



## **CIEE in Gaborone, Botswana**

<b>Course name:</b>	Public and Environmental Health Issues in Botswana
<b>Course number:</b>	PUBH 3001 GCPH
<b>Programs offering course:</b>	Community Public Health
<b>Language of instruction:</b>	English
<b>U.S. Semester Credits:</b>	03
<b>Contact Hours:</b>	45
<b>Term:</b>	<b>Spring 2019</b>
<b>Course Prerequisites:</b>	None
<b>Course meeting times:</b>	TBD
<b>Course meeting place:</b>	246/ Meeting room
<b>Professor:</b>	
<b>Contact Information:</b>	3555238/ 71801975 / <a href="mailto:mbongwe@mopipi.ub.bw">mbongwe@mopipi.ub.bw</a> / bontl.mbongwe@gmail.com
<b>Office address:</b>	Block 246, Office A113, University of Botswana
<b>Office hours:</b>	By appointment

### **Course Description**

This course offers an introduction to public and environmental health practice in Botswana. The course will cover local issues with a focus on the Primary Health Care (PHC) approach. The PHC aspects will include among other functions: infectious diseases, health promotion, safe drinking water supply, food safety, and basic environmental sanitation. The topics covered will allow students to appreciate the different health challenges facing Botswana, its population as well as the root causes (social and biological) of these challenges. Additionally, historical examples of important health challenges will be used to illustrate the nature, role, and organization of public and environmental health. The course will also cover the aspect of sustainable development regarding health issues/concerns in Botswana.

### **Learning Objectives**

- Analyze basic public health and environmental health concepts. Understand public and environmental health principles and the connection between health and development;
- Understand social, cultural and environmental determinants of health and disease;
- Explore and analyze current legislations and regulations regarding public and environmental health issues in Botswana;
- Recognize the role of different stakeholders such as government, non-governmental and international partners on Botswana's health policies.



## Methods of Instruction

This course is taught through a combination of approaches: i.e. direct instruction, field trips and students will also actively engage course material through in-class discussions and review of public health related current events. The set of assigned readings and written assignments will broaden the student's understanding of topics covered in class and reinforce the concept of multidisciplinary integration in public health. Regular class attendance and active participation in class discussions are essential for achieving a meaningful learning experience.

## Assessment and Final Grade

1. Two Report/research briefs (40%)
2. Review of Public health Policy (20%).
3. Presentation of the Public Health policy paper (10%).
4. Group Work- Public Health in Practice (30%)

## Course Requirements

Unless otherwise indicated, all assignments are due during class on the date indicated.

### **A. Report/Research Briefs (40%) (Individual work)**

Students will write two (2) research briefs each worth 20% The briefs should be three (3) pages each covering public or environmental health issues facing Botswana today. Each paper should be types with font 12 points, Times New Roman, double spaced. The format of each brief should be as follows:

1. Title page: Title of the paper, your name and student number and the name of the course and course code.
2. Abstract: Your abstract should be only 200 words giving the background of the paper, the objective of the paper, the methods of collecting the information, your findings and your recommendations
3. Introduction: This section should give an over view of the issue you are discussions and the expanded objectives of the paper (recognizing that in your abstract you were only summarizing) **This should be one page long only**
4. Methods of collection of information (journals, books, newspapers, ets), the key words that you used to search the information (200 words only)
5. **Results (what did you find in your search, how many news papers, how many books, etc). summarize the findings in a table as follows:**



Source of information (author) e.g. Journal article , author.... Or, News paper article ( aauthor....	Where was the study/ report written	Objectives of article or paper or chapter in a book	Main findings

6. **Discussion: discuss in detail (one page only) the finding in the table you just created above. Your duty is to expand the findings in terms of what was the cause of such a finding , who did or did not do what. Why do you think this is a public or environmental health problem in Botswana, how is this different from or compares with other countries (provide facts)**
7. **Recommendations. Give only three recommendations how you think the current challenge can be solved** Your opinion should be backed up with facts and citations but write your opinion as a thesis (“Health is a fundamental critical right because.....”) rather than, “I feel this” or “I think that”. Research briefs should have a minimum of two professional references (journal articles, reports from national or international agencies NOT blogs, NGOs or Wikis).
8. References

### **B. Review of the Botswana health policy of 2011 (20%) Individual work**

Students will write a five (3) page report reviewing/critiquing the health policy of 2011 in Botswana in terms of how it facilitates and/or impedes local health. (Group assignment).

The Policy may be accessed at:

[http://www.nationalplanningcycles.org/sites/default/files/country\\_docs/Botswana/nhp\\_no v 2011 parliament.pdf](http://www.nationalplanningcycles.org/sites/default/files/country_docs/Botswana/nhp_no v 2011 parliament.pdf)

The format for review should be as follows:

1. Title of the Policy
2. Introduction: Write a short introduction on the policy overview, what it seeks to achieve, what are the objectives of your review
3. Key Policy issues: Discuss the key issues in policy and what they seek to achieve
4. Strengths of the policy: Discuss what you see as the strengths of the policy, how does this policy compare with others in terms of its strength elsewhere, why do you feel it is better (Please quote such policies)
5. Weaknesses of the policy: what are the areas that should be covered in the policy and why. What examples can you give that justify its strengthening ( factual)
6. Key recommendations on the policy
7. References
8. Give the contribution of each member in writing this review ( groups will be allocated in class based on the number of students



**C. Presentation of the Health Policy Review paper (10%)**

Each group will present for 10 minutes (Power point). The structure of the presentation should be as follows:

- a. Introduction ( description of policy you are reviewing)
- b. What the review seeks to achieve
- c. Key policy issues
- d. Strengths and weaknesses of the policy
- e. Recommendations
- f. References

NB. Each group member should have a role in the presentation

**D. Public Health in Practice-30% (Group Work 20 % and Presentation 10%)**

Students will engage in a research of the following environmental health issues in Botswana.

**Group 1: Food Safety concerns; Compare food safety practices in the formal and informal sector in Botswana in line with the food control Act and other best practices.**

**Group 2: Health care waste management- Observe the Management of health care waste management in clinics that you will be visiting, critique based on WHO recommended practices and the waste management Act of Botswana (Clinical waste Management code of practice**

The format of the presentation should be as follows:

- a. Title of the presentation
- b. Presentation outline
- c. Introduction
- d. Objectives of the presentation
- e. The methods used to collect the data
- f. The results
- g. Discussion of the results
- h. Conclusions and recommendations
- i. References

**Class Attendance and Participation**

All students are required to attend all classes on time, and valid reasons should be given for absenteeism. If you miss more than 3 classes, you will lose half a letter grade.



**Group Assignments:** Failure for a group member to actively participate will result in the loss of marks. All group members are expected to present their paper in class.

### **Academic Dishonesty**

Cheating and plagiarism in any course assignment or exam will not be tolerated and may result in a student failing the course or being expelled from the class and/or university

Please read the following university documents that facilitate learning:

- ✓ Revised Academic Honesty Policy for students (2006)
- ✓ Learning and Teaching policy (2008)

### **Course Grading:**

The following CIEE grading system will be used on the total accumulated points:

<b>CIEE Course Grade</b>	<b>Recommended US Grade Equivalent</b>
92.50 -100	A
89.50 - 92.49	A-
86.50 - 89.49	B+
82.50 - 86.49	B
79.50 --82.49	B-
76.50 - 79.49	C+
69.50 - 76.49	C
59.50 - 69.49	D
0 - 59.49	F



## Weekly Schedule

### **Week 1**

#### **Introduction**

Clinic visits start for CPH Students An introduction to basic public health and environmental health concepts. Background of the historical practice of public and environmental health in Botswana with an emphasis on the Primary Health Care (PHC) concepts:

- Historical developments
- Causes of health problems
- Ministry of Health role, background/structure
- Health profile Botswana
- Primary health care concept

#### Readings:

- "A Renaissance in Primary Health Care" [www.thelancet.com](http://www.thelancet.com) Vol 372 September 13, 2008
- "30 years after Alma-Ata: has primary health care worked in countries?" [www.thelancet.com](http://www.thelancet.com) Vol 372 September 13, 2008
- Commonwealth online: Health in Botswana: <http://www.commonwealthhealth.org/africa/botswana>

### **Week 2**

#### **Public and Environmental Health Laws**

An introduction to Public and Environmental Health laws, legislations and protocols in Botswana.

#### Readings:

- Botswana Public Health Act 1981
- Botswana Public Health Bill 2012
- Accelerated Child Survival & Development Strategy- Botswana
- Botswana National Roadmap for Reduction of Maternal and Newborn Mortality
- Botswana Malaria Elimination Strategic Plan

### **Week 3**

#### **Public and Environmental Health Laws Continued**

CPH Students leave for Kanye

### **Week 4**

#### **Overview of Food Safety Issues in Botswana**

Quality issues and food outbreaks in Botswana

#### Readings:

- Ohiokpehai, O. (2003). Nutritional aspects of street foods in Botswana. *Pakistan Journal of Nutrition*, 2(2), 76-81.
- 
- Nicolas, B., Razack, B. A., Yollande, I., Aly, S., Tidiane, O. C. A., Philippe, N. A., ... & Sababénédjo, T. A. (2007). Street-



vended foods improvement: Contamination mechanisms and application of Food Safety Objective Strategy: Critical review. Pakistan Journal of Nutrition, 6(1), 1-10.

- **Research Brief 1 due**
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#### **Week 5**

##### **Overview of Food Safety Issues in Botswana**

Quality issues and food outbreaks in Botswana

Readings:

- Ohiokpehai, O. (2003). Nutritional aspects of street foods in Botswana. Pakistan Journal of Nutrition, 2(2), 76-81.
- 
- Nicolas, B., Razack, B. A., Yollande, I., Aly, S., Tidiane, O. C. A., Philippe, N. A., ... & Sababénéjjo, T. A. (2007). Street-vended foods improvement: Contamination mechanisms and application of Food Safety Objective Strategy: Critical review. Pakistan Journal of Nutrition, 6(1), 1-10.

#### **Week 6**

##### **Mid-Semester Break – No Classes**

#### **Week 7**

##### **Water Quality in Botswana**

Treatment and water quality in Botswana

Readings:

- N.Mladenov, K Strzepek and O.M Serumola (2005) Water Quality Assessment and Modeling of an Effluent-Dominated Stream, the Notwane River, Botswana Environmental Monitoring and Assessment ; 109, 1-3, 97-121

#### **Week 8**

##### **Overview of Water-related Diseases in Botswana**

Readings:

- K.A. Alexander and J.K. Blackburn (2013) "Overcoming barriers in evaluating outbreaks of diarrheal disease in resource poor settings: assessment of recurrent outbreaks in Chobe District, Botswana" BMC Public Health 2013, 13:775
- Botswana: Diarrhea epidemic kills 470 children <http://www.irinnews.org/report/58668/botswana-diarrhoea-epidemic-kills-470-children>
- Botswana Accelerated Child Survival & Development Strategy
- Botswana National Roadmap for Reduction of Maternal and Newborn Mortality Strategy



## Research Brief 2 Due

### Week 9

#### Water and HIV and AIDS in Botswana

##### Readings:

- Arvelo W1, Kim A, Creek T, Legwaila K, Puhr N, Johnston S, Masunge J, Davis M, Mintz E, Bowen A. "Case-control study to determine risk factors for diarrhea among children during a large outbreak in a country with a high prevalence of HIV infection" *Int J Infect Dis.* 2010 Nov; 14(11)
- Creek, T. L., Kim, A., Lu, L., Bowen, A., Masunge, J., Arvelo, W., ... & Davis, M. K. (2010). Hospitalization and mortality among primarily nonbreastfed children during a large outbreak of diarrhea and malnutrition in Botswana, *JAIDS Journal of Acquired Immune Deficiency Syndromes*, 53(1), 14-19.
- Case-control study to determine risk factors for diarrhea among children during a large outbreak in a country with a high prevalence of HIV infection

### Week 10

#### Solid and Hazardous Waste Management in Botswana

##### Readings:

- Kgathi, D. L., & Bolaane, B. (2001). Instruments for sustainable solid waste management in Botswana. *Waste management & research*, 19(4), 342-353.
- Khupe, J. S. N. (1996). Water supply, sewerage and waste management for Gaborone, Botswana. *Ambio*, 134-137.
- **Site Visit to Gamadubu:** To establish the waste management hierarchy
- Healthcare waste management: Current practices in selected healthcare facilities, Botswana (Mbongwe et al):  
<http://www.sciencedirect.com/science/article/pii/S0956053X07000219>

### Week 11

#### Waste Management Continued

Evaluation of waste management hierarch concepts in Botswana; waste management strategy of Reuse, Recycle and Reduce

##### Readings:

- Jacks, G., Sefe, F., Carling, M., Hammar, M., & Letsamao, P. (1999). Tentative nitrogen budget for pit latrines—eastern Botswana. *Environmental Geology*, 38(3), 199-203.
- Phorano, O. M., Nthomang, K., & Ngwenya, B. N. (2005). HIV/AIDS, home care and human waste disposal in Botswana. *Botswana Notes and Records*, 161-178.
- Botswana Strategy for Waste Management

### Week 12

#### Housing and Health in Botswana





The effects of housing conditions on health, housing inspection, and sick building syndrome.

Readings:

- UNEP – Africa Environment Outlook – past, present, and future perspectives - <http://www.unep.org/dewa/africa/publications/aeo-1/214.htm>
- Cavric B., Moshia A., (2001). Towards a Better urban development and Management in Botswana. <http://www1.eis.gov.bw/EIS/Reports/TOWARDS%20BETTER%20URBAN%20DEVELOPMENT%20AND%20MANAGEMENT%20IN%20BOTSWANA.pdf>
- Moshia A. C., (2010). Making Land and Housing Accessible to the Urban Low Income in Botswana - [http://www.urbanlandmark.org.za/conference/2010\\_papers/03.pdf](http://www.urbanlandmark.org.za/conference/2010_papers/03.pdf)

**Review of public health policy Due**

**Week 13**

**Last CPH visits to clinics**

Readings:

- J. C. MOREKI and C. M. TSOPITO. (2013). Effect of Climate change on Dairy production in Botswana and its suitable Mitigation Strategies - <http://www.ojafri.ir/main/attachments/article/99/Online%20J.%20Anim.%20Feed%20Res.,%203%20%286%29%20216-221,%202013.pdf>
- Kathleen A. et al., (2013). Climate change is likely to worsen the Public health threat of diarrheal disease in Botswana. [http://www.caracal.info/CARACAL/Our\\_publications\\_files/Alexander%20et%20al%202013%20Climate%20change%20in%20Botswana.pdf](http://www.caracal.info/CARACAL/Our_publications_files/Alexander%20et%20al%202013%20Climate%20change%20in%20Botswana.pdf)
- Climate Change Mitigation in Southern Africa - Botswana Country Study - <http://www.energycommunity.org/documents/Botswana.pdf>

**Week 14**

**Students' Presentations:** Presentation of group submissions & discussions

**Week 15**

**Final Examination Period begins**

**Week 16**

**Final Examination Period ends and Semester ends**



## Readings

“A Renaissance in Primary Health Care.” *The Lancet* 372: 9642 (September 13, 2008): 863.

Arvelo W1, Kim A, Creek T, Legwaila K, Puhr N, Johnston S, Masunge J, Davis M, Mintz E, Bowen A. “Case-control study to determine risk factors for diarrhea among children during a large outbreak in a country with a high prevalence of HIV infection” *Int J Infect Dis.* 2010 Nov; 14(11)

Accelerated Child Survival & Development Strategy- Botswana

Bhutta, Zulfiqar A, et al. “30 years after Alma-Ata: has primary health care worked in countries?” *The Lancet* 372:9642 (September 13, 2008): 950.

Botswana: Diarrhea epidemic kills 470 children  
<http://www.irinnews.org/report/58668/botswana-diarrhoea-epidemic-kills-470-children>

Botswana Bureau of Standard (BOBS) Audit on Microbiological Status of Water Utilities Corporation Portable Water in Botswana Study.

Botswana Malaria Elimination Strategic Plan

Botswana National Roadmap for Reduction of Maternal and Newborn Mortality

Botswana Public Health Act 1981

Botswana Public Health Bill 2012

Botswana Strategy for Waste Management

Case-control study to determine risk factors for diarrhea among children during a large outbreak in a country with a high prevalence of HIV infection

Commonwealthonline: Health in Botswana:  
<http://www.commonwealthhealth.org/africa/botswana>

Creek, T. L., Kim, A., Lu, L., Bowen, A., Masunge, J., Arvelo, W., ... & Davis, M. K. (2010). Hospitalization and mortality among primarily nonbreastfed children during a large outbreak of diarrhea and malnutrition in Botswana, *JAIDS Journal of Acquired Immune Deficiency Syndromes*, 53(1), 14-19.

Jacks, G., Sefe, F., Carling, M., Hammar, M., & Letsamao, P. (1999). Tentative nitrogen budget for pit latrines—eastern Botswana. *Environmental Geology*, 38(3), 199-203.

K.A. Alexander and J.K. Blackburn (2013) “Overcoming barriers in evaluating outbreaks of diarrheal disease in resource poor settings: assessment of recurrent outbreaks in Chobe District, Botswana” *BMC Public Health* 2013, 13:775



Kgathi, D. L., & Bolaane, B. (2001). Instruments for sustainable solid waste management in Botswana. *Waste management & research*, 19(4), 342-353.

Khupe, J. S. N. (1996). Water supply, sewerage and waste management for Gaborone, Botswana. *Ambio*, 134-137.

N.Mladenov, K Strzepek and O.M Serumola (2005) Water Quality Assessment and Modeling of an Effluent-Dominated Stream, the Notwane River, Botswana  
*Environmental Monitoring and Assessment* ; 109, 1-3, 97-121

Nicolas, B., Razack, B. A., Yollande, I., Aly, S., Tidiane, O. C. A., Philippe, N. A., ... & Sababénédjo, T. A. (2007). Street-vended foods improvement: Contamination mechanisms and application of Food Safety Objective Strategy: Critical review. *Pakistan Journal of Nutrition*, 6(1), 1-10.

Ohiokpehai, O. (2003). Nutritional aspects of street foods in Botswana. *Pakistan Journal of Nutrition*, 2(2), 76-81.

Phorano, O. M., Nthomang, K., & Ngwenya, B. N. (2005). HIV/AIDS, home care and human waste disposal in Botswana. *Botswana Notes and Records*, 161-178.