



**Peer Review of the
Community-Based
Medical Education
Program at the University
of Zimbabwe College of
Health Sciences**

August 2015

Desiré Michaels and Ian Couper,
Centre for Rural Health, University of
the Witwatersrand, South Africa, **on
behalf of the peer review team**



USAID
FROM THE AMERICAN PEOPLE



CapacityPlus
Serving health workers, saving lives.



The views expressed in this document do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

ACKNOWLEDGEMENTS

The authors (Professor Ian Couper and Dr. Desireé Michaels of the Centre for Rural Health, University of the Witwatersrand, South Africa, who served as the peer review team facilitators) wish to acknowledge the other international members of the peer review team: **Dr. Mpho Mogodi** (University of Botswana), **Dr. Mwapatsa Mipando** (University of Malawi and MEPI Coordinating Center), and **Dr. Moses Chikoti Simuyemba** (University of Zambia).

The peer review team would like to thank the following University of Zimbabwe College of Health Sciences (UZCHS) representatives for their hospitality and assistance in conducting the peer review: **Dr. Midion Chidzonga**, dean of UZCHS; **Professor James Hakim**, Medical Education Partnership Initiative (MEPI) principal investigator; **Mr. Anthony Matsika**, MEPI community-based education focal person; **Mr. Shemiah Nyaude**, monitoring and evaluation officer; and the entire Novel Education Clinical Trainees and Researchers (NECTAR) program and MEPI teams. Without their support, this review would not have been possible.

The team also wishes to thank the faculty members of UZCHS, the MEPI Coordinating Center, and **Professor Jehu Iputo** of Walter Sisulu University School of Medicine who responded with pertinent information and comments, as well as the following colleagues who provided technical reviews of the draft reports: **Professor Solomon Sagay**, co-chair of the MEPI Community-Based Education Technical Working Group; **Dr. Zohray Talib** of the MEPI CC at George Washington University who contributed to the design of the peer review; and **Ms. Rebecca Bailey**, team lead for health workforce development at CapacityPlus.

TABLE OF CONTENTS

| | |
|-------------------------------------------------------------------------|-----|
| Acronyms | vi |
| Executive Summary | vii |
| Background and Purpose of the Review | 1 |
| Aim..... | 2 |
| Objectives..... | 2 |
| Overview of the University of Zimbabwe College of Health Sciences | 3 |
| Guiding Principles of the College of Health Sciences..... | 3 |
| Vision..... | 3 |
| Mission statement | 3 |
| Historical Background..... | 3 |
| Health System in Zimbabwe..... | 4 |
| History of the Field Attachment Program..... | 4 |
| Structure of the College of Health Sciences..... | 5 |
| The Aim of the Field Attachment Program..... | 8 |
| Methodology | 9 |
| Sampling..... | 9 |
| Data Collection Tools..... | 9 |
| Pre-visit questionnaires | 10 |
| Interviews and document reviews | 10 |
| Analysis..... | 10 |
| Pre-visit questionnaires | 10 |
| Interviews | 11 |
| Post-review validation..... | 11 |
| Results | 12 |
| Pre-Visit Survey Results..... | 12 |
| Faculty | 12 |
| Students..... | 13 |
| The Peer Review Visit Results..... | 18 |
| Definitions and terms | 18 |
| Findings from Faculty and Field Clinical Staff Interviews | 19 |
| Departmental involvement in the field attachment program..... | 19 |

| | |
|----------------------------------------------------------------------------|----|
| Specific goals for community-based education..... | 23 |
| Challenges..... | 26 |
| Resources..... | 27 |
| Leadership, coordination, and curriculum design | 27 |
| Recommendations from Faculty..... | 29 |
| Findings from Student Respondents | 30 |
| Description of experiences of community-based learning..... | 30 |
| Future intentions of practicing in rural/underserved areas | 31 |
| Perceptions of preparedness for work in rural/underserved areas..... | 32 |
| Recommendations from Students | 34 |
| Specify learning objectives and design curriculum accordingly | 34 |
| Improve supervision..... | 35 |
| Improve field attachment experience | 35 |
| Improve working conditions and remuneration for rural doctors | 37 |
| Reviewer Analysis of Findings Vis-à-Vis the CHEER Framework..... | 37 |
| Interpretation of the Framework and Recommendations for Improvement..... | 39 |
| The faculty mission statement | 39 |
| Resource allocation..... | 39 |
| Student selection | 40 |
| First exposure | 40 |
| Length of exposure | 40 |
| Practical experience | 40 |
| Theoretical input | 41 |
| Involvement with the community..... | 41 |
| Relationship with health service..... | 41 |
| Assessment of students..... | 41 |
| Research and program evaluation | 42 |
| Program oversight and coordination..... | 42 |
| Results of the Preliminary Feedback Meeting..... | 43 |
| Faculty Feedback | 43 |
| Faculty Concerns and Challenges..... | 43 |
| Key Recommendations | 44 |
| Strengthen Structures for Curriculum Review and Academic Coordination..... | 44 |

| | |
|-------------------------------------------------------------------------------------------------|----|
| Transform the Field Attachment Program into a Community-Based Education Program..... | 45 |
| Align Learning Objectives of the Community-Based Education Program with Medical Curriculum..... | 45 |
| Align teaching platform to learning outcomes..... | 46 |
| Improve student supervision..... | 46 |
| Invest in infrastructure and resources..... | 46 |
| Explore opportunities for interprofessional learning | 47 |
| Explore introduction of family medicine..... | 47 |
| Post-Review Final Feedback Meeting outcomes | 47 |
| Common Understanding of Community-Based Education..... | 47 |
| MBChB Curriculum Review Status Update..... | 48 |
| Prioritization of Key Recommendations | 50 |
| Conclusion | 52 |
| References..... | 53 |
| Appendix A: CHEER Peer Review Protocol | 55 |
| Appendix B: Faculty Interview Guide | 62 |
| Appendix C: Student Interview Guide | 63 |
| Appendix D: Dean’s Interview Guide | 64 |
| Appendix E: Participant Information Sheet And Informed Consent Form | 65 |

ACRONYMS

| | |
|----------|----------------------------------------------------------------|
| CBE | Community-Based Education |
| CHEER | Collaboration for Health Equity through Education and Research |
| DMO | District Medical Officer |
| HPE Unit | Health Professions Education Unit |
| MBCbB | Bachelor of Medicine and Bachelor of Surgery Degree |
| MEPI | Medical Education Partnership Initiative |
| NECTAR | Novel Education Clinical Trainees and Researchers |
| UZCHS | University of Zimbabwe College of Health Sciences |

EXECUTIVE SUMMARY

In collaboration with the Medical Education Partnership Initiative (MEPI) Community-Based Education (CBE) Technical Working Group and the MEPI Coordinating Center, PEPFAR-funded USAID CapacityPlus project leaders organized and conducted a peer review of the CBE program of the University of Zimbabwe College of Health Sciences (UZCHS). The review was based on a validated methodology developed by the Collaboration for Health Equity through Education and Research (CHEER), which was formed in 2003 in South Africa to examine strategies that would increase the production of health professional graduates who choose to practice in rural and underserved areas of South Africa. The review served two purposes: (1) to provide a practical training experience in the CHEER peer review process for representatives from four MEPI-supported schools; and (2) to explore the strengths and weaknesses of the UZCHS field attachment program with respect to how well students are being prepared to serve in rural and underserved areas in Zimbabwe. Representatives of three MEPI-supported schools in Botswana, Zambia, and Malawi served as peer reviewers and were exposed to the process. In addition, four representatives of UZCHS contributed to the preparation and logistics of the review.

The peer review was conducted between September 29, 2014 and February 6, 2015 with a follow-up meeting to present the final results in May 2015. It began with the adaptation of the CHEER protocol by the host institution and distribution of written questionnaires to relevant faculty members and students. After analyzing the responses to the questionnaires, the peer review team developed an agenda for a five-day peer review visit to the college, which included meetings with the dean, individual interviews with faculty members, visits to two field attachment sites, focus group meetings with students, and a feedback meeting with faculty. Student participation in the review was extensive, consisting of 125 third- and fourth-year students and UZCHS graduates. In addition, the review team mapped out student and faculty participation in field attachments across the five-year Bachelor of Medicine and Bachelor of Surgery Degree (MBChB) program, providing baseline data for UZCHS to build upon.

Through written surveys, interviews, and site visits, the review team identified key strengths, challenges, and gaps in both the theory and practice of the CBE approach applied at UZCHS. Faculty and students alike expressed a general appreciation for the CBE program and the rich experiences it provides for both students and clinical site staff. Several strengths were identified on which UZCHS can build, namely:

- A large teaching platform (in excess of 67 sites across all provinces and districts within Zimbabwe)
- A very good relationship with health service personnel and welcome reception of students at all district sites
- A cooperative relationship with the Ministry of Health

- The dedication of most staff who supervise the pre-clinical and clinical field attachments under difficult circumstances
- The administration of the field attachment program that is managed from the Dean's Office, thus giving it credibility and authority
- The establishment of the Health Professions Education Unit to encourage and facilitate the training of clinicians and other academics in educational approaches and skills.

A number of limitations and challenges emerged through the review, including the fact that the last MBChB degree curriculum review was conducted in the 1980s and the last substantial amendments to the field attachment program were made in the 1990s. Some of the key challenges include the lack of academic coordination and leadership of the CBE program and missed opportunities for interprofessional education through CBE activities. Supervisors reported a poor understanding of the specific objectives of the CBE program, particularly in the clinical years and in relation to the skills that students should develop and demonstrate, as well as dissatisfaction with some of the infrastructure, support materials, and resources (including human resources) available to implement the program.

The following recommendations combine suggestions collected during the review process with the peer review team's broader understanding of the strengths and challenges of the program.

- Strengthen structures for curriculum review and academic coordination to drive forward the implementation and continuous improvement of the CBE program and to integrate it across the continuum of the MBChB curriculum.
- Transform the Field Attachment Program into a Community-Based Education Program, recognizing that the field attachment program extends beyond the second, third, and fifth years.
- To increase the number of graduates who choose to work in rural areas, consider a student selection policy that includes a preference for students from rural origins.
- Define and align learning objectives of the CBE Program with the medical curriculum. Introduce objective formative and summative assessments of students' clinical competencies during field attachments, aligned with these objectives.
- Identify sites which provide the best exposure for particular learning outcomes, ensuring students rotate through sites based on the specific learning objectives for their year.
- Improve student supervision. Supervisors should assess students following clearly set learning objectives and outcomes. Provide supervisors with a toolkit which clearly sets out learning objectives, outcomes, and assessment criteria.
- Invest in infrastructure and resources for students during field attachments, for additional staff and materials, and for training of clinical staff who supervise students.
- Explore opportunities for interprofessional learning by coordinating timetables among the multiple student cadres engaged at clinical sites.

- Explore introduction of family medicine.

Expanding the current program into a fully-fledged CBE program will give momentum to the MBChB curriculum revision process while enhancing its teaching and learning goals. Creating an academic management structure with the leadership and authority to oversee both the revision and implementation of a CBE program at UZCHS should be the first step in this process. This review has highlighted the need for urgent attention to the revision of the CBE program in the context of the overall MBChB curriculum review, which appeared to have lost traction. In order to meet the challenges of medical education in the 21st century, the curriculum revision should take into account international guidelines on transforming health professional education and developing socially accountable medical schools (Boelen and Heck 1995; World Health Organization 2010; World Health Organization 2013; Maggio et al. 2013).

The activity demonstrated that the CHEER approach to peer review can be taught through an experiential training process and is internationally applicable as a tool for the evaluation and review of CBE within medical education programs.

BACKGROUND AND PURPOSE OF THE REVIEW

The Medical Education Partnership Initiative (MEPI) is a five-year initiative (2010–2015) supporting 13 medical schools in 12 African countries, which aims to increase the capacity and quality of African medical education, improve the retention of medical graduates, and promote regionally relevant research through innovative, locally-led programs. MEPI is funded by the US President's Emergency Plan for AIDS Relief (PEPFAR) and by the National Institutes of Health.

In 2010, the University of Zimbabwe College of Health Sciences (UZCHS) was awarded a MEPI grant to address key challenges affecting the college, including variable and resource-driven student enrollment; migration of faculty to greener pastures and the private sector; limited research capacity; and poor infrastructure including Internet connectivity. The grant supported a program entitled Novel Education Clinical Trainees and Researchers (NECTAR), which seeks to increase medical education and research capacity at the college, improve retention of students and faculty, and ultimately improve health care delivery in the country.

The equitable distribution of health care workers geographically and at various levels of health service delivery is a global challenge, as is the need for fit-for-purpose health professional graduates with the appropriate skills to provide the care necessary in a changing local context. This has led to the revision of medical curricula with the aim of preparing graduates to meet the challenges of the 21st century. These challenges include the inability of health professionals to develop collaborative partnerships with the health sector, policy-makers, and communities in order to identify and treat priority health needs (Frenk et al. 2010).

Traditional didactic classroom or clinical settings have been criticized for failing to prepare graduates sufficiently for the demands of current and future practice (Menamin et al. 2014). The pursuit of suitable pedagogical approaches to enable students to understand the social context of health and to develop the skills that their intended practice setting requires has led to the incorporation of community-based education (CBE) into medical curricula as an experiential and transformative educational approach. This approach strives to strike a balance between meeting identified community needs and defined student learning outcomes (Seifer, Hermanns, and Lewis 2000).

MEPI has convened technical working groups in areas of common interest, one of which is CBE. *CapacityPlus* is a PEPFAR- and USAID-funded global project focused on strengthening the health workforce and is collaborating with the MEPI CBE Technical Working Group. The MEPI/*CapacityPlus* CBE collaboration strives to increase the capacity and quality of CBE programs in African medical education institutions. Within the context of this collaboration, UZCHS requested a peer review of its field attachment program—the program that comprises UZCHS's CBE activities for medical students—to serve as a learning exercise for both UZCHS and other medical schools in the MEPI network. Thus, in collaboration with the MEPI CBE Technical Working Group, *CapacityPlus* and the MEPI Coordinating Center organized and conducted a peer review of the CBE program of UZCHS. Representatives from three other MEPI-supported

schools, namely, the Universities of Malawi, Botswana, and Zambia, were invited to participate as peer reviewers of UZCHS.

UZCHS developed a peer review protocol based on that used by the Collaboration for Health Equity through Education and Research (CHEER) initiative. CHEER was established in South Africa by academics involved in CBE from nine health sciences faculties in the country (Reid 2004). Its purpose is to conduct research and provide data for advocacy and evidence-based initiatives to address the training of health care workers in response to the enormous health challenges and lack of adequate human resources to service the population, particularly people in rural and underserved areas (Reid, Couper, and Volmink 2011; Couper et al. 2007). One of CHEER's projects was to conduct peer reviews of the CBE aspects in all nine health science faculties that were part of the collaboration; two rounds of peer reviews were completed at each institution.

The peer review methodology developed by CHEER is not an accreditation process, which is usually conducted by a statutory body such as a health professions council or higher education board. The CHEER review focuses on providing health sciences schools with organizing principles and an opportunity to reflect on the institutional standards and medical curriculum, which will help them become more accountable in addressing some of the health inequities and improvements to the health system (Reid and Cakwe 2011). The purpose of the peer review is to build evidence that supports effective change toward greater impact and accountability of health sciences faculties (Michaels, Reid, and Naidu 2014).

Aim

The aim of the review was to apply the CHEER approach to evaluate the field attachment program of UZCHS to determine how well it is preparing doctors to work in rural and underserved areas in Zimbabwe.

Objectives

The objectives of the peer review were to:

1. Establish where any gaps exist between theory and practice in CBE and training at UZCHS
2. Present a summary report of the peer review findings to UZCHS for its ongoing curricular review
3. Learn from other institutions, such as those involved in CHEER and MEPI, about models of education and training practices relevant to preparing graduates for a future career in rural or underserved areas.

This document reports the methodology and outcomes of the peer review process at UZCHS. It demonstrates how the CHEER approach can be used as a tool for the evaluation and review of community-based medical education programs.

OVERVIEW OF THE UNIVERSITY OF ZIMBABWE COLLEGE OF HEALTH SCIENCES

Guiding Principles of the College of Health Sciences

Vision

UZCHS seeks “[t]o be a referenced teaching, training, research and international leader in Africa and beyond in evidence based training, innovative student learning and health care delivery” ([UZCHS n.d.](#)).

Mission statement

UZCHS is guided by the following mission statement: “To provide a conducive environment for evidence based, high quality, community oriented and community driven training and learning of health professionals. To be a clinical and research centre of excellence and source of high quality health consultancy services” ([UZCHS n.d.](#)).

Historical Background¹

A medical school was first established in Zimbabwe (then known as Rhodesia) in 1963 under the auspices of the University of Birmingham, United Kingdom and the then-University College of Rhodesia and Nyasaland, with an enrollment of 26 students. Faculty in the pre-clinical and clinical departments were seconded to the Medical School from the University of Birmingham Medical School and Birmingham Medical School supervised and monitored the teaching, assessment, and examination of students. Students were awarded Bachelor of Medicine and Bachelor of Surgery (MBChB) degrees by the University of Birmingham. This practice continued until 1975 when the program was localized and once sufficient local capacity had developed, after which Birmingham faculty only played a role as external examiners. Degrees were then issued by the University of Rhodesia, later renamed the University of Zimbabwe.

The College of Health Sciences, formerly the Medical School, was established in 2000 and has since undergone expansion. During 2015, 1,343 undergraduate and 402 postgraduate students were enrolled, of which 883 were medical students.

UZCHS is the leading training institution in Zimbabwe for the following health professionals: medical doctors, dentists, pharmacists, medical laboratory scientists, physiotherapists, occupational therapists, radiologists, nurses, and specialist postgraduates. In addition, it provides training and continuing education for health professionals.

A good international reputation as an academic institution facilitates the research pursuits of academic staff and many are engaged in collaborative research with international colleagues. This in turn has encouraged the establishment of student exchange programs through elective attachments.

¹ This information was shared by Professor Midion Chidzonga, dean of UZCHS, during his briefing with reviewers on February 2, 2015.

Health System in Zimbabwe

The Zimbabwean health system is comprised of rural, Mission, nongovernmental organization, district, provincial, and central hospitals. The public sector is the largest supplier of health services. Though the introduction of a fee system has proven to be a barrier to access, the government has a policy of free health services for children under five years, people 60 years and over, and pregnant and lactating mothers (United Nations Development Program Zimbabwe 2013).

The College of Health Sciences is based at Parirenyatwa Hospital in Harare, one of the central hospitals where students are trained (the other being Harare Central Hospital). The peripheral hospitals are situated all over the country and are divided into district hospitals, which serve the smaller towns and surrounding districts, and Mission hospitals, which serve the rural areas in general. The rural/Mission hospitals are situated approximately 50-100 kilometres or more from towns.

The district hospitals afford students the opportunity to experience and participate in primary health care through such projects as the Expanded Programme on Immunization and visits to rural health centers, serviced by village health workers, which provide preventive and curative medicine down to the clinic and village level. Village health workers play a vital role as liaisons between the rural community and health services.

History of the Field Attachment Program

The university's intention to expose students to CBE originated with the planning of the medical school during the 1950s, with the idea of a "village family scheme" whereby students were attached to families in rural areas (Todd and Tsikirayi 1993). In 1963, with the first intake of students, the faculty of medicine set up a "district project" aimed at giving students exposure to disease patterns in rural areas and, "giving medical departments access to a rural community and to promote preventive medicine" (Todd and Tsikirayi 1993, 45). However, due to political unrest in the country at the time, this project did not get off the ground until 1968. The first rural field site was chosen in Wedza at a Mission hospital 150 km from Harare. In 1972, it was moved closer to Harare to Howard Mission Hospital and set up as a teaching platform. The project was short-lived due to political unrest, and all rural activities were suspended until after Zimbabwe achieved independence in 1980, at which point it was re-established in its former format at Howard Mission Hospital and became known as the Field Project. Later, changes were made when the Department of Paediatrics developed a two-week, country-wide attachment to rural hospitals and the Community Medicine Department included a rural hospital rotation.

The attainment of independence by Zimbabwe in 1980 led to a review of the medical school curriculum "to bring the undergraduate curriculum into line with the needs of Zimbabwe as an African state and to align it closer to world trends in medical education" (Todd and Tsikirayi 1993, 44). A key feature of the new curriculum, which was implemented for all new entrants beginning in 1987, was the revision of the field attachment program. Students were sent out to

placement sites across the country's eight provinces, one class at a time, with eight to ten students per field group during their first and second years (i.e., the pre-clinical years). During the third, fourth, and fifth years (i.e., the clinical years), students were sent in groups of two to three to facilitate "hands-on" experience. See Table 1 regarding the organization of field attachments by year of study in 1991.

Further refinements to the field attachment program were made in 1991 when the pre-clinical year attachments were combined into one longer attachment that took place at the beginning of the second year. Furthermore, a "family health scheme" (home visit) in the first year and a municipal primary care clinic rotation in the fourth year were added.

Table 1: Field Attachments by Year of Study in 1991

| Year | Timing ¹ (duration) | Size of Groups ² | Focal Point | Content Emphasis | Methods |
|----------------|------------------------------------|--------------------------------|---------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 1 ³ | December (3 weeks) | 7-10 | Community | Understanding where, how, and why people live and get sick: communal areas | Questionnaire surveys, observation, group discussions |
| 2 | March or September (3 weeks) | 7-10 | Community | Similar to first year: health issues in large-scale commercial farms, mines, and small towns | Similar to first year: emphasis on comparisons |
| 3 | August/September (3 weeks) | 2-4 | District hospital | Epidemiology of important adult diseases; management of common medical and surgical problems | Review of available data, observation, review of cases |
| 4 | October ⁴ (4 weeks) | 2-4 | District hospital and community | Rural maternal and child health problems and services | Review of available data, special surveys, review of cases |
| 5 | April/May (16-19 weeks) | 2-3 | District hospital | Shadow district medical officer; all-around care of patients and management of district programs | Review of cases, observation of tuberculosis program, audit of one activity/program |

Source: Todd and Tsikirayi 1993

¹ The academic year in Zimbabwe coincides with the calendar year. The first term commences in March (February for clinical students) and examinations are in November.

² The total number of students entering medical school is currently about 90 and has increased gradually since 1987.

³ Since 1991, this attachment has been combined with the second-year attachment into one of four weeks, which takes place in March.

⁴ Previously in July. Moved to after all fourth-year clerkships (Paediatrics, Obstetrics & Gynaecology, Community Medicine, and Psychiatry) have been completed.

Structure of the College of Health Sciences

The College of Health Sciences has 22 academic departments, an Institute of Continuing Health Education, one school, and 11 units. Nine undergraduate programs are currently offered as well as a wide range of specialist postgraduate diploma and degree programs, including the MSc,

MPhil, and DPhil. Figure 1 shows the organizational structure of the College of Health Sciences in relation to the management structures at the University of Zimbabwe. A summary list of all departments and schools within the College of Health Sciences is outlined in Figure 2.

Figure 1: Organogram of the College of Health Sciences

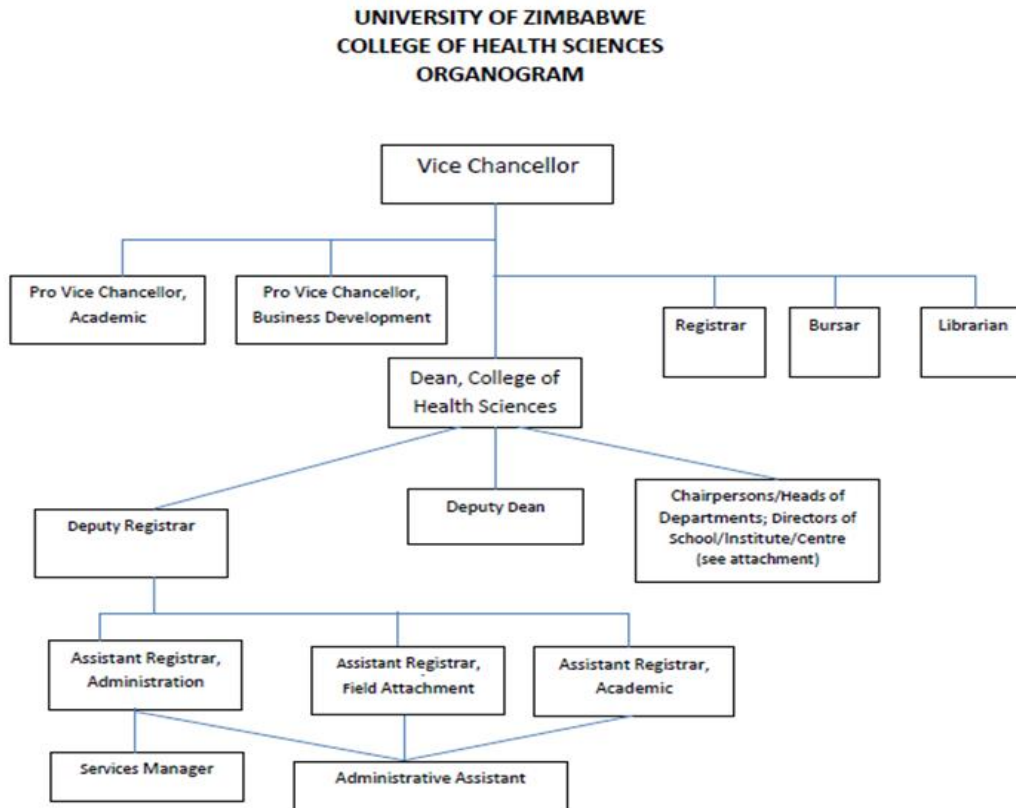


Figure 2: Academic Departments, Schools, Institutes, Centers, and Units

| UNIVERSITY OF ZIMBABWE COLLEGE OF HEALTH SCIENCES | |
|------------------------------------------------------|--------------------------------|
| DEPARTMENTS, SCHOOLS, INSTITUTES, CENTRES AND UNITS | |
| Departments | |
| 1. Anaesthesia and Critical Care Medicine | 12. Medical Microbiology |
| 2. Anatomy | 13. Medicine |
| 3. Chemical Pathology | 14. Nursing Science |
| 4. Clinical Pharmacology | 15. Obstetrics & Gynaecology |
| 5. Community Medicine | 16. Ophthalmology |
| 6. Dentistry | 17. Paediatrics & Child Health |
| 7. Haematology | 18. Physiology |
| 8. Health Professions Education | 19. Psychiatry |
| 9. Histopathology | 20. Radiology |
| 10. Immunology | 21. Rehabilitation |
| 11. Medical Laboratory Sciences | 22. Surgery |
| Schools/Institutes/Centres | |
| 1. School of Pharmacy | |
| 2. Institute of Continuing Health Education | |
| 3. Research Support Centre | |
| Units | |
| 1. Cabinet Making Workshop | |
| 2. Central African Journal of Medicine | |
| 3. Computer Centre | |
| 4. Drug & Toxicology Information Service | |
| 5. Electronic Workshop | |
| 6. Electron Microscopic Unit | |
| 7. Mechanical Workshop | |
| 8. Multi-Disciplinary Teaching Laboratory | |
| 9. Multimedia Resource Centre | |

The peer review focused on the field attachment program, which is reflected in the organogram within the administrative units under the Deputy Registrar's Office. Currently, the field attachment program is not reflected among the academic units. From 1986-2000, the program was housed within the Community Medicine Department, and was coordinated by a field attachment senior lecturer/associate professor. However, since 2000, there has been no academic representative of the program; the current administrative unit for field attachments has no academic coordinator and only the administrative role has been retained in the Dean's Office since the attrition of staff in the Community Medicine Department. This situation could pose challenges in terms of aligning and coordinating the field attachment program with the overall curriculum.

The Health Professions Education (HPE) Unit was established in 2014 for staff development activities, such as courses for clinicians and other faculty members to become skilled teachers. However, the unit has also been instrumental in bridging the gap between students during field attachment and the faculty back on campus through its work on the online student-lecturer interface and via online social media platforms. The interface uses SMILE, an e-learning technology made possible through a collaboration between Stanford University and MEPI Zimbabwe. This unit is currently not fully staffed: it has one director who has a dual role as a clinician and another who is a technical and IT assistant who is qualified as a mathematics teacher.

The Aim of the Field Attachment Program

The aim of the UZCHS field attachment program for medical students is to promote understanding, attitudes, and skills that are necessary for the practice of medicine relevant to the country's needs.

According to the field attachment guidelines (UZCHS Medical Undergraduate Field Attachment Curriculum 2010), the specific objectives of the program are to give students an in-depth critical view of:

- Where and how the people of Zimbabwe live and get sick
- What the perceived and actual health needs are
- What health care and health-related facilities are available
- How these facilities are organized at different levels to meet the health needs
- What the inhabitants' health care seeking behaviors are.

It is expected that as a result of these experiences, graduating students will be able to:

- Identify the main health problems in Zimbabwe
- Provide competent, relevant, and integrated health care at the district level
- Plan, organize, and teach health care appropriate to the needs of the various communities
- Find the provision of community-oriented health care not only challenging but also satisfying (UZCHS Medical Undergraduate Field Attachment Curriculum 2010).

A specific project and guidelines are provided for the second-, third-, and fifth-year student field attachments. The guidelines were originally developed for the "new" MBChB curriculum in 1986. Their revision was led by Dr. Charles Todd, who was a senior lecturer/associate professor for the field attachment program (a faculty post within the Community Medicine Department) from 1986-2000.

Magzoub and Schmidt (2000) define CBE as an instructional program carried out in a community context, outside of the academic hospital. They distinguish among three main classifications of CBE, namely, (1) programs that provide service to underserved communities, (2) programs with a research focus, and (3) programs with the primary aim of clinical training. These classifications are further subdivided into community development and health intervention, health-facility based and community-based services, and primary care-oriented services and community exposure. The review endeavored to identify which definition is appropriate for the current field attachment activities undertaken at UZCHS.

METHODOLOGY

A protocol was developed by UZCHS based on a CHEER protocol, and submitted for local ethics approval.

A descriptive study design, using mainly qualitative methods that focused on semi-structured interviews and supporting documentation, was employed. The quantitative component of the review was the pre-visit questionnaires that were distributed to faculty and students for completion, to serve as baseline data prior to the review visit. All respondents for pre-visit questionnaires and interviewees were identified and nominated by representatives of UZCHS.

Sampling

Purposive sampling was done through the identification of faculty, students, graduates, and key informants in two district hospitals. Respondents included members of the following departments/disciplines:

- Immunology
- Chemical Pathology
- Medical Laboratory Sciences
- Medical Microbiology
- Medicine
- Psychiatry
- Surgery
- Obstetrics and Gynaecology
- Paediatrics
- Ophthalmology
- Community Medicine
- Rehabilitation Sciences
- Anaesthesiology

Interviews were also conducted with the dean, deputy dean,² and a representative of the newly-established HPE Unit.

Data Collection Tools

Data were collected via pre-visit questionnaires to staff and students, interviews, and document reviews.

² Reviewers were not aware of the dual status of the interviewee, who was present with a colleague representing her department. It only became apparent during the interview that she is also the deputy dean of the college.

Pre-visit questionnaires

The pre-visit questionnaire can be found in Appendix A.

Interviews and document reviews

The five reviewers, divided into two sub-teams (of three and two each), conducted interviews separately and in parallel. (A sixth reviewer had been prevented from joining the process due to visa issues.) There were no audio recordings of interviews. One member was assigned to conduct the interview, while the other/s took notes to record responses. However, for two interviews, namely those with the dean and the director of the HPE Unit, all reviewers were present.

Interviews were conducted with individuals or pairs from the same department. Written, informed consent was obtained from each interviewee prior to commencement of the interview (with the exception of the dean, given that he was the principal investigator on this protocol), using the following instruments:

1. Interview guide for deans and chairs of undergraduate committees
2. Staff/lecturer/head of department interview guide
3. Student interview guide.

The students were not seen individually nor in pairs, but in two large groups of approximately 50 students each. Each group was seen separately but in parallel. The students were handed slips of paper on which they had to write the answer to one question at a time. After each response, the paper was handed in and placed in a separate envelope. A discussion was held after each question was answered to get the perspectives of a few students. The written responses were subsequently analyzed by the reviewers.

No course outlines nor curricula were available to the reviewers for document reviews. The following documentation was obtained for review prior to the interviews:

- Second-year, third-year, and fifth-year student guidelines for field attachments from the Field Attachment Office
- The organogram of the College of Health Sciences
- Regulations for the degree of MBChB.

Analysis

Pre-visit questionnaires

The pre-visit questionnaires for faculty/staff were scanned and emailed to be analyzed in South Africa. Due to the paucity of responses, the analysis was done using a grid to summarize answers to the questions.

The responses to the student questionnaires were captured at UZCHS using the RedCap© database. The descriptive analysis was conducted in South Africa with online access to the database. Thematic analysis was conducted on the qualitative aspects of the survey.

Interviews

All data was analyzed using recursive abstraction. The raw notes of reviewers were analyzed by one person and summarized based on the broad themes outlined in the interview schedule, namely:

- Involvement of the department in CBE
- Aim of the program
- Where students do fieldwork and what they do
- Involvement of academic staff in training students in the field
- What the gaps between theory and practice are when preparing students to work in rural and underserved areas
- How local health services are involved in student training
- How they are supported or trained
- How health services personnel perceive the students' presence
- How students are assessed with respect to CBE and what weight is given to the assessment.

The review team discussed the results together, and reached agreement on the themes within and across the interviews.

Due to the large number of students in each discussion group, a paper response method was used to solicit individual participant responses in regard to their experiences of CBE, whether they are considering practicing in rural or underserved areas in the future, whether they think the courses completed thus far have contributed to preparing them for working in rural or underserved areas, and recommendations for changes to the CBE program.

Post-review validation

As part of the peer review process, an initial presentation to faculty outlined the study's key findings and conclusions. A draft report was circulated to the review team for comment as well as to the MEPI CBE Technical Working Group leadership. The revised draft report was then circulated to UZCHS faculty for correction and comment.

During the period of May 13-14, 2015, a delegation of the review team was invited to UZCHS to present the final peer review findings and recommendations and to assist with the planning of the implementation of the CBE program's revision. *CapacityPlus* assigned Professor Jehu Iputo (Walter Sisulu University, South Africa) to lead the team for the follow-up visit since Professor Couper (of the Centre for Rural Health, University of the Witwatersrand, South Africa), who served as one of the original peer review team facilitators, was unavailable. Of the original team,

Dr. Desireé Michaels (Centre for Rural Health, University of the Witwatersrand) and Dr. Mwapatsa Mipando (University of Malawi) participated in the follow-up visit. The brief for the visit included, “creating awareness among departmental heads and faculty about the meaning of community-based education and how the institution can begin to move in the direction of evolving the current field attachment program into a fully-fledged CBE program.”³ The delegation spent two days in meetings with heads of departments or their delegates, and the curriculum review committees.

A summary of the key findings and recommendations of the peer review was presented to the heads of departments and their nominees, as well as a lecture on the key features of a successful CBE program, the content of which arose from Professor Iputo’s experience of assisting with setting up approximately nine CBE programs in Africa. Discussions followed the presentations, both for clarification and for decision-making. During the post-review meetings, UZCHS made several decisions with regard to the recommendations (see Results section below).

RESULTS

Pre-Visit Survey Results

Faculty

There was a very low response rate from faculty (26%, 5/19). Three responses of the five were from different members of the same department (Medicine) with Paediatrics and Obstetrics and Gynaecology being represented as well. None of the respondents reported having a CBE program in their courses. Respondents were mainly involved with the clinical years (years 3-5). There were no responses from those involved in teaching first- and second-year medical students. All reported that there was no policy which specified student recruitment from rural or underserved areas.

None of the respondents reported that their departments had explicit goals or outcomes for preparing students to work in rural/underserved areas but reported that they relied on the field attachment programs to address this.

Responses to the question, “Which, if any, of your Program Goals (general curricular statements of intent) aim to prepare students for a future career in *rural or underserved areas*?” were as follows:

- *“4th year rural attachment is explicitly [designed] to serve this purpose”*
- *“There is no real program targeting this in our department.lectures provide an overview of the common conditions and approach to dealing with these at community level and in underserved areas, but not designed to prepare the students well...”*

³ This information was shared by Professor Midion Chidzonga and Professor James Hakim during the briefing with reviewers on May 13, 2015.

On the contrary, the respondents reported indirect goals or outcomes through their course curricula, as evidenced by the following responses⁴ to, “State program goals or outcomes that **indirectly** relate to preparing students for rural or underserved areas (e.g. PHC approach, equity, human rights, community-oriented care or community responsiveness, health and poverty, etc.)”:

- “PHC approach”
- “Epidemiology and statistics are meant to teach students public health issues”
- “Ethics course teaches rights of the patient. We have more emphasis on competencies such as community/leadership/educator than other departments.”

The poor response rate meant that there was insufficient baseline information from faculty available to the reviewers.

Students

Eligibility and response

Only 5% of eligible students at UZCHS across years 2-5 participated in the survey (N=54/1,164⁵) during the period of November-December 2014 (Table 2). It should be noted that only 100 students were going to be targeted for the survey. However, fewer were approached and available due to the timing of the distribution of the questionnaires during the year-end examination period and the fact that most students were off-campus.

Table 2: Eligible UZCHS Students Who Participated in Survey, by Year of Study

| Year of study | N=54 | % |
|---------------|------|----|
| 2 | 6 | 11 |
| 3 | 15 | 28 |
| 4 | 6 | 11 |
| 5 | 26 | 50 |

Description of respondents

The majority of respondents were female (78%), in their fifth year (50%), and from urban areas (74%). No students indicated that they were from underserved areas. Nineteen percent (19%) (10/54; 20 non-responders) indicated that they received financial assistance.

Preparation for work in rural areas

The majority of students (96%) indicated that they were not aware of any policy regarding specific strategies for recruiting students from rural areas. The following curricular activities and

⁴ These quotes have not been assigned to specific respondents due to the low response rate, which could jeopardize anonymity.

⁵ This figure excludes the first-year students, who were not targeted for this survey.

courses were identified as preparation for working in rural and underserved areas: field attachment (49%), Community Medicine (33%), and “outreach” programs (18%).

Table 3 depicts the order of perceived assistance by “teachers” who are not employed by the university but who assist in preparing students for work in rural areas. Community health workers, health professionals, and other students were reported as the most significant of these. Several students (20) did not respond to this question.

Table 3: Students’ Order of Perceived Assistance of Non-University Faculty Who Prepare Students to Work in Rural Areas

| Type of Teacher* | N=54 | % Respondents |
|---------------------------------|------|---------------|
| Community health workers | 18 | 28 |
| Health professionals | 16 | 25 |
| Other students | 14 | 21 |
| Health administrators | 9 | 14 |
| Community development personnel | 4 | 6 |
| Faculty | 3 | 5 |
| Non-respondents | 20 | 37 |

*Multiple responses were allowed

(Kindly note, an error in the questionnaire—the inclusion of the term “Faculty” in the option list—may have led to confusion.)

Future plans after graduation

The majority of students (78%) plan to do postgraduate studies to become specialists, while 4% of respondents indicated that they wish to practice in rural or underserved areas (public sector). All responses to this question about future plans are summarized in Table 4.

Table 4: Students’ Post-Graduation Plans

| Options | N=54 | % of Respondents |
|-------------------------|------|------------------|
| Postgraduate studies | 38 | 78 |
| Private practice | 5 | 10 |
| Public sector | 1 | 2 |
| Practice in rural areas | 2 | 4 |
| Emigrate | 3 | 6 |
| Non-respondents | 5 | 9 |

Contact with graduates

Approximately half of the respondents (49, 91%) reported that they were in touch with graduates from the College of Health Sciences.

Suggestions to improve preparation for working in rural and underserved areas

This was a solicitation for open-ended responses. The data were parsed using thematic analysis. The following five themes emerged:

1. Increase exposure to rural attachments

This was the dominant theme. It was suggested that the duration and frequency of rural attachments be extended to allow students to experience various scenarios and gain insight into the culture and practices of people living in these areas. It was also suggested that other clinical rotations should be done in rural hospitals instead of tertiary hospitals. Some specific responses included:

- *"More exposure to rural and undeserved areas for attachment"*
- *"Adding more opportunities for field attachment and outreach work during the course of the program"*
- *"More time about 2-3 months should be allocated to rural attachment"*
- *"Have a personal interaction with community members of the rural or undeserved areas and learn about their ways of life"*
- *"Attachment must be done in those areas to get students used to the environment. We must have several programs which teach about different cultures and beliefs in the country"*
- *"Exposing students to more field attachments will prepare them. Increasing interaction between students and health professionals working in undeserved or rural areas"*
- *"...The know-how of the behaviour of people in rural areas through field attachments and community based medicine"*
- *"3 weeks period of current rural attachment is short, increasing it to 1.5 months could make students well versed with the rural health care system. Offer a wider coverage of the attachment places to areas like Binga, Zaka, Gutu would broaden the picture of rural areas health care experience"*
- *"Reserve more time for rural attachment... Do some clinical rotations in district hospitals."*

2. Make rural attachment mandatory during electives

Some respondents felt that a mandatory placement in rural areas should be imposed during the fourth-year elective program. Currently, students can choose where they wish to spend the elective and students report that many of them choose international sites instead of rural ones. The following are some specific responses:

- *"At the end of 4th year elective program, ask all students to serve a month in rural communities so as to be prepared and aware of the type of environment present other than the urban ones known to them"*
- *"Increase time of community medicine 4th year rotation in districts including in districts of origin for students e.g. Matabeleland"*
- *"Enforcement of field attachment even to urbanites to understand the need to work in poor rural areas"*

- *"Rural attachment should be part of the 4th year elective as a must [...] most people want to go abroad to Europe and America"*
- *"More time allocation to field attachment after 3rd year. Students should also practice in the clinics in the rural areas."*

One respondent suggested that placement in rural practice immediately post-graduation, working under supervision while being assessed for competence, would assist in confidence-building to cope with challenges:

- *"Go for rural work attachment after finishing MBChB and assess what I can do and do my best, alternate between urban and rural experiences."*

3. Increase positive exposure to foster motivation to work in rural and underserved areas

Respondents reported that more should be done to foster interaction with those working in community-based settings who are positive about their experiences, so that they can be encouraged and motivated to follow suit. Respondents stated:

- *"... maybe those who are already there [could] have some time talking to students encouraging them on the necessity of working in the rural areas"*
- *"Being encouraged to offer service despite the living conditions"*
- *"...be informed of the actual benefits of working in a rural setup."*

Some believe that district personnel should be encouraged to be more positive about working in rural and underserved areas when interacting with students, as expressed by one of the respondents:

- *"Equip the District Medical Officer (DMO) and other staff at the District hospitals who teach students on social issues to fully encourage us to work in rural areas than on how to emigrate"*
- *"District medical officers should be more forthcoming in teaching students attached to them."*

One respondent expressed the need for information and statistics on the need for personnel in the rural areas to increase motivation:

- *"...Express need for doctors in these areas in numbers which may inform everyone."*

The establishment of student interest groups and extracurricular activities to motivate students to work in rural and underserved areas was also suggested:

- *"...Interest groups, student motivation" or "Extra curricula [sic] activities for those passionate in serving in such areas."*

4. Design curriculum with rural and underserved area focus

Respondents expressed the need for a specific focus in the curriculum to train them in how to work in areas that may be under-resourced from a health care point of view:

- *"Inclusion in curriculum of issues to do with working in rural areas"*
- *"A short hands-on course for management of basic emergencies in a minimal resource setting will boost the morale and confidence to work in such areas. Perhaps academic rotations doing procedures in general surgery and obstetrics for 6 months is a good start"*
- *"To learn both manual and automatic techniques of healthcare"*
- *"Have training on emergency medicine in resource limited communities"*
- *"Taught methods of improvising if there is need (medical equipment)"*
- *"Exposure to variable conditions that can be encountered."*

The need for specific clinical teaching staff to train students in the provision of health care services in rural and underserved areas was also expressed:

- *"[Employ] faculty to teach us on how best to adapt in such areas when we eventually work there."*

5. Improve working conditions and provide incentives for practice

Some respondents expressed the opinion that systematic changes to health services in rural areas must be made to improve conditions, and thus motivate students to consider rural placements:

- *"...Education on advantages of attachment not too useful as students fear the low resources"*
- *"Find ways to ensure rural areas have functional labs and radiological services to help with early diagnosis of most diseases"*
- *"Improve on equipment"*
- *"Medication must be available at centres... Distances between referral hospitals must be reduced by transforming other facilities as referrals."*

Furthermore, personal incentives are required to encourage medical officers to choose to practice in rural and underserved areas, as expressed in the opinions below:

- *"There should be attractive incentives and decent accommodation"*
- *"Good housing conditions for medical officers" and "Better salaries"*
- *"Better salaries and working conditions."*

Finally, the following responses indicate a sense of despair and a reluctance to be placed in a situation where conditions are perceived to be unfavorable:

- *"No, I would rather not work there. Maybe if the conditions there were made favourable but we are a long way from that aren't we?"*
- *"...the attachment [should be] made to be successful."*

The Peer Review Visit Results

The two review sub-teams were each assigned a room for interviews, except for the dean, whose interview was conducted in his office. Discussion, review, and reflection took place among all review team members at the beginning and the end of each day, as well as at regular intervals during these days. Site visits and interviews with district medical officers (DMOs) were conducted at the Howard and Murehwa District Hospitals.

Interviews were conducted with 23 faculty members/academic staff in pre-clinical and clinical departments, four recent graduates, and two off-site district hospital supervisors, as nominated by UZCHS. Modified group interviews were conducted with 69 third-year and 52 fourth-year students.

The results for faculty and students will be reported separately. Table 5 summarizes student involvement in the field attachment program across the MBChB curriculum, as determined by the peer review team.

Table 5: Summary of Student Exposure to Community-Based Education

| Year | Site | Duration | Responsible Department | Focus |
|--------|-----------------------------------------------------|----------------------|------------------------------------------------------------------------|----------------------------------------------------------------|
| Year 1 | Epworth (peri-urban) | Fridays: 2 x 8 weeks | Behavioural Sciences (Psychiatry) | Health-seeking behavior; family health study |
| Year 2 | Communities around district sites: variable numbers | 4-week block | Community Medicine focus; all departments involved | Community characteristics, needs, and structure |
| Year 3 | District hospitals all over | 4-week block | "Field Attachment Office" (deanery); all departments involved | The health system; clinical skills (patient clerking) |
| Year 4 | Urban clinics | 4-week practicum | Community Medicine | Maternal and child health focus; general primary care medicine |
| Year 5 | District hospitals all over | 4-week block | "Field Attachment Office" (deanery); all clinical departments involved | Core clinical disciplines; audit |

Definitions and terms

"Community-based education"

It took the reviewers awhile to figure out that the term "field attachment" was being used interchangeably with the term "rural attachment" by UZCHS staff. CBE includes rotations that are commonly referred to as the "rural attachment" or "field attachment" programs. Hence the concept of UZCHS having a CBE program per se was not overtly understood nor expressed by UZCHS at the time of the review. In discussion, the review team put together its understanding

of all CBE exposure that occurs in the program over five years (see Table 5), which was not available in any form from the faculty. Reviewers included all activities at sites in urban, rural areas, clinics, and hospitals at the mines, as well as general medical practices, in its inclusion of CBE activities at UZCHS.

The Dean's Office has a designated office to manage the CBE program known as the "Field Attachment Office."⁶ This office is administered by the assistant registrar and secretary, who are responsible for the allocation of students,⁷ as well as communication with field attachment sites and with faculty regarding placement and supervision.

The teaching platform consists of ten sites with specific student accommodation attached and a further 37 sites to which second-, third-, and fifth-year students are sent for rural attachment. A total of 67 sites, which include urban clinics and represent every district in Zimbabwe, are available to the college for student placement.

"Underserved areas"

The term "underserved community" to distinguish between urban and peri-urban areas did not find favor among faculty as a relevant concept. In fact, the term was not very useful in this context since staff felt that Zimbabwe's health services were generally under-resourced whether they were located in the urban, peri-urban, or rural areas, though some conceded that central hospitals were relatively well-resourced by comparison.

Findings from Faculty and Field Clinical Staff Interviews

Departmental involvement in the field attachment program

No faculty respondents reported an explicit involvement in the development of the field attachment program or curriculum except for the Community Medicine Department, which runs a four-week practicum at urban clinics for fourth-year students, focusing on maternal and child health and general primary care. It became evident that the various departments were unaware of the extent of student exposure to CBE across the five years, but all were knowledgeable about the second-, third-, and fifth-year rural attachments.

There was a widespread perception that the Community Medicine Department was entirely responsible for the curriculum design, management, and activity of the field attachment program. However, this was disputed by members of the Community Medicine Department. It was reported that their involvement was historical, since Dr. Todd, who led the curriculum revision and who occupied a faculty post in the Dean's Office, also sat on the board of the Community Medicine Department where he assisted with teaching and other departmental activities (including being its chair from 1992-1993).

⁶ This is the name given on the field attachment guidelines document updated May 2015.

⁷ Students are allowed to choose sites and group members. The administrators only intervene when students cannot reach a consensus.

In 1987, new academic staff posts in many departments of the medical school as well as a post for an administrator were created to support the field attachment program, to make it a faculty and not a departmental responsibility. This led to the lecturer-in-charge of the Howard Hospital Field Project being moved to Harare as overall coordinator of the academic facets of the program (Reid, Couper, and Volmink 2011). Staff attrition in this position led to the administrative aspects of the field attachment program reverting to the Dean's Office, under the responsibility of two administrators, which left a gap in the coordination of the academic parts of the program. A general reluctance by faculty to take on the duties of field attachment coordination was reported, as there was neither extra remuneration nor relief from other duties for the position and it was perceived to be a very challenging one.

Some respondents reported that they had a pre-attachment meeting at the Dean's Office to share expectations of supervision at the site. While site allocation is mostly determined by the administrators in the Dean's Office, faculty members have a choice of which sites they wish to supervise. However, this was not a common experience among faculty, as others reported that the Dean's Office dictates when they are required to supervise students at the site. All conceded that they are given ample notice of their assignment (at the beginning of each year). All respondents reported that they did not set specific departmental goals for the field attachments but followed the field attachment guidelines provided by the Dean's Office to assist students. All respondents reported that their involvement in the field attachment program was only supervisory. This supervision was not standardized and there were variations in the approach to supervision and length of stay at the field site.

The staff in the natural sciences disciplines are mostly assigned to supervising second-year field attachments for four weeks' duration. This assignment is aimed at giving second-year students a "broad exposure to the way of life of ordinary people in Zimbabwe." Most emphasis is placed on communal areas and large-scale commercial farms, where 50% and 20%, respectively, of the total population live. Also included are mines and where possible, high-density areas. This exposure is intended "to help [them] understand where and how people in Zimbabwe live and get sick" as well as their health care seeking behavior (UZCHS Medical Undergraduate Field Attachment Curriculum 2010, 8).

Students doing third- and fifth-year field attachments are assigned to district hospitals for clinical attachments involving ward rounds, patient clerking (third year), and ongoing patient management (fifth year).

Apart from the supervision of second-year students, which is field-based for staff and concentrated outside the health facility, all other faculty supervision during field attachments is comprised of one or two visits to the district hospital, mainly to determine student participation and well-being during the four-week placements. On-site supervision and teaching is left up to the local DMOs. Interviewees reported that faculty shortages and thus lack of time prevented them from participating more fully in the field attachments.

The variations in approach to field attachment supervision in the third and fifth years ranged from pastoral care for students, clinical teaching by case management, and demonstration of techniques, to assisting local DMOs with clinical consultations and involving students in these. The Medicine Department has the responsibility to provide three supervisors for the fifth-year rural attachment, which is coordinated by the Field Attachment Office. They report that they have no input into the curriculum for the attachment: “[We] don’t have any say on what to do...what students are exposed to is dependent on the Chief Medical Officer [CMOs] and it is not necessarily medicine focussed...other disciplines are included too.” It was reported that the Medicine Department is extremely short-staffed and finds it hard to spare personnel for more field supervision when there are only nine full-time clinicians on staff (currently, only 1-2 days maximum can be allocated per rotation). On the other hand, it is perceived that undergraduate students are not spending sufficient time on the wards, nor approaching consultants for assistance during their office hours. It is felt that they can learn more skills in the central hospitals in order to prepare for their rural attachments.

The Department of Medical Laboratory Sciences staff are included in the supervision of the medical students during the rural rotations, though they have no involvement during the fifth-year rural attachment for medical students. Students of laboratory sciences undergo a full year of community placements at district hospitals. Faculty expressed the opinion that this was not ideal for their training, since laboratories in the districts are run mainly by laboratory assistants or retired nurses and adequate preceptorship is therefore lacking. It was reported that medical students and laboratory science students are not always placed at the same site and there is very little interaction between the two groups.

The Rehabilitation Sciences Department has a very solid CBE curriculum that involves community exposure, service, and learning. Although the rehabilitation sciences students make use of the same sites and facilities that medical students do, they are never there at the same time and thus there is no interaction between the two groups and no opportunity for interprofessional learning.

The newly-established HPE Unit has a chair who is also a member of an academic department (Anaesthetics). The unit is closely involved in the MEPI initiatives and the NECTAR program, which will amalgamate with the HPE Unit once MEPI funding ends. One of the key initiatives the unit is engaged in is creating awareness of medical education research with two specific projects namely: (1) the installation of SMILE boxes in the student accommodation at field attachment sites to facilitate the “reverse classroom” approach, supporting rehabilitation students at their field attachment sites with conference calls between faculty and students; and (2) a data repository in the field—the SMILE system is populated with information students need for their attachments and previous students’ project information.

The HPE Unit is also engaged in the educational training of clinicians, such as holding a workshop on student assessment with the Departments of Surgery, Paediatrics, and Medicine in order to change the design of current multiple-choice questions. It has further sought to assist

in the curriculum review by sending out the CanMEDS Physician Competency Framework (Frank et al. 2014), and asking departments to map their course objectives and course content. The HPE Unit has also tried to establish links with the students via a social media platform to receive input on students' perceptions of curriculum matters; however, this initiative halted when the server went down during December 2014 and had not been reinstated by the time of the review. Results of a survey conducted by the unit among students last year found that 90% of students interviewed were from rural areas and very few from Group A schools.⁸ It concluded that more students who have recently entered university are from underprivileged environments. However, this report is in contrast to another informant who remarked that the "majority of students were born and bred in cities. So they really don't have an understanding of the context of the patient..."

More students are doing postgraduate studies in order to practice "in town." However, the district hospitals all have medical officers and fewer doctors have been leaving the country recently. A summary of the type of involvement in the field attachment program across departments and course years, as well as aims of the placement, student activities, and assessments, can be found in Table 6.

Table 6: Departmental Involvement in the Community-Based Education Program, By Year

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|----------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Departments involved | Behavioural Sciences (Psychiatry) | <ul style="list-style-type: none"> Community Medicine (CM) Behavioural Sciences (BeS) Basic Sciences (BS) (including Immunology, Pathology, Chemical Pathology, Medical Biology) Psychiatry | <ul style="list-style-type: none"> CM Psychiatry | <ul style="list-style-type: none"> CM Psychiatry Paediatrics | <ul style="list-style-type: none"> Medicine Surgery Paediatrics Obstetrics & Gynaecology (O&G) |
| Departmental role | Psychiatry: Design activity | <ul style="list-style-type: none"> CM: design of rural attachment activity and teach 6 of 10/52 week theory block in Behavioral Sciences BeS: theory BS: field supervision Psychiatry: field supervision | <ul style="list-style-type: none"> CM: theory and practice, 6/52 Psychiatry: field supervision | <ul style="list-style-type: none"> CM: theory and practice, 6/52 Psychiatry: field supervision Paediatrics: student supervision and refresher courses for staff at field sites | <ul style="list-style-type: none"> Medicine: convenor/supervision Surgery, Paediatrics, O&G: field supervision of students/consultant services for preceptors |

⁸ "Group A schools" refer to the formerly-white, predominantly urban-based, private schools in Zimbabwe. (http://www.bibl.u-szeged.hu/oseas_adsec/zimbabwe_sec.htm)

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Student activity | Clinic and home visits with pregnant women in the community | Rural attachment: special surveys, meeting key informants, observation, and group discussion | Rural attachment: review of available health information, interviewing patients (clerking), visits to primary health care facilities | Rotation in urban clinics: focus on maternal and child health; attachment to focal persons – Expanded Programme on Immunization (EPI), child health, diarrheal management (oral rehydration salts (ORS) corner), provide health education to patients | Rural attachment: active participation on ward rounds, patient management; perform an audit of the management of one particular condition or health-related activity at the hospital; review tuberculosis control program; interprofessional cooperation |
| Aim | To learn about health-seeking behavior; to meet with informal and formal health care providers to know how they manage patients in the community | To understand where, how, and why people get sick in communal areas, commercial farms, or mines | To identify the major health problems in the district, their epidemiology, and their management at primary and secondary levels | To familiarize students with common presenting conditions at the primary level | To practice clinical skills and patient management of common in- and out-patient conditions seen at a district hospital |
| Duration (# of weeks) | Friday afternoons 8/52 | 4/52 rural attachment | 4/52 | 4/52 | 4/52 |
| Site | Epsworth community (urban/peri-urban) | Groups of ten students across 67 districts | Groups of ten students across 67 districts | Urban clinics | District hospitals including Mission hospitals. Groups of ten students across 67 districts |
| Assessment | Formative: report | Formative and summative report on the district (individually or in pairs); report back presentation | Formative completion of workbook and report back | No formative nor summative assessment | Formative audit summary; report back |

Specific goals for community-based education

It should be noted that the mission statement of the college includes the desire to “provide a conducive environment for evidence based, high quality, **community oriented and community driven training and learning** of health professionals” (authors’ emphasis; [UZCHS n.d.](#)). Despite this purported emphasis on community, there is no integrated curriculum goal for the field attachments among the various departments and disciplines. Some faculty members interviewed were unaware of the field attachment activities of students in certain years. There is a reported opinion that the college has an obligation to train medical students and provide services to the population. On the other hand, the Ministry of Health has the obligation to ensure placements

of health workers in the areas of need. Thus, it was concluded that the university is not responsible for what happens to graduates. However, the College of Health Sciences did launch a graduate tracking project.⁹ At the time of writing, a report and a database of all graduates' names and specialties from the first class to ever graduate during the Birmingham era to 2014 was completed, but the real-time tracking system to follow up on subsequent cohorts was still under construction at the time of writing.

The current field attachment guidelines available to the reviewers for second-, third-, and fifth-year medical students, as developed by Dr. Todd several years ago, are clear in their aims and specific assignments. However, the field attachment program has not been revised or updated since 1991, and has not been evaluated since 1993. In fact, the entire medical curriculum was last revised more than 15 years ago.

Perceived gaps between theory and practice

All respondents agreed that students have a very good theoretical grounding, but lack skill proficiency. This opinion was echoed by the DMOs and chief medical officers at the field attachment sites. The reason offered for this discrepancy was the increased numbers of students and thus the lack of opportunity for practical application rather than observation. Staff shortages and other academic demands on faculty (such as research, publishing, and postgraduate training), together with larger student groups, have adversely impacted adequate skills practice opportunities for undergraduate medical students at the central hospitals. The limited nature of these opportunities impacts their skill proficiency in rural and field placements, and is perceived as a major gap between theory and practice. On the other hand, it was acknowledged that rural attachments provide more opportunities for undergraduates to practice skills and assist with procedures in smaller numbers.

The increased numbers of postgraduate trainees such as registrars and MPhils have further impacted undergraduate opportunities for skills training at the district hospitals. It was also reported that not all field attachment sites offer the necessary variation and exposure in skills training required by undergraduates. Staff reported no knowledge of how field attachment sites are selected and which criteria applied. It is known that the Ministry of Health identified certain district and peripheral sites when they built student accommodation at sites. However, the accommodation is shared by all health professions trainees (e.g., nurses, rehabilitation services students) and not just medical students.

There is, therefore, a perception of limited hands-on teaching and learning opportunities for undergraduates due to the large number of total students, which seems to be increasing annually. The resultant pressure on accommodation, food, transport and field attachment sites (some of which are unable to cope with increasing group numbers) further exacerbates the gaps and impacts the students' ability to have a positive experience working in rural and underserved areas.

⁹ The university initiated a pilot study for graduate tracking but it is not yet functional (personal communications with Jonathan Gandari, Medical Learning Centre Coordinator, June 2015; August 20, 2015).

Lack of basic medical resources and equipment, shortage of staff for teaching/supervision of students at the district hospitals, and lack of adequate transport for students are reported as some of the barriers to opportunities for practical skills exposure.

Local health service involvement

It is evident that the college relies heavily on central, provincial, and district health service personnel to supervise and train its students. In addition, nongovernmental organizations and Mission staff fulfill these roles as well, particularly in rural areas.

One respondent informed the review team that it is, "culturally appropriate to welcome visitors in Zimbabwe." Thus the question, "How are students welcomed at the health facilities?" seemed superfluous in this context. It is reported that there is a good relationship between the university and the services, and that students (especially senior students) are welcomed at the sites. Furthermore, there is a reciprocal relationship where students share their theoretical knowledge with health service personnel and conversely, health service personnel share their techniques and clinical acumen, as reported by one of the DMOs:

- *"We learn from them...theoretically they are sometimes better [than us] and have more updated information."*

It should be noted that during field attachments, the nursing staff as well as nursing students are reportedly the prime teachers of medical students due to the lack of medical personnel. The third- and fifth-year students are mainly left at the sites under the supervision of health service personnel, who are therefore expected to bear the load for skills training. The practical exposure of students during the clinical years is reportedly variable, depending on the site and the special interests of the DMOs.

At another level, Ministry of Health employees are active as lecturers in some courses while academic staff serve on the technical advisory committees of the Ministry of Health. The relationship is therefore cooperative and congenial. Students are involved in the programmatic endeavors of the Ministry such as the Expanded Programme on Immunization and infectious diseases (malaria and tuberculosis).

Student assessment

First- and second-year students write reports on their experiences and make presentations. These are noted and placed in their files in the Dean's Office. Second-year students' field attachment reports form part of their Community Medicine mark (i.e., their grade in the course).

The field attachment guidelines include an assessment report that is completed by DMOs and faculty supervisors. However, these assessments are based mainly on behavioral criteria rather than academic/clinical skill performance for the rural attachments. There is one generic assessment form for all years of field attachments (see Figure 3).

Figure 3: Field Attachment Supervisor's Report on Students

| Confidential | | | | | |
|---------------------------------------------------------------------------|--------------------------|-----------------------|-----------------------|-----------------------|------------------------|
| University of Zimbabwe Medical School Rural Attachment Programme | | | | | |
| Supervisor's report on Student | | | | | |
| Name of Student: _____ | | | Year: _____ | | |
| Hospital: _____ | | | | | |
| Please grade the student in the following areas and comment as necessary: | | | | | |
| | A (>70%) Excellent | B (60-69%) Good | C (50-59%) Fair | D (40-49%) Poor | E <40% Atrocious |
| Attitude and interest shown | | | | | |
| Clinical skills and ability | | | | | |
| Knowledge | | | | | |
| Ability to communicate | | | | | |
| Relationship to other staff | | | | | |
| Punctuality and general behaviour | | | | | |
| Overall Grade | | | | | |
| Please write the other comments over the page. | | | | | |
| Signed: _____ | | Date: _____ | | Office: _____ | |

Health service personnel at the sites visited by reviewers reported that they are not aware of the student curriculum and the expectations of the placement experience despite following the assessment guidelines when reporting on students. There is one item in the report referring to clinical skills, the detail of which is vague and not defined (see Figure 3). Reviewers could not find a clear answer to the question, "Who is monitoring skill competency of students in the field?" The current assessment is subjective and does not carry much weight in summative assessments.

Challenges

The key challenges for the field attachment program, as expressed by various faculty and staff respondents, fell into four broad categories: resource challenges; challenges related to leadership, coordination, and curriculum design; student supervision challenges at field attachment sites; and challenges with skill competency of students.

Resources

Respondents cited the following resource challenges:

- Poor maintenance of hostel facilities for field attachments, reportedly due to resource constraints and lack of oversight at the Ministry of Health: the fact that various faculties at the university utilize the facilities while no overarching management board exists to ensure infrastructural management has further led to their deterioration. The College of Health Sciences is unable to raise sufficient funds to maintain all the hostels on its own.
- Inadequate transportation to field attachment sites: vehicles for transporting students are very old and cannot meet the demand of increasing numbers of students
- Inequitable fee structure for field attachments between medical and other students: medical students pay to be placed as part of their fee structure and it is compulsory, while other students (e.g. in the rehabilitation professions) receive an allowance from the Ministry of Health for field attachments
- Shortages of academic staff: it was reported that the current staffing is only 30% of the staff establishment. Remuneration constraints are forcing staff members to seek additional sources of income and it is not unusual for them to do locums. Respondents who hold institutional memory informed reviewers that the infrastructure to support the field attachments broke down when the country went through its political and economic crisis, resulting in staff attrition, with each department just “trying to hold on and survive.”
- Limited aptitude for teaching and curriculum design: reportedly, clinicians generally lack training in teaching and education and thus have difficulty understanding curriculum design elements such as setting learning objectives, integrating curricula, and assessing students. As a result, they have less acceptance of the need for curriculum change. However, the Health Education and Advanced Leadership for Zimbabwe (HEALZ) program was created to address this training need.

Leadership, coordination, and curriculum design

Respondents cited the following leadership, coordination, and curriculum design challenges:

- No formally-appointed academic coordinator for the field attachment program: the Community Medicine Department is not directly involved in the academic coordination of the field attachment program but it is assumed that the four-week Community Medicine attachment for fourth-year students links the third- and fifth-year rural attachments in the curriculum.
- Poor definition of educational goals and objectives to support CBE: it was acknowledged that there was a lack of specific goals to realize the college’s mission statement. According to one respondent, “We are a long way off from realizing our vision for community orientated and community driven training.” A need was expressed for a primary care medicine emphasis (clinical community medicine/family medicine) that can support students during field attachments.

- Disconnected curriculum committees: it was reported that curriculum committees for each year were established approximately two years ago. However, the faculty members not on the committees have no idea when the committees meet, what has been achieved, and what the current status of the committees' activities are since there is no communication filtered down to departmental staff.
- Poor integration of field attachments into the overall curriculum: the overall curriculum map is not clear to all, which has led to a lack of vertical and horizontal integration of the field attachment program into the curriculum. After speaking to reviewers, several respondents expressed that they could identify opportunities for incorporating their specific course objectives into field attachment assignments. However, they have not done so, primarily due to a lack of transparency and integration of the curriculum committees, and the absence of an academic coordinator for the field attachment program.

Student supervision at field attachment sites

Respondents cited the following challenges related to student supervision at sites:

- Lack of clear guidance for field attachment supervisors: while some respondents reported awareness and knowledge of what is expected of them when supervising students during field attachments, most were not aware, especially the off-site field attachment DMOs. It emerged that the second-year student supervisors were very clear about the tasks, but this was not the case for any of the clinical years (the third to fifth years). Faculty acknowledged that medical students in clinical years rely mostly on nurses and doctors during field attachments for training and supervision and received limited guidance, if any, from faculty while off-site. This problem has grown, as there is a general lack of faculty—due to their other responsibilities, they therefore do not have time to be out of the office for extended periods.
- Missed opportunities: faculty visits to supervise students provide an opportunity for ongoing training of doctors at peripheral sites (the majority of whom are now UZCHS graduates), but this opportunity is largely being missed, with one or two exceptions. Formalizing this supervision would enhance the experience of students, but would also allow placement of postgraduate trainees (registrars)—both rotating registrars in various specialist disciplines and more permanent registrars in family medicine—at these sites, who in turn could assist with student supervision.

Skill competency of students

Several staff (including the DMOs) expressed concern that students seemed to be strong theoretically but were weak or lacking in practical skills and techniques to practice medicine. Some reasons for this were offered, including:

- The increased number of undergraduate students limits the opportunities for hands-on activities under supervision
- The increased number of interns and postgraduate students working at the central hospitals is increasing the competition to interact with patients—due to the seniority of

postgraduate students, they gain access to patients more easily; this is coupled with undergraduate students not being sufficiently assertive

- not all field attachment sites are able to satisfy students' requirements for the range of clinical exposures needed.

Recommendations from Faculty

Faculty members offered the following recommendations regarding the field attachment program:

- Evolve the field attachment program into a “fully-fledged” community-based education and service program
- Revise the overall MBChB curriculum, which is long overdue (this is an urgent need, as the last revision was reportedly in 1987)
- Revise the CBE program in the context of the overall curriculum revision of the MBChB program
- Make an academic appointment for the management and coordination of the CBE program to ensure its integration in the overall curriculum, in order to fulfill the mission of the College of Health Sciences
- Create explicit CBE goals in every department that can be integrated into the CBE assignments for students in all years. These educational objectives should be in line with the overall curriculum.
- Extend the duration of CBE activities, especially during the clinical years, to strengthen student practical competency
- Introduce objective formative and summative assessments of students' clinical competencies during CBE activities; it was suggested that an integrated clinical logbook or list of clinical exposures required during field attachments should be developed—a system that measures both exposure and proficiency
- Improve infrastructure and resource allocation for students during CBE
- Re-establish training of DMOs and Chief Medical Officers (CMOs) to update their student supervisory skills, including their supervision of clinical practice
- Provide platforms to improve communication between the university and sites, as well as with the Ministry of Health. Communication about the integration of CBE into the overall curriculum should be addressed within the university as well as within and between departments.

Findings from Student Respondents

It should be noted that the reviewers interviewed third- and fourth-year students exclusively, and their responses should therefore be viewed within this context. The responses were based on their field attachment experiences to date.

Description of experiences of community-based learning

Students were asked, "**Please describe your experiences of community-based learning.**"

The majority of students reported that the field attachment provided an experience with which they were not familiar and they welcomed the exposure:

- *"It has been a great experience and we enjoyed being at the rural attachment"*
- *"...had a great time to do more practice and learning new skills."*

The impact on **personal growth**, **empathic skills**, and **professionalism** was acknowledged:

- *"I got to understand what it is like for people from different backgrounds. It has been an eye opener. I find myself being less judgemental and more willing to listen to patients and where they are coming from and why they think the way they do."*
- *"Exposure to the local community allowed me to have a deeper knowledge regarding the life of the people, their values, environment as well as beliefs with regard to their health."*
- *"You get a feel of how to present yourself as a doctor....learn that people have respect for you and the work you have to do."*

Some students reported that the **lack of supervision** and **clear guidelines** impacted their ability to maximize learning from the experience or engage in self-directed learning:

- *"...There was little supervision and most of the time we were not sure of what we were supposed to do"*
- *"The field attachment was practical and realistic but the feedback from the departments was not quite"*
- *"...there is a need to incorporate more clinical supervisors that can make us understand the purposes of the attachment and how to apply it in our career."*

Students also reported **language barriers** to communication with patients when visiting rural areas. There was a suggestion that interpreters are needed:

- *"...in some cases language was a barrier to communication especially in places such as Matabeleland. An interpreter is needed."*

In addition, the experience helped students understand the **health service constraints** at the district and rural clinics:

- *"[the experience] helped us to know...conditions in the hospitals, shortages and drawbacks the health personnel are prone to."*

These positive responses should be viewed in light of the fact that many found **student accommodation and transport** during the field attachment unsatisfactory:

- *"...when we got there the residence was not in order. There were no beds, insufficient equipment for cooking and the rooms were not maintained well."*
- *"There is a need to improve [student] facilities, no fridge, no working stoves"*
- *"the facilities were so bad, the staff were not staying with us because it wasn't fit for them. Why should we have to stay under those conditions then?"*
- *"...no stoves, the toilets were flooded half the time, some rooms did not have electricity/lights"*
- *"...the busses were too few and we would be squashed most of the time."*

Future intentions of practicing in rural/underserved areas

Students were asked, "**Are you considering practicing in a rural or underserved area in the future?**"

Despite the positive experiences reported, most students reported that they have no intention of practicing in rural areas when they qualify. Some of the reasons offered related to personal well-being, whereas others related to the working conditions and lack of opportunities for professional development. The following quotes illustrate these considerations:

Circumstances/working conditions

- *"houses in rural areas are not fit for a doctor to live in"and "better living conditions in town"*
- *"... inadequate staffing, bad facilities and minimal resources – too depressing. My experience [during attachment] was demotivating."*
- *"Urban health facilities have more resources"*
- *"I want to be placed where I'm comfortable with other referral facilities nearby in case of emergencies"*
- *"doctors are blamed for poor service delivery [in rural areas]"*
- *"working there will make a doctor's job very difficult preventing one from doing your job well and wholeheartedly"*
- *"overwhelming workloads [in rural areas]."*

Professional advancement

- *"...[urban facilities] have more cases therefore more room to improve skills"*
- *"I will feel limited in doing research and doing 'more' in rural areas"*
- *"I wish to specialize."*

Financial implications

- *"Financially I can do more locums in town"*
- *"there is little money in rural areas – 'money answereth all things.'"*

Personal considerations

- *"there are family considerations...we cannot just all move"*
- *"my urban origin means all my support is in town."*

Only two students indicated that they may consider rural placements upon qualification. They felt that they may still be persuaded to consider this after their fifth-year attachment. One would accept a placement in a rural area if he/she were able to practice his/her speciality while the other would not mind doing outreach work while based at an urban centre with the motive of seeking out business opportunities for establishing medical practices:

- *"...if I can practice my speciality – I'd like to be a paediatrician"*
- *"...go only as a visiting doctor, with a view to later opening surgeries in rural areas with colleagues."*

Those who reported that they intend practicing in rural and under-resourced areas gave the following reasons for their intentions:

Staffing needs

- *"Majority of the population live in rural areas. Medical staff shortages are greater."*
- *"...referrals from rural areas are a problem due to staff shortages and patients die on the way to urban hospitals."*

Practical exposure and skills development

- *"the lack of staff creates opportunities to do more variety of clinical work than in urban hospitals, I can boost my experience"*
- *"I can attend to more clinical cases."*

Empathy

- *"I want to educate people, too many dying from preventable diseases"*
- *"I do have a passion for those guys out there"*
- *"Because of my positive experience during my rural attachment...everyone deserves the right to health regardless of location."*

Perceptions of preparedness for work in rural/underserved areas

Students were asked, **"Do you think the courses you have completed thus far have contributed to preparing you for working in a rural or underserved area?"**

Most of the students reported that they did **not feel adequately prepared** to practice in rural areas. The reasons ranged from lack of sufficient exposure and experience to inadequate focus on practice in rural and underserved populations in course work. Some of the responses indicate that the curriculum is not appropriate for the present context of Zimbabwe due to the reliance on textbooks written by academics in America and Europe. Furthermore, teachers in the central academic hospitals expect students to know the “gold standard” approach, with few of them discussing how to manage patients in the context of resource-limited settings. Responses included:

- *“...not yet, insufficient exposure”*
- *“...did not have proper person-to-person contact in our rural attachment”*
- *“...the courses were more about what happened in the past than preparing us for what to do in the future”*
- *“...courses mostly scientific, learnt little about Zimbabwe’s communities”*
- *“Behavioural Science and Community Medicine courses were mainly theoretical with a bit of traditional ideology based on Western Frameworks”*
- *“...courses so far have not helped me, everything so far is technology based and the technology being taught is not in rural areas”*
- *“...learning is not rural based”*
- *“...the learning is theory based on assumption that all material and equipment in textbooks are available. Textbooks were written by Americans or other[s] in developed countries.”*

One student remarked that the perceived challenges in rural areas were too much for him/her to cope with and another felt that more emphasis on compassionate and empathetic skills may promote the desire to practice where there is the greatest need:

- *“...not mentally and physically fit for work in rural areas”*
- *“...courses too scientific and clinical, little emphasis on the empathetic role of medical practitioners.”*

The few who indicated that they **feel well prepared** to serve in a rural or underserved area gave the following reasons, which ranged from familiarity with the rural context to the perception that not much preparation is required to work there:

- *“I am familiar with the environment”*
- *“...the views and perspectives on health of people in the rural areas are different and so are their health providers”*
- *“...whether you work urban or rural you do the same work”*
- *“I saw nurses running clinics there without even much know how.”*

In summary, despite the lack of enthusiasm to work in the rural areas and the feelings of inadequacy and unpreparedness, the students voiced an appreciation of the CBE experiences which included introspection and relationship-building:

- *"The experience caused me to evaluate my being in medical school—if it was for the right reasons. Also being subjected with fellow classmates to conditions and environments we are not used to, made a true friends [sic] and I appreciated the whole experience very much."*

Recommendations from Students

Students were asked, "**Are there any changes you would recommend?**" The following themes emerged from their written responses.

Specify learning objectives and design curriculum accordingly

Students expressed the need for more specific learning outcomes and objectives to facilitate self-directed learning and fill the supervision gap during field attachments. There is a sense that this will ameliorate the intimidation they feel subjected to during ward rounds:

- *"More practical components [to the assignments] not just going to the wards to be asked questions and terrorized"*
- *"I would know what should be done if there is an emergency and someone collapses, in theory, but to be honest I would not be able to do it...my student nurse colleagues, on the other hand, have more practical training and would be able to do it"*
- *"We need clear local written guidelines."*

In addition, there were several recommendations relating to the overall curriculum.

Include emergency medicine, first aid, or basic life support courses

Most students reported feeling inadequate when going out to the field attachments during their pre-clinical years with insufficient skills in the light of the needs. Most suggested that emergency medicine, first aid, or basic life support courses be included during their pre-clinical years and emergency medicine again during clinical years as well.

Make courses relevant to the rural context

Courses are structured with the assumption that students will practice medicine in well-resourced areas, and while it is good to learn how things should be done in an ideal world, the reality is that rural and underserved areas lack many critical resources. Students did not have the experience to be able to adapt their knowledge to deal with the obvious challenges in under-resourced health care settings and suggested that lecturers be mindful of this when teaching them:

- *"Do not narrow down 3rd year curriculum to clerking only. Teach basic things like how to put in a canula, drip and how to give a pethidine injection, how to connect a suction pump on a patients [sic] etc."*

- *"During rotations we also need more teaching on doing procedures such as drawing blood, resuscitation, catheterization etc."*

Students also felt that in order to prepare for work in the districts, there should be training on leadership and hospital administration.

Implement a practical skills lab

Students suggested resources that may increase their practical techniques and clinical skills such as more cadavers to do dissections in Anatomy:

- *"dummies to practise certain procedures on"*
- *"more hands-on training."*

Improve supervision

Students suggested increasing the number of clinical supervisors and the duration of supervision to assist students during field attachments. Students mainly interact with nursing staff at sites and most faculty staff are basic scientists (non-clinicians). Students also asked for feedback after field attachment projects and presentations. Some suggested an introduction of a mentorship program to assist junior students. Some responses include:

- *"Even in the wards during 3rd year we never learnt anything in the wards, the registrars always say that they don't want to talk to 3rd years but final years only"*
- *"I would recommend the increase in number of tutors to encourage one-on-one teaching programs so that they will be fewer students for each tutor"*
- *"...strict supervision during 3rd year attachment by a [Masters of Medicine] student, district doctor or even consultants!"*
- *"Some students get away with non-participation and copy assignment reports."*

Train and support district medical officers

Students felt that the clinical preceptors were not clear about what they should teach the students or what the outcome of the placements should be:

- *"Communication with DMOs should be improved on methods to assist students during the attachment."*

Improve field attachment experience

In addition to the above-mentioned suggestions, there were several specific recommendations for the improvement of the student experience of the field attachments. These were as follows:

Increase field attachment exposure

Most students indicated that the amount of exposure was inadequate. One respondent suggested annual rural attachments. Exchange programs with other universities for elective programs were also suggested:

- *"The attachment time is insufficient to prepare one for work in rural and underserved areas"*
- *"Doctors should rotate in all disciplines after they finish part 5...junior doctors should also be allowed to do some operation at the main hospitals to prepare them for district year"*
- *"Exchange programs with other universities for elective programs."*

Improve communication with field attachment sites

Despite the careful administration of the student placements by the Field Attachment Office, it appears that some sites are still seemingly unprepared for the arrival of students:

- *"Inform the field attachment sites prior to students' arrival because some of the centres are not prepared for us [because] they were not informed when we were coming."*

Increase access to textbooks and information during field attachments

There appears to be limited student access to textbooks. As these are only loaned on a short-term basis, students cannot take the textbooks with them on their field attachments. There is also limited access to the Internet while students are on rotations:

- *"Obtain more copies of the books which all students need, overnight library loan is too short."*

Provide field attachment orientation week

According to students, the preparation for field attachments is not adequate. There are certain courses or lectures that they would like to receive before they go to the field. It appears that the rotations are out of alignment with the classroom curriculum:

- *"Having an introductory week between our 3rd year professionals and rural attachment would help in terms of what to expect especially in areas of Obstetrics and Gynaecology and out-patient management and use of Essentials Drug List for Zimbabwe (EDLIZ) because most times we were left alone to prescribe for patients without supervision."*
- *"...it seems most of the things we came across during the attachment were not taught yet. I feel it would have been more helpful if we had an introduction to obstetrics and gynaecology a week before attachment as well as in community medicine as the report we had to fill out needed skills we were only taught after we returned from attachment."*

Improve conditions including accommodation and transport for students

This issue was raised several times in regard to the students' experience of field attachment. Some of the students reported that they had to live in circumstances that were not deemed fit for the faculty and thus the university sought alternative accommodation for supervisors. They recommended that the accommodation be repaired and maintained. The transport seems to be inadequate for the number of students sent out per rotation. Below are some of the students' complaints:

- *"...there were no stores, the toilets were flooded half the time and some of the rooms did not have electricity or lights"*

- *"the accommodation was dilapidated"*
- *"...we had very few utensils to use...no plates, cups and cutlery. Our gas stove didn't work when there was no electricity. On arrival electric bulbs were not working, some doors didn't lock"*
- *"...ended up not going to other assigned places because the driver [said] that we had limited fuel"*
- *"...the busses were too few and we would squash most of the time" and "Our bus would always break down, its very disappointing"*
- *"...the program brings some expenses on us [because] we had to contribute for our own food."*

Improve working conditions and remuneration for rural doctors

It was suggested that working conditions be improved in the districts and that doctors receive an incentive for working in rural areas. This may attract more medical students to work in rural areas upon completion of their studies. Students stated:

- *"Improve working conditions in the district...increase remuneration for district doctors"*
- *"...there are no resources to care for patients adequately"*
- *"...difficult to balance work and academic pressure...provide opportunities for academic exposure for doctors working in rural areas"*
- *"There is less chance of acquiring new knowledge at a District hospital because of limited supervision."*

REVIEWER ANALYSIS OF FINDINGS VIS-À-VIS THE CHEER FRAMEWORK

Based on the data collected through the questionnaires, interviews, and document reviews, the peer review team used the CHEER evaluation grid to assess and justify a score for each component of the research question (see Table 7). This framework was developed to guide health sciences schools in policy and curricula design with the aim of training health professionals, especially medical doctors, to practice in rural and underserved areas in order to strive for equity in health care provision. It is important to note that the framework places greater emphasis on rural/underserved exposure than community-based exposure in general, which could take place in both rural and urban locations. It is used here to provide UZCHS with a framework for identifying strengths and weaknesses in its CBE program. In Table 7, the highlighted sections indicate where UZCHS falls within each of the 12 evaluation criteria,¹⁰ as assessed by the review team. Specific review findings related to each criterion are noted in italics.

¹⁰ The original CHEER framework had 11 criteria; a 12th criterion was added by the UZCHS peer review team.
Peer Review of the Community-Based Medical Education Program
at the University of Zimbabwe College of Health Sciences

Table 7: UZCHS Status Using Modified CHEER Evaluation Framework

| | Score | Less than expected | Adequate | Better than expected |
|----|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------|
| 1 | Faculty mission statement | Rural/Underserved (R/U) not mentioned | Some mention or indirect reference | Explicitly supportive |
| | | <i>"Community oriented and community driven training and learning" (UZCHS n.d.). Issue of social accountability—where graduates go</i> | | |
| 2 | Resource allocation | Nil | Some staff & money but not enough | Sufficient staff & money for sustainability |
| | | <i>Biggest constraint. Worked well with external funding. Financial crisis had major negative effect.</i> | | |
| 3 | Student selection | No policy R/U | Some policy, re: R/U | >25% Rural origin |
| | | <i>None, but most students come from lower socioeconomic backgrounds.</i> | | |
| 4 | First exposure | Final year if at all | Middle years | First year |
| | | <i>Behavioral sciences in first year. Exposure in every subsequent year.</i> | | |
| 5 | Length of exposure | Nil | <5% | >25% of practicals in R/U areas |
| | | <i>Four to eight weeks per year (one to five days per week)</i> | | |
| 6 | Practical experience | Nil | Students watch & listen to others | Students hands-on & contributing |
| | | <i>Develops over the years; fifth year is very hands-on</i> | | |
| 7 | Theoretical input | Nil | R/U mentioned | Critical reflection on R/U issues |
| | | <i>Mainly in community medicine; some reference in other disciplines</i> | | |
| 8 | Involvement with community | "Tourism-type" exposure | Engagement or intervention | Ongoing joint reflection |
| | | <i>Medical students learn from community but do not contribute to it, unlike the rehabilitation students.</i> | | |
| 9 | Relationship with health service | Students are a drain/ burden | Students are tolerated | Students' input is welcomed & used |
| | | <i>Very positive (especially senior years)</i> | | |
| 10 | Assessment of students | No formal assessment for rural learning | Assessment done but not pass/fail | Pass/fail contribution from rural component |
| | | <i>Reports and presentations compulsory but no rigorous assessment of knowledge/skills acquired during CBE</i> | | |
| 11 | Research and program evaluation | No program evaluation or reflection | Evaluation done previously but not specific to R/U | Current educational research, re: R/U |
| | | <i>None</i> | | |
| 12 | Program oversight and coordination | No academic coordination; administrative coordination only | Some academic oversight at departmental level; some academic coordination | Good coordination, with senior-level support and academic oversight |
| | | <i>There was good administrative coordination from the Dean's Office.</i> | | |

Interpretation of the Framework and Recommendations for Improvement

Future applications of the CHEER framework in the analysis of peer review results would benefit from an adaptation of the framework to the goals of CBE. Where they exist, the specific CBE goals of the medical school under review should be used to guide the adaptation of the framework.

The review focused on several components of CBE as defined through the CHEER approach. Based on the findings of the review, the team added a component to the assessment, namely, program oversight and coordination. The strengths and challenges found in relation to each component are summarized below.

The faculty mission statement

The faculty mission statement does not explicitly mention “rural” nor “underserved” but does stress the desire for “community oriented and community driven training and learning of health professionals” ([UZCHS n.d.](#)). Furthermore, there is no other indication of striving to become a socially accountable institution; the lack of overt student selection policies and a strategy to engage with the community further emphasizes this. The opinion was expressed during one of the interviews that it is, “the responsibility of the university...to produce skilled doctors and it is the responsibility of the Ministry of Health to place them where they are needed most.” Although the CBE program aims to promote understanding, attitudes, and skills that are necessary for the practice of medicine relevant to the country’s needs, the contribution of this program to the college’s overall vision and mission was not well understood by students and faculty.

It is recommended that the faculty mission statement be revised to include reference to serving rural/underserved populations or populations in need. An institution that seeks to conduct CBE and seeks to become more socially accountable should incorporate the concept of service in its mission statement, as a guide to fulfilling its responsibility of preparing students for current and future practice.

Resource allocation

This is the biggest constraint facing the current program. There is a certain level of commitment to CBE from the institution, as evidenced by the allocation of some resources in the face of competing priorities; however, the program still suffers from lack of resources.

The success of the CBE program is dependent on certain basic resources and a specific budget allocation for staff. There is currently some funding and some staff but these are insufficient for the increasing numbers of students. The program worked well previously with external funding, but the financial crisis has resulted in a deterioration of infrastructure, impacting maintenance, upgrading, and expansion. A collaborative approach among all disciplines utilizing the teaching

platform as well as the Ministry of Health may rationalize resource allocation, engender joint financial responsibility, and promote joint management of resources.

Student selection

There is no explicit policy, nor overt recruitment practices, that target students from rural or lower socioeconomic backgrounds. It was reported that most students do come from lower socioeconomic backgrounds, though the reviewers were unable to verify this information. The lack of an explicit recruitment policy targeting students from rural areas is one of the factors impacting future career choice to practice in rural areas (Mayer 2010). It is reported that admission criteria is merely academic and therefore students who are admitted come from the “best” schools (i.e., Group A schools), which are based in urban areas. So, despite students being from rural areas originally, they would have spent many years in urban areas attending school and thus identify as urban dwellers. However, as previously stated, one informant cited a 2014 survey which indicated that the majority of respondents identified themselves as being from rural origin, which may indicate a new trend. To ensure more graduates return to rural or other underserved areas to work, a specific student selection policy that includes this criterion may facilitate students returning to their area of origin to practice (Reid 2004).

First exposure

It is one of the strengths of the current program that students are exposed to CBE from the first year of study through the Behavioural Sciences course. Thereafter, in each subsequent year, they are exposed to the various districts.

Length of exposure

The length of exposure to field attachments was estimated to be approximately 5% per year, with time spent ranging between 1-5 days per week for 4-8 weeks within one study year. Preceptors proposed that groups of students in their clinical years rotate through districts on an ongoing basis. In this way, districts can always have students and students can be exposed to more than one rotation during a calendar year.

Practical experience

Clinical skills proficiency was identified as a major gap in students’ capacity. This is in contrast to their theoretical medical knowledge. Students’ practical clinical experience depends on their year of study, with senior students having more hands-on experience during field attachments.

However, all students gain practical skills in their attachments, e.g., communication, interprofessional practice, history-taking, and problem-solving. The community service aspect of CBE is enhanced by providing assistance to patients while acquiring more skills practice. Preceptors suggested an increase in the number of clinical rotations to improve clinical proficiency and to gain more hands-on experience in district hospitals and clinics. However, this should occur under supervision to be effective.

Theoretical input

Theoretical input regarding the approach to working in rural or underserved areas is currently minimal. Students recommended this theoretical framework be included through explicit teaching and learning objectives. More appropriate teaching resources with more relevance to the Zimbabwean context should complement the current textbooks.

Involvement with the community

Involvement with the community (beyond the health facility) is limited to the first two years but even this is a “tourism-type” exposure, whereby medical students are enriched by the interaction with local people but do not reciprocate. This is in contrast to the approach used by the rehabilitation sciences program, who conduct community health needs assessments and then follow up with health interventions, even building wheelchair ramps in the homes of patients, for example. Students reported that more should be done to allow them to interact with those working in community-based settings who are positive about their experiences, which could motivate students to pursue similar work. Giving students opportunities to work on community-identified needs and interventions would enhance community involvement and development.

Relationship with health service

The college relies heavily on central, provincial, and district health service personnel to supervise and train its students. In addition, nongovernmental organizations and Mission staff fulfill these roles, particularly in rural areas. Respondents described a very good relationship with health services staff—one of mutual respect where students welcome the opportunity and are appreciated. Clinical staff reported a reciprocal relationship where students share their theoretical knowledge with health service personnel and health service personnel share their techniques and clinical expertise. The supervision assistance of the DMOs and other staff in the field should be acknowledged by the university in a more formal manner, for example, via continuing professional development opportunities, library access, formal communication platforms regarding student supervision and training, and opportunities for input into the ongoing curriculum revision.

Assessment of students¹¹

The assessments for the pre-clinical years are very explicit with regard to community-oriented knowledge and approaches, while other years were less specific; CBE components are obligatory but the criteria for the assessments are not clear. Supervisors use one assessment tool for all years of study, which is based on generic behavioral criteria rather than specific knowledge, skill, and attitude objectives related to rural or community-based practice (see Figure 3).

Introducing assessment of skill proficiency could relieve the pressure at the tertiary hospitals for clinical and procedural skill evaluation. Patient logs may not be the most expedient tool for evaluating competency: a tool that includes both exposure and proficiency as metrics of success would be more effective.

¹¹ This assessment only refers to CBE components

The relatively favorable rating given for this criterion is a function of the framework rating being quantitative in nature (pass/fail assessments indicating that assessments are satisfactory) but it does not reflect on the quality of the assessments. The fact that no one has apparently failed the rural attachments is indicative of the issue.

Academic staff reported that they do not set departmental learning objectives for CBE. Clinical staff reported that they were not aware of the student curriculum and the expectations of their placement experience. Finally, students expressed a need for more specific learning outcomes and objectives to facilitate self-directed learning and thus fill the supervision gap during field attachments.

Research and program evaluation

There has been no ongoing program evaluation or research on the CBE program. The last evaluation was conducted for the period of 1987-1991. The college recently established curriculum review committees for each year of the MBChB program, as well as the HPE Unit. However, during the review visit, academic staff were not able to report on the progress made by those committees.

The establishment of a mechanism or platform for ongoing research and program evaluation on the needs of the rural population can inform student placements and activities and enrich the CBE experience for the students as well as the communities they serve.

Program oversight and coordination

During this review it became clear that a criterion missing from the existing CHEER framework that is crucial for UZCHS (and other schools) is CBE program oversight and coordination.

The shift of the program to the Dean's Office appears to have created a gap in the academic oversight and coordination of the program. Faculty and students perceive a disconnect or poor alignment between the objectives of the field attachment program and the overall MBChB curriculum, as well as poor integration of the program across departments and over the years of the MBChB degree. While certain departments are responsible for specific field placements, a mechanism to harmonize and align those placements with other aspects of the curriculum is lacking. In addition, many academic staff interviewed had little knowledge of the overall program and were uncertain how learning objectives from their departments and courses were being incorporated into field attachments. Finally, the role of the recently-established HPE Unit in the field attachment program remains unclear.

RESULTS OF THE PRELIMINARY FEEDBACK MEETING

All reviewers participated in the presentation of key findings to a small group of UZCHS staff on the last day of the peer review visit. The purpose of this meeting, which was open to all staff, was to present a preliminary report of key findings in order to clarify factual information and solicit feedback from participants regarding the process of the review. There were approximately 20 people present, including the deputy dean (representing the dean). This session was chaired by Professor James Hakim (principal investigator, MEPI).

Faculty Feedback

Some faculty at the meeting expressed confusion about the peer review's objectives and were under the impression that a MEPI evaluation had been conducted.¹² It was suggested that a pre-visit briefing would have been useful to eliminate this confusion. Some indicated that they thought the pre-visit survey form was difficult to complete, especially the grid relating to the rural learning objectives, but conceded that in hindsight, they did not know why they felt that way. A representative of one department expressed her disappointment in not being a respondent for the review visit and questioned how respondents were selected. Several present expressed their gratitude to the reviewers for the manner in which the interviews were conducted.

Many remarked on the ability of the reviewers to have gathered so much information and to have presented key findings within the week. The results presented were confirmed by the MEPI evaluator present who stated that, "this is very consistent with our results but you have done more than we have been able to do."

There was a point of clarification that while there seemed to be an assumption that the Community Medicine Department coordinates the field attachment program, this is actually not the case. A staff member of the department stated, "The field attachment program has no link with Community Medicine. Only five out of 19 staff members in the department are clinicians. We do not have the capacity to manage this program. Second-year learning outcomes have no link with Community Medicine."

Faculty Concerns and Challenges

Some faculty present at the review meeting stated that there is no educational coordination to map the overall curriculum, thus perspective of how each course fits into the bigger picture is lacking. Some departments reported that they were reviewing their courses and wished to make changes that would align with CBE program goals; however, this is not possible without a curriculum map. The practice of "silo" teaching is therefore entrenched.

¹² There was, in fact, a MEPI evaluation being conducted during the week of the review.

The definition of “community” was raised in a statement by a participant, “We see the community as the *patients* at the clinics and hospitals.” The institution does not recognize the inclusion of other members of the community beyond the clinics as critical to the CBE process.

There was an acknowledgement that resources are required to make the student experience better, starting with academic leadership for the CBE program, to ensure that systems and resources are in place to improve accommodation and transport, as well as supervisor and student support.

A word of caution was issued by a participant in the light of the expression of resource challenges, saying that “If we continue doing things the way we are doing it [sic], even with resources, we will not achieve more...” This provided food for thought that perhaps what is required is a paradigm shift regarding CBE as well as optimal use of resources.

The meeting concluded with the agreement of time frames for the circulation and completion of the report. The purpose of the review was reiterated, namely, that it is for the benefit of UZCHS and that its outcomes are for UZCHS to adopt and implement.

KEY RECOMMENDATIONS

Throughout the review, academic faculty, clinical staff, students, and graduates from the field attachment program provided feedback on the strengths and challenges of the program, as well as recommendations for its improvement. The following recommendations combine suggestions collected during the review process with the peer review team’s broader understanding of the strengths and challenges of the program. The team developed this overall understanding through document review, analysis of written questionnaires, interviews with faculty and students, and visits to field attachment sites, as well as feedback from faculty and input on the draft report.

Strengthen Structures for Curriculum Review and Academic Coordination

Formal structures should be strengthened or established to drive forward the review, implementation, coordination, and continuous quality improvement of the CBE program. There is a need for academic leadership to ensure integration across the continuum of the CBE program and within the overall MBChB curriculum. The academic coordination should involve the clarification and renewal of CBE learning objectives and assessments, which should be given greater value. Field supervision of students requires improvement through the training of preceptors and setting of minimum standards. Communication with preceptors, health facility managers and academic supervisors should be ongoing and two-way.

It is recommended that a CBE sub-committee of the curriculum review committee be established. Because the field attachment program touches on nearly all years and departments of the MBChB degree program, representatives from each relevant academic department should

be included in the CBE sub-committee. In addition, the sub-committee should include representatives from the community, from field attachment sites, and from the HPE Unit and should be chaired by an academic coordinator who has the time, motivation, commitment, and authority to move the process forward. Following the CBE curriculum review, a CBE committee consisting of a coordinator and representatives similar to those described above should be established to ensure the program's implementation and continuous improvement. An academic coordinator of the CBE program should be put into place who can establish appropriate mechanisms to ensure that the goals, objectives, and updates to the program are regularly communicated to relevant academic departments and to field attachment sites.

Furthermore, the HPE Unit should be empowered and resourced to support ongoing curriculum renewal and faculty development.

Transform the Field Attachment Program into a Community-Based Education Program

The review revealed that there are CBE activities during each year of the medical curriculum. However, a paradigm shift is required to recognize that the field attachment program extends beyond the second, third, and fifth years, which are currently recognized as the components of this program.

Ensuring that there is a spiral of learning linking CBE activities from one year to the next with increasing levels of competency could be viewed as the first step in the overall MBChB curriculum review process. As with any curriculum review process, it will require clearly defining the goals of the program, the learning objectives for each year and each department involved in the program, as well as the methods and resources needed to achieve those objectives. Some suggestions that arose from the peer review included adding orientation in the classroom prior to the first field placement and extending the duration of clinical attachments, especially during the clinical years. Students also suggested harmonizing the theoretical and practical aspects of the CBE program so that they are already exposed to concepts before they come across them in the field. For example, one student reported that it would have been helpful to have an introduction to obstetrics and gynecology a week before the third-year rural attachment.

To increase the number of graduates who choose to work in rural areas, a student selection policy that includes a preference for students from rural origins should also be considered.

Align Learning Objectives of the Community-Based Education Program with Medical Curriculum

The goal of the CBE program should be clearly defined and aligned with the overall MBChB program. The revision should be guided by the following international guidelines: Social Accountability of Medical Schools (Boelen 1995), the Lancet Commission Report (Frenk et al. 2010), World Health Organization Transformation of Health Professions Education guidelines (World Health Organization 2013), and evidence-based medical education (Mayer 2010; Levinson 2010).

Learning objectives to support CBE goals should be defined for each year of the program and for each department involved. Incorporating specific discipline-based objectives can enhance the experience and value of the CBE program. These tasks can be included in the terms of reference of the CBE sub-committee suggested above. Objective formative and summative assessments of students' clinical competencies during field attachments should be introduced, and these assessments should be aligned with the CBE objectives. It was suggested that an integrated clinical logbook or list of clinical exposures required during field attachments should be developed. However, the logbook should be set up to not only measure exposure but proficiency as well.

Align teaching platform to learning outcomes

Once the specific CBE goals are set for each year, the sites that provide the best exposure for particular learning outcomes should be identified. The first step in this process is to evaluate the current 67 available sites to identify the type of exposure that students can have at each site. Students should be rotated through these sites based on the specific learning objectives for a particular year. During the clinical years, rotations between sites may be increased to offer students practical exposure in several clinical domains and thus ensure equity among students regarding exposure.

Improve student supervision

The keys to learning proper practice and skills are assessment and feedback, and currently, field attachment supervision falls short. Supervisors should be given a mandate to conduct academic assessments, following clearly set learning objectives and outcomes, and utilizing students' CBE experiences to integrate knowledge across disciplines and ensure skill proficiency. The supervisors from the basic sciences have a key role to play as well as the clinicians. The problem-based learning approach works very well in a CBE program and supervisors should be trained in using it. A toolkit/guide for supervisors which clearly sets out learning objectives, outcomes, and assessment criteria is essential. Orientation of faculty supervisors and local preceptors is necessary and should be continuously re-enforced to accommodate staff turnover.

Invest in infrastructure and resources

Once the goals and objectives of the CBE program are clearly defined, the CBE committee should identify the human, material, financial, and infrastructure resources needed to achieve those objectives. The peer review noted a need for improved infrastructure and resource allocation for students during field attachments, for additional staff and materials, and for training of clinical staff who supervise students. Students suggested increasing the number of clinical supervisors and the duration of supervision to assist them during field attachments and to provide feedback after field attachment projects and presentations. To increase the number of supervisors of undergraduates, the rotational placements of registrars and other postgraduate students in districts should be considered.

The clinical preceptors are key to the training of students during their attachments and UZCHS should provide support and teaching to hospital clinicians. Formal recognition of local

preceptors, through incentives such as access to libraries and ongoing academic involvement, is important to maintain their motivation and dedication.

Explore opportunities for interprofessional learning

During the review it became apparent that the field sites are shared among various disciplines at UZCHS. Timetabling coordination between some of these (e.g., rehabilitation services, nursing, laboratory sciences) may promote an understanding of each profession's role and how they work together to benefit the patient. During the revision of the CBE curriculum, opportunities for interprofessional learning should be explored.

Explore introduction of family medicine

It was noted that family medicine, a medical sub-specialty of primary care, does not exist as a discipline at UZCHS, though it is recognized in Zimbabwe and is found in the large majority of medical schools in the world, including many in Africa and all in South Africa. Apart from its importance in terms of preparing doctors for primary care, this discipline would provide support for primary care medical training at the undergraduate level. Moreover, registrars undergoing postgraduate training in family medicine could provide additional supervisory support to students during CBE placements.

POST-REVIEW FINAL FEEDBACK MEETING OUTCOMES

The aim of the follow-up visit, which took place May 11-15, 2015, was to present the final peer review findings and recommendations and to assist with the planning of the implementation of the CBE program revisions. The follow-up visit faced several challenges: the original peer review team leader was not able to participate and the meeting occurred during the supplementary examination period for the MBChB program, which impacted faculty participation. However, the heads of departments were very well-represented (N=16/22) during the first presentation meeting (in the morning). Dentistry, Rehabilitation Sciences, Pharmacology, and the Basic Sciences in particular were well-represented. An additional challenge was that the participants changed from one meeting to the next (e.g., there was very little representation from the core clinical departments), which meant that key issues needed to be repeated to update new participants. Despite these challenges, the meetings were successful and the conclusions validated.

Common Understanding of Community-Based Education

A clear and agreed-upon definition of CBE at UZCHS emerged from the discussions. It was defined as, "any organised teaching or learning activity which takes place outside of the College and tertiary institution." This definition clarifies that experiential activities during the first and fourth years form part of the CBE program as well, supplementing the already-understood attachment activities of the second, third, and fifth years. It should be noted that this definition has evolved since the review visit (see Results of the Preliminary Feedback Meeting).

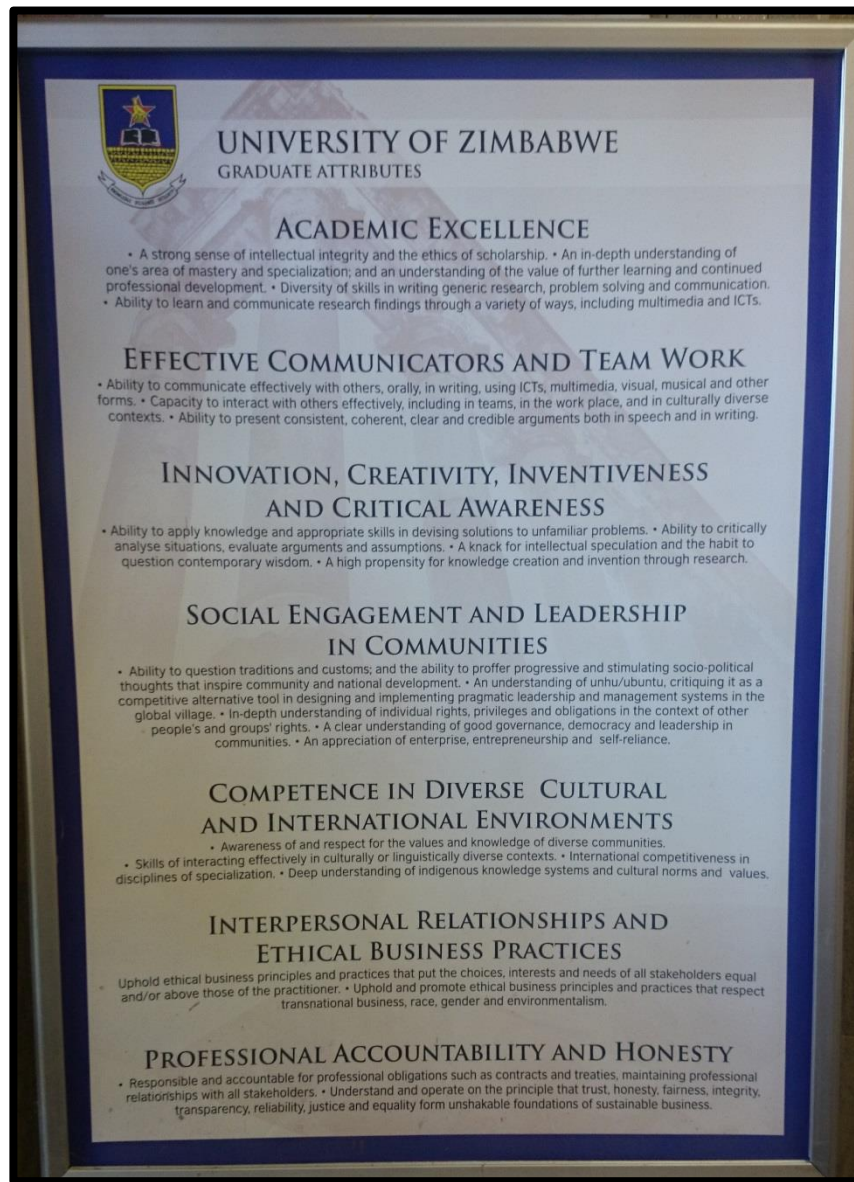
MBChB Curriculum Review Status Update

During this follow-up visit, new information came to light: a MBChB curriculum review had been implemented during the period of June to December 2013, during which monthly meetings were held with representatives from each teaching year. The deputy dean in her report on the status of the curriculum review indicated that the purpose of the review meetings was to identify the gaps in the existing curriculum as they relate to the CanMEDS Framework (Frank et al. 2014). It was reported that most of the meetings involved the discussion of timetabling issues. During this period, the university also launched its Graduate Attributes campaign (see Figure 4). The committees then tried to add these attributes to the review. The curriculum committee discontinued this process due to insufficient response from the core clinical departments and a lack of consensus regarding the role of the CanMEDS Framework.

One of the challenges that the curriculum revision committee faced in terms of integrating the basic sciences into early clinical exposure was that basic sciences are taught on the main campus during the first and second years, whereas CBE occurs off-site. It was further reported that the curriculum committees have reached an impasse in the curriculum revision process since then.

It was resolved that the curriculum committee meetings should be reinstated with a brief to identify the core curriculum and specific learning outcomes for each year. During this process, the CBE revision must be taken into account and the curricula aligned.

Figure 4: UZCHS Graduate Attributes



Source: Photographed Poster at UZCHS (Courtesy of Anthony Matsika and Miriro Muvoti)

Prioritization of Key Recommendations

The recommendations presented by the reviewer team were generally welcomed and found to be feasible, albeit with modifications (Table 8).

Table 8: Key Recommendations, Presented and Adopted

| Key Recommendations (Presented) | Key Recommendations (Adopted) |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identify academic coordinator for CBE | Identify academic management structure for CBE <ul style="list-style-type: none"> o (Monitoring and Evaluation) |
| Revise CBE program based on review results | Revise field attachment program* to evolve into CBE based on results of review |
| Integrate the CBE program across medical departments | Integrate the MBChB CBE program across all teaching departments |
| Align learning objectives with the overall medical curriculum | Align learning objectives with the overall medical curriculum |
| Launch a parallel medical curriculum revision process | - |
| Align teaching platform to learning outcomes | Align teaching platform to learning outcomes <ul style="list-style-type: none"> o Increase CBE exposure time across the years (?rotations) |
| Increase CBE exposure time across the years (?rotations) | - |
| Improve student supervision | Improve student supervision |
| Attend to student accommodation, transport, maintenance, and resources issues | Attend to student accommodation, transport, maintenance, and resources issues |

*The dean was of the opinion that the current CBE program was merely a field attachment program and that it needed to evolve into a “fully-fledged” CBE program.

The revisions to the recommendations involved:

- Changing the recommendation for a person to coordinate the CBE program, to setting up a structure that would involve more than one person—this team would facilitate the immediate revision of the field attachment program, rather than filling the position for which there are no additional resources at this point
- Adding the point about monitoring and evaluation of the process of revising the field attachment program: setting specific objectives, time frames, and outcomes for evaluation was seen as crucial
- Including the increased CBE exposure time as a subheading to the “Align teaching platform...” recommendation
- Removing the point about launching a parallel MBChB curriculum process. The rationale for this was that the MBChB curriculum process was underway but that it did not have

momentum. It is envisaged that the CBE revision committee would provide the impetus for the revival of the MBChB curriculum revision committee.

The concretization of the recommendations adopted by UZCHS led to the following:

- The establishment of a working committee for CBE revision consisting of interested parties present who nominated themselves and committed by submitting their names to the dean. Most of those present volunteered to get involved, including representatives from Community Medicine and Paediatrics, though members of the Basic Sciences were in the majority. The first meeting of the committee was planned for two weeks from the date of the post-review meeting. The dean called the meeting and confirmed the convenor of the committee.
- The appointment of a convenor of this working group who was nominated by the dean (the head of the HPE Unit).
- The inclusion of CBE in the staff development program originally planned to focus on MBChB curriculum planning. This workshop was held in August 2015.
- The agreement that the CBE curriculum review would take place in the context of the overall MBChB curriculum revision.
- The agreement that the deputy dean should be on the CBE curriculum committee since she heads up the MBChB curriculum committee. This is to ensure that the CBE and the MBChB curricula are aligned.
- The agreement that student supervision will be revised and improved to include an academic component. To this end, the head of the HPE Unit approached the 17 supervisors for the field attachment in June 2015 and oriented them to their new role and the concept of CBE in the light of the peer review visit outcomes. The HPE Unit will develop an orientation program for all supervisors to support the evolution to CBE. This orientation will include a revision of the guidelines for supervision as per the new goals set for competencies that students should achieve during the field attachment.
- The agreement that Health Education and Advanced Leadership for Zimbabwe (HEALZ) graduates from UZCHS would be co-opted to assist the HPE Unit and the CBE curriculum committee with the curriculum revision of the CBE program. There were several graduates present at the meeting and they indicated a willingness to put their skills into practice.
- The possible funding opportunities that lie within the CBE program, since there is a market to provide international students with a rural attachment experience for which they pay. UZCHS is willing to explore this funding strategy.

CONCLUSION

UZCHS is poised to create positive change that will enhance its capacity to produce medical graduates who will address the health care needs of all the people of Zimbabwe. The recommendations from heads of departments, staff, students, and reviewers contained in this report indicate that there is both the capacity and the desire within the institution to move toward an integrated CBE curriculum, which will benefit both students and the communities where they learn and serve. This review, and the subsequent plans to revise the CBE learning objectives to align them with the overall MBChB curriculum, should assist UZCHS in re-establishing the CBE attachments as an integrated, internationally-benchmarked, and locally relevant program that enhances the competencies and commitment of the university's medical graduates.

REFERENCES

- Boelen C., and J. Heck. 1995. Defining and measuring social accountability of medical schools. Geneva, Switzerland: World Health Organization.
http://whqlibdoc.who.int/hq/1995/WHO_HRH_95.7.pdf (accessed August 11, 2015).
- Couper I.D., J.F.M. Hugo, H. Conradie, and K. Mfenyana. 2007. "Influences on the choice of health professionals to practise in rural areas." *South African Medical Journal* 97: 1082-1086.
- Frenk J., L. Chen, Z. Bhutta, J. Cohen, N. Crisp, T. Evans, H. Fineberg et al. 2010. "Health professionals for a new century: Transforming education to strengthen health systems in an interdependent world." *Lancet* 276: 1923-1958.
- Frank J.R., L. Snell, et al. 2014. Draft CanMEDS 2015 Physician Competency Framework – Series I. Ottawa: The Royal College of Physicians and Surgeons of Canada.
- Levinson, A.J. 2010. "Where is evidence-based instructional design in medical education curriculum development?" *Medical Education* 44: 536-537.
- Maggio L.A., N.H. Tannery, H.C. Chen, O. ten Cate, and B. O'Brien. 2013. "Evidence-based medicine training in undergraduate medical education: a review and critique of the literature published 2006-2011." *Academic Medicine* 88, no. 7: 1022-1028.
- Magzoub M., and H. Schmidt. 2000. "A Taxonomy of Community-based Medical Education." *Academic Medicine* 75, no. 7: 699-707.
- Mayer, R.E. 2010. "Applying the science of learning to medical education." *Medical Education* 44: 543-549.
- Menamin R., M. McGrath, P. Cantillon, and A. MacFarlane. 2014. "Training socially responsive health care graduates: Is service learning an effective educational approach?" *Medical Teacher* 36, no. 4: 291-307.
- Michaels D., S. Reid, and C. Naidu. 2014. "Peer Review for Social Accountability of Health Sciences Education: A model from South Africa." *Education for Health* 27, no. 2: 127-131.
- Seifer S., K. Hermanns, and J. Lewis. 2000. Creating community-responsive physicians: Concepts and models for service-learning in medical education. In Zlotkowski E (Series Ed) American Association for Higher Education's series on service-learning in the disciplines. Washington, DC: American Association for Higher Education.

Reid S. 2004. "A cheerful group – The Collaboration for Health Equity through Education and Research (CHEER)." *South African Family Practice* 46, no. 7: 3.

Reid S.J., I.D. Couper, and J. Volmink. 2011. "Educational factors that influence the urban-rural distribution of health professionals in South Africa: a case-control study." *South African Medical Journal* 101, no. 1: 29-33.

Reid, S.J., and M. Cakwe, on behalf of the Collaboration for Health Equity through Education and Research (CHEER). 2011. "The contribution of South African curricula to prepare health professionals for working in rural or under-served areas in South Africa: A peer review evaluation." *South African Medical Journal* 101, no. 1: 34-38.

Todd C.H., and C.M.R. Tsikirayi. 1993. "Community-based medical education and curriculum change: the field attachment programme of the School of Medicine of the University of Zimbabwe." *Annals of Community-Oriented Education* 6: 43-52. https://archive.org/stream/ERIC_ED385211 (accessed August 18, 2015).

United Nations Development Program Zimbabwe. 2013. Millennium Goals in Zimbabwe. <http://www.zw.undp.org/content/zimbabwe/en/home/mdgoverview/> (accessed June 3, 2015).

UZCHS Medical Undergraduate Field Attachment Curriculum: Guidelines for Students, January 2010. [hardcopy available from the Field Attachment Office, UZCHS]

University of Zimbabwe College of Health Sciences (UZCHS). n.d. Vision and Mission Statement. <http://www.uz.ac.zw/index.php/faculties/faculty-of-medicine> (accessed August 11, 2015).

World Health Organization. 2010. Increasing access to health workers in remote and rural areas through improved retention: Global Policy Recommendations. Geneva, Switzerland: World Health Organization. <http://www.who.int/hrh/retention/guidelines/en/> (accessed August 11, 2015).

World Health Organization. 2013. Transforming and scaling up health professionals' education and training. Geneva, Switzerland: World Health Organization. http://apps.who.int/iris/bitstream/10665/93635/1/9789241506502_eng.pdf (accessed June 3, 2015).

APPENDIX A: CHEER PEER REVIEW PROTOCOL

Evaluating the Contribution of current University of Zimbabwe Health Science Curriculum to the Preparation of Doctors for Working in Rural or Under-Served Areas in Zimbabwe: Peer Review. Protocol version 1.0 14/01/2014

Short title: CHEER Peer Review: University of Zimbabwe College of Health Sciences

Principal Investigator: Prof MM Chidzonga

Co-Principal Investigator: Prof JG Hakim

Investigator/Coordinator: Antony Matsika

INTRODUCTION

Amongst important factors that influence health professionals' career choices, the role of undergraduate and post-graduate training is significant. The selection criteria used for entry, the timing, duration and type of exposure to rural and community-based educational opportunities during the under-graduate phase, as well as the availability of post-graduate programmes that are supportive of rural practitioners, all play a significant part in influencing the eventual career choices of health science graduates. However, the extent of this influence has not been demonstrated in Zimbabwe, and the applicability of international studies on these issues has been questioned.

A number of research projects in other countries have shown, for example, that medical students drawn from rural backgrounds are more likely to end up practicing in rural areas, and a study has recently demonstrated this in South Africa.[1]

Field attachment programme (Community-Based Education (CBE) or Rural Attachment)

As a background the University of Zimbabwe College of Health Sciences (UZCHS) recognized the importance of rural attachment for medical students exposure to rural environments at its last major curriculum review in 1985. This will help them to get acquainted with the health service needs of rural communities. At the 1985 review of the curriculum this was accepted as an important thrust of the curriculum. Implementation of this curriculum started in 1987 and has been implemented in some form up-to-date. There have been variations in the implementation of this aspect of the curriculum because of resource challenges, but it is recognized as a key aspect of the training of doctors in Zimbabwe.

In South Africa three universities have established specific rural sites for training of health science students in this field. A case study of innovative curricula and student support programmes at South African medical schools in 2000 found that all schools had introduced selection criteria and academic support mechanisms to facilitate access for historically disadvantaged students.[2-6] Two schools have managed to move away from hospital-based towards community-based education.

However, there is often a gap between the lofty mission statements of Health Science Faculties and the actual outcomes of its graduates. To what extent curriculum reform such as the one developed at UZCHS in 1985 emphasizing the importance of rural attachment influence the educational outcomes in terms of graduates' contributions to the health system is unknown.

Medical Education Partnership Initiative

The United States government has funded 13 medical schools in sub-Saharan Africa through MEPI to improve medical education capacity, retention of health workers and strengthen research capacity. These medical schools include University of Zimbabwe, University of Stellenbosch, University of KwaZulu Natal, University of Botswana, Eduardo Mondlane University of Mozambique, Malawi University, University of Zambia, Kilimanjaro Christian Medical College, University of Nairobi, Addis Ababa University, University of Nairobi, Makerere University, Ibadan University and Kumasi University of Science and Technology.

NECTAR Programme

The MEPI programme in Zimbabwe is run under the NECTAR label. This includes two other programmes all funded through MEPI. The CHRIS and IMHERZ programmes are a cardiovascular and mental health training and research programmes respectively. These programmes expand the scope of activities of MEPI to address areas that the UZCHS felt were weak and needed special focus during the MEPI programme including implementation in rural areas. The UZCHS field attachment programme was identified in NECTAR as an area that needed to be evaluated and improved. Through MEPI and USAID initiatives NECTAR will use the CHEER approach to review aspects of the UZCHS field attachment programme.[2]

AIM

To evaluate the field attachment programme of UZCHS in relation to how well it is preparing doctors for working in rural and under-served areas in Zimbabwe

Objectives

The following are the objectives of this peer-review study with regard to the field attachment programme at UZCHS

1. To establish where any gaps exist between theory and practice in education and training
2. To present a summary report of the peer review findings to UZCHS for its ongoing curricular review.
3. To learn from other institutions, such as those involved in CHEER (see below) and MEPI (see above) of models of education and training practices relevant to preparing graduates for a future career in rural or under-served areas

Assumption

An assumption of the team is that community-based education positively influences the career choices of graduates towards working in rural and under-served areas.

METHODS

For this evaluation UZCHS has adapted the South African CHEER (Collaboration for Health Equity through Education and Research) programme audit by peer review to evaluate the CBE (field attachment) program at the UZCHS. Two other MEPI schools; University of Botswana and University of Zambia have also accepted to implement this model and will participate in the peer audit. The CHEER model is briefly described below.

Description of the CHEER Model

CHEER is a collaboration of academics involved in community-based education, from 9 Health Science faculties in South Africa. CHEER is funded by the South African MRC to develop a research programme around the issue of “*Educational Strategies to Improve the Supply and Retention of Medical Practitioners in Rural and Underserved Areas in South Africa*”.

Four distinct research projects arose from this collaboration. These were intended to provide evidence for educators, policy-makers and planners to shape and guide health science education towards outcomes that will result in more equitable distribution of graduates in South Africa.

- i) A Systematic review of the literature
- ii) A Qualitative study was undertaken to understand the influences on where health professionals choose to practice
- iii) A Case-control study was carried out to evaluate the educational factors that influence health professionals with regard to their site of practice in South Africa.
- iv) A Curriculum Audit by institutional peer review of elements of the curricula which would contribute to graduates choosing to practice in rural or underserved areas.

UZCHS CHEER peer-review study

The project is a descriptive study.

Data will be collected in two phases:

- i) Preparatory phase: Peer Review Questionnaires and Curriculum Framework document reviews (attached to ethics application) will be circulated electronically to key Faculty staff and student representatives by the UZCHS CHEER coordinator for completion and return prior to the next phase.
- ii) Peer review phase: The CHEER representative will host a team of 3 MEPI CHEER reviewers one each from Witswatersrand University, University of Botswana and University of Zambia for the next phase. The peer review team will not include any staff from UZCHS, or other UZ Faculties. In this phase semi-structured interviews will be conducted over three days with faculty members and students and there will be a review of the curriculum documentation in order to validate and complement the data collected during the preparatory phase.

The outcome will be a written report summarizing the overall process which will be handed over to UZCHS. A publication of the report in a peer reviewed journal is anticipated if acceptable to UZCHS administration.

PARTICIPANTS

The participants will be key UZCHS staff, involved in the design and implementation of courses in the MBChB curriculum at UZCHS and student representatives.

Invitations will be sent out by the UZCHS CHEER coordinator requesting volunteers to participate in the peer review phase of the study. It is estimated that 15-20 faculty members and 15-20 students will volunteer for interviews by the CHEER peer review team.

The questionnaires that will be used are appended to this application. A log will be kept with study identification number and the name of the participant for any follow-up questions. The actual questionnaire with responses will only bear the study identification number to ensure that during analysis the respondent is not identified by name.

DATA ANALYSIS

The peer review team will use the “grid” below to assess and justify a score for each component of the research question using the data from the questionnaires, interviews and document reviews.

| | Score: | -10 | 0 | +10 |
|----|-----------------------------------|---------------------------------------|----------------------------------------------------|---------------------------------------------|
| 1 | Faculty Mission Statement | Rural/Underserved (R/U) not mentioned | Some mention or indirect reference | Explicitly supportive |
| 2 | Resource allocation | Nil | Some staff & money but not enough | Sufficient staff & money for sustainability |
| 3 | Student selection | No policy R/U | Some policy re R/U | >25% Rural origin |
| 4 | First exposure | Final year if at all | Middle years | First year |
| 5 | Length of exposure | Nil | < 5% | >25% of pracs in R/U areas |
| 6 | Practical experience | Nil | Students watch & listen to others | Students hands-on & contributing |
| 7 | Theoretical input | Nil | R/U Mentioned | Critical reflection on R/U issues |
| 8 | Involvement with Community | “Tourism”-type Exposure | Engagement or Intervention | Ongoing joint reflection |
| 9 | Relationship with health service | Students are a drain / burden | Students are tolerated | Students’ input is welcomed & used |
| 10 | Assessment of students | No formal assessment for R/U learning | Assessment done but not pass/fail | Pass/fail contribution from R/U component |
| 11 | Research and Programme Evaluation | No programme evaluation or reflection | Evaluation done previously but not specific to R/U | Current educational research re R/U |

REFERENCES

1. de Vries E, Reid S. Do South African rural origin medical students return to rural practice? SA Med J, 93(10), 789-793, 2003
2. Lehmann U, Andrews G, Sanders D. Change and Innovation at South African Medical Schools – an investigation of student demographics, students support and curriculum innovation. Health Systems Trust, Durban, 2000.
3. Edginton ME, Holst HE. Doctors in rural hospitals in KwaZulu and Natal. S Afr Med J 1991; 80:511-512.
4. Couper I. Why doctors choose to work in rural hospitals. S Afr Med J 1999; 89(7):736-738.
5. Rabinowitz HK. Recruitment, retention, and follow-up of graduates of a program to increase the number of family physicians in rural and underserved areas. The New England Journal of Medicine 1993; 328(13):934-939).
6. Strasser R et al. WONCA Rural Working Party. WONCA Policy on Training for Rural Practice. WONCA, 1995.
7. Wilson NW, Couper ID, De Vries E, Reid S, Fish T, Marais BJ. A critical review of interventions to redress the inequitable distribution of healthcare professionals to rural and remote areas. Rural and Remote Health 9 (online), 2009: 1060. Available from: <http://www.rrh.org.au>

8. Couper ID, Hugo JFM, Conradie H, Mfenyana K. Influences on the choice of health professionals to practise in rural areas. *S Afr Med J* 2007; 97: 1082-1086.
9. Reid SJ, Couper ID, Volmink J. Educational factors that influence the urban-rural distribution of health professionals in South Africa: A case-control study. *S Afr Med J* 2011; 101: 29-33.
10. Reid SJ, Cakwe M, Chandia J, Couper ID, Conradie H, Hugo J, Irlam J, Nel P, Mabuza H, Mpofu R. The contribution of South African curricula to prepare health professionals for working in rural or under-served areas in South Africa: A peer review evaluation. *S Afr Med J* 2011; 101: 34-38.

UNIVERSITY OF ZIMBABWE COLLEGE OF HEALTH SCIENCES

PRE-VISIT QUESTIONNAIRE

Date Completed: _____

1. GRADUATE OUTCOMES

1.1. Name of Programme: ____MBChB____

1.2. Which, if any, of your Programme Goals (general curricular statements of intent) aim to prepare students for a future career in *rural or under-served areas*?

Rural area: where the health service is in the district far away from referral centres and where most health care is provided by generalist practitioners with limited or distant access to specialist resources and high technology support.

Under-served area is characterized by

- i) a lack of basic health requirements, eg. clean water, adequate food and shelter, etc;
- ii) limited access to health services
- iii) high ratios of patients to facilities (hospital beds) and health personnel.

These can occur in rural, peri-urban or urban areas.

a) Programme goals or outcomes that **explicitly** refer to preparing students for rural or under-served areas:

b) Programme goals or outcomes that **indirectly** relate to preparing students for rural or underserved areas (e.g. PHC approach, equity, human rights, community-oriented care or community responsiveness, health and poverty, etc):

2. RECRUITMENT AND SELECTION OF STUDENTS

2.1. Does your student **selection policy** make any explicit reference to rural or underserved areas?

YES ___ NO ___ IN PART ___ NOT SURE ___

2.2. Does your student **recruitment process** include strategies (e.g. marketing, scholarships) to identify students with a preference for a future career in rural or under-served areas ?

YES ___ NO ___ IN PART ___ NOT SURE ___

3. **CURRICULUM**

Please enclose a copy of a written description of those aspects of the curriculum you consider relevant to preparing students for a future career in rural or under-served areas. This may be in the form of a catalogue for students, a more lengthy description of relevant courses or any papers, published or unpublished, that discuss or evaluate these aspects of your curriculum.

Content/Themes, Educational Methods, Learning sites, etc

PLEASE COMPLETE THE CURRICULUM FRAMEWORK PROVIDED ELECTRONICALLY
(see appendix)

4. **CURRICULUM PLANNING AND TEACHING**

4.1. Have Faculty staff been employed with **specific responsibility** for developing aspects of the curriculum that are relevant to preparing students for a future career in rural or under-served areas?

YES ___ NO ___ NOT SURE ___

If 'yes', please specify:

Academic Levels

(eg. tutor, lecturer, professor),

Job Title

(e.g. Community-based education, Rural Health, PHC)

4.2. Which departments at your university, other than your own, are most involved with curriculum planning for rural or under-served areas at the various levels of health care?

4.3. Are there other members, not employed by the university, who are involved in **curriculum planning**?

YES ___ NO ___ NOT SURE ___

If yes, please indicate with a tick below:

- Health Professionals
 - Health Administrators
 - Community Health Workers
 - Community Development Personnel
 - Students (either contemporary or previous years)
 - Other (please specify)
-

4.4. Are there other members, not employed by the university, who are involved in **teaching/facilitating learning**?

YES NO NOT SURE

If yes, please indicate with a tick below:

- Health Professionals
- Health Administrators
- Community Health Workers
- Community Development Personnel
- Students (either contemporary or previous years)
- Faculty
- Other (please specify)

4.5. Is sustainability of the Programme being addressed?

Not at all Partially addressed Systematically

5. **EVALUATION**

5.1 Are you evaluating whether the graduate outcomes are being achieved?

YES NO

If YES, please enclose any written material you may have.

Thank you for your valuable participation in the UZCHS CHEER project.

APPENDIX B: FACULTY INTERVIEW GUIDE

UNIVERSITY OF ZIMBABWE COLLEGE OF HEALTH SCIENCES

Peer Review
2-6 February 2015

FACULTY INTERVIEW GUIDE

AIM: Assist the research team in making a considered judgement with regard to the each issue that contributes to the preparation of students for rural or underserved areas

OBJECTIVES:

- to explore selected issues in greater depth
- to obtain new information

1. What is the involvement of your department in the CBE?
2. What is the aim of your programme in relation to CBE? (What are you hoping to achieve through your contribution?)
3. Where do students do field work and what do they do?
4. What is the involvement of academic staff in the training of students in the field.
5. What are the gaps between theory and practice when preparing students to work in rural and underserved areas.
6. What do you think you could be doing better to address these gaps.
7. How are local health services involved in the student training,
 - what role do the local health care workers play in relation to the students?
 - how are they supported or trained to do that?
 - how is the presence of students perceived by the health services?
8. How are students assessed in respect of the CBE and what weight is given to the assessment.

APPENDIX C: STUDENT INTERVIEW GUIDE

**University of Zimbabwe College of Health Sciences
Peer Review
2-6 February 2015**

STUDENT INTERVIEW GUIDE

1. Please describe your experiences of community based learning.
2. Are you considering practicing in a rural or under served area in the future?
3. Do you think the courses you have completed thus far have contributed to preparing you for working in a rural or underserved area?
4. Are there any changes you would recommend?

APPENDIX D: DEAN'S INTERVIEW GUIDE

University of Zimbabwe College of Health Sciences

Peer Review

2-6 February 2015

Interview Guide: the Dean

1. Describe the structure of the College of Health Sciences and how it fits into the University structure.
2. What priority does the faculty give in preparing students for a future career in rural or underserved areas?
3. Describe your current Community based education program
4. What are the factors that enable your faculty to contribute to preparing students?
5. What are the factors that inhibit your faculty contributing to preparing students?
6. What is the student selection policy and what criteria are applied for admission?
7. What is the extent of student involvement in the community?
8. What does the health service feel about student attachments?
9. What is the university's role in terms of service and training doctors to serve the population?
10. What would it take, in your view, to enable your faculty to contribute to preparing students for a future career in rural or underserved areas?

APPENDIX E: PARTICIPANT INFORMATION SHEET AND INFORMED CONSENT FORM

University of Zimbabwe College of Health Sciences

Peer Review

2-6 February 2015

PARTICIPANT INFORMATION SHEET AND INFORMED CONSENT FORM

Title of Research Project: Evaluating the Contribution of current University of Zimbabwe Health Science Curriculum to the Preparation of Doctors for Working in Rural or Under-Served Areas in Zimbabwe: CHEER Peer Review. Protocol version 1.0 14/01/2014

Short Title: CHEER Peer Review: University of Zimbabwe College of Health Sciences

Principal Investigator: Prof Midion Chidzonga, Dean University of Zimbabwe College of Health Sciences. Phone numbers: (04)708127 or 0227217068

We are doing research and would like to invite you to participate in our study. This letter will help you understand what we are doing and what is involved should you agree to participate. Please read this carefully. You can ask any questions about anything that is not clear to you before you decide whether you want to participate or not.

What is this research about?

This project is a review of how field attachment for medical students in the MBChB programme at the UZCHS prepares them to work in rural and underserved areas in Zimbabwe. Several factors have been shown to influence the career choice of doctors to work in rural and underserved areas. These include the selection criteria used for entry into medical school, the timing, duration and type of exposure to rural and community-based educational opportunities during the under-graduate phase, as well as the availability of post-graduate programmes that are supportive of rural practitioners. However, the extent of this influence has not been demonstrated in Zimbabwe, and the applicability of international studies on these issues has been questioned.

This peer review mainly aims at reflection and discussion towards solutions rather than assessment and judgment.

Please note that the information you provide in this questionnaire will be kept strictly confidential, your name will not be connected to any results in the analysis. The information derived from this research may be used in reports and publications of the Research Team.

Who is CHEER?

CHEER is the Collaboration for Health Equity through Education and Research. This is a group of educators from 9 health science faculties in South Africa who work for the advancement of equity in health care through education. UZCHS has adapted the CHEER peer review model to assess its field attachment programme.

Interviews

We will interview you for up to an hour. We will ask you questions about your experience and views of the UZCHS field attachment programme.

Will you be at risk or feel discomfort by taking part in this study?

This research will not put you at any risk or make you feel any discomfort. You do not have to answer questions that make you feel uncomfortable, while you take part in the study.

What are the benefits of this study?

There will be no direct benefit to you from this study. However, by participating in this research, you will help improve the education and practice of health workers in the future.

What are your rights as a participant in this study?

Your participation in this study is entirely voluntary. Without giving any reason, you can choose not to participate in the research or can stop participating in it at any time during the study. This decision will not affect your relationship with the faculty and colleagues in any way or, if you are a student this will not affect your marks or assessment.

Will you be compensated in participating in this study?

Your participation in this study is voluntary. There will be no costs to you for your participation and no compensation will be given to you for your participation.

What about Confidentiality?

All the information you provide will be kept strictly confidential. This means that the information you give us will not be linked to your name and no one will be able to identify you. All questionnaires and other documents you provide will be kept under lock and key and will only be accessible to the Principal investigator and the coordinator of the project. Publications that come out of this research will not use any information that can identify you or your department, clinic, hospital or institution.

What about ethical approval?

Before beginning any research all studies conducted at the UZCHS have to be approved by Research Ethics Committees. This study has been approved by the Joint Ethics Research Committee of Parirenyatwa Hospital and UZCHS (JREC) and the Medical Research Council of Zimbabwe.

Information and Contact Person

If you have any questions about this study at any point in time, please contact the study Principal Investigator Prof Midion Chidzonga on (04)708127 or 0772217068; the study coordinator Mr Antony Matsika on (04)705035 or 0712236660. You may also contact the JREC on 708140 or MRCZ on (04)790715.

INFORMED CONSENT FORM

Consent to participate in this study: Individual interviews

I confirm that

- a. The person asking me to take part in this study has told me about the nature, process, risks, discomforts and benefits of the study;
- b. I have received, read and understood the information leaflet about this study as well as this consent form;
- c. I have had time to ask questions;
- d. I am participating willingly in this study;
- e. I know I can withdraw from this study at any time;
- f. If I decide to withdraw, I know my decision will not affect in any way my relationship with the faculty and colleagues, or, if I am a student, my marks;
- g. My participation in this research is voluntary;
- h. The information I provide will be kept strictly confidential and my name will not be connected to any results in the analysis.

.....
Participant's Name (PLEASE PRINT)

.....
Signature and Date

.....
Study Staff conducting Consent (Name)

.....
Signature and Date



USAID
FROM THE AMERICAN PEOPLE



CapacityPlus
Serving health workers, saving lives.



CapacityPlus is the USAID-funded global project uniquely focused on the health workforce needed to achieve the Millennium Development Goals. Placing health workers at the center of every effort, CapacityPlus helps countries achieve significant progress in addressing the health worker crisis while also having global impact through alliances with multilateral organizations.

The CapacityPlus Partnership



CapacityPlus
IntraHealth International

1776 I Street, NW, Suite 650
Washington, DC 20006
T (202) 407-9473
F (202) 223-2295

6340 Quadrangle Drive, Suite 200
Chapel Hill, NC 27517
T (919) 313-9100
F (919) 313-9108

www.capacityplus.org
info@capacityplus.org