

PAN AFRICAN GLOBAL ACADEMY
WEEKLY LESSON PLAN
UNIT 1

INSTRUCTOR:

-

WEEK: 1st

Ending: XX – XX – XX

SUBJECT: Public Health

SPECIFIC TOPIC: *Introduction to Health and the Social Ecological Model*

INSTRUCTIONAL GOAL:

Students will be presented with:

- An overview of this Public Health course (road map)

Students will be able to:

- Understand and apply the definition of health, emphasizing that being healthy involves much more than just physical wellbeing (psychological, social, emotional, spiritual health, etc.)
- Understand and apply the definition of public health
- Understand and apply the Social Ecological Model

LESSON CONTENT:

Outline of the Public Health Curriculum:

*The purpose of presenting students with this outline is to help them understand the general flow of the course as well as get them excited about taking this class.

>Unit 1: Public Health and How It Is Studied

Learn about vital signs and how to take them

>Unit 2: Introduction to Environmental Health

Learn about climate change, soil erosion and waste in Oshiyie

>Unit 3: Introduction to Healthy Relationships and Diet

Organize (and prepare!) a healthy dinner for you and your family

>Unit 4: Health, Economics and Society

Clinic visit

>Unit 5: Health and Community

Debate about international trade and public health (importing HIV/AIDS medication)

>Unit 6: Health and Government

Prepare and distribute a pertinent public health message to your community (fliers, radio, put some of it up somewhere)

DEFINING HEALTH

According to the World Health Organization, health is a state of complete physical, mental and social well being and not merely the absence of disease or infirmity.

DEFINING PUBLIC HEALTH

Public health can be defined as the practice of preventing disease and promoting good health within groups of people, from small communities to entire countries (American Public Health Association).

Public health consists of organized efforts to improve the health of communities. As a result, public health efforts are often directed toward communities rather than toward individuals. Instead of relying on a detailed body of knowledge and expertise, public health practice relies on both scientific and social

approaches together. This definition of public health reflects its goal of reducing disease and improving the health of a community.

SOCIAL ECOLOGICAL MODEL

Health is not solely an individual matter. Many different levels of interactions between people come in to play when talking about public health, including: intra-personal (having to do with one person); inter-personal (having to do with two or more people); organizational (having to do with coordinated groups of people); communal (having to do with neighbors, families and friends within a community); and political (having to do with groups of communities such as nations). The diagram below depicts how these different levels coexist within a society of people:



Ask the students to come up with examples of entities and interactions that fall into the categories listed above. Examples include: one person cleaning himself or herself in the morning for intra-personal; a mother telling her child not to play in the trash piles for inter-personal; all of the fishermen agreeing to not throw rubbish into the sea while they are fishing for organizational; five families agreeing to put their rubbish in a single place to make everyone's house cleaner for communal; and instituting a national waste removal system for political.

Have the students take turns writing their suggestions onto a large poster with a bulls-eye on it, and then put the poster somewhere in the classroom at the end of the week for students to later reference. (For further information, see *Theory At A Glance*)

CASE STUDIES

Case studies will be used in this course in order to demonstrate to students the direct applicability of the concepts that they are learning in the classroom to their own communities. Ideally, each year the teacher(s) of this course would find current articles that they feel illustrate the point being made by the lessons. Three newspaper articles have been included as samples in this lesson (see below), although teachers are encouraged to find their own articles to present to the class.

CASE STUDY #1

See "9 Bodies of Easter Revellers At Beach Washed Ashore." Discuss how a community practice affected the health of these 9 young men. How could inter-personal relationships have also contributed to this tragedy? If there was a political law (see the largest circle of the Social Ecological Model that prevented people from swimming at night in this particular area, could this tragedy have been prevented? Why or why not? Try to address all levels of the Social-Ecological Model when discussing the article.

CASE STUDY #2

See “Land Guards on Rampage, Kill One, Injure Three.” Discuss how an ecological problem, land rights, can affect the safety of people in Oshiyie. Is violence over land rights the only way that the land can impact one’s health?

CASE STUDY #3

See “One Third of Greater Accra Residents Live in Slums.” How can poor living conditions negatively impact a person’s health? Is hygiene impacted? Does waste management become a problem? Does the article link urbanization with an increase in violent crimes? What are some ways that we could improve the living conditions of the Greater Accra residents who live in poor conditions?

MATERIALS AND AIDS:

- Lecture Notes
- Poster with markers as well as tape

TEACHING AND LEARNING ACTIVITIES:

- Teacher outlines the schedule of the Public Health class including the six units.
- Teacher first asks the students what they think that health and public health mean, and then defines them for the class.
- Teacher introduces and explains the Social-Ecological model, and puts the poster up on the wall. The class then proposes additional interactions that fall into intra-personal, inter-personal, organizational, communal and political. Students from the class will then take turns filling out the different levels of the poster. If no poster is available, the teacher should draw the social ecological model on the board and allow the students to fill this in instead of the poster.

EVALUATION:

Sample class assignment or quiz:

1. What is health?
2. What is public health?
3. What makes public health distinct from health in general?
4. State the five levels of the Social Ecological Model.
5. Provide a novel example (not used in class already) of different interactions that would fall into each of the levels of the Social Ecological Model.

Suggest three ways that the public health practices of Oshiyie could be improved (very generally – students are not yet expected to come up with very detailed health proposals).

RESOURCES / REFERENCES:

“WHO Definition of Health.” World Health Organization, 2003. <http://www.who.int/about/definition/en/print.html>

“What is Public Health? Our Commitment to Safe, Healthy Communities.” American Public Health Association. http://www.apha.org/NR/rdonlyres/C57478B8-8682-4347-8DDF-A1E24E82B919/0/what_is_PH_May1_Final.pdf

McLeroy K.R., Bibeau D., Steckler A. and Glanz K. “An Ecological Perspective on Health Promotion Programs.” *Health Education Quarterly*, 1998. 15: 351-377.

United States Department of Health and Human Services National Cancer Institute. “Theory At A Glance: Application to Health Promotion and Health Behavior (Second Edition).” *National Institutes of Health* No. 05-3896. 2005. <http://www.cancer.gov/cancertopics/cancerlibrary/theory.pdf>

Abbey, Emelia Ennin. "9 Bodies of Easter Revellers at Beaches Washed Ashore." *Graphic Online*. The Daily Graphic, 24 April 2014. <http://graphic.com.gh/news/general-news/21754-9-bodies-of-easter-revellers-at-beaches-washed-ashore.html>

PAN AFRICAN GLOBAL ACADEMY
WEEKLY LESSON PLAN
UNIT 1

INSTRUCTOR:

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WEEK: 2nd

Ending: XX – XX – XX

SUBJECT: Public Health

SPECIFIC TOPIC: *Introduction to Public Health Skills*

INSTRUCTIONAL GOAL:

Students will be able to:

- Understand why we must study a group of people in order to learn about their health practices
- Understand the concept of demography
- Understand the importance of as well as the use of basic public health skills including observation, interviews, surveys and public records
- Understand the limitations of each of the public health skills

LESSON CONTENT

In order to understand health and health practices around the world, we study the health practices of groups of groups of people. In order to acquire a comprehensive understanding of health practices within a community, we must understand the group that we are studying. **Demography** is defined as the study of groups of people. Often demography includes looking at vital and social statistics, such as the records of births, deaths, diseases and marriages of a population of people.

At this point, ask the students about what characteristics they would study if they wanted to understand a group of people. Possible answers include age, sex, education level and place of residence. Try to get the students to come up with these responses instead of providing them for the students.

In order to study these characteristics, we use different data collection methods. These methods include observation, surveys, interviews and public records.

OBSERVATION

Observation is defined as an act or instance of noticing or perceiving.

Class Activity: At this point, take the large poster of the picture of the beach as seen from Cape Coast Castle and have students make a list of everything that they notice that is going on in the picture for 5 minutes. Go around the room and have each student list something different than what has already been said that they noticed in the picture. Highlight that different people notice different things about the picture, and that this is the same with observation. Some sample observations about the picture include: a man carrying a bag in the water, people walking on the beach, people talking, people mending nets, flags waving and children playing. Studying the health practices from two or more different

perspectives can lead to different and even a more in-depth understanding of what you are studying.

INTERVIEW

Discussion Question: Ask the class, “what is an interview?” An **interview** is defined as a meeting or conversation in which one or more persons question, consult or evaluate another person. Interviews allow us to ask questions about health practices of groups of people. There are two different kinds of interviews. A **structured interview** is an interview where the interviewer asks guided questions (pointed questions to illicit discussion of specific topics). An **unstructured interview** is an interview where the interviewer asks open-ended questions (questions that are not pointed but meant to allow the person being interviewed to talk about the topics that they would like to talk about).

Class Activity: Have students break into groups to make a list of six interview questions that they could ask members of the Oshiyie community if they wanted to learn more about trash burning in Oshiyie.

Discussion Questions: Sample questions include: How often do you burn trash? Where do you burn trash? After writing the list of questions, students can break up into groups to practice interviewing each other. After asking the questions and having the students respond, the class can get back together and the teacher can ask the students: What did it feel like to be interviewed? What did it feel like to ask questions? What things went well during the interview? What things could have gone better during the interview?

SURVEY

Ask the class, “what is a survey?” A **survey** is defined as an investigation of the opinions or experiences of a group of people *based on a series of questions*. Surveys allow us to ask people questions about things that we are interested in. There are many different ways to conduct a survey. Ask students to come up with ways to conduct a survey. Possible answers include: in an interview, over the phone and even self-administered written.

When conducting a survey, it is important to understand what your unit of analysis is and what your unit of observation is. The **unit of analysis** is the person who you want information about. The **unit of observation** is the person that tells you information about the unit of analysis. An example to provide to the class to help them understand the different between unit of analysis and unit of observations: if we are studying malnutrition in children under the age of 5 in Oshiyie, then the unit of analysis would be the children who are under age 5 in Oshiyie, and the unit of observation would be the mothers of the children. The unit of analysis, the children, is who we are actually interested in studying; the unit of observation, the mothers, is who can provide us with information about the unit of analysis.

Class Activity: Have the students then answer the questions on the survey worksheet, and after about 10 minutes go over what the units of analysis and the units of observation are for each sample health research project.

PUBLIC RECORDS

Public records are defined as records that a government body is required to maintain that can be viewed by the public. Examples of public records include birth registries, death registries and patient records at hospitals, although this is not an exclusive list. The teacher should emphasize to the class that public records can be studied in order to learn more about the health practices of a group of people.

MATERIALS AND AIDS:

- Lecture Notes
- Large poster of the beach as seen from Cape Coast Castle
- Survey worksheet
- Student notebooks/paper

TEACHING AND LEARNING ACTIVITIES:

Class discusses:

- Why it is important to understand people when we seek to learn about health in an organization, community or nation
- What demography is
- How observations, interviews, surveys and public records can be utilized to learn more about health and health practices

EVALUATION

Sample class quiz:

1. What is demography?
2. What are three characteristics that we can study if we want to learn more about a certain group of people?
3. How is it that different people can observe the same scene but still record different things from each other?
4. What is a structured interview? What is an unstructured interview? What is the difference between a structured interview and an unstructured interview?
5. What is the difference between unit of analysis and unit of observation?
6. What are three examples of public records that we can study to learn more about health?

Resources / references:

Dictionary.com. Dictionary.com, LLC, 2014.

PAN AFRICAN GLOBAL ACADEMY
WEEKLY LESSON PLAN
UNIT 1

INSTRUCTOR

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WEEK: 3rd

Ending: XX – XX – XX

SUBJECT: Public Health

SPECIFIC TOPIC: *Evaluation and Health*

LEARNING OBJECTIVES:

Students will be able to:

- Understand what it means to evaluate an action
- Understand and be able to apply the different types of evaluation (process, outcome, impact)
- Understand and be able to apply the six methods of evaluation

LESSON CONTENT

IMPORTANCE OF EVALUATION

Discussion Question: The teacher can ask the class, “what does it mean to evaluate an action?” After asking a few students to answer this question, the teacher can explain that to **evaluate** an action means to determine if your action is working or not.

Discussion Question: The teacher could then ask the class, “why is it important to evaluate?” The teacher can elicit answers from the class. Sample answers include: to make sure what you are doing is working; to see what aspects of a project need to be changed.

TYPES OF EVALUATION

There are three types of evaluation:

1. **Process evaluation** is when you track whether what was planned is going as expected. For example, if a hospital sponsored nurses to provide vaccines to a certain group of children, you could use process evaluation to determine if the nurses are able to find the correct houses or if the nurses are properly administering the vaccine.

CASE STUDY #1: A new hospital is being built in a village in the Northern region of Ghana. Ask the students what types of questions they could ask that would involve process evaluation. Sample answers: the students could ask if the hospital is being built in the intended location and if it is being built according to the approved building plans

CASE STUDY #2: A small village in the Greater Accra region has recently experienced an outbreak of malaria. In an effort to help the village, the government has sent a shipment of antimalarial medicines to the village to be administered to those who have malaria. Ask the students what types of questions

they could ask that would involve process evaluation. Sample answers: did the shipment arrive at the correct village? Has everyone who has malaria been given antimalarial medicines?

2. **Outcome evaluation** is when you look at your short-term and mid-term goals (as well as any goals that fall in between). This is rarely used to refer to long-term goals. For the example where a hospital sponsors a group of nurses to provide vaccines to a group of children, one question that can address outcome evaluation of the endeavor is how many children have been vaccinated?
3. **Impact evaluation** measures the higher-level changes that potentially occur as a result of your project/program/efforts. For example, where a hospital sponsors a group of nurses to provide vaccines to a group of children, impact evaluation would look at attitudes toward evaluation and if the total rates of the disease went down.

METHODS OF EVALUATION

See the “Overview of Selected Program/Project Evaluation Design” chart.

There are five main types of evaluation:

1. Experimental Design
2. Quasi-Experimental Design
3. Pre/Post Comparisons
4. Post Test Only/Goal Based Evaluation
5. Cross-Sectional Studies
6. Natural Experiments

Go over the types of evaluation with the students, making sure that they can distinguish between the different methods of evaluation.

CASE STUDY #1

A nonprofit sets a goal of having fewer than five infant deaths each year in a large village in the Greater Accra region by educating the women of the village about antenatal care. One year after the education, the nonprofit records how many infant deaths occur in the next year. What type of evaluation strategy is the nonprofit using? Is this the best strategy to decrease the number of infant deaths in the village?

CASE STUDY #2

A research facility believes that it might have discovered a chemical that is a more effective insecticide when applied to mosquito nets than what is currently being used. Propose an evaluation plan that would allow the research facility to determine if the new insecticide is more effective at preventing the spread of malaria than the old insecticide.

CASE STUDY #3

A school headmaster wants to look at the educational paths taken by students in her village. She wants to determine at what age a group of young children will later go to school and whether they all will end up going to college. What type of experimental design could she use? Describe how this evaluation

design could be used in this case.

CASE STUDY #4

A nurse in Kokrobite goes into the hospital and notices lots of patients with malaria and lots of patients with cholera. The nurse wants to determine which disease is resulting in more deaths within the hospital. What kind of evaluation design could she use to answer this question? What are the problems with using this method? What should she do about patients who die who have both malaria and cholera?

CASE STUDY #5

A government researcher believes that she has discovered a cure for tuberculosis (TB). She knows that there is a village in the Western region that has very high rates of TB. How could she use the quasi-experimental design to determine if her TB cure is effective?

CASE STUDY #6

A prominent man in a village in the Greater Accra region begins an initiative to spread awareness about domestic violence in the village. He and several of his friends want to put up posters to encourage more members of the village to report domestic violence to the local police. What would be the best type of evaluation design to use in this case? Could more than one be used? What are the benefits and drawbacks of using each suggested design?

MATERIALS AND AIDS

- Lecture notes

TEACHING AND LEARNING ACTIVITIES:

- Class discusses the definition of evaluation and its importance to studying health
- Teacher goes over the three types of evaluation (process, outcome and impact evaluation)
- Teacher goes over the six methods of evaluation using the teacher chart and explains these to the students
- Teacher presents the two case studies to the class and encourages the class to engage in a discussion about how the health proposals in the case studies can be evaluated

EVALUATION PROCEDURE

Class test/assignment:

1. What does it mean to evaluate?
2. Why is it important to evaluate?
3. What are the three types of evaluation?
4. What are the five methods of evaluation?
5. Come up with a case study and evaluate it yourself using appropriate types and methods from those described above

RESOURCES / REFERENCES:

US Department of Health and Human Services Centers for Disease Control and Prevention. Office of the Director, Office of Strategy and Innovation. *Introduction to Program Evaluation for Public Health Programs: A Self-Study Guide*. Atlanta, GA: Centers for Disease Control and Prevention, 2011.

PAN AFRICAN GLOBAL ACADEMY
WEEKLY LESSON PLAN
UNIT 1

INSTRUCTOR:
David Lamptey

WEEK: 4th
Ending: XX – XX – XX

SUBJECT: Public Health

SPECIFIC TOPIC: *Data Presentation and Dissemination*

INSTRUCTIONAL GOAL:

Students will be able to:

- Students review the important concepts of Statistics I and Mensuration I involving charts, bars and graphs
- Students practice making pictorial representations of data having to do with public health using case studies
- Students come to understand and distinguish between the different types of data dissemination
- Students come to understand the importance of dissemination data to communities

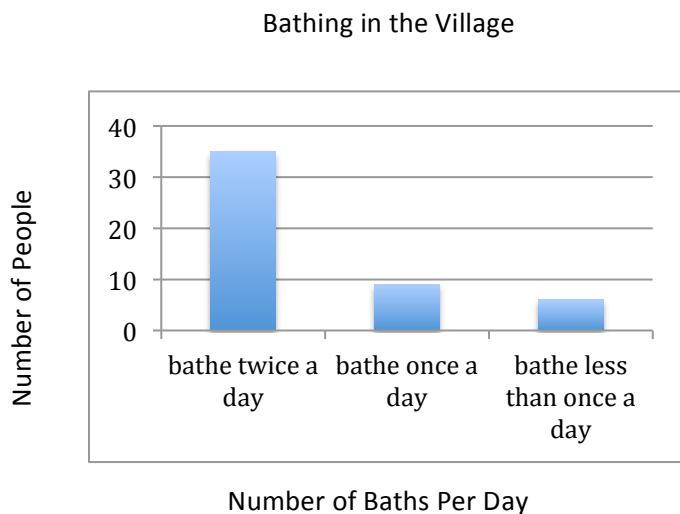
LESSON CONTENT

The teacher can briefly review charts, bars and graphs as covered in Statistics I if he or she chooses. The students can then practice making pictorial representations of data using the vignettes below:

VIGNETTE #1

A doctor is interested in learning how many people in her village bathe twice a day. After talking to 50 villagers, she learns that 35 bathed twice a day, 9 bathed once a day and that 6 bathed less than once a day. Make a bar graph depicting this data.

Solution:

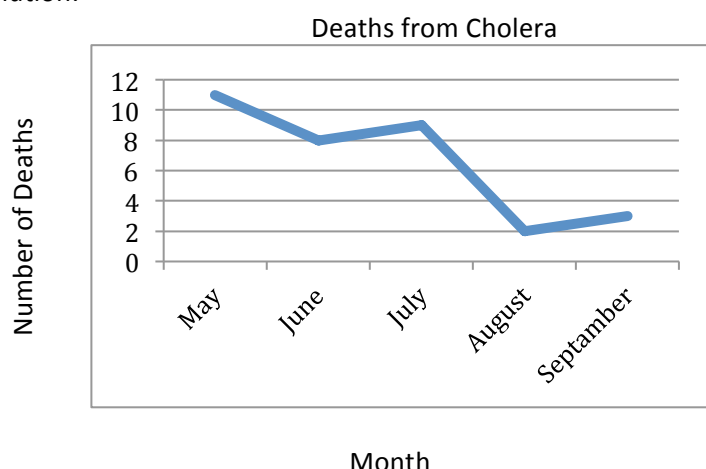


VIGNETTE #2

The government decides to build a health clinic in small village near Kumasi that has never had a health clinic before. Cholera is rampant in this village. After the clinic was completed in May, the nurses of the clinic recorded the number of deaths from cholera each month in the village in the chart below. Make a line chart depicting this data. What conclusions can you make about the effectiveness of the health clinic in treating cholera?

Month	Deaths from Cholera
May	11
June	8
July	9
August	2
September	3

Solution:



The health clinic seems to be effective in reducing the number of deaths from cholera in the village.

DATA DISSEMINATION

Dissemination is the active, purposeful process of transferring knowledge. In order to properly disseminate information (or data), you must properly plan as well as have access to resources and infrastructure.

TYPES OF DATA DISSEMINATION

There are three main types of data dissemination:

1. **Interactive dissemination** – this type of dissemination involves interaction between two or more people. Examples of interactive dissemination include train-the-trainer sessions, workshops and professional education sessions.
2. **Print dissemination** – this type of dissemination involves printed materials that are distributed throughout a community or area. Examples of print dissemination include reports, books and brochures.
3. **Digital dissemination** – this type of dissemination involves online media or materials used to disseminate information. Examples of digital dissemination include websites and videos.

DATA DISSEMINATION TO COMMUNITIES

Teacher should discuss the importance of disseminating to communities information in which new strategies and programs were tried out or can be discussed.

LEVELS OF DATA DISSEMINATION

Data can be disseminated at the following levels:

1. Community
2. State
3. National
4. International

When disseminating data, you must adjust your message to your audience. For example, when talking to a community with a large number of pig farms about managing their pig waste, you must remember that many Muslims in Ghana do not eat pork and thus might feel that they do not have a reason to take part in this effort in the first place.

CASE STUDY #1

A group of students at a school in a village near the Volta conduct a survey of local teens about teen substance abuse. The students asked 38 teenagers whether they have used alcohol or marijuana in the last month. The students found that 8 of the teenagers admitted to using both alcohol and marijuana in the last month, 14 teenagers admitted to using marijuana, and 22 teenagers admitted to using alcohol.

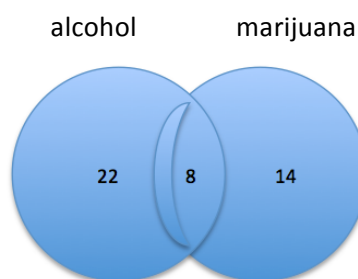
- a. Make a Venn diagram to depict this information.

The students decide to take action to try to reduce the numbers of teenage substance abuse in their village. The students get a friend to make a radio announcement every day at 9:00am about the dangers of teenage substance abuse for six months.

- b. Is this an effective way for the students to disseminate their information? What level of data dissemination does this qualify as?

Solution

- a.



- b. This would be an effective way to disseminate information, although it is encouraged for students to suggest drawbacks to radio announcements. This qualifies as dissemination on the community level.

CASE STUDY #2

The head of the Ghanaian Immigration Service at the border of Ghana and Togo notices several people who exhibit the signs and symptoms of the Ebola virus passing from Togo to Ghana. This troubles her, and she decides to talk to a representative from Ghana's National Health Department. This representative then comes to the border to investigate the situation. After a week, the representative records that 5,000 Togolese men and women crossed the border into Ghana. The representative noted

20 possible cases of the Ebola virus. After 18 of these individuals went to the hospital, it was found that 10 of them were infected with the Ebola virus, 4 of them had malaria and that 4 of them had common colds.

- a. Make a pie chart depicting the differing conditions of the 18 individuals who received care at the hospital.
- b. What are some reasons why the 2 individuals who presented with signs and symptoms of the Ebola virus did not go to the hospital for care? How will their decision to not seek care facilitate the transmission of the Ebola virus?

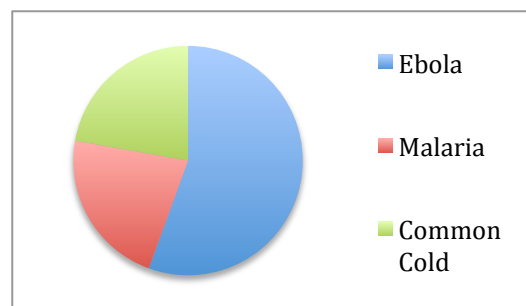
The head of the Ghana Immigration Service decides to start an initiative to encourage people crossing the border to seek care at a hospital if they are exhibiting signs and symptoms of the Ebola virus.

- c. What are two ways that the head of the Ghana Immigration Service could go about encouraging people to seek care at a hospital before they cross the border?

Solution:

a.

Differing Conditions of Individuals Who Received Care at the Hospital



- b. The 2 individuals might not have wanted to or might not have been able to afford to seek care at the hospital. Because they did not seek care, they continued to transmit the disease throughout the population.
- c. The head of the Ghana Immigration Service could make and put up posters around the border to spread her message. She could also make a commercial and show this on a local television station.

MATERIALS AND AIDS:

- Lecture Notes

TEACHING AND LEARNING ACTIVITIES:

- Teacher reviews the basics of charts, bars and graphs covered already in Statistics I and Mensuration I
- Teacher demonstrates to students how to properly organize data having to do with health
- Students learn about data dissemination and engage in interactive examples in order to reinforce the importance of data dissemination.
- Teacher describes the types of data dissemination, as well as the benefits and drawbacks of all three types

EVALUATION

For homework, teachers could find a current newspaper article and have students draw bar charts or something similar in order to represent the pictorial data in the articles.

RESOURCES / REFERENCES:

Harris J.R., Cheadle A., Hannon P.A., Forehand M., Lichiello P., Mahoney E., Snyder S. and Yarrow J. A Framework for Disseminating Evidence-based Health Promotion Practices. *Prev Chronic Dis* 2012; 9:110081. DOI: <http://dx.doi.org/10.5888/pcd9.110081>.

United States Department of Human Services. "Evaluation and Dissemination." *Integrated Health Promotion Resource Kit*. Victoria. 63-72.

PAN AFRICAN GLOBAL ACADEMY
WEEKLY LESSON PLAN
UNIT 1

INSTRUCTOR:
David Lamptey

WEEK: 5th
Ending: XX – XX – XX

SUBJECT: Public Health

SPECIFIC TOPIC: *Project: Clinic Visit and Vital Signs*

INSTRUCTIONAL GOAL:

Students will:

- Visit a local clinic and be introduced to the logistics of visiting the hospital (check-in, triage, waiting room, patient room, check-out)
- Learn what vital signs are and how they are taken
- Work in groups to use their data analysis and presentation skills to make bar graphs and charts of the vital signs data of the class
- Present their data in the form of bar charts and graphs to the class

LESSON CONTENT

CLINIC OR HOSPITAL VISIT

Note: Please discuss with nurse or clinic before hand to determine the capacity of students they can handle. Students may have to do the exercise in pairs or groups depending on how much equipment is there for them to use.

Have either a nurse from a local health clinic come to the school or have the students visit a clinic or hospital in order to learn how to take vital signs. Have the nurse teach the class how to take vital signs, and have each of the students get their vital signs taken either by the nurse or by another student. Before leaving for the hospital, have the students copy down the vital signs chart below so that they can record their own vital signs before leaving the hospital:

Name	BP	Temperature (°F)	Pulse	Respiratory Rate	Pulse Oximeter	*Lung Sounds	*Pupils
Sample	126/72	98.6	64	18	99%	<i>clear bilateral</i>	<i>Equal and reactive to light</i>

**Note: Lung sounds and pupil exams are not vital signs and may be too much for students to do. However, if there is time, students are encouraged to try taking these as well.*

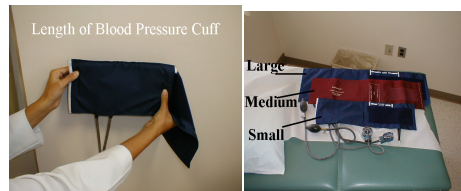
Background about Taking Vital Signs

When taking vital signs, the examination room should be quiet, warm and well lit. After the nurse has finished interviewing the patient, the patient will often be provided with a gown. The nurse will leave

the room while the patient changes. Prior to measuring vital signs, the patient should sit for approximately five minutes so that the values are not affected by the exertion required to walk to the examination room. All measurements are made while the patient is seated.

Blood Pressure

Blood pressure (BP) is often measured using mercury-based manometers. Readings are reported in millimeters of mercury (mm Hg). The size of the BP cuff will affect the accuracy of these readings. If the cuff is too small, the readings will be artificially elevated. The opposite occurs if the cuff is too large. Try to use the size that is most appropriate, recognizing that there will rarely be a perfect fit.



"Vital Signs." *A Practical Guide to Clinical Medicine*. University of California, San Diego

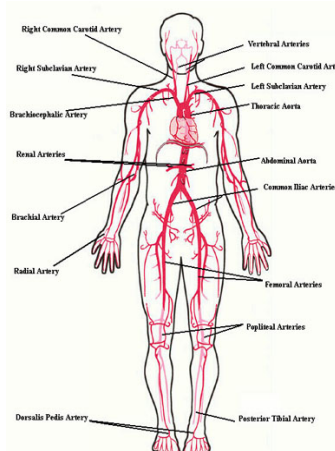
Temperature

Temperature is usually taken using an oral thermometer that is placed under the patient's tongue. Temperature is measured in either Celsius or Fahrenheit. A person has a fever when his or her temperature is above 37°C. However, medically significant fevers occur when temperature is above 38°C or 100.4°F. Rectal temperatures, which most closely reflect internal or core values, are approximately 0.6°C (or 1°F) higher than those obtained orally.

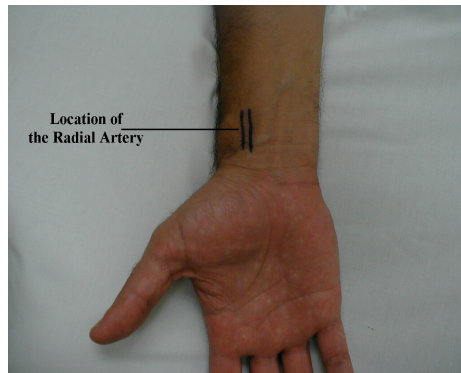
Pulse

Pulse can be measured at any large artery, such as the carotid or the femoral arteries, as well as at the apex of the heart. For the sake of convenience a patient's pulse is generally measured by palpating the radial impulse. Place the tips of your index and middle fingers just proximal to the patient's wrist on the thumb side.

Vascular Anatomy



"Vital Signs." *A Practical Guide to Clinical Medicine*. University of California, San Diego



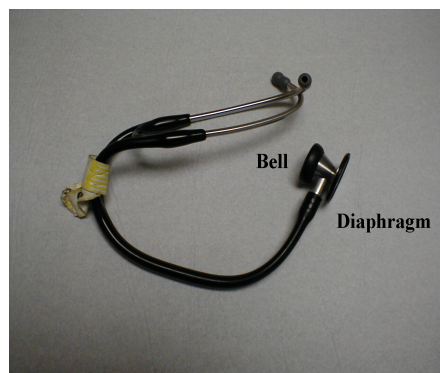
"Vital Signs." *A Practical Guide to Clinical Medicine*. University of California, San Diego

Respiratory Rate

A person's respiratory rate is recorded in breaths per minute. They should be counted for at least 30 seconds. When taking a patient's respiratory rate, try to do this as surreptitiously as possible so that the patient does not consciously alter their rate of breathing. This can be done by observing the rise and fall of the patient's chest while you appear to be taking their pulse. A normal respiratory rate is usually between 12 and 20. In the setting of cardio-pulmonary illness, respiratory rate can be a very reliable sign of disease.

Lung Sounds

Using a stethoscope to listen to a patient's lung sounds can sometimes indicate whether the patient is having a respiratory problem. Use the diaphragm of the stethoscope to listen to both sides of a patient's chest in multiple locations, preferably between the intercostal spaces (between the ribs).



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Pulse Oximeter

A pulse oximeter goes around a patient's finger and measures the how much oxygen the patient's blood is carrying. Although this measurement can often be misleading (such as in the case of carbon monoxide poisoning), this can indicate whether oxygen is reaching all of the cells in a person's body. Specifically, a pulse oximeter measures what percentage of a patient's blood cells are carrying oxygen. Usually, the

higher, the better.



"Vital Signs." *A Practical Guide to Clinical Medicine*. University of California, San Diego

Pupils

The reactivity of a patient's pupils is tested by shining a light very quickly near each eye. The reactivity can sometimes indicate whether a person's nervous system is acting appropriately. This can indicate what type of drug a person has taken as well as whether a person's nervous system is functioning appropriately. Pupils can be unequal, pinpoint, dilated or PEARL (pupils are equal and responsive to light).

Make sure to tell the students to record their own vital signs before leaving the hospital or before the nurse leaves the school.

Class Activity: Then, after returning from the hospital or after the nurse leaves, have the students compile the data either on the board in the classroom or on a piece of paper shared by the whole class. Assign the students to groups (about 4 or 5 students per group) and then have each group make a bar graph depicting the data. Also have each group calculate mean, median and mode for each vital sign taken. Have the groups take turns presenting their bar chart and calculations to the class.

MATERIALS AND AIDS:

- Lecture notes
- Vital signs chart
- Nurse from nearby clinic or hospital

TEACHING AND LEARNING ACTIVITIES:

- Students learn how to take vital signs through hands-on training by a local nurse
- Students practice analyzing data, making bar graphs and finding the mean, median and mode of a data set
- Students present their graphs and calculations to the class in groups and thus gain experience speaking publically

EVALUATION

Teachers will grade the students on the quality of their bar graphs and on the accuracy of their vital signs calculations

RESOURCES / REFERENCES:

"Vital Signs." *A Practical Guide to Clinical Medicine*. University of California, San Diego, 2009.

<http://meded.ucsd.edu/clinicalmed/vital.htm>

PAN AFRICAN GLOBAL ACADEMY
WEEKLY LESSON PLAN
UNIT 1

INSTRUCTOR:
David Lamptey

WEEK: Testing Week (6th)
Ending: XX – XX – XX

SUBJECT: Public Health

SPECIFIC TOPIC: *Unit 1 Test*

INSTRUCTIONAL GOAL:

Teachers will:

- Administer the test to the students
- After the test has been completed and graded, go over the questions of the examination

Students will be able to:

- Understand and be able to explain why they missed questions on the exam and in so doing gain a better understanding of the course material of Unit 1

LESSON CONTENT

Unit 1 Test Questions

MATERIALS AND AIDS:

- Test questions
- Answer sheets

TEACHING AND LEARNING ACTIVITIES

- Class engages in an interactive discussion of the Unit 1 test questions

EVALUATION

Unit 1 test questions

RESOURCES / REFERENCES:

“WHO Definition of Health.” World Health Organization, 2003. <http://www.who.int/about/definition/en/print.html>

“*What is Public Health? Our Commitment to Safe, Healthy Communities.*” American Public Health Association. http://www.apha.org/NR/rdonlyres/C57478B8-8682-4347-8DDF-A1E24E82B919/0/what_is_PH_May1_Final.pdf

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United States Department of Health and Human Services National Cancer Institute. “Theory At A Glance: Application to Health Promotion and Health Behavior (Second Edition).” *National Institutes of Health* No. 05-3896. 2005. <http://www.cancer.gov/cancertopics/cancerlibrary/theory.pdf>

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United States Department of Human Services. "Evaluation and Dissemination." *Integrated Health Promotion Resource Kit*. Victoria. 63-72.

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