PARTICIPANT WORKBOOK

Using Science to Inform Policy

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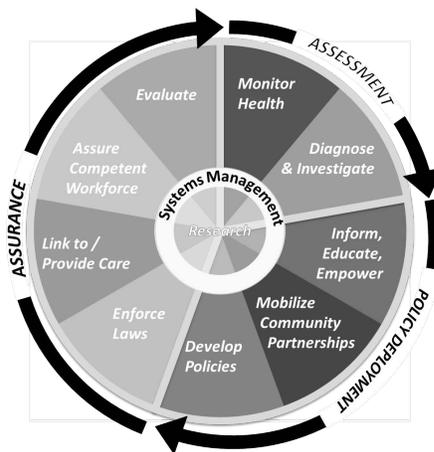# Table of Contents

Introduction

OVERVIEW OF USING SCIENCE TO INFORM POLICY

Using science to inform decision making ensures that policies and practices used in the prevention, detection, and treatment of diseases are based on data, principles, interventions, and findings that have been proven through appropriate scientific methods and are therefore more likely to improve health outcomes.

Policy is purposeful action by an organization or institution to address an identified problem or issue through executive, legislative, or administrative means. It can be voluntary or legally binding.

Policy development is one of the core functions of public health; within those core functions are the 10 essential services of public health as shown below:[1,2]

Core Functions of Public Health[3]

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[1] Institute of Medicine, Committee for the Study of the Future of Public Health. The future of public health. Washington (DC): National Academy Press; 1988.
[2] 10 Essential Services of Public Health. Avaiilable at: http://www.cdc.gov/nphpsp/essentialServices.html
[3] Fielding JE, Teutsch S, Breslow L. A framework for public health in the United States. Public Health Reviews 2010;32:174-189. Available at: http://www.publichealthreviews.eu/show/f/25

Assessment – the ability to conduct public health surveillance to measure the health of the population and determinants; investigate health problems and identify causes.

1. Monitor health status to identify and solve community health problems.
2. Diagnose and investigate health problems and health hazards in the community.

Policy development – the ability to inform leaders and the general population about health, to develop policy solutions and mobilize support.

3. Inform, educate, and empower people about health issues.
4. Mobilize community partnerships and action to identify and solve health problems.
5. Develop policies and plans that support individual and community health efforts.

Assurance – the ability to ensure the health of the population by having a competent workforce to enforce laws; to have medical care available to all; and to evaluate progress as part of a virtuous cycle of quality improvement (Plan/Do/Study/Act).

6. Enforce laws and regulations that protect health and ensure safety.
7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable.
8. Assure competent public and personal health care workforce.
9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services.
10. Research for new insights and innovative solutions to health problems.

In this training, you will gain introductory knowledge about public health policy. Topics will cover how and why a health issue becomes important and the steps that are taken to develop policy around a specific issue. Throughout the training, additional resources are noted so that you can study in greater depth areas of interest to you.

LEARNING OBJECTIVES

At the end of the training, you will be able to present policy recommendations to key stakeholders that include:

- Scope and impact of the health issue
- Costs (economic and morbidity/mortality) of the issue
- Recommended policy to address the issue
- Consequences of implementing the policy, including effectiveness, costs, savings
- How the policy option(s) can be implemented
- Barriers to implementing the policy and ways to overcome them

ESTIMATED COMPLETION TIME

The module should take approximately 12 hours to complete.

TARGET AUDIENCE

The module is designed for FETP residents who specialize in noncommunicable diseases (NCDs).

PREREQUISITES

Participants should have completed training on program planning prior to this module.

ABOUT THIS WORKBOOK

The format of the **Participant Workbook** consists of 6 sections. You will read information about how to use science to inform policy and discuss examples with your colleagues, mentor, and/or facilitator. At the end of the module, you will practice the skills learned by completing a case study.

ICON GLOSSARY

The following icons are used in this workbook:

Image Type	Image Meaning
Activity	**Pencil** - an activity you should complete
Stop	**Stop** - a point at which you should consult a mentor or wait for the facilitator for further locally relevant information about the topic
Light bulb	**Light bulb** – key idea to note and remember
Resource	**Resource/Website Icon** - This icon represents a resource or website that may provide further information on a given topic.

ACKNOWLEDGEMENTS

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Section 1: Understanding Health Policy

INTRODUCTION

"Health policy refers to decisions, plans, and actions that are undertaken to achieve specific health care goals within a society. An explicit health policy can achieve several things: it defines a vision for the future which in turn helps to establish targets and points of reference for the short and medium term. It outlines priorities and the expected roles of different groups; and it builds consensus and informs people."[4]

Health policy is a subset of public policy, which is the larger set of laws, plans, and actions made by government. Health policies may affect individuals, groups, organizations, or entire populations. Public policy refers to policy that is developed and enforced by a government. It can be formalized into law, legally binding rules or regulations, or other means depending on a country's political process. For example, a national law requiring enforcement of seatbelt use in road vehicles may result in local or district regulations that impose fees for noncompliance within their jurisdictions.

Policy can also be developed and implemented within a private organization, and although noncompliance with the policy may not have legal repercussions, the organization may take other action to ensure compliance. For example, a company may promote healthy food and beverage choices in restaurants that it operates; school

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[4] World Health Organization, http://www.who.int/topics/health_policy/en/

systems may have policies related to violence among students; or employers may encourage physical activity among workers by requiring onsite fitness centers at workplaces.

Health policies are one way to address health issues within a community. Health policies may remove barriers to obtaining good health or may prevent situations that lead to poor health. In this way health policies can be viewed as an intervention. Alternatively, health policies may lead to health intervention programs being implemented.

Public health professionals may play a small or large role in policy development ranging from providing some data to support specific actions to working in the community and with leaders to develop feasible solutions to health problems, to championing a specific issue within their agency or government.

Purpose of Health Policy

Health policies help achieve maximum health status for the targeted population. The content of health policy reflects a country's health priorities as well as what is feasible in the country's context; for example, social and cultural norms, politics, and economics. Additionally, the content of health policy is an element of resource planning.

Allocation of Resources vs. Regulation

Public health policy is generally developed for one of two broad goals: either for allocation of resources or for regulatory purposes.

Allocative public health policies are designed with the goal of providing benefits to a specific group of individuals or organizations to ensure that public health objectives are met. For example, a government may provide free or low-cost healthcare to all citizens below a specific income level.

Regulatory public health policies are designed to influence the behaviors, actions, or decisions of others to ensure that public health objectives are met. These policies may be social or economic controls, or they may assure quality of healthcare services. For example, a government may limit the amount that a hospital may charge for specific services; licensure may be required to enter as a practitioner into health-related fields; or workers may be required to maintain their weight below a certain limit to receive employer-paid healthcare benefits.

Key Players in Health Policy

Health policy can direct allocation of resources or regulation of activities at one of several levels: organizational, community, or governmental. There will be key players or stakeholders who have a critical interest or have a part in the development, implementation, and monitoring of policy. The affiliations and roles that stakeholders have

can vary widely with each specific policy, but for health policy there are several general categories, which include but are not restricted to:

- The community
    - Those affected by or interested in the health issue. This could be families of school-aged children, workers in an industry, or residents of a specific area.
    - These individuals can petition decision-makers and leaders for changes in policy, participate in programs related to health policies, and communicate their needs in a variety of ways.

- Community leaders
    - Those who have influence over members of the community and often mobilize community efforts to make changes in policy. For example, president of a neighborhood association, president of a parent-teacher coalition group, leader of special interest groups based on religion, stage in life, or common goals.
    - These individuals act as a voice for the members of the community and can be seen as "gatekeepers" to community acceptance of ideas or policy changes.

- Political leaders
    - Those who have a clearly defined role in the formation of policy, often with a responsibility to do what they perceive are best for the community. This includes officials elected to office in the local, district, or national government to a nongovernmental organization office (for example, governing board of a school or private company).
    - These individuals write policy with input from interested groups and expert consultation. Depending on the political system they may propose a policy to a governing body to have the policy adopted.

- Decision-makers
    - Those who have the power to make decisions that affect the community. In some cases decisions may be limited in scope; for example, limiting nutritionally poor food choices from a local school lunch program. In other cases decisions may be far-reaching; for example, enacting a national law requiring the use of helmets when riding motorbikes or mopeds. Decision-makers may be political leaders or community leaders.

- o These individuals decide whether suggested policies or policy changes are adopted. The power that decision-makers have to influence the adoption of a specific policy depends on their exact role.

- Special interest groups/labor unions/professional associations
  - o Those who have a particular interest in a health issue; for example, physicians and nurses, hospitals and healthcare personnel, private companies, or lobbyists. This group may overlap with community members and leaders but it has a defined role. A policy may affect working conditions, amount of work, ability to work, or have an impact on a product or investments.
  - o These individuals can influence policy through advocacy efforts and often have economic backing to promote their views on policy.

- Nongovernmental or international/multinational organizations
  - o Those who provide funding, expertise, assistance, or aid involving a health issue; for example, WHO offices, religious organizations, or bilateral aid organizations.

CHARACTERISTICS OF POLICY

A good health policy is one that:

- Reflects understanding of the current social, political, and economic climate
- Acknowledges challenges in achieving health goals
- Requires actions that lead to an improvement in health because of solid evidence
- Gains the support of multiple sectors within a country's social, economic, and political structure

Health policy usually involves multiple sectors including the community affected, health agencies, public safety, law, private firms, and nongovernmental organizations (NGOs). Health policies can be implemented to support or direct programs or interventions. Issues requiring policy often involve:

- Health concerns of a large economic or social sector of the population
- Multiple or indefinite years of involvement
- A large geographic area

For example, a regulation involving the use of chemical compounds in manufacturing involves multiple national agencies such as commerce, environment, and health. It also

has an effect on the industry using the chemical, and it may take several years to completely enact and implement.

Because policies are developed through a political process the solution or ideal that may appear to be most logical may not always be the solution that is eventually presented. A policy is a consensus of outspoken stakeholders and political leaders and may represent a compromise by the stakeholders.

CATEGORIES OF HEALTH POLICY

There are three general categories of policy. The first is *organizational* policy. These are policies implemented by individual schools, workplaces, or places of business. Organizational policies are usually required by the organization participants or the organization itself. Another category of policy is *community* policy. Community policy is adopted by a governing body or other groups made up of community members to improve health or health services within a community. The third category of policy is *governmental* or *national* policy. Governmental policy states requirements and standards for agencies and organizations to safeguard the health of the population. This may be carried out at the national level or subnational level.

Figure 1: Examples of Categories of Health Policy

Organizational
- School lunches will include foods meeting specific nutritional standards. (Note: This could also be a national policy.)
- An employer-sponsored program offers free blood pressure screening and body mass index assessment to employees.

Community
- Volunteer health officers offer free classes on diverse topics such as CPR (cardiopulmonary resuscitation), healthy cooking, and diabetes prevention and management.
- Parks provide exercise equipment and instructions for promoting physical activity.

Governmental / National
- Seatbelts are required for all passengers in cars.
- Tobacco use is not allowed in or near government buildings.

REVIEW QUESTIONS #1

After completing this section, answer the following questions. Check your responses with those in Appendix A.

1. What are some of the characteristics of policy?

2. Give an example of each of the three categories of policy.

    1. _____

    2. _____

    3. _____

Stop

Let the facilitator or mentor know you are ready for the group discussion.

DISCUSSION POINTS

Use the space below to record any key points from the facilitator-led discussion:

KEY POINTS

1. Health policies create policies and procedures to achieve maximum health status for the targeted population. The health policy contents reflects a country's health priorities as well as what is feasible in the country's context.

2. Health policy can direct allocation of resources or regulation of activities at the organizational, community, or governmental level. Policies can be local, domestic (within country), or international.

3. A good health policy functions in the current political, and socioeconomic climate, addresses challenges and barriers to achieving stated goals, is based on solid evidence, and has the support of stakeholders from multiple sectors.

Section 2: Developing Health Policy

In this section, you will learn about the process of developing health policy in general and how your own skills can be used to inform the art of crafting policy. There are several stages in the policy development process, including:

STEP 1: SET THE AGENDA

Setting the agenda for policy development is the process whereby a specific health issue or topic gains prominence and receives attention from media, the public, policy makers, government agencies, and/or other organizations. Whether an issue comes to a high enough level of awareness is dependent upon multiple factors. Although there is not a set formula for bringing an issue to the policy agenda, some of the factors that influence whether an issue moves onto the agenda include:

- Feasibility of having an impact on the issue through policy: Subject matter experts or advocates for an issue may identify policy as one way that a health issue can be positively impacted, and can make efforts to raise awareness of policy as recourse through scientific publications, conferences, or other educational venues.
- Perceived importance of competing issues: "Importance" can be dependent on the context. For example, a health issue that affects a large number of people, one that affects a small number but is often fatal, one that affects a vulnerable population, or one that is seen as being the result of unjust actions can all be interpreted as having importance, depending on other issues that are also in the public view.
- Positions taken by key policy makers: Policymakers are able to bring issues to the agenda that they think should be addressed through policy; in ideal conditions the policy-makers' position would reflect the needs of his or her constituent population.
- Other factors affecting whether an issue is set on the policy agenda include
  - Motivation of stakeholders to take action, including public health advocates
  - Occurrence of an event or crisis related to the issue

- o Evidence from studies, existing programs, or evaluations indicating that an issue requires attention
- o Emphasis given by the media
- o Politics surrounding the issue
- o Population's social norms related to the issue

Stop

Read the example below. Then meet with your mentor or facilitator to discuss how this example might be applied to your country (or region).

Example: Setting the Agenda for Health Policy on Cervical Cancer

Below are excerpts and occurrences from Country X.

Heard on TV:

"Tonight on News Channel One: Cervical cancer is having a major impact on the women in our community. A vaccine for HPV, the sexually-transmitted virus that causes cervical cancer, is recommended in some countries for adolescent girls. Would you have your daughter immunized? Reporter Maria Vargas talks to parents and church leaders about the moral issue."

Printed by the World Health Organization (WHO):

"Worldwide, cervical cancer comprises approximately 12% of all cancers in women. It is the second most common cancer in women worldwide but the commonest in developing countries… In 2000, there were over 471, 000 new cases diagnosed and 288, 000 deaths from cervical cancer worldwide. Approximately 80% of these deaths occurred in developing countries."[1]

"Cervical screening is acknowledged as currently the most effective approach for cervical cancer control. However, in many countries, including most middle-income developing countries, the existing programmes are failing to achieve a major impact."[1]

"Cervical cancer is preventable, but most women in poorer countries do not have access to effective screening programs."[1]

Example: Setting the Agenda for Health Policy on Cervical Cancer

Printed in peer-reviewed journals:

"An organized program should include ensuring the quality, the appropriate analysis of the sample and the timely delivery of results and treatment; guidelines that state the priority age group, definitions of abnormalities, frequency of subsequent screens as well as mechanisms to invite women with negative results for re-screening . . . "

"Latin America and the Caribbean have the infrastructure for cervical cancer early detection; however, reductions of the burden of disease have been modest. In Mexico, in spite of the existence of an early detection program for 20 years, the impact on mortality has been almost none."[2]

"Cervical cancer remains a leading cause of death in many developing countries because of a lack of population coverage by cervical screening services in these settings."[3]

Questions to consider:
1. Based on the content presented above, there are different factors that would lead to the issue of cervical cancer being placed on the health policy agenda. What are some of the priority issues and why are they important to put on the agenda?

2. If this was a health issue in your country, what are some factors that would influence the issue moving onto the agenda?

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1. World Health Organization. Cervical Cancer Screening in Developing Countries: Report of a WHO Consultation. WHO Programme on Cancer Control and Department of Reproductive Health and Research. Geneva 2002. Available at: http://whqlibdoc.who.int/publications/2002/9241545720.pdf

2. Agurto, I, Sandoval, J, De Le Rosa, M, Guardado, M A. Improving cervical cancer prevention in a developing country. *International Journal for Quality in Health Care.* 2006; 18(2):81–86.

3. Suba, EJ, Raab SS. Lessons learned from successful Papanicolaou cytology cervical cancer prevention in the socialist republic of Vietnam. Diagnostic Cytopathology. doi: 10.1002/dc.21655.

STEP 2: DEFINE THE ISSUE

After you set the agenda, you will define the issue.

A clear definition of the issue provides a solid foundation for identifying ways that policy can address the issue. The issue should be defined in a simple, operational and concise way. To really understand the issue and its potential impact, however, you must do your research. This includes determining what is already known about the issue and quantifying the extent of the problem. At this phase of policy development, public health scientists and practitioners can provide a great deal of knowledge and skills.

Determine what is known

The first step in defining the issue is to determine what is already known by doing a scientific literature search to evaluate publications on the issue in general, as well as specifics of the issue in the setting or country. Meta-analyses published in the scientific literature can be a very useful source of information for topics where a certain amount of research and priority-setting has been done. A meta-analysis is an analytic method of combining the results of a number of different studies that have been published in the literature in effort to reach a consensus of findings. If multiple studies have been published that estimate the relative risk of a disease given a particular exposure, a meta-analysis can be conducted to synthesize all of these findings and generate an overall relative risk. The Cochrane Library is a good source of information on meta-analyses; abstracts and summaries are available for free on the Internet. (See website on the following page.)

In particular, look to find the following information:

- Description of the problem (for example, the illness)
- Causes of the problem (include epidemiology)
- Who is affected
- History of the problem

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Resource

Results of meta-analyses can be found on the following website:
http://www.thecochranelibrary.com/

Quantify the Issue

The next step in defining the issue is to quantify the extent of the issue or problem using available information or data. This process can use published information either in peer-reviewed journals or in public health organization bulletins and surveillance summaries such as national surveillance bulletins or WHO publications. If necessary, new data collection activities might need to be considered.

Remember that the policy development process is not necessarily one that can be completed in a specific time frame. For issues with little or no background information available it is worth investing time and resources to adequately document the problem and any interventions that are feasible before advocating for policy implementation or change.

There are several methods you can use to quantify the scope of an issue.

- Review publications describing the burden of disease. This is a good option for longstanding problems or problems that have been on the public health agenda for a long period of time and have been routinely studied. Sources of information include the literature search you have already conducted as part of determining what is already known about the issue, as well as:
    - Surveillance reports and descriptive studies on the population of interest or on comparable populations
    - Analytic studies published on the population of interest or on comparable populations

- Review existing data on the problem. Existing data may be available but not routinely published or publicized. Example sources of information include
    - Publicly available data for download or distribution from the agency that collected it (see Appendix B)
    - Data internal to your organization that may or may not have been published

- Conduct new data collection or analysis. If there is a strong need for information there may be enough resources and momentum to collect new data to quantify the problem.
    - Analyze existing data, if available (for example, data that has been collected, but not yet analyzed; data that has been collected for another purpose but not analyzed for your question of interest, etc.)
    - Add questions to existing routine surveys

     o Implement new surveys or special studies

     o Begin multiagency problem assessment (for major initiatives with broad political support)

Stop

Read the example below. Then meet with your mentor or facilitator to discuss how this example might be applied to your country (or region).

Example Defining the Issue

The following information was gathered from a literature search and from an internet search for WHO documents published about cervical cancer in developing countries.

"The estimated population in Country X was 6,000,000 in habitants in 2002; 50% of them lived in poverty with close to one quarter living in extreme poverty. The public health system covers 80% of the population, and 15% is covered by the social security system, non-governmental organizations and private services.[5]

"There are 2.14 million women ages 15 years old and older living in the country that are at risk of developing cervical cancer."[6]

"Cervical cancer incidence rates for the country were 40.6 per 100,000 women in 2000; age-standardized mortality rate was 15.8 per 100,000 women, which are persistently high compared to neighboring countries. Cervical cancer ranks as the most frequent cancer among women in the country, and is also the most frequent cancer among women between 15 and 44 years of age."[2]

"Data are not yet available on the HPV burden in the general population. However, in the region, about 20.6% of women in the general population are estimated to harbour cervical HPV infection at a given time."[2]

"Cytology-based screening using the Papanicolauo smear has been the main screening

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[5] Agurto, I, Sandoval, J, De Le Rosa, M, Guardado, M A Improving cervical cancer prevention in a developing country. International Journal for Quality in Health Care. 2006;18(2):81–86.

[6] WHO/ICO Information Centre on HPV and Cervical Cancer (HPV Information Centre). Human Papillomavirus and Related Cancers in El Salvador. Summary Report 2010. [March 21, 2011]. Available at www. who. int/ hpvcentre

Example Defining the Issue

method used for the secondary prevention of cervical cancer worldwide. In many low-income countries, however, cytology screening has proved difficult to sustain because of its reliance on highly trained cytotechnologists; good-quality laboratories; and infrastructure to support up to three visits for screening, evaluation of cytologic abnormalities with colposcopy, and treatment."[3]

Two alternative screening approaches replace the Pap smear with simple visual screening methods, such as visual inspection after application of an acetic acid solution (VIA), or with HPV DNA testing…. Brown and others (2001) assessed the cost-effectiveness of several cervical cancer screening strategies in previously unscreened 30-year-old South African women. Screening tests included VIA, cytology, and HPV DNA testing. Strategies differed by the number of clinic visits required, frequency of screening and individual's age at the time of screening, and response to a positive test result. The authors found that when all strategies were considered to be equally available and were compared incrementally, HPV DNA testing was always more effective and less costly than cytology and generally more effective but more costly than VIA….The authors find the choice between using HPV DNA testing [which requires a follow-up visit] or VIA depended on the relative costs and sensitivity of the two tests and on the percentage of women lost to follow-up between the first and second visit."[7]

The following information was analyzed from data publicly available for download.

Table: Incidence of cervical cancer in Country X, the region, and the world.

Indicator	Country	Region	World
Crude incidence rate[1]	35.4	20.6	15.8
Age-standardized incidence rate[1]	37.2	22.2	15.3
Cumulative risk (%). Ages 0-74 years[1]	3.6	2.2	1.6
Annual number new cancer cases	1,145	15,606	529,828

1. Rate per 100 000 women per year
Source: IARC, Globocan 2008. http://globocan.iarc.fr/method/method.asp?country=222.

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[7] Goldie SJ, Kohli M, Grima D, Wienstein MC, Wright TC, Bosch FX, et al. Projected clinical benefits and cost-effectiveness of a human papillomavirus 16/18 vaccine. Journal of the National Cancer Institute 2004;96(8):604–15.

Example Defining the Issue

Table: Mortality due to cervical cancer in Country X, the region, and the world.

Indicator	Country	Region	World
Crude mortality rate[1]	17.4	10.1	8.2
Age-standardized mortality rate[1]	18.2	11.1	7.8
Cumulative risk (%). Ages 0-74 years[1]	1.9	1.2	0.9
Annual number of deaths	563	7,631	275,128

1. Rate per 100 000 women per year
Source: IARC, Globocan 2008. http://globocan.iarc.fr/method/method.asp?country=222.

Questions to consider:

1. How would you describe the problem of cervical cancer in Country X?

2. What is the cause of the problem?

3. Who is affected?

4. What is known about the history of the problem in the county?

Additional resources

Malloy, C, Sherris, J, Herdman, C. HPV DNA Testing: Technical and Programmatic Issues for Cervical Cancer Prevention in Low-Resource Settings. Available at http://screening.iarc.fr/doc/HPV-DNA-Testing-Issues.pdf.

Resource

Brown, M, Goldie, S, Draisma, G, Harford, J, Lipscomb, J. Ch 29: Health Service Interventions for Cancer Control in Developing Countries, in

> *Disease Control Priorities in Developing Countries.*
> http://files.dcp2.org/pdf/DCP/DCP29.pdf
>
> Goldie SJ, Kohli M, Grima D, Wienstein MC, Wright TC, Bosch FX, et al.
> Projected clinical benefits and cost-effectiveness of a human
> papillomavirus 16/18 vaccine. Journal of the National Cancer Institute
> 2004;96(8):604–15.

STEP 3: DEVELOP POLICY OPTIONS

After you have clearly defined and quantified the issue, you will consider the options for using a policy to address and improve the identified issue.

In some cases, you may convene expert panels to offer expertise on the situation, especially if subject matter experts are not among the current stakeholders.

Stakeholders

Stakeholders are key members in developing and implementing policy. The local community, healthcare providers, workers, special-interest groups, businesses, community leaders, the media, lobbyists and other political groups all have a role in bringing attention to an issue and promoting solutions.

Stakeholders for an issue will vary, but in general stakeholders belong to one of several groups:

- Those affected by the health issue
- Those involved in programs or projects that directly or indirectly address the health issue
- Those with influence over the health issue and/or its related programs and projects

Health Policy Analysis

For any given health issue there will be many criteria to consider when identifying the potential policy options that can impact the health issue. In your role you may not have the answers to all of these questions but you should be aware of how policy options are determined, and be ready to offer your knowledge or to solicit input where needed. Questions to answer when considering policy options are:

1. What are the best practices, interventions, or accepted standards, if any, for this health issue?

2. What are the identified interventions that could benefit from policy change or new policy implementation? Consider how the health problem can be prevented and controlled. Solicit input from the appropriate stakeholders as well as using the results of your research.

3. Consider the existing infrastructure, policy, and practices. Are there solutions to the health problem that could be more easily implemented through program changes or updates than through policy changes?

4. What impact on morbidity, mortality, or healthcare access is each policy option likely to have?

5. What are the costs associated with implementing potential policy options?

6. Who should you involve in the decision making process? Consider government agencies, NGOs, community groups, the medical community, social services, police, etc. Identify potential stakeholders as well as the best way to access them. For example, reaching community groups may be easiest by visiting community events or fairs, but it may be better to access social services or police by making an appointment to speak with an appropriate representative, or networking with others who partners with these stakeholders.

7. At which category should you develop the policy? Consider the characteristics and categories of policy you read about in Section 1 (organizational, community, and government/national). Continue to solicit input from the appropriate stakeholders.

8. What potential barriers to implementation do you foresee for each policy option?

Stop

Read the example below. Then meet with your mentor or facilitator to discuss how this example might be applied to your country (or region).

Example: Develop Policy Options

The following information was gathered from research and expert panels from Country X:

Best practices, interventions, or accepted standards, for this health issue:

- Encourage more research as to why Pap smears, which are so successful in other countries, do not have an apparent impact on mortality in developing countries
- Establish structure and increase efforts to cover the at risk population in the country with Pap smear screenings
- Research into the viability of HPV DNA testing and/or policy as an alternative screening method
- Implement HPV DNA testing or VIA as a national preventative screening policy (Note: VIA may not be relevant to low-income countries).

Partner and stakeholder support should be considered when analyzing policy options, such as political, medical, public health, and community groups.

Policy options can be directed at the national level (because of country X's national healthcare system) or at the organizational level. Policies and standards of care requiring training of doctors or technicians in carrying out VIA, and/or training of laboratorians carrying out HPV DNA testing, may be required.

Existing infrastructure, policy, and practices were considered and there are no solutions to the health problem that could be more easily implemented through program changes or updates than through policy changes.

The cost considerations associated with implementing potential policy options are as follows:

- The cost-effectiveness of Pap smear vs. DNA analysis vs. VIA should be considered.
  - o On the "cost" side, supplies, equipment, laboratory expenses, community outreach, and staff training costs were considered.
  - o On the "effectiveness" side, the research is not definitive.

- The policy decision is to go with a proven choice in a different setting and try to make it work in this setting (as opposed to an unproven choice in an unproven setting). Data gathered as the policy is implemented can be used, in hindsight, to indicate whether this was a good decision.

Potential barriers to implementation of the policy options include lack of political or

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Example: Develop Policy Options

community motivation to address the problem, lack of resources (funds, trained staff, supplies) to implement the policy, and lack of existing infrastructure to carry out the policy.

Questions to consider:

1. If Country X was *your* country, would the policy options described in the example be feasible?

2. What category would you direct a cervical cancer policy in your country? Why?

3. Consider the existing infrastructure, policy, and practices in your country. Are there solutions to the cervical cancer issue that could be more easily implemented through program changes or updates than through policy changes in your country?

4. How would you determine the costs for implementing the potential policy options?

5. What potential barriers to implementation do you foresee for each policy option in your country?

STEP 4: MAKE RECOMMENDATIONS FOR POLICY DECISIONS

Once you have gathered evidence, explored policy options, and solicited input from stakeholders and experts throughout the process, you can formulate recommendations to inform decision-makers. Note that the next section discusses how you will present the evidence you have gathered to decision-makers.

There are several factors to consider in the decision process, but there is not necessarily a "right" solution to the problem (nor is there necessarily a "right" problem to address!). The factors to consider include:

- Scientific basis for the intervention/policy

- Political environment/support for the intervention

- Feasibility of implementing policy options with the current infrastructure and resources

- Economic evaluation:
  - Published assessments, such as cost-benefit analyses or cost-utility analyses, are an important tool in health policy. If there are no economic evaluations available, consider enlisting the help of an economist

- Expert/stakeholder recommendations:
  - Remember that through mobilizing all stakeholders it is possible to develop policies that are affordable, acceptable to the people for whom they are intended to benefit, in line with other national health programs, and linked with other relevant sectors

- Magnitude, severity, preventability:
  - Both the real and perceived impact and societal and economic burden of the health problem influence both decision-makers and the public

- How policy can be evaluated for effectiveness (whether actions to implement or carry out the policy are measurable)

  - When deciding on a policy option remember that policy will eventually be evaluated. If the impact of a policy cannot be

measured it is difficult to assess whether the policy is worthwhile. Think about intermediate or programmatic outcomes, such as the number of participating physicians, number of tests performed, or number of participants in a program, as well as longer term impacts such as decreases in morbidity and mortality and cost savings.

o Consider the availability of data on the health issue. Is there an objective way to measure the impact of the policy after implementation?

Stop

Read the example below. Then meet with your mentor or facilitator to discuss how this example might be applied to your country (or region).

Example: Make Recommendations

Based on expert recommendations, the following policy is recommended: a scaled approach to HPV DNA testing utilizing pilot projects within the existing medical system that recognizes past and ongoing Ministry of Health and NGO efforts with an aim for a country-level implementation. This would be supported through country-sponsored funding for equipment (including maintenance), personnel staffing and training, research as to why Pap smears are not accepted by providers or patients, and provider education. This option was shown to have the greatest impact on the health problem because of 1) the results of Brown et. al indicate that HPV DNA testing as a cost-effective approach and 2) the relative reluctance to Pap smears noted above indicates that more work needs to be done on understanding how to best address the concerns of patients and providers in administering this program. The scaled approach will allow project administrators the chance to implement and evaluate small-scale efforts prior to country-level implementation.

Given the infrastructure, personnel, and resources of Country X, it is feasible to implement this policy.

Example: Make Recommendations

The policy can be evaluated for effectiveness by 1) understanding the cervical cancer screening and diagnosis rates in the pilot project area prior to and after project implementation; 2) assessing the available population for screening via census to provide denominator information for rate calculations; 3) assessing the number of clinics in the pilot area with functional screening programs and policies prior to and after the intervention period; and 4) monitoring laboratory and provider quality assurance measures during the project period (e.g., times between sample collection, processing, reporting, patient follow-up, and treatment).

Questions to consider:

1. What is the scientific rationale and evidence for this policy?

2. Is the policy feasible and practical to implement in Country X?

3. Do you think the severity of the health problem warrants such a policy?

4. Does the policy address the key factors that will influence the health problem?

5. What economic factors and other non-health issues should you consider before implementing this policy in *your country?*

REVIEW QUESTIONS #2

After completing this section, answer the following questions. Check your responses with those in Appendix A.

1. List the four steps leading up to and including making a policy decision.

2. List at least three methods you can use to quantify the scope of a problem.

KEY POINTS

1. The stages in the policy development process are the following:

   - Setting the agenda

   - Defining the issue

   - Developing policy options

   - Making recommendations for a policy decision

2. A clear definition of an issue on the policy agenda provides a common framework for identifying ways that policy can address the issue. The issue should be defined in a simple, operational and concise way.

3. Quantifying the extent of the issue or problem can be based on existing information or data or new data collection activities might need to be considered.

4. There are numerous criteria to consider when assessing options for interventions and when deciding on policy recommendations. Some of these include scientific evidence, political environment, cost, feasibility, expert recommendations, and many others. There may not be a "right answer", but instead there may be an option that most parties will agree on.

5. The policy development process is not necessarily one that can be completed in a set time frame.

Section 3: Presenting the Evidence

TAILOR THE MESSAGE

As you and the stakeholders assess the policy options and decide on the most recommended course of action, you will need a way to present your data to the decision-makers to help them arrive at an informed decision. Whenever presenting data or other information to an audience it is important to deliver the message in a way that will encourage the audience to respond. In this section we will focus on how to present this information.

Your role in presenting the evidence gathered may vary and will likely depend on the health issue and the other experts or agencies involved. In most cases you will be part of a team that is assembling evidence, putting together policy options, and potentially advocating for a specific option. In some cases you may be called upon, or take it upon yourself, to present evidence to decision-makers or your superiors within your agency.

Know the audience

Depending on the level of policy (local, organizational, national) and the type of policy that is needed, the decision-makers involved could be coming from several different perspectives. For example, if you want to advocate for a policy where increased funding of a specific program is required, you may be presenting information to financial officers at the ministry of health who have the power to influence how funds are spent. However, if you want to advocate for a policy that allows traditional medical practitioners to implement a screening test or participate in the health system you may need to present the evidence to a different range of decision-makers from those involved in medical regulations and laws to medical associations. The key factors to keep in mind when presenting a specific message to a decision-maker include:

1. What does this decision-maker care most about and what is within their power to accomplish?

   If you want the decision-maker to hear you, you must address what they care about. Always keep to the facts, but use them wisely. If you need to gain the support of a financial officer, focus on financial data and findings. If you need support from social services, highlight how the policy will improve the well-being of the target population. If you need to persuade an elected official, show the official what his or her constituency needs and wants as related to the health issue. Recognize that government officials have defined roles and there

may be a limit on the types of actions they can take related to the health issue.

2. What professional/technical background does this decision-maker have?

   Decision-makers tend to be generally knowledgeable about topics that come to the forefront of the political agenda. You should assume that they have studied the issues and are familiar with the challenges involved. However, if you are speaking with a decision-maker that handles finances but not health, avoid too many medical or public health terms. Use data to present the facts such as measures of association but keep the presentation clear and simple. Similarly, do not shy away from presenting technical information to a decision-maker who has the background or interest to discuss the medical or public health details of the topic with you. Take advantage of their interest and background by sharing what you have researched.

3. What is the best way to present information to this decision-maker?

   Most decision-makers are extremely busy but it is also part of their job to gather and process information on policies that they are considering. Discuss with your colleagues and the staff of the decision-maker the best way to present the data. If a regular weekly staff meeting is the best option, a formal PowerPoint presentation can be given or a more conversational talk with bullet-point handouts could be used. In a one-on-one discussion with the decision-maker, you may want to prepare a written report to send ahead of a meeting; or email a report ahead of a phone meeting. All of these are viable options.

   Regardless of the presentation method you select, ensure that the information you present is concise and simple. We will discuss more about the format of presentation later in this section.

Example: Presenting the Evidence

The following are examples of how you might adapt your key message to convince a stakeholder to join your efforts to promote a feasible policy for the cervical cancer policy in Country X.

1. **A high-level national elected official** known for his efforts to improve the standing of your country in the region.

   Cervical cancer is an important health issue in this country, especially for women. The risk of cervical cancer in the country is at least twice that of the world in general, and approximately 30% higher than the regional average.

2. **An NGO board member** whose participation is critical to accessing the target population.

   As a key organization in this region, it is critical we work together to help address extremely high rates of cervical cancer in your population in a sustainable manner. Your organization is uniquely positioned to provide health services and educate women on cervical cancer, especially women who are have been diagnosed with HIV and are at increased risk of having cervical cancer. Your collaboration would be a key factor in helping to increase the provision of cervical cancer screening, precancer and cancer treatment, and education to a disproportionate number of women who do not currently have access to these lifesaving interventions.

3. **A ministry of health budget officer** who has great influence in how health funds are allocated to different programs.

   HPV DNA testing is a proven cost-effective approach that will save the country money through lower-cost screening vs. Pap testing, fewer personnel involved (it is machine-based instead of needing to be read by a pathologist), and early interventions (fewer costly surgeries because of earlier diagnosis and fewer people on high-cost cancer treatment regimens because of fewer people diagnosed later).

PRESENTING THE DATA

Many public health professionals think in terms of the scientific perspective. The recommendations identified by you or your team should be based on the comprehensive research findings you have assembled, stakeholder and expert input, and practical feasibility. It is useful to organize all of the information you have gathered into the following categories:

- Scope/impact of the health issue

- Costs (economic and morbidity/mortality) of the issue

- Possible solutions, including the recommended policy and impact

Once you have summarized your information into these sections, even if it is informal, it will be easier for you to assemble the information you need and present it in an appropriate way for your intended audiences.

Include the information you have gathered from your background literature search on what is currently known about the problem and the potential interventions or methods of improving the situation.

Note the basic frequencies that are relevant such as incidence or prevalence of morbidity and mortality in the population of interest, incidence or prevalence by age group, impact of prevention measures, and any other relevant factors. If an analytic study was conducted or analyzed include the measures of association calculated with 95% confidence intervals.

Interpret the numbers presented in the analysis in words, and extrapolate the data to the policy issue that you would like to address. If available, note projected costs of the health problem. Summarize the evidence to make a strong case for the policy you are proposing.

Presentation Format

Remember that every decision-maker does not need to hear every piece of information that you have. Present the most relevant information to make your point; if you have done your research thoroughly you can easily address any questions that may arise.

Although this training is not intended to teach you how to do a policy brief, here are some general guidelines when presenting information. You may wish to bring someone with you who can add substance to your presentation such as a cancer survivor who supports your efforts.

1. Respect the amount of time that you have to meet with the decision-maker. Whatever format you use to present, be clear and concise, keep to your main points, and leave enough time for questions and discussion.

2. Present the most important information first, and auxiliary or supporting information second. Remember the information you have about tailoring the presentation to the intended audience.

3. Keep PowerPoint or oral presentations clean and simple and well within the allotted time. Write reports in two pages or less. In both cases use color graphics to display data in an eye-catching manner. While there are many methods of organizing information for either written or oral/PowerPoint formats, we suggest you include the following:

- Describe the problem: brief scope and importance of the health issue

- Give the policy option(s) to address the problem including recent and concise evidence

- Describe briefly how the option(s) can be implemented, including projected cost and timeline

- Describe potential barriers to implementing the policy and ways to overcome them

- Discuss the interest to stakeholders and specific course of action. Or, if you are persuading your audience to join you in efforts to promote solutions to the health issue, ask them what they perceive as the most important needs and what they can do to help

Example: Policy Brief
Consult Appendix C for an example policy brief: "Preventing Cervical Cancer in South Africa." This brief is written with a different structure, but covers many of the content areas noted above.

REVIEW QUESTIONS #3

After completing this section, answer the following questions. Check your responses with those in Appendix A.

1. Explain how a message should be tailored for a specific stakeholder.

2. Explain the importance of presenting the most important information first.

3. List the three categories into which information should be organized.

KEY POINTS

1. Presenting scientific evidence and recommendations requires knowing, understanding, and respecting your audience.

2. Considering the main point or ideas that you want to communicate and ensuring that all parts of your written or oral presentation support these points.

3. Organizing your information into the following categories will make it easier for you to present your message clearly:

   - Scope/impact of the health issue

   - Costs (economic and morbidity/mortality) of the issue

   - Possible solutions, including the recommended policy and impact

4. Keep PowerPoint or oral presentations clean and simple and well within the allotted time to leave time for questions at the end.

Section 4: Health Policy Implementation

AFTER THE DECISION

After an organizational or government decision has been made to select a policy option the involved organizations can begin to take action. Decision-makers in governments or other organizations may be charged with crafting a set of rules designed to carry out the policy. Public health agencies may be involved in implementation and/or monitoring of the implementation. Regulatory agencies may be charged with enforcing the policy. In your role, you may be involved in parts of these activities or the process may have moved out of your area of responsibility. The implementation and subsequent evaluation of policy is beyond the scope of this training. However, it is useful to know the next steps in the life of a policy, which include the following three phases:

1. **Policy implementation**. This is the process of carrying out the policy decision, which involves developing and putting in place programs, procedures, regulations, and practices. The full implementation of a policy may take months or longer depending on the complexity of the policy.

2. **Policy evaluation**. After the policy has been implemented for a certain amount of time the processes and actions involved in implementation of the policy, as well as the initial and ongoing health impact of the policy, must be examined to assess whether the policy has the desired effect. Stakeholders play a critical part in determining indicators, methods, and outcomes of the evaluation. There are many approaches to policy evaluation; for the purposes of this training you should be aware that the process generally involves multiple stakeholders who come to a decision about the framework, goals, and methods of the evaluation. Where feasible it is beneficial for policy options and decisions to consider the kinds of outcomes that would demonstrate the success (or failure) of a policy and how those could be assessed in future evaluations.

3. **Maintenance, revision, or discontinuation of policy**. Once the results of the evaluation are available, decision-makers can determine whether the policy should be continued, revised, or revoked.

Conclusion

TAKE HOME POINTS

Health policy refers to decisions, plans, and actions taken to achieve specific health care goals within a society. Health policies are created to achieve maximum health status for the targeted population. The content of health policy reflects health priorities as well as what is feasible in the local context; for example social and cultural norms, politics, and economics. Additionally, the content of health policy is part of resource planning.

Public health practitioners may take a variety of roles in the formation and execution of health policy. One possible role is identifying what is already known about the health problem that the policy will address and formulating recommendations for policy and intervention. Epidemiologists can be instrumental in synthesizing the nature of the problem, its causes and history, and who is affected. Epidemiologists can also review the evidence for any available interventions and present recommendations.

In addition to the scientific evidence for effective interventions and policies there are other factors that stakeholders need to consider when formulating health policy. These include the political support for the intervention, feasibility, economics, expert recommendations, size and severity of the health problem, preventability, and whether actions to implement the policy can be measured and evaluated.

Stop

	CASE STUDY
Activity	(Estimated time: 5 hours, 30 minutes)
	Let your mentor or facilitator know that you are ready for the case study.

Resources

For more information on topics found within this workbook:

Reference for case study:

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Appendices

APPENDIX A

Answers to Review Questions

Review Question	Answers
#1	1. It involves many changes, multiple agencies, often has an economic impact and/or involves a large amount of money; it spans a lengthy time period and/or geographic area. It may affect a significant segment of the population or subpopulation 2. Examples of organizational, community, and governmental/national should be given.

#2	1.
	     1. Setting the agenda
	     2. Defining the issue
	     3. Developing policy options
	     4. Coming to a policy decision
	
	2.
	     • Review publications describing the burden of disease
	     • Review existing data on the problem
	     • Conduct new data collection or analysis

#3	1. Information should be included that a stakeholder can use to inform their specific needs and that is appropriate for the decisions that are within their power to make. A message or presentation can also be used to solicit help or support from the stakeholder.
	
	2. Presenting the most relevant information first will ensure the stakeholder receives the most necessary parts of the message since typically there is a limited amount of time when meeting with or presenting to a stakeholder.
	
	3.
	     1. *Scope/impact of the issue*
	     2. *Costs (economic and morbidity/mortality) of the issue*
	     3. *Possible solutions, including the recommended policy*

APPENDIX B

Publicly available NCD databases

Population Reference Bureau Datafinder (health, education, economy, environment): http://www.prb.org/datafinder.aspx

The GLOBOCAN Project, Cancer incidence and mortality worldwide in 2008: http://globocan.iarc.fr/

WHO Global Database on Child Growth and Malnutrition: http://www.who.int/nutgrowthdb/database/en/

Demographic and Health Survey interactive and downloadable databases (downloadable with free registration): http://www.measuredhs.com/accesssurveys/

United Nations Statistics Division Statistical Databases: http://unstats.un.org/unsd/databases.htm

WHO infobase: https://apps.who.int/infobase/

WHO NCD country profiles: http://www.who.int/nmh/countries/en/index.html

WHO global health observatory (NCD section): http://apps.who.int/ghodata/

BMI global database: http://apps.who.int/bmi/index.jsp

APPENDIX C

Example policy brief:

Health Economics Issue Policy Brief, September 2010. Available at: http://uct-heu.s3.amazonaws.com/wp-content/uploads/2010/09/policy-brief_preventing-cervical-cancer.pdf

Preventing cervical cancer in South Africa
Would adding the HPV vaccine to the screening programme be cost-effective?

Introduction
Human papillomavirus (HPV) causes about 6 800 new infections and 3 700 deaths from cervical cancer every year in South Africa. Cervical cancer is the most common cancer in women in this country with the age-standardised incidence rate of 30 per 100 000 per year (Mqoqi *et al*, 2004). South Africa's cervical cancer prevention programme consists of a national cervical cancer screening policy which aims to screen at least 70% of women attending public sector services over a 10-year period using the Papanicolaou cytology technique.

However, effective screening programmes have been difficult to implement in South Africa (Moodley *et al*, 2006). The recent development of the HPV vaccine offers a new approach to cervical cancer prevention in South Africa. Studies have estimated that a vaccine preventing 75% of persistent HPV (types 16 and 18) infections could be associated with a 70–83% reduction in HPV-related cancer (Goldie *et al*, 2004). HPV vaccines are not currently available in the public sector.

Research objective
The research asks whether a cervical cancer prevention programme that includes an HPV vaccine is more cost effective than the current strategy of screening alone.

Methods
The cost-effectiveness of adding the HPV vaccine to the secondary cervical cancer prevention programme was estimated in terms of incremental cost per life year saved, and incremental quality-adjusted life years (QALYs) gained (compared with the current strategy - i.e. screening only). The cost-effectiveness analysis was undertaken from a health service perspective (the costs of providing different screening, treatment and vaccination services borne by the public sector organisations delivering the services and the Provincial Reproductive Health Programme) and a societal perspective (health service perspective and patient's travel and time costs). It was assumed that girls would be vaccinated at the age of 12 years followed by screening.

Findings

- From the societal perspective, the cost per vaccinated girl was R3,295. The most costly screening strategy is the HPV DNA test (R669 per woman). The cost of diagnosis and treatment of cervical cancer stage IV (R55,997 per woman) is almost double the cost of that for stage I (R29,997 per woman).
- Findings show that adding the HPV vaccine to the current screening strategy to prevent HPV-related diseases in South Africa is cost-effective
  - When costs and benefits are not discounted, the vaccine followed by screening strategy is more cost-effective, and the screening only strategy is dominated (i.e. this strategy is both more costly and less effective)
  - When cost and benefits are discounted, the incremental cost-effectiveness ratios (ICERs) are R29,217 and R21,580 per life-year saved (R9,490 and R7,007 per quality-adjusted life year gained) from the health service and societal perspective, respectively
- The cost-effectiveness of vaccination decreases with increasing HIV-related mortality. However, the data on HIV-related mortality used in our model assumes low access to ART. If ART is scaled up in the country, it is possible that vaccination will become more cost-effective, particularly given the vulnerability of HIV-positive women to cervical cancer.
- When patient costs were included in the analysis, the incremental cost-effectiveness ratio decreased by 26% on average. Therefore, while the presence of vaccination has the potential to reduce the cost of cervical cancer to the health system, it also can potentially decrease the cost to the patient—not an insignificant finding given the current levels of poverty in South Africa.
- Findings also show that a vaccine price reduction of 60% or more would make the vaccine followed by screening strategy more cost-effective than the screening only strategy.

Table 1: Cost-effectiveness of adding the HPV vaccine to the existing screening programme in 2007 Rands

Strategy	Lifetime cost	Life years saved	QALY: Quality-adjusted life years gained	ICER: Incremental cost-effectiveness ratios (life years)	ICER (QALY gained)
From the perspective of health service					
Undiscounted					
Screening only	4,173	51.95	51.74	dominated	dominated
Vaccine plus screening	3,204	52.07	52.04	more cost-effective	more cost-effective
Discounted					
Screening only	1,176	24.13	24.14	-	-
Vaccine plus screening	1,826	24.22	24.16	29,217	9,490
From the perspective of society					
Undiscounted					
Screening only	4,907	51.95	51.74	dominated	dominated
Vaccine plus screening	3,360	52.07	52.04	more cost-effective	more cost-effective
Discounted					
Screening only	1,404	24.13	24.08	-	-
Vaccine plus screening	1,878	24.16	24.15	21,580	7,007

Source: Adapted from Table 3, page 6200 (E. Sinanovic et al. / *Vaccine* 27 (2009) 6196-6202)

Policy implications

- Whilst a combination of vaccination and screening at the current vaccine price is more costly than screening alone, it is a cost-effective strategy for preventing cervical cancer.
- The main cost driver is the vaccine cost. If the vaccine price is reduced, vaccination followed by screening might be a very affordable policy option.
- The vaccine has the potential to reduce the incidence of HPV-related diseases, and to reduce the cost of treating cervical cancer.
- This requires a well-functioning screening programme aimed at secondary prevention of cervical cancer as the HPV vaccine does not eliminate, but rather reduces the risk of cervical cancer.
- In South Africa, screening coverage is very low (well below 50%) and adherence to treatment of pre-cancerous and cancerous lesions is also less than 100%, thus having another preventative measure could be desirable.
- Approaches for reducing the cost of introducing the vaccine (which should be publicly funded) include:
  - Accessing international funding mechanisms, such as the United Nations Children's Fund (UNICEF) and public private partnerships.
  - Commitments from the pharmaceutical companies to reduce prices.

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