Dear Professor Kellermann,

The purpose of this proposal is to identify a problem that exists with the current system of vitamin distribution by Global Medical Brigades and to provide an overview of the steps that will be taken to recommend a solution. This proposal describes the structure and mission of Global Medical Brigades, expresses the prevalence of vitamin deficiencies in Ghana, and justifies the need for an improved vitamin distribution system. It also outlines our plans to investigate the most appropriate solution, provides a schedule of our research with important deadlines, and gives our qualifications for addressing this problem.

Global Medical Brigades (GMB) is one of the nine programs of Global Brigades, Inc., a student-led 501(c)3 nonprofit international relief organization. The mission of GMB is to provide medical relief and promote the development of sustainable care in communities with little or no access to healthcare. The three countries that GMB currently supports are Honduras, Panama, and Ghana. Communities with the greatest need and least access to healthcare are selected to receive aid. A medical brigade is set up in each partner community every 3-4 months by in-country GMB staff, medical professionals, and student volunteers. GMB chapters are located at universities in the United States, Canada, United Kingdom, Germany, Switzerland, and Ireland. Students are responsible for recruiting medical professionals and purchasing medications, vitamins, and medical supplies prior to each brigade.

**PROBLEM**

Global Brigades was established in 2007 and only served communities in Honduras and Panama until 2010, when the organization expanded to include Ghanaian communities. In each country, the list of common diseases differs depending on the climate, agricultural resources, living conditions, water supply, etc. Malnutrition is a common morbidity in Ghana and is especially prevalent among young children and infants. One contributing factor to malnutrition among the young Ghanaians is a severe vitamin deficiency. When vitamin deficiencies are neglected, the consequences can be severe. In addition, many mothers do not receive prenatal vitamins, which undoubtedly contributes to the startling 43 percent neonatal mortality rate.

In most cases, death and diseases caused by vitamin deficiencies are preventable. Ideally, infants and children in Ghana would not suffer the consequences of vitamin deficiencies. Until a self-sustainable solution is implemented, GMB would provide a consistent supply of prenatal and children’s multivitamins to the communities with the greatest percentages of infant and child vitamin deficiencies. The children would live much healthier lives and morbidity and mortality rates would be greatly reduced.
Currently, all GMB chapters are responsible for bringing vitamins to distribute during their medical brigades. When ordering vitamins, group leaders follow rough estimates provided by GMB staff members. There are a number of companies that donate vitamins or offer them at a reduced cost. Occasionally a group brings enough vitamins to give each child and pregnant woman a three month supply, which should last until the next brigade arrives. More often, a group only has enough resources to distribute a one month supply to a limited number of pregnant women and children. Thus, children continue to suffer from vitamin deficiencies and pregnant women continue to lack adequate prenatal care. In addition, the types and quantities of vitamins that are provided every three months are not consistent because each GMB chapter gathers vitamins from different companies.

The current system that is utilized to collect and distribute prenatal and children’s vitamins to underserved communities in Ghana is unreliable. If this problem is ignored, infants and children will continue to be malnourished and suffer from preventable diseases. To create a more reliable system for distributing prenatal and children’s vitamins, we propose that Global Medical Brigades establish a partnership with a specific vitamin company that will provide a consistent supply of vitamins for all young children and pregnant women in the communities with the greatest need.

**RESEARCH PLAN**

First, we will investigate specific vitamin deficiencies among infants and children in Ghana by exploring databases such as the World Health Organization (WHO) database. We will then attempt to rank the Ghanaian communities in order from highest to lowest prevalence of vitamin deficiencies. The percentages of morbidities and mortalities caused by vitamin deficiencies will also be investigated and reported.

Next, we will research vitamin manufacturing companies and charitable organizations that have donated vitamins for medical missions in the past. There are many companies and non-profit organizations that provide donations, but we will search specifically for companies and organizations that may be interested in establishing a partnership with Global Medical Brigades. This will likely require us to contact representatives of prospective partners to address the need for assistance in Ghana and the possibility of establishing a partnership. One organization that partners with other non-profits to deliver prenatal, infant, and children’s vitamins to countries with severe vitamin deficiencies is Vitamin Angels. We plan to further investigate Vitamin Angels and other organizations in order to recommend a specific partnership to Global Brigades. After a comparative analysis, we will recommend the organization that will most appropriately meet the specific needs of the young Ghanaians.

**SCHEDULE**

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<th>February 22</th>
<th>Submit Proposal Rough Draft</th>
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<td>February 24</td>
<td>Submit Proposal Final Draft</td>
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February 27 - March 2  Research types of vitamin deficiencies, areas of highest prevalence

March 19 – March 23  Research percentages of morbidities and mortalities caused by vitamin deficiencies

March 26 – March 30  Research potential partner organizations

April 2 - April 4  Prepare progress report

April 6  Submit Progress Report

April 9 - April 11  Contact representatives from potential partner organizations

April 12 – April 16  Prepare formal report draft

April 18  Submit Formal Report Draft

April 19 – April 20  Revise formal report

April 23  Submit Revised Formal Report Draft

April 25 – April 26  Re-revise formal report

April 27  Submit Final Formal Report

QUALIFICATIONS

As the medical coordinator for the Penn State chapter of Global Medical Brigades, Megan is responsible for ordering the vitamins, medications, and medical supplies for brigades. Consequently, she understands the current system of vitamin distribution and recognizes the need for change. She has previously ordered prenatal, children, and infant vitamins for two brigades so she is familiar with numerous vitamin manufacturing companies and charitable organizations.

Chanel and Desiré are pursuing a degree in Biology and Megan is pursuing a degree in Microbiology. We have a strong interest in medicine and have collectively taken many courses that emphasize the importance of proper nutrition, including Introductory Principles of Nutrition, Contemporary Nutrition Concerns, and Mammalian Physiology. Also, we are well acquainted with conducting secondary research owing to previous courses that have required us to do so.

I believe that we have the necessary tools to prepare a recommendation report to Global Brigades that suggests the establishment of a specific partnership and provides necessary justification. We thereby request your permission to begin our investigation for the report. Ideally, the outcome of
our efforts will be a reduction in the number of morbidities and mortalities caused by vitamin deficiencies among infants and young children in Ghana.

Sincerely,

Chanel
Megan
Desiré

REFERENCES

(1) www.globalbrigades.org
(2) www.vitaminangels.org/starting-your-micronutrient-project