EXECUTIVE SUMMARY FOR THE REPORT ON PHASE 1 MALAWI OPTOMETRY HUMAN RESOURCE DEVELOPMENT STUDY

A Partnership of Brien Holden Vision Institute and African Vision Research Institute with appreciation to Graduate Careers Australia

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INTRODUCTION

Phase 1 of the Malawi Optometry Human Resource Development Study examined an optometric response to the development of human resources for eye health within the Malawi Public Health System. Optometry Graduates with a Bachelor of Science Degree (BOptoms) reported on (1) adequacy of their Academic (Pedagogical) Preparedness, (2) adequacy of their Clinical Competency, and (3) adequacy of Management/Human Resource Support provided at their deployment site.

Figure 1. Results of Phase 1


BACKGROUND

Malawi School of Optometry Program. A growing awareness of global visual impairment resulting from uncorrected refractive error, especially in developing nations, provided the momentum for integration of optometry into the global public health sector. In 2003, the majority of the population of Malawi (an under-resourced, low income, developing nation in Anglophone sub-Saharan Africa) had been suffering from extremely limited access to eye care. In 2008, a partnership of global, national, and local agents (Brien Holden Vision Institute aka International Centre for Eyecare Education, SightSavers, Malawi Ministries of Health and Education, Mzuzu University and Malawi College of Health Sciences) responded to the problem by launching the Malawi School of Optometry Program (The Program). Optometry Giving Sight, World Optometry Foundation and Canadian Vision Care served as additional funding agents.

The Program, an optometric educational and public health program, was framed with constructs and strategies taken from VISION 2020, Right to Sight Initiative (World Health Organization and International Agency for Prevention of Blindness Global, 2000) and from the Naidoo Optometric Education Model of Multiple Entry and Exit (2000). The overall goal was to educate and deploy optometry eye health specialists who would deliver specialized and sustainable optometric services to Malawians living in underserved urban and remote rural communities. Expected outcomes were to increase the number of qualified optometry graduates trained within existing Malawi educational systems and deployed to gainful employment within existing Malawi public health eye care clinics.
The Program provided a Bachelor of Science Degree from Mzuzu University and an Optometry Technician Diploma from Malawi College of Health Science. Obtaining a Bachelor of Science Degree was available through three channels: Four Years at Mzuzu University; Three Years at Malawi College of Health Sciences followed by two years of Upper Division Course work at Mzuzu University; and Upgrading of an existing Ophthalmic Diploma (international Optometrists with a diploma, and domestic Ophthalmic Clinic Officers with a diploma) by two years of Upper Division Course work at Mzuzu University.

**AIM AND RATIONALE OF PHASE 1 OF THE STUDY**

**Rationale.** In under-resourced and developing nations the development of optometry human resources are a recent occurrence. As such, there exists a dearth of scientific literature on optometric human resource development, optometry education and deployment, and optometry integration into general health systems and ophthalmic systems.

**Aim.** The Malawi Optometry Human Resource Development Study is divided into Phase 1, 2, and 3 with an overall aim to explore the experience and perception of optometry graduates (BOptoms and Optometry Technicians) on Preparedness, Clinical Competency, and Management/Human Resource Support (Dependent Variables) related to Type of Optometry Education (Independent Variable). However, since Phase 1 graduates were limited to BOptoms who completed a degree from Four Years at Mzuzu University, the Phase 1 aim was limited to examining their perceptions of preparedness to practice (academic and clinical) and perceptions of management/human resource support provided at their deployment settings.

**RESEARCH QUESTIONS FOR PHASE 1**

- Are Malawi BOptom Graduates Prepared for Practice?
- Are Malawi BOptom Graduates similar to Australian BOptom Graduates on Preparedness for Practice?
- Are Malawi BOptom Graduates Clinically Competent?
- Description of Management/Human Resource Support Factors Reported by Malawi BOptom Graduates.

**METHODS**

**Design.** The Study was a multi method, retrospective survey design utilizing self-reported quantitative and qualitative data from a purposeful sample.

**Instrumentation, the Optometry Human Resource Development Survey.** An existing instrument was not available to measure the concepts of Preparedness, Clinical Competency, and Management/Human Resource Support. Therefore, the Optometry Human Resource Development Survey Instrument was constructed consisting of items derived from other scientifically validated and reliable studies, models and instruments.

**Analysis.** Quantitative questions with Likert Scale responses were converted to interval scores (Range 1 to 5) and analyzed. A score of 3 or more was designated as adequate. Due to
a small sample size, analysis was limited to descriptive statistics (measures of central
tendency and dispersion, numbers, and percents). Additionally, while using the same set of
preparedness questions, responses of deployed Malawi BOptom Graduates were compared to
responses of 2012 Australian BOptom Graduates. Qualitative comments by Malawi BOptom
Graduates, for each question, were analyzed for commendation and recommendation themes.

RESULTS

**Demographics.** The 2012 and 2013 BOptom Graduates were deployed to eye care clinics
of tertiary hospitals through-out the Malawi Public Health Service. Sixty-four per cent (9/14)
were serving their supervised internship, and 36% (5/14) were post interns serving as public
practitioner employees. All respondents were male, Black African, and not disabled. The
average age was 27.8 years with a range of 24-35. The year of qualification was 36% in 2012
and 64% in 2013. The majority of respondents were from rural communities. The
respondents were the first ever home grown Malawi BOptoms.
TABLE 1. QUANTITATIVE AND QUALITATIVE RESULTS

<table>
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<th>RESEARCH QUESTIONS</th>
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<th>QUALITATIVE THEMES: COMMENDATIONS AND RECOMMENDATIONS</th>
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| Preparedness:  
(Variables of Faculty Support-Course Curriculum, Clinic Content, Development of Cognitive Capacity, and Cost Benefit) | Are Malawi BOptom Graduates prepared for practice? | Scores ranged from 4.07 (1.39) to 4.86 (0.37). | The scores on Preparedness indicate BOptom Graduates agreed they were prepared adequately by The Program for their deployment as BOptoms. | Qualitative Commendation Themes:  
Good faculty support and appreciation for diverse pedagogical techniques;  
Expanded world view and expanded clinical skills from experience with international lecturers;  
Courses in the abnormal eye, communication, and research were especially appreciated.  
Qualitative Recommendation Themes:  
Expand abnormal eye curriculum; |
| Preparedness:  
(Variables of Faculty Support-Course Curriculum, Clinic Content, Development of Cognitive Capacity) | Are Malawi BOptom Graduates similar to Australian BOptom Graduates on Preparedness for Practice? | Malawi BOptom Scores ranged from 4.14 (1.03) to 4.86 (0.36)  
Australian BOptom Scores ranged from 4.06 (0.73) to 3.61 (0.82) | Results reveal Malawi BOptom Graduates rated Preparedness similar to Australian BOptom Graduates and the expected outcome of similarity between the groups was supported. In fact, although not tested for statistical significance due to small sample size, Malawi respondents gave ratings greater than Australian respondent ratings. | |
| Clinical Competency:  
(Variables of Clinical Methods of Eyecare & Ocular Management, Communication, Self-Perceived Clinical Capacity, and Professional Conduct) | Are Malawi BOptom Graduates clinically competent? | Scores ranged from 4.21 (0.89) to 4.86 (0.36) | The scores on Clinical Competency indicate BOptom Graduates agreed they were adequately trained by The Program for their clinical deployment as BOptoms. | Qualitative Commendation Themes:  
As deployed BOptom graduates, respondents reported their student clinical experiences in the Student Academic Vision Centre at Mzuzu Central Hospital were linked to BOptom adequate clinical capacity, technical skills, and diagnostic skills;  
Qualitative Recommendation Themes:  
Increase time and diversity of student practicums and externships; |
| Management/Human Resource Support:  
(Variables of Deployment, Transition, Human Resource Assistance, Quality Assurance, and Retention) | Description of Management/Human Resource Support Factors | Scores ranged from 1.85 (0.38) to 4.39 (0.51) | The Scores on Management/Human Resource Support reveal problematic areas: (1) Quality Assurance (Information Technology, Equipment Management, Fire Safety and Supplies-Medications) and (2) Retention (Salary).  
The eye clinic systems were not managed by The Program, but instead by Malawi Ministry of Health. Although the Ministry of Health assured The Program that deployment sites met quality standards, the quantitative results reveal otherwise. | Qualitative Commendation Themes:  
In order to serve Malawian urban and rural communities, BOptoms reported equitable deployment to tertiary hospitals in all regions of Malawi which included regularly scheduled outreach visits to rural primary clinics.  
Qualitative Recommendation Themes:  
Address worksite infrastructure deficits (equipment, IT and patient supplies-medications);  
Improve mentoring/supervision;  
Pre-train eye care teams, especially ophthalmic clinic officers, on Optometry Scope of Practice in order to address professional conflicts inflicted on BOptoms. |
KEY LEARNINGS

- Adequate self-ratings by Malawi BOptom Graduates on Preparedness, and, similarity of Malawi ratings to Australian ratings on Preparedness, portray successful pedagogical/academic education and clinical training provided by The Program.
- Adequate self-ratings by Malawi BOptom Graduates on Clinical Competency portray successful clinical training provided by The Program.
- Mandated deployment of BOptom graduates to Malawi Public Health eye clinics through-out the country indicates equitable distribution of optometry personnel nationwide.
- Numerous negative comments on transition into eye clinics related to professional conflict created by existing and uninformed eyecare teams require implementation of staff education on the role and scope of practice of BOptoms.
- Inadequate scores and comments on clinic conditions and worksite infrastructure must be addressed in order to provide quality patient care, to maintain BOptom clinical competency and to provide a positive worksite experience.