

INSTRUCTIONAL DESIGN AND ASSESSMENT

Interprofessional Online Global Health Course

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Objective. The design and evaluation of an online global health course targeted for pharmacy and other undergraduates is presented.

Design. Enrolled students represented nursing, health education, pharmacy and a variety of other disciplines. The course was designed as an entirely online one with no class meetings. The course consisted of eight modules addressing global health competencies and interprofessional education competencies. Readings, quizzes, study question and team projects were tailored to the goals of each module. Students worked in interprofessional teams for their team projects.

Assessment. Assessments consisted of pre and post course perceptions and course evaluation. Rubrics were designed to evaluate team assignments and peer assessment of team participation.

Conclusion. Course was successful in enhancing perceptions of global health knowledge and understanding of roles and responsibilities of various health disciplines in addressing challenges of global health. No changes in teamwork perceptions were documented after completing the course. The overall course structure was successful in meeting course goals.

Keywords: global health education, interprofessional, online teaching, teamwork

INTRODUCTION

Awareness of global health issues has rapidly increased during the past decade as technology has allowed the world to become more interconnected.¹ The nature of global health challenges presents an ideal opportunity for training students from an interprofessional approach as these challenges require multiple disciplines to learn and work together. Additionally, the literature suggests that global health education should be addressed from an interprofessional approach.² In recent years, competencies for interprofessional education for global health have been developed.³⁻⁵ These competencies are consistent with the Interprofessional Education Collaborative (IPEC) competencies including role clarification, ethics, teamwork and collaboration, and communication.⁶

There are few interprofessional undergraduate global health courses developed and assessed in the literature.⁷⁻⁹ The global health education involving pharmacy students is often in the form of experiential training.^{10,11} While experiential training is valuable, it is essential for students to be thoroughly grounded on fundamental global health concepts in order to better relate their experiences.

Additionally, there has not been much evaluation of interprofessional competencies in global health courses. Previous global health literature has involved dental students and public health students,⁷ design of an interdisciplinary undergraduate and graduate certificate program in global health that included international field experiences,⁴ a review of approaches to global education that did not include interprofessional outcomes,⁵ and a description of Canadian global medical education programs that did not address interprofessional outcomes.¹² A recent article described a year-long seminar for medical, nursing, public health, and physician assistant students that involved group discussion on global health topics and a final group project.⁸ This report also measured participant satisfaction, and changes in knowledge, skills, and attitudes related to global health outcomes. However, the published report only reported on the faculty leaders' experiences with the program. A report by Palmer et al described an interprofessional global health experience involving teams interacting with refugee and immigrant populations.¹¹ The teams consisted of medical, dental, pharmacy, nursing, physician assistant, public health, and nutrition students. The main method of evaluation was students' reflection.¹¹ A report by Arif et al evaluated the attitudes of a group of health care students from osteopathic medicine, pharmacy, dental medicine, optometry, and podiatric medicine after they completed an international experience in Guatemala.¹⁰ In particular, students'

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perception of the role of pharmacists in public health was evaluated. The study we conducted and present here is the first one that describes the performance of a group of students from diverse medical and nonmedical healthcare disciplines enrolled in an online global health course that focused on developing both fundamental global health knowledge and interprofessional competencies.

DESIGN

An interprofessional team with faculty members from the Schools of Nursing; Pharmacy; and Education, Health and Human Behavior; and the Department of Speech Communication assembled to develop an interprofessional global health elective course. As many global health issues are handled by various health professionals working together, the team desired not only to develop global health competencies but also IPEC competencies, especially enhancing knowledge about the roles and responsibilities of various professions involved in global health, interprofessional communication, teamwork, and collaboration. The team decided to develop this course as a completely online course in order to accommodate the diversity of schedules of students from various disciplines. The online format involved asynchronous readings, quizzes, and self-study questions. Students also collaborated in teams to work on various assignments. Teams were required to use the Blackboard course management system.

The targeted students were third-year pharmacy students and junior and senior nursing and health education students. The course was cross-listed as a pharmacy elective and an undergraduate integrated studies course. Thus, any undergraduate junior or senior could have matriculated into the course.

The specific learning outcomes for the course are provided in Table 1. Based on recommendations by faculty members in the Department of Health Education and Kinesiology who had previously taught a classroom course with similar topics to their students, the team chose Skolnik's *Global Health 101* as the textbook for the course.¹³ An interprofessional team of six faculty members from pharmacy, nursing, and health education, also examined the appropriateness of the textbook for their respective disciplines and concurred with each other regarding textbook choice. Additionally, the faculty team worked together to: identify topics from the recommended textbook, choose 10 quiz questions from the assigned text for each module (described later), design team projects for the various modules, and design and finalize grading rubrics. In its first offering, the course was administered and taught by two faculty members, one from the School of Pharmacy and the other from the Department of Kinesiology and Health Education from the School of Education, Health and Human Behavior.

The course was comprised of eight modules, with each module focusing on a different topic being delivered over a two-week period. The specific content included in the different modules is reported in Table 2. The format for the modules consisted of assigned chapters from Skolnik's text, quizzes, and team projects related to the topics covered by the modules. The faculty team worked on designing relevant and applicable team projects for the various modules. Each two-week module was structured such that the first week included assigned readings from the text followed by a 10-item multiple choice online quiz to be completed by the end of the week. Students were allotted 15 minutes to complete the quiz. The quiz was

Table 1. Learning Outcomes for an Interprofessional Online Global Health Course

Students working in interprofessional teams will be able to describe the roles of various health professions in addressing global health challenges.
Students working with other health professional students will maintain respect and shared values for each other in addressing global health challenges.
Students will be able to communicate with other health professional students in completing various global health projects.
Students will be able to collaborate in teams of health professionals to address global health challenges.
Describe the principles and goals of global health and the role of public health in global health.
Define key measurements of global burden of disease.
Evaluate the ethical issues that arise in a global health society.
Examine communicable and non-communicable diseases and assess the impact of both communicable and non-communicable disease to a global health case.
Describe the impact of humanitarian emergencies and the health measures to mitigate the impact of such emergencies.
Apply knowledge of burden, costs, and consequences of nutrition problems to address undernutrition issues in the global environment.
Identify the health needs of women and children in different countries.
Describe health systems in different countries and compare and contrast the roles of different health professionals in underdeveloped and developed countries' health systems.

Table 2. Specific Course Modules Covered in an Interprofessional Online Global Health Course

Module 1	Introductory concepts – chapters 1, 2, 3, and 17 in Skolnik 2 nd ed.
Module 2	Ethics and culture – Chapters 4 and 6
Module 3	Women and children – Chapters 9 and 10
Module 4	Communicable disease – Chapter 11
Module 5	Non-communicable disease – Chapter 12
Module 6	Nutrition – Chapter 8
Module 7	Global health systems and pharmaceutical system – Chapters 5 and 16
Module 8	Humanitarian emergencies – Chapter 14

open book and made available by Saturday of the previous week with an online submission deadline of Friday of the current week. During the second week of each module, teams were required to work on a team project. An online video featuring the course instructors was posted on the first day to introduce students to the course, the syllabus, and technology requirements for the course, and to address key course policies.

Enrollment was limited to 36 students because of prior challenges instructors had encountered with having too many students in an online course. Advisors in the targeted schools and departments were encouraged to make students aware of the course. Thirty-seven students initially enrolled in the course; however, four students dropped out within the first 2 weeks because of over commitment, leaving 33 students who participated in the course.

The faculty members teaching the course randomly organized students into 12 interprofessional teams. Each team consisted of students from the various academic disciplines represented in the course. While the aim was to form three-member teams for optimal teamwork, the

final composition of the teams consisted of seven three-member teams, four two-member teams and one four-member team. Teams were instructed to use the Blackboard wiki for collaborating with each other on the team assignments. The specific team assignments are found in Appendix 1. The team assignments for the various modules were structured not only to apply knowledge gained in the particular module, but also to encourage team collaboration and enhance knowledge about discipline roles and responsibilities.

EVALUATION AND ASSESSMENT

Several instruments were used to assess various aspects of the course as well as the overall course. These included a 10-item multiple-choice quiz from Skolnik’s textbook to assess knowledge gained from individual chapter readings; a team participation rubric completed by the student (Table 3); a team assignment grading rubric completed by course faculty (Appendix 2); a perception survey to assess the IPEC competencies of teamwork and collaboration, interprofessional communication, and role clarification, as well as knowledge about global health challenges; and an overall course evaluation. The grading scale used for the course was based on a total of 800 points and consisted of 20 points for each individual quiz, 30 points for study questions, and 40 points for the inter-professional team project for each module. There were four peer assessments worth 20 points each. Rubrics were developed to grade team participation and team assignments.

The team participation rubric was used by each team four times during the course to evaluate their team members regarding team participation and team dynamics. The rubric was adapted from the CATME peer evaluation system and a participation rubric created by Dr. Barbara

Table 3. Team Participation Rubric Completed by Students^{a, b}

	Below Expectations (1 point)	Meets Average Expectations (2.5 points)	Above Average Expectations (4 points)
Share of Work (roles & responsibilities)	Minimally contributed to the work.	Contributed an equal share of the work or more	Worked above and beyond the expectation
Interprofessional Communication (communication)	Rarely expressed ideas and feelings	Usually communicated ideas and feelings	Always communicated ideas and feelings
Respect of Others (values & ethics)	Rarely respected input from the different professions	Usually respected input from the different professions	Always respected input from the different professions
Responsiveness to Others (values & ethics)	Rarely responsive to other members in a timely manner	Usually responsive to other members in a timely manner	Always responsive to other members in a timely manner
Quality of Work (teamwork & collaboration)	Work was poor	Work was good	Work was excellent

^aTotal possible points range from 0 to 20

^bInstructions to students indicated that they needed to provide justification for their ratings and constructive feedback was encouraged

Frandsen of St Edward’s University in Austin, Texas.¹³⁻¹⁴ The rubric was designed to ensure that IPEC competencies as well as elements of team participation for an online course were assessed.

A team assignment rubric was designed to evaluate the team assignments from each module. The team assignment rubric was customized for each module by seven fourth-year pharmacy students participating in an education specialization as part of their advanced pharmacy practice experience (APPE) elective education. The fourth-year pharmacy students also pilot tested the modules prior to the course going live. Each APPE student took about 6 to 8 hours to complete each module during the pilot tests. To ensure consistency in grading, both instructors graded the team assignments using the rubric for two team assignments. As there was good consistency in grading, to save time, the instructors subsequently each graded three assignments out of the remaining six.

The perception tool was designed to be administered as a pre-course and post-course assessment tool (Table 4). The tool was designed by the interprofessional faculty team involved with the design of the course and

consisted of a 5-point Likert scale ranging from strongly disagree to strongly agree. The items for the perception tool were designed based on the global health course objectives as well as the IPEC competencies. The tool consisted of 20 items, with the first four items assessing the four broad IPEC competencies. A bonus of 20 points each (total 40 points) for completing the pre-course and post-course assessment and evaluation was offered as an incentive.

An end-of-course evaluation to seek student input for future course improvements was also designed (Table 5). The purpose of the end of course evaluation was to obtain student feedback regarding the administration of various aspects of the course and its delivery in the online environment.

All assessment tools were reviewed and deemed exempt when approved by the Institutional Review Board (IRB) at the Southern Illinois University Edwardsville. Individual responses were coded with unique identifiers so data could be matched.

The majority of students enrolled in the course were health-related disciplines including 27% nursing, 24% health education, 12% pharmacy and 18% other professions such as speech language, social work and

Table 4. Student Perceptions Before and After Completing an Interprofessional Online Global Health Course^a

Question	Pre-course Mean	Post-course Mean
Confident in working with other disciplines	4.1	4.3
Important to develop teamwork & collaboration skills with other disciplines	4.4	4.4
Communication skills are necessary to work with other disciplines	4.6	4.6
Knowledgeable about roles of other disciplines in addressing global health challenges	3.3	4.2*
Knowledgeable about roles of government and NGOs for global health challenges	2.7	4.2*
Estimate burden of global health issues	3.3	4.2*
Address ethical issues in global health	3.5	4.3*
Knowledgeable of cultural factors that contribute to global health challenges	3.6	4.2*
Knowledgeable of global health needs of women & children	3.5	4.4*
Knowledgeable of impact of environment on global health of women & children	3.5	4.4*
Knowledgeable of impact of communicable diseases in global health	3.5	4.4*
Knowledgeable of methods to prevent infectious diseases such as HIV/AIDS, malaria, TB worldwide	3.9	4.4*
Knowledgeable about impact of non-communicable diseases worldwide	3.3	4.4*
Knowledgeable of measures to address burden of non-communicable diseases worldwide	3.1	4.3*
Knowledgeable of measures to address nutrition issues worldwide	3.4	4.4*
Knowledgeable of consequences of poor nutrition worldwide	3.9	4.4*
Knowledgeable of differences in health systems in different countries	2.9	4.0*
Knowledgeable about roles of science & technology in addressing global health challenges	3.2	4.1*
Knowledgeable of health measures for addressing humanitarian emergencies	3.1	4.2*
Knowledgeable of impact of health issues in global disasters	3.5	4.3*

^aFive-point Likert scale of strongly disagree=1 and strongly agree=5

*Significant difference at $p < 0.05$

Table 5. Distribution and Means of responses to Course Evaluation (N=27 students)^{a,b}

Question	Strongly		Agree/Strongly		Mean
	Disagree/Disagree	Neither	Agree		
Syllabus provided clear instructions of expectations and grading.	2	1	24		4.3
Assignment directions clearly specified requirements and directions for submission.	2	1	24		4.3
Grading system or method for assigning point, the grading scale, and rubrics used were clear.	1	0	25		4.2
Feedback was provided in a timely manner.	2	4	21		3.9
Instructors created opportunities for students to communicate with each other to enhance my learning.	3	3	21		3.9
Team assignments were useful in helping me learn.	7	3	17		3.6
Individual study questions were useful in helping me learn.	2	0	25		4.2
Module quizzes enhanced my learning of content.	1	5	21		4.1
Peer assessment process for evaluating team participation was appropriate.	6	2	29		3.5
Course instructors responded to email questions promptly.	2	5	20		4.0
Appropriate technology was used to support learning in course.	1	7	19		4.0
Overall this course enhanced my learning about global health.	1	2	24		4.2

^aScale: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree and 5=strongly agree

^bNumber of respondents

psychology. Non-health disciplines (18%) represented included biology, political science, elementary education, speech communication, and physics. Pre- and post-course perception data for each item were compared using paired *t* tests to determine whether there were significant differences in global health knowledge and teamwork items. Bonferroni correction for multiple tests was applied. One-way analysis of variance (ANOVA) was used to determine if there were significant differences in perceptions based on disciplines.

Thirty-two of 33 (97%) students completed both the pre- and post-course perception survey (Table 4), and 27 of 33 (81.8%) completed the course evaluation (Table 5). Overall, except for three perception statements relating to IPEC competencies, student responses on all of the remaining perception statements about global health knowledge were significantly enhanced after taking the course. The only perception statement related to the IPEC competencies that was significantly enhanced was related to knowledge about the roles of other disciplines in addressing global health challenges ($p < 0.05$). Student perceptions about interprofessional communication, and teamwork and collaboration were not significantly enhanced. There were no significant differences in pre- and post-course perceptions based on discipline for most of the perception survey items. Responses to only two questions regarding perceptions of knowledge about the impact of noncommunicable diseases worldwide and measures to address the burden of noncommunicable

diseases worldwide (Questions 13 and 14) differed significantly by discipline (health education and other health profession students) in the pre-perception survey ($p < 0.05$). However, these perceptions did not remain significant in the post-course survey. This may indicate that the students learned these topics during the course.

Overall the course evaluations were positive toward the structure of the course (Table 5). One student indicated that the course structure was not only excellent but that the course promoted critical thinking. Other examples of open-ended comments included, “learning to think differently about how things are done outside of U.S.,” and “broaden my horizons and understanding that world does not work the same way that U.S. does.” Numerous students commented about how the course enhanced their knowledge about global health and health burdens, and also how to work as a team with people from different backgrounds. When asked if the course enhanced interest in working in global health, 16 of 22 (73%) respondents indicated yes, and six indicated (23%) no. Regarding the impact of course content, one student said, “The content of the course was depressing.” Two students said they would like to participate in a medical mission trip. One student had accepted a job overseas and wished to study public health there.

When asked if the course enhanced their desire to work with other disciplines, 11 of 17 (64.7%) respondents indicated yes, and 6 (35.3%) indicated no. Regarding working with other disciplines, students indicated that they

enjoyed learning about other disciplines' perspectives, and importance of other disciplines, and how disciplines can work together to address burden of global health.

Suggestions to enhance learning included for faculty members to be more specific with individual study questions, and to use more visual aids such as videos. Students expressed concerns about the use of team projects for an online course and the fairness of the peer assessments in groups where team dynamics were challenging.

DISCUSSION

Overall, the course structure was a successful approach to offering an interprofessional global health grades course in an online environment as determined by generally positive student comments and course evaluations. Only one student earned a B in the course with the remaining students earning an A. While the bonus points given for completing the pre- and post-survey instruments may have influenced student grades, a review of what the grades would have been without the bonus points suggests that only 4 students would have received B's. Thus, the students performed well in the online course environment.

The field of global health is a natural topic for addressing interprofessional competencies as the challenges need to be addressed from a multitude of disciplines working together. Peluso has advocated that global health programming should be a model for interprofessional health education.⁸ Thus, one of the goals of the interprofessional team that developed this online course on global health was to develop the IPEC competencies for interprofessional education. This is the first article to describe and evaluate an online course targeted for various health professions and nonhealth disciplines. It addresses gaps in the literature to provide global health education to diverse-related disciplines.⁹ The challenges of communicating online without the ability to meet face to face and responding to the nonverbal cues of classmates can be formidable and make effective teamwork, which is an important IPEC competency, difficult. Nevertheless, the course improved students' perceptions regarding understanding of the roles and responsibilities of various disciplines, which is another important IPEC competency. The course achieved the goal of improving students' perceived knowledge of global health challenges as evidenced by the significant improvement in students' ratings for the majority of items in the perception of knowledge survey. Completing the course even enhanced some students' interest in pursuing work in this area.

The course was specifically designed to organize students into interdisciplinary teams to work on assignments that would require their learning about other professions' roles and responsibilities, teamwork and collaboration, and

communication. The noted negative feedback about the course centered on the team projects and the fairness of the peer assessment process. Closer evaluation revealed that this feedback was related more to team dynamics than to the content of team projects. There were a few cases where team members struggled to function as a highly effective team. There were team members who rated fellow team members harshly when evaluating teamwork on the peer assessment. In reviewing the peer assessments, we identified five teams that had conflicts with at least one member of the team. However, only one team had issues that were of significant concern, such that it required instructor intervention to promote team harmony. Thus, seven of the 12 (58.3%) teams appeared to be effective teams. The team projects reflected good interdisciplinary collaboration in spite of challenges associated with an entirely online course.

The assessments did not reveal any significant changes in students' perceptions about teamwork after completing the course. One explanation for this may be the small sample size and limited number of negative feedback comments. Alternatively, selection bias may have occurred, with students who had an affinity for working in teams electing to enroll in this type of course. Thus, these students may have already been aware of the value of working in teams and communicating with other disciplines prior to taking the course. Even though no changes in perceptions of teamwork were documented, the structure of the team assignments required teamwork and collaboration. The peer assessment process and the use of wikis revealed that teamwork and collaboration were occurring.

We did demonstrate that students' perceptions about the interprofessional competency regarding the roles and responsibilities of other professions were enhanced as a result of the course structure. This suggests that our course achieved the goal of preparing learners (as much as possible at the undergraduate level) for the kind of interprofessional communication needed in global health.² We recognize that the lack of use of validated tools to demonstrate IPE core competencies is a weakness of this report.¹⁴ Many of the learning outcomes in global health advocated by Seymour and Barrow were addressed and achieved in the course.²

Only four pharmacy students enrolled in the first offering of this course. The low number of pharmacy students that participated could be attributed to the online format of the course. Up to this point, pharmacy students at our institution had not enrolled in any online course. Students tended to be apprehensive about such offerings. Also, the course being new and students having many other options for course electives that semester could also

be factors. In general, all of the pharmacy students who enrolled were high-functioning team members.

SUMMARY

We successfully implemented an interprofessional online global health course for pharmacy and other undergraduate students. The course structure was successful in addressing global health outcomes and in encouraging interprofessional outcomes. Using an online format allowed various disciplines to enroll in the course. Designing innovative approaches to enhance interprofessional collaboration for global health work is highly desirable. This online course offered a convenient option for busy students to not only learn about global health, but also to develop IPEC competencies that are highly desirable for future health care practitioners.

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Appendix 1. Team Assignments in an Interprofessional Online Global Health Course

Module 1 – Introductory concepts	The team selects a profit or nonprofit NGO involved in global health and responds to the following questions <ol style="list-style-type: none">What is the main mission of the organization?Identify the roles of the following professionals in the organization: medicine, dental medicine, nursing, pharmacy, and health educator.Discuss a recent global health challenge addressed by the NGO including:<ol style="list-style-type: none">Identify the roles played by various health professions to address the specific challenges.Identify the skills/training needed and provided by the organization to prepare the health professionals.Identify how the organization addressed the specific challengeReflect on your current competencies with the skills required to address the specific challenges.
Module 2 – ethics and culture	In your team, please choose one of the following cases and document your answers on the Case Analysis Assignment Sheet as a team <ol style="list-style-type: none">Review the short-course AZT case found in Chapter 4. ORGo to the following links to familiarize yourself with the controversy related to the China Golden Rice trials. http://www.nature.com/news/china-sacks-officials-over-golden-rice-controversy-1.11998 http://www.scidev.net/en/agriculture-and-environment/gm-crops/news/golden-rice-trial-triggers-sackings-investigation.html http://news.sciencemag.org/scienceinsider/2012/12/chinese-researchers-punished-for.html
Module 3 – Women & children	Choose one of the following: <ol style="list-style-type: none">In this exercise the team will choose a health problem faced by women and children in a developing country and discuss what the problem is, what factors contribute to this problem, and how the problem affects the citizens; you will also recommend public health interventions that will help alleviate the problem. Your analysis of the problem and design of the intervention should incorporate perspectives of all disciplines represented on the team. . Also, you will need to discuss the country’s profile such as: population, capital, area (square mile), major languages, life expectancy, main exports, GDP, literacy rate, and poverty rate. Research this problem in greater depth and write a paper that outlines the problem.Childhood vaccinations have been proven to be effective. However, in developing nations as well as in the United States there is skepticism about their necessity. How would you utilize resources and tools of your discipline to improve vaccination rates and outcomes? Please include examples of issues that have been raised here in the United States as well as other countries. The 2-3 paper should include:<ol style="list-style-type: none">Discuss the importance of vaccinations/immunizationsIdentify issues related to vaccinations in the United States and at least one other countryCompare the contributing factors of the vaccination issues in the two nations (discuss unique cultural issues if applicable)Discuss what medical, pharmaceutical, nursing, and health education practices be utilized to improve vaccination rates and outcomes.
Module 4 – Communicable disease	Students are to create an analysis on an emerging or re-emerging infectious disease that continually provides challenges to the public health system in the global environment. This 2-3 page (double-spaced) analysis should contain the following information: <ol style="list-style-type: none">Descriptive summary related to an emerging infectious disease in the areas of transmission, patient isolation precautions, clinical presentation, diagnosis, and therapyAn identification of factors and/or situations that may promote the spread of this emerging disease.Recommendations for how this evidence can be applied to medical, pharmaceutical, nursing, and health educator practice.

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Module 5 – Non-communicable disease	<p>In your team, discuss the differences between a lower income and higher income country with regard to cultural beliefs (attitudes toward disease, treatment), preventative care, and treatment including non-traditional treatments, within your assigned noncommunicable disease. Within your group, define the role of each health professional (physician, pharmacist, health educators, nurse) in the prevention and/or treatment of your assigned noncommunicable disease. Your response should be no more than 2 to 3 double-spaced pages.</p> <ul style="list-style-type: none">Team 1 and 8 : Cardiovascular Disease- Vietnam and United StatesTeam 2 and 9: Cardiovascular Disease- Haiti and GermanyTeam 3 and 10: Diabetes- Mexico and JapanTeam 4 and 11: Diabetes- Kenya and ArgentinaTeam 5 and 12: Mental Health Disorders- India and AustraliaTeam 6: Mental Health Disorders- Burundi and BosniaTeam 7: Cancer- Afghanistan and Canada
Module 6 - Nutrition	<p>Identify a country in South Asia or sub-Saharan Africa not discussed in the book. Please respond to the following questions in essay format. Your response should not be more than 2-3 pages, double spaced. Please provide at least 5 references to support your discussion. APA format is not required.</p> <ol style="list-style-type: none">a) Describe a nutritional issue that the country faces. Using the Figure 8-1, determine the potential cause(s), and offer a solution to the issue in terms of designing an intervention to address it. Also, address the impact of the intervention towards improving the economic development of that chosen country.b) Discuss the roles and responsibilities of different health care professionals (pharmacist, nurse, physician, and health educator) towards resolving the nutritional issue.
Module 7 – global health systems & pharmaceutical system	<p>Please choose one of the following questions and respond in essay format. Your responses should be no more than 3 to 4 pages double-spaced.</p> <ol style="list-style-type: none">1. Case analysis based on the video “Frontline: Sick around the America”, as well as other resources.<ol style="list-style-type: none">a. Video link: http://www.pbs.org/wgbh/pages/frontline/sickaroundamerica/view/b. Based on the videos and your own research, compare and contrast the structure of the health systems (universal health care, private sectors, public sectors, payment methods, etc.), and the roles and/or responsibilities for each different type of health professionals (e.g., pharmacist, physician, nurse, and health educators) between the current U.S. health system and any TWO of the five health systems (Great Britain, Japan, Germany, Taiwan, and Switzerland)?2. Please find an intervention/program/policy that was implemented in a country that was not described in the sections of Policy and program briefs and Case studies of Chapter 15, and discuss how it has improved the health system in that particular country.
Module 8 – humanitarian emergencies	<p>Unfortunately, sometimes we learn after the fact what we should have done to optimize our response in a disaster. In your team, please write a short essay of 2-3 pages double-spaced performing an analysis of the lessons learned from a recent disaster (natural or man-made) within the past 10 years. Select and focus on one of the following challenges related to a disaster:</p> <ol style="list-style-type: none">1. socioeconomic and cultural factors2. the delivery of health care3. provision of food, water, and shelter4. disease control5. communication challenges6. ethical issues7. the role of government in disaster response. <p>Additionally, discuss how an interprofessional team would address the lessons learned in a future disaster. Please address at a minimum 3 professions, i.e. nurse, social worker, pharmacist, health educator, medical doctor, etc.</p>

Appendix 2. Sample Team Assignment Rubric for Module 6 – Nutrition

Criteria	Exceeds Expectations	Meets Expectations	Does Not Meet Expectations	Multiplier	Score
	8-7 points	6-4 points	3-0 points		
“Identifying a need for nutritional intervention in developing countries”	A country is stated and the nutritional issue is appropriate in the context of regional nutritional challenges and the concepts covered in the module. The student elaborates on the nutritional issue, giving background information and making connections to the current status of the country’s population, economy, etc.	The nutritional issue is appropriate, however, descriptions of the nutritional issue and/or connections made to the country’s current development status are weak.	The nutritional issue identified is not appropriate in the context of substantial nutritional issues facing that region or does not align with the concepts that have been developed in the module or the student fails to identify either an appropriate country and/or nutritional issue.	1.0	
“Explaining underlying causes”	The students appropriately use underlying cause(s) of malnutrition in Figure 8-1 from the textbook to support an explanation of how the nutritional issue developed in the country. Specific examples of cause and effect are included.	Explanations and/or specific examples of how these causes manifested into the nutritional issue are lacking.	The students identify possible underlying cause(s) of malnutrition but makes little or no attempt to explain.	0.5	
Description of potential underlying causes of nutritional issue	Students clearly state a logical, feasible solution to the nutritional issue that highlights their grasp of the underlying causes and their propensity for creativity.	Support for their chosen solution is lacking or solution may lack a clear focus.	A solution is not stated or the suggested solution is not logical and/or feasible.	0.5	
“Identifying solutions”	The students elaborate on a plan to carry out the solution, providing insight not only into “what” is going to be done but also “how” it is going to be done with specific examples of interventions.	The students provide a clear plan as to what needs to be done to implement the solution, but the “how” component is consistently not addressed.	The provided solution is largely theoretical and contains few or no feasible actions that could be carried out to address the nutritional issue.	1.0	
“Designing interventions”	Students mention specific, feasible, and creative roles for 3 or more health professionals.	Students mention specific roles for 1-2 health professionals.	The roles mentioned are not specific or feasible or there is a failure to address roles.	1	
Depth of discussion of the roles of health care professionals”	Depth of discussion of the roles of health professionals				

(Continued)

(Continued)

Criteria	Exceeds Expectations	Meets Expectations	Does Not Meet Expectations	Multiplier	Score
“Seeing broader implications” Discussion of the economic impact of intervention	The students elaborate on the cost-effectiveness of the interventions, improved productivity, and/or stimulation of the economy and uses specific examples.	The students makes mention of economic impact but fails to give specific examples.	Students do not address the economic impact or their discussion of economics contains false information.	0.5	
Spelling, grammatical length	Double spaced, 2-3 pages, and < 3 spelling and grammatical errors.	Deviates from page requirement by ½ page, double spaced or contains 4 to 10 spelling and/or grammatical errors.	Deviates from page requirements by more than ½ pages, is not double spaced or contains more than 10 spelling and/or grammatical errors.	0.25	
References	Contains 5 or more reputable sources that help support findings with appropriate in-text citations.	Contains 4 to 3 reputable sources that help support findings with appropriate intext citations.	Contains less than 2 reputable sources or non-reputable sources that help support findings or lacking intext citations.	0.25	
TOTAL (OUT OF 40)					