Project on Scaling up Midwifery Education in Four African Countries

Final Project Evaluation Report

Health Workforce Unit
UHC Life Course Cluster
WHO Regional Office for Africa

Brazzaville, Congo
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Designed by Vito Raimondi, Berlin, Germany.

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SUMMARY

Despite the significant progress made in health over recent decades, there is widespread recognition that health gaps between countries and among social groups within countries have widened. As countries strive to meet the goals of the health-related Millennium Development Goals (MDGs) and the Sustainable Development Goals (SDGs), significant challenges still remain. At the midpoint between 2000 and 2015, analyses on the progress of the health-related MDGs revealed encouraging signs of progress in child health but little or no progress in maternal and newborn health. Every year, some 526 000 women die from complications during pregnancy or childbirth, or every minute a woman dies in childbirth. More than 99% of maternal deaths occur in the developing world, 84% in sub-Saharan Africa and South Asia. Most of the maternal and newborn deaths are avoidable, yet mothers and babies are dying due to lack of, or limited access to skilled health care providers and health care, or poor quality of care. Evidence shows that the risk of maternal and newborn deaths reduces when deliveries are overseen by skilled birth attendants (SBAs) with access to emergency obstetric care.

This five-year collaborative project between the World Health Organization (WHO) and the Seventh-day Adventist (SDA) Church on scaling up midwifery education was initiated in 2015. The project emphasis was on enhancing the quality of midwifery education by improving the competencies of midwifery educators in the four selected countries and establishing Laboratories of Change and a Centre of Excellence for midwifery education. The partnership embraced the fact that faith-based organizations have been providing support to national governments and making positive contributions to the professional education of the health workforce and to population health. The SDA Church has a broad range of educational and health institutions, including medical and nursing schools and health facilities. Globally, the SDA Church operates 78 nursing schools, four of which collaborated on the project: Kanye Seventh-day Adventist College of Nursing in Botswana; Cosendai Adventist University in Cameroon; Maluti Adventist College of Health Sciences in Lesotho; and Malamulo College of Health Sciences in Malawi.

The project evolved through five phases, namely institutional capacity assessment, scaling up of midwifery education, building of laboratories of change, consolidation, and impact evaluation. To improve the competencies of midwifery educators and the quality of midwifery education, WHO midwifery educator core competencies were utilized in a series of capacity-building activities spearheaded by the Loma Linda University Global Nursing Taskforce with support from the four WHO Collaborating Centres for Nursing and Midwifery Development in Africa. The participating midwifery and nursing schools were supported with resources such as iPads loaded with up-to-date WHO reference materials on midwifery to ensure the content taught was current. Other materials and resources provided to the project sites included manikins, textbooks, computer drives, solar panels and projectors.

To enhance the acquisition of educator competencies, each institution selected competencies for their focus and developed unique Action Plans which reflected the selected educator competencies. The project set benchmarks for determining progress towards attainment of Laboratory of Change or Centre of Excellence status in the broad areas of leadership, resources, innovation and community engagement. The WHO midwifery educator core competencies and the benchmarks for Laboratory of Change and Centre of Excellence were the foundation of the evaluation of the project.

The final evaluation of the project was delayed due to the COVID-19 pandemic; it commenced in June 2020 and was concluded in early October 2020. The approach adopted for this evaluation was comprehensive, utilizing a broad range of methods including desk reviews, teaching session evaluations, focus group discussions among faculty and students and in-depth interviews with the Heads of the programme. The evaluation was conducted by national experts not directly involved in the implementation of the project, technical staff from WHO, representatives from ministries of health, institutions of higher education, nursing councils and WHO Collaborating Centres for Nursing and Midwifery Development. The composition of the teams varied across countries, and was based on availability and mobility of the experts due to COVID-19 restrictions.

The findings show that the project has achieved the set objectives. The results demonstrate that three institutions overwhelmingly performed well on their action plans. (Maluti 95%, Cosendai 86%, Malamulo 84%), while Kanye only reached a performance rate of 33%. Except for Kanye, over 90% of midwifery educators demonstrated the educator core competencies as validated by the broad range of evaluation methods used. Although the project objective was to establish at least one Centre of Excellence, three of the project sites surpassed the 75% threshold for attaining centre of excellence status (Maluti, Lesotho 93.7%; Cosendai, Cameroon 79%; and Malamulo, Malawi 83%). The fourth project site, Kanye, Botswana had a score of 43.7%. This site did not perform well and was not able to meet the set objectives, or did so only partially because of intrinsic bottlenecks that led to delays in the uptake of key essential activities by the school and the faculty. However, educator competencies were shown to improve as of late December 2019, which is a positive indication that intrinsic bottlenecks, previously unknown to the project, may have been resolved.

In addition, the three well-performing institutions had forged partnerships beyond their usual collaborators and had taken a keener interest in ensuring that the educators maintained competency through continuous professional development. This is a major contribution to sustainability and retention of the faculty. There is greater engagement with communities, reflecting the fact that the institutions are responding to community needs. Implementation of innovative strategies has been demonstrated in three project sites. For example, the construction of a Maternity Centre at Cosendai Adventist University will provide a practical site to students for skills acquisition; Maluti has developed sustainability strategies to ensure positive project outcomes are sustained and opportunities for growth are utilized, while online teaching has been introduced.

Overall, the project has helped to increase institutional visibility and participation in local, national and international educational and research events. It is a model for strengthening existing partnerships beyond government institutions. This model of partnership offers a good reference point for scaling up midwifery education in similar settings.

Finally, it was observed that the institutions could not rapidly increase student enrolment in this project cycle due to inadequate infrastructure and faculty. These are issues that go beyond the financial capacity of the project. However, the Loma Linda University School of Nursing off-campus programme is investing in enhancing the capacity of the faculty at the project sites. In 2018, among the Master's Degree graduates of the off-campus programme, three were from the project sites of Botswana, Lesotho and Malawi (one per site).

ACKNOWLEDGEMENTS

The project was a collaborative undertaking between the World Health Organization headquarters, Regional Office for Africa and country offices and its implementing partner, the Seventh-day Adventist Health Ministries through the Loma Linda University Office of Global Nursing led by Professor Patricia Jones. Dr Allen Handysides and Dr Peter Landless, Department of Health Ministries, General Conference of Seventh-day Adventists are acknowledged for their technical and administrative support. The Seventh-day Adventist Church organizations and institutions in the Southern Africa-Indian Ocean Division represented by Bangwato Sikwa, Rhoda Nthani and June Negre provided an enabling environment at the participating project sites and secured local collaboration within the Seventh-day Adventist nursing and midwifery educational institutions and affiliated hospitals.

The support provided by the Loma Linda University Office of Global Nursing Taskforce for the implementation of the project, especially in conducting the capacity building worshops on competency-based education executed by Sabine Dunbar, Marlise Lima, Marian Llaguno, Monica McKenzie and Emmy Obradovic made the transformation towards competency-based education attainable in the project sites.

The project objectives would not have been realized without the cooperation of the Project Coordinators and their administrative support and commitment to rolling out the project in their respective sites led by Marie Abemyil (Cameroon), Lillian Lemo, Stella Nkgau (Botswana), Lillo Kuape, Motebang Molainyane (Lesotho), Dennis Gwesere and Catherine Nkhoma (Malawi).

Ministries of health and nursing councils represented by Mpoeetsi Makau, Ntsoaki Ralejoana, Palesa Monamane, Makholu Nthabiseng Leba, Eustache Maga, Khumo Modisaeman, Assumpta Kechia and Tulipoka Soko provided ongoing technical support to the project. Their enormous investments will ensure the sustainability of the project activities beyond the project conclusion.

The World Health Organization Collaborating Centres for Nursing and Midwifery Development in the African Region provided technical support on monitoring project implementation through the following representatives: Keff Dithole, Belinda Gombachika , Abigail Kazembe, Johanna Mathibe-Neke, Khumo D. Modisaeman, Mosidi Mokotedi, Ntombifikile Mtshali, Naomi Seboni, Nthabi Phaladze and Zetu Nkosi. Their expert contribution helped to propel the project efforts to the success documented in this report.

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Project Coordination at the WHO Regional Office for Africa was undertaken by Jennifer Nyoni, Technical Officer, Human Resources for Health with support from Prosper Tumusiime, Acting Director Health Systems and Services Cluster (Now Universal Health Coverage Life Course Cluster) and Adam Ahmat, Technical Officer, Human Resources for Health. Pamela Drameh, External Relations, Partnership and Governing Bodies Unit, is acknowledged for the support in securing funding for this project.

The project goals could not have been implemented without the faculty and students at the project sites who participated and shared their experiences with the Evaluation Teams. The SDA and government health institutions were valuable partners in this endeavour.

Evaluation results analysis, compilation and report writing were conducted by Annette Mwansa Nkowane, Independent Consultant, Human Resources for Health.

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PART I

THE PROJECT

BACKGROUND

GLOBAL PERSPECTIVES

At the inception of the project in 2014, the joint WHO/SDA partnership was responding to the MDG aspiration of contributing to improved accessibility and quality of maternal care. Maternal, newborn and child health continues to receive attention in current global mandates, including the SDGs. Maternal deaths can be greatly reduced by increasing the number of births attended by a skilled birth attendant, alongside timely access to secondary and tertiary care.

Despite the ambition to end preventable maternal deaths by 2030, the world will fall short of this target by more than 1 million lives at the current pace of progress. Ninety-four per cent (94%) of all maternal deaths occur in low- and lower-middle-income countries (1). Globally, 2.5 million children died in the first month of life in 2018 - approximately 7000 newborn deaths every day with about one third dying on the day of birth and close to three quarters dying within the first week of life. Children who die within the first 28 days of life suffer from conditions and diseases associated with lack of quality care at birth or skilled care and treatment immediately after birth and in the first days of life. Preterm birth, intrapartum-related complications (birth asphyxia or lack of breathing at birth), infections and birth defects account for most neonatal deaths. Women who receive midwife-led continuity of care (MLCC) provided by professional midwives, educated and regulated by international standards, are 16% less likely to lose their baby and 24% less likely to experience preterm birth (2). Partnerships between key health stakeholders can help accelerate achievement of specific health goals.

ROLE OF FAITH-BASED ORGANIZATIONS IN AFRICA

Faith-based organizations (FBO) have existed for many years in Africa. They provide support to governments in making positive contributions to the professional education of the health workforce and the health of the population. This support existed long before the present development agendas were advanced. Faith-based groups predominantly offer capacities well aligned with the MDG and SDG imperatives (3). Global health trends, economic realities, and changing development approaches prompt the need for closer partnership between faith and governmental groups in support of global health mandates.

The WHO/SDA partnership was born out of the realization that much more could be done using partners' respective comparative advantages to make improvements in the delivery of midwifery education. As of 2018, the SDA is present in 213 countries, providing health care through hospitals, nursing homes and clinics (4). The SDA has a broad range of educational institutions, from secondary to university level, depending on the regulations of the country in which each school exists. These include medical and nursing schools. There are currently 78 schools of nursing operated by the SDA, among which are the four country project sites in Africa (Botswana, Cameroon, Lesotho and Malawi).

SCALING UP MIDWIFERY EDUCATION

The faculty in nursing and midwifery educational institutions in developing countries is in general inadequate. There is often insufficient academic preparation of faculty members. The faculty-student ratio is as high as 1:45 compared to 1:12 in developed countries. In addition, only 6.6% of the teaching staff in developing countries have had formal preparation in education and/or the qualifications needed to enter, or progress as teachers in higher educational institutions (5). It is further emphasized that: "in preparing the workforce, the curriculum is expected to meet standards that are often defined as core competencies". Such curricula should be responsive to the changing state and knowledge of health and needs to meet clients' expectations (5).

THE WHO MIDWIFERY EDUCATOR CORE COMPETENCIES

Through a consultative process in 2014, WHO published core competencies for midwifery educators as a basis for making improvements in the quality of midwifery education (6). These core competencies were deemed as an appropriate reference point to improve the quality of midwifery teaching and consequently the quality of care in the selected SDA schools that offer midwifery. Within the African Region, the WHO Regional Office has developed prototype curricula for pre-service education for nursing and midwifery programmes (7). These documents were the foundation for the rolling out of this Five-Year WHO/SDA Collaborative Project on scaling up midwifery education.

The focus of the project was on strengthening the midwifery educators in four selected African countries within SDA-run nursing and midwifery educational institutions, namely Cameroon, Botswana, Lesotho and Malawi.

PROJECT DESCRIPTION

PROJECT SITES

The four project sites were:

1. Kanye Seventh-day Adventist College of Nursing, Botswana;
2. Cosendai Adventist University, Cameroon;
3. Maluti Adventist College of Health Sciences, Lesotho;
4. Malamulo College of Health Sciences, Malawi.

All the schools except for the Cameroon site are attached to a Seventh-day Adventist Hospital. These institutions were to undergo transformation in midwifery education by implementing innovative educational strategies and change in services and be designated as a Laboratory of Change (LoC) or a Centre of Excellence (CoE) based on a set of criteria.

LABORATORY OF CHANGE AND CENTRE OF EXCELLENCE

A meeting bringing together WHO, the Loma Linda University Global Nursing Office, the four WHO Collaborating Centres for Nursing and Midwifery Development in Africa, the designated site project coordinators and representatives of the relevant WHO Country Offices was held from 6 to 7 December 2016, in Centurion, South Africa. At the meeting, critical elements of achieving the status of LoC and CoE were established and agreed upon. This was critical for the initiation of trust and understanding as well as for motivating the sites to strive towards achieving the objectives of the project. The broad areas considered were leadership, resources, innovation and community engagement. Benchmarks were later established to determine under each category, the extent to which the project site would have progressed to the level of LoC or CoE.

CRITERIA FOR LABORATORY OF CHANGE AND CENTRE OF EXCELLENCE

The following are the criteria for achieving LoC or CoE status:

1. LoC: An institution is considered to have achieved the status of LoC if it has a systematic, collaborative approach to **progressively improve** midwifery education and practice through the development and application of midwifery competencies in four categories: leadership (7), resources (6), innovation (6) and community engagement (5). (**The number of elements assessed under each category is given in the brackets**). Each element has a maximum score of 1. Progress requires an achievement of 50% of the total 24 benchmark points with flexibility across the categories, leaning towards the specific strengths of the particular site.

2. CoE: An institution is considered a CoE if it has **achieved and maintains a systematic, collaborative approach to improving midwifery education and practice** through leadership, resources, community engagement, and innovation. The assessment requires achievement of ≥ 75% (minimum of 18 points of total items described in the laboratory of change section above) with distribution across the categories, leaning towards the specific strengths of the particular site.

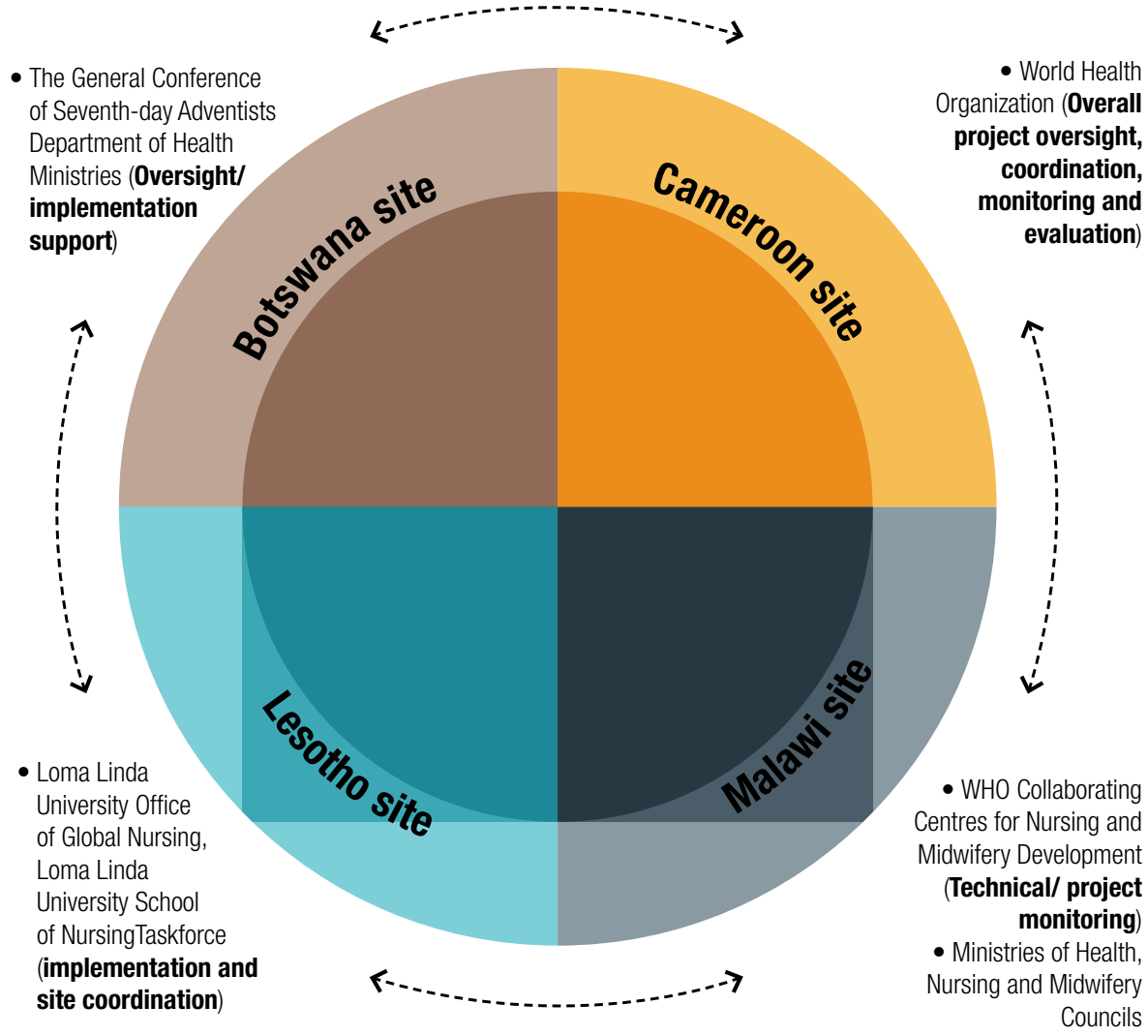
THE PROJECT STRATEGIC ORIENTATION

The planning and execution of the project was carried out in the context of the WHO/SDA partnership, taking into account the comparative advantage of FBOs in African countries and the commitment to improve the health of vulnerable populations. The strategy of this partnership in the selected countries was to utilize available training facilities to scale up training of midwifery educators to ensure that they attain competency and build institutional capacity. The project was to establish and apply innovative strategies that combine education and practice embedded in community needs.

PROJECT IMPLEMENTATION

The Department of Health Ministries, General Conference of the Seventh-day Adventists (GCHM), partnered with the Office of Global Nursing at Loma Linda University School of Nursing. A statement of commitment from the Director of GCHM and the President of Loma Linda University was drawn up and signed by the Director of Health Ministries in the Southern Africa Indian Ocean Division of SDA, and the principals of the educational programmes who implemented the project. WHO was responsible for monitoring and evaluation of the project with support from the respective country offices and the four WHO Collaborating Centres (WHOCCs) for Nursing and Midwifery Development in Africa (University of Botswana, University of South Africa, University of Kwa-Zulu Natal and Kamuzu College of Nursing) and in collaboration with the respective ministries of health, nursing and midwifery councils and higher education institutions. The implementation and coordination scope is illustrated in Figure 1. Details are provided in Annex 1.

Figure 1. Project implementation and coordination



PROJECT OBJECTIVES

1. Undertake baseline situation analyses of the capacity of selected SDA training institutions in low- to middle-income countries in Africa to determine which institutions will become Laboratories of Change.
2. Establish a network of LoCs to rapidly scale up quality nursing and midwifery training to meet community health needs.
3. Establish Centres of Excellence to serve as the information, training and research hub for bridging the critical education-practice gap in maternal and newborn health.
4. Evaluate the impact of the project strategy and validate the model of WHO partnering with faith-based institutions.

PROJECT PHASES

The project had five phases.

PHASE I

INSTITUTIONAL CAPACITY ASSESSMENT

Baseline assessments were conducted in December 2014 at Kanye Seventh-day Adventist Hospital and College of Nursing, Botswana; Malamulo Hospital and Malamulo College of Health Sciences, Malawi; and Maluti Adventist Hospital and Maluti Adventist College of Health Sciences, Lesotho. The assessment at Cosendai Adventist University in Cameroon was conducted in March 2015. The delay was due to travel restrictions imposed during the Ebola outbreak in Central and West Africa. The assessment was a collaborative effort between WHO, Loma Linda University Office of Global Nursing and the SDA Global Health Ministries. This phase determined the capacity and feasibility of implementing the project in the selected sites and also helped to identify key players for the project.

PHASE II

SCALING UP MIDWIFERY EDUCATION

This phase involved an analysis of cultural and demographic factors contributing to the high maternal mortality rates, identification of gaps in the competencies of the educators and introduction of competency-based education (CBE), including provision of resources for teaching and capacity building for the teachers to improve their skills. Each institution developed its own unique Action Plan which was presented at a meeting in Bloemfontein, South Africa in the last quarter of 2015. The meeting was organized by Loma Linda University Office of Global Nursing. This process allowed for discussions, review and critique by peers allowing for revision or modification of Action Plans. Following this meeting, specific capacity building seminars were conducted by the Loma Linda University Office of Global Nursing Global Taskforce on various aspects of CBE. Efforts were made throughout the project to build the capacity of each of the participating institutions.

PHASE III

BUILDING LABORATORIES OF CHANGE

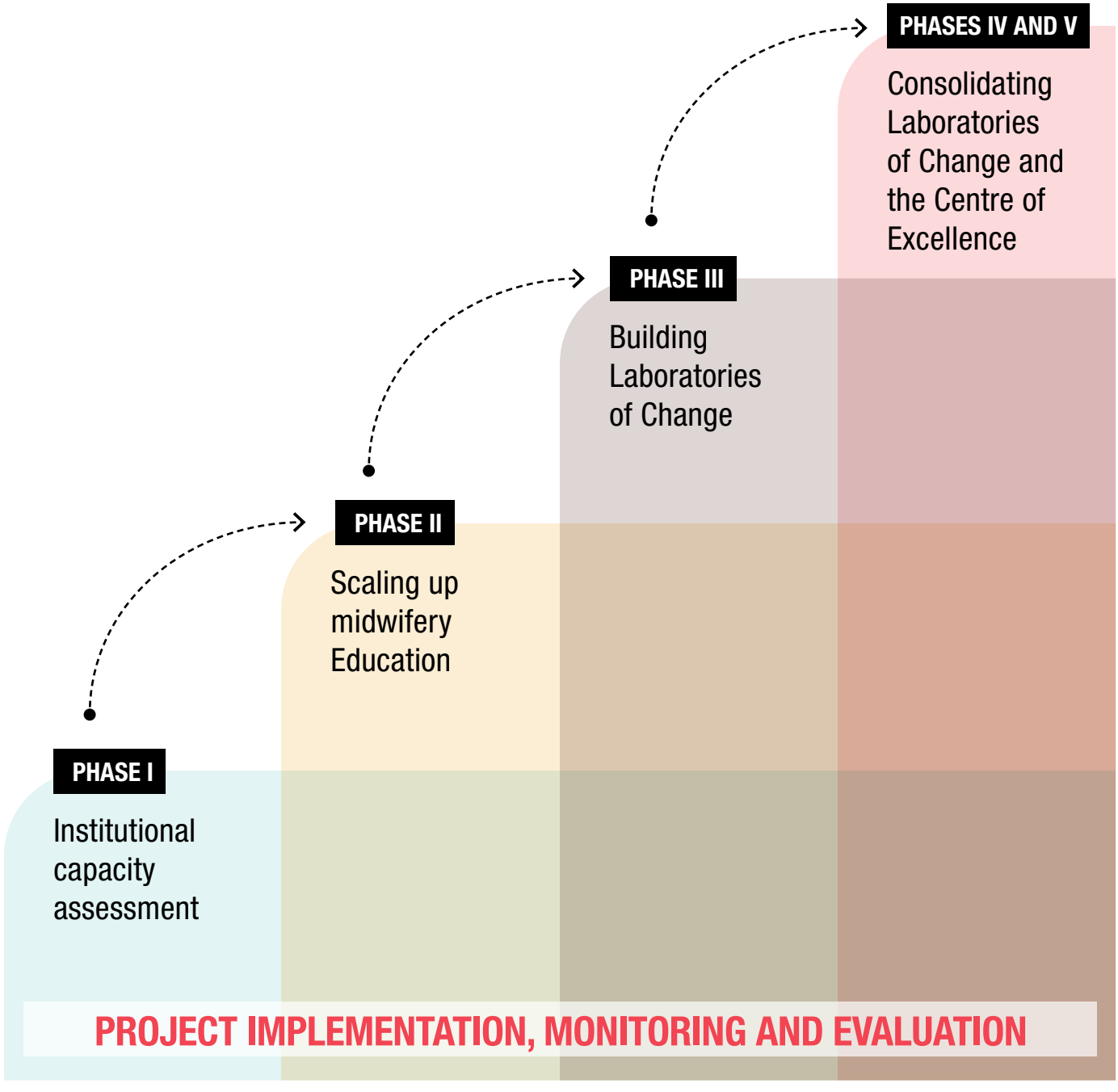
This phase focused on support to the four institutional educational programmes and clinical facilities to function as laboratories of change by: (a) strengthening collaboration with the Ministry of Health and professional regulatory bodies for nursing and midwifery; (b) upgrading educators' knowledge base, clinical expertise and skills; (c) incorporating WHO standards/resources for midwifery education and practice into curricula of educational programmes; (d) providing support for improving internet connectivity of the training institutions; (e) providing innovative resources, including virtual modes of learning on standards of practice in midwifery; and (f) engaging and collaborating with the community and government offices on matters related to maternal and child health.

PHASES IV/V

CONSOLIDATION OF LABORATORIES OF CHANGE AND THE CENTRES OF EXCELLENCE

Emphasis during these phases was on regular monitoring of the operations of the LoC to ensure adherence to WHO standards for midwifery education, completion of the establishment of CoE, preparations for sustaining the operation of programmes with long-range planning, continuing education for educators of the programme and evaluating the outcomes. Figure 2 summarizes the project phases.

Figure 2: Project phases



PROJECT IMPACT

The following was the expected impact by the end of the five years of the project:

1. Establishment of three LoCs and one CoE.

2. An increase of more than 100 students admitted each year once all sites become operational.

3. An increase of approximately 300 skilled birth attendants will have graduated or scheduled to complete the programme, and enter into practice in areas of need.

4. Two years after the first graduates enter into practice, a lower rate of maternal mortality reported in those communities compared with the rate when the project started.

PROJECT BENEFICIARIES

The primary intended beneficiaries for this project in the participating institutions are midwifery educators, their students and the communities they serve. The secondary beneficiaries are other midwifery institutions within the country and international organizations working to improve maternal and newborn health and the respective ministries of health. A summary of the beneficiaries and envisaged benefits are presented Table 1.

Table 1. Summary of beneficiaries

ANTICIPATED BENEFIT	BENEFICIARIES	COMMENTS/BENEFITS
Competency-based education (CBE)	• Midwifery educators • Midwifery students • Mothers and their newborns • Communities	• Competent educators provide quality education to midwifery students both in classrooms and clinical sites. Once qualified, the midwifery students can provide quality midwifery services to mothers and newborns, consequently contributing to improved mother and newborn health • Brings accessible, available, acceptable and quality services to surrounding communities.
Established Laboratories of Change and Centres of Excellence	• Midwifery educational institutions • WHO Collaborating Centres • Ministry of Health and Nursing and Midwifery Councils	These institutions: • Can transform midwifery education by implementing innovative and transformative educational strategies and change in midwifery services. • Provide education and practice embedded in the needs of communities and enhance social responsibility. • Have improved libraries and skills labs. • Bring about increased technology use as well as utilization of the WHO midwifery competencies and regional prototype curricula through "Smart Classrooms". • Increased institutional visibility and participation in local, national and international educational and research events.
Model partnership	• The World Health Organization • International organizations such as UNFPA, UNICEF • Other faith-based institutions	• The presence of a number of faith-based institutions in Africa offers a strong foundation for accelerated scale-up of midwifery education in the already established institutions. It is a model for strengthening existing partnerships beyond government institutions.

PART II

FINAL PROJECT EVALUATION

Preparations leading up to the final evaluation began in the last two years of the project cycle with the development and pilot testing of the evaluation tools. The field testing of the tools helped to consolidate CBE due to the fact that midwifery educators were engaged in microteachings to pilot-test the tools.

OBJECTIVES OF THE PROJECT EVALUATION

The ultimate objective of the evaluation was to determine the extent to which the project implementation achieved the following:

a. Adoption of the WHO midwifery educator core competencies;

b. Improved the quality of midwifery education;

c. Contributed to the establishment of LoC or a CoE;

d. Created a model of international organization partnership with faith-based organizations;

e. Promoted the sustainability of project activities.

To determine the extent to which the above five objectives were achieved, the evaluation attempted to answer the specific questions listed below.

1. Did the educators acquire skills in competency-based education?
2. Have the site-specific Action Plans been achieved?
3. Have the project sites attained the level of being designated as an LoC or CoE?
4. What is the impact of the project on the quality of education and surrounding communities?
5. Can this project strategy be replicated in other settings?
6. What are the challenges, opportunities and sustainability issues in this project?

A number of goals related to the impact of the project that were set at the start could not be achieved. These include an increase of more than 100 students admitted each year once all sites became operational; an increase of approximately 300 skilled birth attendants to have graduated or scheduled to complete the programme and enter into practice in areas of need; and two years after the first graduates enter into practice, a lower rate of maternal mortality reported in those communities compared with the rate when the project started. These goals are beyond the project capacity and relate to resources for infrastructure improvement. The sites could not fulfil the requirements due to the down-sized final financial support that was received by the project. This led to the narrowing of project activities to focus on the improvement of midwifery education through the introduction and implementation of CBE, capacity building for the establishment of LoC and CoE, and provision of material and technical support.

EVALUATION METHODOLOGY

Two approaches were used for the evaluation: desk reviews and primary data collection.

DESK REVIEWS

Desk reviews of current issues pertaining to overall country maternal and newborn health, review of project implementation documents including the institutional baseline assessments, project site Action Plans and monitoring reports.

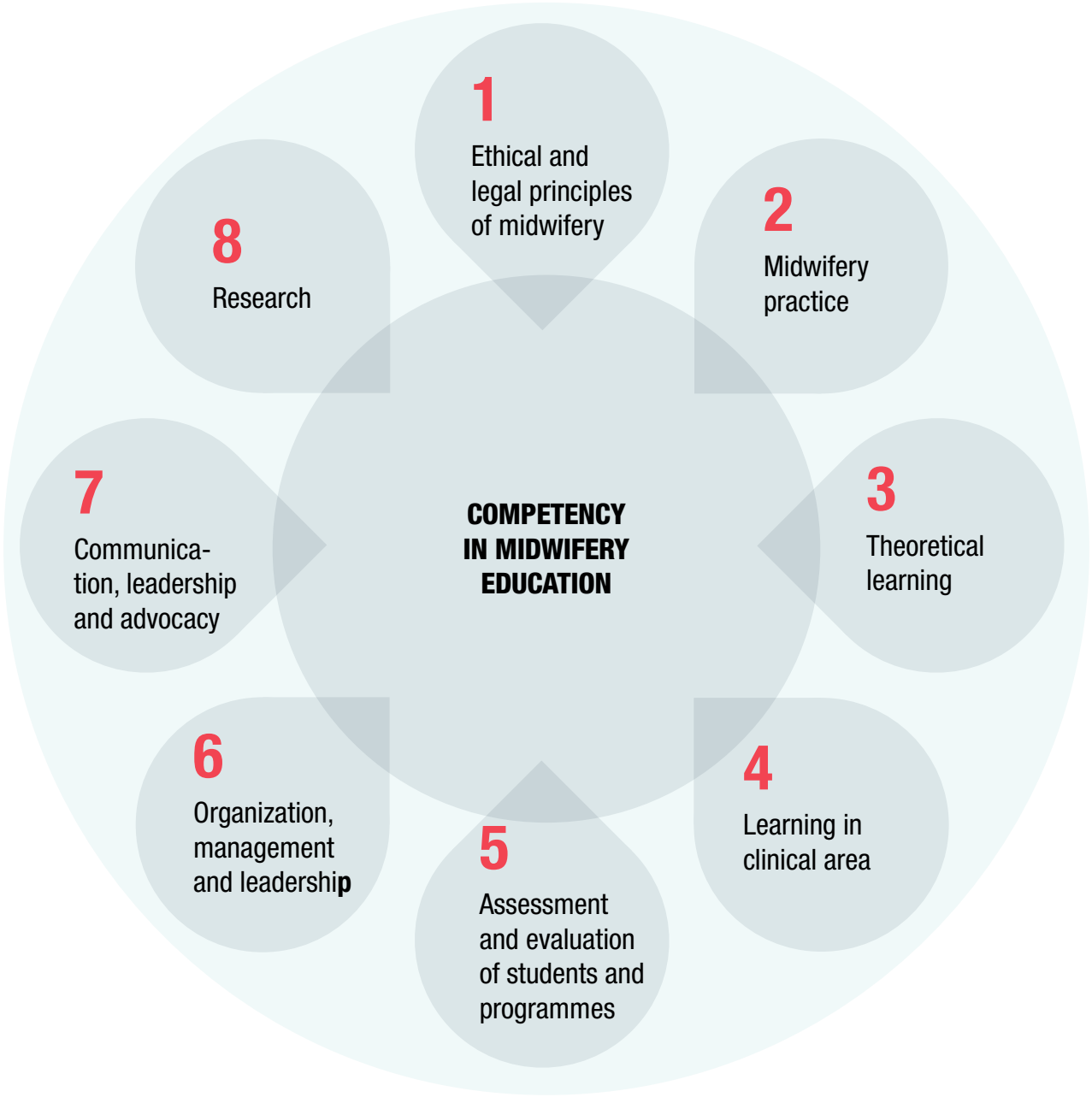
PRIMARY DATA COLLECTION

Specific data collection instruments developed by the project were used. They are listed below.

1. Institution's assessment of the Action Plan for midwifery educator core competencies;
2. Educator self-evaluation;
3. Students', peer evaluators' and evaluators' observations;
4. Student focus group discussions (FGDs);
5. Faculty FGDs/in-depth interviews;
6. Overall institutional capacity assessment self-administered questionnaire;
7. LoC or CoE status benchmarks.

Except for the LoC/CoE and capacity evaluation tools, all the other evaluation tools were based on the WHO midwifery educator core competencies (6). There are eight WHO competency domains with a total of 19 competencies. Each project site developed its own specific objectives for each domain and competency deemed critical for its improvement and as the basis for its Action Plan. A summary of the WHO midwifery core competencies is given in Figure 3.

Figure 3. WHO midwifery educator core competencies



EVALUATION STRATEGY

The initial project evaluation strategy was intended to be an on-site evaluation by a team comprising international and national experts as external evaluators. The COVID-19 pandemic resulted in travel restrictions put in place in early 2020. The evaluation strategy was revised to bring it in line with public health measures. With the agreement of the project sites, WHO and the Loma Linda University Office of Global Nursing and in-country national expert evaluation teams were constituted for the adapted final evaluation. These teams were supported virtually by an International Expert. In order to maintain objectivity, the national teams, where possible, included representatives of the WHOCCs for Nursing and Midwifery Development, ministry of health, educational institutions, nursing and midwifery councils and WHO country office technical staff who were not directly involved in project implementation.

EVALUATION ACTIVITIES

The evaluations were conducted from June 2020 to October 2020. The scope of the evaluation covered all aspects of the project, namely Action Plans, midwifery educator competencies, overall institutional capacity and LoC/CoE status. The broad range of methods used included desk reviews, FGDs with students and educators, microteaching sessions (to observe educators' use of competency-based education) and in-depth interviews with heads/coordinators of the project site.

1. **Evaluation of Action Plans**: The educator competencies were evaluated on the basis of "Domains" and "Competencies" that had been selected by the site and included in the Action Plan. The identified competencies reflected the overall areas of growth need at each site in CBE. Each objective related to the competency was scored based on achievement with a numeric value. ***Fully achieved = 2 points, Partially achieved = 1 point and Not achieved = 0***.

2. **Evaluation of midwifery educator competencies**: Three methods were used: the first was the evaluation of teachers through observation of teaching sessions in classrooms and skills laboratory; the second was the educator self-evaluation; and the third was FGDs and in-depth interviews. A total of four sets of Tools were used to evaluate educator competencies.

a) **Evaluation of teaching sessions**: This was done by external evaluators, peers, students and self-evaluation by the educators themselves. The tools used were the Student, Peer and Evaluators tool for the microteaching session and the Educator self-evaluation tool. The tools assessed the competencies of the educator across the competency domains. The results are presented as how many evaluators indicated the competency was: ***Always, Frequently, A few times or Never***. An educator who was assessed as having demonstrated a competency of ***"always" or "frequently"*** was considered to have the skills for the respective core midwifery educational competency.

b) **Educator self-evaluation**: Each competence had a maximum score of 3. This was based on the achievement status as **Always = 3 points, Frequently = 2 points, A few times = 1 point** and, **Never = 0**. A score of 57 is assigned to the 19 competencies.

c) **Focus group discussions**: The FGDs were conducted among students and educators. The tool used was the "Guide for evaluators conducting FGDs with students and the faculty".

d) **In-depth interview tool**: This was used with the Head of the Midwifery Programme of the project site.

3. **Institutional capacity evaluation and LoC or CoE**. A capacity assessment tool was used at the baseline and at the end of the project to determine improvements, challenges and future opportunities for capacity strengthening. For evaluating LoC or CoE, four areas were evaluated, with each having a number of elements that received a score: (a) Leadership - seven items; (b) Resources - six items; (c) Community engagement - five items; and (d) Innovation - six items. Achievement scores were: **Fully achieved = 1, Partially achieved = 0.5, and Not achieved = 0**.

RESOURCES

To enhance the delivery of CBE in all the sites, the project provided a broad range of resources.

1. A total of 15 iPads (standard size) were provided for students at each site; every two students would share an iPad. IPad Minis for educators were distributed as follows: nine for educators at Malamulo; seven for Maluti and Kanye; and five for Cosendai. Capacity building instructions via Zoom (multiple sessions at different times) were conducted by the Loma Linda University Global Nursing Taskforce for both students and faculty on how to maximize the use of the iPads to find current evidence-based knowledge.

2. Other resources provided to the project sites were:

    a) Manikins including, Laerdal's portable Mama Natalie and Birthing models from Brazil for use in the community;

    b) Projectors and laptops for classroom use;

    c) New classic midwifery textbooks;

    d) Boxes of used books published in the last five years;

    e) Solar panels for the nursing classroom and skills lab to maintain electricity and provide stable internet access;

    f) External computer drives loaded with information for teaching midwifery students and for use in community education.

3. An off-campus PhD programme at Loma Linda University School of Nursing is investing in the development of nurse educators globally. The graduating class of 2018 included students from Botswana, Lesotho and Malawi. This programme will continue and will benefit the project sites. A short description is presented in Annex 2.

In the subsequent pages of this report, findings are described in each of the evaluation components. The order of the sections on the sites is based on the dates of the evaluation, starting with the first site evaluated.

PART

III

MALUTI ADVENTIST COLLEGE OF HEALTH SCIENCES, LESOTHO

A BRIEF BACKGROUND ON LESOTHO

Lesotho is a small mountainous country which is completely landlocked by the Republic of South Africa. The country's population is estimated at 1.8 million with gender distribution of 51.3% females and 48.7 % males. Life expectancy is estimated at 41.2 years, i.e. 39.7 years for males and 42.9 years for females; this signifies a decline of ten years, in relation to the 1996 census, due partly to the HIV/AIDS pandemic. The Lesotho Government is a constitutional monarchy. The King's functions are predominantly ceremonial. The country practices democratic governance, with a prime minister as head of government with full executive authority (8). The maternal mortality rate (MMR) in Lesotho has been consistently high in comparison to other countries in the region. Estimates from WHO suggest that Lesotho's MMR dropped from 594 deaths per 100 000 live births in 2010 to 529 deaths per 100 000 live births in 2017 (1). The leading causes of maternal deaths are post-partum sepsis (22%), postpartum haemorrhage (20%) and obstructed labour (16%). The neonatal mortality has decreased from 38.5 to 35.5 per 1000 live births over the same period (1,9). This clearly shows that much more work needs to be done to achieve the Sustainable Development Goals target 3.1 and to end preventable maternal deaths by 2030 (10).

PROJECT LOCATION

Maluti Adventist College of Health Sciences and Maluti Adventist Hospital are located in Mapoteng, Lesotho. Mapoteng is a community of villages in the Berea District, situated approximately 100 km northeast of Maseru, the capital of Lesotho. The College and Hospital share a campus in this rural setting. Maluti Adventist Hospital was established as a mission hospital by the SDA in 1951. A wide range of health-care services are provided by the hospital to the residents within its catchment area, as well as to patients who travel from other parts of Lesotho to receive care. In 1958 the Maluti Hospital School of Nursing was established for the provision of nursing and midwifery education.

MALUTI ADVENTIST SCHOOL OF NURSING PROGRAMMES

The institution has been offering nursing training since 1958. Midwifery was introduced in 1971, first as a certificate programme and then as a diploma in 1973. The midwifery programme has been aligned to the South African system of training. Two programmes are offered at this institution: a three-year Diploma in Registered Nursing (RN) and a one-year Registered Nurse-Midwife Diploma (RN/RM). In 2016, the midwifery programmes within the nursing training institutions developed new tools aligned to the new curriculum. They include a midwifery register where students record all the skills performed during their training. Consequently, the Lesotho Nursing Council developed its own midwifery training standards and Midwifery Register. Recently, the institution also started offering the midwifery programme as an 18-month open distance learning (ODL) programme which targets nurses who are not formally trained as midwives. In February 2020, the ODL received a full five-year accreditation by the Lesotho Council of Higher Education. The admission capacity for the full-time programme is 70 students each year. For the 2019/2020 academic year, the programme had 87 full-time students.

The mission statement, *"To provide and maintain high quality comprehensive and holistic education to all learners regardless of any discriminative factors that may influence their learning outcomes; thus, developing highly skilled and countable professionals capable of advancing in their various professions and evidence-based practices"* is well articulated and emphasizes a culture of excellence. However, some faculty members are yet to be conversant with it.

FINAL PROJECT EVALUATION RESULTS

The evaluation for Maluti Adventist College of Health Sciences was conducted from 17 to 25 June 2020. The evaluation team comprised: (1) Ms Mpoeetsi Makau, Director of Nursing Services-MoH, Team Leader; (2) Mrs Mantsane Tsoloane, WHO Country Office; (3) Makhabiso Ramphoma, Ministry of Education; and (4) Dr Ntsoaki Mapetla, Research Officer, Council of Higher Education.

ACTION PLAN FOR SCALING UP MIDWIFERY EDUCATION

The Action Plan developed in 2015 by the College prioritized the domains and competencies for the project. The domains were: (a) Domain 2, ***Midwifery practice***; (b) Domain 4, ***Learning in the clinical area***; (c) Domain 5, ***Assessment and evalution of students and programmes;*** (d) Domain 6, ***Organization, management and leadership***; and (e) Domain 8, ***Research***. For each of the domains selected, competencies were listed, and the objectives indicated. The WHOCCs, Loma Linda School of Nursing and the WHO Regional Office for Africa provided regular support (at least two site visits per year) during the implementation period. Monitoring reports were prepared and submitted to WHO. The project held or participated in a total of six capacity-building workshops, three of which were jointly attended by the other project sites (Annex 3).

Table 2 and Table 3 present the summary of the findings on the Action Plan implementation for Maluti College. The five domains which were the focus of the project had a total of 11 objectives. The College fully achieved 10 of these and only one objective was partially achieved because of the COVID-19 outbreak (training of Maluti staff to serve as preceptors). The programme had an overall achievement score of 21/22 (95.4%). Each objective related to the competency was scored based on achievement with a numeric value. ***Fully achieved = 2 points, Partially achieved = 1 point, and Not achieved = 0***.

Table 2. Action Plan achievement, Maluti Adventist College, Lesotho (Domains 2, 4 and 5)

DOMAIN/COMPETENCY	GOALS/OBJECTIVES	NOT ACHIEVED (0)	PARTIALLY ACHIEVED (1)	FULLY ACHIEVED (2)	REMARKS AND SUPPORTING RATIONALE
DOMAIN 2: Midwifery practice					
Competency 4: **Practise midwifery in ways that reflect evidence-based and up-to-date knowledge.**	1. Use available national, regional and global guidelines for midwifery practice.			**2**	National guidelines used: for instance, integrated management of pregnancy and childbirth and newborn care, antenatal care guidelines, antiretroviral treatment (ART) guidelines.
DOMAIN 4: Learning in clinical area					
Competency 8: **Facilitate a safe and effective learning environment in the clinical setting.**	2. Train Maluti clinical staff to act as preceptors		**1**		Training could not take place due to the COVID-19 pandemic. Training is anticipated to start in July 2020.
Competency 9: **Foster individualized experiential learning.**	3. Employ staff to facilitate student supervision			**2**	Strategies such role play, Kahoot, crossword and other innovative strategies are used in teaching midwifery.
	4. Employ teaching strategies to promote active learning			**2**	Four consultants from the University of Sao Paolo, Loma Linda University, University of South Africa (UNISA) and University of Kwa-Zulu Natal (UKZN) conducted a three-day capacity-building workshop on innovative teaching strategies
	5. Involve consultant to strengthen innovative teaching strategies.			**2**	
DOMAIN 5: Assessment and evaluation of students and programmes					
Competency 10: **Continously monitor, assess and evaluate the effectiveness of the educational programme.**	6. Develop assessment tools for programme, peer and student evaluations of the programme.			**2**	Tools developed for: (a) Supervisor assessment; (b) Peer review; (c) Class facilitation tool-student educator assessment; (d) Student performance tracking. Programme assessment incorporated into the programme policy.

Table 3. Action Plan achievements, Maluti Adventist College, Lesotho (Domains 6 and 8)

DOMAIN/COMPETENCY	GOALS/OBJECTIVES	NOT ACHIEVED (0)	PARTIALLY ACHIEVED (1)	FULLY ACHIEVED (2)	REMARKS AND SUPPORTING RATIONALE
DOMAIN 6: Organizing, management and leadership					
Competency 12: Actively participate in organizing and implementing a midwifery curriculum. **Competency 13: Implement and revise midwifery educational courses/programmes.**	7. Develop programme goals and objectives. Participate in the national review of the midwifery competency-based curriculum (CBC)			**2**	Work in progress, awaiting recruitment of consultant to guide the process.
	8. Align modules with outcomes from the review			**2**	2019 Report on intercollege preparation for review of CBC reflects alignment of modules to review outcomes.
DOMAIN 8: Research					
Competency 18: Use research to inform teaching and practice	9. Subscribe to accredited midwifery journal			**2**	The College has access to journals through WHO HINARI.
	10. Invite consultant to assist with research proposal and conduct research related to country's priority areas			**2**	Consultant from UNISA provided training to staff on research and priority identification.
	11. Identify the country's priority areas and align topic for research studies.			**2**	National research agenda used for identifying student project topics.

*Each objective related to the competency was scored based on achievement with a numeric value. ***Fully achieved = 2 points; Partially achieved = 1 point; and Not achieved = 0***.

The site is now readily teaching midwifery in ways that reflect evidence-based and up-to-date knowledge, by using national guidelines related to maternal and child care such as integrated management of pregnancy and child and newborn care and antiretroviral treatment guidelines. There has been an enhancement of access to journals through the WHO Health InterNetwork Access to Research Initiative (HINARI) system. UNISA is supporting the faculty on identification of research priorities. Furthermore, student research topics are now based on the National Research Agenda. The College has also been employing innovative teaching strategies that foster individual experiential learning, following support from consultants from the University of Sao Paulo, Loma Linda School of Nursing, University of South Africa and University of Kwazulu-Natal. In the area of monitoring, assessment and evaluation of effectiveness of the programme, the College has developed tools for programme, peer and student assessment and incorporated assessment in the programme policy.

EDUCATOR COMPETENCY EVALUATION

To evaluate skills acquisition in competency-based education, educators had to demonstrate this by conducting a teaching session (microteaching) which was then assessed by the students (student evaluators), peers (other educators), external evaluators and the educators themselves (educator self-evaluation). This evaluation included all the domains of the WHO midwifery educator competencies. Overall, the educators at Maluti utilize over 80% of the competency-based education strategies.

EDUCATOR TEACHING/LABORATORY SESSION EVALUATION

Three teaching sessions were conducted on midwifery topics. Included among the topics was examination of the placenta and high-risk intrapartum care. The evaluator tool requires evaluators to complete a set of questions. The results of the teaching and skills laboratory evaluations of the educators are presented in Tables 4, 5 and 6.

Table 4. Teaching evaluations, Educator 1, Maluti College

	EDUCATOR 1 No. of **students** = **21**			EDUCATOR 1 No. of **evaluators** = **5**		
EDUCATOR COMPETENCY	**Always**	**Frequent**	**Never or few**	**Always**	**Frequent**	**Never or few**
1. Incorporates, promotes ethical and legal aspects	20	1	0	5	0	0
2. Lecturer is a consistent role model	19	2	0	5	0	0
3. Lecturer maintains current knowledge and skills	19	1	1	4	1	0
4. Educational methods promote active learning	20	1	0	5	0	0
5. Uses updated teaching and learning methods	19	2	0	5	0	0
6. Recognizes, supports, unique learning needs	20	1	0	5	0	0
7. Uses evidence-based, up-to- date teaching resources	18	3	0	5	0	0
8. Facilitates a safe & effective learning environment in the clinical setting	20	1	0	N/A	N/A	N/A
9. Promotes integration of theory into clinical practice	20	1	0	N/A	N/A	N/A
10. Uses different methods to assess students	19	1	1	5	0	0
11. Assesses students' competencies using different methods	20	0	1	5	0	0
12. Provides timely, specific and constructive feedback	20	0	1	5	0	0
13. Communicates effectively using a variety of methods	20	1	0	_	-	-
14. Responds effectively to students' questions, encourages student reflection	21	0	0	_	-	-

Red: *Reflects competency ranked as not adequate by at least one evaluator*

Table 5. Teaching evaluations, Educator 2, Maluti College

	EDUCATOR 2 No. of **students** = **16**				EDUCATOR 2 No. of **evaluators** = **5**		
EDUCATOR COMPETENCY	**Always**	**Frequent**	**Never or few**		**Always**	**Frequent**	**Never or few**
1. Incorporates, promotes ethical and legal aspects	14	2	0		5	0	0
2. Lecturer is a consistent role model	12	3	1		5	0	0
3. Lecturer maintains current knowledge and skills	15	1	0		4	1	0
4. Educational methods promote active learning	12	4	0		5	0	0
5. Uses updated teaching and learning methods	15	1	0		5	0	0
6. Recognizes, supports, unique learning needs	13	3	0		5	0	0
7. Uses evidence-based, up-to- date teaching resources	15	1	0		5	0	0
8. Facilitates a safe & effective learning environment in the clinical setting	15	1	0		N/A	0	0
9. Promotes integration of theory into clinical practice	16	0	0		N/A	0	0
10. Uses different methods to assess students	12	4	0		5	0	0
11. Assesses students' competencies using different methods	14	2	0		5	0	0
12. Provides timely, specific and constructive feedback	10	5	1		4	0	1
13. Communicates effectively using a variety of methods	12	4	0		5	0	0
14. Responds effectively to students' questions, encourages student reflection	14	2	0		2	3	0

Red: *Reflects competency ranked as not adequate by at least one evaluator*

Table 6. Teaching and Skills lab evaluations, Educator 3, Maluti College

	EDUCATOR 3 No. of **students** = **8**			EDUCATOR 3 No. of **evaluators** = **2**		
EDUCATOR COMPETENCY	**Always**	**Frequent**	**Never or few**	**Always**	**Frequent**	**Never or few**
1. Incorporates, promotes ethical and legal aspects	4	4	0	2	0	0
2. Lecturer is a consistent role model	6	2	0	2	0	0
3. Lecturer maintains current knowledge and skills	6	2	0	2	0	0
4. Educational methods promote active learning	6	1	1	2	0	0
5. Uses updated teaching and learning methods	7	1	0	2	0	0
6. Recognizes, supports, unique learning needs	5	3	0	2	0	0
7. Uses evidence-based, up-to- date teaching resources	4	4	0	2	0	0
8. Facilitates a safe & effective learning environment in the clinical setting	6	2	0	2	0	0
9. Promotes integration of theory into clinical practice	6*	1	0	N/A	0	0
10. Uses different methods to assess students	4*	3	0	2	0	0
11. Assesses students' competencies using different methods	5*	2	0	2	0	0
12. Provides timely, specific and constructive feedback	4*	2	1	2	0	0
13. Communicates effectively using a variety of methods	7	1	0	-	-	-
14. Responds effectively to students' questions, encourages student reflection	6	2	0	-	-	-

***** One or more student did not respond to these questions.
Red: *Reflects competency ranked as not adequate by at least one evaluator*

TEACHING AND SKILLS LABORATORY EVALUATIONS

The evaluation of the teaching sessions across all evaluators showed that the educators had mastered the core educational competencies. Overall, competencies were always or frequently demonstrated. The competencies that were not adequately demonstrated (never) included: (a) competency 12, provides timely, specific constructive feedback which was marked for three evaluators; (b) four competencies which one evaluator rated as "never" (competency 2, lecturer is a consistent role model; competency 3, lecturer maintains current knowledge and skills; competency 4, educational methods promote active learning; competency 10, uses different methods to assess students).

EDUCATOR SELF-EVALUATION

The three educators who conducted teaching sessions evaluated themselves using the tool provided. Educator 2 did not complete the section related to clinical skills. The scores achieved out of a maximum of 57 were: Educator 1, 100% (57/57); Educator 2, 88% (50/57); and Educator 3, 75% (43/57). Overall, the educators used most of the recommended teaching methods which promote active learning among students. However, the educators also indicated that they rarely used the following methods: concept mapping, seminars, projects, mind mapping, checklist reflective diaries, survey and self-confidence.

MIDWIFERY FACULTY FGD AND HEAD OF PROGRAMME IN-DEPTH INTERVIEW

The areas covered in the FGD were: (a) **Domain 4**,Learning in the clinical area; Competency 8, Facilitate a safe and effective learning environment in the clinical setting; (b) **Domain 5**, Assessment and evaluation of students and programmes; Competency 10, Continuously monitor, assess and evaluate the effectiveness of the educational programme; (c) **Domain 6**, Organization, management and leadership; Competency 12, Actively participate in organizing and implementing a midwifery curriculum; Competency 13, Implement and revise midwifery course or programme; (d) **Domain 7**, Communication, leadership, and advocacy; Competency 15, Demonstrate cultural competency in course design and development, teaching and midwifery practice; Competency 16, Function as a change agent and leader in order to improve both midwifery practice and education; Competency 17, Use a variety of advocacy strategies to promote midwifery education and practice including professional, community, human rights and structural advocacy; and (e) **Domain 8**, Research; Competency 18, Use research to inform teaching and practice; Competency 19, Cultivate a culture supporting critical inquiry and evidence-based practice (EBP).

An FGD was conducted among the midwifery faculty and an in-depth interview was conducted with the head of the programme. Table 7 and Table 8 present a combined summary from the FGD with educators and in-depth interview of the Head of the midwifery programme.

Table 7. Results from faculty FDG and in-depth discussions, Maluti College

DOMAIN AND COMPETENCIES	FINDINGS
DOMAIN 4 **Learning in a clinical area**	
Competency 8: **Facilitate a safe and effective learning environment in the clinical setting.**	1. More use of interactive methods such as role play, videos, simulations 2. Clinical department established 3. Increased clinical staff from one to three (two are dedicated to midwifery) 4. Staff received continuous professional development in a clinical setting at the University of Cape Town (18-20 November 2019) 5. Staff trained in research methodology and data analysis 6. More resources for skills lab secured including manikins and Mama Nathalie 7. Pre- and post-objective structured clinical examinations (OSCEs) are conducted
DOMAIN 5 **Assessment and evaluation of students and programmes**	
Competency 10: **Continuously monitor, assess and evaluate the effectiveness of the educational programme.**	1. Performance management system introduced 2. Assessment tools developed (peer review tool, student rating of educator tool, supervisor review tool). Tools are available online for easy access and used for planning and continuous professional development. 3. Quality assurance officer observes OSCEs and participates in report writing* 4. Assessment policy developed 5. External national programme review done 6. Adopted WHO prototype midwifery competency-based curriculum tools
DOMAIN 6 **Organization, management and leadership**	
Competency 12: **Actively participate in organizing and implementing a midwifery curriculum** **Competency 13:** **Implement and revise midwifery course or programme.**	1. Collaboration between classroom and clinical teachers increased (collaborative planning) and was established 2. Evidence from research used to make improvements in skills lab 3. A teaching and learning master plan developed. 4. Well-articulated timetable inclusive of all relevant components 5. Monthly midwifery programme meetings initiated 6. Curriculum review done, overlaps identified and removed 7. A curriculum steering committee (National Nursing and Midwifery Education Committee) established in the country is chaired by the Maluti Head of Programme 8. Student workbooks revised to incorporate principles of competency-based curriculum.

*A group of five clinical supervisors representing the Lesotho Nursing Training Institutions (NTI) went to the University of Cape Town for benchmarking of OSCE as part of the curriculum review process. The team developed a tool to guide the benchmarking process. These are the areas covered: (a) Educational principles of OSCE (validity, reliability and feasibility); (b) Importance of having pre-OSCE briefing and post-OSCE debriefing); (c) Examination processes (development of checklists and scenarios); and (d) Management of obstetric complications/emergencies through use of manikins (simulation-based education).

Table 8. Results from faculty FGD and in-depth interview, Maluti College

DOMAIN AND COMPETENCIES	FINDINGS
DOMAIN 7 **Communication, leadership, and advocacy**	
Competency 15: **Demonstrate cultural competency in course design and development, teaching and midwifery practice.** **Competency 16:** **Function as a change agent and leader in order to improve both midwifery practice and education.** **Competency 17:** **Use a variety of advocacy strategies to promote midwifery education and practice, including professional, community, human rights and structural advocacy.**	1. Cultural aspects taught and active learning methods, such as role play, used 2. Programme observes cultural days and accepts research topics related to culture 3. Learner performance tracking tool developed to encourage student success 4. Two staff members dedicated to providing student support and chaplain services 5. Students encouraged to freely interact with teachers through open door policy 6. Resits available for students not performing well. 7. Midwifery certificate programme upgraded to diploma level 8. Use OSCEs to align classroom and clinical teaching 9. Increase from two clinical assessments to 10 student clinical procedures 10. Clinical site staff now involved in student orientation 11. Technology adopted includes Moodle Cloud 12. Accountability improved, partnerships strengthened with the Christian Health Association of Lesotho, Ministry of Health through the Nursing Directorate, the National Nursing and Midwifery Education Committee 13. Collaborated on the establishment of a Lesotho Register in 2019**
DOMAIN 8 **Research**	
Competency 18: **Use research to inform teaching and practice.** **Competency 19:** **Cultivate a culture supporting critical inquiry and evidence-based practice.**	1. Using more evidence in lesson planning (references less than 10 years old used) encouraging students to go beyond prescribed textbooks 2. Students engaged in critique of new research/knowledge 3. Designated funding for research and continuous professional development addressing the research needs of faculty
Personal reflections	
1. **Changes in midwifery education-based WHO project?** 2. **Personal changes as an educator, as a result of the WHO project**	1. Increased faculty confidence and competency 2. Better structured and resourced midwifery programme, for instance, iPads, which are provided exclusively to the midwifery programme, and projectors 3. Assessment used as basis for reflection, feedback and making improvements. Not viewed anymore as policing 4. Faculty and staff more goal-oriented, leading to reduced turnover.

**A midwifery register was established and released by the Lesotho Nursing Council (LNC) in 2019. In the past, all nursing institutions in the country were using the South African Nursing Council (SANC) midwifery register. The register is a tool developed to improve midwifery competencies, and is used in conjunction with the standards of midwifery care for better maternal outcomes in the country. The LNC is guided by the 1998 Nurses and Midwifery Act no. 12.

In-depth interview and FGD with the faculty on the programme highlighted the positive changes made. Notable among these were: (a) Colleagues appreciate each other as complementors, which has enhanced teamwork. There is evidence of improved competency, confidence and teaching. There is greater understanding of the importance of self-assessment; (b) Research and documentation of activities are much more appreciated as is the increased access to reference materials, journals and technology; (c) There is increased networking and visibility of the programme; (d) Improved resources, especially in skills laboratory; (e) Increased collaboration with staff at clinical sites as well as between classroom and clinical educators.

A major shortcoming was that due to the high turnover of staff, there was involvement of non-midwifery faculty in the project, who consequently required orientation in competency-based education.

> *"The project came at the right time when we were a year into the competency-based curriculum and did not know how to go about it. Through the project, we gained access to WHO resources and felt we had support through these resources. As an institution, we are ready to support other institutions and help them grow".*

> *"I assumed the leadership role in the middle of the project and I found teamwork to be useful because we had a few members who had been with the institution since the beginning of the project".*

MIDWIFERY STUDENT FGDS

Two FGDs were conducted. The aspects of the midwifery educator core competencies addressed were: (a) Ethical and legal principle of midwifery - Competency 1 - Behave in ways that reflect the ethical standards of the teaching and midwifery professions; (b) Theoretical learning - Competency 5 - Incorporate educational strategies to promote active learning, and Competency 7 - Recognize and support different learning and unique needs of students; (c) Learning in the clinical area - Competency 8 - Facilitate a safe and effective learning environment in the clinical setting; and Competency 9 - Foster individualized and experiential learning; and (d) communication, leadership and advocacy - Competency 15 - Demonstrate cultural competency in course design and development, teaching and midwifery practice.

There is overall satisfaction and appreciation of the changes brought about with the introduction of CBE. The teaching in the midwifery programme at Maluti has improved. There is mutual respect between the educators and students. The college should, however, strive to set realistic numbers for intake of students in the clinical areas to ensure that adequate practice takes place. Some sentiments expressed are included below.

Active learning

In CBC we use a lot of role play, we take part and actively participate unlike in General Nursing where teaching was teacher centered".

"They use talk shows on the lessons, which we did not have when doing general nursing. For example, we did a talk show on antenatal care. Each student presents his or her own perspective of the lesson and then discuss".

Cultural competency

When we are given scenarios in class, they are based on settings that we are not used to, so as to expose us to different settings and cultural practices".

We were taught to respect different cultures. We have to observe the cultural practices. We are also taught to provide health education to show the client the dangers of some of the practices without imposing our views and perspectives".

Learning in clinical area

"The simulation room is similar to the real setting. For example there is the three-bin system in our simulation lab, which is similar to the labour ward. This ensures that we learn the proper disposal of all the things we use".

"For each clinical practice, we have a meeting to discuss the objectives of the clinical area; then we would have a meeting at the end to give feedback as a class, to ensure that the objectives have been met. We also discuss the challenges".

"I think the register is too big, it is a challenge to complete the set number of clinicals within the duration of the course. We appreciate that it is good to do the set number of clinicals for us to be competent but I think we need more time in the programme so that we can complete the register within the programme duration. Maybe the duration of the programme can be increased".

Upholding ethical and legal principles of midwifery

"When we do not understand something, they assist us in a manner that is not demeaning, it helps us to be confident".

"When we use the doll, we are encouraged to treat them as patients. Like when male students laughed when a female manikin was undressed, the teacher told them to stop and told us that we need to respect our patients".

OVERALL INSTITUTIONAL CAPACITY ASSESSMENT

INITIAL BASELINE ASSESSMENT

In December 2014, a capacity assessment of the institution determined it to be suitable to participate in the WHO/SDA project on scaling up midwifery education. There were seven full-time faculty members in the Registered Nurse programme, with 138 full-time students. The midwifery programme had three full-time faculty members and 46 full-time students. A new classroom block was under construction with adequate space for faculty offices and classrooms. There were enough computers for students and a new computer laboratory and library were under construction. The skills laboratory was suitable for basic and advanced maternal and child procedures and complications and had the appropriate educational aids. Clinical sites for student experience included maternal and child health, prenatal care, midwifery and labour and delivery, and care of the newborn in five hospitals and a number of clinics, one of which is located on the hospital premises - three in urban and five in rural communities. Partnerships existed with the Nursing Education Partnership Initiative (NEPI), Johns Hopkins Program for International Education in Gynaecology and Obstetrics (Jhpiego) and the Government.

FOLLOW-UP CAPACITY ASSESSMENT (2020)

A follow-up capacity assessment was done in June 2020. The findings of the assessment related to programme, clinical practice and infrastructure are presented in Tables 9, 10 and 11. The tables also show the baseline assessment of December 2014. The major changes are highlighted in the column “Comments”.

Table 9. Summary of institutional capacity: Maluti College

	EVALUATION AREA	2015	2020	COMMENTS
1	**Capacity of programme**	Full-time = 35	Full-time = 70	
2	**Students enrolled**	Fulltime = 46 Part-time= 0	Full-time = 87 Part-time = 0	
3	**Number of graduates**	2015/2016 =82	2019/2020= 67	
4	**Training modality**	Traditional	Three-year online distance learning (ODL) introduced	***ODL targets nurses without formal midwifery training***
5	**Student source of funding for training**	Government and private	Bursaries from SDA and Higher Life Church now available	
6	**Faculty**	Four full-time: Two with master's degrees and two with PhDs	Five full-time: Two with master's, two with PhDs and one with diploma	***Expansion of midwifery faculty by one staff member***
7	**Continuous professional development**	Not mentioned	Seminars/updates offered more than once a year.	
8	**Continuous professional development**	Not mentioned	Seminars/updates offered more than once a year.	
9	**Curriculum**	Maintained global (WHO) standards	Maintained global standards	***Curriculum reviews done every three years***

Table 10. Summary of institutional capacity: Clinical practice, Maluti College

	EVALUATION AREA	2015	2020	COMMENTS
1	**Clinical practice sites**	Seveth-day Adventist Hospital with three physicians and eight nurses Five hospitals as clinical settings No information on other settings	Seveth-day Adventist Hospital with six physicians and 35 nurses 11 hospitals with a total of 20 clinics Seven independent clinics in urban communities Six clinics in rural communities	***Major increase in number of doctors and nurses at major clinical facility*** ***A significant expansion of facilities (hospitals and clinics) for midwifery clinical training***
2	**Student involvement in other primary care services**	Limited in mental health care	Limited in health promotion	
3	**Average weekly number of clients/patients available to the students**	Maternal and child health=322 Labour and delivery=25 Postnatal care=25 Newborn= 9	Maternal and child health=143 Labour and delivery=46 Postnatal care=46 Newborn=45	***Except for a drop in maternal and child health care (MCH), there has been an increase in the number of clients available to the students for clinical training***
4	**Clinical facility overall annual deliveries available to students**	Hospitals=1692 Clinics: No information Home=0	Hospitals=13 994 Urban clinics=2658 Rural clinics=324 Home =10	***The number of deliveries at the hospitals is over five times that of 2015.***

Table 9. Summary of institutional capacity: Maluti College

	EVALUATION AREA	2015	2020	COMMENTS
1	**Classrooms and equipment**	No dedicated classrooms for midwifery training Overhead screen and projector Furniture inadequate	Three classrooms exclusively for midwifery training Same as in 2015 Furniture inadequate	***The facilities are still inadequate to support the current number of students in the training programme***
2	**Staff offices and accommodation**	No information available	Offices adequate for two educators. The other three use the simulation laboratory. Secure storage not available	***There has been limited or no expansion in staff office space. What is available is inadequate.***
3	**Skills laboratory**	Only one high-fidelity manikin and a low-fidelity one	Skills laboratory shared with other programmes. High-fidelity manikins (Noelle, baby Hal, Suzie) and wide range of low-fidelity manikins	***The skills laboratory has been expanded with more equipment.***
4	**Information technology**	34 computers	15 desktop computers and lockable storage cabinets 24-hour internet but low bandwidth Computer laboratory space inadequate Five midwifery educators have laptop computers and Apple iPads.	***Significant reduction in IT equipment for use by students.***
5	**Student facilities**	Student rooms without study space No heating in dormitories and no entertainment space	No accommodation for ODL students when they come for face-to-face activities	***Student facilities are inadequate in view of the increase in numbers***
6	**Eating facilities**	Small cafeteria shared by the college and the hospital	No change in eating facilities	***Eating facilities are inadequate***

PROGRAMME COLLABORATIVE ACTIVITIES

The programme works collaboratively with both the government institutions and professional organizations. With the government institutions, there are memorandums of understanding. The key areas for collaboration include establishing training institutions, curricula development and placement of students at clinical sites. The college conducts a wide range of training workshops on technology-enhanced learning for other nursing institutions in Lesotho. Recently, the faculty became a valuable partner of the Ministry of Health by providing nationwide training for 35 preceptors from all hospitals in the country. The College has links with the Pan-African Adventist Association of Universities and colleges, higher education councils in the country, and the health promotors of South Africa. The faculty of the College serves on the Lesotho Nursing Council, National Nursing and Education Committee and the Lesotho Nurses Association. Compared to 2015, the programme has significantly expanded on collaborative activities with government and nongovernmental institutions.

JOB AVAILABILITY FOR MIDWIVES

There is no information on where the graduates are now practising midwifery. However, it is estimated that over 50% of the graduates are employed in the local community, region or geographical area for at least five years following graduation. There has been no change since 2015. Due to challenges within the country, such as the difficult terrain, the poor road network and unattractive retention packages for nurses and midwives, the majority of graduates seek job opportunities in neighbouring countries, where remuneration is better. In 2019, the Ministry of Health recruited 210 nurse-midwives. Of these, 33 declined the positions due to unattractive packages and deployment to rural areas. On the other hand, 240 nurse-midwives were promoted to senior positions. In 2020, one hundred and thirty-six nurse-midwives were recruited. Since 2015, there has been no increase in salaries for Ministry of Health employees. The Ministry still has 253 vacant and unfunded positions. Human resource management, including strategies for retention of professional staff, have still not been adequately addressed by the Government.

PROGRAMME CONTRIBUTION TO THE COMMUNITY

The programme recognizes the major cultural impediment to prenatal care, which is that pregnancy is regarded as something private. This leads to late antenatal care bookings by women, resulting in late discovery of pregnancy complications. The College gives priority to addressing issues related to maternal and infant mortality and wishes to become more involved in cases. It has put much effort into developing new programmes that address, expand and deliver health improvements for women and infants in the community.

FUTURE PLANS FOR THE MIDWIFERY PROGRAMME

The plans for the future are to improve infant and maternal health outcomes for the primary clinical practice site (Adventist Hospital) and the midwifery programme of the college. These plans will focus on continuing to make improvements in midwifery education by: (a) securing financial support for student clinical placements and clinical instructors; (b) expanding simulation blocks encompassing prenatal, labour, postnatal and nursery care; (c) fully installing an eLearning classroom; (d) hosting research databases in order to have access to quality references; and (e) upgrading the midwifery qualification to a degree (advanced midwifery qualification).

EVALUATION OF LABORATORY OF CHANGE AND CENTRE OF EXCELLENCE STATUS

Phase 3 and Phase 4 of the project involved establishing and consolidating LoC and CoE. The evaluation examined the areas of leadership, institutional resources, community engagement and innovation. The scoring criteria was: Achieved = 1, Partially achieved = 0.5 and Not achieved = 0. The summary of the findings and scores (in brackets) are presented in Table 12. Maluti College achieved a score of 22.5/24 (93.7%).

Table 12. Summary on laboratory of change and centre of excellence, Maluti College

CRITERIA ELEMENT AND SCORE ( )	FINDINGS
Leadership	
a) Mission articulation (0.5) **b) Teamwork, networking, leadership (1)** **c) Proactive, collaborative leadership (1)** **d) Governance (1)** **e) Performance indicators (1)** **f) Change in initiatives (1)** **g) Culture of excellence (1)**	• Well-articulated mission statement, understood and accepted by all levels of personnel and students • Employs teamwork, networking, and mentorship for improvement of professional, managerial, and educational competencies • Proactive, collaborative leadership that empowers others • Governance reflects financial accountability • Established key performance indicators and methods of assessing faculty and students • Change initiatives are well directed and consistent • Reflects a culture of excellence, open communication, professionalism
Resources	
a) Functional, adequate infrastructure (1) **b) Education/clinical best practices (1)** **c) Ethical, quality education (1)** **d) Access to journals (1)** **e) Interdisciplinary teams (0.5)** **f) Lifelong learning (1)**	• Adequate infrastructure to maintain functional operations • Recognized for best practices in education and clinical practice • Provides quality education based on ethical principles • Has access to national and international professional journals and guidelines (HINARI, iPads) • Works in interdisciplinary teams • Provides for lifelong learning and growth in knowledge, skills, and attitudes
Community engagement	
a) Social responsibility policies (0.5) **b) Knowledge/experience sharing (1)** **c) Resource accessibility, availability, affordability (1)** **d) Fostering partnerships (1)** **e) Cultural sensitivity and inclusiveness (1)**	• Institutional policies address social responsibility and community engagement • Knowledge and expertise are shared with local institutions and the community • Relevant resources, available, accessible and affordable • Fosters community engagement through partnerships • Demonstrates cultural sensitivity and inclusiveness to diverse populations
Innovation	
a) Innovative and sustainable strategies (1) **b) Incremental improvement strategies (1)** **c) Evidence-based practice (1)** **d) Curriculum development and implementation (1)** **e) Collaborative research (1)** **f) National policy engagement (1)**	• Innovative strategies for sustainability in the presence of limited resources • Strategies designed for incremental improvement • Implementation of evidence-based practice • Participates in curriculum development and implementation • Collaborates in research activities • Engaged in national policy change initiatives

KEY HIGHLIGHTS OF THE EVALUATION OF LABORATORY OF CHANGE AND CENTRE OF EXCELLENCE

LEADERSHIP

The College has a well-defined chain of command known by all staff. Emails are used for communication and the College has a functional website and a WhatsApp group. Ethical principles are upheld and students who engage in ethical misconduct are disciplined and suspended. The staff have an open-door policy for students to consult during specified consultation hours. The College is actively involved in mentoring other nursing institutions and has a well-established performance management system. Communication with the community is done through a Facebook page and the College website. The key performance indicators are drawn from the Council on Higher Education. Progressively, financial responsibility and accountability are being promoted. A separate account from that of the hospital has now been opened and an independent accountant is used. An audit was done recently.

RESOURCES

The College has become a resource to other institutions. The Ministry of Health has requested the College to provide preceptor training. The programme has been accredited by the Council on Higher Education (five-year accreditation). The Queen of Lesotho, who is the patron of Health Promoters, approached the College to run the Lesotho Health Promoters programme. The College has trained other nursing institutions in the use of Moodle, which is the platform for distance learning, and has undertaken benchmarking of courses with other institutions, such as the University of Kwa-Zulu Natal and the University of Cape Town. A staff development plan (2020-2025) was developed and includes short-term and long-term training. In the future, the interdisciplinary teams will have to be expanded beyond Maluti Hospital. The College secured funding for staff training and has a pension fund for its staff.

COMMUNITY ENGAGEMENT

The Maluti Adventist College constitution includes a component on community engagement. The College has signed a memorandum of understanding (MOU) with partners for community engagement activities. Presently the College is offering community screening for COVID-19 at the Adventist Hospital and two former students have been engaged for this purpose. Adequate resources are available to the programme for working with communities. The community councils sometimes provide the resources. The College also runs wellness programmes in collaboration with the Adventist Hospital and cleaning campaigns in collaboration with the community councils. Community members are involved in health promotion activities and incentives for their participation are provided. The admission policy allows for admission of students from other denominations, international students and students from communities outside the College area to better respond to local community needs and promote diversity.

INNOVATION

The College's Strategic Plan 2016-2019 and the draft Strategic Plan 2019-2024 reflect an incremental improvement in the use of innovative teaching methods in a competency-based curriculum. The College participated in the review of the midwifery curriculum. The plans reflect elements of sustainability, such as the development of proposals for funding, continuous capacity-building for staff and orientation for new staff. The Head of Programme for Midwifery is the Chairperson of the Midwifery Competency-based Curriculum Review Committee. The College participated in the review of the higher education policy. In the area of research, the College has established an institutional research policy and has research collaborations with the University of South Africa, the University Kwazulu-Natal and North West University.

SUMMARY

Maluti Adventist College has adopted the WHO midwifery educator core competencies for making improvements in the quality of midwifery education. For the project Action Plan, they focused on 11 objectives in five domains of competency-based education: (Domain 2, Midwifery practice; Domain 4, Learning in clinical area; Domain 5, Assessment and evaluation of students and programmes; Domain 6, Organization, management and leadership; and Domain 8, Research). The final evaluation showed that 10 objectives had been fully achieved, and one, partially achieved. The partially achieved objective had to do with training, which could not be done due to the COVID-19 outbreak. The evaluation of the educator competencies showed that overall, educators at Maluti utilized over 80% of the competency-based education strategies. Furthermore, based on the findings from educator self-evaluations, peers, students and external evaluators, there is overall satisfaction and appreciation of the changes brought about with the introduction of CBE, and mutual respect among the educators. Moreover, teaching and learning in the midwifery programme have improved. Resources have improved greatly as a result of the project. The skills laboratory has been expanded with more equipment, and technology is now being used to improve teaching. The tools used include iPads and HINARI, which contains a huge volume of midwifery essential resources for the educators and students.

In the area of leadership, the College has become a resource for other institutions through mentorship and preceptor training at the request of the Ministry of Health and the Council of Higher Education. In addition, the Queen of Lesotho, who is the Patron of Health Promoters, approached the College to run the Lesotho Health Promoters programme, recognizing the capacity and leadership role of the institution. The community engagement activities of the College are demonstrable and continue to be in concert with community priorities, promote diversity and evolve with prevailing trends, as shown by the provision of community screening for COVID-19. Other activities, such as operating a wellness programme in collaboration with the Adventist Hospital, cleaning campaigns in collaboration with the community councils, all reflect responses to local community needs.

The faculty has been engaged in research at several levels in the past two years, with a focus on teaching, learning and faculty development. The

findings include the need for realistic numbers of students in the clinical areas to ensure that adequate practice takes place. These findings point to the need for careful evaluation of the level of resources in the context of increasing student numbers. Indeed, as the numbers of students and staff increase, IT equipment, student and staff facilities, including accommodation and staff office space, all require expansion. With regard to teaching and learning, research findings point to the need to address impingements to the application of all competency-based education methods, such as concept mapping, seminars, projects, mind mapping, and checklist reflective diaries.

The Maluti Adventist College of Health Sciences' draft Strategic Plan 2019-2024 and the Staff Development Plan (2020-2025) both reflect an incremental improvement in the use of innovative teaching methods in a competency-based curriculum, based on international and regional standards. The College's active participation in the review of the midwifery curriculum and partnership with national, regional and international entities will be maintained, to foster continuity and sustainability. The College admission policy, which allows for intake of students from other denominations, international students and students from communities outside the College area will be maintained.

Finally, as part of the WHO/SDA project for scaling up the midwifery education objective for the establishment of laboratories of change and centres of excellence, the evaluation showed that Maluti Adventist College of Health Sciences attained a score of 22.5/24 (93.7%). Based on the set criteria, this score is 18.7% above the minimum score for attaining centre of excellence status. The College has demonstrated that challenges can be overcome, and opportunities uncovered and utilized to advance excellence, and sustainability enhanced through networking, partnerships and increasing financial and social accountability.

PART IV

KANYE SEVENTH-DAY ADVENTIST COLLEGE OF NURSING, BOTSWANA

A BRIEF BACKGROUND ON BOTSWANA

Botswana is a landlocked country in Southern Africa. It has a landscape that is defined by the Kalahari Desert and the Okavango Delta. It has an estimated population of 2.25 million. In 2017, there were 52 358 live births, of which 52 242 were institutional births, representing 99.8% of all births. The maternal mortality ratio had been fluctuating over the years, but declined from 179 deaths per 100 000 live births in 2010 to 144 deaths per 100 000 live births in 2017. Overall, 76% of all maternal deaths were due to direct causes, while the remainder were due to indirect causes. The leading direct cause of maternal mortality was 'genital tract and pelvic infection following abortion and ectopic and molar pregnancy' which accounted for 20% of all maternal deaths, followed by 'diseases of the circulatory system complicating pregnancy, childbirth and the puerperium' at 11%, 'severe pre-eclampsia' at 8% and 'rupture of uterus during labour' at 8%. On the other hand, diseases of the circulatory system complicating pregnancy, childbirth and the puerperium were the leading indirect causes of maternal deaths (1, 11). The neonatal mortality rate also decreased from 30.1 in 2010 to 25.2 deaths per l000 live births in 2017 (1, 11).

PROJECT LOCATION

The town of Kanye is located in southern Botswana, approximately 94 km from the capital Gaborone, and has a population of about 47 000. The Kanye Seventh-day Adventist (SDA) Hospital was established in 1921 and has 167 patient beds, with an average bed occupancy rate of 55%. Over 250 outpatients are seen per day. Department specialties include internal medicine, paediatrics, obstetrics and gynaecology, general surgery, emergency medicine, infectious disease control clinic, general outpatient (OPD), dental health clinic, eye clinic, psychiatry and public health. The Kanye SDA College of Nursing is located in the grounds of Kanye SDA Hospital.

KANYE SDA COLLEGE OF NURSING PROGRAMMES

The School of Nursing currently offers three programmes in nursing. These are the three-year diploma in Registered Nursing (RN), Advanced Registered Nurse Midwife Diploma (RN/RM) and an Advanced Diploma in Family Nurse Practice. The advanced diplomas take two years, under the Midwifery and Family Practitioner programmes. The minimum requirements for the advanced diploma in the midwifery programme include being a registered nurse with a minimum of two years' experience in nursing practice.

The College mission statement is "***To further the healing and teaching ministry of Jesus Christ by providing ethical, competent and globally competitive health human resource".***

FINAL PROJECT EVALUATION RESULTS

The final project evaluation of Kanye Seventh-day Adventist Nursing College of Health Sciences was conducted from 22 to 24 July 2020. The members of the evaluation team were: Mrs Bakanuki Nfila, WHO Country Office (team leader); Mrs Mosidi Mokotedi, University of Botswana, WHO Collaborating Centre for Nursing and Midwifery Development; Dr Khumo D. Modisaeman, Chief Nursing Officer, Ministry of Health, Botswana; and Ms Senewa Dolly Mooko, Coordinator for the Institute of Health Sciences, Botswana.

ACTION PLAN FOR SCALING UP MIDWIFERY EDUCATION

The Action Plan for Kanye SDA school of Nursing was developed during a meeting organized for project collaborators in Bloemfontein in 2015. The Plan addressed three domains: (a) Domain 3,Theoretical learning; (b) Domain 6, Organization, management and leadership; and (c) Domain 8, Research. In each of the domains, specific competencies were listed, and objectives defined. The three prioritized domains had a total of six objectives related to competencies for educators. During the course of the project, capacity-building workshops were conducted by the Loma Linda University Office of Global Nursing Taskforce, while monitoring was conducted by WHO and the WHO Collaborating Centres for Nursing and Midwifery in the African Region. The total number of capacity-building workshops was six (Annex 3).

During the evaluation in July 2020, the team noted that the WHO/SDA project college coordinating team had not fully shared the objectives of the project with the faculty. The faculty also acknowledged that they only began to understand the purpose of the project in the last quarter of 2019. The implication was that not much activity had taken place and some of the resources (such as the iPads) that were available to the project site had not been utilized. The few activities that took place are summarized in Table 13. Based on the Action Plan of the College, its performance in the implementation of the Action Plan was at 33% (4/12). Table 13 presents the summary of the findings.

Table 13. Action Plan achievements, Kanye Adventist College achievements

COMPETENCY DOMAIN	ACTION PLAN OBJECTIVES AND SCORE*	FINDINGS/COMMENTS
DOMAIN 3: Theoretical learning		
Competency 5: **Incorporate educational strategies to promote active learning**	1. Building capacity on active teaching methodology and technology **(2)**	1. Participated in active learning methodologies at University of Botswana
DOMAIN 6: Organization, management and leadership		
Competency 12: **Actively participate in organizing and implementing midwifery curricula**	1. Review the curriculum in line with national and international standards **(0)**	1. Curriculum not yet reviewed
	2. Develop a plan for implementation of the revised curriculum **(0)**	
DOMAIN 8: Research		
Competency 18: **Use research to inform teaching and practice**	1. Build capacity for research methods **(2)**	1. Faculty trained in research by the University of Botswana. However, the college faculty are not yet conducting research.
	2. Improve educators' research knowledge and skills **(0)**	
	3. Improve knowledge base for educators **(0)**	

*Each objective related to the competency was scored based on achievement with a numeric value. ***Fully achieved = 2 points, Partially achieved = 1 point and Not achieved = 0***.

EDUCATOR COMPETENCY EVALUATION

EDUCATOR TEACHING/LABORATORY SESSION EVALUATION

Three educator teaching sessions were conducted on midwifery topics, including examination of the placenta and high-risk intrapartum care. The first two educators had seven students and the third educator had five. **None of the students answered questions 4, 5, 6, 7, 8, 13 and 15 for all the teaching sessions**. As regards the external evaluators/peers, there were seven for educator 1 and three each for educator 2 and educator 3. Only one peer/external evaluator completed all the questions, while the others did not complete questions 13 and 14. The results of the educator evaluations are presented in Tables 14 and 15.

Table 14 - Teaching Evaluations, Teacher 1 and Teacher 2: Kanye Adventist College of Nursing, June 2020

	Teacher 1 No students = 7			Teacher 1 Evaluators = 3			Teacher 2 Students = 7			Teacher 2 Evaluators = 5		
EDUCATOR COMPETENCE	**Always**	**Frequent**	**Never or few**	**Always**	**Frequent**	**Never or few**	**Always**	**Frequent**	**Never or few**	**Always**	**Frequent**	**Never or few**
1. Incorporates, promotes ethical and legal aspects	4	3	0	2	1	0	4	3	0	3	0	0
2. Lecturer is a consistent role model	5	2	0	3		0	6	1	0	2	1	0
3. Lecturer maintains current knowledge and skills	6	1	0	2	1	0	1	3	0	0	2	0
4. Educational methods promote active learning				0	1	0				0	1	0
5. Uses updated teaching and learning methods				0	1	0				0	1	0
6. Recognizes, supports, unique learning needs				1		0				0	1	0
7. Uses evidence-based, up-to- date teaching resources				1	0	0				0	1	0
8. Facilitates a safe & effective learning environment in the clinical setting				1	0	0				0	1	0
9. Promotes integration of theory into clinical practice	6	0	0	2	0	0	1	3	0	3	0	0
10. Uses different methods to assess students	1	5	1	2	0	0	0	3	0	2	1	0
11. Assesses students' competencies using different methods	1	5	1	1	1	0	2	2	0	3	0	0
12. Provides timely, specific and constructive feedback	5	2	0	1	1	0	4	0	0	3	0	0
13. Communicates effectively using a variety of methods				0	1	0				1	0	0
14. Responds effectively to students' questions, encourages student reflection				0	1	0				0	1	0

Shaded boxes reflect where competencies were not completed in study tool.
***Red**: Reflects competence ranked as not adequate by at least one evaluator*

Table 15. Teaching evaluations, Teacher 3: Kanye Adventist College of Nursing, June 2020

	Teacher 3 No of students = 5			Teacher 3 Evaluators = 3		
EDUCATOR COMPETENCY	**Always**	**Frequent**	**Never or few**	**Always**	**Frequent**	**Never or few**
1. Incorporates, promotes ethical and legal aspects	4	1	0	2	1	0
2. Lecturer is a consistent role model	3	2	0	3	0	0
3. Lecturer maintains current knowledge and skills	1	4	0	2	0	1
4. Educational methods promote active learning				0	1	0
5. Uses updated teaching and learning methods				0	1	0
6. Recognizes, supports, unique learning needs				1	0	0
7. Uses evidence-based, up-to- date teaching resources				1	0	0
8. Facilitates a safe & effective learning environment in the clinical setting				1	0	0
9. Promotes integration of theory into clinical practice	1	3	0	2	1	0
10. Uses different methods to assess students	1	3	1	2	1	0
11. Assesses students' competencies using different methods	0	2	1	2	1	0
12. Provides timely, specific and constructive feedback	2	2	0	2	1	0
13. Communicates effectively using a variety of methods						
14. Responds effectively to students' questions, encourages student reflection						

Shaded boxes reflect where competencies were not completed in evaluation tool.
***Red**: Reflects competence ranked as not adequate by at least one evaluator*

EVALUATION OF TEACHING SESSIONS

The evaluation of the teaching sessions across all evaluators showed that the educators had mastered the core educational competencies. Overall, competencies were always or frequently demonstrated. The competencies that were not adequately demonstrated (never) included: competency 10, uses different methods to assess; and competency 11, assesses students' competencies using different methods, which was mentioned by four evaluators. Two were rated by one evaluator as "never" (competency 1, incorporates, promotes ethical legal aspects; competency 3, lecturer maintains current knowledge and skills).

EDUCATOR SELF-EVALUATION

All the educators who conducted teaching sessions evaluated themselves based on the tool provided by the project at the end of their session. The tool evaluated the achievement of the 19 competencies. The scores of the self-evaluation were high for all the three educators. Educator 1: 86% (49/57), educator 2: 74% (42/57), and educator 3: 82% (47/57). Collectively, the three educators indicated that the most commonly used teaching methods were: one-on-one meetings, group feedback, open office hours, mentoring and coaching, role play, demonstrations and audio-visuals. The main sources of information for their teaching are research, journals, WHO and Ministry of Health guidelines and books. **The three educators also indicated that some of the barriers to their work were poor internet connectivity, which limited their access to online journals, and lack of knowledge on accessing databases.**

MIDWIFERY FACULTY FDG AND HEAD OF PROGRAMME IN-DEPTH INTERVIEW

An FGD was held with the midwifery faculty and an in-depth interview was conducted with the head of the programme. The areas covered in the FGD were: (a) **Domain 4**, Learning in the clinical area; Competency 8, Facilitate a safe and effective learning environment in the clinical setting; (b) **Domain 5**, Assessment and evaluation of students and programmes; Competency 10, Continuously monitor, assess and evaluate the effectiveness of the educational programme; (c) **Domain 6**, Organization, management and leadership; Competency 12, Actively participate in organizing and implementing a midwifery curriculum; Competency 13, Implement and revise midwifery course or programme; (d) **Domain 7**, Communication, leadership, and advocacy; Competency 15, Demonstrate cultural competency in course design and development, teaching and midwifery practice; Competency 16, Function as a change agent and leader in order to improve both midwifery practice and education; Competency 17, Use a variety of advocacy strategies to promote midwifery education and practice including professional, community, human rights and structural advocacy; and (e) **Domain 8**, Research; competency 18, Use research to inform teaching and practice; Competency 19, Cultivate a culture supporting critical inquiry and EBP.

The results from the FGDs and the in-depth interviews showed that **since late 2019, some changes** had been taking place in the midwifery programme. For example, the faculty are able to promote CBE by identifying learners' needs, and using that information to improve their teaching, provide counselling and mentor students. The faculty acknowledged that ***"the project made us realize that the curriculum was content-based and not competency-based"***. Table 16 below summarizes the findings from these discussions.

Table 16. Summary of Nursing Faculty focus group discussions, Kanye College

DOMAIN AND COMPETENCIES	FINDINGS
DOMAIN 4: Learning in the clinical area	
Competency 8: Facilitate a safe and effective learning environment in the clinical setting.	1. Demonstrations before procedures 2. Observation during return demonstration 3. Participation of faculty in clinical teaching 4. Use of clinical conferencing and case studies 5. Increased student monitoring
DOMAIN 5: Assessment and evaluation of students and programmes	
Competency 10: Continuously monitor, assess and evaluate the effectiveness of the educational programme.	1. Return demonstrations 2. Feedback to improve performance 3. Educator and course evaluations conducted by students every semester 4. Head of programme provides feedback to educators 5. Unannounced Head of Programme visits to classes
DOMAIN 6: Organization, management and leadership.	
Competency 12: Actively participate in organizing and implementing a midwifery curriculum	1. Influenced decisions at national level on the review of midwifery curriculum
Competency 13: Implement and revise midwifery course or programme	1. **Educational tools not yet competency-based**
DOMAIN 7: Communication, leadership, and advocacy	
Competency 15: Demonstrate cultural competency in course design and development, teaching and midwifery practice **Competency 16: Function as a change agent and leader in order to improve both midwifery practice and education** **Competency 17: Use a variety of advocacy strategies to promote midwifery education and practice, including professional, community, human rights and structural advocacy.**	1. Aspects of cultural sensitivity taught in the midwifery programme 1. Supportive feedback provided to students 2. Students assigned mentors or any faculty member of their choice and progress on mentorship shared in staff meetings 3. Active learning methods being recently used
DOMAIN 8: Research	
Competency 18: Use research to inform teaching and practice.	1. Use WHO and Ministry of Health guidelines 2. Students research for information as part of assignment
Competency 19: Cultivate a culture supporting critical inquiry and evidence-based practice.	1. Case study presentations in clinical conferences
Personal comments	
Changes in midwifery education-based WHO project? **Personal changes as an educator as a result of the WHO project**	• Students now complain less and are willing to do work* • Promotion and use of active learning

*During the last monitoring visit, there was much discontent among students. There was an apparent mistrust of teachers. The pilot testing of the focus group discussion was used as individual one-on-one student interview. Students feared that other students would report to teachers what other students revealed during the discussions. It is apparent that during the eight months since the last monitoring visit, some positive changes are beginning to emerge at Kanye.

MIDWIFERY STUDENT FDGS

Two FGDs were conducted. The aspects of the midwifery educator core competencies addressed were: (a) **Domain 1**, Ethical and legal principle of midwifery; Competency 1, Behave in ways that reflect the ethical standards of the teaching and midwifery professions; (b) **Domain 3**, Theoretical learning; Competency 5, Incorporate educational strategies to promote active learning; Competency 7, Recognize and support different learning and unique needs of students; (c) **Domain 4**, Learning in the clinical area; Competency 8, Facilitate a safe and effective learning environment in the clinical setting; Competency 9, Foster individualized and experiential learning; and (d) **Domain 7**, Communication, leadership and advocacy; Competency 15, Demonstrate cultural competency in course design and development, teaching and midwifery practice.

The key findings from the student FDGs are highlighted below. **In general, there was an apparent ambivalence in the perceptions of the students about their learning and the teaching of their educators.**

Upholding ethical and legal principles of midwifery

"Teachers are seasoned, mature and show respect to us". Others felt that some teachers talked to them "any how"

"Lecturers are relaxed in class but in the clinical area, they become very angry. We don't like it. They become very angry when they feel the patient`s life is in danger"

Students further indicated that:

(a) Professionalism and management should be core courses and not optional
(b) The course on religion is compulsory and yet it is not credited in the programme.

Learning in the clinical area

The students reported poor logistic arrangements for placement outside Kanye SDA Hospital. They also reported poor accommodation arrangements and late arrivals of placement letter. However, there was good relationship with the clinical staff. Clinical instructors are supportive and demonstrate procedures before introducing students to clinical sites.

"Nurses in the clinical setting are the best, they support us and provide an appropriate teaching environment"

Active Learning

"Teaching methods not the same, other teachers don't teach. They give assignment…".

"We get assistance from faculty for research work".

Students did not have access to the iPads provided by the project.

Cultural competency

There is a core subject on cultural sensitivity in the midwifery programme where the concepts are taught. Furthermore, the students reported that they ask for consent from clients.

"When patients refuse hospital meals because meat is not part of the meal, they are allowed to eat meat if family brings the food"

Changes in the classroom and clinical experiences

- The students noted that the teachers do more research as compared to the nursing programme and there is more follow up and supervision of the students. In addition, Internet access has improved.
- Some students did not see any changes in the midwifery programme. However, they noted that teaching in the general nursing programme was much better.

OVERALL INSTITUTIONAL CAPACITY ASSESSMENT

The capacity information provided primarily relates to the Advanced Midwifery Training programme. At present, midwifery training is offered as a two-year advanced diploma programme. The admission requirements are a diploma in general nursing with a minimum of two years' practice; and candidates must be registered with the Nursing and Midwifery Council of Botswana.

PROGRAMME STRUCTURE AND CLINICAL FACILITIES FOR TRAINING

Tables 17 and 18 present the summaries of the institutional capacity assessment of the midwifery programme and the clinical aspect of the programme.

Table 17. Summary of Kanye College Midwifery Programme, 2015 and 2020

	PROGRAMME COMPONENT	2015	2020	COMMENTS
1	**Capacity of programme**	Full-time = 30	Full-time = 30	***No change in capacity of programme***
2	**Students enrolled**	Full-time = 32 Part-time = 0	Full-time = 33 Part-time = 0	
3	**Number of graduates**	2017/2018 = 40	2019/2020=None*	***No graduation due to COVID-19***
4	**Training modality**	Traditional	Traditional	
5	**Student source of funding for training**	Government and Private	Government and Private	
6	**Faculty**	7 full-time, 4 with bachelor's and 3 with master's degrees	5 full-time, 3 with master's, two with bachelor's and one part-time staff with a diploma	***Faculty from other nursing programmes teach in the midwifery programme***
7	**Continuous professional development**	Seminars/updates offered more than once a year	Seminars/updates offered more than once a year	***No information on faculty involvement or conduct of research***
8	**Curriculum**	Maintained global (WHO) standards	Maintained global (WHO) standards	***Curriculum reviews done every three years***

Table 18. Summary of institutional capacity: clinical practice, Kanye College

EVALUATION COMPONENT	YEAR: 2015	YEAR: 2020	COMMENTARY
Clinical site	Kanye SDA Hospital with 11 physicians and 34 nurses	Kanye SDA Hospital, 11 physicians and 150 nurses and midwives.	In spite the of non-replacement of nurses who retired, the facility has had a major increase in the number of nursing personnel
Available primary care services for clinical experience (2015-2019)	1. Three hospitals 2. Nine independent clinics (4 in urban and 4 in rural communities).		Midwifery and labour and newborn care are only available at the hospitals
Student involvement in other primary health activities	Students involved in all areas except mental health	No students are involved in health promotion, preventive services and mental health	
Student average weekly number of clients/patients	**Weekly average :** 1. MCH = 10 2. Prenatal = 10 3. Labour/delivery = 5 4. Newborn care = N/A 5. Postnatal care = N/A 6. Home deliveries = 0	**Weekly average :** 1. MCH = 10 2. Prenatal = 10 3. Labour/delivery = 2 4. Newborn care = 5 5. Postnatal care = 56 6. Home deliveries = 0	
Facility overall total numbers of available deliveries	Total = 5500	1. Hospitals =1 800 2. Urban clinics = 60 3. Rural clinics = 30	

MIDWIFERY PROGRAMME INFRASTRUCTURE

Table 19 provides a summary of the midwifery programme infrastructure. In 2015, the midwifery programme had one designated classroom with a capacity of 30 to 35 students, a dormitory and cafeteria capacity for 250 students, computer laboratory with 30 computers and 24-hour wireless internet access that was low-band. At that time, the facilities were considered adequate for the number of students that were enrolled. The programme now has numerous models of the breast, female pelvis, female reproductive organs, maternal and foetal birthing torsos, perineal repair, and a high-fidelity simulation manikin. There is a new learning resource centre and additional classroom space, a library and a new computer laboratory. The facilities remain adequate as there has been no increase in student enrolment.

Table 19. Summary of institutional capacity: Infrastructure, Kanye College

EVALUATION AREA	YEAR: 2015	YEAR: 2020	COMMENTARY
Classrooms	Only one classroom for midwifery training	1. Four dedicated classrooms, 1 multipurpose hall, 1 resource centre with library, two more classrooms and 3 more offices available 2. The College can take up to 150 additional students for all the three programmes. 3. The midwifery programme can accommodate an additional 20 students.	**There has been an expansion of classroom facilities for the programme as well as additional multipurpose facilities and resources for teaching midwifery.** **Increasing the number beyond this will require recruitment of more teaching staff**
Staff offices and accommodation	Staff facilities were adequate	1. Available staff offices can accommodate up to 9 lecturers.	
Skills laboratory	Information not provided	1. One skills laboratory shared between the Midwifery and Family Nurse Practitioner programmes	
Information technology	Computer Laboratory could accommodate 30 students	1. Computer laboratory for up to 250 students in 2020 2. 24-hour reliable internet access available on campus and in student hostels. 3. "Smart" classrooms with full complement of equipment.	**Even with an increase in the number of students in the programme, there has been a significant reduction in IT equipment for use by students**
Student facilities	Accommodation available for up to 250 students.	1. No expansion since 2015 as the facilities are adequate 2. Self-sponsored students prefer to stay off campus to reduce costs	**Student travel to clinical sites by public transport. Was the same in 2015.**
Eating facilities	Adequate to accommodate 250 students.	1. Facilities are still adequate	

PROGRAMME COLLABORATIVE ACTIVITIES

The programme works collaboratively with both government institutions and professional organizations. These include the Ministry of Health and Wellness, Botswana Qualification Authority, Human Resources Development Council, Nursing and Midwifery Council, Botswana Health Professional Council, government health institutions, Jwaneng Mining Hospital, Southern District Council, Bamalete Lutheran School of Nursing, University of Botswana and Loma Linda University. Areas of collaboration include curriculum development and updates, placement of students in clinical facilities and applied research activities. The programme has now included UNICEF and WHO as new partners while maintaining its collaborative activities with government and nongovernmental institutions.

JOB AVAILABILITY FOR MIDWIVES

There is no information as to where the graduates are now practising midwifery. However, it is estimated that 25% to 50% of the graduates are employed in the local community, region or geographic area for at least five years following graduation. The proportion serving in rural areas is about 50%. There has been an increase in the proportion of graduates currently serving in rural areas. In 2015, the proportion serving in rural areas was 30%. In Botswana, midwives are in high demand. Graduates are able to find jobs easily in both government and private facilities.

PROGRAMME CONTRIBUTION TO THE COMMUNITY

The programme recognizes that there are major cultural impediments to prenatal care. For example, some religious affiliations are against mothers attending prenatal care, asserting that culture dictates that a woman should be assisted by an experienced birth attendant during childbirth. **The College gives priority to addressing issues related to maternal and infant mortality and wishes to become more involved**.

PROGRAMME CHALLENGES

Over the past five years, the College has made significant investments in developing, expanding and improving programmes to address infant and maternal mortality. The College has an opportunity to increase the number of students in the programme. **However, this will require recruiting more teachers and equipping the skills laboratory with more teaching aids. There is still no dedicated transport for students to travel to clinical sites.**

FUTURE PLANS FOR THE PROGRAMME

The college plans to improve outcomes related to infant and maternal mortality. Priority will be given to offering a competency-based curriculum, staff development for faculty members through continuing education and offering opportunities for further study to the doctorate level. The College would also like to upgrade their training to offer a degree programme in midwifery so as to empower graduates with leadership and management skills.

LABORATORY OF CHANGE AND CENTRE OF EXCELLENCE

EVALUATION OF LOC AND COE STATUS

Table 20 presents a summary of the findings of LoC and CoE status. Based on the evaluation, the College achieved an average score of 10.5 out of 24 (43.7%).

Table 20. Summary of LoC and CoE, Kanye College

CRITERIA ELEMENT AND SCORE ( )	FINDINGS
1. Leadership	
a) Mission articulation (1)	• Mission statement well-articulated and strategic plan available • Teamwork through teaching allocations and networking with other institutions • Participation in the Loma Linda University student exchange programme • Recognition award for the midwifery programme • Student Evaluation of Classroom and Teaching (SECAT) Tool available • Performance Assessment Tool for government-employed faculty available but **No Assessment tool for SDA Mission employees**
b) Teamwork, networking, leadership (1)	
c) Proactive, collaborative leadership (1)	
d) Governance (0)	
e) Performance indicators (0.5)	
f) Change in initiatives (0.5)	
g) Culture of excellence (0)	
2. Resources	
a) Functional, adequate infrastructure (0.5)	• Expansion of the College with new building and library space • Future increase in bandwidth for internet connectivity • Future possible increase in online programmes
b) Education/clinical best practices (1)	
c) Ethical, quality education (0)	
d) Access to journals (0)	
e) Interdisciplinary teams (0.5)	
f) Lifelong learning (0.5)	
3. Community engagement	
a) Social responsibility policies (0.5)	• Clinical rotation schedules available • Policy on social responsibility developed • College is a member of the Education Committee • Cultural and religious sensitivity upheld
b) Knowledge/experience sharing (0)	
c) Resource accessibility, availability, affordability (0.5)	
d) Fostering partnerships (0)	
e) Cultural sensitivity and inclusiveness (0.5)	
4. Innovation	
a) Innovative and sustainable strategies (1)	• Income generation through farming • New building expansion • Membership of the Institute of Health Science Coordination Committee on policy
b) Incremental improvement strategies (0.5)	
c) Evidence-based practice (0)	
d) Curriculum development and implementation (0.5)	
e) Collaborative research (0)	
f) National policy engagement (0.5)	

KEY HIGHLIGHTS OF THE EVALUATION OF LOC AND COE

LEADERSHIP

The vision is visible and the values are shared with all at the institution. The culture of excellence at the College has been shaped by the church doctrine and this impacts positively on professionalism. This is evident from reports and anecdotes from other institutions where students are placed. The students and faculty adhere to college regulations as well as observe cultural sensitivity when attending to patients. The College accepts students who have other religious affiliations and are not Adventists. Non-Adventist students are allowed to attend their church services on Sundays. This has ensured cultural and religious diversity. A Student Representative Council (SRC) exists and addresses student issues with the College management.

For teaching allocations, more experienced faculty teach with junior faculty and new junior faculty members are also attached to other collaborating institutions. Kanye College also has a student nurse exchange programme with Loma Linda University. Faculty are also supported to participate in collaborative activities such as conferences and mentoring workshops. Furthermore, the Midwifery team participates in the Hospital Maternal Mortality Audit Committee of the hospital and the College Quality Control Officer is a member of the taskforce that is developing policies for health training institutions.

In appreciation of the achievements of the Midwifery programme, the Principal's Office awarded the Midwifery programme a certificate of recognition for being a responsible department. The Nursing and Midwifery Council also awarded the College a recognition certificate for students' best practice.

The assessment, however, noted several shortcomings. These were: (a) unavailability of specific funding to enable faculty members to attain higher academic degrees; (b) non-disbursement of funds to the institution to manage and hence, lack of financial accountability; (c) non-existence of a budget committee to plan for requirements of the institution. The lack of an established budgetary process raises issues of financial transparency; (d) although Government-employed faculty are assessed through an employee Performance-based Reward System, there is no similar performance scheme for SDA Mission faculty; (e) change initiatives are not clear; (f) communication is not transparent and faculty engagement is lacking; (f) there is no consistency in lifelong learning for the faculty as there is no training plan and staff who engage in any lifelong training do so at their own cost and this is not sustainable; (g) the College did not report any ongoing research or any collaborative research projects. Only recently has the College received permission to conduct research.

RESOURCES

The College has dedicated classrooms for midwifery training but shares a multipurpose hall with other programmes. There has been an expansion of the facilities during the project period. The computer laboratory can now accommodate more students and the internet access has been upgraded, with 24-hour access both on campus and in student hostels. There are now "Smart" classrooms with their full complement of equipment, but the skills laboratory is shared with the other programmes. The library has a holding capacity of 2868 volumes. Of these, only 72 (3%) are books on midwifery and there were only three journal titles that were available to the Midwifery programme. Current volumes of these journals were not available. The project donated iPads to be used by the educators and students as an educational resource material. However, the resource was not being used.

COMMUNITY ENGAGEMENT

The College has a policy that addresses social responsibility and community engagement. In addition, school faculty serve on various health/development committees in the community. To enhance their learning, students are placed in communities around the College and beyond for their clinical experiences.

INNOVATION

In terms of innovation, the College has a farm, which is used to generate income through selling of farm produce.

SUMMARY

Kanye Seventh-day Adventist College of Nursing's culture of excellence has been shaped by the church doctrine which impacts positively on professionalism. This is evident from reports and anecdotes from other institutions where students are placed. For the WHO/SDA project on scaling up midwifery education, the Action Plan for the College focused on six objectives in the three domains of the core Midwifery Educator competencies (Domain 3: Theoretical learning; Domain 6: Organization, management and leadership, and Domain 8: Research). The final evaluation showed that very few activities took place and only two objectives were fully achieved (building capacity in teaching methodology and technology and building capacity for research methods). The other four objectives were not achieved. The corresponding performance score on the Action Plan for Kanye College was 4/12 (33%). The primary reason for the low score appears to be that the College only began to embrace CBE towards the end of 2019. The evaluation of the educator competencies showed that although the educators evaluated themselves as being competent in applying CBE methods, students expressed ambivalent views. This was evidenced by the finding that seven of the competencies in the evaluation tool were systematically not evaluated by all students. In addition, for the competencies evaluated, the proportion of competencies ranked by the students as "always" was low.

The infrastructure of the College is generally adequate for the number of students and the faculty. An additional resource provided for use by teachers and students (iPads which contain valuable reference resources on midwifery) remains underutilized at Kanye College. The College has, however, subscribed to some midwifery journals and there is access to up-to-date guidelines or books. Internet access is now available 24 hours a day and the programme has "Smart" classrooms with the full complement of equipment.

In the area of leadership and community engagement, it is notable that the culture of excellence at the College has been shaped by the church doctrine, and this impacts positively on professionalism. The assessment confirmed that students and faculty adhere to college regulations and also observe cultural sensitivity when attending to patients. The College accepts students who have other religious affiliations and are not Adventists and this has ensured cultural and religious diversity. A Student Representative Council (SRC) exists and addresses student issues with the College management. An established mentoring programme for new members of the faculty and active participation in the Hospital Maternity Audit committee are all reflections of leadership roles. The recognition awards received for being a model and responsible college and for students' best practice also attest to this. Some of the key constraints faced by the College include lack of a staff development plan and financial resources for lifelong learning, lack of an established budgetary process for the College, unclear change initiatives and non-transparent communication.

Finally, the evaluation of the status of Laboratory of Change and Centre of Excellence showed that Kanye Adventist College of Nursing attained a score of 43.7%. This score falls way below the benchmark of 50% for LoC and far below that of 75% for CoE. The College appears to have a sense of renewed vigour since late 2019 in implementing CBE and is set to strive towards making improvements in the quality of midwifery education.

PART

V

COSENDAI ADVENTIST UNIVERSITY, CAMEROON

A BRIEF BACKGROUND ON CAMEROON

Cameroon is situated in Central Africa, sharing common frontiers with Nigeria, Gabon, Congo, Central African Republic and Chad. The country has an area of 475 000 square kilometres. The country's population is estimated at 26.6 million with a gender distribution of 51% females and 49% males. Life expectancy is estimated at 59.4 years (58 years for males and 60.9 years for females). Estimates from WHO suggest the maternal mortality rate dropped from 597 deaths per 100 000 live births in 2010 to 529 deaths per 100 000 live births in 2017. The neonatal mortality rate over the same period dropped from 30.5 to 27.5 deaths per 1000 live births. (1.9) The leading causes of maternal deaths are haemorrhage, hypertension, infection and abortions.

COSENDAI UNIVERSITY SCHOOL OF NURSING

The project is located at Cosendai Adventist University in Nanga-Eboko, a semi-rural area of central Cameroon. The health district of Nanga-Eboko comprises more than 80 000 inhabitants and 14 health areas (six non-functional) and 54 health centres. The School of Nursing has been offering nurse training since 2005. Currently, the institute offers two degree programmes in nursing. These are a four-year Registered Nurse baccalaureate degree (BSc/BSN, RN) and a four-year Registered Nurse baccalaureate degree with midwifery (B.Sc./BSN, RN/RM) which was introduced in 2016 following the WHO prototype integrated curriculum. For the 2019/2020 academic year, the programme had 32 full-time students. Fourteen will graduate during the 2020 academic year.

The mission of the programme is: ***"Former des infirmières/ Infirmiers Sage Femmes compétent(e)s, culturellement sensibles, compatissantes, et agents de changement pour une santé optimale de la personne, de la famille et de la communauté»***. (To produce nurses and midwives who are competent, culturally sensitive, compassionate and change agents, with a view to optimizing the health of individuals, families and communities).

FINAL PROJECT EVALUATION

The evaluation for Cosendai Adventist University was conducted from 17 to 19 August 2020. The final evaluation was conducted by national teams not directly involved in the implementation of the project. The team was composed of Dr Hubert Wang, WHO Country Office and Professor Mary Bi Suh Atanga of the University of Bamenda.

ACTION PLAN ON SCALING UP MIDWIFERY EDUCATION AT COSENDAI ADVENTIST UNIVERSITY

The Action Plan developed in 2015 by the School of Nursing prioritized the specific domains and competencies selected by the project site. The domains were: (a) Domain 3, ***Theoretical learning***; (b) Domain 4, ***Learning in the clinical area***; (c) Domain 5, ***Assessment and evaluation of students and programmes***; and (d) Domain 6, ***Organization, management and leadership***. For each of the domains selected, competencies were listed and the goals were stated. The WHO collaborating centres, Loma Linda School of Nursing and the WHO Regional Office for Africa provided regular support and capacity building (at least two site visits per year) during the implementation period. Monitoring reports were prepared and submitted to WHO. The project site hosted or participated in a total of six capacity building workshops, three of which were jointly attended by the other project sites (Annex 3).

Table 21 and Table 22 present the summary of the findings on the Action Plan on CBE at Cosendai Adventist University. The four domains which were the focus of the project had a total of 21 objectives, each with a maximum score of 2, giving a total of 42 points. Fifteen of the objectives were fully achieved (30 points) and the remaining six (6 points) were partially achieved. The overall achievement score was (36/42) = 86%.

Table 21. Action Plan achievement, Cosendai Adventist University Midwifery Programme (Domains 3 and 4)

DOMAIN/COMPETENCY	GOALS/OBJECTIVES	NOT ACHIEVED (0)	PARTIALLY ACHIEVED (1)	FULLY ACHIEVED (2)	REMARKS AND SUPPORTING RATIONALE
DOMAIN 3: Theoretical learning					
Competency 5: Incorporate educational strategies to promote active learning **Competency 7:** Recognize and support different learning styles and unique learning needs **Competency 6:** Select and use effective learning materials/resources	**Update competencies of existing and new faculty members:**				
	1. Establish faculty development plan		1		Faculty development plan partially achieved and two staff sent to study for Master of Science degree Teaching methods are in place with many learning styles
	2. Implement faculty development plan		1		
	3. Hire four new faculty members			2	
	4. Teaching skills of all faculty upgraded and evidenced through integration of active learning strategies and support for a variety of learning styles in the classroom.		1		
	Acquire, select, and consistently use appropriate, innovative teaching and learning materials in the classroom, skills lab, and clinical settings:				
	1. Complete inventory related to 8 domains of WHO midwifery educator core competencies		1		Virtual libraries initiated and skills lab materials (manikins, DVDs, projectors) are available.
	2. Implement open educational resources, i.e. eLearning		1		
	3. Strengthen skills lab materials (manikins, DVDs, video projectors)			2	
	4. Translate key materials and documents into French			2	
	5. Strengthen English club			2	
DOMAIN 4: Learning in the clinical area					
Competency 8: Facilitate a safe and effective learning environment in the clinical setting	**Renovate a former dormitory into a maternal care centre, thereby creating a safe and effective clinical learning environment for students, and an avenue for providing evidence-based care for women and newborns in the community.**				Construction of Maternity Centre for students to practice skills at advanced stage.
	1. Apply for funding			2	
	2. Acquire a vehicle			2	
	3. Obtain medical equipment and supplies			2	

*Each objective related to the competency was scored based on achievement with a numeric value. ***Fully achieved = 2 points, Partially achieved = 1 point and Not achieved = 0.***

Table 22. Action Plan achievement, Cosendai Adventist University Midwifery Programme (Domains 5 and 6)

DOMAIN/COMPETENCY	GOALS/OBJECTIVES	NOT ACHIEVED (0)	PARTIALLY ACHIEVED (1)	FULLY ACHIEVED (2)	REMARKS AND SUPPORTING RATIONALE
DOMAIN 5: Assessment and evaluation of students and programmes					
Competency 10: **Continuously monitor, assess, and evaluate the effectiveness of the educational programme.**	**Standardize assessment and evaluation tools; empower faculty to implement assessment and evaluation tools.**				Assessment and evaluation tools standardized
	1. Review institution's assessment policies			**2**	Faculty empowered to implement assessment and evaluation tools initiated
	2. Design assessment and evaluation tools			**2**	
Competency 11: **Assess student competence**	3. Validate instruments			**2**	Materials based on WHO prototype competencies updated
	4. Orient and train faculty to use tools			**2**	
	5. Update existing materials			**2**	Using iPads donated by the project
	6. Implement use of newly developed tools		**1**		
DOMAIN 6: Organization, management and leadership					
Competency 12: **Actively participate in organizing and implementing midwifery curricula**	**Delivery of a high-quality midwifery programme.**				Using updated materials
	1. Programme based on high-quality modules			**2**	Monitoring students
	2. Consistent monitoring of student attendance			**2**	Compliance with programme objectives
	3. Ensuring compliance with the programme			**2**	

*Each objective related to the competency was scored based on achievement with a numeric value. ***Fully achieved = 2 points, Partially achieved = 1 point and Not achieved = 0.***

EDUCATOR COMPETENCY EVALUATION

As part of the assessment of skills acquisition in competency-based education, teachers had to demonstrate this by the way they conducted the teaching session, which was assessed by the students, peers and themselves. The evaluation had 15 questions that covered all the domains of the WHO core competencies. Three teaching sessions (two classroom and one clinical) were conducted and included among the topics was examination of the placenta and high-risk intrapartum care.

EDUCATOR TEACHING/LABORATORY SESSION EVALUATION

The results of the teaching evaluations are presented in Tables 23, 24 and 25.

Table 23. Teaching and Skills Lab Evaluation, Teacher 1, Cosendai Adventist University Midwifery Programme

	Teacher 1 No students = 11			Teacher 1 No Evaluators = 4		
EDUCATOR COMPETENCY	**Always**	**Frequent**	**Never or few**	**Always**	**Frequent**	**Never or few**
1. Incorporates, promotes ethical and legal aspects	6	5	0	2	2	0
2. Lecturer is a consistent role model	4	7	0	3	1	0
3. Lecturer maintains current knowledge and skills	10	1	0	2	2	0
4. Educational methods promote active learning	8	3	0	3	1	0
5. Uses updated teaching and learning methods	7	4	0	3	1	0
6. Recognizes, supports, unique learning needs	5	6	0	3	1	0
7. Uses evidence-based, up-to- date teaching resources	4	6	1	2	2	0
8. Facilitates a safe & effective learning environment in the clinical setting	4	6	1	2*	1	0
9. Promotes integration of theory into clinical practice	2*	8	0	3	1	0
10. Uses different methods to assess students	5	5	1	3	1	0
11. Assesses students' competencies using different methods	4	3	4	1*	2	0
12. Provides timely, specific and constructive feedback	6	4	1	3	1	0
13. Communicates effectively using a variety of methods	8	3	0	4	0	0
14. Responds effectively to students' questions, encourages student reflection	6	5	0	2	2	0

**One student or evaluator did not respond to this question.*
***Red**: Reflects competence ranked as not adequate by at least one evaluator*

Table 24. Teaching and Skills lab Evaluations, Teacher 2: Cosendai Adventist University Midwifery programme

	Teacher 2 No students = 13			Teacher 2 No Evaluators = 4		
EDUCATOR COMPETENCY	**Always**	**Frequent**	**Never or few**	**Always**	**Frequent**	**Never or few**
1. Incorporates, promotes ethical and legal aspects	13	0	0	4	0	0
2. Lecturer is a consistent role model	11	2	0	3	1	0
3. Lecturer maintains current knowledge and skills	13	0	0	3	1	0
4. Educational methods promote active learning	11	2	0	1	3	0
5. Uses updated teaching and learning methods	10	3	0	4	0	0
6. Recognizes, supports, unique learning needs	9	3	1	1	3	0
7. Uses evidence-based, up-to- date teaching resources	8	5	0	2	2	0
8. Facilitates a safe & effective learning environment in the clinical setting	6*	5	1	3	1	0
9. Promotes integration of theory into clinical practice	13	0	0	4	1	0
10. Uses different methods to assess students	7*	5	0	0	3*	0

**One student or evaluator did not respond to this question.*
***Red**: Reflects competence ranked as not adequate by at least one evaluator*

Table 25. Teaching and Skills lab Evaluations, Teacher 3: Cosendai Adventist University Midwifery Programme

	Teacher 3 No students = 12			Teacher 3 No Evaluators = 4		
EDUCATOR COMPETENCY	**Always**	**Frequent**	**Never or few**	**Always**	**Frequent**	**Never or few**
1. Incorporates, promotes ethical and legal aspects	11	1	0	3	1	0
2. Lecturer is a consistent role model	11	1	0	3	1	0
3. Lecturer maintains current knowledge and skills	12	0	0	3	1	0
4. Educational methods promote active learning	12	0	0	4	0	0
5. Uses updated teaching and learning methods	12	0	0	3	1	0
6. Recognizes, supports, unique learning needs	9	3	0	3	1	0
7. Uses evidence-based, up-to- date teaching resources	8	4	0	4	0	0
8. Facilitates a safe & effective learning environment in the clinical setting	8	3*	0	4	0	0
9. Promotes integration of theory into clinical practice	11	1	0	4	0	0
10. Uses different methods to assess students	10	2	0	3	1	0
11. Assesses students' competencies using different methods	9	3	0	4	0	0
12. Provides timely, specific and constructive feedback	11	1	0	2	2	0
13. Communicates effectively using a variety of methods	9	2	1	3	1	0
14. Responds effectively to students' questions, encourages student reflection	11	1	0	4	0	0

Shaded boxes reflect where competencies were not completed in evaluation tool.
***Red**: Reflects competence ranked as not adequate by at least one evaluator*

TEACHING SESSION AND LABORATORY EVALUATION

The evaluation of the teaching sessions across all evaluators showed that the educators had the core educational competencies. Overall, competencies were always or frequently reflected. The competencies that were not adequately reflected (never) included; competency 3: lecturer maintains current knowledge and skills; competency 7: uses evidence-based, up-to-date teaching resources; and competency 11: assesses students' competencies using different methods, which was named by three evaluators. There were four competencies which one evaluator rated as "never" (competency 2: lecturer is a consistent role model; competency 6: lecturer maintains current knowledge and skills; competency 8: promotes integration of theory into clinical practice; and competency 13: communicates effectively using a variety of methods.

EDUCATOR SELF-EVALUATION

Of the 57 items included in the Self-evaluation tool, the scale of 0-3 (0-Never, 1-a few times (not very often), 2-frequently (often) and 3-always) was utilized to evaluate the educator competencies. The scores were: Educator 1: 79%,(45/57); Educator 2: 82% (47/57); and Educator 3: 86% (49/57). Overall, the educators felt they had improved their skills in CBE as a result of the WHO/SDA project. They have been able to access WHO reference materials to aid their teaching as well as the regional prototype curricula on midwifery. The educators also found the iPads to be a useful source of teaching materials on midwifery and there has been greater engagement of students on research. The educators have also attended seminars on reproductive health offered by WHO, the Ministry of Health and other international agencies. Based on the self-assessment, all three educators are using all the teaching methods for CBE.

MIDWIFERY FACULTY FDG AND HEAD OF PROGRAMME IN-DEPTH INTERVIEW

An FGD was held with the midwifery faculty and an in-depth interview was conducted with the Head of the programme. The areas of the FGD comprised: (a) **Domain 4**, Learning in the clinical area; *Competency 8*, Facilitate a safe and effective learning environment in the clinical setting; (b) **Domain 5**, Assessment and evaluation of students and programmes; *Competency 10*, Continuously monitor, assess and evaluate the effectiveness of the educational programme; (c) **Domain 6**, Organization, management and leadership; *Competency 12*, Actively participate in organizing and implementing a midwifery curriculum; *Competency 13*, Implement and revise midwifery course or programme; (d) **Domain 7**, Communication, leadership, and advocacy; *Competency 15,* Demonstrate cultural competency in course design and development, teaching, and midwifery practice; *Competency 16*, Function as a change agent and leader in order to improve both midwifery practice and midwifery education; *Competency 17*, Use a variety of advocacy strategies to promote midwifery education and practice including professional, community, human rights and structural advocacy; and (e) **Domain 8**, Research; *Competency 18*: Use research to inform teaching and practice; *Competency 19*: Cultivate a culture supporting critical inquiry and evidence-based practice. Table 26a and Table 26b summarize the findings.

Table 26a. Results from FGD and in-depth interview, Domain 4, 5, 6, Cosendai University Midwifery Programme

DOMAIN AND COMPETENCIES	FINDINGS
DOMAIN 4: Learning in the clinical area	
Competency 8: Facilitate a safe and effective learning environment in the clinical setting.	1. Utilizing CBE approaches 2. Improved communication among faculty 3. Evaluations of learning easier
DOMAIN 5: Assessment and evaluation of students and programmes	
Competency 10: Continuously monitor, assess and evaluate the effectiveness of the educational programme.	1. Improved monitoring of students and faculty 2. Participate in seminars to upgrade skills and knowledge 3. Provide feedback on past semester activities 4. Feedback to students immediate, whether right or wrong
DOMAIN 6: Organization, management and leadership.	
Competency 12: Actively participate in organizing and implementing a midwifery curriculum	1. Well-structured teaching units 2. Well-structured evaluation
Competency 13: Implement and revise midwifery course or programme	3. Using prototype curriculum 4. Credit hour modifications
Personal perspectives	
Changes in midwifery education based on WHO/SDA project? Personal changes as an educator as a result of the WHO/SDA project	• Teaching methods have changed for the better • Learning approaches changed for the better • More students interested in midwifery.

Table 26b. Results from FGD and in-depth interview, Domain 7,8 Cosendai University Midwifery programme

DOMAIN AND COMPETENCIES	FINDINGS
DOMAIN 7: Communication, leadership, and advocacy	
Competency 15: Demonstrate cultural competency in course design and development, teaching and midwifery practice **Competency 16: Function as a change agent and leader in order to improve both midwifery practice and education** **Competency 17: Use a variety of advocacy strategies to promote midwifery education and practice, including professional, community, human rights and structural advocacy.**	1. Increased clinical time with the minimum being 4 months 2. Involved in national health programmes 3. Attend seminars and conferences to learn new things 4. Cooperation with Ministry of Higher Education
DOMAIN 8: Research	
Competency 18: **Use research to inform teaching and practice.** **Competency 19:** **Cultivate a culture supporting critical inquiry and evidence-based practice.**	• Students encouraged to use WHO library • Research introduced to students early and production of research reports in areas of study • Research websites and research articles given to students • Research findings are shared
Personal comments	
Changes in midwifery education based on WHO/SDA project? Personal changes as an educator as a result of the WHO/SDA project	• Teaching methods have changed for the better • Learning approaches changed for the better • More students interested in midwifery.

The FDG and in-depth interview revealed that improvements have been made in the programme. The faculty are able to promote CBE by identifying learners' needs and using the information to improve their teaching, provide counselling and mentor students. The faculty acknowledged that *"the project made us realize that the curriculum was content-based and not competency-based"*. The programme is encouraging a culture of research among students and faculty. Students are introduced to basic research early. The faculty are now planning to do research on COVID-19. The faculty, however, feel that they lack mentorship and coaching for research. **Other constraints noted are limited access to scientific literature in the French language. The reference materials that the project introduced in the iPads are in English and internet connectivity remains poor**. The discussions revealed that there are actually no permanent staff, implying that every time a new educator is recruited, there is need for orientation and this compromises growth and sustainability.

MIDWIFERY STUDENT FDGS

Two FGDs were held. The aspects of the midwifery educator core competencies addressed were: (a) **Domain 1**: Ethical and legal principle of midwifery; *Competency 1*: Behave in ways that reflect the ethical standards of the teaching and midwifery professions; (b) **Domain 3**: Theoretical learning; *Competency 5*: Incorporate educational strategies to promote active learning and *Competency 7*: Recognize and support different learning and unique needs of students; (c) **Domain 4**: Learning in the clinical area; *Competency 8:* facilitate a safe and effective learning environment in the clinical setting; and *Competency 9*: Foster individualized and experiential learning; (d) **Domain 7**: Communication, leadership and advocacy; *Competency 15*: Demonstrate cultural competency in course design and development, teaching and midwifery practice.

Overall, the students noted marked changes in classroom and clinical experiences since the introduction of the project. These included: (a) follow-up during clinical placement, positive change at the clinical sites and practice allowed at clinical sites; (b) perception of the College has improved and students are well received at practice sites; and (c) a variety of teaching methods are used. The students, however, also felt that improvements could be made in the skills laboratory by bringing in more manikins. As interest in midwifery has increased, students would want to start midwifery courses in the first year of training. Below are quotes in each of the competency domains from the focus group discussions.

Learning in the clinical area

All courses that need practice are demonstrated. Then application at clinical sites….guidance is provided. Students made to critique peers and self; students observed, then performed until they did well".

Students also indicated that the iPads have been useful, especially the interactive sessions contained in them. This has helped to improve practice.

Active learning

First Year was full of lectures only, then video teaching, then student-centred and now more active".

"Divided class debates, flipped class with different teaching styles. In the past it was only lecture, now more interactive"

The students also indicated that there was more time for research and computer orientation. Registration into various libraries is possible including the WHO library.

Upholding ethical and legal principles of midwifery

….teachers are well behaved, respond very well to questions, check for understanding, respect students, are religious and respect all religions, often pray before start of class. They give time for everyone to increase our self-esteem…..”

"Teachers are interactive and very cordial. They resolve our personal problems with ease. They show respect during clinical teaching. Repetition is often done. Teachers listen to everyone….”

Students further indicated that they are always supervised when in clinical practice.

Cultural competency

Cultural values are taught, attitudes of different cultures are demonstrated….”

The subject dealing with cultural values is included in course work. It emphasizes respect and that communities have different cultural values, approaches and the importance of integrating cultural differences in care.

OVERALL INSTITUTIONAL CAPACITY ASSESSMENT

INITIAL BASELINE ASSESSMENT

In 2015, an overall capacity assessment determined that the institution met the criteria to participate in the WHO/SDA project on scaling up midwifery education. At the time, the midwifery programme had two full-time faculty members and 20 full-time students. The classroom space was large and more students could be accommodated. The Institute offers two degree programmes in Nursing. These are a four-year Registered Nurse baccalaureate degree (BSc/BSN, RN) and a four-year Registered Nurse baccalaureate degree with midwifery (B.Sc./BSN, RN/RM). However, the facilities were in poor condition and needed renovation. For the faculty, there was a general office shared with other faculty at the institute. Due to financial constraints, information technology resources were inadequate. The number of computers for student use was inadequate and internet access was only available for a few hours every day. The programme did not have “Smart” classrooms and the skills laboratory had two manikins and only basic maternal care materials which were considered inadequate.

FOLLOW-UP CAPACITY ASSESSMENT (2020)

A follow-up capacity assessment was done in June 2020 based on the self-administered questionnaire. The findings of the assessment related to programme, clinical practice and infrastructure are presented in Tables 27, 28 and 29. The tables also show the baseline assessment of December 2014. The major changes are highlighted in the last column of Tables 27, 28, and 29.

Table 27. Summary of institutional capacity: Cosendai University Midwifery programme

	EVALUATION AREA	2015	2020	COMMENTS
1	**Capacity of programme**	Full-time = 20	Full-time = 12	
2	**Students enrolled**	Full-time = 22 Part-time = 0	Full-time = 32 Part-time = 0	***School enrols nurses with RN Diplomas who wish to obtain the degree qualifications***
3	**Number of graduates in last 2 years**	2015/2016 =12	2018/2019 = 6	
4	**Training modality**	Traditional	Traditional	
5	**Student source of funding for training**	Student private funding	Private funding and scholarships	***Tuition is a constraint and students drop out. The school is also in a poor semi-rural area.***
6	**Faculty**	2 full-time, 1 part-time. All three have Master's degrees in Nursing.	2 Full-time, 6 Part-time. One with BSc Nursing, 6 with non-nursing BSc, 4 with MSc in Nursing and one non-nursing Doctoral degree.	***Recruitment of more staff is constrained by unavailability of financial means***
7	**Continuous professional development**	Seminars/updates about once a year	Seminars/updates offered less than once a year.	
8	**Curriculum**	Maintained global (WHO) standards	Maintained global (WHO) standards	***Curriculum reviews done every three years. Last review was in April 2020.***
9	**Faculty research involvement**	No involvement in research	No information provided	

Table 28 - Summary of institutional capacity: Clinical practice, Cosendai University Midwifery programme

	EVALUATION AREA	2015	2020	COMMENTS
1	**Clinical practice sites**	• District Hospital with 2 physicians and 3 nurses • 5 hospitals with total of 8 clinics • 3 independent clinics in urban communities • 2 clinics in rural communities	• District Hospital with 8 physicians and 12 nurses and 14 auxiliary midwives • 8 hospitals with a total of 8 clinics, • 14 independent clinics in urban communities • 6 clinics in rural communities	There is an increase in placement sites for clinical practice
2	**Student involvement in other primary care services**	• Very involved in behaviours that affect maternal health • Little involvement in health promotion and substance abuse.	• None in mental health • Little in preventive services, substance abuse and health policy issues.	
3	**Average weekly number of clients/patients available to the students**	• Maternal and Child Health =5 • Prenatal care =4 • Labour and Delivery =1 • Postnatal care =5 • Newborn = 1	• Maternal and Child Health =6 • Prenatal care =12 • Labour and delivery =2 • Postnatal care =2 • Newborn =9	
4	**Clinical facility annual deliveries available to students**	• Hospitals =300 • Urban clinics =30 • Rural clinics = 20 • Home = 0	• Hospitals = 700 • Urban clinics =1000 • Rural clinics =50 • Home =30	
5	**Priority issues/plans to improve school programme**	• Increase enrolment • Hire more faculty • Establish efficient referral system for patients • Acquire more books in French	• The school works with local government and professional bodies for student clinical placements; these include Nurse/Midwife councils, Ministry of Higher Education, Ministry of Health, Health District leadership.	

Table 29. Summary of institutional capacity: Infrastructure, Cosendai University Midwifery Programme

	EVALUATION AREA	2015	2020	COMMENTS
1	**Classrooms and equipment**	• Classrooms are large but dilapidated	• Classrooms larger now, exclusively for midwifery training	
2	**Staff offices and accommodation**	• Staff use general office available to all University staff	• 2 dedicated offices for faculty • Can accommodate 3 more if an old classroom is renovated	
3	**Skills laboratory**	• Available equipment is not adequate for training • Programme has 2 manikins, basic maternal care supplies, MASF CDs & Windbreak	• Skills laboratory shared with other programmes. • High-fidelity manikins (Noelle, baby Hal, Suzie) • Wide range of low-fidelity manikins • Equipment is not sufficient for the training programme	
4	**Information Technology**	• There are no computers for the programme • No smart classrooms	• Computer facilities and access are not adequate. • Smart classrooms but not efficient • Internet not available all the time • New site of University has reliable internet	
5	**Student facilities**	• Student accommodation is adequate • Can accommodate an additional 20 students.	• Student accommodation is adequate • Enough accommodation for students from outside to attend seminars • Enough space to accommodate an increase in number of students	
6	**Eating facilities**	• University cafeteria which is adequate.	• Eating facilities are adequate.	

PROGRAMME COLLABORATIVE ACTIVITIES

Since 2018, the University has been collaborating with the National Obstetric and Gynaecological Hospital for student clinical experience, the Nurse and Midwifery Council and Ministry of Higher Education and local government officials, notably the Mayor and District health leadership for placing students in clinical settings.

During the project period, a donor provided resources to develop a Maternal and Child Centre at the school and also provided a brand new vehicle which is used for community engagement and is attached to the Centre. The vehicle is used by the faculty and students for community outreach and also transports women to the centre for care. Collaborators at a University in Yaoundé have also contributed a new ultrasound scanner which will greatly expand the services provided by the Centre. Loma Linda University Office of Global Nursing will also provide some funds to strengthen the Centre.

In terms of capacity building for the faculty, Loma Linda provided funds for the salary of one faculty member and a scholarship for one student. The student graduated recently and the University has hired her to help in the Maternal Care Centre. In addition, one faculty member is currently studying for a PhD degree at UNISA, supported by a private donor fund. The upgrading of nursing and midwifery education at Cosendai University has already received several awards from the Government in recognition of its efforts.

JOB AVAILABILITY FOR MIDWIVES

Less than 10% of graduates are employed in the geographic area of the school for at least 5 years after graduation.

PROGRAMME CONTRIBUTION TO THE COMMUNITY

There has been an improvement of women's health through community outreach activities. Ninety per cent (90%) of Nanga-Eboko District health zones were visited in the last three years. In addition, 12 out of 14 health posts were visited. The outreach was made possible because the programme acquired a four-wheel-drive vehicle in 2018. A total of 1230 women were reached for reproductive health.

FUTURE PLANS FOR THE PROGRAMME

The programme has embarked on the establishment of a Maternity Centre within the grounds of the University. Once completed, it will facilitate student clinical practice and will also offer a service to the local population to access maternal health services. The Maternity Centre facility ensures that students will always have a place to practice their skills. This will reduce the cost of clinical placements for both students and the university.

LABORATORY OF CHANGE AND CENTRE OF EXCELLENCE

The results of the evaluation are outlined under each of the categories; leadership, resources, community engagement and innovation (Table 30).

Table 30. Summary of LoC and CoE, Cosendai University Midwifery Programme

CRITERIA ELEMENT AND SCORE ( )	FINDINGS
1. Leadership	
a) Mission articulation (0.5) **b) Teamwork, networking, leadership (1)** **c) Proactive, collaborative leadership (1)** **d) Governance (1)** **e) Performance indicators (1)** **f) Change in initiatives (0.5)** **g) Culture of excellence (1)**	• Mission statement exists but not well articulated and not understood at all levels • All the WHO educator core competencies are used • Faculty empowerment is taking place • Student educator competency assessment in place • There is now open communication between staff and students, staff and school administrator • **No open communication between staff and general University administration and governance of the school is in the hands of one person.**
2. Resources	
a) Functional, adequate infrastructure (0.5) **b) Education/clinical best practices (1)** **c) Ethical, quality education (1)** **d) Access to journals (0.5)** **e) Interdisciplinary teams (1)** **f) Lifelong learning (1)**	• Best practices based on the project are being utilized • Use of appropriate tools to improve student learning • HINARI and other journals are accessed • Collaborating with the other schools • The skills manuals developed, which will assist students and staff to continuously search for knowledge • The school has space for another laboratory but plans for establishment are not developed. • **Internet connectivity still limited**
3. Community engagement	
a) Social responsibility policies (0.5) **b) Knowledge/experience sharing (1)** **c) Resource accessibility, availability, affordability (0.5)** **d) Fostering partnerships (0.5)** **e) Cultural sensitivity and inclusiveness (1)**	• Community engagement takes place at planning and execution of projects only • Good practices shared with the community through the Municipal Councils and Town Administrators • Easier cultural engagement attained • **Not all resources such as guidelines are available. There are still shortages of electronic materials and equipment. Community does not contribute to policy development**
4. Innovation	
a) Innovative and sustainable strategies (0.5) **b) Incremental improvement strategies (1)** **c) Evidence-based practice (0.5)** **d) Curriculum development and implementation (1)** **e) Collaborative research (1)** **f) National policy engagement (0.5)**	• Staff and student assessment demonstrates evidence-based practices • Curriculum has been updated • Plan for joint research is in the pipeline • Community midwifery is in the pipeline • Collaboration with Ministries of Public Health, Cameroon and higher education sector through the "One Health Programme" • Educators being sent for higher education for sustainability

Cosendai was attributed a score of achievement on progress towards the status of CoE for each item in all the categories, obtaining 19 out of 24 (79%), one point above the minimum of 18 for CoE status.

KEY HIGHLIGHTS OF THE EVALUATION OF LOC AND COE

LEADERSHIP

Partial achievement was noted in the mission statement, governance and change initiatives. It was revealed that: (a) governance of the school is concentrated in the hands of one person who draws up a budget for the school and sends it to the administration for funds to be allocated. The Head of school is not fully involved in budget planning; (b) the school accepts change but the means to effect the change is limited. For instance, the school encourages staff to live in the locality, but facilities are not adequate; and (c) there is open communication between staff, students, and school administrator but no open communication between staff and the general University administration. On the other hand, WHO educator competencies, prototype midwifery curriculum and collaboration between faculty and other schools such as the School of Theology and School of Education are strong. In addition, empowerment of faculty is ongoing and based on assessments, with improvements observed in the competencies.

RESOURCES

The midwifery programme is still in need of more classrooms and a proposed second skills laboratory is not yet in place. Through the WHO/SDA project, the programme has been able to realize best practices as the educators have been trained to teach well. Furthermore, being a church-affiliated university, the programme enhances justice at all times using the right documents and adapting them to suit the needs of students. The programme is linked to HINARI and other journals, but poor internet connectivity and electricity unpredictability render access to these resources limited. Skills manuals have been developed to assist students and staff to continuously search for knowledge when they encounter limitations.

COMMUNITY ENGAGEMENT

The school has a policy of engagement with mothers, the youth and the elderly. Community participation is limited to execution of project activities and these groups are not involved in the planning phase or in policy development. However, good practices are shared with the community through the municipal councils and town administrators. Due to its semi-rural location, there is not much cultural diversity in the surrounding community and this makes it easier for the students to interact with the community.

INNOVATION

The University works with departments of the Ministry of Health on health activities such as the One Health programme which also involves the higher education Sector. A new midwifery curriculum is in place and the staff and student assessments show that evidence-based practice is being implemented. Joint research and community midwifery is planned. Individual staff are assigned topics for research and the results are shared with the students and faculty. The Maternity Centre is an innovation that allows for clinical practice within the university campus, given the remoteness of the area.

SUMMARY

Although the Cosendai Adventist University joined the project 6 months later than the other three sites due to the West Africa Ebola virus disease outbreak, the midwifery programme moved steadily towards making improvements on CBE and LoC and CoE status. The Action Plan focussed on 21 objectives from five domains of educator core competencies (Domain 3: Theoretical learning, Domain 4: Learning in the clinical area, Domain 5: Assessment and evaluation of students and programmes, Domain 6: Organization, management and leadership, Domain 8: Research). Of the 21 set objectives, all but one were achieved or fully achieved, giving a score of 86%. The area of the objectives that was not fully achieved relates to updating existing teaching materials and implementing newly developed tools. Language barriers to accessing information is one of the issues mentioned and the programme is working to address it.

There has been an accelerated uptake of CBE. Educators and students have acknowledged the effectiveness of the approach. The evaluation of the teaching sessions across all evaluators showed that the educators had the core educational competencies. Overall, competencies were always or frequently reflected in the teaching sessions. The students noted marked changes in classroom and clinical experiences since the introduction of the project. As the interest in midwifery has increased, students would want to start midwifery courses in the first year of training. Students however also felt that improvements could be made in the skills laboratory by bringing in more manikins.

In terms of capacity for LoC and CoE, the midwifery programme is making progress. WHO educator competencies and prototype midwifery curriculum have been adopted and there is open communication between staff, students, and the school administrators. However, there is no open communication between staff and the general University administration, and governance of the school is in the hands of one person. Furthermore, not all resources such as guidelines are available. There are still shortages of electronic materials and equipment. Although there is community engagement, community groups are not involved in planning for activities. Nevertheless, the Maternity Centre is an innovation that will help the community in accessing better maternity services. Collaboration with the Government and other academic institutions remains a priority and the programme has received support from private donors to facilitate its work with surrounding communities.

The project has enabled the midwifery programme to adopt quality assurance strategies such as the use of attendance registers in classrooms, clinical training booklets, appropriate allocation of time for lectures, formative evaluation, practice, and student personal time. Assessment tools for faculty, assessment of faculty by staff and educator self-evaluations are being utilized. Staff development is in place with two new members hired and three staff members enrolled in the Loma Linda University off-campus Master's Degree programme since July 2020. An additional faculty member has enrolled for a PhD programme at the University of South Africa.

The assessment of the status of Laboratory of Change and Centre of Excellence showed that Cosendai Adventist University achieved a score of 79%, which is above the benchmark for LoC and CoE status.

PART

VI

MALAMULO COLLEGE OF HEALTH SCIENCES, MALAWI

A BRIEF BACKGROUND ON MALAWI

Malawi is a small landlocked country in southern Africa with a surface area of 118 484 square kilometres of which 94 080 square kilometres is land and the remaining is primarily Lake Malawi. The 2018 census estimated the population at 17.5 million, and 83% of the population live in the rural areas. Literacy among individuals 15 years and older is 70% for men and 55% for women. Malawi is one of the 18 countries in sub-Saharan with a very high maternal mortality rate currently estimated at 439 maternal deaths per 100 000 live births (9). Adolescent pregnancies account for 29% of all births and 15% of maternal deaths. Obstetric complications contribute significantly to maternal deaths. Other indirect causes include delays in seeking care, a poor referral system, and lack of appropriate drugs, equipment and staff capacity. There are approximately 665 000 births every year. Neonatal mortality, often caused by birth asphyxia, premature birth, and infection, is estimated at 29 per 1000 live births. Causes of under-five mortality include malaria, diarrhoea, and pneumonia.

BACKGROUND TO THE NURSING AND MIDWIFERY PROGRAMMES

Malamulo Hospital and College of Health Sciences are Seventh-day Adventist institutions in Malawi. They are located 65 km from the city of Blantyre, in Thyolo District in southern Malawi. Malamulo Hospital was established in 1902 and serves a catchment population of 129 000 (Malamulo Hospital, 2015). An educational component was added to Malamulo Hospital in 1938, with nursing and midwifery training beginning in 1953. Malamulo College of Health Sciences became a separate entity from Malamulo Hospital in 2001. However, the two institutions are closely linked and are located on the same campus. Malamulo College of Health Sciences provides education in clinical laboratory technology, clinical medicine, public health, nursing and midwifery. The school is in the process of introducing a Bachelor of Nursing programme with the support of the management and other partners. Currently, there are 10 faculty members and four (4) are undertaking further studies at Masters and PhD levels.

The College (University) Vision is **"to become a world class university of choice with excellent programmes for creating high quality graduates"**.

Midwifery education is offered as a three-year Nurse midwife technician (NMT) programme. The admission requirements are the Malawi School Certificate of Education with credits in physical science, biology and mathematics or a strong pass in either physical science or biology and two credits in agriculture, geography or home economics.

FINAL PROJECT EVALUATION

The evaluation at Malamulo College of Health sciences was conducted from 28 September to 2 October 2020. Like all the other sites, the evaluation activity was affected by international travel restrictions and in some countries local travel restrictions due to the COVID-19 pandemic. To overcome this challenge, the final evaluation was conducted by national expert teams not directly involved in the implementation of the project. The team was composed of Harriet Chanza, WHO Country Office and Ursula Kafulafula, Kamuzu College of Nursing.

THE ACTION PLAN ON SCALING UP MIDWIFERY EDUCATION

The Action Plan developed in 2015 by the College prioritized the domains and competencies for the project. The domains were: (a) Domain 1, ***Ethical and legal principals of midwifery***; (b) Domain 2, ***Midwifery practice***; (c) Domain 3, ***Theoretical learning***; (d) Domain 6, ***Organization, management and leadership***; and (e) Domain 8, ***Research***. For each of the domains selected, competencies were listed and a total of nine objectives were indicated. The WHO Collaborating Centres for Nursing and Midwifery Development in Africa, Loma Linda School of Nursing and the WHO Regional Office for Africa provided regular support and capacity building (at least two site visits per year) during the implementation period. Monitoring reports were prepared and submitted to WHO. The project hosted or participated in a total of six capacity-building workshops, three of which were jointly attended by the other project sites (Annex 3).

Table 31 and Table 32 present the summary of the findings of the evaluation of the action plan for competency-based midwifery education for the Malamulo midwifery programme. The five domains which were the focus of the project had a total of nine objectives, each with a maximum score of 2, giving a total of 18. Seven of the objectives were fully achieved (14 points) and the remaining 2 (4 points) were partially achieved. The overall achievement score was (16/18)= 88.8%.

Table 31. The Action Plan achievements, Malamulo College of Health Sciences (Domains 1 and 2)

DOMAIN/COMPETENCY	GOALS/OBJECTIVES	NOT ACHIEVED (0)	PARTIALLY ACHIEVED (1)	FULLY ACHIEVED (2)	REMARKS AND SUPPORTING RATIONALE
DOMAIN 1: Ethical and legal principals of midwifery					
Competency 1: Behave in ways that reflect the ethical standards of the teaching and midwifery professions. **Competency 2: Demonstrate an understanding of the legal and regulatory statutes relevant to midwifery teaching and practice**	1. Midwifery educators will be able to demonstrate professional, legal and ethical behaviour both in classroom and clinical settings: • Access to the code of ethics of the Nurses and Midwives Act • Be change agents through their example in teaching and practice			**2**	A self-assessment tool on professional and ethical behaviour for educators developed. Affirmative policy on no to sexual violence, established Performance review to assess educators' behaviour is conducted
	2. Knowledge, skills and attitudes reflect the ethical and legal standards of midwifery • Model to students the values and legal standards of ethical and professional behaviour in the clinical area.			**2**	Tool for self-assessment, peer review and students' involvement in appraising faculty behaviour developed.
DOMAIN 2: Midwifery practice					
Competency 4: **Practice midwifery in ways that reflect evidence-based and up-to-date knowledge**	1. Educators able to keep up to date with the midwifery practice. • Maintain competency in midwifery practice by being informed of current practice guidelines and by collaborating with various regulatory and professional organizations • Demonstrate the use of EBP in their teaching and practice.			**2**	Clinical sites and educators have access to current guidelines from Ministry of Health as well as WHO Guidelines which inform educators' practice Course outlines and lesson plans reflect updated sources of information, including online, iPad, national guidelines, protocols and quality research Educators share and critique the protocols and guidelines to identify gaps and contextualize through journal club

*Each objective related to the competency was scored based on achievement with a numeric value. ***Fully achieved = 2 points; Partially achieved = 1 point; and Not achieved = 0***.

Table 32. Action Plan and Achievements, Malamulo College of Health Sciences (Domains 3, 6 and 8)

DOMAIN/COMPETENCY	GOALS/OBJECTIVES	NOT ACHIEVED (0)	PARTIALLY ACHIEVED (1)	FULLY ACHIEVED (2)	REMARKS AND SUPPORTING RATIONALE
DOMAIN 3: Theoretical learning					
Competency 5: Incorporate educational strategies that promote active learning. **Competency 6: Select and use effective teaching and learning materials/resources**	1. Educators able to incorporate strategies that promote active learning • Educators will be trained on active learning strategies and will implement them in classroom and clinical teaching.			**2**	Educators supported with training and resources on teaching methods, other resources and the different learning styles Peer support in place to reinforce teaching that meets the different learning needs The curriculum, course outlines and lesson plans have incorporated teaching strategies that promote active learning
	2. The educators able to recognize and support different learning styles to meet the unique needs of the student • Updated learning resources for faculty and students			**2**	Educators have shifted from passive lecturing to methods of teaching and assessment that involve students more
DOMAIN 6: Organization, management and leadership					
Competency 12: Actively participate in organizing and implementing midwifery curricula **Competency 13: Implement and revise midwifery educational courses and programmes.**	1. Educators trained on CBE curriculum and will work with Nurses and Midwives Council of Malawi		**1**		Educators have adopted CBE, they identify competencies for each course/lesson and assessment to ensure competencies are clear. Course outlines for diploma programme revised to reflect competency-based education.
	2. WHO collaborating centres and KCN to develop and implement a CBE BSN-Midwifery curriculum that incorporates the WHO core competencies			**2**	
DOMAIN 7: Communication, leadership and advocacy					
	1. Midwifery educators will actively participate in policy formulation, outlining programme outcomes, curriculum designing, review and implementation		**1**		Competency-based curriculum for the BSNM programme approved and work ongoing on Nurses Council accreditation recommendations to start the programme. Best practices on CBE shared with other departments and colleges
DOMAIN 8: Research					
Competency 18: Use research to inform teaching and practice	1. Midwifery educators able to promote use of research to inform midwifery education and practice			**2**	A policy on research dev eloped and faculty included in research teams. During CPD, faculty appraise research papers and evidence for their fitness to be used in our setting. Improved linkage with KCN on research, faculty represented in research conferences
	2. Actively participate in the University research committees and activities; collaborate with others.				

*Each objective related to the competency was scored based on achievement with a numeric value. ***Fully achieved = 2 points; Partially achieved = 1 point; and Not achieved = 0***.

Malamulo College made great strides in implementing its Action Plan. With regards to the promotion of ethical, legal and professional standards, educators have incorporated these in their teaching. The programme has also developed a culture of self-assessment and tools have been developed for this purpose. Reliable and up-to-date information is key for EBP. Progressively, national and international guidelines have been made accessible and available and are being used by the faculty and students.

In terms of competencies related to management, organization, leadership in policy formulation and involvement in curriculum design and implementation, Malamulo faculty have actively participated in curriculum development and course outline reviews to reflect CBE. As agents of change, educators advocate for community needs and promotion of human rights of vulnerable populations. This is even more evident during the COVID-19 pandemic when they engage the community in health promotion activities including distribution of masks.

There has also been an uptake of research activities by the educators. The faculty are involved in conducting, communicating, publishing and using the research as part of evidence-based practice and teaching. However, it was noted that the heavy workload compromises their full participation in research.

EDUCATOR COMPETENCY EVALUATION

To evaluate acquisition of CBE skills, teachers had to demonstrate their skills by the way they conducted the teaching session which was assessed by the students, peers and themselves. The evaluation had 15 questions that covered all the domains of the WHO core competencies.

EDUCATION CLASSROOM/LABORATORY SESSION EVALUATION

Three classroom teaching and two skills lab sessions were conducted.

However, data from the skills laboratory session are not included in this analysis as the data were not provided to the international consultant due to logistical problems. Tables 33a and 33b present the findings from the three sessions.

Table 33a. Teaching and Skills lab Evaluations, Malamulo College

	Teacher 1 No students = 21			Teacher 2 No students = 25			Teacher 3 No students = 28			Teacher 1 Evaluators = 5			Teacher 2 Evaluators = 2**			Teacher 3 Evaluators = 3		
EDUCATOR COMPETENCY	**Always**	**Frequent**	**Never or few**	**Always**	**Frequent**	**Never or few**	**Always**	**Frequent**	**Never or few**	**Always**	**Frequent**	**Never or few**	**Always**	**Frequent**	**Never or few**	**Always**	**Frequent**	**Never or few**
1. Incorporates, promotes ethical and legal aspects	20	1	0	20	0	0	22	0	0	2	1	0	1	0	0	2	0	0
2. Lecturer is a consistent role model	19	2	0	24	1	0	28	0	0	4	1	0	1	0	0	3	0	0
3. Lecturer maintains current knowledge and skills	16	5	0	24	1	0	28	0	0	3	2	0	0	1	0	2	1	0
4. Educational methods promote active learning	20	1	0	22	3	0	28	0	0	5	0	0	2	0	0	2	1	0
5. Uses updated teaching and learning methods	18	3	0	19	6	0	25	3	0	5	0	0	0	1	0	2	0	0
6. Recognizes, supports, unique learning needs	20	1	0	19	6	0	27	1	0	5	0	0	0	2	0	3	0	0
7. Uses evidence-based, up-to- date teaching resources	16	5	0	17	8	0	25	3	0	5	0	0		1	0	2	1	0
8. Facilitates a safe & effective learning environment in the clinical setting	16	5	0	18	7	0	24	4	0	N/A	N/A	N/A	N/A	N/A	N/A	1	0	0

***One evaluator answered only question 4 and 6.*
***Red**: Reflects competence ranked as not adequate by at least one evaluator*

Table 33b. Teaching and Skills lab Evaluations, Malamulo College

	Teacher 1 No students = 21			Teacher 2 No students = 25			Teacher 3 No students = 28			Teacher 1 Evaluators = 4			Teacher 2 Evaluators = 2			Teacher 3 Evaluators = 3		
EDUCATOR COMPETENCY	**Always**	**Frequent**	**Never or few**	**Always**	**Frequent**	**Never or few**	**Always**	**Frequent**	**Never or few**	**Always**	**Frequent**	**Never or few**	**Always**	**Frequent**	**Never or few**	**Always**	**Frequent**	**Never or few**
9. Promotes integration of theory into clinical practice	18	3	0	16	8	0	26	2	0	2	0	0	_	_	_	0	1	0
10. Uses different methods to assess students	21	0	0	20	4	0	27	0	0	4	0	0	_	_	_	2	0	0
11. Assesses students' competencies using different methods	21	0	0	20	4	0	27	0	0	1	0	0	_	_	_	2	0	0
12. Provides timely, specific and constructive feedback	21	0	0	20	4	0	26	1	0	1	3	0	_	_	_	1	1	0
13. Communicates effectively using a variety of methods	20	1	0	22	3	0	25	2	0	4	0	0	_	_	_	1	1	0
14. Responds effectively to students' questions, encourages student reflection	20	1	0	19	5	0	25	2	0	4	0	0	_	_	_	1	0	0

***Red**: Reflects competence ranked as not adequate by at least one evaluator*

TEACHING SESSION AND LABORATORY EVALUATION

The evaluation of the teaching sessions across all evaluators showed that the educators had the core educational competencies. Overall, all the educator competencies were always or frequently demonstrated. The competencies that were not always demonstrated (frequently) included: competency 3, lecturer maintains current knowledge and skills; competency 7, uses evidence-based, up-to-date teaching resources; competency 8, promotes integration of theory into clinical practice; and competency 9, promotes integration of theory into clinical practice.

EDUCATOR SELF-EVALUATION

The midwifery educators evaluated their own performance using a standard tool provided. The scores achieved were: Educator 1, 60% (34/57); Educator 2, 82.4% (47/57); and Educator 3, 97% (55/57). There was a marked difference in the self-evaluation, with one educator scoring high and applying almost all relevant CBE methods and one educator using very few of these methods. For example, the educator with the lowest score frequently used only two methods for active learning (online teaching and resources and small group discussions). For stimulating critical thinking, this educator only indicated four methods out of eight choices provided in the tool (discussion, reflective questioning, case studies and one-minute paper) and for assessing or evaluating level of competencies of students, only three out of the 10 methods were used. In contrast, the educator who scored highest on almost all competencies elaborated on how the methods were used, the type of resources used and how the students were engaged in active learning. Periodic internet interruptions, although now resolved, constituted a barrier to accessing evidence-based content. However, one educator indicated that access to local evidence was still a problem. Another educator cited the need to have functioning laptops to access relevant research. It was also observed in this evaluation that the educator who scored very high was proactive and participated in online CPD platforms, engaged in research, read journals and updated guidelines.

It can be concluded that while some educators are quite competent in delivering CBE, others are still in the process of acquiring CBE competencies.

MIDWIFERY FACULTY FDG AND HEAD OF PROGRAMME IN-DEPTH INTERVIEW

An FGD was held with the midwifery faculty and an in-depth interview conducted with the Head of the programme. The competency domains covered and the findings are summarized in Table 34 and Table 35. These tables present a combined summary from the FGD with educators and the in-depth interview with the Head of the Midwifery programme.

Table 34. Results from Focus Group Discussion and in-depth interview, Malamulo College

DOMAIN AND COMPETENCIES	FINDINGS
DOMAIN 4: Learning in the clinical area	
<u>Competency 8:</u> Facilitate a safe and effective learning environment in the clinical setting.	1. Interactive student-centred teaching methods being utilized as well as in the selection and preparation of teaching materials 2. Students actively involved in learning 3. More use of updated information on iPads 4. Receiving support on borrowing books from the International Council of Nurses 5. Internet access improved due to installed solar panels 6. More collaboration between Hospital and College. Three-monthly committee meetings being held 7. Hospital staff now participating in clinical teaching 8. Using of midwifery videos for skills acquisition
DOMAIN 5: Assessment and evaluation of students and programmes	
<u>Competency 10:</u> Continuously monitor, assess and evaluate the effectiveness of the educational programme.	1. A checklist has been developed to assess student performance 2. Involving students in the evaluation 3. Using logbooks for documentation in the clinical area 4. End-of-year objective, structured clinical examination (OSCE) jointly done with the Hospital 5. Disciplinary and counselling sessions offered to students 6. Clinical practical exercises in iPads used in clinical settings as well
DOMAIN 6: Organization, management and leadership.	
<u>Competency 12:</u> Actively participate in organizing and implementing a midwifery curriculum **<u>Competency 13:</u> Implement and revise midwifery course or programme**	1. Promoting WHO midwifery educator competencies 2. Core values and ethics included in the curriculum 3. Faculty involved in curriculum design 4. Bachelor of Science in Nursing curricula approved in December 2018

Table 35. Results from Focus Group Discussion and in-depth interview, Malamulo College

DOMAIN AND COMPETENCIES	FINDINGS
DOMAIN 7: Communication, leadership, and advocacy	
Competency 15: Demonstrate cultural competency in course design and development, teaching and midwifery practice **Competency 16: Function as a change agent and leader in order to improve both midwifery practice and education** **Competency 17: Use a variety of advocacy strategies to promote midwifery education and practice, including professional, community, human rights and structural advocacy.**	1. Using nationally approved curriculum by the Nursing and Midwifery Council to ensure relevancy to context 2. Cultural and ethical aspects included in the midwifery curriculum 3. Students exposed to cultural issues during placements 4. More delegation of responsibilities to other faculty members 5. More communication through meetings and memorandums of understanding 6. Advocating for appropriate protocols in the labour ward in specific clinics such as Limbe 7. Students allocated personal tutors 8. Dean of students instituted 9. Disciplinary Committee established
DOMAIN 8: Research	
Competency 18: **Use research to inform teaching and practice.** **Competency 19:** **Cultivate a culture supporting critical inquiry and evidence-based practice.**	1. Using research for classroom teaching and in practice 2. Kamuzu College of Nursing providing support 3. Internal Research Committee established linking up with University Research Council 4. Terms of reference for the Committee developed 5. Areas of research identified based on national priorities 6. Community research is being supported by the College, e.g. infection prevention and control practices 7. Postgraduate students engaged in research in the Hospital 8. System to reinforce culture of research and performance appraisal instituted 9. Improving educator research skills through CPDs 10. Workload makes it difficult to fully engage in research
Personal reflections	
1. **Changes in midwifery education based on WHO project?** 2. **Personal changes as an educator as a result of the WHO project**	1. More positive attitude due to acquired competency 2. Imparting knowledge with Hospital colleagues, which increases knowledge and strengthens teaching skills 3. Self-perception as coach, facilitator helps improve involvement of students 4. More linkages with Ministry of Health and Kamuzu College of Nursing 5. Transparency increased, able to openly share with other Christian Health Association of Malawi (CHAM) Colleges

Many achievements have been made as shown in Tables 34-35. However, there were challenges noted as well. These included:

1. Lack of financial support within the College;
2. Inadequate capacity for faculty to conduct research, although sessions on research are now being conducted as part of CPD;
3. Maintaining a culture of inquiry for evidence-based practice among faculty;
4. Lack of timely feedback on areas needing improvements;
5. Heavy workload and competing priorities especially for the project coordinators;
6. Misunderstandings about project purpose resulting in some staff not owning the project.

> *"our interest is to see that the project is scaled up to other institutions"*
>
> *"evaluation findings should be disseminated to the national level"*

MIDWIFERY STUDENT FGDS

Two FGDs were conducted. The aspects of the midwifery educator core competencies addressed were: (a) Ethical and legal principle of midwifery, *Competency 1*-behave in ways that reflect the ethical standards of the teaching and midwifery professions; (b) Theoretical learning, *Competency 5*-incorporate educational strategies to promote active learning; and *Competency 7*-recognize and support different learning and unique needs of students; (c) Learning in the clinical area, *Competency 8*-facilitate a safe and effective learning environment in the clinical setting; and *Competency 9*-foster individualized and experiential learning; and (d) Communication, leadership and advocacy, *Competency 15*-demonstrate cultural competency in course design and development, teaching and midwifery practice.

The results of the students focus group discussions indicate that the introduction of CBE at Malamulo is facilitating a positive outlook towards learning among students. There is increased collaboration with the Hospital and faculty are working together with ward nurses-in-charge at the Hospital to ensure a positive experience when students are sent for clinical practice. Some sentiments expressed are outlined below.

Ethical and legal principles of midwifery

...(teacher) handles our situation well in clinical areas, they discuss what to do..."

Active Learning

encourage (us) to be in groups. Teamwork for good care to patients".

"easy to practice in small groups. The skills lab is accessible, teacher is present and helps us"

Learning in the clinical area

lecturers come to the clinical areas for supervision"

Cultural competency

…(teachers) help us to understand and respect culture and beliefs of clients. If harmful, we discuss and (they) explain more and intervene".

"We hold cultural dances and have cultural days. This promotes a sense of togetherness"

FOLLOW-UP CAPACITY ASSESSMENT (2020)

As part of the "Upscaling Midwifery Education" project, an institutional capacity assessment of the midwifery training programme at Malamulo College of Health Sciences School of Nursing was conducted in 2015 and an Action Plan was developed and has been in place over the past 5 years. The focus of the assessment was on the educational programmes, the resources for the programmes and the capacity of the institution. A follow-up capacity assessment was done during the final evaluation of the project from 28 September to 2 October 2020.

The findings of the assessment related to programme, clinical practice and infrastructure, and are presented in Tables 36,37,38. The tables also show the information from the baseline assessment of December 2014. The major changes are highlighted in the last column of the Tables.

Table 36. Summary of institutional capacity: the Midwifery programme, Malamulo College

	EVALUATION AREA	2015	2020	COMMENTS
1	**Capacity of programme**	Full-time =50	Full-time = 50	No change
2	**Students enrolled**	Full-time = 106 Part-time = N/A	Full-time = 156 Part-time = N/A	
3	**Number of graduates**	2015/2016 =47	2017/2018= 72	
4	**Training modality**	Traditional	Competency-based education	
5	**Student source of funding for training**	Government and Private		
6	**Faculty**	Full-time: 13, Part-time: 3 9 with Bachelor's degree, 3 with Masters and 1 with Nursing Diploma	Full-time: 10, Part-time:0 6 with Master's degree in Nursing, 3 Bachelor's degree, 1 with Nursing Diploma	***There are fewer midwifery faculty members.***
7	**Continuous professional development**	No information provided	Seminars/updates offered more than once a year.	***Faculty members involved in research on a regular basis.***
8	**Curriculum**	Maintained global (WHO) standards	Maintained global standards	
	EVALUATION AREA	**2015**	**2020**	**COMMENTS**
1	**Clinical practice sites**	Malamulo Hospital - 275 bed capacity, provides comprehensive health services, with 3 physicians and 8 nurses	Malamulo Hospital currently has 7 physicians and 16 nurses and midwives (including nurse midwifery technicians) Travel to any of the clinical sites is by public transport	***There has been an increase (almost doubling) in both physicians and nurses***
2	**Student involvement in other primary care services**	Limited in mental health care	Limited in health promotion	
3	**Average weekly number of clients/patients available to the students**	Maternal & Child Health =50 Labour and Delivery =10 Postnatal care =20 Newborn = 20	Maternal & Child Health =20 Labour and Delivery =10 Postnatal care =20 Newborn care =20	
4	**Clinical Facility overall annual deliveries available to students**	Hospitals=No information Clinics: No information Home=0	Hospitals=1500 No information about numbers in clinics or home deliveries.	

Table 37. Summary of institutional capacity: Infrastructure, Malamulo College

EVALUATION AREA	2015	2020	COMMENTS
1 Classrooms and equipment	*Number of classrooms was not given but were small and can accommodate no more than 50 students.*	Additional classrooms accommodating 50 students.	Two additional classrooms are under construction
2 Staff offices and accommodation	Office shared by 2-3 educators	Faculty not currently sharing.	The new construction taking place will have additional offices
3 Skills laboratory	Only mentioned models and manikins	Models, manikins, delivery bed, intravenous arm, protective wear, resuscitation machine, fetal scopes, blood pressure cuffs, automated simulators and complete delivery sets.	
4 Information technology	**3 desktop computers** No computer laboratory and no "Smart" classrooms 3-hour internet access only in the school library and tutors' offices.	Recently constructed computer laboratory with 30 desktop computers (22 are functional) 24-hour Internet access on campus and in the student hostels	**There are still no *"Smart"* classrooms**
5 Student facilities	No indication accommodation was adequate	1045 hostel capacity for female students Shared male dormitories	**No resources for temporary accommodation**
6 Eating facilities	Adequate	The cafeteria space remains adequate	

CHALLENGES

The cultural impediments to prenatal care and the cultural environment that may enhance or undermine acceptance of a programme to prepare birth attendants include, in some regions, women delaying initiation of antenatal care for fear of being bewitched. However, some cultures will allow women to undergo counselling by their husbands' relatives before starting antenatal care services.

PROGRAMME COLLABORATIVE ACTIVITIES

The programme has expanded collaborative activities to include academic institutions (Kamuzu College of Nursing, Malawi College of Health Sciences and College of Medicine). In 2015, the programme worked collaboratively with both Government institutions and professional organizations. These organizations provide support for the students and offer employment (Nurses and Midwife Council of Malawi, National Organization for Nurses and Midwives in Malawi and Christian Health Association of Malawi). This support is ongoing.

Loma Linda University Office of Global Nursing is collaborating with Malamulo College to develop a Nurse Scientist Programme in the area of midwifery. Already, a faculty member at Malamulo was selected and sponsored for a PhD at Nelson Mandela University in South Africa. She was selected on the basis of her interest and capability in research.

JOB AVAILABILITY FOR MIDWIVES

The proportion of graduates who are employed in the local community, region or geographic area for at least five years following graduation has now increased to about 50%. The rate was 25% in 2015. Based on a 2017 tracer survey, the breakdown by institution was 36% in Government, 46% in faith-based institutions, 5% in nongovernmental agencies, 3% in private health facilities and 2% in research.

PROGRAMME CONTRIBUTION TO THE COMMUNITY

The programme reports that they are very much involved in primary health care services, preventive services and specific diseases conditions. However, there is little involvement in health promotion, substance abuse or mental health. The level of involvement in 2015 was not indicated.

FUTURE PLANS FOR THE PROGRAMME

The development and expansion of programmes to address infant and maternal mortality have remained a priority since the baseline assessment. The College has given priority to introducing a Bachelor of Science degree programme in nursing and midwifery. The programme will develop skills for applying critical thinking to provide quality care that will contribute to improved health of mothers and infants in the country as a whole. *“The Department of Nursing and Midwifery desires to be the preferred Centre of Excellence in competency-based nursing and midwifery training in Africa and beyond, demonstrated by diverse specialized undergraduate and graduate programmes by 2024”*.

LABORATORY OF CHANGE AND CENTRE OF EXCELLENCE

The results of the evaluation are outlined under each of the categories; leadership, resources, community engagement and innovation (Table 38).

Table 38. Summary of Laboratories of Change and Centre of Excellence, Malamulo College

CRITERIA ELEMENT AND SCORE ( )	FINDINGS
1. Leadership	
a) Mission articulation (1) **b) Teamwork, networking, leadership (1)** **c) Proactive, collaborative leadership (1)** **d) Governance (1)** **e) Performance indicators (0.5)** **f) Change in initiatives (0.5)** **g) Culture of excellence (1)**	• Mission statement exists and is shared with faculty and students • Students and faculty Whatsapp group established • Faculty empowerment through CPDs • The Department, College and University function through Teams and Committees e.g. for social, research finance, student affairs, academic affairs, examination, and discipline. • Financial accountability done at various points, e.g. requests and payments • ***Performance indicators need more work to be fully developed.***
2. Resources	
a) Functional, adequate infrastructure (0.5) **b) Education/clinical best practices (1)** **c) Ethical, quality education (1)** **d) Access to journals (1)** **e) Interdisciplinary teams (0.5)** **f) Lifelong learning (1)**	• ***Infrastructure such as skills lab and classrooms not adequate and their practical use should be reconsidered*** • ***Need more interdisciplinary, full-time faculty and not only part-time ones***
3. Community engagement	
a) Social responsibility policies (0.5) **b) Knowledge/experience sharing (1)** **c) Resource accessibility, availability, affordability (0.5)** **d) Fostering partnerships (1)** **e) Cultural sensitivity and inclusiveness (1)**	• The educators are involved in transforming midwifery education and the communities, as reflective of change agents. • Educators advocate for community needs and promotion of human rights of vulnerable populations • ***Resources for teaching and learning needed***
4. Innovation	
a) Innovative and sustainable strategies (1) **b) Incremental improvement strategies (0.5)** **c) Evidence-based practice (1)** **d) Curriculum development and implementation (1)** **e) Collaborative research (1)** **f) National policy engagement (0.5)**	• Online teaching initiated • ***Plans for incremental improvements need to be revised***

A point was attributed to each item in the category totalling (20/24 (83%))

KEY HIGHLIGHTS OF PROGRESS TOWARDS CENTRE OF EXCELLENCE

LEADERSHIP

The Department is implementing some key change projects. For example, they plan to introduce a Bachelor of Science in Nursing programme. They have started with curriculum development and upgrading faculty to Master's and PhD levels. A mentorship programme has been established for new and junior faculty members and new lecturers undergo orientation and are paired with a senior faculty member. Faculty and students take on active roles and are members of different committees at the College and are involved in decision-making processes. The Department is making strides to improve on governance and accountability and clear lines of communication exist from the university administration to the staff. The College involves the Department and faculty in budgeting and shares reports of expenditure and financial statements. Periodic performance reviews based on job descriptions are conducted and during these reviews, the faculty and supervisors use established performance indicators.

RESOURCES

The College is still working towards having adequate infrastructure to maintain functional operations as was recommended in a recent nursing accreditation report. The College benefits from access to HINARI, Malawi Library and Information Consortium (MALICO) and national and international professional journals. The WHO and Ministry of Health websites and the resources in the iPads are also an important source of information. The Department collaborates with the Ministry of Health to access protocols and guidelines such as those on maternal and neonatal health, sexually transmitted infections, malaria and HIV. In addition, the Department collaborates with other clinical specialties including training, research and clinical teaching. Such resources are essential for delivering CBE.

COMMUNITY ENGAGEMENT

The policies of the College foster responsibility and community engagement. Through an initiative called "The Winter Project", the College distributed blankets and provided health education to the community. Recently, the College took an active part in activities aimed at mitigating the spread of COVID-19 in the surrounding community. Nursing and midwifery faculty often serve as facilitators for various training programmes arranged by the Government as well as providing consultancy services to the community in their areas of expertise and experience. Community needs have been identified in the areas of maternal and child health, sanitation, nutrition, communicable and noncommunicable diseases. This work builds on other successful community initiatives the College has been engaged in, such as access to safe water and mask distribution.

INNOVATION

The College has introduced online learning after conducting a needs assessment and has updated the course outlines to include updates and new trends. In addition, through CPD sessions, the faculty share information on new guidelines and protocols. The protocols are posted on the walls of classroom and wards as references. The faculty also work in the hospital to update their skills. The Malamulo faculty participated in curriculum development, and CBE is being adapted and implemented. The faculty are also actively involved in internal collaboration on research in teams and within the intra-department research committee. Furthermore, the Department has a working relationship with the Kamuzu College of Nursing on mentorship in research. Some faculty members are involved in research supervision and on occasions present their work at research conferences. A number of faculty members are involved in policy and policy development. Some of the educators are designated as national trainers. The College is spearheading the transition to competency-based nursing education through the sharing of best practices. A strategic plan for further development of the programme in the areas of infrastructure, human resources, programmes, and finance is under preparation. According to the faculty, the COVID-19 pandemic challenge offered an opportunity for growth.

SUMMARY

For the WHO/SDA project on scaling up Midwifery education, Malamulo College prioritized five domains of educator competencies in their Action Plan: Domain 1, Ethical and legal principles of midwifery; Domain 2, Midwifery practice; Domain 3, Theoretical learning; Domain 6, Organization, management and leadership; and Domain 8, Research. For each of the domains selected, competencies were listed and there was a total of nine for the Action Plan. The final evaluation showed that seven of the nine objectives were fully achieved and two were partially achieved, giving a score of 16/18 (88.8%).

The evaluation of the teaching sessions across all evaluators showed that the educators demonstrated the core educational competencies. Overall, all the educator competencies were always or frequently demonstrated. The evaluation also showed that students were contented with the teaching and learning approaches. The College faculty also work in the Hospital from time to time, performing clinical duties. This addresses the important aspect of linking theory to practice and sustaining competency in midwifery skills.

The policies of the College foster responsibility and community engagement. Community needs have been identified for maternal and child health, sanitation, nutrition, communicable and noncommunicable diseases. This work builds on other successful community initiatives the College has been engaged in, such as access to safe water and mask distribution.

The project is viewed as catalytic to improving quality of care at the College. More and more departments are emulating the process and considering adopting competency-based education strategies. In particular, the College strategic plan 2017-2021 will be reviewed and the newly approved BSc in Nursing programme will include competency-based education strategies, while collaboration with the Ministry of Health, Kamuzu College of Nursing and WHO will continue. This strategic approach taken by the College indicates the potential for sustaining the project objectives.

The programme, however, faces challenges which include limited resources for infrastructure development, the computer laboratory and library, and the need to help deserving students who are unable to access midwifery education due to lack of school fees. Greater collaboration with other partners may generate the much needed support for such students. Furthermore, in order to encourage faculty members to embark on research, there is need to continue mentoring to build skills in poster presentations and publication in scientific journals.

Finally, as regards the status of Laboratory of Change and Centre of excellence, the evaluation assigned a score of 87% to Malamulo College. This score is above the minimum threshold for attaining Centre of Excellence status.

PART

VII

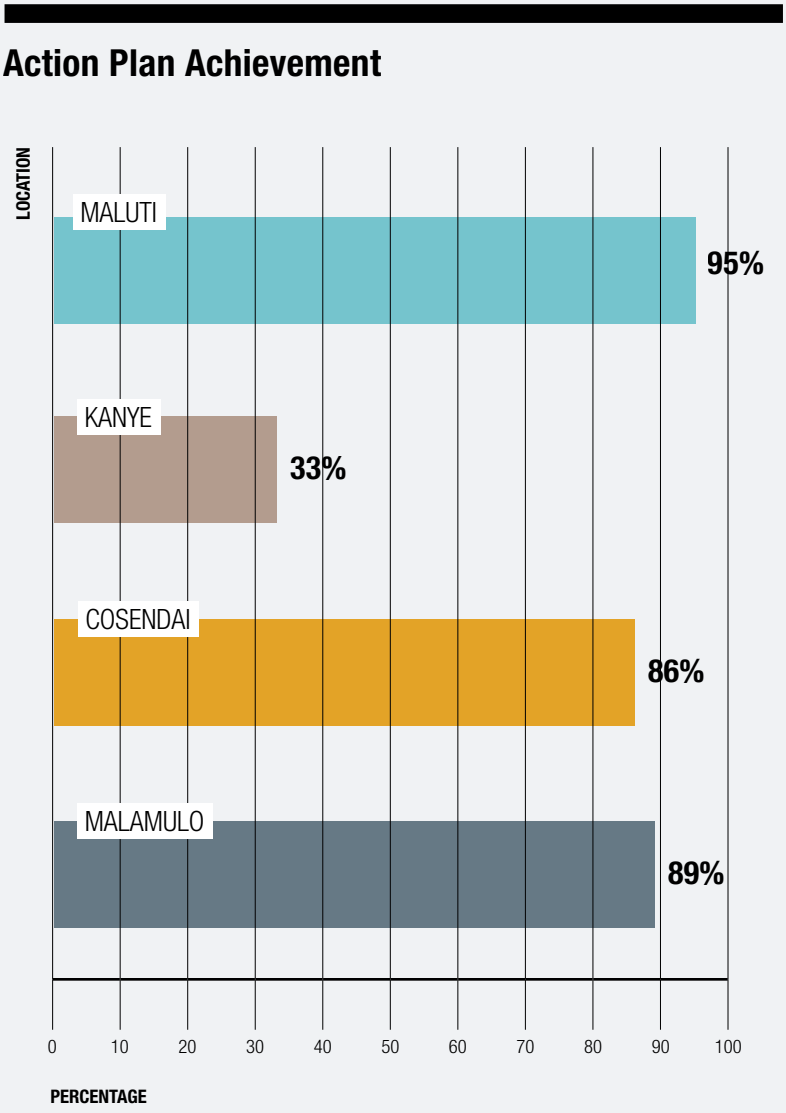
PROJECT EVALUATION CONCLUSION

ACHIEVEMENTS IN IMPROVING THE QUALITY OF MIDWIFERY EDUCATION

The primary objective of the project was to transform midwifery education through innovative and transformative educational strategies. This is based on the conviction that competent educators provide quality education to midwifery students in the classroom and clinical settings. Once qualified, such a midwifery graduate will provide quality midwifery services to mothers and newborns.

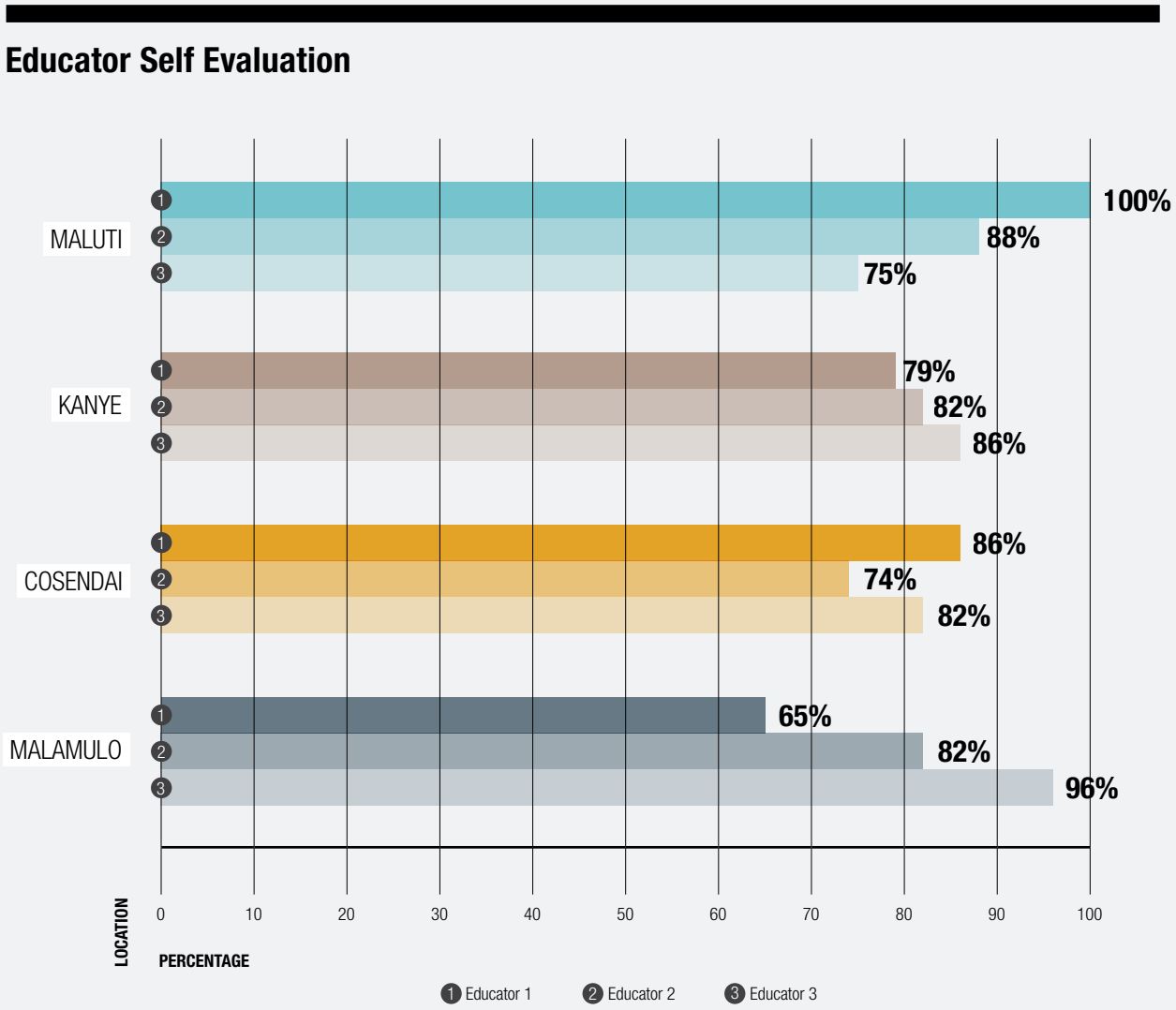
At the start of the project, a joint planning meeting took place at which each participating site identified the specific educator competencies the institution deemed it needed to foster and nurture competency-based education. These were the focus of their respective Action Plans. For each competency, they identified the objectives. This process engendered ownership of the proposed activities. The number of objectives for each site were: Maluti=11; Kanye=6; Cosendai=21; and Malamulo=9. The evaluation of the implementation of the objectives is shown in Figure 4. Whereas three sites achieved 95%, 88% and 86% respectively, Kanye College only fully achieved two of the six objectives with a total score of 33%. The evaluation confirmed that the low implementation rate was because the faculty at Kanye only got on board in late 2019.

Figure 4. Action Plan achievement: Maluti, Kanye, Cosendai and Malamulo



This project demonstrated in the four participating sites that competency-based educational strategies can be adopted by educators and used effectively. The self-evaluation of the educators at the participating sites confirmed that there was a significant change in the educators themselves in that they now appreciate the importance of using teaching methods that promoted active learning among students. This was also confirmed through the evaluation of educator sessions which showed overall satisfaction from the students as reflected by the fact that they overwhelmingly reported that the educators exhibited most of the competencies, always or frequently. The project evaluation recognizes that there could be some inherited bias in self-evaluations but at the same time, the triangulation of results from the other evaluation methods used indicate the fact that the midwifery educator core competencies have been fully embraced in all the four project sites. Figure 5 shows the percentage scores achieved through educator self-evaluation. Three sessions were done at each site.

Figure 5. Educator Self-evaluation scores based on assessment of teaching methods (percentage is based on maximum score of 57 points)

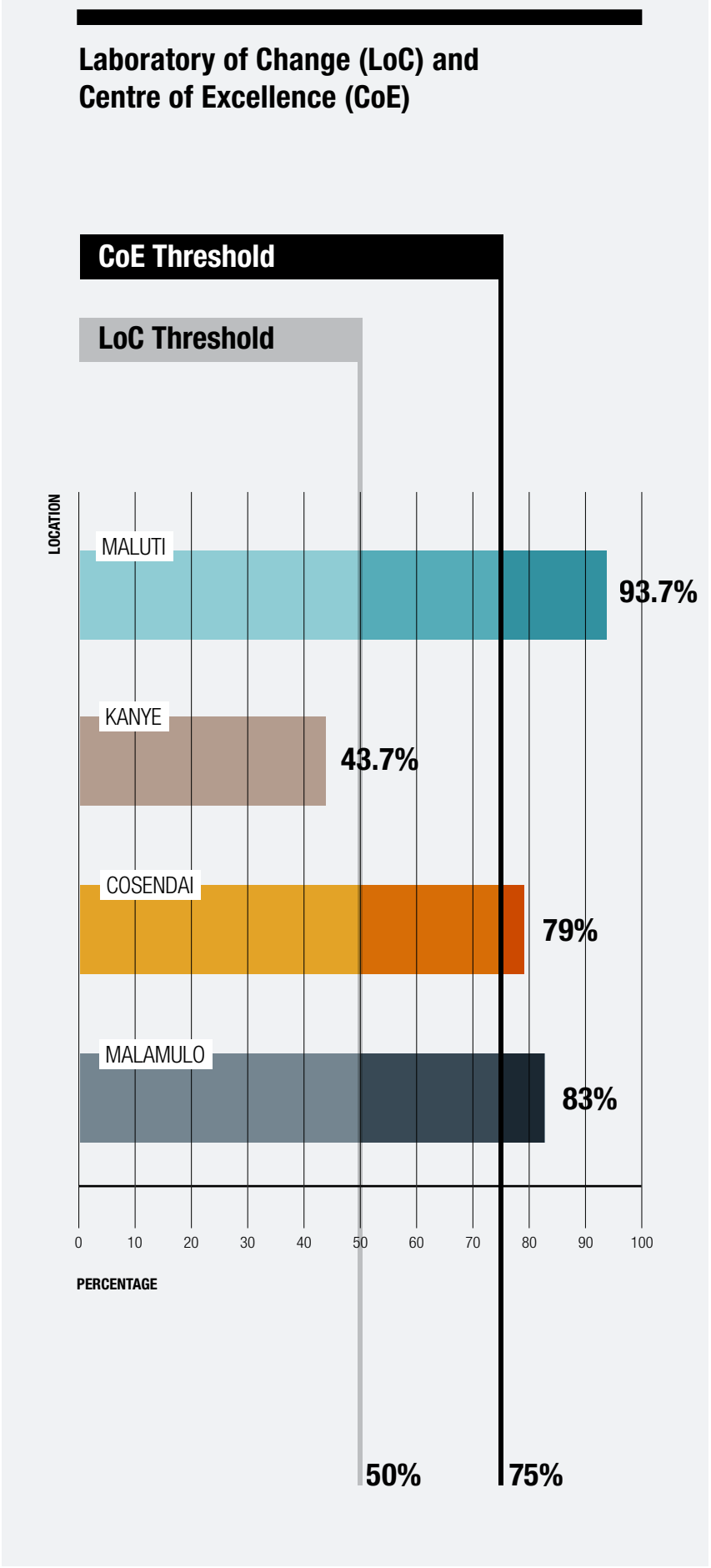


The adoption of the competency-based educator competencies was made possible by the concerted efforts of, and technical support from the project technical partners, Loma Linda University Office of Global Nursing, the WHO Collaborating Centres for Nursing and Midwifery Development in Africa and all levels of WHO. Resources such as iPads with important midwifery reference materials to help the institutions increase technology use were critical. Utilization of WHO midwifery competencies and regional prototype curricula in "Smart Classrooms" reflected the sites' adoption of technology. This was supported by increased internet connectivity over the years and provision of solar power by the project. One site, Kanye, did not use the iPads that were provided, although they improved access to scientific information including journals. It was clear from the evaluation that internet connectivity though improving, remains an important area for further improvement.

ACHIEVEMENT OF LABORATORIES OF CHANGE OR CENTRE OF EXCELLENCE STATUS

To evaluate the contribution of the project to establishment of LoC and CoE, institutional capacity assessments were conducted at the start of the project and at the end of the project in all four sites. The findings from the capacity assessments complemented the benchmarks set for achieving LoC or CoE status. The scores were: Maluti=93.7%; Kanye=43.7%; Cosendai=79%; and Malamulo=83%. Therefore, Maluti and Cosendai attained the status of Centres of Excellence.

Figure 6. Levels of achievement of LoC and CoE



OVERALL ACHIEVEMENTS AND SUSTAINABILITY

The project achieved its objective to train midwifery educators on CBE, and the educators attained competency with students engaged in active learning. Midwifery students appreciate the way they are taught and are motivated to perform better. More practice sites have been availed to students and there is good coordination between classroom and clinical teaching with more engagement of staff in practice sites supporting mentoring of students. The construction of a Maternity Centre at the Cosendai site will provide a good, well-resourced practice site. Significant institutional capacity has been achieved, thereby enhancing the project's relevance and impact. The changes in perspective among educators and faculty heads of midwifery programmes is evident. The sites are seeking to innovate, transform and continue to be agents of change. There is increased institutional visibility and participation in local, national and international educational and research events. New partnerships beyond the traditional ones have been forged and strengthened. The presence of a number of faith-based institutions in Africa offers a strong foundation for accelerated scaling up of midwifery education in the already established institutions. It is a model for strengthening existing partnerships beyond government institutions.

CONSTRAINTS

Constraints noted during the evaluation were problems of poor internet connectivity, which renders access to updated information difficult. The facilities for learning in some sites are inadequate for the number of students enrolled, and the faculty numbers are not optimal and some sites experience a high turnover of staff. Taking cognizance of, and working to resolve the constraints identified in this report will help the participating institutions to continuously work towards maintenance of the Centres of Excellence.

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ANNEX 1

PROJECT COORDINATION AND IMPLEMENTATION FOCAL POINTS

Focal point	Position	Responsibilities	Site
World Health Organization			
Annette Mwansa Nkowane, MA, BSc Nurs, Cert.Mgt. RN,RM	Technical Officer, Nursing and Midwifery (Retired 2017)	Global Coordination, administrative and technical support	**All sites**
Prosper Tumusiime MD	Acting Director HSS, then ULC	Overall regional coordination/ supervision	**All sites**
Jennifer Nyoni, MA, BA,	Technical Officer, Human resources for Health	Regional Coordination, administrative and technical support	**All sites**
Adam Ahmat, PhD	Technical Officer, Human resources for Health	Administrative and technical support	**All sites**
Magda Awases Phd	Technical Officer, Human resources for Health- IST/ESA (retired 2018)	Technical support	**All sites**
Hubert Wang, MD	Technical Officer,	Technical Support/local coordination	Cosendai, Cameroon
Mary Atanga, RN, BSc, MPH, PhD, FWCN	External Consultant, Professor, Nursing/Vice Dean, Research and Cooperation, Bamenda University	Technical support/local coordination	Cosendai, Cameroon
Harriet Chanza, PhD	Technical Officer	Technical support/local coordination	Malamulo, Malawi
Belina Tsolaone-Bolepo	Technical Officer	Technical support/local coordination	Maluti, Lesotho
Bakanuki Flora Nfila	Technical Officer	Technical support/local coordination	Kanye, Botswana
Habib Somanje, MD	Technical officer, HSS WCO RSA (retired 2018?)	Technical support/coordination	All sites, admin support Maluti
Rajesh Narwal , MD	Technical Officer -HSS-WCO RSA	Coordination/admin support	Maluti, Lesotho

Loma Linda University Office of Global Nursing			
Patricia S. Jones, PhD, RN, FAAN	Distinguished Emerita Professor, LLUSN, Associate Director, GC Health Ministries	Global Coordination, administrative and technical support	All sites
Sabine Dunbar, DNP, MMid, NMW	Assistant Professor, Loma Linda University School of Nursing	Technical support/site Coordination	Cosendai, Cameroon
Marlise Lima, PhD, RN.	Professor, University of Sao Paulo, Brazil	Technical support/site Coordination	All sites
Monica McKenzie, DrPH, RN.	Retired Staff Development Educator, LLUMC	Technical support/site Coordination	Maluti, Lesotho
Marian Llaguno, DNP, RN,	Assistant Professor, Loma Linda University School of Nursing	Technical support/site Coordination	Malamulo, Malawi
Emmy Obradovic, MSc, RN,	Retired Nurse Midwife, Croatia	Technical support/site Coordination	Malamulo, Malawi
Seventh-day Adventist Nursing and Midwifery schools (Project sites)			
Marie Abemyil, MSc, RN MW	Director, Higher Institute of Health Sciences and Chair of the Department of Nursing	Local coordination/ implementation Dean & Site Coordinator	Cosendai, Cameroon
Lillian Lemo, PhD, RN	Principal		Kanye, Botswana
Stella Nkgau, MS, RN, MW	Head, Midwifery department	Site coordinator	Kanye, Botswana
Lillo Kuape, MS, RN	Acting Rector		Maluti, Lesotho
Motebang Molainyane	Head, Midwifery department	Site coordinator	Maluti, Lesotho
Dennis Gwesere, MScN (Midwifery and Neonatology), BSN, RNM, ANP.	Head of Nursing and Midwifery Department	Technical Support/Site Coordinator	Malamulo, Malawi
Catherine Nkhoma MPH, MSN (Adult Health), BScNM, RNM	Senior Lecturer, Midwifery	Site coordinator	Malamulo, Malawi

Ministries of health and Nursing Councils			
Khumo Modisaeman, MSc Midwifery, BED Nursing, RM, RN	Chief Nursing Officer, Ministry of Health		Kanye, Botswana
Assumpta KECHIA	Chief Nursing Officer, Ministry of Health	Technical support	Yaounde, Cameroon
Tulipoka Soko, RNM, MPH,	Director of Nursing and Midwifery services, Ministry of Health (Retired May 2020)	Technical Support	Malamulo, Malawi
Mpoeetsi Makau ,	Director Nursing Services. Ministry of Health, Lesotho	Technical support	Maluti, Lesotho
Palesa Monamane, RN, RM, Nurse educator, Community health Nurse	Standards and Compliance Officer Lesotho Nursing Council	Technical support	Maluti, Lesotho
WHO Collaborating Centres for Nursing and Midwifery Development			
Dithole DLittelPhil, MSc, Bed, RN	Head, School of Nursing, WHOCC Director University of Botswana	Technical support	Kanye, Botswana
Mosidi Mokotedi, MSN (Paeds),RM, RN	Coordinator-WHOCC, University of Botswana	Technical support	Kanye, Botswana
Mogobe, K. Dintle. PhD, MSc Midwifery, RM, RN	Former Head of the School of Nursing, WHOCC Director, University of Botswana	Technical support	Kanye, Botswana
Ntombifikile Mtshali, PhD	Professor/Academic Leader Nursing Discipline and WHOCC , Academic Leader, Nursing Discipline and Director, University of Kwa Zulu Natal,	Technical support	Maluti, Lesthoto
Johanna Mathibe-Neke, RN, RM, BA Cur, MSc Midwifery, PhD	Associate Professor, University of South Africa	Technical support	Maluti, Lesthoto
Abigail Kazembe, RNM, BSc Nurs., MSc Nurs., PhD	Associate professor, Faculty of Midwifery, Neonatal and Reproductive Health Studies, Kamuzu College of Nursing	Technical support	Malamulo, Malawi
Belinda Gombachika, RNM, BSc Nsg., MPhil, PhD	Vice Principal/Associate Professor Nursing, University of Malawi, Kamuzu College of Nursing	Technical support	Malamulo, Malawi
Zerish Nkosi, RN, BSc Nurs, MA Nsg, PhD	Professor/Manager, Office for Tuition and Learning Support, University of South Africa	Technical support	Cosendai, Cameroon

ANNEX 2

LOMA LINDA UNIVERSITY SCHOOL OF NURSING OFF-CAMPUS PROGRAMME

The LLUSN off-campus programme is evidence of the investment LLU has made and is still making in the development of nursing educators and leaders to improve health care globally. It is currently the only programme in the School of Nursing that is offered off-campus. It was created specifically to prepare nursing professionals for leadership roles in countries and institutions outside of the United States of America. Applicants from the US are not admitted unless they are already serving in Third World countries.

To date, 101 students have graduated from 33 countries. Four of these graduates later received scholarships to earn a PhD in nursing at LLU, three more earned PhD degrees from other institutions and several more are currently completing PhD degrees. A recent alumni survey indicates that 97 per cent are serving in their home countries in various leadership roles ranging from faculty, deans/directors of nursing programmes, and academic administrators or directors of international relations in universities; in health care facilities they serve as directors of nursing services or other levels of management. One graduate from the first cohort, who earned a PhD degree, is Director of Organizational Development for the Myanmar Red Cross.

The last graduating class in 2018 had students from **Botswana**, Kenya, **Lesotho**, Liberia, **Malawi**, Rwanda, and Zambia on the African continent, and from Cambodia, China, Japan, Papua New Guinea, Solomon Islands, and Thailand in the region of Asia and the Pacific Islands. The new fifth cohort of 45 students which just started, represents 14 countries with 34 from Africa, 11 from Asia and two from the Pacific Islands.

Each student is charged a flat fee to cover travel to the host site (Asia-Pacific International University in Thailand), plus accommodation and food at the site. To be equitable for all areas of the world field, the fee per student is the same for all students regardless of the cost of their travel to the site. For some students the fee is less than the actual cost and for some it is more than the actual cost. Tuition and related fees plus textbooks are provided by LLUSN, and are covered by donor funds. In most cases, either the regional division of the Seventh-day Adventist church or the student's employing institution pays the flat fee so the cost to the individual student is minimal. The fee has increased with each cohort but the programme still operates on the same business plan it started with.

More detailed explanation at: https://news.llu.edu/academics/increasing-nurse-leadership-seventh-day-adventist-institutions-around-globe

ANNEX 3

SCALING UP MIDWIFERY EDUCATION CAPACITY BUILDING ACTIVITIES, 2014–2020

Capacity Building Seminars and Other Site Visits	
SITE	**ACTIVITY AND DATE**
Cosendai Adventist University, * Cameroon	• Capacity assessment: 19–23 March 2017 • Capacity building: 28 November–3 December 2017 • Capacity building & pilot testing tools: 25–28 March 2019 • Capacity building: Zoom session on using the iPad: 19 June 2019 • Capacity building: 28–30 October 2019
Kanye SDA College of Nursing, Botswana	• Capacity assessment: 14–15 December 2014 • Capacity building: December 2015 • Capacity building: 29–30 June 2016 (Monica & Marian) • Capacity building: 24–26 July 2017 • Capacity building: 13–16 March 2019 (piloting tools) • Capacity building: Zoom session on using the iPad: 19 June 2019 • Capacity building: 22–24 July 2019
Malawi College of Health Sciences, Malawi	• Capacity assessment: 10–12 December 2014 • Capacity building: December 2015 • Capacity building: 24–27 June 2016 • Capacity building: 17–19 July 2017 • Capacity building: 19–21 March 2019 (piloting tools) • Capacity building: Zoom session on using the iPad: 20 June 2019 • Capacity building: 15–17 September 2019
Maluti Adventist College, Lesotho	• Capacity assessment: 7–9 December 2014 • Capacity building: (Attended at Kanye in Botswana) 17–18 December 2015 • Capacity building: 4–7 July 2016 • Capacity building: 24–26 July 2017 (Attended at Kanye in Botswana) • Capacity building/pilot testing of tools: 12–14 March 2019 • Capacity building: Zoom session on using the iPad: 20 June 2019 • Capacity building: 2–5 September 2019

***Please note**: The Capacity Assessment visit for the Cameroon site, which would have been done in December 2014, was postponed due to the Ebola outbreak in West Africa. However, representatives from Cameroon participated in the orientation meeting in Bloemfontein from 27 July to 2 August 2015, and in the midterm meeting in Centurion, South Africa, 6–7 December 2016.

World Health Organization
REGIONAL OFFICE FOR Africa

World Health Organization - Regional Office for Africa
Cité du Djoué, P.O.Box 06 Brazzaville
Republic of Congo

Telephone: +(47 241) 39402
Fax: +(47 241) 39503
Email: afrgocom@who.int

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