# Building Capacity in Leadership and Management for Nurses Managing Rural Health Centers in Zambia

Allison Annette Foster, IntraHealth International, United States
Marjorie Makukula, School of Nursing, University of Zambia, Zambia
Nellisiwe Luyando Chizuni, University Teaching Hospital, Zambia
Carolyn Moore, mPowering Frontline Health Workers, United States
Fastone Goma, School of Medicine, University of Zambia, Zambia

# ACKNOWLEDGEMENTS

This report was prepared by the Primary Health Care to Communities (PHC2C) team, who developed and delivered the continuing professional development training, "Certificate in Leadership and Management Practice (CLMP)." Special acknowledgements go to Michael Bzdak and Laura Hollod of Johnson & Johnson, who represented J&J not only as a corporate funder in the area of corporate responsibility, but also as active participants in J&J's partnership with Zambia to advance the health and development of its population. Appreciation also goes to members of the PHC2C collaboration who were not actively participating in this phase of the initiative in Zambia, but were consistently available to provide counsel and input on the design and implementation of the leadership and management training: Dr. Judith Shamian,[1] past president of the International Council of Nurses; Gail Tomblin Murphy, Executive Director of the WHO Collaborating Centre for Health Workforce Planning and Research; and Lesley-Anne Long,[2] former Director of mPowering Frontline Health Workers.

PHC2C CLMP Curriculum Design and Research Team
- Dr. Fastone Goma, School of Medicine,[3] University of Zambia, Zambia
- Dr. Marjorie Makukula, School of Nursing,[4] University of Zambia, Zambia
- Ms. Carolyn Moore, mPowering Frontline Health Workers,[5] United States of America
- Ms. Nellisiwe Luyando Chuzuni, University Teaching Hospital, Zambia
- Alan Myles, IntraHealth International (consultant), United Kingdom
- Charity Kapenda, University of Zambia, Zambia
- Allison Annette Foster, IntraHealth International, United States of America

**Zambia PHC2C CLMP Technical Advisory Group**
Zambia's technical advisory group included technical experts and leaders in the field of community health. This group provided guidance and input to the PHC2C team throughout the development of the training curricula, and were consulted for approval before the training was finalized. Members of the Technical Advisory Group attended the workshops and maintained close contact with the PHC2C team throughout the delivery and assessment of the training. (See Appendix 3 for a list of Technical Advisory Group members.)

**Zambia National PHC2C Advisory Group**
The national advisory group consisted of the leadership from key stakeholder organizations guiding the continued development and strengthening of the community health system in Zambia. The National Advisory Group included both Zambian organizations and global development organizations that are partnering with the Zambian government and stakeholder groups in various initiatives to improve community health. (See Appendix 3 for a list of National Advisory Group members.)

---

[1] Dr. Judith Shamian completed her term as President of ICN in December 2016.
[2] Lesley-Anne Long completed her directorship of mPowering Frontline Health Workers in June 2016.
[3] Dr. Fastone Goma ended his Deanship of the School of Medicine in May 2017, at the end of the program, and is pursuing a research assignment at Vanderbilt University (as of July 2017).
[4] The University of Zambia (UNZA) Department of Nursing was under the School of Medicine at the initiation of this project, and became the School of Nursing in the middle of the project (December 2017).
[5] Carolyn Moore was acting director of mPowering until May 2017, when she moved to another organization.

**Global PHC2C Advisory Group**
The PHC2C global advisory group for the CLMP includes select members of the wider PHC2C collaborative. (See Appendix 3 for list of PHC2C Advisory Group members.)

Special appreciation goes to the Ministry of Health of Zambia for its national leadership and demonstrating its foresight and innovation in understanding the potential for nurses and midwives to play a stronger leadership role in advancing universal health coverage and achieving Sustainable Development Goal (SDG) 3. Nurses have long stood at the center of primary health care; and, empowered and equipped, they can galvanize action, guide improvements, and contribute to district strategies that respond to community voices and patient needs.

# CONTENTS

# ACRONYMS

| | |
|---|---|
| CBV | Community Based Volunteer |
| CHA | Community Health Assistant |
| CHIP | Community Health Improvement Project |
| CHW | Community Health Worker (one type of community based volunteer) |
| CLMP | Certificate of Leadership and Management Practice |
| CPD | Continuing Professional Development |
| DALWHOCC | Dalhousie University WHO Collaborating Center for Health Workforce Planning and Research |
| DHMT | District Health Management Team |
| EHT | Environmental Health Technician |
| FH | Facility Head (nurse manager, head nurse, or 'in-charge') |
| GNC | General Nursing Council |
| HCC | Health Center Committee |
| HPCZ | Health Professionals Council of Zambia |
| ICN | International Council of Nurses |
| LFP | Learning for Performance |
| MAZ | Midwives Association of Zambia |
| MCH | Maternal Child Health |
| MOH | Ministry of Health |
| PHC2C | Primary Health Care to Communities |
| NHC | Neighborhood Health Committee |
| RHC | Rural Health Center |
| RHP | Rural Health Post |
| SDG | Sustainable Development Goal |
| SMAG | Safe Motherhood Action Group (one group of CBVs) |
| UHC | Universal Health Coverage |
| UNZA | University of Zambia |
| ZEN | Zambian Enrolled Nurse |
| ZUNO | Zambia Union of Nurses Organization |

# EXECUTIVE SUMMARY

Johnson & Johnson (J&J) joined with IntraHealth International, the University of Zambia (UNZA), and mPowering Frontline Health Workers (mPowering) to help the Ministry of Health (MOH) of Zambia to strengthen its community health system and lay the groundwork for on-going advancement toward universal health coverage (UHC) and the Sustainable Development Goals (SDGs). As part of the Primary Health Care to Communities[6] (PHC2C) initiative, these organizations worked closely with a technical advisory group from Zambia to develop and deliver the Certificate in Leadership and Management Practice (CLMP) in-service training to build leadership capacity among nurses and midwives to lead frontline teams[7] to deliver quality care.  The technical advisory group, including leadership from the General Nursing Council (GNC), the Health Professions Council of Zambia (HPCZ), the Zambian Union of Nurses Organization (ZUNO), the Midwives Association of Zambia (MAZ), and five district health management teams, ensured that the initiative aligned with and advanced existing community health strategies and was led by Zambian workforce leaders within Zambian systems frameworks.

Informed by a formative assessment and guided by its recommendations, the training designers developed the CLMP in response to the needs expressed by members of frontline teams and community members in rural communities across Zambia. The formative assessment confirmed that strong leadership capacities are needed to build collaboration and cooperation among the widely diverse frontline team members,[8] and to develop their capacity to monitor and improve the quality of services they provide and to be accountable to each other for measurable results.

The purpose of the CLMP initiative was to develop and test the in-service training to see if the training content and delivery approach developed leadership and management competencies in head nurses and if those strengthened competencies would contribute to improved primary health care services. The vision for the initiative is that Zambia will scale up and institutionalize this training and that the MOH and stakeholders will recognize the critical role of nurses in leading quality care at the community level and thus advancing UHC and the achievement of SDG3.

The training was evaluated through a mixed method assessment that included a presentation of case examples where nurses in charge had applied new knowledge and skills, a final community health improvement project (CHIP) presented by each facility head to demonstrate application of those skills, and a retrospective qualitative assessment to understand if staff, volunteers, and community members from the participating facilities saw an improved management style in the nurses in charge and/or a better functioning frontline team. Respondents in the assessment were also asked if they had seen improvement in the quality and/or accessibility of services.

The training was completed and tested with 20 nurses in charge of rural health facilities (rural health posts and rural health centers) across five districts in two provinces. The assessment of the training showed that

---

[6] PHC2C is an innovative approach to achieve excellence in primary health care for rural populations toward universal health coverage. This highly collaborative program supports government health priorities and focuses on the power of nurses as leaders in delivering change.

[7] The frontline team at community level has evolved over time to include not only the clinical staff of the facility, but also a new professionalized cadre of community health assistants, as well as community-based volunteers and members of the communities themselves, through neighborhood health committees.

[8] The formative assessment defined the frontline team as trained staff from the rural health facility (clinical officers, nurses, nurse-midwives, environmental health technicians, community health assistants, community-based volunteers having a wide range of training and capacity, and community members themselves, represented through neighborhood health committees and health center committees).

the nurse managers did adapt and strengthen leadership and management competencies and were able to apply those competencies to guide their teams and improve service quality. The CHIPs demonstrated that the nurses were able to build collaboration among the different cadres and provider groups in the frontline team to identify gaps, prioritize needs, plan and implement strategies to address needs, and improve the quality of care delivered to the community. Through the CHIPs, completed by all but two in the program, the nurses demonstrated their leadership, as they were able to articulate their improvement goals, their SMART[9] objectives for attaining those goals, and the indicators they defined to monitor and demonstrate improvement. As part of the presentation, the 18 head nurses who completed the course were able to explain the specific roles and responsibilities of their frontline team members in contributing to the improvement plan, and describe what leadership and management competencies, gained from the training, they applied to the process, and how those competencies contributed to the CHIP achievement.  The CHIPS demonstrated a recognition and individual ownership among the head nurses of their role as influencers within their team and across their community. The two participants that did not complete their CHIPs were transferred to a different district in the third quarter of their program.

Subsequent to the final CHIP presentations, data were collected from the staff, volunteers, and community members of the participating facilities to learn whether or not they recognized changes in the nurses' management style, increased collaboration among the frontline team members, and improvements in the quality of services delivered. The interviews showed that communities did recognize improvements and were able to point to specific gaps that had been filled.

Overall, the UNZA educators, the Zambian stakeholder representatives from the technical and advisory groups, and the MOH were pleased with the training and the results that it brought. The MOH expressed particular recognition and appreciation of the skills exhibited by the head nurses during their presentations and noted that their capacity to explain quality improvement and the processes used surpassed expectations and preconceived limitations that MOH leadership had formed about nurses managing rural facilities. The Dean of the School of Nursing noted after the closing ceremony and CHIP presentation that, "The students had exhibited great knowledge and confidence in their presentations. I could not believe that many of them, the nurses in charge of the posts, were even enrolled nurses. Their presentations demonstrate that they are going to make good managers."  The representative from ZUNO stated that "the presentations of the nurses here today (presenting their final community health improvement projects) demonstrated the potential of their leadership to influence and advance primary health care in Zambian communities. When Zambia invests in their leadership capacity and recognizes the significance of their role in leading quality services in such demanding environments, we will be able to see greater progress toward the SDGs."

# INTRODUCTION

Informed by the findings and recommendations of a 2015 formative assessment, Zambia's Ministry of Health (MOH) requested that IntraHealth International, the University of Zambia (UNZA), Johnson & Johnson (J&J), and mPowering Frontline Health Workers partner, with support from key Zambian leaders in workforce development, to design and deliver a program to strengthen the leadership capacity of nurses in charge of rural health facilities. Most rural facilities in Zambia are headed by nurses or nurse-midwives, referred to in this report as "head nurses" or "facility heads." The training was designed to enable these nurses to better

---

[9] Specific, Measurable, Achievable, Results-Focused, and Time-Bound

lead frontline teams to deliver quality care and advance universal health coverage (UHC). This report presents the experience of delivering this initial training approach to address Zambia's need for greater leadership and management capacity at primary health care facilities in rural, low-resourced areas.

## BACKGROUND

In January 2015, J&J provided funding to IntraHealth to partner with UNZA and mPowering to conduct a formative assessment of the community health system in Zambia. IntraHealth, UNZA, and mPowering invested significant in-kind contributions as well. Members of a Global Advisory Board included IntraHealth, UNZA, J&J, mPowering, the International Council of Nurses (ICN), the Dalhousie University WHO Collaborating Center for Health Workforce Planning and Research (DalWHOCC), and the Muhimbili University of Health and Allied Services in Tanzania. This group came together not only to support community health strengthening in Zambia, but also to identify lessons and solutions that apply to low-resourced, rural settings in other countries facing the same challenges. Defining their shared vision as Primary Health Care to Communities (PHC2C), this collaboration aimed in particular to highlight and strengthen the critical role of nurses and midwives in the achievement of UHC and the SDGs.

## CONTEXT

Zambia's national staffing establishment designates that a rural health center should be led by a clinical officer or a registered nurse-midwife and that a rural health post should be led by a Zambian enrolled nurse (ZEN). However, some national policies do not align with the staffing establishment, and Zambia's health worker shortage and recent hiring freeze have forced District Health Management Teams (DHMTs) to place available staff at the head of rural health centers and health posts regardless of the establishment or policy. Therefore, remote facilities may be managed by certified midwives (sometimes referred to as direct-entry midwives), ZENs, enrolled midwives (which are enrolled nurses with an added midwifery certification), or registered nurses.

Rural health centers are seldom managed by a physician or clinical officer. A 2010 study showed that 45% of rural health facilities in Zambia had neither a doctor nor a clinical officer on staff, while only 15% were without a nurse.[10] The assessment conducted by IntraHealth and partners found that only one out of a purposive sampling of seven rural health centers representative of remote environments was staffed with a clinical officer, and only one was staffed with a registered nurse-midwife.

Findings[11] from the formative assessment underscore the need for nurses and midwives leading frontline teams in rural environments to have greater leadership and management capacities. Evidence has consistently shown that improved performance of provider teams and increased motivation and retention of individual team members is directly tied to the leadership and management capacity of nurses leading those teams.[12]

---

[10] Fullman, N., F. Masiye, and C. Mphuka. 2014. Health service provision in Zambia: Assessing facility capacity, costs of care, and patient perspectives. Seattle, WA: Institute for Health Metrics and Evaluation (IHME) at University of Washington and University of Zambia (UNZA).
[11] See attached report on preliminary findings of the formative assessment.
[12] Clegg, Angie. Leadership: improving the quality of patient care. *Nursing Standard,* 2000, 14(30):43-45.

The frontline team at Zambia's community level is made up of health professionals at the facilities, including clinical officers, when they are available, nurses, nurse-midwives, environmental health technicians (EHTs), community health assistants (CHAs), as well as community-based volunteers (CBVs) and community members represented by neighborhood health committees (NHCs) and in health center committees (HCCs). These different groups of health workers and community members are typically trained separately, and the community members are more often than not trained by different development or implementing organizations. The MOH has established mechanisms for harmonizing these various training organizations toward coordinated ends, but the management of that coordination remains weak as partners are accountable first to their organizations and funders. Within the professional team, training has also been implemented by cadre rather than through cross-cadre training. This siloed approach to capacity building challenges efforts to manage the varied members of the frontline team toward a shared vision and a clear understanding of roles and responsibilities that each group has to the other and to the whole.

Facility heads interviewed during the formative assessment, as well as respondents from DHMTs, consistently stated that there is need for training, mentorship, and ongoing guidance to support facility managers to effectively lead their teams, respond to the community, and deliver quality care. Members of NHCs, offering the client perspective, showed again and again through their focus group responses that community satisfaction with the quality of care received was linked to the head nurse's outreach and engagement with the community and demonstrated ability to build relationships with village heads, volunteers, and community leaders. When the facility heads did not have these skills, respondents voiced less satisfaction and in some cases dissatisfaction with their health services. The findings of the formative assessment also indicated clearly that capacity building needs to be team-based, integrating both the frontline team and DHMTs, with respondents noting a desire for clarification of roles and responsibilities of all actors in the community health system.

Given these findings, the MOH and national stakeholders agreed that the highest priority recommendation for improving the community health system was to strengthen the leadership and management capacity of those nurses and midwives who are managing rural health facilities. Further, this investment was seen as important to bring the greatest opportunity for impact in the short-term and to be most sustainable to maintain and scale.

## PURPOSE, OBJECTIVES, AND VISION

The *Purpose* of this initiative was to develop and test an in-service training approach that builds the capacity of head nurses leading facilities to guide their frontline teams to deliver quality care and advance universal health coverage and SDG 3.

The *Objectives* of the training, informed by findings and recommendations from the formative assessment, were to:

1. Enable the nurses to better lead their frontline teams to collaborate in improving quality of care
2. Increase or improve nurses' leadership and management competencies
3. Improve the nurses' ability and confidence in using technologies
4. Contribute to the advancement of UHC.

The *Vision* for the training was that it would be effective enough to:

1. Be scaled and institutionalized as part of the educational offering for nurses leading frontline teams in low-resourced areas.
2. Harmonize with other trainings for community health system strengthening to leverage resources and maximize impact
3. Raise the visibility of the important role of nurses in leading frontline teams and advancing UHC, thus opening doors for greater recognition and providing opportunities for academic and professional advancement.

# TRAINING DESIGN

The training was designed with careful thought to relevant and effective content conveyed through an interactive and participatory delivery that would build sustainable practices that would engage the entire frontline team in the improvement of services and delivery of quality care.

### Content

The purpose of the training content is to build capacity among head nurses of rural facilities to lead frontline teams to deliver quality care in their communities. The specific content of the training was developed by the three key PHC2C partners, IntraHealth, UNZA, and mPowering, with support from J&J. The technical advisory group members reviewed and agreed on the results of the initial formative assessment and the necessary leadership and management competencies that were identified by the key informants and focus groups. See Figure 1 for the defined competencies identified through the formative assessment. Throughout the planning, design, and delivery of the training, the lead partners continually sought counsel and input from their technical advisory group colleagues.

From the list of core competencies defined, four competency sets were selected, and from those competency sets, four training modules developed:

- Leadership and Management
- Evidence-Based Practice
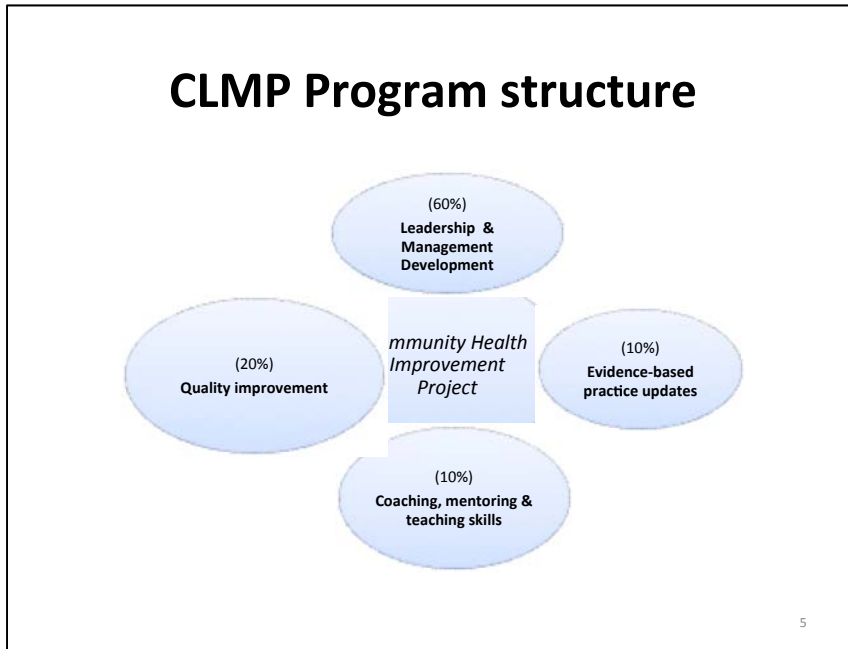- Quality Improvement
- Coaching, Mentoring, and Teaching

Because "clinical expertise and ability" was a recurring competency highlighted as important through the research, the Evidence-Based Practice module was designed to address current clinical priorities in Zambia and to be updated annually as needed. The module is to be used to impart latest findings, teach new protocols, and enforce high-impact practices prioritized by the MOH.

**Figure 1. Competencies Defined**

# Competencies Identified
## How does the 'in-charge' lead quality care delivery?

| Basic Activities | Effective Practices | Recommended Competencies |
|---|---|---|
| "What tasks do you carry out and what are you responsible for?" | "Which in-charge practices are important to improve the quality of care?" | "What competencies are needed to better prepare the in-charge to effectively lead their team?" |
| Assess, screen, and diagnose | Prioritize and delegate tasks | Deliver respectful care |
| Manage referrals | Build cooperative teams | Respond to community needs |
| Prescribe and dispense medicines | Train, mentor, and supervise staff | Manage facility repairs |
| Oversee operations, budgets, and supply chain | Build community relationships | Teach, motivate, retain, mentor |
| Oversee staff and volunteers | Engage NHC in decisions | Ensure delivery of quality care |
| Document and report | Motivate and integrate volunteers | Leverage position for influence |
| Interface with NHCs and CBVs | Resolve conflicts | Monitor performance |
| Directly report to DHMT | Remain clinically up-to-date | M&E: data management and application |
| Responsive 24 hours a day | | Use tech for info management, training, M&E |
| | | Negotiate with community |
| | | Provide services |
| | | Manage medicines |
| | | Independent decision making |
| | | Delegation and assignment of tasks |

The four modules were developed together around a final community health improvement project (CHIP), through which the facility heads applied their learning and engaged their frontline team members to improve care and services and achieve measurable results.

Zambia's GNC agreed to the contents of the training as a certification for leadership and management practice (CLMP). Attendance at all three workshops and a presentation of the final CHIP earn the student a Certificate of Completion. Additional completion of all workbook exercises and active participation in group activities earns the student a Certificate of Merit, which fulfills all 25 continuing education units required for re-licensure.

**CLMP Program structure**

(60%)
Leadership & Management Development

(20%) Quality improvement

mmunity Health Improvement Project

(10%) Evidence-based practice updates

(10%) Coaching, mentoring & teaching skills

5

## Figure 2. Certificate of Leadership Management and Practice

### Delivery Design

The training was designed with three criteria in mind: to minimize the time that head nurses and midwives spent away from their facilities; to adapt and use IntraHealth's Learning for Performance (LFP) approach, which integrates learning into the daily activities of the health worker; and to incorporate technologies that would both facilitate distance learning and improve nurses' familiarity and confidence with technologies.

*Decreased time away from facilities*
The training was developed as a one-year activity to be delivered primarily in the workplace with only four face-to-face meetings outside of the facilities. These meetings were held quarterly, each lasting three to four days, with the last meeting scheduled for presentation of the final CHIP. Between the quarterly meetings or workshops, participants were assigned daily readings in small manageable amounts, scheduled on a weekly calendar, enabling them to continue their learning over time without adding unnecessary responsibilities to the heavy day-to-day duties of the nurses.

*Learning for Performance*
Rather than adding new activities or training topics to existing practices of the facility environment, IntraHealth's LFP approach connects the learning process with specific job responsibilities and incorporates the needed competencies. Within the existing workflow this approach addresses gaps and improves performance by developing competencies on the job to better perform the work assigned. Designed using LFP, the training workbook readings provide theory, evidence, and examples of the targeted CLMP competencies. Then the exercises that accompany the readings provide opportunities to develop and reinforce those competencies by incorporating their application into existing staff meetings, community interactions, documentation and report writing, and service delivery.
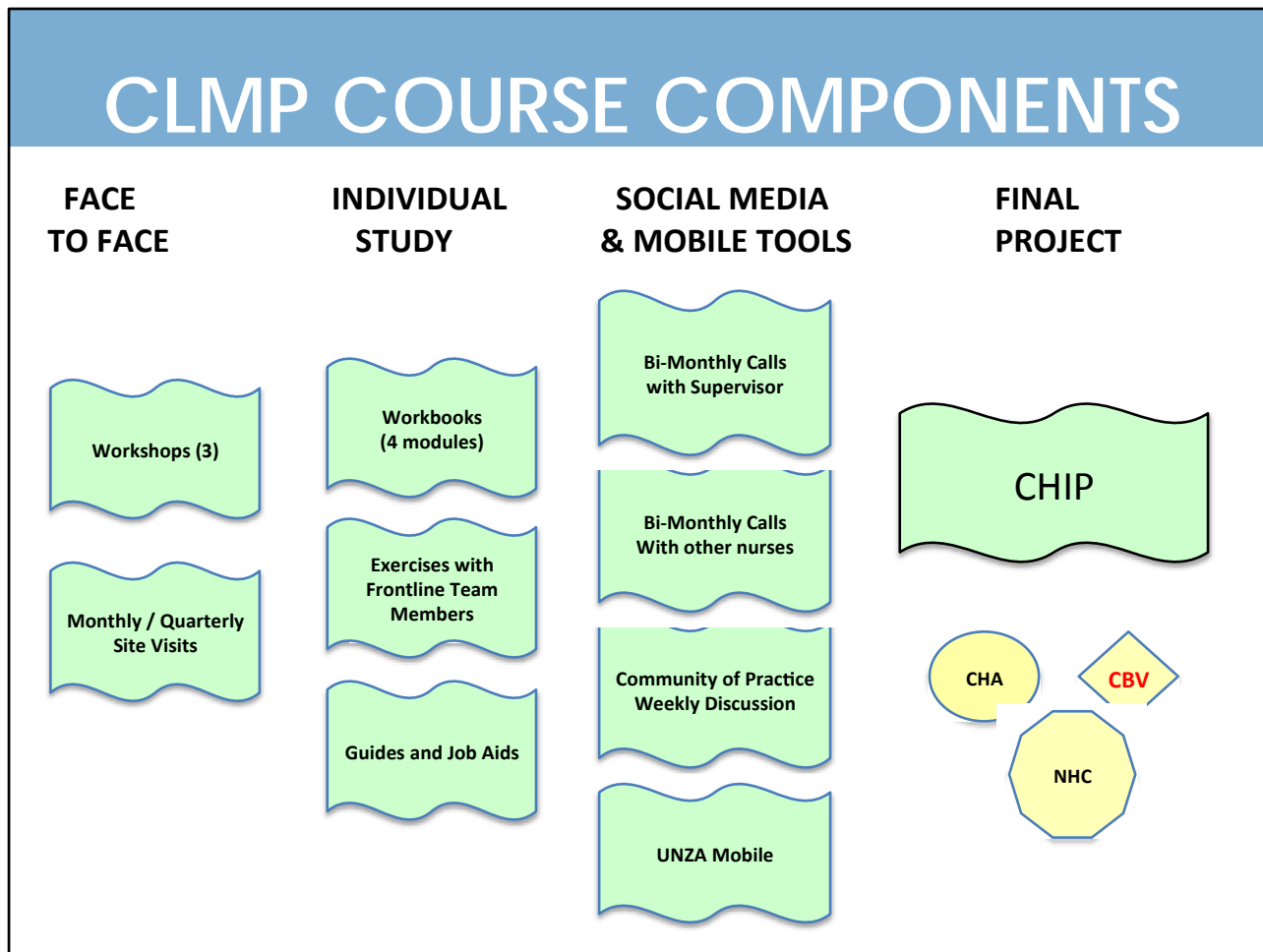
*Technologies*
IntraHealth and partners created supplemental training audio and visual content in a mobile phone application to incorporate content delivery mechanisms that would appeal to all learners. Training designers also believed that learning new ways to use their mobile technologies would both motivate and engage the training participants. The UNZA Mobile application (or "app") provides videos, publication excerpts, audio recordings, and self-guided review quizzes to complement the workbook readings and assignments. The mobile app, designed for smart phones, was uploaded onto the participants' mobile phones during the workshop. For participants using feature phones, the app content was uploaded onto SD Cards and then put into their feature phones. The UNZA Mobile app was developed by mPowering and Digital Campus on the Oppia Mobile Platform. To ensure ownership and scalability of the app by Zambian partners, IntraHealth and

mPowering trained UNZA educators and facilitators to work with Oppia Mobile to input and update content onto the UNZA Mobile app.

In addition to the UNZA Mobile app, PHC2C training designers also incorporated social media activities into the training. Building on existing practices to facilitate uptake and sustainability, training designers leveraged the participants' familiarity with and use of the *WhatsApp* application for social communication to incorporate it into the training design to facilitate professional collaboration. Trainers and facilitators helped participants to create a community of practice on *WhatsApp* and incorporate texting through that community and calling through the *WhatsApp* call function as part of the training activities. Training assignments required participants to alternatively call another nurse in the program or their supervisor each week. In addition, the workbook assignments required them to respond and comment to training questions posted by their nurse supervisors each week on the *WhatsApp* Community of Practice. Weekly communication among facility heads and between the facility heads and their supervisors established a habit of peer-to-peer consultation and supportive supervision practices with district managers. These communication practices, as intended, developed a support system over time that continued to provide professional support and diminish the isolation that health workers in remote and rural areas reported feeling in initial informant interviews of the formative assessment.

Figure 3 illustrates the components of the training design.

**Figure 3. CLMP Course Components**



**CLMP COURSE COMPONENTS**

| FACE TO FACE | INDIVIDUAL STUDY | SOCIAL MEDIA & MOBILE TOOLS | FINAL PROJECT |
|---|---|---|---|
| Workshops (3) | Workbooks (4 modules) | Bi-Monthly Calls with Supervisor | CHIP |
| Monthly / Quarterly Site Visits | Exercises with Frontline Team Members | Bi-Monthly Calls With other nurses | CHA  CBV  NHC |
| | Guides and Job Aids | Community of Practice Weekly Discussion | |
| | | UNZA Mobile | |

*Supervisor support*

The training design incorporated the participation of the nurse supervisors in order to reinforce existing supervisory mechanisms and to integrate the program into existing mechanisms for performance evaluations, supervisory activities, and accountability. The nurse supervisors were responsible to check in twice monthly with the participating facility heads in their district and review their workbooks each month. The UNZA project lead and professor at the School of Nursing, Dr. Marjorie Makukula, provided guidance and supervision to the district nurse managers, also with bi-monthly calls and quarterly visits to the field. Just as the head nurse training participants, the supervisors also earned the full 25 continuing education credits required for annual re-licensure through their contribution to the course.

*Student evaluation*

Students were evaluated on their attendance at the three workshop meetings. They were also evaluated on the completion of their workbooks, contribution to the weekly *WhatsApp* communications through the community of practice, and completion and presentation of their CHIPs.

**Innovations**

The PHC2C training incorporated several innovations that are noteworthy.  Innovations are not only the development of new technologies or approaches but also the application of existing approaches or technologies in new ways that create different results. PHC2C used four specific innovations in the development and delivery of this training.

*Self-guided learning within the facility*
Distance learning is not new to Zambia, and is used to broaden access to education and training for community level health workers. Correspondence courses allow providers to collect their coursework and assignments and submit completed exercises and written tests through the mail. This approach provides information and limited instruction, but no opportunity for in-time application of the learning or sustainable peer-to-peer discussion and problem-solving. Workshops are another form of training, but take health workers away from their facilities for long periods of time, leaving skeleton staff to manage the heavy workload. Another model of continuing professional development (CPD) training is the combination of several intermittent workshops spaced between time to apply the learning in the workplace around specific assignments.

Until the PHC2C training, other Zambian programs had not provided for self-learning and application of skills and knowledge through in-facility training over an extended period of time, nor did they engage other health workers and volunteers in the process to allow cross-cadre training. Within existing practices of the facility and catchment area primary care activities, the PHC2C training guided the head nurse to develop their own competencies and build competencies within their team for improving the quality of care.

*Participation of district nurse managers in training implementation*
The integration of district nurse managers into the program as course mentors, responsible for providing supportive supervision and guidance throughout the course, facilitated course delivery and oversight. Further, the nurse managers' participation resulted in unplanned improvement in the supervision practices of the five participating nurse managers.  In an unstructured discussion with PHC2C advisors during the fourth and last meeting of the program, all five nurse managers agreed that they had gained two important benefits from their participation. The first was that they built a relationship with their facility heads, many of whom they had not known prior to the training. The second benefit was an improvement in the nurse managers' own supervision practices. All five supervisors reported that they had gained confidence as supervisors, and had developed a practice of supporting and guiding their facility heads, rather than only assessing their performance. In addition, four of the five nurse managers had established a specific monthly meeting time at their district offices, so that when nurses came to submit their monthly reports, they had a designated time to convene with the other facility heads in the course and the nurse manager to discuss challenges and exchange lessons learned. During this time, the district nurse managers reviewed the workbook assignments and helped the facility heads address problem areas. The fifth nurse manager agreed that this approach would be useful and he planned to instigate a similar monthly schedule. By using existing system mechanisms, such as the district supervisory structure and reporting requirements, the training program leveraged available resources for course implementation and oversight. Further, this approach both reinforced and strengthened the capacity of Zambia's community health system.

*Employing existing communication technologies*
Until the PHC2C training, Zambian training programs did not include regular and consistent peer-to-peer conversations and technologies to reinforce learning.  Integrating interactive communication practices

through the commonly used *WhatsApp* mobile application, PHC2C training designers employed an innovative approach to develop support networks among the health workers as a learning reinforcement and sustainability mechanism to continue their capacity for self-management and accountability long after the training has been completed.

*The UNZA Mobile app*
The fourth innovation, the UNZA Mobile, is a new innovation, developed specifically for the PHC2C blended learning program, and adaptable for other contexts and training content.

# EVALUATION METHODOLOGY

A mixed method approach was used to evaluate the results of the training with respect to objectives 1, 2, 3, and 4.

## CHIPs

The Community Health Improvement Projects, or CHIPs, provided the primary means of evaluating the training results with regard to Objective 1 ("Enable the nurses to better lead their frontline teams to collaborate in improving quality of care"). During the first quarter of the program, the nurses began working with their frontline teams to identify a service gap or need and select a priority area that they wanted to improve. Guided by the training exercises, the nurses applied their learning to develop and hone competencies (including planning, managing, influencing, resolving conflicts, reaching consensus, coaching, teaching, mentoring, effective use of resources, documenting, team building) that enabled them to lead their frontline teams to complete their CHIPs. Through the CHIP presentations, the results of the training were demonstrated in the head nurse's ability to describe the improvement process, identify the competencies they used and how they applied them, clarify the roles of the various frontline team members that contributed, and show a measurable improvement toward meeting the need or closing the gap (See Appendix 4 for individual CHIP presentations.)

## Case Examples

In addition to the CHIPs, a two-part (Part A and Part B) retrospective assessment was used to determine achievement of objectives 2, 3, and 4. Part A consisted of case examples presented and discussed at the end of the third quarter workshop. At the end of the third workshop, nine months into the training, each nurse presented the progress to date of their CHIP activities, and discussed additional areas of service improvement being pursued. Presentations were observed and clarifying questions posed regarding competencies gained, used, and demonstrated. Responses were recorded and described in a summary, 'Rural health facility heads apply leadership and management competencies to improve services.'[13]

## Qualitative Assessment

A retrospective qualitative assessment was conducted through focus groups and key informant interviews to learn if staff, volunteers, and community members had seen changes in the management practices of the nurse, increased teamwork among the staff and volunteers, and improved services delivered to clients. The qualitative assessment was carried out at 18 of the 20 facility sites because during the last quarter of the

---

[13] See Appendix 6 to see brief on qualitative results in improved management.

program, two of the nurses were transferred to another facility, so those two catchment areas were not assessed. See Table 1 for the List of Assessment Interviews and Focus Groups.

**Table 1. List of Assessment Interviews and Focus Groups**

| Health Facility | NHC Focus Groups | CBV Focus Groups | Key Informant Interviews with CHAs | Key Informant Interviews with other Facility Staff |
|---|---|---|---|---|
| Kabweza RHP | 1 | 1 | 1 | |
| Chikoka RHP | 1 | 1 | 1 | |
| Kafue Mission RHC | 1 | 1 | | 1 |
| Mugurameno RHP | 1 | 1 | 2 | |
| Chongwe RHC | 1 | 1 | | 5 |
| Kapeta RHC | 1 | 1 | | |
| Shiyala RHP | 1 | 1 | 1 | |
| Mphango RHC | 1 | 1 | | 2 |
| Rufunsa RHC | 1 | 1 | | 2 |
| Nyamanongo RHP | 1 | 1 | 2 | |
| Chisamba RHC | 1 | 1 | | 1 |
| Mwapula RHP* | | 1 | 1 | |
| Momboshi RHP | 1 | 1 | 1 | |
| Mulungushi Agro RHC | 1 | 1 | | 1 |
| Mwajuni RHC | 1 | 1 | | 1 |
| Shimukuni RHC | 1 | 1 | | 1 |
| Chamakubi RHC | 1 | 1 | 1 | |
| Kabangelala RHP | 1 | 1 | | 1 |
| | | | | |
| TOTAL | 17 | 18 | 10 | 15 |
| *The NHC of the Mwapula RHP was made completely of CBVs so there was only one focus group conducted.* | | | | |

# ASSESSMENT LIMITATIONS

There were three areas of assessment limitations.

*Small cohort size*
First, although the pilot training was intended to be small to test the training content and delivery design, 20 facility heads does not provide a statistical sample or strong evidence to enable valid assumptions on ultimate impact and expected results from a scaled training. The evidence gathered certainly demonstrates the value of the training content and design, and shows a change in the practices of the frontline team and the experiences of the community that can be considered to have a contributory relationship with the training. However, a wider number of students will need to complete the training to gain a truer understanding of how leadership and management competencies can enable community level nurses to improve quality care and contribute toward UHC.

*Multiple factors*
Second, the nurses are not capacitated in a vacuum. While receiving this leadership and management training, head nurses are attending various workshops that improve their clinical skills and provide them with updated practices and improved frameworks for strengthening systems processes and delivery of care. Close observation, probing questions, and objective analysis are needed to tease out which improvements were borne of the CLMP, which evolved from a combination of the CLMP activities with other training activities, and which service or systems improvements were completely unrelated to the CLMP initiative. PHC2C advisors were vigilant in their assessments. The CHIPs were the most reliable demonstration of competency development and application toward improvements.  The case examples were also reliable as PHC2C trainers discussed the examples with the nurses to confirm that the examples were directly related to the CLMP training. The qualitative interviews were the most susceptible to misappropriation, so the PHC2C team identified only those responses that could most clearly be linked to the CLMP training.

*Retrospective assessment*
Initially a mixed method evaluation was designed, based on a Likert-scale score enhanced by qualitative questions. The initial design included a baseline and end-line analysis of data collected through interviews with key informants and focus group discussions. However, upon analysis of the baseline data, irregularities were identified both in data collection and a lack of transparent responses, which together skewed the results to render them unusable. For this reason, the curricula design and research team were forced to abandon the initial research methodology, and design a retrospective assessment.

*CHIP results*
All CHIPS, except the two belonging to transfer students, showed positive results and exaggerated results. Many of the students were applying QI activities with frontline team members for the first time, so they began to understand how multiple factors can show positive or negative results that may be exaggerated. Course facilitators discussed the limitations of their initial results and advised their continued monitoring of the data and expectation for changes in the result over time until monitoring and data sharing had become more stabilized, and the roles of the frontline team been strengthened over time.

*Transfers*
Two of the students were transferred. Despite efforts of the curriculum design and research team, supported

by the DHMTs, the transfer of the CHIP from one facility head to the replacement proved too difficult to achieve in the middle of the program.  There was not overlap of the two out-going head nurses to orient the in-coming nurses on the project, and the leadership vacuum in the end was too difficult for the other frontline team members to overcome. These two communities were not interviewed in the end, as part of the retrospective assessment, and it would be interesting to investigate how the community might have taken the leadership on themselves to complete the CHIP. In these cases, roles of different members of the frontline team in the improvement project had been established by the out-going head nurses before their transfers, but as none of those roles allowed for one group or individual to step in and take over the coordination of the rest, the momentum was lost in both situations. This lost momentum, in the absence of the head nurse, does underscore the critical role of that the facility head plays, and the importance of their capacity to bring team members together to collaborate toward achieving improvement goals.

## RESULTS

**The purpose of the initiative was achieved**

A training program[14] was developed and tested with an initial cohort of 20 head nurses/nurse-midwives leading rural health facilities and rural health posts in Zambia's Central and Southern provinces (see Appendix 1 for the training program participants). With a mixed method assessment approach, the evidence shows that the training provides nurses with leadership and management capacities, as defined and agreed upon through the formative assessment report recommendations. Further, through the CHIPs, the individual case examples, and the post-training data collected from key informant interviews and focus group discussions, evidence shows that the strengthened leadership and management competencies contributed to the head nurses' ability to guide their frontline teams in improving the quality care delivered, thus advancing universal health coverage and SDG 3.

**The objectives of the training were initially achieved**

*Objective 1:  Increase or improve nurses' leadership and management competencies*
During the third quarter workshop, head nurses were asked to provide examples of where they were applying newly gained competencies from their training and present those examples to the group. The purpose of this exercise was to act as a quality control mechanism, allowing the curriculum design and research team to assess the progress of the training and its effectiveness. This exercise was also intended as part of the training, giving students experience in presenting their progress and re-enforcing their ownership of their role as leaders through public accountability and articulation of their effectiveness in that role. Observations of the curriculum design and research team, coupled with the content of the informal presentations and the responses to unstructured interviews demonstrated that the nurses had successfully gained and strengthened leadership and management competencies and were able to apply them toward achieving health outcome goals and improvement objectives. (See Appendix 2 for case example detail of how head nurses demonstrated their improved competencies in leadership and management.)

*Objective 2:  Enable the nurses to better lead their frontline teams to collaborate in improving quality of care*

---

[14] See Appendix 7 for summary brief describing training program: Leadership and Management Practices for Nurses and Midwives in Rural Health Facilities

Eighteen of 20 CHIPs were presented during the fourth and final meeting of the course. Two of the CHIPs were not presented because two of the nurses had been transferred to another district and facility during the last quarter of their training, and were not available to complete their CHIP or present the results. All 18 CHIPs presented showed measurable improvements over the limited time (eight months) during which the project was monitored. Such exceptional results are not realistic in service improvement practices, and the head nurses were able to understand and explain the limitations of their results and the factors that influenced such positive outcomes, including improved documentation, focused effort over a short time, and seasonal shifts that always bring changes in the preponderance of disease presentation. The nurses were able to explain in their presentations that over an eight-month period, data can be affected by multiple factors, and that even when improvements are achieved, they will fluctuate over time and should be expected to maintain an improved level over three quarters to demonstrate real improvement.

The CHIPs demonstrated that the nurses were able to build collaboration among the different cadres and provider groups in the frontline team to identify gaps, prioritize needs, plan and implement strategies to address needs, and improve the quality of care delivered to the community. Through the CHIPs the head nurses demonstrated their leadership as they were able to articulate their improvement goals, their SMART objectives for attaining those goals, and the indicators they defined to monitor and demonstrate improvement. As part of the presentation, the 18 facility heads who completed the course were able to explain the specific roles and responsibilities of their frontline team members in contributing to the improvement plan, and describe what leadership and management competencies, gained from the training they applied to the process, and how those competencies contributed to the CHIP achievement. (See Appendix 3 CHIPs Summary Results and Appendix 4 for individual CHIP presentations.)

*Objective 3: Improve the nurses' ability and confidence in using technologies*
In December 2016, several of the nurses participating in the PHC2C training were invited to join PHC2C trainers in an interactive session at the Global Digital Health Forum to present their experience using technologies in their blended learning program. The head nurses, along with the PHC2C trainers, demonstrated how the technologies supported their training by presenting exercises from their workbook to conference attendees, in which they had to refer to the UNZA Mobile app to answer the assigned questions.

They continued the demonstration by simulating both a *WhatsApp* community of practice discussion and a peer-to-peer call, also using the *WhatsApp* call function. Conference attendees were impressed that they were able to discuss the lesson with the training participants in Zambia, and the Zambian nurses noted that they had gained a number of skills in using technologies.

Less than half of the participants in the training program owned a smart phone when they began the program. In line with their commitment to leverage existing resources, the training designers asked the nurses in the program to use their own mobile phones, purchasing them airtime to use for their calls and community of practice activities. As participants saw their colleagues using the phones and were trained on how to download the application, organize files within the application, and access different types of files, most decided to invest in a smart phone for themselves. By the third meeting, 90% of the participants were using a smart phone.

The training participants also gained experience and confidence using computer programs. Only two of the participants were comfortable using PowerPoint to create presentations. However, the CHIP project required that they develop a PowerPoint presentation and use it to demonstrate their final project results. During the workshop sessions of the training, the students learned to use PowerPoint to create a presentation and show

their slides as part of their final CHIP presentation. Nurses also gained skills using Microsoft Word documents, building tables, and creating images to paste into their PowerPoints. As with the smart phones, only a small percentage of the students brought computers to their first meeting, and most of the students (90%) needed to ask for assistance from the few students (10%) who were familiar with how to use Word and PowerPoint tools. By the third face-to-face meeting, only 10% were still unable to use the computer programs and functions on their own. The rest of the students, though at varying speed, were able to maneuver through PowerPoint slides and apply short cuts to update tables and graphs.

All of the students were comfortable using mobile phones to call and text, but only a few were using their mobile phones to connect with colleagues for support and consultation. Initially, the nurses were not clear on how they would use the *WhatsApp* community of practice to discuss weekly questions posed by their district managers. However, soon the nurses were using the community of practice not only to fulfill their course requirement and to socialize with each other, but as a network of support that would be critical to their work—and even help save lives.  More than once, one of the nurses faced a difficult health care challenge while alone in their facility. Without any other support available, the nurse in distress reached out to the community of practice and found technical guidance and moral support to steer them through the necessary steps in responding to the critical health need. One of these times, a woman arrived at a facility in the middle of the night with obstructed labor, and the enrolled nurse was the only health provider immediately available. The second event occurred when a man was brought to a facility unconscious and there was no evidence as to the cause or the needed response. In both cases the patient was saved due to the network of colleagues that were ready to provide their expertise through the community of practice.[15]

Students demonstrated their increased competence and confidence using technologies, and they also voiced their satisfaction in being able to access new tools and different ways to utilize mobile phones and computers. Despite initial difficulties accessing their UNZA mobile files, the students were particularly pleased with being able to supplement their workbooks and assignment activities with video examples and familiar voices of their instructors in audio lessons. Further, even without access to the Internet, they were able to access relevant excerpts from recent publications, which training designers had included in the UNZA Mobile app content.

*Objective 4:  Contribute to the advancement of UHC*
The retrospective qualitative assessment conducted by the project revealed that all communities where nurses had completed the training saw specific improvements in the quality and accessibility of services, two of the four characteristics of UHC as defined by WHO.[16]

1. ***Efficiency of service delivery*** is one of six domains of quality care, as described by the Institute of Medicine (IOM).[17] Delegation of tasks was one of the main learnings that the nurses claimed in describing the competencies they applied in their CHIPs.  Over and over again, nurses described how the training had empowered them to better work with the members of the team, inside and outside of their facility, to divide the work among everyone and to assign roles and responsibilities. As described by the nurses, this ability capacitated them to use time more wisely, see more clients, and achieve goals. Community members and facility staff echoed this improvement as a result of the training and

---

[15] www.intrahealth.org/vital/whatsapp-lifeline-nurses-and-midwives-remote-communities
[16] WHO, Universal health coverage (UHC): Fact sheet no. 395 (September 2014). Available at http://www.who.int/mediacentre/factsheets/fs395/en
[17] http://www.peerpt.com/performancequality-improvement/the-definition-of-healthcare-quality-and-the-institute-of-medicine/

described their own increased motivation and engagement with a clear role that had meaning in contributing to the health of their community.

"One thing that the nurse is doing differently here is that now she involves CBVs and other members of staff in helping. She is also including us in NHCs to help in our CHIP. And even now Headmen are actively being involved in health facility activities. Also she is involving the farmers and the teachers."
- Momboshi Rural Health Center, Focus Group, NHC members

2. **Timely services** are another of the IOM domains of quality care. Nurses described that their increased ability to shift tasks with clear roles for both volunteers and staff enabled the more efficiently delivered services and smoother running of the facility to increase the capacity of the facility to complete tasks and serve patients. Patients from Mwanjuni, Momboshi, and Chisamba facilities specifically noted shorter wait times and a more effectively run facility. This heightened effectiveness also increased users' confidence in the provider team, the head nurse, and the facility's ability to deliver patient-centered care.

3. **Accessibility**.  Shorter wait times, improved services and greater confidence of the community in the facility increase accessibility to quality services, thus contributing to UHC. Confidence of clients demonstrates patient-centered care, which not only translates into the care that the community member receives at the point of service but also in the inclusion and engagement of the community members in improving the quality of care. Volunteers and NHC members described a clear increase in their own collaboration and the nurses' increased outreach to the community, evidenced by the nurses' coming into the community physically and inviting community members to share their thoughts and participate in plans to improve services.

   Staff described that the head nurse was sharing with them coaching and mentoring techniques to use with clients and community members; and they reported that they felt that their using these techniques had built more trust and confidence in the community to come to them with problems. A CHA from the Kabweza Rural Health Post (RHP) reported that, "We teach and mentor now with the community-based volunteers and they can't just keep quiet anymore. If they see something wrong in the community they will still come to us and say, 'We don't know how you're going to handle this but there is such a case in our community.'"

   Community members described changes they had seen in the way that nurses and their staff treated patients. One member CBV from the Kafue Mission RHC described how the nurse explained to the volunteers that if they wanted to improve care, they needed to listen to the people that they were caring for. This nurse wanted to understand better why women were not coming to enroll in antenatal care when they knew that they were pregnant. This head nurse went into the community and sat with women to listen to their concerns. What she found was that some women were afraid to register with the clinic because the father was not their husband, and they thought that they would be required to name the father. The head nurse then instructed all of the CBVs to be sure and explain to all the community members that when they come to enroll in ANC, they do not have to be married or name the father. They can feel safe.

   Access improved through better treatment of community members as well. During the initial formative assessment, some clients complained that head nurses and staff shouted at patients,

treated them with disrespect and never listened to their problems. Later in the post-training retrospective assessment, community members noted specifically that they had seen improvements in the way that the head nurse and the other facility providers communicated with clients.

> "In the past nurses used to shout at the patients, but this time there is nothing; and the community appreciates that. The staff here has been told not to shout at the patients because they came to serve the community. And this improvement we saw it this year."- NHC member; Chisamba RHC

4. **Supportive supervision** is a well-known factor in ensuring that providers are motivated and accountable to deliver the highest quality of services, particularly important in low-resource settings.[18] As part of achieving the delegation of shifted tasks and the broader assignment of roles to the frontline team, the head nurses demonstrated greater capacity for teaching, coaching, and mentoring.

> The in-charge helps us, when we see that there is a serious problem, he comes and helps to teach us that if you see a pregnant woman like this, you have to do this and that."- Respondent from CBV Focus Group, Kabweza RHP

**The vision for the future and on-going development of this course and its results is already taking shape**

The School of Nursing, with support from the MOH, will build upon this training in two significant ways. First, the UNZA School of Nursing has already incorporated principals of the PHC2C training program into their pre-service curricula for both registered and enrolled nurses to improve the existing leadership and management curriculum so that it is responds to specific leadership needs for improved service delivery. Second, UNZA has collaborated with the MoH, the GNC, and district managers to adapt the course and offer the blended learning curricula across all districts of Zambia. The adaptation will engage the participation of precepts posted in provincial hospitals to supervise the facility heads and the district health managers to supervise the precepts. All elements of the scale have been approved, and the final approval of the Board of Education will be heard in the Fall of 2017.

In addition, as envisioned by the PHC2C partners and in line with the guiding principles of the PHC2C collaboration,[19] the CLMP incorporated elements of related efforts and training programs to strengthen the community system. At the urging of the MoH, and following their commitments to the Joint Commitment to Harmonized Partner Action,[20] PHC2C partners joined the Clinton Health Advocacy Initiative (CHAI) to link the CHAI supervisor training for community health assistant supervisors with the nurses' leadership and management training, eliminating redundancies and strengthening Zambia's ability to sustain on-going capacity building. Further, IntraHealth and UNZA continually collaborated with UNICEF, World Vision, and Ministry counterparts to align training of facility heads to match training of CBVs and NHC members. UNZA has incorporated these alignments in the adapted program for scale and plans to continue in the same collaborative practice.

---

[18] Rowe A., et al. "How can we achieve and maintain high-quality performance of health workers in low-resource settings?"Lancet 2005; 366: 1026–35 Published online August 9, 2005 DOI:10.1016/S0140-6736(05) 67028-6

[19] See appendix 8 for summary of the partnership exploring the nurses' role in community settings: 'Primary Health Care to Communities (PHC2C)

[20] http://www.who.int/workforcealliance/knowledge/resources/chw_outcomedocument01052014.pdf

An added positive outcome of this course is the higher visibility of nurses who lead teams at the community level and a greater understanding of their role as leaders in the advancement of UHC. The presentation of the final CHIPs was attended by representatives from the MOH (from national, provincial, and district levels), GNC, HPCZ, ZUNO, and UNZA, thus opening doors for greater recognition and providing opportunity for academic and professional advancement. Comments from the audience noted that the capacity of the registered and enrolled nurses heading some of the most remote and rural facilities had been underrated. One comment from a MOH representative who asked to remain anonymous stated, "I never imagined that an enrolled nurse could learn to lead a quality improvement project." Another comment from a colleague at the MOH noted, "The presentations were impressive. The old saying goes, 'You have not learned it until you can teach it.' Well, clearly this cohort of students has learned well." The ZUNO president noted that through this program, nurses had demonstrated that their capacity coordinate volunteers, monitor quality service delivery, and engage community in mutual accountability.  One ZUNO representative stated that the evidence will help them advocate for greater recognition and access to career and educational opportunities for nurses leading rural facilities.

Despite the small size of the initial cohort, the positive experience of the students, PHC2C training designers, and the district nurse mangers was significant and the training has had an impact in several areas. It is hoped that the momentum will continue and that Zambia will move to increase its support of nurses who lead frontline teams, recognizing their critical role in advancing UHC and SDG3.

## PROJECT ACTIVITIES AND DELIVERABLES

In the initial proposal, based on the recommendations of the formative assessment, seven deliverables were established. As the project developed its activities evolved to fit the realities on the ground and the priorities of the MOH. Most of the deliverables were achieved. Where the initial deliverable did not match the country priorities, an explanation is provided and the alternative activity and/or deliverable is presented.

1. **Develop and test an in-service training program that builds leadership and management capacity of nurses and midwives in charge of rural health facilities, with emphasis on managing teams of facility-based and community-based health workers, ensuring quality, coordinated care that meets the needs of communities served.**
   The in-service training, made up of four modules and accompanied by a mobile application, UNZA Mobile App and a community of practice linked through mobile communications, was developed and tested. The training was tested with 20 initial facility heads, and evaluated through case evidence, observations, community health improvement projects, and a retrospective qualitative assessment. Based on the results of this project, the training improves the leadership and management capacity of nurses and midwives in charge of rural facilities and community-based health workers. Further, based on the CHIPs results the training contributes to better coordination among team members in response to community needs and in the improvement of quality care.

2. **Incorporate cross-trainings that will bring together nurses and midwives with staff subordinates, volunteers, community members, and district managers so that all actors in the community health system are engaged, involved, and aligned, with improved capacity in their roles and responsibilities to the facility head and to each other.**

The training was developed to include the participation of community members, CBVs, and facility staff (including registered and enrolled nurses, nurse-midwives, EHTs, and CHAs. Exercises and activities within workbook assignments, required the nurse in charge to teach and coach the staff and community members on many of the leadership and management skills and practices learned in the workshop. Through the CHIPs the training results demonstrated that the community members and facility staff were also trained as part of their participation in the CHIPs.

3. **Develop a learning guide, made accessible in hard copy, online, or through mobile devices, that will accompany the training and serve as a reference for nurses and midwives to sustain their learning and continue to improve their practices.**
   The learning guide, including the four modules, a community assessment guide, a CHIP guide and presentation template, a facilitator's guide, and the UNZA Mobile App contents will be available on the IntraHealth International website as well as the ORB by mPowering website in Fall of 2017. Through the websites, trainers and educators will be able to download the training modules and Mobile App and adapt the content for use as paper or online resources.

4. **Facilitate access to training materials in Zambia and beyond, through existing global platforms such as the ORB by mPowering website.**
   When the training program is made available on the ORB website in the Fall of 2017, announcements of the CLMP resource will be disseminated through social media by mPowering Frontline Health Workers, IntraHealth, Frontline Health Workers Coalition, CORE Group, CHW Central, and others.

5. **Create a shared vision for strengthening the community health workforce in Zambia and develop a "roadmap" of steps involved and the collaboration required across cadres and service levels.**
   During the formative assessment, stakeholders in the technical advisory group advocated for the development of a roadmap that would guide the community health strategy to meet the immediate needs with the limited resources available while shifting step-by-step to more efficient and effective processes and procedures as infrastructure, technologies, and resources became available.

   In the initial concept note, IntraHealth proposed that the initiative would include a roadmap as part of its training so that nurses would be prepared to adjust and adapt their leadership approach to respond to increased access to resources and modern technologies and commodities. The vision was that the roadmap would be developed with the MOH to align with the new community health strategy. However, the MOH determined that due to elections and changes within the Ministry, the community strategy would not be developed until after the training had been developed and delivered, and lessons learned from the training and its assessment would be used to inform the strategy.

6. **Share experiences and results with the global community.**
   IntraHealth will continue to submit abstracts to relevant conferences so that the lessons from this training and the useful blended learning approach will be shared with the broader global community.

   The approach was first presented at the Global Digital Health Forum[21] in December 2016 through an interactive session (described earlier). The session was well attended with 45 audience participants.  It

---

[21] https://www.mhealthworkinggroup.org/content/global-digital-health-forum-2016

will be presented again as part of a side session at the WHO 4th Global Forum on HRH in Dublin, Ireland in November 2017.

A blog by Lindsey Freeze, "*WhatsApp* is a lifeline for nurses and midwives in remote communities" was widely shared on social media. At the WHO Fourth Global Forum on Human Resources for Health in November 2017, Dr. Marjorie Makukula will present the Zambian PHC2C experience and highlight the importance of nurse leadership managing frontline teams, as part of a side event on task sharing and efficiencies in health workforce collaboration. IntraHealth is also preparing a manuscript, which it will submit this Fall 2017 to a peer-reviewed journal to further disseminate the effectiveness of the training and the importance of the evidence developed through the mixed method assessment.

# CONCLUSIONS

The CLMP developed and strengthened leadership and management competencies among nurses leading frontline teams in low-resourced settings. This capability is particularly important in low-resourced areas because nurses are required to make decisions and create innovative solutions to challenges unlike those they find managing a ward or leading a policy group. Further, the influence they need to have and the teams they must build range across a wide variance of sophistication, training, exposure, and capacity. Particularly in rural settings, nurses are often working alone, without easy access to a medical doctor for consultation and far from resources, supplies, or the benefit of modern technologies and equipment. Primary care services in these areas must be ever ready to meet an emergency or face unexpected challenges and multiple diseases across vast distances and sometimes difficult terrain.

Autonomy in leadership is critical. In his book, *Drive: The Surprising Truth About What Motivates Us*,[22] Daniel Pink talks about three key motivators: autonomy, mastery, and purpose. Pink describes autonomy as the desire to be self-directed and explains that the autonomy to make informed decisions, and the capacity and mastery to make decisions that will be effective toward an accomplishment, are the key factors to improve performance and commitment. Nurses must feel capacitated and empowered to make decisions on their own and to be able to use creative responses to solve problems. Nurses need the capacity to make autonomous decisions and to be transformational leaders, with the confidence and competence to think on their feet and respond to an ever-shifting demographic and epidemiological landscape. Further, they must be able to instill confidence in their teams and successfully influence them to cooperate and contribute to achieve ongoing improvements in the way they overcome challenges and deliver quality services.

One of the greatest contributions that this CLMP training made to the nurses participating in the course was the development of their autonomy. Members of the curricula design and research team observed the transformation of the training participants over the course of the program. Initially, when asked to go into the community and perform their community assessment, nurses were not sure how to proceed, as the task fell out of the standard operating procedures and their scheduled NHC or HCC meetings. However, once they ventured into the community to simply ask questions of the families and household members, they returned with new confidence in themselves and an idea of how they might operate as leaders in their communities. They described feeling more connected and confident among the community members, village leaders, and village headmen. Further, after their initial unstructured venture into the community, they felt

---

[22] Daniel Pink. Drive: The Surprising Truth About What Motivates Us. Riverhead Books 2011

comfortable calling on community members for help or for collaboration in future activities to improve the quality of services provided by the facility team.

Another demonstration of increased autonomy that the curriculum design and research team observed was when nurses began to identify and articulate ways that they could initiate improvement activities. Initially their plans for achieving their CHIP goals were shaped around objectives that depended on external sources – such as the action of the DHMT or the resources from a donor or the intervention of an implementing partner. For example, to achieve a higher number of facility births, the head nurses would plan to 1) have a maternity home built (by an implementing partner) and 2) have more volunteers trained in safe motherhood practices (by the DHMT). The PHC2C training and related activities helped the nurses to see that they themselves, with their team members, could effect changes and lead interventions that would contribute to increased facility births. For example, working with the village headmen to create 'transportation volunteers' who could be called on at any time to take someone to the facility; better counseling and sensitization of mothers and families on the importance of planning ahead and coming to the facility offered not just by SMAGs but by all facility staff and volunteers who interacted with mothers and families; linking activities of one donor intervention to related interventions that would meet priority needs; and improved treatment of clients so that they felt comfortable and safe coming to the facility. Through the course of the program, the nurses recognized their own power and autonomy to initiate, recruit, and guide their team in solving problems with the resources at hand.

Members of the curriculum design and research team also recognized the transformation of the various frontline team members. Across Zambia, community members and facility staff easily identify themselves as NHC members or CBVs or EHTs or CHAs. In the communities where the training was delivered, these various groups and individuals consistently referred to themselves as "members of the frontline team." The team-building of the nurses had not only resulted in shifting of tasks, clarification of roles, and motivation of team members, but had clearly transformed the identity of the community members and facility providers into a single frontline team. This shared identity and ownership of their contribution to the quality of services provided will enable the progress made to last well beyond the project timeline and sustain an ongoing collaboration that can continue to advance UHC in Zambia.

> "The frontliners are us; it starts with the (facility) staffs, then it comes to us."
> -NHC member from Shimukuni RHC

# LIST OF APPENDICES

The following appendices can be found at: https://www.intrahealth.org/resources/building-capacity-leadership-and-management-nurses-managing-rural-health-centers-zambia

Appendix 1:  List of CLMP Participants and Mentors with CHIP Details

Appendix 2:  Case Examples of Competency Development

Appendix 3:  Advisory Groups

Appendix 4:  Sample CHIP presentations (one from each of the five participating districts

Appendix 5:  Retrospective Assessment Questionnaires

Appendix 6: Rural health facility heads apply leadership and management competencies to improve services

Appendix 7: Primary Health Care to Communities (PHC2C)

Appendix 8: Leadership and Management Practices for Nurses and Midwives in Charge of Rural Health Facilities: University of Zambia 2016-2017 Certificate Training