinical learning of students.	NO – CMFs no longer in-country.
4 **Increase quantity and quality of midwifery graduates**		
4.1 The NDoH in collaboration with UTS WHO CC undertake a project to track the employment, retention and experiences of graduates from the 2012 and 2013 midwifery programs through a longitudinal study.	Longitudinal study research of 2012 and 2014 midwifery graduates was completed with findings providing information on graduate employment, retention and individual experiences.	NO – however further research could expand on this work and explore issues around professional support and development, employment trends, employment shortfalls.

5	**Increase technical capacity of clinicians in participating sites**		
5.1	The MCHI obstetricians continue to work with the SMHS at UPNG to support the training of new registrars to build capacity in the regional hospitals	Obstetricians were based at Kundiawa (2014, 2015), Mendi (2014) and Vunapope (2015) for the capacity building of hospital and other staff.	The obstetrician based in Kundiawa continues his work employed on local contract.
5.2	CMFs have a more visible presence in the clinical areas to support the clinical learning of hospital clinicians.	Clinicians, educators and students reported high visibility of CMFs in all clinical settings during Phase II.	NO – CMFs no longer in country.
6	**Improve quality of the midwifery curricula**		
6.1	Schools of Nursing work with the NDoH and the PNG NC to work towards accreditation of the National Framework for Midwifery Education.	Review of the National Framework for Midwifery Education completed and implementation plan submitted to NDoH for approval and action.	NO – However implementation of revised curriculum is needed.
6.2	Course coordinators to produce a discussion paper for the PNG NC on issues relating to the midwifery curricula.		
6.3	The UTS WHO CC and the CMFs continue to provide support to the PNG NC and assist with capacity building when invited including assisting with the drafting of discussion papers and other documents.	Support from the WHO CC UTS and CMFs has been provided to the PNG NC which has made significant progress towards curriculum accreditation, and the registration of midwives.	NO – WHO CC and CMFs no longer in country.
7	**Support progress towards regulation of midwifery**		
7.1	The MCHI team continue to provide support to the PNG NC and assist with capacity building when invited in relation to the regulation of midwifery.	MCHI team including WHO CC consultant have supported capacity building for the PNG NC which has led to significant progress in this area.	NO – MCHI team no longer in country.
8	**Increase opportunities for key stakeholders and participating PNG clinicians to collaborate and strengthen skills**		
8.1	The UTS WHO CC to take on the role as Secretariat on the MCHI Steering Committee to assist with the channels of communication and ongoing collaboration.	WHO CC UTS has supported the MCHI Steering Committee as Secretariat throughout Phase II.	NO – MCHI Steering Committee is no longer active.
8.2	The UTS WHO CC and the CMFs continue to provide support to the PNG Midwifery Society and assist with capacity building when invited.	Support and capacity building provided by CMFs, CME and UTS WHO CC to the PNG Midwifery Society throughout Phase II. Initiative activities and collaborations were reported at each SC meeting.	NO – CMFs, CME no longer in country.
8.3	The agenda of the MCHI Steering Committee should include a standing item that reports on the communication and collaboration with other initiatives and activities (eg. RHTU, CHW up-skilling) and ensures synergies occur.		NO – MCHI Steering Committee is no longer active.

9 **Provide ongoing supportive environment for clinical midwifery facilitators and MCHI obstetricians**		
9.1 The UTS WHO CC ensure that the regular mentoring and support teleconferences between the MCHI team members are held and tailored to meet the needs of the participants. 9.2 The UTS WHO CC ensure that the midwifery educators are included in regular teleconferences to enable them to strengthen their own network and problem solving with other schools.	Regular teleconferences held with CMFs, CME and educators throughout Phase II.	NO – MCHI team no longer in country or employed on MCHI.

Appendix 5: MCHI Phase II Case Studies

Case Study - A challenge of rural midwifery at Haisi Sub Health Centre, Arob

Louisa, 2015 AROB (2015) Story told with her permission

Location:
Siwai District, South Bougainville, Autonomous Region of Bougainville

Louisa was posted to Haisi Health Centre in April 2014 and is the only midwife. A building was constructed in 2010 and originally operated as an Aid Post. It was upgraded in 2014 to the level of a Health Sub-Centre and serves a population of more than 1000 people. When Louisa arrived, only general outpatient services were offered. There were land disputes in the area and it was not safe to have inpatient care provided. Haisi is managed by Catholic Health Services.

Shortly after Louisa began work at Haisi, she began working with the community to increase awareness about the importance of antenatal care, supervised births and family planning. Louisa worked with village health volunteers, community and church leaders and the local health committee to establish antenatal and family planning services. The local community helped her by building a small incinerator.

By the following month in May 2014, Louisa commenced antenatal clinics and provided a pleasant environment for women to come for care.

By July this year (2105), Louisa opened a labour room and began to assist women giving birth there.

Impact of having a midwife in the Health Centre

Since Louisa arrived, she has worked tirelessly with women and the community to improve the care of women. More women are coming for antenatal care and most are coming to the health centre to give birth with Louisa's care. Women are beginning to see the benefit of family planning and are accessing these services, despite Haisi being managed by Catholic Health Services. Men now understand the important role they have in improving maternal and newborn health.

Despite these wonderful improvements, women still face many challenges in Haisi. The difficulties of geographical isolation, poverty, poor transport and lack of community support endanger their lives and that of their newborns.

Personal Challenges

Louisa has been able to instigate amazing improvements despite communal and personal difficulties. Her living quarters were far from ideal (right). She felt isolated as a new graduate midwife posted in a remote setting with no supervision. There were difficult issues in a community full of unsolved conflicts. Communication was hard as she did not speak the local language. There were not enough resources; health equipment, manpower or even water. Louisa felt that “for the first year … nobody even cared that I was there”.

During her midwifery education, Louisa learned a little about advocating for improved midwifery care and through this gained the courage to approach the local politicians for assistance. They responded by improving her housing and clinic capacity.

Facing her hardships has made her stronger as a midwife. She is able to work confidently under minimal supervision and has built up the courage to communicate with a senior Obstetrician at any time. This is helping her to improve maternal health in her area –preventing maternal deaths and saving lives.

A near miss – a woman survived a secondary PPH and is raising a healthy baby.

Case Study – PNG MCHI Phase II Research Team Workshop

RESEARCH TEAM WORKSHOP – 1st SEPTEMBER 2015

JAIS ABEN RESORT, MADANG PROVINCE, PAPUA NEW GUINEA

The Research Workshop for the Maternal and Child Health Initiative (MCHI) workshop for Phase II was held at the Jais Aben Resort on Tuesday 1st September 2015. All team members were in attendance: Ms Mary Kililo - Technical Advisor Pre-service and Health Training, NDoH; Professor Caroline Homer - Director, Centre for Midwifery, Child and Family Health, UTS; Mrs Paula Puawe - Midwifery Program Coordinator, UoG; Dr Nancy Buasi - Midwifery Program Coordinator, UPNG; Ms Alison Moores – MCHI Midwifery Mentor and Researcher; Ms Amanda Neill – MCHI Monitoring and Evaluation Officer.

The one day workshop focussed on the MCHI Phase II Longitudinal Study of Midwifery Graduates, data collected and ongoing data analysis. Ms Alison Moores started the day with a short presentation on progress of the study so far – providing an overview of graduate respondent demographics, and plans for further data analysis.

Professor Homer then explained the process of coding qualitative research data which was then put into practice as two teams were formed to analyse responses to some questions from the graduate survey. The teams worked to compare and cross-validate coding data, and agree on themes that were then summarised.

The team also worked together to code focus group transcripts from discussions held with provincial graduates and supervisors.

At the end of the day, the team planned the structure of the final report, and associated timelines. Future tasks were delegated to individual team members.

There was some discussion on possible publications and policy briefs that may result from the research. The research will next be presented at the MCHI National Stakeholder Forum in November 2015.

Appendix 6: Example of capacity building activities from the MCHI Obstetrician based at St Mary's Hospital – January to April 2015

Date	Topic/Activity	Participants	Time spent
16/01/2015	Abortion and Ectopic Pregnancy	O&G unit, HEOs, Outpatient department	4 hours
23/01/2015	Partogram	Same as above	4 hours
18/02/2015	Manual Vacuum Aspiration Syringe Introduction	Senior O&G unit staff & Midwifes	1 hour
18/02/2015	Maternal Mortality Case Review	All O&G staff involved in the management	2 hours
20/02/2015	Maternal Mortality case review discussion	Doctors, HEOs, DMS	2 hours
23/02/2015	Maternal mortality case review Audit meeting	All O&G unit staff	4 hours
24/02/2015	Case review discussion and practical demonstration (Clinical teaching) – Suturing deep vaginal tears	Nursing staff present for the case	1 hour
05/03/2015	In Service- 2nd Stage of Labour	All O&G unit staff. Discussion was led by one senior staff and discussions of key points was done by me	4 hours
06/03/2015	Case review and Live clinical Demonstration ON Contraceptive Implant Insertion	Students and Staff present at that time	30 minutes
12/03/2015	In Service- Management of PPH	All O&G unit staff. Discussion was led by one senior staff and discussions of key points was done by me	4 hours
18/03/2015	Clinical teaching and live demonstration - Suturing technique of Deep vaginal tear & vaginoplasty of a previous fibrous scar	All O&G staff present on duty	2 hours
19/03/2015	Clinical case review discussion – Suturing techniques of Vaginal tear and Perineal tear	All O&G staff present on duty	1 hour
19/03/2015	Clinical case demonstration and short inservice on IUCD (Intrauterine contraceptive devices) – Insertion and removal	All O&G staff present on duty	1 hour
30/03/2015	Live demonstration and clinical discussion of Internal Podalic Version and Breech delivery	Operation theatre staff and Maternity staff present during that case	30 minutes
31/03/2015	Demonstration and clinical discussion on External cephalic version	ANC staff present at that time	15 minutes
01/04/2015	Discussion about different indications for use of Misoprostol	O&G staff present at that time	30 minutes
02/04/2015	Clinical discussion and Live demonstration and Vacuum delivery in Persistant Occipito posterior position	Labour ward staff present at that time	30 minutes
02/04/2015	Inservice on Hematoma and Cervical	All O&G unit staff. Discussion	4 hours

	tears. Revisiting EmOC and EOC training conducted in March – Take home key points which were new and should be implemented in O&G unit	was led by one senior staff and discussions of key points was done by me	
03/04/2015	Clinical discussion- Duties of Assistants and Scout nurses during Operatives	Operation theatre staff	1 hour

Other activities not mentioned above:

January- February 2015 – Morning handover meeting were supervised by me and case discussions were taken to help staff know how the ideal handover meeting should be done. This was discontinued after staff was doing it themselves.

16-27 March 2015 – Coordinated (planning to implementation) and arranged the EmOC and EOC workshop for the Christian health services and Provincial Health staff. Facilitated and conducted by RHTU (reproductive health training unit) Team. Key points were discussed by me during few sessions of this workshop.