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# Communicating, Motivating and Teaching the Significance of Public Health

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Additional information is available at the end of the chapter

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## 1. Introduction

Teaching public health represents a challenge for all health educators, as it includes a wide variety of important subjects that can be general, broad or specific and technical. Keeping students' attention is a difficult task when introducing purely theoretical concepts or subjects that for some, can be obvious, but are the building blocks of public health practice. Pretending to create a "hands on effect" is not an easy task for any health educator. More so, if your students come from different backgrounds, as those interested in Public Health. This chapter intends to address aspects of public health, such as skill sets needed, using technology and strategies to teaching public health, as well as, mentoring students to generate action. Each section will include examples and proposed exercises for the teacher to use in the classroom.

## 2. Significance of teaching public health

When does a health problem become a public health problem? That's the first question I asked myself when I was in the middle of my medical training. And, while everybody else was thinking about how to do well the semiology oral examination, I was thinking, how I could help not just one, but many people.

Theories in health education vary and they support themselves with behavioral change theories that are no less important, however, these theories are not discussed here due to length and the specific topic of this chapter. This section of the chapter emphasizes the importance of public health's applicability to one's practice, communities, governments and life in general.

After years of public health teaching experience I have come to identify that in order for public health students to understand what public health means and what they can do with it, they

first have to learn basic definitions of the subject, a little bit of history, view the complexity of individuals and communities and their determinants of health and be up to date with the health priorities of their community and the world. In short, public health is exciting and challenging!

Public Health is one of those areas that appears to many, as a general science that is “out there” but not necessarily considered the way to go when choosing a career. In the medical world, it is way more attractive (financially speaking) to go further in your clinical training than explore fields related to community health. Public Health is all around us, it encompasses so many areas in which varied professionals can serve and contribute.

One of the earliest definitions of Public Health in the modern world was given by Charles-Edward Winslow in 1920, when he defined it as “the science and art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations, public and private, communities and individuals”[1]. From all the definitions found, this one succinctly describes the subject with its dimensions, determinants and participants. Thereafter you can find other definitions that include terms of functionality, and community participation and involvement that you may relate to, helping facilitate your teaching style and syllabus.

In teaching public health it is very important to transfer not only knowledge but experiences to the students that can lead them to take action in their communities and will show them a breadth of possible areas that can be developed working in the public health field. Some of these include: Child and Maternal Health, Biostatistics, Behavioral Medicine, Environmental Health or Environmental Epidemiology, Epidemiology, Global Health, International Health, Health Care Services Delivery, Preventive Medicine, Public Policy, Health Care Organization amongst others.

Academic training requires students to consider all aspects of a topic, from a range of viewpoints. It also requires students to state general claims and then prove each claim by providing solid evidence from a range of sources. [2] Giving practical examples allows students to grasp the intricacies of public health challenges and how to face them.

Another recommendation in having people interested and involved in Public Health is to teach them some history. The best way to know what something is, is to know where it comes from. I always recommend to begin your public health teaching activities by exploring some of the history of public health, areas or public health, origins in the different civilizations, examples of actions that were public health efforts but were not considered as such until a definition of public health came out, the relationships of public health with other scientific disciplines, the process of emergence of key concepts, the influence on demographic, health, social, cultural and economic context and the role of public health in society. [3]

As a public health educator it is important to use a variety of teaching methods to meet individual preferences of your students. Possible methods to be used are discussed later.

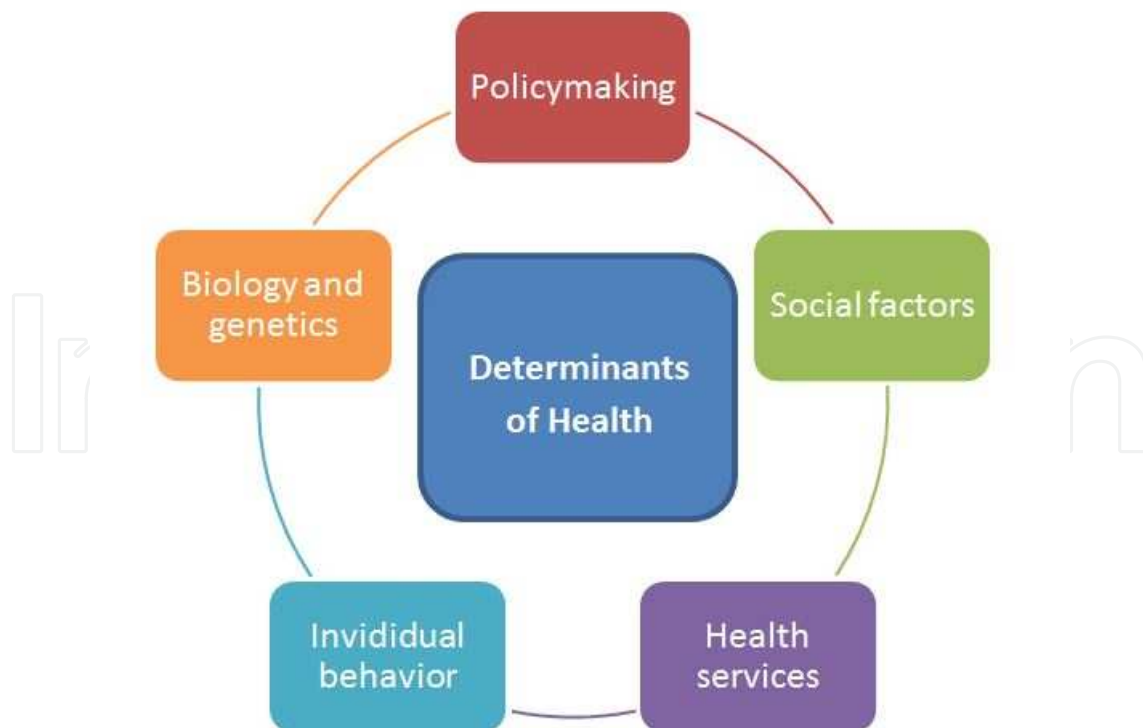
Some of the best results in public health education are achieved by stimulating research the theory and practice of health education; supporting high quality performance standards for the practice of health education and health promotion; advocating policy and legislation

affecting health education and health promotion; and developing and promoting standards for professional preparation of health education professionals [4].

Public health differs from clinical medicine by emphasizing prevention and keying interventions to multiple social and environmental determinants of disease; clinical medicine focuses on the treatment of the individual [4]. The best way to approach a health issue is by integrating both clinical assessment with public health perspective. A health professional can no longer treat his patients symptoms of pathology, but he has to view, analyze and treat all the other determinants of health that surround that individual ensuring a better outcome for the patient.

With the creation and updates of the program “Healthy People”, by the United States Department of Health and Human Services, a vision was delineated of where public health wants to be, and it changed the way of planning, organizing and acting in public health. Health promotion and disease-prevention goals were set. It also has analyzed and transformed the determinants of health; including areas to fulfill one’s needs and describe all the areas that affect individuals’ health.

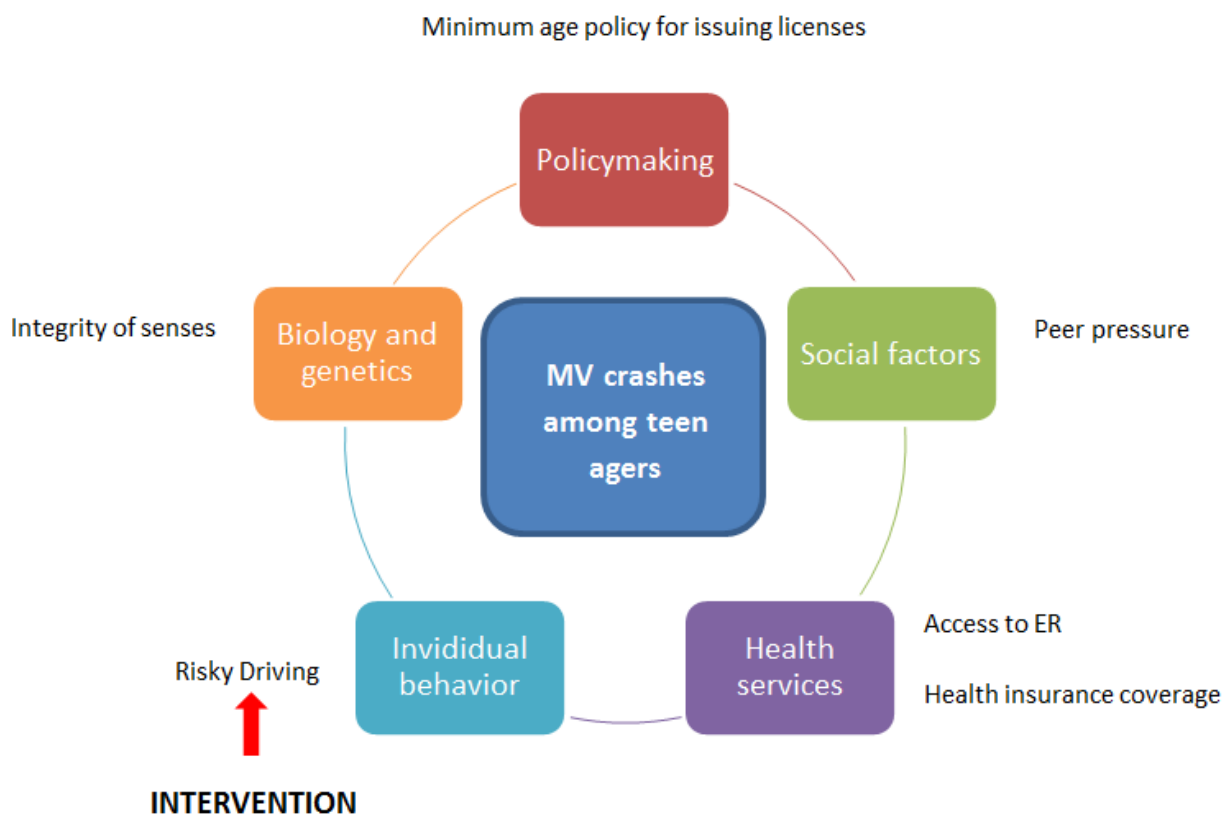
Determinants of health (as seen in figure 1) have evolved, encompassing five dimensions that need to be studied and understood by public health students. There are personal, social, economic, and environmental factors that influence health status, and those can be summarized as follows: Policymaking, Social factors, Health services, Individual Behavior and Biology and Genetics.



**Figure 1.** Determinants of Health

As it can be seen in the figure all five determinants are inter-related and each one can be targeted individually or as a group when working out a solution for a health problem.

**Example:** For the public health problem: “Motor-vehicle crashes among teen agers”, one can analyze the problem by using the determinants of health. You can take one or several of the determinants to define what will you target in the intervention (Figure 2).



**Figure 2.** Assessment of Motor-vehicle crashes among teen agers using determinants of health

The world is changing fast. Often unclear is the impact that social, economic, and political change will have on health in general, on health inequities within countries or across the globe in particular. Action on the social determinants of health will be more effective if basic data systems, including vital registration and routine monitoring of health inequity and the social determinants of health are in place and there are mechanisms to ensure that the data can be understood and applied to develop more effective policies, systems, and programs [5]. This being said, education and training in social determinants of health are vital during teaching public health.

In conjunction with Healthy People 2020, we should ask ourselves two questions: “what makes some people healthy and others unhealthy?” and, “how can we create a society in which everyone has a chance to live long healthy lives?”. In order to answer these questions, it is recommended to develop objectives that address the relationship between health status and biology, individual behavior, health services, social factors and policies; and emphasize an ecological approach to disease prevention and health promotion. An ecological approach focuses on both individual-level and population-level determinants of health and interventions [6].

| Exercise 1   | Exercise 1 Characteristics  |
|--|---|
| <ol style="list-style-type: none"> <li>1. Select a health problem</li> <li>2. Ask your students to brainstorm and analyze the causes associated to the health problem according to the determinants of health</li> <li>3. The students can analyze the problem from one or several determinants.</li> <li>4. Moderate the discussion</li> <li>5. Write on the board the related causes given by the students</li> <li>6. Wrap up the discussion</li> </ol> | <p><b>Type of exercise:</b> Brainstorming<br/> <b>Setting:</b> Classroom<br/> <b>Number of students recommended:</b> From 5 to 30<br/> <b>Materials:</b> Bibliography resources, board, markers, eraser.<br/> <b>Duration:</b> 15 to 20 minutes.<br/> <b>Expected outcome:</b> Blackboard utilization with a health problem and its possible causes analyzed from each determinant of health.</p> |

Figure 3. Exercise 1 - Brainstorming

### 3. Who is interested in learning about public health?

People interested in public health come from a variety of backgrounds and with different educational levels (Technical, Professional, Masters, PhD). When teaching public health one has to be very well aware of this diversity to use the proper vocabulary, terms and information so it can reach those from non-health and health related backgrounds. Technical jargon should be utilized but only after being thoroughly introduced.

Traditionally, those interested in public health are health practitioners, especially physicians, nurses and social workers. However, I have worked with people from various backgrounds such as finances, administration, anthropology, information technology, biology, etc. actively working on public health. Some of them came into the public health arena by accident and some others because they truly liked it to begin with.

Public Health is a field easy to fall in-love with, challenging different backgrounds seeking the solutions and the outcomes expected for health problems. The recruitment of non-health professionals into public health is not so difficult, but we have an obligation as public health practitioners to promote and communicate that this is an exciting area for many people.



One of my first work experiences at the World Health Organization had me recruiting professionals from non-health backgrounds to work in Public Health specifically from developing countries. In the beginning I thought it was going to be very difficult to motivate these professionals to work in the subject, however, it was highly sought by those who were informed about the job opportunities and areas of work. The main challenge was just to get out there and to deliver the message effectively for public health to be known within some target groups.

The fields of work in Public Health are broad as well. You can work for local, regional, national or world offices, governmental or non-governmental, private and educational institutions. Next is an example of a job description for a non-health professional to work in Public Health:

**Example: Sample Job Description: Performance Improvement Manager**

**Position Overview:** Manages and coordinates organization-wide efforts to ensure that performance management (PM) and quality improvement (QI) programs are developed and managed using a data driven focus that sets priorities for improvements aligned to ongoing strategic imperatives.

**Minimum Requirements:** Master's degree in public health or MBA and 10 or more years of experience in public health management, planning or public policy development. Experience in Performance Improvement Management and Quality is desired [7].

In the beginning of my public health career, I quickly learned that Public Health needs the work and support of different disciplines and backgrounds. To analyze and act upon a health issue you need the participation of a health professional who knows the theory behind the health issue, people with some knowledge in administration and finances, people that know about policy development, statistics and so on, if you really want to target properly the matter of study and have some impact.

You are able to find all the levels of training in Public Health, while in developing countries, you can mainly find graduate programs such as Masters or PhDs. Perhaps, developing countries are just now entering the world of policy development in public health issues and training programs are just starting to grow.

There are many different degree programs for those interested in studying public health. Some of the programs include:

BA = Bachelor's in public health: Designed to give students a basic grounding in public health issues and methods. [8]

- MPH = Master of Public Health: include coursework in a number of public health disciplines, such as administration, epidemiology, environmental health, and behavioral health. Specialized degrees such as a Master of Health Administration will be more focused on a specific topic.

- MHA = Master of Health Administration: People with experience in public health but often don't have MPH degrees
- MHSA = Master of Health Services Administration: For people interested in administration of Public Health.
- MSPH = Master of Science in Public Health
- DrPH = Doctor of Public Health: It is for people with an interest in public health leadership, or a desire for deeper knowledge than an MPH program can provide.
- PhD = Doctor of Philosophy

The MPH, DrPH, and MHA are example of degrees which are geared towards those who want careers as practitioners of public health in traditional health departments, managed care organizations, community-based organizations, hospitals, consulting firms, international agencies, state and federal agencies, among others.

MS, PhD, and ScD are examples of academic degrees. They are more oriented toward students wishing to seek a career in academics and research rather than public health practice.

However, each school of public health can tailor their degree programs significantly. Students interested in getting a degree in public health should check with individual schools for more information on specific degree programs.

In your classroom, you will have you have an array of backgrounds that represent an opportunity to make your class exciting and fulfilling. Know your students, who they are, what they do, what their expectations are, and more importantly, identify how can they contribute to the public health world.

| Exercise 2  | Exercise 2 Characteristics   |
|---|--|
| <p>Greet your students and ask them the following information</p> <ol style="list-style-type: none"> <li>1. What is your name?</li> <li>2. What is your background?</li> <li>3. What do you expect from the class?</li> <li>4. What previous experiences in public health have you had?</li> <li>5. Is there a particular career path or job you seek?</li> </ol> | <p><b>Type of exercise:</b> Getting acquainted<br/> <b>Setting:</b> Classroom<br/> <b>Number of students recommended:</b> From 5 to 30<br/> <b>Materials:</b> -<br/> <b>Duration:</b> 15 to 30 minutes.<br/> <b>Expected outcome:</b> Knowing your students, identifying what they expect and what they could give to the class.</p> |

**Figure 4.** Exercise 2 – Getting acquainted

Public health is a rewarding field. The field of public health offers great personal fulfillment - working towards improving people's health and well-being is a rewarding day's work. Health status indicators or health outcomes, can tell you whether you've got a clean bill of health or if you and your community are in need of some regular public health attention [9].



#### 4. What skills and competences are needed in a public health practitioner?

An array of skills and competences become the tools of good performance in the field. Those skills and competences need to be developed during public health training. The teacher is directly responsible for assuring that the students get what is needed to execute impeccably the plans and goals delineated for taking action in the community or research fields.

Competency is defined as the ability to apply particular knowledge, skills, attitudes, and values to the standard of performance required in specified contexts. The Core Competencies can serve as a starting point for public health practice and academic organizations as they create workforce development plans, identify training and workforce needs, prepare for accreditation, and more [10]. Generic competencies are the minimum baseline set of competencies that are common to all public health roles across all public health sectors and disciplines and that are necessary for the delivery of essential public health services [11].

The competencies are organized into twelve topic areas. Each topic comprises a set of competency statements as follows (Table 1):

| Topic                                 | Generic Competency statement   |
|---------------------------------------|--|
| 1. Health systems                     | <ul style="list-style-type: none"> <li>• Demonstrates knowledge of the health systems and structures</li> <li>• Demonstrates knowledge of key international agreements.</li> </ul>   |
| 2. Public Health Science              | <ul style="list-style-type: none"> <li>• Demonstrates knowledge of what constitutes public health and how it relates to public health practice in specific contexts.</li> <li>• Demonstrates knowledge of the determinant factors that affect health and health inequalities.</li> <li>• Demonstrates knowledge of the basic concepts of health.</li> <li>• Demonstrates knowledge of the basic epidemiological concepts.</li> </ul> |
| 3. Policy, Legislation and Regulation | <ul style="list-style-type: none"> <li>• Demonstrates knowledge of the use of policy in a public health context.</li> <li>• Demonstrates knowledge of how legislation and regulations are applied in public health contexts.</li> </ul>  |
| 4. Research and evaluation            | <ul style="list-style-type: none"> <li>• Demonstrates understanding of the principles of research and its applications in public health.</li> <li>• Demonstrates understanding of the principles of evaluation and its applications in public health.</li> </ul>   |
| 5. Community health development       | <ul style="list-style-type: none"> <li>• Demonstrates knowledge of community development in a public health context.</li> </ul>  |
| 6. Public Health Practice             | <ul style="list-style-type: none"> <li>• Demonstrates knowledge and understanding of the intent of public health interventions.</li> <li>• Analyses public health issues.</li> </ul>   |

| Topic   | Generic Competency statement   |
|---|--|
|   | <ul style="list-style-type: none"> <li>• Uses culturally appropriate values processes and protocols when working in teams.</li> </ul>  |
| 7. Working across and understanding cultures      | <ul style="list-style-type: none"> <li>• Demonstrates knowledge of the nature of culture.</li> <li>• Demonstrates knowledge of the principles of cultural safety and takes responsibility for maintaining safety in regards to cultural values, norms, and practices.</li> </ul>   |
| 8. Communication                                  | <ul style="list-style-type: none"> <li>• Listens actively.</li> <li>• Uses different communication styles to facilitate understanding accommodate.</li> <li>• Uses oral communication effectively in a range of contexts.</li> <li>• Communicates clearly in writing for the given context.</li> <li>• Consults with others in a range of settings.</li> </ul>   |
| 9. Leadership, Teamwork, and professional liaison | <ul style="list-style-type: none"> <li>• Positively influences the way teams work together.</li> <li>• Demonstrates understanding of the many aspects of leadership.</li> <li>• Instigates, coordinates and facilitates groups.</li> <li>• Establishes and maintains effective professional relationships to improve health outcomes.</li> </ul>   |
| 10. Advocacy                                      | <ul style="list-style-type: none"> <li>• Demonstrates the ability to advocate in achieving public health outcomes.</li> <li>• Demonstrates the ability to negotiate to achieve public health outcomes.</li> </ul>  |
| 11. Professional Development and Self- Management | <ul style="list-style-type: none"> <li>• Manages self to improve performance and professional development.</li> </ul>  |
| 12. Planning and Administration                   | <ul style="list-style-type: none"> <li>• Accesses a range of organizational information.</li> <li>• Describes how work plan fits with organizational and wider public health priorities.</li> <li>• Completes appropriate administration record keeping and allocated financial responsibilities according to contractual and legal frameworks and organizational policies as they apply.</li> <li>• Demonstrates understanding of the public health role in an emergency response.</li> </ul> |

Source: Keating, Gay et al. Generic Competencies for Public Health in Aotearoa-New Zealand. New Zealand: The Public Health Association of New Zealand.

**Table 1.** Topic areas with their generic competencies in Public Health

A skill is the ability to do something well; to have the expertise. Some of the most important skills for a public health professional to have are: Analytic Assessment Skills, Policy Development/Programa Planning Skills, Communication Skills, Cultural Competency Skills, Community Dimensions of Practice Skills, Basic Public Health Sciences Skills, Financial Planning and Management Skills and Leadership and Systems Thinking Skills [12]

For each domain of skills there are a group of specific competences that apply as shown in table 2.

| Skill                                      | Specific Competence   |
|--|---|
| Analytic Assessment Skills                 | <ul style="list-style-type: none"> <li>• Defines a problem</li> <li>• Determines appropriate uses and limitations of both quantitative and qualitative data</li> <li>• Selects and defines variables relevant to defined public health problems</li> <li>• Identifies relevant and appropriate data and information sources</li> <li>• Evaluates the integrity and comparability of data and identifies gaps in data sources</li> <li>• Applies ethical principles to the collection, maintenance, use, and dissemination of data and information</li> <li>• Partners with communities to attach meaning to collected quantitative and qualitative data</li> <li>• Makes relevant inferences from quantitative and qualitative data</li> <li>• Obtains and interprets information regarding risks and benefits to the community</li> <li>• Applies data collection processes, information technology applications, and computer systems storage/retrieval strategies</li> <li>• Recognizes how the data illuminates ethical, political, scientific, economic, and overall public health issues</li> </ul> |
| Policy Development/Program Planning Skills | <ul style="list-style-type: none"> <li>• Collects, summarizes, and interprets information relevant to an issue</li> <li>• States policy options and writes clear and concise policy statements</li> <li>• Identifies, interprets, and implements public health laws, regulations, and policies related to specific programs</li> <li>• Articulates the health, fiscal, administrative, legal, social, and political implications of each policy option</li> <li>• States the feasibility and expected outcomes of each policy option</li> <li>• Utilizes current techniques in decision analysis and health planning</li> <li>• Decides on the appropriate course of action</li> <li>• Develops a plan to implement policy, including goals, outcome and process objectives, and implementation steps</li> <li>• Translates policy into organizational plans, structures, and programs</li> <li>• Prepares and implements emergency response plans</li> <li>• Develops mechanisms to monitor and evaluate programs for their effectiveness and quality</li> </ul>   |
| Communication Skills                       | <ul style="list-style-type: none"> <li>• Communicates effectively both in writing and orally, or in other ways</li> <li>• Solicits input from individuals and organizations</li> <li>• Advocates for public health programs and resources</li> <li>• Leads and participates in groups to address specific issues</li> <li>• Uses the media, advanced technologies, and community networks to communicate information</li> <li>• Effectively presents accurate demographic, statistical, programmatic, and scientific information for professional and lay audiences</li> </ul>  |
| Cultural Competency Skills                 | <ul style="list-style-type: none"> <li>• Utilizes appropriate methods for interacting sensitively, effectively,</li> </ul>  |

| Skill                                    | Specific Competence   |
|--|---|
| Community Dimensions of Practice Skills  | <ul style="list-style-type: none"> <li>• and professionally with persons from diverse cultural, socioeconomic, educational, racial, ethnic and professional</li> <li>• backgrounds, and persons of all ages and lifestyle preferences</li> <li>• Identifies the role of cultural, social, and behavioral factors in</li> <li>• determining the delivery of public health services</li> <li>• Develops and adapts approaches to problems that take into</li> <li>• account cultural differences</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• Establishes and maintains linkages with key stakeholders</li> <li>• Utilizes leadership, team building, negotiation, and conflict</li> <li>• resolution skills to build community partnerships</li> <li>• Collaborates with community partners to promote the health of</li> <li>• the population</li> <li>• Identifies how public and private organizations operate within a community</li> <li>• Accomplishes effective community engagements</li> <li>• Identifies community assets and available resources</li> <li>• Develops, implements, and evaluates a community public health assessment,</li> <li>• Describes the role of government in the delivery of community</li> <li>• health services</li> </ul> |
| Basic Public Health Sciences Skills      | <ul style="list-style-type: none"> <li>• Identifies the individual's and organization's responsibilities within the context of the Essential Public Health Services and core functions</li> <li>• Defines, assesses, and understands the health status of populations, determinants of health and illness, factors contributing</li> <li>• to health promotion and disease prevention, and factors influencing the use of health services</li> <li>• Understands the historical development, structure, and interaction of public health and health care systems</li> <li>• Identifies and applies basic research methods used in public health</li> <li>• Applies the basic public health sciences including behavioral and social sciences, biostatistics, epidemiology, environmental public</li> <li>• health, and prevention of chronic and infectious diseases and injuries</li> <li>• Identifies and retrieves current relevant scientific evidence</li> <li>• Identifies the limitations of research and the importance of observations and interrelationships</li> </ul>   |
| Financial Planning and Management Skills | <ul style="list-style-type: none"> <li>• Develops and presents a budget</li> <li>• Manages programs within budget constraints</li> <li>• Applies budget processes</li> <li>• Develops strategies for determining budget priorities</li> <li>• Monitors program performance</li> <li>• Prepares proposals for funding from external sources</li> </ul>   |

| Skill                                  | Specific Competence   |
|--|---|
| Leadership and Systems Thinking Skills | <ul style="list-style-type: none"> <li>• Applies basic human relations skills to the management of organizations, motivation of personnel, and resolution of conflicts</li> <li>• Manages information systems for collection, retrieval, and use of data for decision-making</li> <li>• Negotiates and develops contracts and other documents for</li> <li>• the provision of population-based services</li> <li>• Conducts cost effectiveness, cost benefit, and cost utility analyses</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• Creates a culture of ethical standards within organizations and communities</li> <li>• Helps create key values and shared vision and uses these principles to guide action</li> <li>• Identifies internal and external issues that may impact delivery of essential public health services (i.e. strategic planning)</li> <li>• Facilitates collaboration with internal and external groups to ensure participation of key stakeholders</li> <li>• Promotes team and organizational learning</li> <li>• Contributes to development, implementation, and monitoring of organizational performance standards</li> <li>• Uses the legal and political system to effect change</li> <li>• Applies theory of organizational structures to professional practice</li> </ul> |

Source: PHF. Core Competencies for Public Health Professionals. Washington: Public Health Foundation; 2012.

**Table 2.** Skills and specific competences in Public Health.

You can observe in tables 1 and 2, public health professional needs to develop: a series of skills and competences that will make s/he a professional that will be able to perform different duties in several areas and to have a broader understanding of the health problems in his community and the world.

According to the discipline, profiles are outlined to meet the requirement of the tasks as it is presented in the following example:

**Example: Sample Job Description: Performance Improvement Manager**

**Position Overview:** Lecturer / Senior Lecturer in Public Health

**Essential Factors and Skills:** Master's degree or equivalent, Ability to inspire and collaborate, Establishes writing skills, Specialist expertise and experience in public health, Previous experience in coordinating public health research, writing and submitting proposals and bids and mentoring and supervising staff. Excellent verbal and communication skills, presentation skills and IT skills. Organized, with an ability to work methodically, accurately and to deadlines. [13].

| Exercise 3  | Exercise 3 Characteristics  |
|---|---|
| <p>Invite a guest speaker to your class, who's profile is an experienced Public Health Professional.</p> <p>Ask him to talk about his experience in the field; how he has done it, what skills and competences he has developed.</p> <p>Finish the session with questions and answers from your students.</p> | <p><b>Type of exercise:</b> Guest speaker</p> <p><b>Setting:</b> Classroom or auditorium</p> <p><b>Number of students recommended:</b> From 15 to 100</p> <p><b>Materials:</b> Audiovisual, video beam, computer</p> <p><b>Duration:</b> 30 to 60 minutes.</p> <p><b>Expected outcome:</b> Students motivated about Public Health</p> |

Figure 5. Exercise 3 – Guest speaker

## 5. Importance of knowing your students and identifying their particular skills

This is a special section with some strategies to identify the potential of your students in the classroom, how to explore and encourage their development and applicability towards public health practice.

It doesn't matter how good a professional can be if s/he doesn't care for who s/he is teaching. A success factor for any one's learning experience is having a teacher that can actively search and find the talents of his/her students.

I always recommend to anyone who works in education, more so in health education, to devote a good amount of time to get to know their students well. I say especially in health education because health sciences tend to depersonalize learning experiences; leaving the themes as just science to be learned no matter the individual makes learning sterile.

From the first encounter with your students take some time getting acquainted, for example, use icebreakers, ask about your student's family, habits, hobbies and why not get into some of the public health subjects you are going to be teaching them utilizing their own health risk factors or determinants of health. That way you will know how much resonance you will have in your lectures. This will also give you the opportunity to select examples that will reach your students in a deeper level that will touch them, that will make them remember!




Learners can be classified according to their learning style or preference as visual, auditory or tactile/kinesthetic [14].

For visual learners it is important to use pictures, diagrams, photographs, graphs, videos, illustrations, flipcharts or any other visual aid that will accompany the main message. Body language it is also important with these types of students. It can become a powerful tool for keeping their interest in the class and the subject.



Auditory learners are those who learn best by listening. Be prepared to use a decisive tone of voice, make changes in volume, intensity, accentuation and speed. Learners get the most out of discussions in small groups, short lectures and interesting subjects. Sometimes you can also use music to emphasize parts of the lecture or discussion.

Tactile or kinesthetic learners learn better by doing, moving or touching. In teaching public health, any type of community work, such as data collection, surveying, prevention activities in the community, education, etc. it is a very used method to motivate and train your students in a particular subject.

| <b>Example: Learning Styles</b>   |  |
|---|--|
| <p><b>AUDITORY LEARNERS</b></p> <p>Like to be read to<br/>Like to read at loud<br/>Like to use mnemonics to help learn material<br/>Like to talk with others about their ideas</p>                        |    |
|    | <p><b>VISUAL LEARNERS</b></p> <p>Like to learn from reading, taking notes, and using worksheets<br/>Like to use highlighters to outline important facts<br/>Like to see a visual representation of the information<br/>Like to use multimedia materials such as computers and transparencies</p> |
| <p><b>KINESTHETIC LEARNERS</b></p> <p>Like to move around to learn new information<br/>Like to take frequent breaks<br/>Like to use rhythms or music to learn<br/>Like to learn in different settings</p> |    |

**Figure 6.** Example of learning styles. Source: BENSLEY, Robert and BROOKINS-FISHER, Jodi. Community Health education and methods. A practical guide. United States: Jones and Barlett Publishers, LLC; 2009.

You can use either or all the methods whenever you feel you need them. Public Health teaching is not limited to the classroom, but can be done in all kinds of settings. Where ever you are, try to use it for your convenience and apply your skills to achieve your main goal: capture your student’s interest [15]. You can do this by stimulating research on the theory and practice of health education; supporting high quality performance standards for the practice of health

education and health promotion; and finally, advocating policy and legislation affecting health education.

In the next table there are several methods that can be used in the exercise of teaching public health by developing three types of objectives: cognitive objectives, affective objectives and psychomotor objectives.

| Method                           | Cognitive | Affective | Psychomotor | Time required |
|----------------------------------|-----------|-----------|-------------|---------------|
| Getting acquainted (icebreakers) | X         | P         | P           | 15+           |
| Audio                            | X         | P         | P           | 15+           |
| Audiovisual materials            | X         | P         | P           | 15+           |
| Case studies                     | X         | X         |             | 30+           |
| Computer-assisted instruction    | X         | P         |             | 30+           |
| Cooperative learning             | P         | P         | P           | 30+           |
| Debates                          | P         | P         |             | 30+           |
| Educational games                | X         |           |             | 20+           |
| Field trips                      |           | P         |             | 60+           |
| Guest speakers                   | X         | P         |             | 30+           |
| Lecture                          | X         |           |             | 5+            |
| Panels                           | P         | X         |             | 30+           |
| Peer education                   | P         | X         |             | 120+          |
| Problem solving                  |           | X         | P           | 30+           |
| Self-appraisals                  |           | X         |             | 10+           |
| Service learning                 | X         | X         | P           | 120+          |
| Simulations                      | X         | X         | X           | 30+           |
| Storytelling                     | P         | X         |             | 10+           |

Legend: X = Yes, common use; P = possible

**Table 3.** Methods for teaching public health and their objectives

Some of the methods described above have been used as examples in this chapter.

**Example: Selecting team members**

After a getting acquainted section, you noticed you have at least 5 students that know very well SPSS, 3 more that are great speakers, 2 that have field experiences in public health interventions, 4 students with grant writing experiences, and 2 students with managerial and financial skills. You need to put together a team of 5 people that can manage and run an intervention in the community. You are able to select the individuals for your team after knowing the skills your students have.

In order to have a good point of departure in a modern public health course, I recommend choosing an authoritative book on the main concepts of Public Health to be used as course text. Depending on the focus of the class, that book can have only public health theory or more specific information on any of the public health areas.

Prepare your class using at least one of the methods that have been explained or more than one depending on the content of the lecture, number of students, available resources and time.

Create a course syllabus. Schedule topics in advance and inform your students about the materials to be used in the class. Assign some readings so the students have a previous review of the information to be discussed in the class and make sure to make a round of questions (Q&A) about the assigned reading.

This will help you and your students to trace a baseline from which your class will start with generated expectations and a basic knowledge to be developed.

| Exercise 4   | Exercise 4 Characteristics   |
|--|--|
| Prepare an outline for a lecture using at least 3 methods described in table 3.<br>Input the time dedicated to each activity, materials used and bibliography. Make sure to include exercises for your students. | <b>Type of exercise:</b> Lecture<br><b>Setting:</b> Classroom or auditorium<br><b>Number of students recommended:</b> From 5 to 30<br><b>Materials:</b> Audiovisual, video beam, computer<br><b>Duration:</b> 45 to 90 minutes.<br><b>Expected outcome:</b> Objectives of the lecture met. |

**Figure 7.** Exercise 4 – Lecture

Again, using either one or several of those methods, you should be able to include the students and make them full participant in your class activity. Once you have identified what the

student can do and what it that makes her/him special in the classroom, reinforce it and promote it.

## 6. Guiding your students to generate actions in public health

Public health is a field that offers an abundance of job opportunities to suit a variety of interests and skills. Whether you are more interested in crunching numbers, conducting research, or working with people, there is a place for you. Recent college graduates and those that have been in the field for years have something to offer and to gain in this field. Public health is ideal for those that gain satisfaction knowing that they are working to improve the lives of others.

It is very important for a student to understand the public health priorities that surround her/him, and in that way, should be able to propose solutions that can be taken to actions. Some of the key public health priorities which have become achievements for the world and the United States of America are listed in table 4.

| No. | Worldwide 2001-2010  | United States 2001-2010                       |
|-----|--|---|
| 1   | Reductions in child mortality  | Vaccine-Preventable Diseases                  |
| 2   | Vaccine-Preventable Diseases   | Prevention and control of Infectious Diseases |
| 3   | Access to Safe Water and Sanitation                                  | Tobacco Control                               |
| 4   | Malaria Prevention and Control                                       | Maternal and Infant Health                    |
| 5   | Prevention and control of HIV/AIDS                                   | Motor Vehicle Safety                          |
| 6   | Tuberculosis Control   | Cardiovascular Disease Prevention             |
| 7   | Control of Neglected Tropical Diseases                               | Occupational Safety                           |
| 8   | Tobacco Control  | Cancer Prevention                             |
| 9   | Increased Awareness and Response for Improving<br>Global Road Safety | Childhood Lead Poisoning Prevention           |
| 10  | Improved Preparedness and Response to Global<br>Health Threats       | Public Health Preparedness and Response       |

Source: CDC. Ten Great Public Health Achievements

**Table 4.** Ten great Public Health Achievements

Public Health needs to transcend the assessment of health issues and professionals should be able to propose and deliver interventions in the field that make changes in communities and hopefully in public policies.

Many public health practitioners find the problems, analyze them and give plausible explanations of the causes to health issues. Less come out with ideas for interventions and activities

to be made, and even less are able to conjugate the results of those interventions to proposing political exits to public health problems.

| Exercise 5  | Exercise 5 Characteristics  |
|---|---|
| <p>Take your students on a field trip to visit a vulnerable community to a health problem, example, a community with water problems. Have them talk to the people, look for the water sources, identify the problems, propose solutions and implement intervention activities if already outlined. Wrap up the session with lessons learned. Take pictures and write a field trip report.</p> | <p><b>Type of exercise:</b> Field trip<br/> <b>Setting:</b> Field<br/> <b>Number of students recommended:</b> 5 to 15<br/> <b>Materials:</b> Transportation mean, identifications for students, camera<br/> <b>Duration:</b> 90 to 180+ minutes.<br/> <b>Expected outcome:</b> Students motivation, intervention goals reviewed and measured.</p> |

**Figure 8.** Exercise 5 – Field trip

## 7. Use of technology in the teaching and practicing of public health

Globalization has changed the way in which we work, especially as a scientific community. Networking and technology are quintessential tools for teaching public health now.

Teaching and assessing public health has changed within a century, and now, we face an age in which the Information and communication technologies (ITCs) are the gold standard. ITCs are the integration of telecommunications, computers, audio-visual systems, wired and wireless signals, software, storage and others in order to transmit, store, manipulate and share information efficiently between users.

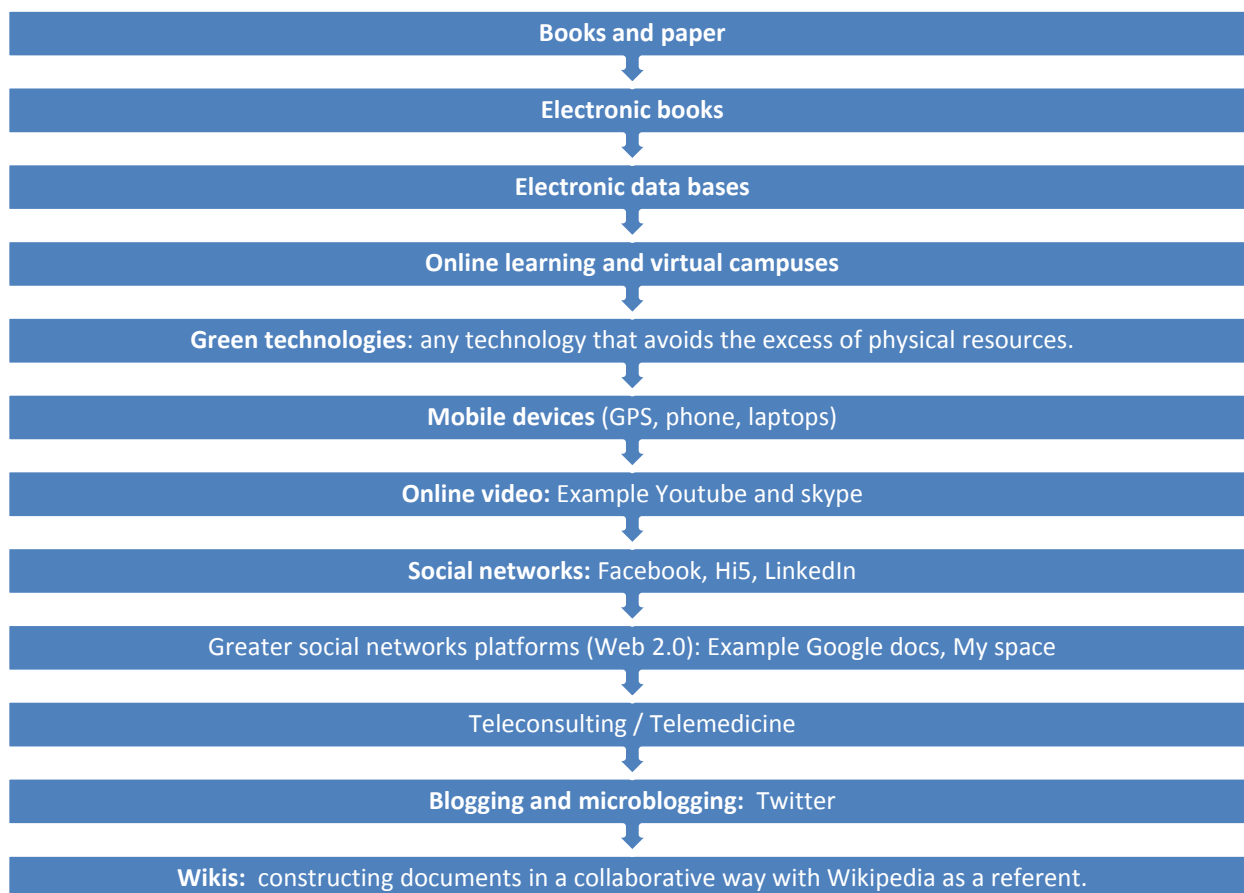
The ITCs join what used to be telephone networks with computer networks, and has facilitated the delivery of messages to public health practitioners and community.

Dr. Mirta Roses Periago, former Director of the Panamerican Health Organization said in 2003 the following words that I consider relevant: “This century will be the century of networks, connectivity and interdependence, and this will allow us to overcome the barriers of time and space, opening possibilities that we never imagined to improve the life conditions of our people...” [18]

Health services are complex in the way they are built, based upon scientific research and evidence based medicine. In order to do this, it is necessary the collaboration and participation of multiple actors with different profiles, knowledge and skills.

Communication between parties that work in public health has significantly improved through ITCs and social networks. There are other technologies that include digital content and video streaming that also facilitate the interaction of interdisciplinary groups.

The source of knowledge and their spread has evolved as follows (figure 3):



**Figure 9.** Evolution of knowledge sources and their communication resources

With the use of ITCs you can interact with others, share information and resources efficiently, however, one has to be very cautious when protecting the security and privacy of the health information that is being managed, because of its efficiency and ease of use, sharing this type of knowledge through ITCs can put people at risk.

This is why users, roles and privileges in accessing any type of ITC resource has to be well defined. Computer accounts need to be secure, data storage and back up has to be warranted. [19]

I have personally used all of the tools named in figure 3 for both clinical and public health practice. I believe ITCs and social networking are a powerful tool to access the community and generate highly impacting interventions. However, I also believe the management of the messages being distributed, the discussions created and the rising questions need a careful treatment in order not to allow the transformation or deviation of the core messages that were intended to be delivered.



**Example:** Blog: U.S Strategy to prevent and respond to gender-based violence globally [20]



Social networking works especially well in settings where technology is accessible and other communication practices might be more expensive. Some developing countries have good access to internet for instance, and people in the community might be able to participate in activities and discussions, read messages, post queries or getting actively involved in a public health strategy without having to spend a lot of resources.

| Exercise 6   | Exercise 6 Characteristics  |
|--|---|
| <p>At the computer lab give your students a public health topic to research. Provide them with a list of health databases to be used. Ask them to look for at least 5 scientific articles that discuss the topic selected. Students should write a report and send it to the instructor by e-mail at the end of the class.</p> | <p><b>Type of exercise:</b> Computer-assisted instruction<br/> <b>Setting:</b> Computer lab<br/> <b>Number of students recommended:</b> 5 to 30<br/> <b>Materials:</b> Computer, video beam<br/> <b>Duration:</b> 60 to 120 minutes<br/> <b>Expected outcome:</b> Data bases management</p> |

**Figure 10.** Exercise 6 – Computer-assisted instruction

## 8. Results expected in the learning process of public health

One of the key messages to be taught is to keep in mind that partnering with the community is the key to success of Public Health practice.

Community diversity and culture must be recognized and respected. Community engagement can only be sustained by identifying and mobilizing community assets, and by developing capacities and resources for community health decisions and action.

The concerns of society are always in the forefront of public health. These concerns keep changing and the methods for addressing keep expanding. New technologies and global, local, and national interventions are becoming a necessary part of public health. [21]

The impact of any public health initiative is proportional to the amount of community involvement and collaboration. They are who, in the end, will acquire long-term commitments with their own health and we as public health practitioners, are the ones who will partner with them and other organizations to make those relationships long lasting and productive.

The final outcome of a public health learning process involves:

- Basic knowledge in public health generalities
- Acute sense of research
- Highly committed and sensible professionals with the community
- Community involvement
- Setting realistic goals that should progress to highly impact the social setting to be applied.
- Setting performance indicators

Goals, objectives, and performance indicators function very much like the elements of an archer and his or her target, in that, they clarify the purpose of the health education intervention.

## 9. Conclusion

Teaching public health means training individuals to assess effectively health issues, assure the maintenance of health in a community and develop policies, strategies and interventions to improve health.

Public health is an exciting and growing field of study that challenges its professionals to confront complex health issues, such as improving access to health care, controlling infectious disease, and reducing environmental hazards, violence, substance abuse, and injury. The field is dynamic and diverse, and Public Health professionals come from varying educational backgrounds and can specialize in an array of fields. A host of specialists, including teachers,

journalists, researchers, administrators, environmentalists, demographers, social workers, laboratory scientists, and attorneys, work to protect the health of the public.

Public health is also a field geared toward serving others. Public health professionals serve local, national, and international communities. They are leaders who meet the many exciting challenges in protecting the public's health today and in the future.

As public health trainers we have the obligation to educate our students develop their skills and make them competent in the areas they select as their preference. A well trained professional should be capable of taking on challenges with confidence, effectiveness and assertiveness.

During training, students need to explore all three dimensions of the core functions of public health: assessment, assurance and policy development. In this way, they would be able to choose which direction to go once they are practicing.

A public health trainer needs to be proficient in the use of ICTs and apply them not only during the academic exercise of teaching public health but during his practice. ICTs facilitate public health intervention outcomes and are an efficient and cost-effective way to promote health.

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