

Population Health: A Primer

Instructor's Guide with Sample Answers to Selected Case Studies

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Why Adopt *Population Health: A Primer*?

In recent years, major efforts have been made to define the content of population health so that it can be integrated into the basic educational requirements of clinical and health administration professionals as well as those working in public health. These national efforts are highlighted below:

- The Healthy People Curriculum Task Force is made up of representatives of eight clinical health professions educational organizations, including nursing and nurse practitioners, allopathic and osteopathic medicine, pharmacy, dentistry, physician assistants, allied health as well as public health. The Task Force has developed the Clinical Prevention & Population Health Curriculum Framework. This framework specifically includes two population health components: Foundations of Population Health and Clinical Practice and Population Health. These recommendations have been widely accepted and are being incorporated in the accreditation requirements for graduate nursing, physician assistants, and pharmacy. (See www.teachpopulationhealth.org/)
- The Association of Schools and Programs of Public Health (ASPPH) has reinforced the need for integration of population health into clinical and administrative health professions in their publication *Population Health Across All Professions*, which recognizes the need for and approaches to interprofessional collaboration. (See www.aspph.org/ftf-reports/population-health-in-all-professions/)

Population Health: A Primer addresses the intent and much of the content of these reports. It provides the basis to integrating population health into the basic degree requirements of a broad range of health professions. The goal is to enable clinical and administrative health professionals to be full participants in improving population health.

How Can You Use *Population Health: A Primer*?

Population Health: A Primer is designed as an overview of population health and can be used as standalone material or incorporated into existing courses to introduce students to key population health concepts. It provides a series of frameworks that can be used as the basis for ongoing education at the preclinical and clinical levels.

This primer is designed as an introduction to a set of primers, which together are being designed to provide a comprehensive approach to population health for use as part of basic coursework for clinical and administrative health professionals. Additional population health primers will include such topics as:

- Climate Change & Population Health
- Opioids & Population Health
- Biostatistics & Population Health
- Health Information Systems & Population Health

- Global Population Health

Population Health: A Primer is divided into three units, each of which includes case studies that illustrate the principles discussed in the unit. The three units can be used together to provide the basis for a mini-course or a module within a larger course. The units may be used in order, but individual modules may be used alone or in an alternative order.

Each unit can be used as lecture material followed by small group discussion of the cases. If students read the material in the unit before class, a 1-hour lecture/discussion can highlight key points.

Case studies could be used in small group format with students reviewing the cases and thinking through responses prior to the discussion classes. Under these conditions each case study can be covered in approximately 30 minutes.

The material is flexible allowing mini-courses or modules from 6 to 12 hours or use of portions of the material for shorter curriculum components. Classroom-tested examination questions are included in the Test Bank for each unit. Case studies and the discussion questions may also be used as examination questions. This Instructor's Guide should be helpful in grading student answers. The sample answers should also be helpful in conducting small group discussions.

Sample Answers to Selected Case Studies

The first of the sample answers address the HIV case study that is located in the Introduction. Each of the three units has questions on this case study. These discussion questions appear as the first case study in each of the three units. Sample answers for each of the questions follows organized by the unit in which they appear.

Unit 1 Sample Answers to Selected Case Studies

HIV/AIDS: A Population Health History

Discussion Questions

SAMPLE ANSWERS

1. Use the BIG GEMS framework to outline the determinants of health discussed in this case.

The following table outlines the components of the BIG GEMS framework and their impact on HIV/AIDS:

HIV/AIDS Determinants of Health

Determinant	Impact on Disease
Behavior	Sexual behaviors with multiple sexual partners and anal intercourse increases probability of transmission. Sharing of needles associated with drug abuse greatly increases transmission.
Infection	The presence of the organism is a necessary cause of the disease. Other sexually transmitted diseases cause local sores or irritation that may increase risk by increasing potential for exposure to blood during intercourse.
Genetics	Genetics can provide limited protection with a very small but well-documented group having genetic protection against infection.
Geography	Sexual contact or sharing of needles in geographic regions with high prevalence of HIV infection increases the risk of infection.
Environment	Crowding increases the hazard of tuberculosis, which is one of the most serious and common complications of AIDS. There is a theoretic possibility of mosquito-borne transmission but there has been no evidence of this form of environmental transmission.
Medical care	Current drug interventions are capable of delaying the onset of AIDS and reducing complications of AIDS. Other precoital, coital, and postcoital drug interventions are being actively investigated.
Socioeconomic	Social factors including contraceptive practices, premarital and extramarital practices, and circumcision affect probability of infection.

2. What role has health care played in controlling or failing to control the HIV/AIDS epidemic?

The advances in drug treatment have not only helped individual patients but have helped control the spread of HIV since they reduce the quantity of virus that is present and therefore the degree of infectivity or the chances of becoming infected after sexual exposure to an HIV-positive patient.

Unfortunately, antibody testing for HIV misses many early cases of the disease during the period when the disease is most communicable. This has limited the ability of HIV medications to effectively prevent the spread of the disease.

New drug interventions to prevent transmission to HIV-negative partners from HIV-positive individuals, pre- as well as postcoital interventions, hold promise for increasing the effectiveness of health care in the control of the HIV epidemic.

3. What role has traditional public health played in controlling or failing to control the HIV/AIDS epidemic?

Public health interventions are primarily aimed at prevention of disease. Consistent use of condoms has been shown to be highly effective in preventing the spread of HIV. Efforts to increase use of condoms have had only limited success.

Other preventive interventions have been highly successful. Interventions to prevent maternal–child transmission and post–needle stick transmission have been extremely successful in preventing disease. The use of male circumcision has been shown to reduce, by approximately half, the occurrence of new cases of the disease among circumcised males but there is little evidence of its effectiveness in preventing spread to females.

Screening for early detection of HIV at the time the disease is most contagious may be an important future public health intervention. Use of antigen rather than antibody testing will be needed to detect disease at an early stage. If case finding to rapidly identify exposed individuals and early treatment is shown to be effective, early screening and case finding may become central to the control of the HIV epidemic.

Screening HIV-positive patients for the presence of tuberculosis (TB) infection, as well as ongoing efforts to effectively control TB using public health interventions such as case finding and directly observed therapy, have helped control the increased frequency of TB that has been associated with the HIV/AIDS epidemic.

Efforts to develop an effective vaccine began early in the HIV/AIDS epidemic. Unfortunately, the success of vaccine development has been very limited. Research on use of vaccines continues but dramatic results are not expected in the foreseeable future.

4. What roles have social factors (beyond the sphere of health care or public health) played in controlling or failing to control the HIV/AIDS epidemic?

In recent years social factors have played important roles in controlling the epidemic. The social stigma that surrounded HIV/AIDS in the early days of the epidemic has largely subsided if not entirely disappeared. This change has led to more open and more frequent discussions of HIV/AIDS in the media and on the web. New communications technologies have assisted in educating a new generation.