

Cervical cancer screening and management
of cervical pre-cancers

Trainees' handbook and
facilitators' guide

Programme managers' manual



Trainees' handbook and facilitators' guide – Programme managers' manual

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Cervical cancer screening and management of cervical pre-cancers

Trainees' handbook and facilitators' guide

Programme managers' manual

Cervical cancer screening and management of cervical pre-cancers

Package contents

- **Training of health staff in VIA, HPV detection test and cryotherapy**
 - Trainees' handbook
 - Facilitators' guide
- **Training of health staff in colposcopy, LEEP and CKC**
 - Trainees' handbook
 - Facilitators' guide
- **Trainees' handbook and facilitators' guide**
 - Programme managers' manual
- **Trainees' manual for community health workers**
- **Counselling cards**
- **Flip chart**
- **Teaching aids**

Content

Foreword	v
Acknowledgements	vi
Abbreviations	vii
Section 1: General information	1
1.1 Contents of the manual	2
1.2 Training objectives	2
1.3 Trainees' profile	3
1.4 Training materials	4
1.5 Duration of training	5
1.6 Batch size and number of facilitators	5
1.7 Ground rules for trainees	5
1.8 Dos and don'ts for trainees	5
Section 2: Session plan	7
Section 3: Modules	13
1 Principles of cancer control and planning cancer control programmes	14
1.1 Module overview	15
1.2 Module contents	15
1.3 Learning objectives	15
1.4 Key points for discussion	15
2 Implementation of cancer control programme	24
2.1 Module overview	24
2.2 Module contents	24
2.3 Learning objectives	24
2.4 Key points for discussion	24
3 Planning cervical cancer screening programme	34
3.1 Module overview	34
3.2 Module contents	34
3.3 Learning objectives	34
3.4 Key points for discussion	35
4 Implementation of cervical cancer screening programme	50
4.1 Module overview	50
4.2 Module contents	50
4.3 Learning objectives	50
4.4 Key points for discussion	51

5	Organizing training in a cervical cancer screening programme	62
5.1	Module overview	62
5.2	Module contents	62
5.3	Learning objectives	62
5.4	Key points for discussion	62
6	Social and behaviour change communication	72
6.1	Module overview	72
6.2	Module contents	72
6.3	Learning objectives	72
6.4	Key points for discussion	72
7	Counselling	81
7.1	Module overview	81
7.2	Module contents	81
7.3	Learning objectives	81
7.4	Key points for discussion	81
8	Ensuring quality improvement of services in cervical cancer screening	86
8.1	Module overview	86
8.2	Module content	86
8.3	Learning objectives	86
8.4	Key points for discussion	87
9	Health information system	100
9.1	Module overview	100
9.2	Module contents	100
9.3	Learning objectives	100
9.4	Key points for discussion	100
Section 4:	Notes for facilitators	109
4.1	Facilitators' profile	110
4.2	Record keeping	111
4.3	Dos and don'ts for the facilitators	112
4.4	Training methodologies	112
4.5	Evaluation of trainees	117
Section 5:	Annex	123
5.1	Pathogenesis of cervical cancer	124
5.2	Infection prevention practices	126
5.3	Facility tour worksheet	131
5.4	Trainees' feedback form	132

Foreword



Cervical cancer is the second most common cancer among women worldwide and causes a significant number of deaths in the South-East Asia Region. Nearly 200 000 new cases of cervical cancer occurred in SEA Region Member States in 2008, giving an incidence of almost 25 per 100 000 and a mortality rate of almost 14 per 100 000. Cervical cancer can be prevented by early screening and vaccination. However, due to poor access to screening and treatment services, the vast majority of these deaths occur in women from nine Member States of the South-East Asia Region which account for more than one third of the global burden of cervical cancer.

In 2015, the WHO Regional Office for South-East Asia, in consultation with Member States, launched a Strategic Framework for the Comprehensive Control of Cervical Cancer in the South-East Asia Region. To strengthen the capacity of health-care providers, a training package has been developed based on the emerging scientific evidence related to new technologies and novel paradigms in cervical cancer screening and to the safety and efficacy of the vaccines.

A paradigm shift has taken place over the recent years in the understanding of the natural history of the disease, the preventive strategies, and the technologies associated with its early detection and treatment. The availability of effective and safe human papillomavirus (HPV) vaccine has introduced an entire new dimension to the prevention of the disease.

The South-East Asia Region is the first region of WHO to publish a training package on a comprehensive approach to cervical cancer screening and management of cervical pre-cancers. The training package provides strategies for a screen-and-treat programme building upon the existing evidence-based WHO global guidelines.

The training package is intended for programme managers, health-care providers and other professionals who have a responsibility for cervical cancer prevention, detection and treatment at the national and sub-national levels. There are eight separate modules for different target audiences including the facilitator's guides.

I am convinced that the success of the Sustainable Development Goals and implementation of the Global Strategy on Women's, Children's and Adolescents' Health will depend on strong commitment towards the '*Survive, Thrive and Transform*' objectives for building healthy societies. This is our vision as we work together for stronger health systems, universal health coverage and scaling-up of life-saving interventions for comprehensive cervical cancer prevention and control. I would urge Member States to strengthen the capacity of health-care providers in the prevention and control of cervical cancer.

Dr. Poonam Khetrapal Singh
Regional Director
WHO South-East Asia Region

Acknowledgements

The World Health Organization (WHO) would like to thank all experts, partners and reviewers involved in developing this training package on cervical cancer screening and management of pre-cancers. The enormous task of preparing the comprehensive package to train the complete spectrum of providers in a cervical cancer screening program could be completed successfully due to the contributions of several experts from Member States of the WHO South-East Asia Region.

The development of the training package was coordinated by the WHO Collaborating Centre for Human Reproduction at the Department of Obstetrics and Gynaecology, Post-Graduate Institute of Medical Education & Research (PGIMER), Chandigarh, India, under the leadership of Professor Lakhbir Dhaliwal and Professor Vanita Suri, along with team members Professor Rashmi Bagga, Dr Rakhi and Dr Parul. Inputs from consultants who worked on the project, Dr Partha Basu, Screening Group, International Agency for Research on Cancer (WHO), France, and Dr Srabani Mittal, Child in Need Institute, India, were critical.

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Abbreviations

ANM	auxiliary nurse midwives
BCC	behaviour change communications
CD-ROM	compact disc
CIN	cervical intraepithelial neoplasia
CKC	cold knife conization
FCTC	Framework Convention on Tobacco Control
HIS	health information system
HLD	high-level disinfection
HPV	human papillomavirus
IARC	International Agency for Research on Cancer
LEEP	loop electro-surgical excision procedure
LMIC	low and middle income countries
MCQ	multiple choice questions
MMT	multi-disciplinary management team
NCD	non-communicable disease
NGO	non-governmental organizations
SAG	stakeholders advisory group
SBCC	social and behaviour change communication
SEARO	South-East Asia Regional Office
VIA	visual inspection after acetic acid application
WHO	World Health Organization

Section 1: General information



1.1 Contents of the manual

The training manual for programme managers is designed to build the capacity of professionals in managerial positions to develop cervical cancer screening programmes, plan implementation strategies and effectively manage the programme at the national or sub national levels. The guidelines and information included in the manual are intended to be used both by trainees and facilitators while participating in the structured training programme for programme managers. The manual contains different modules to assist trainees to be acquainted with different aspects of planning, implementing and monitoring of cervical cancer screening services. Considering the fact that programme managers need to understand cervical cancer screening in the broader perspective of the national cancer control programme (NCCP), modules describing the planning and implementation of NCCP are also included in the manual. The modules include relevant case studies from real screening programmes in different countries. The manual includes notes to facilitators on how to conduct the various training sessions as per the session plan. The detailed methodology of conducting trainee evaluation is also part of this manual.

1.2 Training objectives

The training in Cervical Cancer Screening and Management of Cervical Pre-cancers for programme managers aims to enhance the knowledge and skills of professionals in managerial positions at different tiers of the health-services.

The goal of the training is to improve the proficiency of programme managers to:

- understand the concept of cervical cancer screening programme as a part of the overall cancer control initiative;
- develop strategies to implement cervical cancer screening and treatment services according to national guidelines (if available) or other guideline documents;
- develop an action plan to implement successful linkage between community education, screening services, diagnostic services, treatment and referral services for continuum of care;
- conduct advocacy for the programme and use the strategies of social and behaviour change communication to make the programme efficient;
- develop effective partnerships with various stakeholders;
- implement quality improvement at different levels of services;
- identify the sustainability components intrinsic to the programme and develop strategies to ensure sustainability of programme and services.

The objectives include both knowledge enhancement and skills development.

Knowledge-based objectives

By the end of the training, trainees would be able to:

- describe the concept of cancer control and its key components;
- state the importance of cervical cancer screening;
- state the components of a cervical cancer screening programme;

- explain national policy development and establishment of a programme management structure;
- list components of programme planning and preparation, including an effective referral system;
- describe steps of implementation of screening services;
- list key components of programme monitoring and evaluation including reporting formats;
- list critical points for advocacy among different stakeholders for effective planning and implementation of cervical cancer screening programme.

Skills-based objectives

By the end of the training, trainees would be able to:

- plan for and execute outreach and clinical services;
- perform audit of equipment and supplies required for screening;
- perform screening and treatment service facility audit;
- list client management guidelines;
- conduct assessment of training needs and prepare for a training programme;
- utilize the health information system for programme implementation.

1.3 Trainees' profile

The training is directed to professionals who work in positions of managers or coordinators of cervical cancer screening programmes at national, regional or organizational levels. While the training primarily targets programme managers, other professionals who may benefit include hospital or clinic administrators, nursing supervisors, representatives of voluntary organizations and officials involved in reproductive health programmes. The professionals should be committed to cervical cancer control and have an interest or stake in the successful implementation of the programme.

Each trainee has to fill in the experience record (Box 1.1) prior to initiation of the training to help facilitators understand their background and job experience.

1.5 Duration of training

The total duration of training will be 3 days. For details of the session plan please refer to Section 2.

1.6 Batch size and number of facilitators

The total number of trainees should be 10 to 15 per batch. The number of facilitators per batch should be at least three.

1.7 Ground rules for trainees

- Adhere to the training schedule according to the session plans
- Sign daily attendance sheet
- Attend all sessions as per schedule
- Perform group activities as directed by facilitators
- Ensure and respect privacy and rights of women in examination rooms during field visits
- Have mutual respect for co-trainees and for facilitators

1.8 Dos and don'ts for trainees

Dos	Don'ts
<ul style="list-style-type: none"> • Reach the training venue at least 15 minutes ahead of beginning of the session each day • Familiarize yourself with training sessions and training materials provided to you • Participate actively in the training • Interact with facilitators as and when required and ask questions for clarity • Get to know your group members and stick to your allocated group during group activities • Listen carefully to the instructions given by facilitators for group activities • Be respectful and considerate to clients during field visit • During observation of clinical sessions, know and follow safety precautions 	<ul style="list-style-type: none"> • Cross-talk among yourselves during training sessions • Use mobile phones or do anything to distract your colleagues during training sessions • Hesitate to ask questions

Section 2: Session plan



Session plan

Day	Session	Time	Contents
Day 1	Registration	8:30 a.m.– 9:00 a.m.	Registration of name and contact details
			Signature of trainee on attendance sheet
			Handing over of the training folder
			Filling up of experience record of trainees
	Opening session	9:00 a.m.–10:00 a.m.	Welcome of participants
			Objectives and overview of training
			Introduction of facilitators and trainees
			Ground rules and other logistics of training
			Agenda of training
			Assessment of trainees' expectations and concerns
			Pre-test knowledge assessment
	Module 1: Principles of cancer control and planning cancer control programme	10:00 a.m.–11:00 a.m.	
	1a. Interactive presentation		Magnitude of the problem of cancer
			Risk factors of cancer and their prevention
			Principles of cancer control
			Cancer control programme
			Planning a cancer control programme
	1b. Group learning activities		Case studies
	Module 2: Implementation of cancer control programme	11:00 a.m.–12:00 p.m.	
	2a. Interactive presentation		Principles of implementing a cancer control programme
			Step-wise approach to implementing cancer control
			Health systems approach to implement comprehensive cancer control programme
			Roles of stakeholders
	2b. Group learning activities		Case studies

Day	Session	Time	Contents
	Module 3: Planning cervical cancer screening programme	12:00 p.m.–1:00 p.m.	
	3a. Interactive presentation		Need for cervical cancer screening Protocol for cervical cancer screening Eligible population for cervical cancer screening Screening tests for cervical cancer Frequency of cervical cancer screening Components of cervical cancer screening programme Organized or opportunistic cervical cancer screening programme Planning for cervical cancer screening programme
	3b. Group learning activities		Case studies
	Lunch break	1:00 p.m.–2:00 p.m.	
	Module 4: Implementation of cervical cancer screening programme	2:00 p.m.–3:30 p.m.	
	4a. Interactive presentation		Roles and responsibilities of programme managers Implementation of cervical cancer screening plan Challenges in cervical cancer screening programme and how to overcome them Single and multiple visit approaches Organizing outreach services Developing and maintaining referral linkages Planning and implementing a cervical cancer screening programme
	4b. Group learning activities		Case studies
	Summary of the day's activities	3:30 p.m.–4:30 p.m.	Key points to be presented by the trainees

Day	Session	Time	Contents
	Discussion of next day's agenda	4:30 p.m.–5:00 p.m.	Discussion to be led by the facilitators
Day 2	Review of previous day's activities and doubt clearance	9:00 a.m.–9:30 a.m.	Presentation of key-points by the trainees and discussion to be led by facilitator
	Module 5: Training in cervical cancer prevention programme	9:30 a.m.–11:00 a.m.	
	5a. Interactive presentation		Role of programme manager in training of various service providers Planning of training activities for cervical cancer screening programmes Approaches to implement training programmes Preparation for a training course Discussion of checklists
	Module 6: Social and behaviour change communication	11.00 a.m.–12:00 p.m.	
	6a. Interactive presentation		Definition of social and behaviour change communication Strategies for social and behaviour change communication Role of advocacy in cervical cancer screening programme Role of community mobilization in cervical cancer screening programme Strategies for community mobilization Principles of behaviour change communication Role of behaviour change communication in cervical cancer screening programme
	6b. Group learning activities		Case studies
	Module 7: Counselling	12:00 p.m.–1:00 p.m.	
	7a. Interactive presentation		Necessity of counselling Being a good counsellor

Day	Session	Time	Contents
			Steps of counselling
			Counselling messages
	7b. Group learning activities		Role play
	Lunch break	1:00 p.m.–2:00 p.m.	
	Module 8: Ensuring quality improvement in cervical cancer screening	2:00 p.m.–3:00 p.m.	
	8a. Interactive presentation		Ensuring quality of services by healthcare providers
			Programme monitoring and its necessity
			Indicators to monitor cervical cancer screening programme
			Quality assurance and quality control
			Framework for effective quality assurance
			Role of programme managers in quality assurance
			Supportive supervision
			Supportive supervision guidelines and tools
			Evaluation of programme performance
			Using evaluation results for quality improvement
	8b. Group learning activities		Case studies
	Module 9: Health information system	3:00 p.m.–4:00 p.m.	
	9a. Interactive presentations		Definition and importance of a Health Information System
			Role of programme managers in implementing HIS
			Components of HIS
			Utility of HIS for cervical cancer screening programme
			Cancer registry
	9b. Group learning activities		Case studies

Day	Session	Time	Contents
	Summary of the day's activities	4:00 p.m.–4:30 p.m.	Key points to be presented by the trainees
	Discussion of the next day's agenda	4:30 p.m.–5:00 p.m.	Discussion to be led by the facilitators
Day 3	Review of previous day's activities and doubt clearance	9:00 a.m.–9:30 a.m.	Presentation of key-points by the trainees and discussion to be led by the facilitator
	Facility tour	9:30 a.m.–1:00 p.m.	
	Lunch break	1:00 p.m.–2:00 p.m.	
	Group presentation on facility tour and discussion	2:30 p.m.–3:30 p.m.	
	Final assessment	3:00 p.m.–4:00 p.m.	Final assessment (MCQ, case studies)
	Feedback from Trainees and planning the next steps	4:00 p.m.–4:45 p.m.	
	Certificate distribution and dispersal	4:45 p.m.–5:00 p.m.	

Section 3: Modules

- Module 1:** Principles of cancer control and planning cancer control programmes
- Module 2:** Implementation of cancer control programmes
- Module 3:** Planning cervical cancer screening programmes
- Module 4:** Implementation of cervical cancer screening programmes
- Module 5:** Organizing training in cervical cancer screening programmes
- Module 6:** Social and behaviour change communication
- Module 7:** Counselling
- Module 8:** Ensuring quality improvement of services in cervical cancer screening
- Module 9:** Health information system



Module 1: Principles of cancer control and planning cancer control programmes

1.1 Module overview

This module is designed to make programme managers understand the concept of cancer control and the various components of the cancer control programme. The module will give them an overview of the planning process for a population-based cancer control programme, of which cervical cancer screening is an integral part. For more information on the module, trainees are advised to read *Cancer control: Knowledge into action, WHO Guide for Effective Programmes (Planning)*.

1.2 Module contents

- Magnitude of the problem of cancer
- Risk factors of cancer and their prevention
- Principles of cancer control
- Cancer control programme
- Planning a cancer control programme
- Group learning activities
 - Case studies

1.3 Learning objectives

By the end of this module, trainees would be able to:

- explain the burden of cancer in the population;
- list the risk factors of cancer;
- state the components of cancer control;
- describe the strategic planning process for cancer control;
- state the WHO Step-wise framework for planning cancer control;
- list the benefits of comprehensive cancer control plan.

1.4 Key points for discussion

1.4.1 Global burden of cancer

Cancer is the second leading cause of death globally and is responsible for 15% of all deaths. It has been estimated that in the year 2012 there were 14.1 million new cancer cases worldwide, of

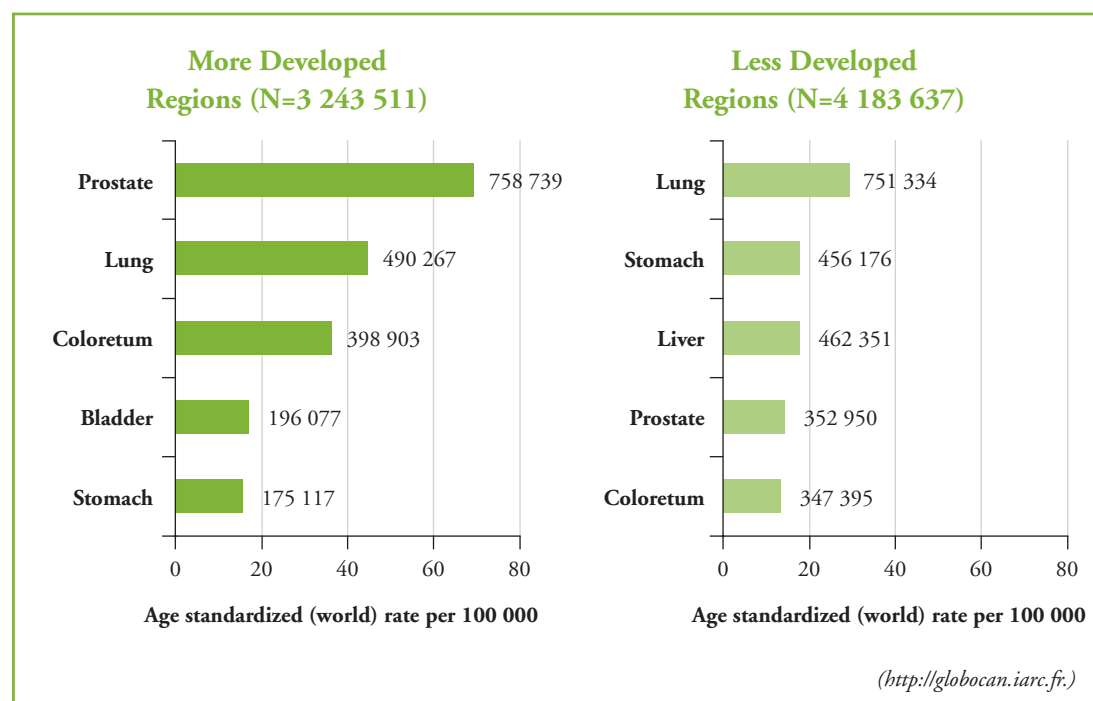
which 8 million cases occurred in low and middle income countries. Cancer causes more deaths than tuberculosis, malaria and AIDS combined. The number of estimated deaths from cancer in 2012 was 8.2 million. According to an estimate, the global burden of cancer is expected to increase to 21.7 million new cancer cases and 13 million cancer deaths by the year 2020.

An effective cancer control programme aims to reduce the burden of cancer, decrease the morbidity and mortality from the disease and improve the quality of life of the affected people. Nearly 40% of all cancers can be prevented and for the large majority of cancers early detection leading to cure is feasible.

1.4.2 Most common cancers worldwide

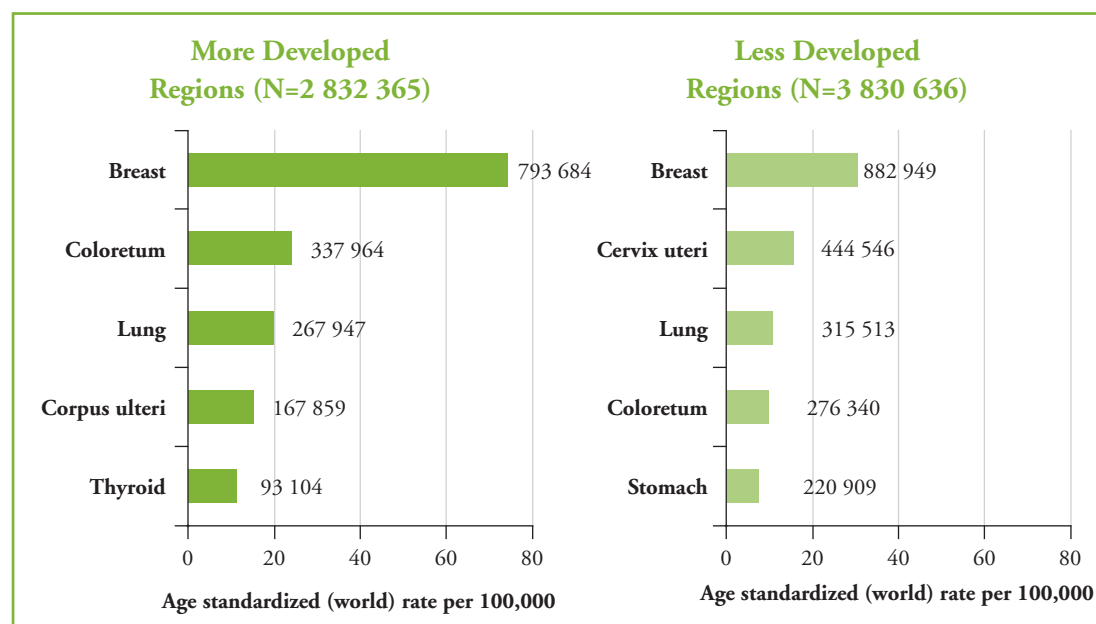
The incidence of common types of cancers varies by geographical areas (Fig. 1.1 and Fig. 1.2) In economically developed countries, the three most commonly diagnosed cancers in 2012 were prostate, lung and colorectal cancers among males; and breast, colorectal and lung cancers among females. In developing countries during the same year, the three most commonly diagnosed cancers were lung, liver and stomach cancers among males; and breast, uterine cervix and lung cancers among females. The three leading sites of cancer in men and women in both developed and developing countries were also the three leading causes of cancer deaths in the respective regions.

Fig. 1.1: Incidence of most common cancers among men in more-developed and less-developed regions of the world [total number of cases and age standardized (word) rate per 100 000]



Source: Lozano R et al, *Lancet*. 2012 Dec 15;380(9859):2095–128. doi: 10.1016/S0140–6736(12)61728–0.; Ferlay et al. GLOBOCAN 2012; (<http://globocan.iarc.fr>)

Fig. 1.2: Incidence of most common cancers among women in more-developed and less-developed regions of the world [total number of cases and age standardized (world) rate per 100 000]



Source: Ferlay et al., GLOBOCAN 2012 (<http://globocan.iarc.fr>)

1.4.3 Risk factors of cancer and their prevention

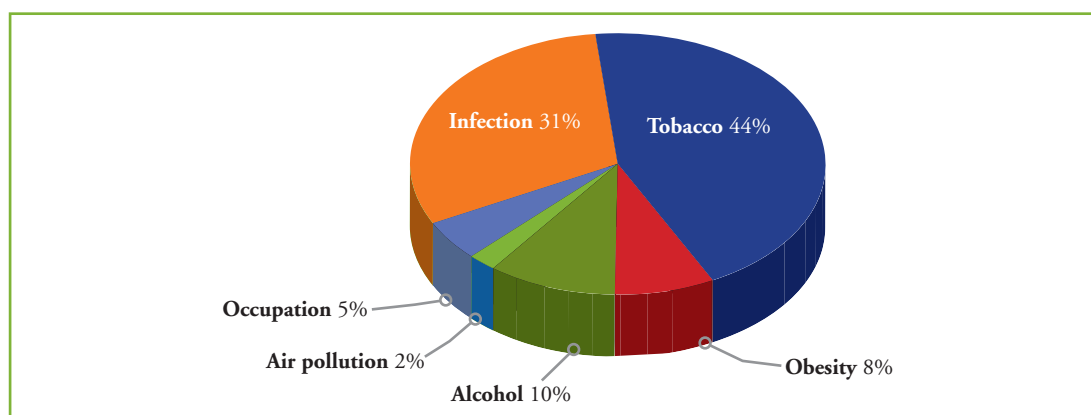
Cancer is caused by certain changes (mutations) in the genetic materials within the cells of the body. Due to the abnormalities in genetic content, the cells divide rapidly in an unregulated way and fail to die after the normal life span. Such unregulated proliferations of the cells give rise to malignant growth. The genetic changes can be spontaneous without any definite cause or may be induced by certain known risk factors. The common risk factors for cancer are:

1. Tobacco use – responsible for up to 1.8 million cancer deaths per year (60% of these deaths occur in LMICs). The common cancers attributable to tobacco use are cancers of lung, lips and oral cavity, kidneys, stomach, etc.
2. Overweight, obesity and physical inactivity – together responsible for 274 000 cancer deaths per year. Cancers of breast, uterus, colon, prostate, etc. have been linked to obesity and overweight.
3. Harmful alcohol use – responsible for 351 000 cancer deaths per year from cancer of liver, oral cavity, colon etc.
4. Outdoor and indoor air pollution responsible for 71 000 cancer deaths per year from lung cancer.
5. Occupational carcinogens – responsible for 152 000 cancer deaths per year from cancer of pleura, bladder, skin etc.
6. Infections:
 - Human papilloma virus infection - responsible for 235 000 cancer deaths per year from cancer of cervix, anus, oro-pharynx etc.

- Hepatitis B and C virus infection – responsible for liver cancer causing 745 000 deaths per year
 - Bacteria and parasites *helicobacter pylori* is responsible for stomach cancer that causes nearly 70 000 deaths each year. *Schistosoma haematobium* is responsible for bladder carcinoma, and liver fluke increases the risk of cholangiocarcinoma of the bile duct
 - Epstein-Barr virus –increases the risk for Burkitt lymphoma, nasopharyngeal cancer
7. Physical carcinogens – ultraviolet ray (sun exposure) and ionizing radiations have been implicated in non-melanoma skin cancer, leukemia, thyroid cancer, etc.
 8. Food additives, food and water contaminants – colouring agents, contaminants like aflatoxins, arsenic are associated with liver cancer, skin cancer, urinary bladder cancer, etc.

The relative proportions of cancer deaths caused by different modifiable risk factors are shown in Fig. 1.3.

Fig. 1.3: Common modifiable/avoidable risk factors of cancer



Source: <http://www.who.int/features/qa/15/en/>

Prevention of cancer is of great benefit to public health and is the most cost-effective long-term method of cancer control. Nearly 40% of all cancer deaths can be prevented by avoiding or minimizing the exposure to the risk factors mentioned earlier. Many of these risk factors have multiple health consequences other than cancer, e.g., cardiovascular disease and diabetes. Broadly there are two alternative approaches to reduce the risk of cancer:

- To focus interventions on the people who are at highest risks, e.g. counselling tobacco users to quit tobacco, screening women between 30 years and 50 years for cervical cancer, etc.
- To adopt measures for reduction of the risk across the entire population, e.g. introduction of Hepatitis B vaccine in the national immunization programme to prevent liver cancer, enforcing regulations to reduce outdoor air pollution, etc.

1.4.4 Principles of cancer control

Cancer control aims to reduce the incidence of various cancers through modification of the identified risk factors in a defined target population. The other major objectives of cancer control are the reduction in morbidity and mortality from the disease and improvement in the quality of life of cancer patients through early detection, prompt treatment and access to palliative care services.

The components of cancer control are:

- i) **Prevention** – A substantial number of cancers can be avoided by minimizing or avoiding exposure to common risk factors like tobacco use, unhealthy diets, cancer causing viruses, etc. (primary prevention)
- ii) **Early detection** – Many of common cancers have a high potential for cure if detected and treated at an early or premalignant stage (secondary prevention). Early detection of cancer is possible either through early diagnosis or through cancer screening.
 - Early diagnosis – This strategy involves creating public awareness about the early signs and symptoms of common cancers and ensuring prompt confirmation of diagnosis and treatment of patients reporting with such signs and symptoms.
 - Cancer screening – Systematic screening for cancer involves testing of asymptomatic and apparently healthy individuals routinely to detect the cancer at a premalignant or early stage and ensuring prompt and appropriate treatment.

Systematic screening is more complex than early diagnosis and needs well-developed health services with adequate human and financial resources. Early diagnosis as a cancer control strategy is feasible even in resource limited setups.

- iii) **Treatment** – Optimal treatment especially for those diagnosed at early stages can lead to cure of the disease and decline in disease specific mortality (tertiary prevention). The primary modalities of cancer treatment are surgery, radiotherapy and chemotherapy, used alone or in combination. This component also includes rehabilitation and psycho-social care aimed at limitations of disabilities and improvement in quality of life.
- iv) **Palliative care** – Palliative care essentially provides symptom relief, psycho-social and supportive care to patients suffering from advanced cancer with low probability of being cured. One of the key objectives of a cancer control programme is to ensure access to opioid analgesics including morphine to terminally ill cancer patients, since morphine is effective, safe, easy to administer and inexpensive.

1.4.5 Cancer control programme

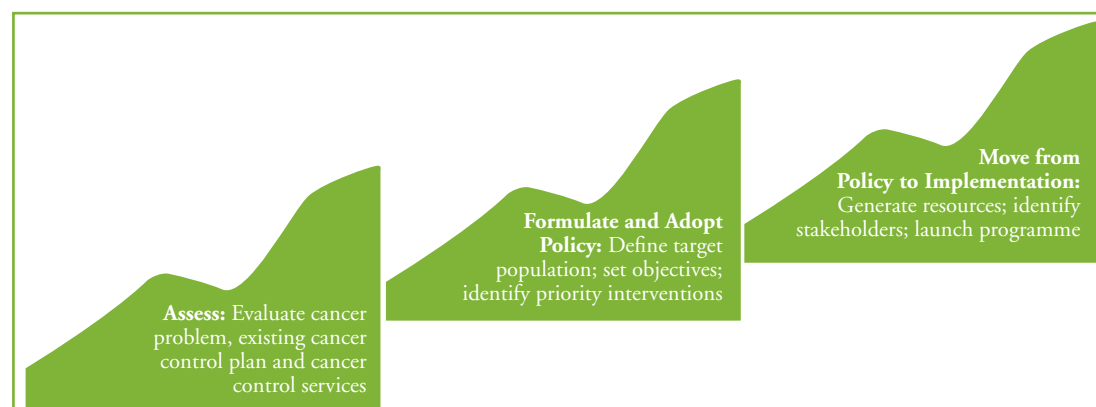
Cancer control programme is a public health initiative designed to reduce cancer incidence and mortality in the target population and improve the quality of life of cancer patients through systematic and equitable implementation of evidence-based strategies. The aim of a cancer control programme is to prevent occurrence of the disease, detect it early, cure it and improve the quality of life of the affected population according to a defined plan within a specified time frame. A comprehensive cancer control programme involves setting optimal objectives, determining possible strategies, strategic planning and implementation of all the components of cancer control – prevention, early detection, treatment and palliative care. A comprehensive programme needs a comprehensive cancer control plan.

The cancer control plan identifies unmet needs in cancer control and directs available resources to address those unmet needs in an effective and equitable manner. WHO advocates a step-wise framework to plan a cancer control programme (Fig. 1.4), which comprises the following activities:

- conducting a situational analysis;
- formulation and adoption of policies guided by specific objectives ;
- identification of the steps to implement these policies.

The detailed process of formulating a country or region specific action plan for cancer control is discussed in the following section.

Fig. 1.4: WHO step-wise framework for cancer control planning

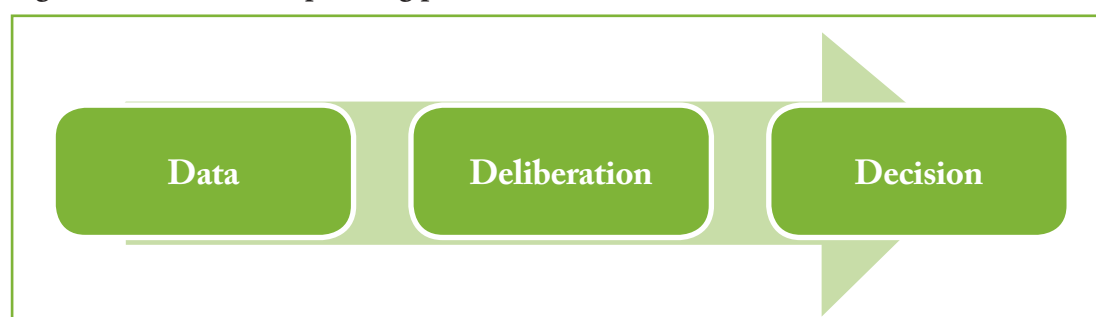


Source: Adapted from *Cancer Control Planning; WHO guide for effective programmes*

1.4.6 Planning a cancer control programme

As the initial step to plan a cancer control strategy for a particular country or region it is essential to identify the problems and gaps and to define programmatic goals and objectives. The necessary information is collected through scientifically designed and implemented situational analysis. The team responsible for formulating the cancer control action plan needs to deliberate over the results of the situational analysis to understand the need, competing priorities, health system preparedness and the available resources. Finally they have to take a decision regarding the short term and long term goals and objectives of the cancer control programme. (Fig. 1.2)

Fig. 1.2: Cancer control planning process

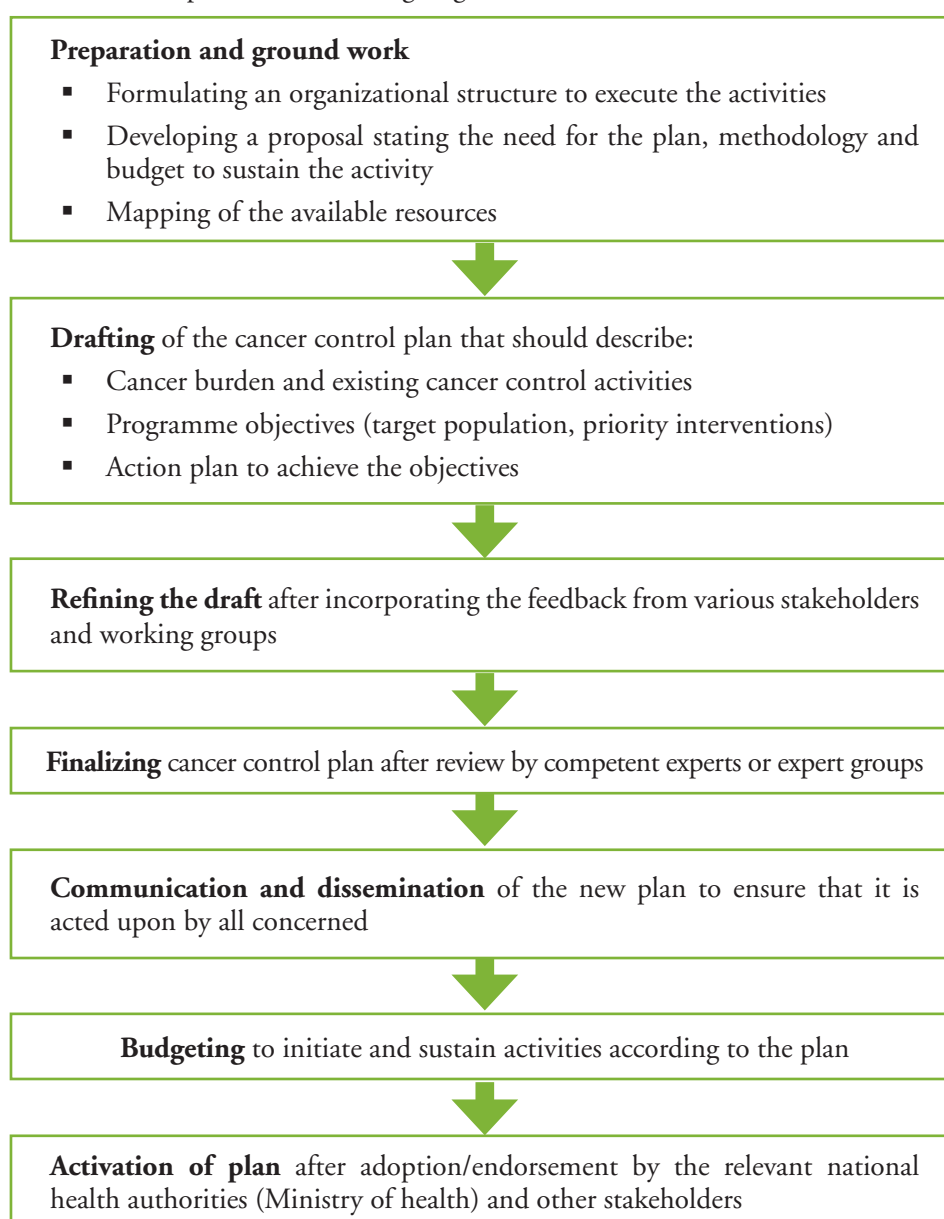


The approach to plan a cancer control programme can be either bottom-up or top-down depending on the existing culture and the practices within the government. The 'bottom-up' planning process is preferable as those who will implement the plan are involved from the beginning. In this approach the planning process is usually driven by *working groups* comprising representatives of health professionals, provincial health authorities, cancer societies, medical colleges and tertiary cancer care centres and cancer survivor groups. The recommendations of the working groups can be reviewed by a higher level *steering committee* comprising representatives of ministry of health, national health organizations, oncology related professional bodies and working group chairpersons. The steering committee refines the working group recommendations by identifying gaps, integrating areas of common concern and

developing the overall strategic vision. The final version has to be presented and deliberated upon for critical comments and consensus in a final consultation meeting before being accepted by the policy-makers for implementation.

In the 'top-down' approach, the ministry of health usually initiates the planning process. The ministry can set-up a *steering committee* that usually comprises of subject experts, representatives of ministry of health, national health organizations and oncology related professional bodies. The committee develops the plan in coordination with other disease control programmes integrated into the existing health delivery system. The final version is presented and deliberated upon for critical comments and consensus in a final consultation meeting before being accepted by policy-makers for implementation.

Once the programme objectives are defined, the final policy and protocol for the cancer control programme are developed in the following stages:



The final national cancer control plan should:

- be aligned with the policy on cancer prevention and control;
- list activities according to priorities;
- clearly define roles and responsibilities of different functionaries;
- have measurable targets for monitoring and outcome evaluation;
- have a defined time line;
- have a financial outlay recommended or endorsed by the Ministry of Health.

Box 1.1: Benefits of cancer control planning

- “A good plan is a like a road map: It shows the final destination and usually the best way to get there.”
- A well-planned comprehensive cancer control strategy allows for a more balanced, efficient and equitable use of limited resources.
- A realistic and goal oriented cancer control plan prepared through a participatory process is more likely to move into effective implementation.
- An effective cancer control plan is needed in every country as cancer cases or cancer risk factors are a major or increasing problem in every country of the world.

Group learning activities

Case study

The facilitator will briefly describe the cancer control programme in Brazil and then divide the trainees into three groups. Each group will have one of the following tasks:

- a) Studying the burden of cancer in Brazil and listing the most common cancers amongst males and females
- b) Identifying the cancers that can be prevented and listing the preventive strategies
- c) Identifying the cancer control interventions that Brazil has adopted

All the groups will have to make presentations. The facilitator will guide the discussion towards identification of cancer burden and selection of the strategies to control the common cancers in the trainees' own country.

Case study : Cancer control in Brazil

Brazil has a complex geographical territory, large population and great burden of non-communicable diseases (NCD). NCDs are responsible for 72% of deaths in the country. A plan to strengthen the network of prevention, diagnosis, and treatment of cancer was launched in March, 2011, by the Ministry of Health. An effective tobacco prevention programme was introduced with the establishment of smoke-free environments, increased cigarette taxes to 85%, and mandatory posting of warnings on cigarette packaging. Tobacco cessation drugs were made available free of cost. This resulted in a steady decline in the prevalence of smoking. Cervical and breast cancer screening programmes were strengthened and Pap smear coverage exceeded 85% and mammography coverage exceeded 70% in some of the regions. Access to free cancer treatment at all levels has been ensured. In 2014, Brazil introduced HPV vaccination for 11–13 year old girls to protect them against cervical cancer. Some actions, introduced earlier, have already contributed to a 20% decline in rates of NCDs between 1996 and 2007. The long-term goal is to reduce mortality from NCDs by 2% per year.

Trainees will get more information on cancer control in Brazil from:

- http://globocan.iarc.fr/Pages/fact_sheets_population.aspx
- Goss PE et al. *Planning cancer control in Latin America and the Caribbean. Lancet Oncol* 2013; 14: 391–436
- Pan American Health Organization. *Cancer in the Americas: Country Profiles 2013. Washington, D.C.: 2013*

Multiple choice questions

1. Which is not a risk factor for cancer?

- a) Infection with hepatitis B virus
- b) Infection with H1N1 virus
- c) Infection with hepatitis C virus
- d) Infection with Epstein-Barr virus

2. Which component of cancer control involves testing apparently healthy individuals to detect cancer at pre-cancer or early stages?

- a) Early diagnosis
- b) Prevention
- c) Screening
- d) Palliative care

3. Screening for cervical cancer belongs to which category of prevention?

- a) Primary
- b) Secondary
- c) Tertiary
- d) None of the above

4. The preparation stage of developing a plan for a cancer control programme involves all, except:

- a) Drafting of cancer control plan
- b) Formulating an organizational structure
- c) Developing the initial planning proposal
- d) Mapping the available resources

5. Which of the following is not true?

- a) Cancer control programme is necessary only for high income countries
- b) Assessment of cancer burden in the country or region is essential to set the programme goals
- c) The bottom up approach to plan a cancer control programme is superior to the top down approach
- d) Monitoring and supervision should be integral parts of a cancer control plan

Answer key

1 – b

2 – c

3 – b

4 – a

5 – a

Module 2: Implementation of cancer control programme

2.1 Module overview

This module is designed to make programme managers learn the step-wise implementation of cancer control programme and the role of various stakeholders. The module provides an overview of the process of operationalizing a cancer control plan to a population-based programme, of which cervical cancer screening is an integral part. For more information on the module trainees are advised to read *Cancer control – knowledge into action; WHO guide for effective programmes (Planning)*.

2.2 Module contents

- Principles of implementing a cancer control programme
- Step-wise approach to implementing cancer control
- Health systems approach to implementing a comprehensive cancer control programme
- Role of stakeholders
- Group learning activities
- Case study

2.3 Learning objectives

By the end of this module, trainees would be able to:

- describe the WHO framework for a step-wise approach to cancer control;
- list interventions for step-wise implementation of a comprehensive cancer control programme;
- explain how to develop a cancer control programme by engaging various stakeholders.

2.4 Key points for discussion

2.4.1 Principles of implementing a cancer control programme

Implementation of a comprehensive cancer control programme is based on certain principles that are explained in Fig. 2.1. Effective leadership, coordinated efforts from all stakeholders, efficient programme planning based on needs and feasibility, generating adequate resources to sustain the programme and meticulous attention to continuous improvement are key to the implementation of a successful cancer control programme.

Fig. 2.1: Principles of developing and implementing a comprehensive cancer control plan
(Adapted from: Cancer control: Planning; WHO guide for effective programmes)

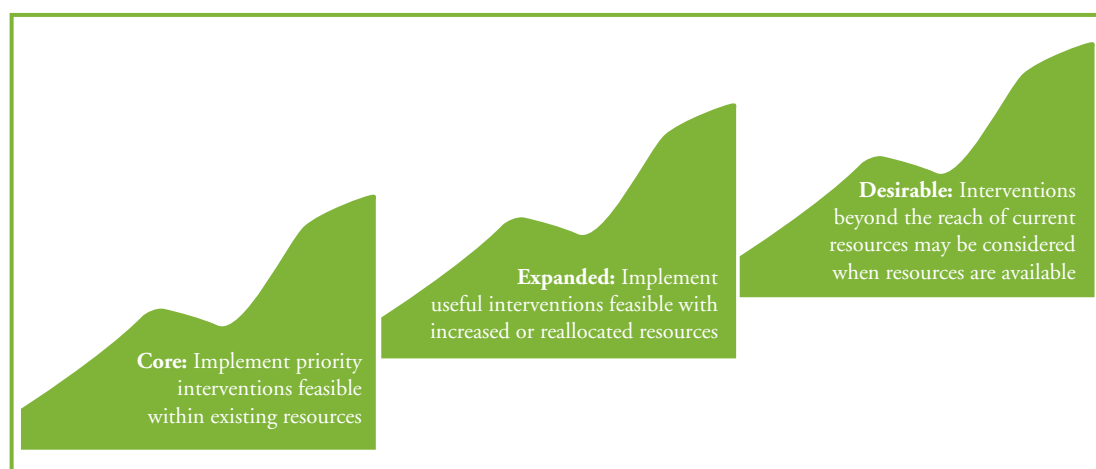


2.4.2 WHO step-wise approach to implement cancer control

WHO recommended a step-wise approach to implement a cancer control plan. The approach maximizes health benefits for the population as a whole, making the judicious use of existing resources.(Fig. 2.2). The WHO step-wise approach takes into consideration the facts that the resources are limited and there are several competing health priorities, especially in low and middle income countries.

According to the WHO implementation framework, countries should first introduce high priority interventions that are immediately feasible within existing resources (core interventions). Further expansion (expanded interventions) should be planned pragmatically after careful evaluation of the impact of the existing interventions. The newly proposed interventions should be feasible and ensure the most cost-effective use of resources. Introduction of the most effective interventions (desirable interventions) should be part of a long term strategic plan based on the realistic allocation of resources.

Fig. 2.2: WHO step-wise framework for implementation of a cancer control programme



A comprehensive cancer control programme should include appropriate interventions addressing each of the components of the programme – prevention, early detection, diagnosis and treatment and palliative care. Examples of some of the key interventions from each of these components of cancer control that can be introduced in phases based on the priorities, available resources and feasibility are given in Table 2.1.

Table 2.1: List of interventions based on the different components of cancer control (list is not exhaustive and will differ between the countries)

Interventions based on available resources			
Components of cancer control	Core	Expanded	Desirable
Prevention	<ul style="list-style-type: none"> Promote healthy behaviour and environment Ratify and implement the recommendations of WHO FCTC Implement tobacco control legislation 	<ul style="list-style-type: none"> Reinforce legislative measures on tobacco control and alcohol abuse Develop regulatory and legislative measures to reduce exposure to occupational 	<ul style="list-style-type: none"> Introduce HPV vaccination

	<ul style="list-style-type: none"> • Improve the coverage of hepatitis B vaccination in national immunization programme 	and environmental carcinogens	
Early detection	<ul style="list-style-type: none"> • Introduce screening of women for cervical cancer using VIA as pilot projects in selected areas 	<ul style="list-style-type: none"> • Scale-up cervical screening facilities to expanded areas • Establish reference training centres and introduce effective quality control systems 	<ul style="list-style-type: none"> • Organize screening facilities for breast and colo-rectal cancer; • Introduce HPV DNA test for cervical cancer screening
Diagnosis and treatment	<ul style="list-style-type: none"> • Create awareness about signs and symptoms of common cancers; arrange for prompt diagnosis and treatment of common cancers 	<ul style="list-style-type: none"> • Create upgraded cancer diagnostic and treatment facilities • Develop/ reinforce reference training centres and quality control systems 	<ul style="list-style-type: none"> • Reinforce clinical training; upgrade research institutions and other referral centres
Palliative care	<ul style="list-style-type: none"> • Ensure availability of oral morphine and palliative care services in oncology centres • Develop training centres for primary and community healthcare providers 	<ul style="list-style-type: none"> • Create provision for home based palliative care 	<ul style="list-style-type: none"> • Ensure availability of palliative care medications and services at all levels of healthcare systems

Source: WHO FCTC- WHO Framework Convention on Tobacco Control

Establishment of a national cancer control program requires coordinated effort to strengthen the overall health systems. Cancer control plans can not be operationalized without some investment into simultaneous improvement in the healthcare delivery of the country or the region.

2.4.3 Health systems approach to implementing a comprehensive cancer control programme

A comprehensive cancer control programme requires a multi-sectoral approach leading to resource mobilization and health system restructuring. Implementation of the cancer control plan in a time-bound manner is primarily the responsibility of the national government and strong political and financial commitment is essential for its success. The key components of a well-functioning health system that provide equitable access to cancer prevention and control services are given in Table 2.2.

Table 2.2: Components of health system that need to be strengthened to provide equitable cancer control services

Essential Health Service Component	Expected Outcome
Effective leadership and governance committed to health equity through sound public health policies and accountability	<ul style="list-style-type: none"> • National cancer healthcare policies, plans and strategies • Implementation through effective governance for financing, infrastructure, human resources, availability of drugs and technology and service delivery • Preparation of relevant guidelines, plans and targets
Adequate financing of health services to develop optimal healthcare infrastructure, recruitment of human resources and to ensure universal health coverage by removing financial barriers to access quality healthcare	<ul style="list-style-type: none"> • Government budget lines committed to the programme • A system to raise and pool donor funds fairly • Social security and employee insurance schemes and other cost recovery mechanisms, as applicable • Clear operational rules and audits to ensure timely and efficient use of funds
Adequate human resources for healthcare administration and delivery	<ul style="list-style-type: none"> • Improvement in education through academic initiatives • Recruitment, distribution, and retention of trained service providers through appropriate payment systems and incentives • Enhancement of productivity, performance, competency and skills by in-service training, reorientation, and continuing education opportunities • Creation of enabling work environments and job promotion Opportunities
Ensuring universal access to essential diagnostics, vaccines, drugs and technologies	<ul style="list-style-type: none"> • Preparation of national lists of essential medical products, national diagnostic and treatment protocols, and standardized equipment per level of care to guide procurement, to promote rational prescription and reimbursement

	<ul style="list-style-type: none"> • A supply and distribution system to ensure universal access to essential medical products and health technologies through public and private channels, with focus on the poor and disadvantaged • A medical products regulatory system for marketing authorization, quality assurance and price and safety monitoring
<p>Service delivery through a network of primary, secondary and tertiary care facilities</p>	<ul style="list-style-type: none"> • Preventive services (health education, awareness, control of tobacco/alcohol/other cancer risk factors, healthy diet, promotion of physical activity, obesity/overweight control, hepatitis B virus (HBV) and human papillomavirus (HPV) vaccination) • Early detection services (population awareness on early symptoms/signs, improving early detection skills of primary healthcare practitioners by in-service training and reorientation, screening, early diagnosis, development of referral pathways) • Diagnosis and staging (histopathology, cytology, haematology, immunohistochemistry, tumour markers, biochemistry, microbiology, imaging and endoscopy services) • Treatment services (cancer surgery, radiotherapy, chemotherapy, hormone therapy, rehabilitation and counselling services), palliative care (oral morphine, other opioids and analgesics, adjuvant drugs, symptomatic treatments) • Systems and establishments to render the above services (comprehensive cancer centres, specialized centralized services such as paediatric oncology services, oncology units in district and provincial hospitals, community cancer centres, cancer screening units, rural extension services for follow-up care in remote areas, palliative care units, palliative care teams and home care)
<p>Health information systems and initiatives such as risk factor surveys, population based cancer registries, hospital based cancer registries, medical records departments, screening programmes and health insurance databases and death registers</p>	<ul style="list-style-type: none"> • Risk factor surveys and situational analysis • Population based and hospital based cancer registries • Linkage of registries with the screening programme, and health insurance databases and death registers

Source: Adapted from World Health Organization; Key components of well functioning health systems (http://www.who.int/healthsystems/EN_HSSkeycomponents.pdf) and Sankaranarayanan et al. BMC Medicine 2014, 12:3

2.4.4 Roles of stakeholders in planning and implementation of a cancer control programme

Stakeholders are individuals or organizations who can contribute to the successful implementation of a cancer control programme by their active involvement in various programmatic aspects. The interest and willingness of stakeholders to participate during the planning process and programme implementation is fundamental for overall functioning of the programme. It is important to identify potential stakeholders and plan for their participation in specific activities of the cancer control programme. Some suggested stakeholders who may be involved for implementation of a cancer control programme are given in Table 2.3.

Table 2.3: Suggested stakeholders for implementation of different components of cancer control

Components of cancer control	Activities	Suggested stakeholders
Prevention	<ul style="list-style-type: none"> • Development and dissemination of IEC material • Generation of Community awareness 	<ul style="list-style-type: none"> • NGO representatives • Community leaders • Health promotion staff
Early detection	<ul style="list-style-type: none"> • Screening services 	<ul style="list-style-type: none"> • Government health authorities • NGO representatives • Health facility managers • Clinic supervisors • Community leaders
Diagnosis and treatment	<ul style="list-style-type: none"> • Diagnosis of pre-cancers and cancers and their appropriate treatment 	<p>In addition to all of the above:</p> <ul style="list-style-type: none"> • Diagnostic laboratory managers • Clinicians (surgeons, gynaecologists, oncologists, etc.) • In-charges of referral centres
Palliative care	<ul style="list-style-type: none"> • Home based palliative care • Clinic based palliative care • Oral morphine distribution 	<ul style="list-style-type: none"> • Health specialists, trained nursing personnel and primary care physicians • Social workers and support groups • Hospitals/referral centres with palliative care facilities

Group learning activities

Case study

In the year 2013, the Lancet Oncology Commission, a group of national and international experts conducted an in-depth study on the cancer burden, existing cancer control efforts, health system functioning, feasibility of introducing new interventions for cancer control and health financing mechanisms in different Latin American countries. The summary of their recommendations to improve cancer control efforts in Latin American countries is given in Box 2.1.

Trainees along with facilitators will go through the recommendations of the Lancet Commission and then discuss how to adopt a similar comprehensive, multi-sectoral approach to cancer control through health system strengthening and improved fiscal and healthcare management in their own countries/regions. The discussion may be held in separate groups and, at the end, group rapporteurs should present the respective group's views and observations.

Box 2.1: Actions recommended to reduce cancer morbidity, mortality and related medical and non-medical costs in Latin America by Lancet Oncology Commission

Recommended actions to improve cancer care in Latin America

Increase financial resources for cancer control

- Increase the percentage of gross domestic product assigned to healthcare, and specifically to cancer services
- Improve balance of resource allocation for cancer control, with particular attention to marginalized populations
- Solicit philanthropy for patient care and policy lobbying

Restructure healthcare systems

- Move towards universal healthcare coverage
- Emulate policies that promote financial protection for health and extend coverage to the uninsured

Optimize oncology workforce to meet regional needs

- Increase the number of cancer specialists, in view of current shortages and future demands
- Geographically redistribute doctors, nurses, and other cancer-care professionals to address the population's needs

Improve technical resources and services for cancer early detection and treatment

- Optimize pathology evaluation and laboratory diagnostics
- Improve imaging availability, accuracy, and efficiency to achieve timely communication of results to providers and patients
- Establish centralized laboratory testing so that state-of-the-art testing and personalized cancer care can be offered

Invest in research and evidence-based cancer care relevant to the region

- Characterize the epidemiology of national and regional cancers
- Create and strengthen national cancer registries
- Monitor cancer outcomes and study the cost-effectiveness of specific interventions
- Build a clinical-trials infrastructure that is sustainable and will support innovative research and educational opportunities for trainees

Invest in education

- Improve and expand training of doctors, nurses, and other healthcare workers
- Fund and organize multidisciplinary healthcare workshops
- Raise public awareness and education
- Increase and fund organized advocacy

Source: Goss PE et al. Planning cancer control in Latin America and the Caribbean. Lancet Oncol 2013; 14: 391–436

The groups should be encouraged to list the suggested interventions as core, expanded and desirable interventions.

Multiple choice questions

1. Which of the following is not recommended in WHO's step-wise approach to implementation of cancer control?

- a) Identifying feasible and most cost-effective interventions for cancer control
- b) Implementing high priority interventions that are immediately feasible with existing resources
- c) Scaling-up of the programme based on the realistic allocation of resources
- d) Introducing screening of women for breast cancer using digital mammography as a core intervention

2. The core interventions of the prevention component of a cancer control programme include all, except:

- a) Ratify and implement WHO FCTC
- b) Introduce hepatitis B vaccination in national immunization programmes
- c) Introduce HPV vaccination
- d) Promote healthy behaviour and environment

3. Which type of intervention involves introducing screening of women for cervical cancer using VIA as pilot projects in selected areas?

- a) Desirable intervention
- b) Core intervention
- c) Expanded intervention
- d) None of the above

4. For which component of cancer control is it an expanded intervention to develop regulatory and legislative measures to reduce exposure to occupational and environmental carcinogens?

- a) Prevention
- b) Early detection
- c) Diagnosis and treatment
- d) Palliative care

5. The following are suggested stakeholders who can contribute to prevention activities of a cancer control programme, except:

- a) NGO representatives
- b) Community leaders
- c) Information system manager
- d) Health promotion staff

Answer key

1 – b

2 – c

3 – b

4 – a

5 – c

Module 3: Planning cervical cancer screening programme

3.1 Module overview

This module is designed to teach programme managers how to plan for a cervical cancer screening programme at the national or sub-national levels using the same principles and guidelines of planning a cancer control programme discussed in earlier modules. It gives an overview of the components of a cervical cancer screening programme, the process of drafting a policy and protocol for cervical cancer screening and the groundwork required for the introduction of the new policy and protocol. For more information on the module, trainees are requested to read Chapter 2– Essentials for cervical cancer prevention programmes of the *WHO Comprehensive cervical cancer control – Guide to essential practice*.

3.2 Module contents

- Need for cervical cancer screening
- Protocol for cervical cancer screening
- Eligible population for cervical cancer screening
- Screening tests for cervical cancer
- Frequency of cervical cancer screening
- Components of a cervical cancer screening programme
- Organized or opportunistic cervical cancer screening programme
- Planning for a cervical cancer screening programme
- Group learning activities
 - Case studies

3.3 Learning objectives

By the end of this module, the trainees would be able to:

- describe the burden of cervical cancer in the population;
- state how screening for cervical cancer helps to reduce the burden of disease;
- list the various components of an organized screening programme;
- describe the target age group and frequency of screening;
- explain the concept of comprehensive cervical cancer control;
- describe the concept and importance of organized cervical cancer screening;
- list the steps and processes of developing a cervical cancer screening policy and protocol.

3.4 Key points for discussion

3.4.1 Screening for cancer cervix

Screening in general is defined as the application of a test on an apparently asymptomatic healthy population to identify those with high risk of having or developing a particular disease. The screening test positive men and/or women need to have further investigations to confirm the diagnosis. To screen for cancer cervix, apparently healthy women belonging to a specified age group are tested routinely irrespective of whether or not they have any symptom. The tests applied are called screening tests.

3.4.2 Necessity of screening for cancer cervix

Cancer of uterine cervix is the fourth most common cancer among women globally. Among Asian women, cervical cancer ranks second after breast cancer. The cancer causes a large number of deaths among women in the WHO South East Asia regional countries (Table 3.1). Cervical cancer affects women at a relatively younger age causing great personal, social and economic loss. Screening helps to detect the cancer at a potentially curable premalignant stage. Detection of the premalignant conditions by screening tests and their appropriate treatment can prevent the cancer and avoid untimely deaths of women from the disease.

Table 3.1: The burden of cervical cancer in the WHO South-East Asia Regional (SEAR) countries

	Number of cases	Age Standardized rates (100 000)	Rank among all cancers in women	Number of deaths
World	527 624	14.0	4 th	265 672
Bangladesh	11 956	19.2	2 nd	6582
Bhutan	37	12.8	1 st	19
DPR Korea	1881	12.4	4 th	1119
India	122 844	22.0	2 nd	67 477
Indonesia	20 928	17.3	2 nd	9498
Maldives	14	11.0	2 nd	7
Myanmar	5286	20.6	2 nd	2998
Nepal	2332	19.0	1 st	1367
Sri Lanka	1721	13.1	2 nd	690
Thailand	8184	17.8	2 nd	4513
Timor-Leste	46	13.3	3 rd	24

Source: Ferlay J, et al. GLOBOCAN 2012 v1.0, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013

Bruni L, et al. ICO Information Centre on HPV and Cancer (HPV Information Centre). Human Papillomavirus and Related Diseases in the World. Summary Report 2014–08–22.

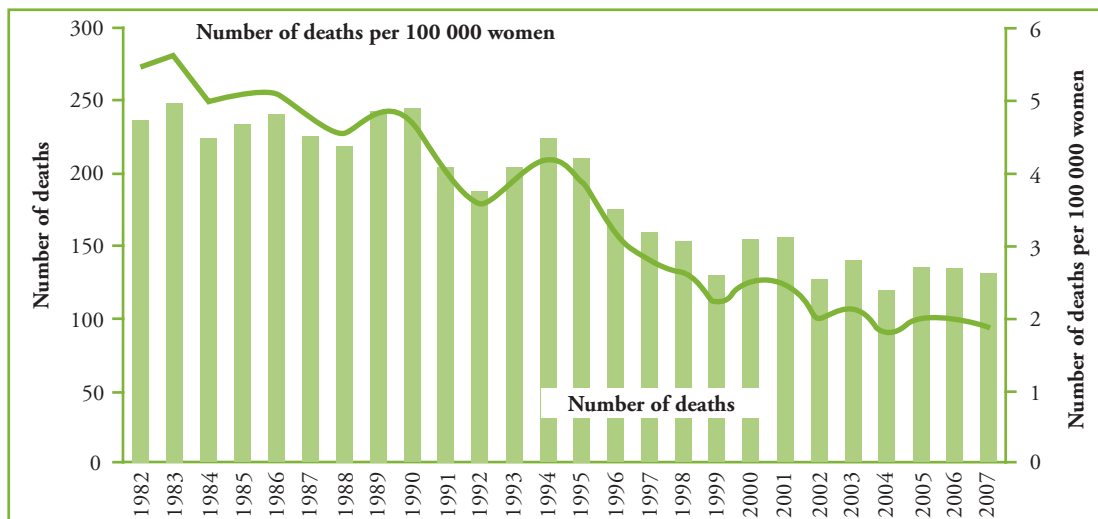
Reasons for high incidence and mortality of cervical cancer in developing countries

- Lack of awareness of cervical cancer among the population, healthcare providers and policy-makers
- Cervical cancer prevention is not yet considered a priority among national public health programmes resulting in inadequate resource allocation for screening programmes
- Absence or poor quality of cervical cancer screening programmes
- Limited access to quality healthcare services for early detection and treatment of cervical cancer
- The early symptoms are often neglected by patients (and sometimes also by physicians) resulting in late diagnosis of the disease
- Lack of functional referral systems

Cervical cancer has a unique natural history that allows its prevention through screening. The cancer is caused by the infection from high risk types of human papillomavirus (HPV). Trainees are referred to Annex 1 for further information on the pathogenesis of cervical cancer. About 10% of Asian women are estimated to harbour cervical HPV infection at any given time, and more than 70% of invasive cancers of cervix detected among Asian women are attributed to HPV types 16 or 18. The virus infection induces a premalignant change known as cervical intraepithelial neoplasia (CIN). CIN can be detected by different screening tests and can be treated by simple techniques. Detection and treatment of the disease at premalignant stage prevents development of cervical cancer in the future. Countries that introduced national programmes to systematically screen women for cervical cancer and treat the premalignant conditions observed significant reduction in deaths from cervical cancer over a few years.

Fig. 3.1 shows the decline of cervical cancer deaths over time in Australia since the inception of the National Cervical Screening Programme in 1991. The mortality rates reduced by more than 50% from 1991 to 2007 due to systematic screening of the population.

Fig. 3.1: Cervical cancer mortality rates in Australia (in women aged 20–69 years) from 1982 to 2007 (National Cervical Screening Programme initiated in 1991)



(Source: Government of Australia, Department of Health; http://www.health.wa.gov.au/cervical/for_health_profhp_statistics.cfm)

3.4.3 Women at risk of cervical cancer

- Women above the age of 40 years who have ever been sexually active
- Women whose sexual debut is at a very young age
- Women who have sex with multiple partners or women whose partners have multiple sex partners
- Women who have too many children, specially at young age
- Women who belong to the lower socio-economic strata of society
- Women who smoke
- Women who have lower genital tract infection with *Chlamydia*
- HIV-infected women and women with poor immunity

The most important cause for cervical cancer is persistent infection with human papilloma virus (HPV) that is transmitted through sexual contact. The virus infection is very common and any woman who is ever sexually exposed has nearly 80% lifetime risk of getting the HPV infection. Fortunately, majority of the infected women clear the infection due to the natural immune response of the body. A small proportion of them cannot clear the infection and these women, with persistent HPV infection, have a high risk of developing cervical cancer. Hence, all sexually active women are at risk of developing cervical cancer and should be screened after a certain age.

3.4.4 Screening protocol

The screening protocol is the set of guidelines that must be followed by all healthcare providers involved in a screening programme. The protocol specifies the eligible population for screening, the screening test to be used, the frequency of screening, management of screen positive women, etc. The contents of the protocol vary from programme to programme.

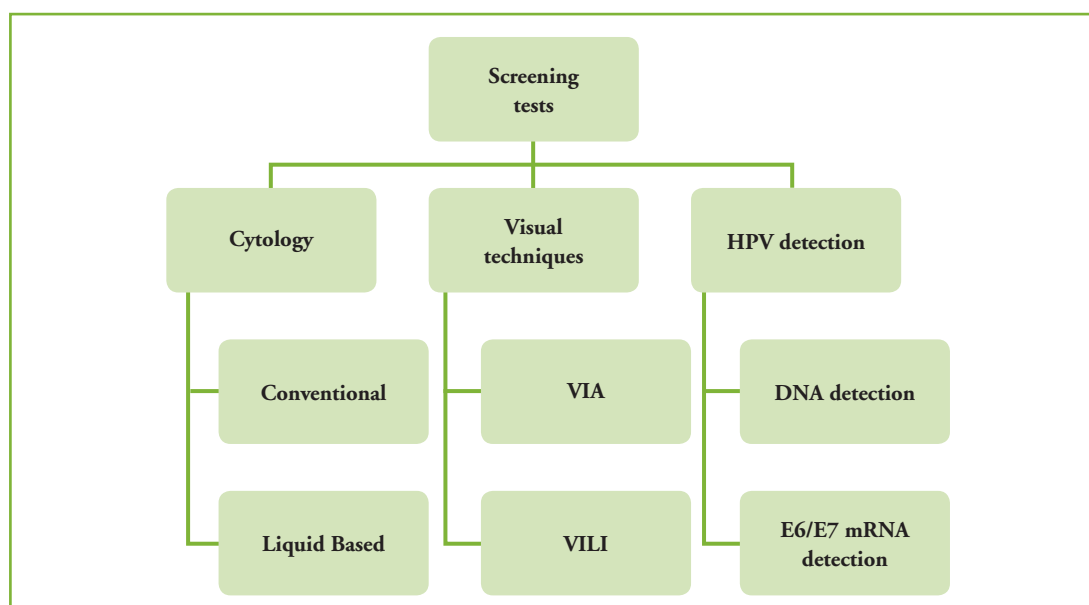
3.4.5 Eligible population for cervical cancer screening

Screening tests are not recommended for women below 30 years of age as the risk of cancer cervix is extremely low below this age. The premalignant conditions detected in young women below 30 years usually resolve on their own and do not progress to cancer. As a result, screening of women below 30 years leads to many unnecessary tests and treatment that will waste limited resources. Screening women between the ages of 30–49 years, even once in a lifetime, substantially reduces deaths from cervical cancer as most high grade premalignant conditions are detected and treated. The upper age limit of screening may differ across different countries and is generally between 50 years and 65 years. The upper age limit to stop screening is decided on the basis of available resources within the programme. Pregnancy is not the ideal time to perform screening. Screening should be deferred to six weeks after childbirth. Women who have had hysterectomy and did not have premalignant or malignant conditions of the cervix in the post-operative specimen do not need further screening for cervical cancer.

3.4.6 Different screening tests for cervical cancer

An ideal screening test for cancer cervix should be reasonably accurate, easy to use on a large number of women, feasible to perform in the particular setting, provide results immediately (point of care), acceptable to the women and inexpensive. There are a number of tests available for cancer cervix screening (Fig. 3.2).

Fig. 3.2: Screening tests for cervical cancer



The test characteristics, personnel requirement and limitations of different screening tests are shown in Table 3.2. HPV DNA tests have the highest sensitivity and do not require highly trained personnel to perform the test. However, the tests are still expensive. VIA is the least expensive of the tests, can be performed by non-clinician trained providers and has reasonably good sensitivity.

Table 3.2: Test characteristics, personnel requirements and limitations of different screening tests

Screening test	Sensitivity to detect CIN 2+	Specificity to detect CIN 2+	Test provider	Personnel for processing and interpretation	Major limitations
Conventional cytology	53%	96.3%	Doctor/ nurse / midwife/ reproductive healthcare provider	Cyto- technician/ pathologist	<ul style="list-style-type: none"> • Result not immediately available • Laboratory necessary • Highly trained personnel required • Low-moderate sensitivity

Liquid based cytology (LBC)	79.1%	78.8%	Doctor/nurse / midwife/ reproductive healthcare provider	Cyto-technician/ pathologist	<ul style="list-style-type: none"> • Same as conventional cytology • Expensive
HPV DNA	96.1%,	90.7%	Doctor/nurse / midwife/ reproductive healthcare provider	Laboratory technician	<ul style="list-style-type: none"> • Result not immediately available • Laboratory necessary • Expensive
VIA	80%	92%	Doctor/nurse / midwife/ reproductive healthcare provider	Not necessary	<ul style="list-style-type: none"> • Sensitivity moderate • High false positives • Subjective, performance variable and depends on training of providers

Source: WHO SEARO, Framework on cervical cancer control

3.4.7 Frequency of screening for cervical cancer

The interval between two rounds of screening in screen negative women will depend of the screening test used and the resources available. In VIA-based programmes the interval for rescreening VIA negative women should be 3–5 years. In HPV detection-based programmes the interval for rescreening HPV negative women can be extended beyond 5 years. The interval can be extended even up to 10 years if a high sensitivity HPV test is used.

- *Women and girls who are HIV positive and have initiated sexual activity should be screened as soon as they are detected HIV positive, regardless of age.*
- *In HIV positive women screening interval should not exceed 3 years.*

3.4.8 Components of a cervical cancer screening programme

A Cervical cancer screening programme has three main interlinked service delivery components

- Community mobilization and education
- Screening services
- Diagnosis and/or treatment services

All service delivery components should be supported by the following key activities essential for successful programme implementation and for ensuring quality of the services:

- A programme management structure and a documented policy to deliver the screening services
- Programme planning and implementation according to a written protocol and aligned to the policy
- Training of all cadres of service providers
- Monitoring and evaluation across all levels of care

3.4.9 An organized or opportunistic cervical cancer screening programme

Screening programmes can be organized or opportunistic. An organized screening programme is more efficient than an opportunistic programme into reducing the incidence of cancer cervix and deaths from the disease. The screening programme is considered to be organized when it includes the following:

- A commitment and policy at the national level to make the services accessible to the entire target population;
- A programme protocol that clearly defines
 - screening and treatment methodologies
 - frequency of screening and the target age for screening
 - operational aspects of the programme
- a mechanism for systematically inviting target women to ensure high participation rate;
- linkage between screening, diagnosis and treatment;
- a programme monitoring, supervision and quality assurance plan.

Opportunistic screening implies that screening tests are offered to eligible women when they visit the health facilities for various reasons. In opportunistic programme there is no concerted effort to make screening services accessible to all the eligible women and to ensure appropriate follow up and treatment of screen positive women. Quality control measures are often sub-optimal in an opportunistic programme. Organized screening is more efficient and cost-effective than opportunistic screening.

Screening programmes will be effective in reducing cervical cancer burden if there is:

- high coverage (nearly 80%) of the population at risk of the disease;
- appropriate follow-up and management of those who are positive on screening;
- effective linkage between programme components (e.g., from screening to diagnosis and treatment);
- high quality of screening tests, diagnostic evaluation, treatment and follow-up;
- adequate infrastructure, trained and dedicated manpower and financial resources;
- efficient monitoring and supportive supervision of the programme

3.4.10 Comprehensive cervical cancer control programme

A comprehensive cervical cancer control programme is a public health strategy to reduce the incidence of cervical cancer and also the morbidity and mortality from the disease in a defined target population. The cervical cancer control activities include systematic implementation of HPV vaccination, screening for and treatment of premalignant conditions, early diagnosis and treatment of invasive cancers and palliative care for advanced disease. A comprehensive cervical cancer control programme addresses the entire population and aims to include interventions that are most feasible and cost-effective.

Cervical cancer screening is one component of the cervical cancer control programme. Organizing early diagnosis and appropriate treatment facilities for women with symptoms suggesting cervical cancer is the other key component of a cervical cancer control programme and relatively less complex to implement. Some programmes with limited resources may decide to implement health education, early diagnosis and treatment as the core activities and subsequently introduce cervical cancer screening as the expanded activity. Ensuring access to morphine tablets to patients with advanced cervical cancer should also be the part of the core activities.

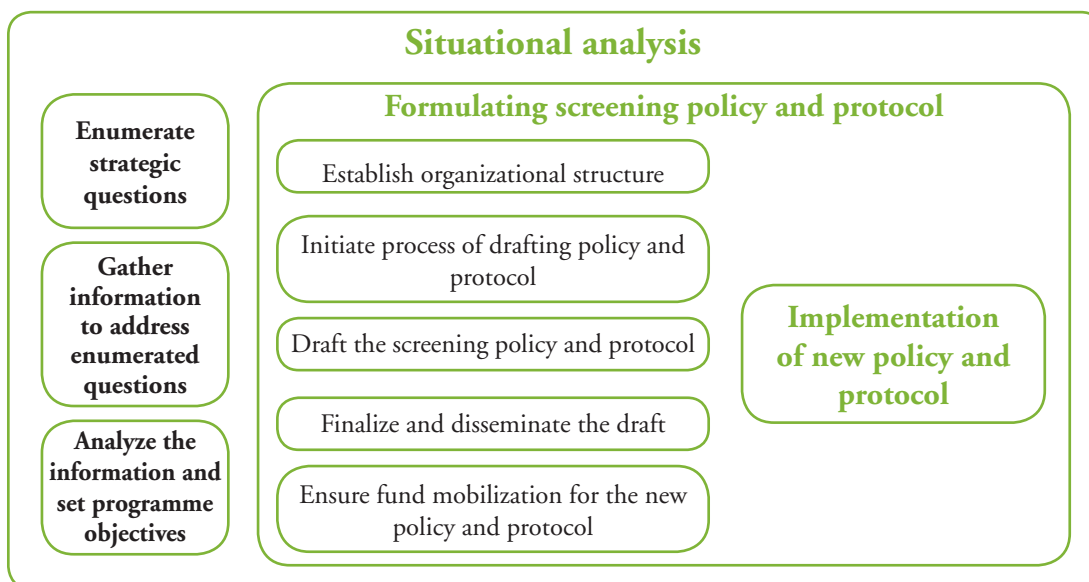
3.4.11 Planning a cervical cancer screening programme using the WHO step-wise framework

Planning for a cervical cancer screening programme involves the following steps:

- Step 1:** Situational analysis and assessment of the needs
- Step 2:** Formulation and adoption of cervical cancer screening policy and an implementation plan
- Step 3:** Moving from policy to implementation

Fig. 3.3 summarizes all the steps necessary to plan an effective cervical cancer screening programme. The final outcome of the planning process should be a protocol for the screening programme and an operational plan to implement the protocol.

Fig. 3.3: Framework for planning an effective cervical cancer screening programme



Planning for a cervical cancer screening programme should also include planning for early diagnosis, treatment and palliative care as integral components of the programme.

3.4.11.1. Strategic planning step 1: Performing situational analysis and needs assessment

A situational analysis and needs assessment exercise requires:

- Enumerating the strategic questions that need to be addressed through situational analysis
- Systematic collection of information on the strategic questions
- Analysis of the collected information

The strategic questions to be addressed through situational analysis and needs assessment must include the following:

- What is the cervical cancer burden (incidence, mortality, social and economic impact)?
- Are there any existing cervical cancer control plans, ongoing activities and services?
- What are the available infrastructural, human and financial resources of ongoing cervical cancer control activities and services?
- Are the capacity and readiness of the health system adequate to cope with a new/upscaled programme?
- Who are the existing and potential stakeholders for a cervical cancer screening programme?
- What are the community perspectives and knowledge about cervical cancer and the needs for screening?
- Is there any monitoring and evaluation mechanism for the existing programme?

The situational analysis should identify the available resources required to implement and maintain the programme. Funding support may be available from state legislature, health and other relevant programmes of the country or region. Financial commitment obtained from various public and private sector agencies should be documented and also the possible role of the insurance providers.

3.4.11.2. Strategic planning step 2: Formulation and adoption of cervical cancer screening policy and protocol

Policy and protocol should be formulated following the same guidelines discussed earlier (Section 1.4.7). Information obtained from the situational analysis and needs assessment should be used to set SMART (specific, measurable, achievable, realistic and time-bound) programme objectives. The policy has to be adopted at national or sub-national levels to achieve these objectives and the protocol document needs to be formalized, aligned to the adopted policies.

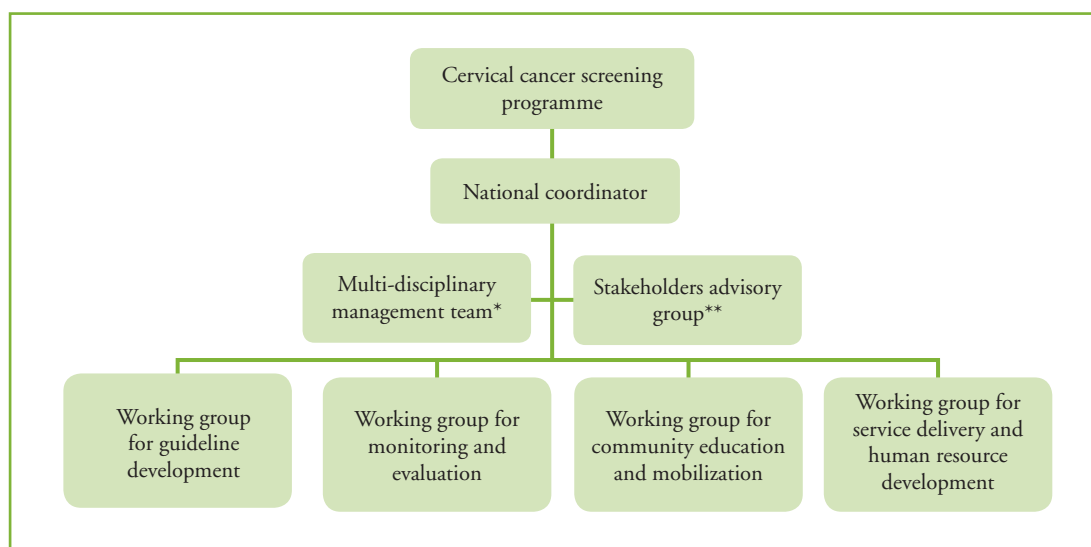
The process involves the following actions:

1. Establishment of programme planning and management structure (Fig. 3.4)

- A programme management structure at national or sub-national level with clearly defined responsibilities and accountability is essential for planning, implementation and monitoring of a cervical cancer screening programme.

- A multidisciplinary management team (MMT) has to be formed by the Ministry of Health as the core team responsible for the programme planning and implementation. The MMT may be supported by a stakeholders advisory group (SAG) comprising representatives from appropriate stakeholders.
- A national programme coordinator at the ministry of health should be identified.
- The key responsibilities of the MMT, SAG and programme coordinators are described in later sections.
- The programme coordinator can form smaller working groups with specified responsibilities (development of programme protocol and guidelines, monitoring and evaluation, community education and mobilization, training, service delivery, etc.) for planning and implementation of various aspects of the programme. Such working groups can include experts other than members of MMT and SAG.

Fig. 3.4: Cervical cancer screening programme planning and management structure



*Representatives from cancer control programme, reproductive health programme, health information division, Ministry of Education and Finance

**United Nations agencies, civil societies, women's groups, elected representatives, key opinion leaders, representatives of academic and professional organizations

Key responsibilities of the multidisciplinary management team (MMT):

- Developing a national cancer control plan
- Preparing a detailed budget for all components of the programme
- Assessing quality of services through monitoring and supportive supervision and implementation of corrective action
- Documenting and addressing any misinformation and miscommunication among the service providers
- Ensuring appropriate logistic and technical support to the programme coordinator

Key responsibilities of stakeholders advisory group (SAG)

- Providing support and inputs to the MMT to develop a new programme and/or strengthen the new programme
- Periodic review of activities and suggesting measures to improve quality
- Formulating the working groups to focus on specific elements of national programmes in consultation with MMT
- Participating in national or regional meetings as planned by MMT

2. Initiating the process of developing a programme plan and protocol

- If the existing cervical cancer screening plan is outdated or if the programme is not achieving the expected outcomes, a realistic and efficient plan has to be developed aligned to the national policy and overall cancer control plan.
- If there is no previous cervical cancer control plan written for the country or region, the process preparing a plan should be initiated.
- To begin with, it is essential to acknowledge that cervical cancer causes significant morbidity and mortality and systematic organized action is required.
- Leaders with decision-making authorities need to be identified and urged to take action.
- The multidisciplinary programme management team has to take the responsibility of starting the planning process.
- Mapping and assessment of the following resources is to be done at the preparatory phase:
 - protocols, guidelines, manuals, etc;
 - physical resources (infrastructure, technologies, consumables);
 - human resources;
 - financial resources;
 - health information systems;
 - regulations and legislations.

3. Drafting of a cervical cancer screening action plan

- An action plan needs to be drafted to achieve identified programme goals and objectives. The essential components of the action plan should be:
 - definition of the target population for cervical cancer screening;
 - screening test, screening intervals and follow-up procedures including treatment;
 - estimates of case load of women requiring screening and post-screening care;
 - strategies for community education and information, screening, diagnostic and treatment services;

- service delivery strategies focusing on the geographical location of services, infrastructure, supplies and equipments;
 - identification of screening, diagnostic and treatment service delivery points;
 - well defined programme monitoring and supervision plan;
 - plan to ensure steady supply of trained human resources to provide quality services;
 - programme budget and resource mobilization plan.
- The new cervical screening plan has to be integrated with the existing health service delivery infrastructure to ensure better utilization of available resources.

4. Refining the draft

- The proposed draft of a cervical cancer screening plan requires to be reviewed by various stakeholders and working groups for their suggestions on strategic directions and initiatives to make the programme a sustainable one
- The suggestions and feedback need to be suitably grouped according to the programme objectives and the draft should be refined after incorporating the changes.

5. Finalizing the draft

- Finalization of the refined draft of cervical cancer screening plan involves:
 - distribution of draft among competent experts and technical working groups for review;
 - organizing validation workshops;
 - consolidating reports obtained from experts and others involved;
 - revision and finalization of the draft based on the inputs.

6. Dissemination of the final plan

It is necessary to create a network through which widespread dissemination of the finalized cervical cancer screening policy and protocol can take place. Creating awareness among policy-makers, health administrators and NGO representatives and other stakeholders through advocacy workshops and meetings are effective means of promoting dissemination. The plan can be shared with professional bodies to educate clinicians and other healthcare providers. Accessibility to the plan can be improved by placing it on relevant websites.

7. Budgeting to initiate and maintain an implementation plan

Realistic estimation of cost to implement the programme plan at a local level needs to be worked out so that every service delivery site has adequate resources to cater to expected numbers of women. Budgetary allocations should have provisions for the following:

- community mobilization;
- training of healthcare providers;
- screening services;

- diagnostic and treatment services;
- monitoring and evaluation;
- training of service providers;

Depending on the existing resources, the programme may be started as a pilot project and services may be scaled up later as additional resources become available.

8. Adoption of the plan and launching of the programme

The final plan has to be endorsed by the responsible health authorities and adopted as the final strategy to implement the cervical cancer screening programme. Prior to launching of the programme, it is necessary to ensure that the services offered according to the final plan can be effectively delivered and sustained. All groundwork regarding procurement of equipment and supplies, training of service providers and quality assurance measures should be completed. A formal launch should be done by organizing an event or a large scale meeting in the presence of policy-makers, stakeholders, health staff, community representatives and media. It is important to start service delivery soon after formal programme launching.

3.4.11.3 Strategic planning step 3: moving from policy to implementation

This will be discussed in the next chapter.

Group learning activities

Case study

The facilitator will briefly discuss the cervical cancer control programme in Bangladesh and then divide the trainees into groups and assign each group to perform one of the following tasks:

- a) Study the disease burden of cervical cancer in Bangladesh
- b) Critical evaluation of the process of initiating the programme as a pilot and gradual scaling –up
- c) Scope for similar exercise in their respective country(s). All groups will have to make presentations at the end.

National cervical and breast cancer screening programme in Bangladesh

A pilot project to evaluate the feasibility and effectiveness of population based cervical cancer screening was launched in Bangladesh in 2004. The United Nations Population Fund (UNFPA) in collaboration with the Director General of Family Planning (DGFP) organized an orientation meeting to develop a strategic plan for the pilot project on 16 October 2003. Representatives from the Government of Bangladesh, gynaecologists, pathologists, nongovernmental organizations (NGO) and health professionals from different parts of the country participated in the meeting. After deliberating on the several options, it was decided that visual inspection of cervix after application of acetic acid (VIA) was a feasible method for screening for cervical cancer in Bangladesh. UNFPA agreed to fund the pilot project.

The pilot programme was implemented in 16 districts to screen ever-married women of 30 years of age or above with VIA. A total of 113 service providers (including gynecologists, nurses and family welfare visitors) were trained at Bangabandhu Sheikh Mujib Medical University (BSMMU), which was the nodal centre for training. A total of 11693 women were screened over one year in the maternal and child welfare centres (MCWC) and the district hospitals of 16 districts. The referral chain was developed by linking each VIA centre with a medical college having colposcopy and treatment facility. The results of the pilot project were critically evaluated by the same group that was involved in planning the project. The group decided to scale-up the project to all the districts in phases.

The Government of Bangladesh formally launched the **National Cervical and Breast Cancer Screening Programme** in 2006 by gradually scaling up the pilot project to a national level programme. Presently the programme is running in 320 screening centres spread across all the 64 districts of Bangladesh. Until December 2013, a total of 691 423 women were screened for cervical cancer in the country. Though the coverage of the total target population (approximately 3 000 000) is still quite low, a steady increase in the number of women screened is observed every year.

Further information on the Cervical Cancer Screening Programme in Bangladesh may be obtained from:

- http://globocan.iarc.fr/Pages/fact_sheets_population.aspx
- Basu P et al. Evaluation of the National Cervical Cancer Screening Programme of Bangladesh and the formulation of quality assurance guidelines. *J Fam Plann Reprod Healthcare*. 2010 Jul;36(3):131–4.
- Nessa A, et al. Screening for cervical neoplasia in Bangladesh using visual inspection with acetic acid. *Int J Gynaecol Obstet*. 2010 Nov;111(2):115–8. doi: 10.1016/j.ijgo.2010.06.004. Epub 2010 Aug 2.
- Sankaranarayanan et al. Managing the changing burden of cancer in Asia. *BMC Medicine* 2014;12:3

Group discussion

The trainees will be asked to perform the following exercise for their own Country/region. One of the trainees will note the responses on a flip chart. Another trainee will summarize the discussion at the end. The exercise can be done in 2–3 separate groups to ensure participation of all trainees.

- **Identify the gaps in cervical cancer control in your own country/region:**
 - What is available?
 - What is desirable?
 - Gaps

	Core	Expanded	Desirable
1.			
2.			
3.			
4.			

- **Suggested interventions:**
- **Suggested key actions:**
 - 1.
 - 2.
 - 3.
- **Who are empowered to decide on the initiation of programme planning process?**
 - 1.
 - 2.
 - **How can they be approached?**

Multiple choice questions

1. Screening is defined as application of a test on:

- a) Children to decide their eligibility to have vaccination
- b) Symptomatic population to determine their suitability for chemotherapy
- c) Men and women who have been treated for cancer to detect recurrence
- d) An apparently healthy asymptomatic population to identify those with high risk of developing a particular disease

2. All the following statements are true for cervical cancer, except:

- a) Second most common cancer among Asian women
- b) More common in women who never had sexual relations
- c) Has a curable premalignant stage
- d) Mortality can be significantly reduced by systematic screening of women

3. Which of the following is not the screening test for cervical cancer?

- a) Pap test
- b) VIA
- c) Colposcopy
- d) HPV DNA

4. Which of the following statements is true about the screening programme?

- a) Effective if high coverage (nearly 80%) of population at risk is achieved
- b) In organized screening programmes, screening tests are offered to women who visit health facilities for different reasons
- c) Opportunistic screening has a high participation rate
- d) Organized screening programme is less cost effective

5. All are service delivery components of cervical cancer screening programme, except:

- a) Community mobilization and education
- b) HPV vaccination
- c) Screening services
- d) Diagnosis and/or treatment services

Answer key

1 – d

2 – b

3 – c

4 – a

5 – b

Module 4: Implementation of cervical cancer screening programme

4.1 Module overview

This module discusses the strategies to implement a cervical cancer screening programme at the national or sub-national levels in convergence with the existing health delivery infrastructure. It gives an overview of the challenges commonly faced during implementation of a screening programme and the steps to overcome them. Trainees will get further information on the subject from *Planning and implementing cervical cancer prevention and control programme: Manual for managers* by Alliance for Cervical Cancer Prevention.

4.2 Module contents

- Roles and responsibilities of a programme manager
- Implementation of cervical cancer screening plan
- Challenges in cervical cancer screening programme and how to overcome them
- Single and multiple visit approaches
- Organizing outreach services
- Developing and maintaining referral linkage
- Checklists:
 - Planning and implementing a cervical cancer screening programme
- Group learning activities:
 - Case studies

4.3 Learning objectives

By the end of this module, trainees would be able to:

- describe the specific responsibilities of a programme manager;
- plan the setting-up of cervical cancer screening services at various tiers of healthcare;
- list the challenges to cervical cancer screening;
- explain how to overcome barriers and ensure good quality services;
- explain the importance of ensuring linkage between different service delivery components and an effective referral system.

4.4 Key points for discussion

4.4.1 Roles and responsibilities of programme managers in a cervical cancer screening programme

A programme manager has a key role to play in effective implementation of a cervical cancer screening programme. His/her primary responsibilities are to ensure that:

- appropriate screening, diagnosis and treatment services are accessible to eligible women;
- effective functional linkages are established among various service components;
- adequate health education materials, supplies and functioning equipment are available for uninterrupted services at delivery points;
- service providers are appropriately trained and are adequate in number;
- services meet women's needs and expectations;
- clients' rights to continuity of care, dignity and confidentiality are maintained;
- appropriate mechanisms of programme monitoring and supportive supervision are established.

4.4.2 Implementation of a cervical cancer screening plan

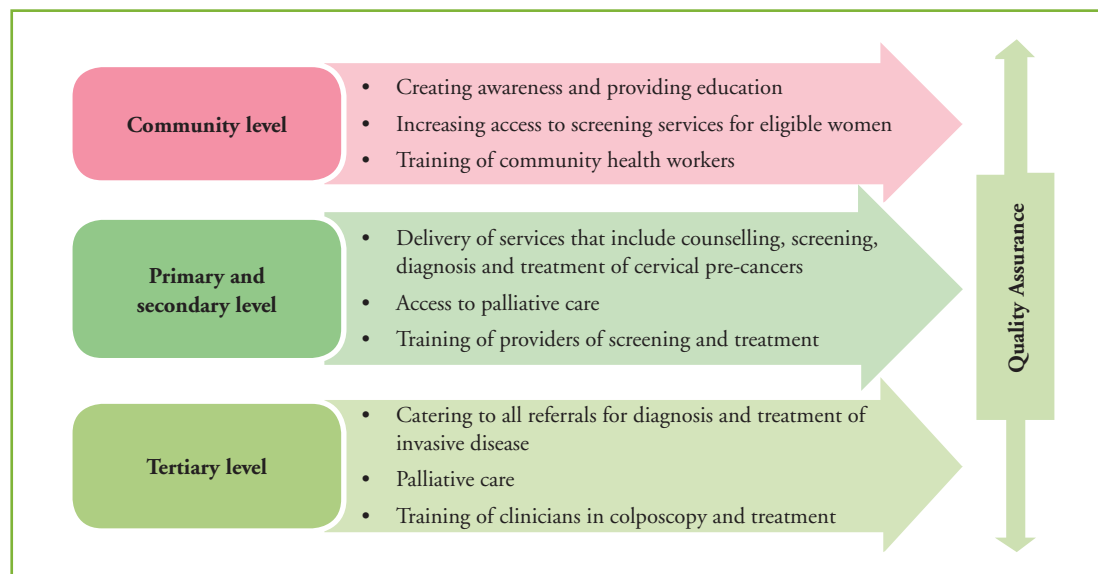
Implementation of a new programme plan has to ensure maximum access to quality cervical cancer screening and treatment services for the entire target population.

Effective implementation of the cervical cancer control programme involves:

- setting measurable and achievable objectives and sharing them with the entire team;
- capacity building of service providers at various levels;
- delivering screening, diagnostic and treatment services according to the programme protocol;
- establishing functional linkages among services for continuity of care;
- monitoring and supervising the performance of service providers to ensure quality of care;
- monitoring and evaluating the programme against defined process and outcome measures;
- providing community information and education;
- modification of the programme based on monitoring and evaluation results.

The cervical cancer screening programme should be implemented in convergence with an existing health service delivery system and integrated to the noncommunicable disease (NCD) control programme or reproductive healthcare programme. The organization of the different components of the programme at different levels of healthcare is shown in Fig. 4.1. Monitoring and quality assurance should be an integral part of the programme to be implemented at each level.

Fig. 4.1: Activities related to cervical cancer screening at different tiers of healthcare delivery system



4.4.3 Challenges in implementing cervical cancer screening

To achieve programme objectives, challenges need to be identified and addressed properly. The challenges commonly encountered in a screening programme are listed below:

- **At the management level (Ministry of Health)**
 - Lack of commitment and political will
 - Inadequate budgetary allocation
 - Inefficient programme management and lack of coordination
- **At the healthcare facility level**
 - Limited number of competent human resources
 - Poor healthcare infrastructure and services in general
 - Poor accessibility to health facilities due to location and lack of proper transport
 - Inappropriate monitoring and supervision
 - Irregular supply of consumables and lack of maintenance of equipment
 - Lack of a functional call–recall system
 - Cost involved, if any, for screening, diagnosis and treatment services

- **At the community level**
 - Competing health needs
 - Lack of awareness of necessity for screening in the absence of symptoms
 - Traditional beliefs and norms inhibiting discussion of diseases of the genital tract
 - Misinformation or negative attitude of community leaders, traditional care providers
 - Individual, social and cultural factors affecting health seeking behaviours of women
 - Lack of financial support for women for screening and loss of wages
 - Poor social empowerment of women

4.4.4 Overcoming challenges to ensure good quality services

An appropriately designed advocacy strategy targeting key policy-makers can ensure strong political and financial commitment to the programme. The details of planning and implementing advocacy strategies are discussed in Module 6.

Screening and treatment services should be made accessible to all eligible women to ensure high participation rate and compliance. The following strategies need to be adopted so that the quality of services is assured at different facilities:

- **Availability of trained providers:** The providers of different services related to cervical cancer screening (Table 4.1) need to be trained and certified. All the facilities should be adequately staffed to ensure continuity of services.
- **Preparedness of the facilities to provide screening services:** Each screening centre can estimate the expected number of women to be screened per week or month on the basis of the number of eligible population in the area and expected coverage to be achieved over 5 years. [If the total number of eligible women to be covered by the screening center is 10 000 and a target of 80% coverage is to be achieved over the next 5 years the monthly expected target is $(10\ 000 \times 0.8) / 5 / 12 = 133$]. Facilities should be prepared to handle the expected case load to deliver screening services. Adequacy of trained manpower, equipment and supplies to meet the anticipated screening load should be determined before initiating the services. Screening clinics should be located in areas convenient to the target population.
- **Improving access to diagnosis and treatment:** The screening services should have functional linkages with diagnostic and treatment facilities. The screen positive women who need further evaluation should get preferential and early dates at the diagnostic facilities. The diagnostic evaluation and treatment should be completed in a minimum number of visits to reduce drop-out rates and improve programme effectiveness. A system of active tracking of the positive and referred women will improve compliance.
- **Clean and efficient work environment:** Cervical cancer screening is for healthy women who can get discouraged at seeing a very busy and/or untidy clinic set up. Waiting time for the women should be minimized and the screening clinics should preferably be separate from regular out-patients of the clinic or hospital. The practices should focus on proper management of medical waste, decontamination and sterilization/high-level disinfection of used instruments and maintenance of general cleanliness.

- **Prompt and quality laboratory services:** Laboratories performing screening tests (Cytology, HPV DNA tests) and/or histopathology should have mechanisms to ensure delivery of reports within an acceptable time frame. The following good laboratory practices need to be enforced:
 - appropriate labelling and packaging of specimens;
 - locally feasible and efficient specimen transportation system;
 - use of standardized reporting formats and uniformity in reporting;
 - delivery of test results to the clients with specific advice in a timely manner;
 - standard quality assurance practices at the laboratories.
- **Improved facilities for follow-up:** All women treated for cervical pre-cancers are required to be followed up according to the programme guidelines. Repeat screening or diagnostic tests recommended for follow-up should be done at facilities convenient for the women to attend. A proactive approach to track women requiring follow-up will improve compliance.
- **Education and counselling of women:** Behaviour change communication (BCC) strategies (discussed later) need to be formulated to educate the entire community about the necessity of cervical cancer screening and improve their participation. Healthcare providers who are involved in delivery of screening services should receive proper training in counselling skills so that they can communicate effectively with clients. Using clear simple and specific messages on screening, diagnosis, treatment of cervical pre-cancers and cancers and follow-up are an integral part of cervical cancer screening services.
- **Services free of cost:** Ideally, screening services should be provided free of charge or there should be a mechanism of reimbursement of the expenses to all. In absence of all else, a mechanism should be in place to waive payment for financially disadvantaged women.

Table 4.1: Clinical service components of cervical cancer prevention and their providers

Service components	Healthcare providers
Education and counselling	Nurses, midwives, primary healthcare workers, other paramedical workers, clinicians
Screening (VIA, HPV test)	Clinicians, nurses, midwives, primary healthcare workers and other paramedical workers
Colposcopy and cervical biopsy	Clinicians (gynaecologists, nonspecialist clinicians) and nurses
Cryotherapy	Clinicians (gynaecologists, nonspecialist clinicians) and nurses
LEEP	Gynaecologists, nonspecialist clinicians
Cold Knife Conization (CKC)	Gynaecologists

4.4.5 Single visit approach

In a screening programme it is absolutely essential to ensure treatment of screen detected cases. The common barriers to access screening or treatment services, especially in rural or other underserved areas are long distances and poor communication to health facilities, cost of transport, possibilities of losing wages at the workplace, etc. Adopting a strategy to reduce the number of clinic visits required for screening, treatment and follow-up increases the uptake of services, improves compliance to follow-up and reduce programme costs. One such strategy is the single visit approach.

In this approach, screening and treatment of screen positive women are completed on the same day. Such an approach is feasible when screening tests provide results immediately or within a few hours. Visual screening methods like VIA provide instant results, allowing for treatment decisions to be taken immediately. The test positive women are treated in the same sitting without doing a colposcopic or histopathologic verification. This strategy is also known as screen and treat. Cryotherapy is the method of choice for treatment in such a scenario. Not all VIA positive women can be treated by cryotherapy and such women need referral to another facility for further management. The single visit approach ensures treatment of the majority of screen positive women and is cost-effective. Some of the women will be over-treated as VIA may be falsely positive in the presence of some benign conditions. Over-treatment is acceptable as cryotherapy is a simple and inexpensive procedure with minimal complications. The benefits to the woman outweigh the harm of over-treatment.

4.4.6 Multiple visit approach

In the multiple visit approach, screen positive women are required to attend the health facility at a later date for treatment/evaluation. This is also known as the screen, diagnose and treat approach. Major drawback of multiple visit approach is that women may fail to return for subsequent visits leading to decrease in uptake of diagnostic/treatment services and increased loss to follow-up. It is important to ensure minimum delay between an initial screening visit and subsequent visits for test results, confirmatory tests and treatment. Appropriate counselling should emphasize the importance of diagnosis and treatment. A reliable tracking system should be in place. During colposcopy if a high grade lesion (CIN 2 or CIN 3) is suspected, the colposcopist may decide to do the treatment (cryotherapy or LEEP) without waiting for the histology confirmation of the disease. This will avoid at least one additional visit and improve compliance to treatment.

4.4.7 Organizing outreach services for cervical cancer screening

Outreach screening services are offered close to the doorsteps of clients to increase participation and achieve high coverage. Such services may be organized on a temporary basis in a health centre, private clinic, premises offered by voluntary organizations, etc. The dates and the timings are decided beforehand depending on the convenience of the women. These services are particularly beneficial to underserved women residing in remote rural areas. Screening tests and cryotherapy can be performed at outreach clinics. Organizing outreach clinics requires detailed planning, focusing on the following aspects:

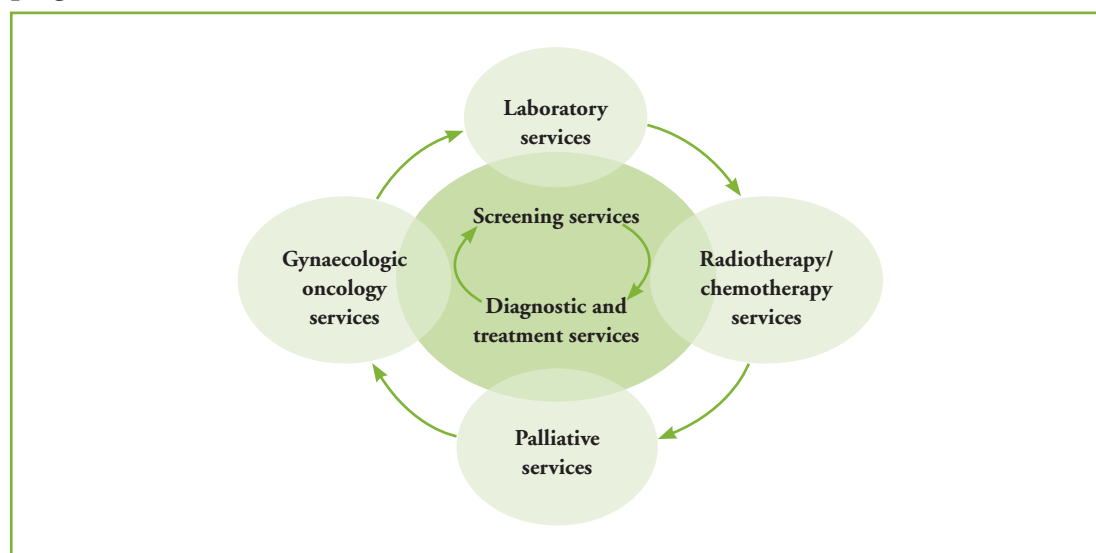
- identification of location and availability of clinic space;
- willingness and participation of local community leaders and volunteers;

- planning for communication of promotional activities;
- scheduling of dates;
- organizing a team of trained healthcare providers to provide service at the clinics;
- organizing transport for the team and necessary equipment and supplies (including those required for infection prevention);
- coordinating with referral facilities for diagnostic and treatment services;
- ensuring that women requiring further investigations or treatment are supported to reach the referral facility.

4.4.8 Developing and maintaining a referral linkage system

Linking of cervical cancer screening services with appropriate referral facilities is crucial for effective functioning of the programme (Fig. 4.3). Even in a screen and treat programme nearly half the screen positive women will require referral to a colposcopy and treatment centre. It is essential to identify the referral facilities for each screening centre so that women can be given clear directions about where to go. If necessary, the capacities of some of the referral facilities may be augmented to ensure appropriate management. Ideally, the linkage should be two-way for efficient client management and continuity of care at all levels. Oncology centers and palliative care facilities are integral parts of the referral chain.

Fig. 4.2: Schematic diagram of linkage of services for an effective cervical cancer screening programme



Programme managers can use the following checklist for guidance while planning and implementing a cervical cancer screening programme.

Skills Checklist: Planning and implementing a cervical cancer screening programme		
Steps		Action Taken
Policy Development		
1.	Political commitment obtained	Yes/ No
2.	Necessary resources identified and allocated	Yes/ No
3.	A programme coordinator with mandate, authority, and resources to direct the programme designated	Yes/ No
4.	Key stakeholders identified and engaged	Yes/ No
5.	Situational analysis conducted	Yes/ No
6.	Policies and guidelines developed/already exists and reviewed	Yes/ No
7.	Support obtained for new policies	Yes/ No
8.	Guidelines include evaluation of screening and treatment methods and approaches	Yes/ No
9.	Guidelines include target age group for screening	Yes/ No
10.	Guidelines include frequency of screening	Yes/ No
11.	Guidelines include desired population coverage	Yes/ No
12.	Guidelines include the level of providers to perform screening and treatment	Yes/ No
13.	Guidelines specify whether a programme will be vertical or integrated	Yes/ No
Planning the programme		
14.	A management team	Yes/ No
15.	Local stakeholders identified and engaged	Yes/ No
16.	Local needs assessed	Yes/ No
17.	Programme action plan developed	Yes/ No
18.	Action plan includes screening coverage goals	Yes/ No
19.	Budget prepared and resources allocated according to the programme action plan	Yes/ No
20.	Action plan includes estimated treatment case load	Yes/ No
21.	Action plan includes review of service delivery strategies	Yes/ No
22.	Action plan includes training plan for service providers	Yes/ No
23.	Action plan includes information and education strategies	Yes/ No

Preparing to launch the programme		
24.	Service delivery systems established	Yes/ No
25.	Programme materials developed	Yes/ No
26.	Community, stakeholders, and staff oriented to the new programme	Yes/ No
27.	Provider training and deployment done	Yes/ No
28.	Equipment and supplies procured and distributed	Yes/ No
29.	Inaugural event planned to launch the programme	Yes/ No
30.	Systems for quality management established	Yes/ No
31.	Quality management includes capacity building	Yes/ No
32.	Quality management includes setting up the system for supervision	Yes/ No
33.	Quality management includes defining the quality indicators	Yes/ No
34.	Quality management includes setting up the information system	Yes/ No
Implementation		
35.	Community information and education organized	Yes/ No
36.	Clinical services delivery organized and linkages between services ensured	Yes/ No
37.	Mechanisms in place to monitor and supervise the work of providers	Yes/ No
38.	Mechanisms in place to monitor and evaluate programme performance and outcomes	Yes/ No
39.	Provisions exist to modify the programme based on monitoring and evaluation results	Yes/ No

Group learning activities

Case study

The case study on the cervical cancer screening programmes of Bhutan highlights the common barriers to implementation of cervical cancer screening programmes in low and middle income countries. The facilitator will ask trainees to:

- a) identify the barriers faced by the screening programme in Bhutan;
- b) list the steps taken to overcome these barriers;
- c) discuss if these barriers exist in their own countries/regions.

Screening for cervical cancer in Bhutan

A situational analysis revealed that:

- very few hospitals were doing pap smear (<3 000 smears per year in the country);
- evaluation of the cytology slides could be done in one centre only in the country;
- reporting time was long;
- more than 30% of the cytology reports were unsatisfactory;
- reports were often not even collected by the woman and there was no mechanism to ensure delivery of reports to them;
- no protocol for screening and treatment was in place;
- many women were advised unnecessary hysterectomy even on minor abnormalities detected on pap smear cytology.

National Cervical Cancer Screening Programme (cytology based) was launched in October 1999.

A committee was formed comprising gynecologists, pathologists, cytotechnicians, auxiliary nurse midwives and representatives of Reproductive Health Programme of Ministry of Health to coordinate the programme.

The National Screening Programme ensured that:

- the screening protocol was developed;
- all levels of service providers followed the screening protocol and treatment guidelines;
- screening was linked to colposcopy and treatment (LEEP and cryotherapy);
- more cytology centres opened by training more cytotechnicians;
- reporting time was shortened;
- unsatisfactory smear rate came down to less than 5%.

The screening programme was introduced in a step-wise manner

- The preparatory phase, included capacity building, procurement of necessary equipment and instruments and infrastructure development.
- A pilot programme was launched in three districts (from 2001 to 2004) to study feasibility.
- The lessons learnt from the pilot programme were analysed and appropriate modifications were made to the protocol.
- The improved National Cervical Cancer Screening Programme was launched in 2006.

Scaling-up of the screening programme

- Cervical cancer screening has been integrated into the existing maternal and child health or reproductive health clinics.
- Auxiliary nurse midwives (ANM) in the districts are trained to obtain cervical smear for cytology and also to do VIA in a five-day-long training programme.
- Out-reach clinics (mobile camps) are organized in different districts and screening is provided by the ANMs.
- The ANMs take pap smear from every woman. Additionally, VIA is done on women aged 30–45 years.

Present situation

- More than 20 000 women are screened per year (total female population in Bhutan approximately 350 000).
- There are 13–laboratories providing cytology services (pathologists available in 2 centres).
- Quality assurance for cytology is in place.
- Cervical screening is being conducted in all hospitals and many basic health units.
- It is done once a week on fixed days in most of the smaller hospitals and BHUs.
- Colposcopy and LEEP/cryotherapy services have been set up in four centres.
- Women with abnormal smears are given prior appointment and colposcopy on fixed days.
- According to the latest National Health Survey, coverage for pap smear is 45% in rural and 50% in urban areas.

Problems faced

- Non-availability of adequate number of female health workers affected the programme.
- Cervical screening programme has to compete with many other national programmes and often takes a back-seat.
- Reporting time in the districts is still more than a month.
- The programme has been unable to increase coverage
- Impact on the disease incidence and mortality is still unknown.

New initiatives

- HPV vaccination being done for 12-year-old girls since 2010
- Population based cancer registry established in July 2014

Information provided by Dr Ugyen Tshomo, Technical Advisor to the Cervical Cancer Screening Programme, Bhutan

Multiple choice questions

1. The cervical cancer screening activities at primary and secondary levels of a healthcare delivery system are all, except:

- a) Delivery of services that include counselling, screening, diagnostic tests and treatment of cervical pre-cancers
- b) Referral to the oncology centres for treatment of invasive cervical cancers
- c) Training of the gynaecologists to do colposcopy
- d) Training of providers for screening and treatment

2. The following are challenges in implementing cervical cancer prevention services at the community level, except:

- a) Women always prefer to go to a secondary or tertiary care centre for preventive health services
- b) Lack of awareness about necessity of screening
- c) Poor social empowerment of women
- d) Traditional beliefs and norms inhibiting discussion about diseases of the genital tract

3. The following are advantages of screen and treat approach, except:

- a) Reduces number of visits to healthcare facilities
- b) Over-treatment due to false positive diagnoses of screening tests
- c) Reduces referral rate
- d) Increases compliance to treatment

4. The following statement is true for the multiple visit approach:

- a) Increases uptake of diagnostic and treatment services
- b) Decreases due to follow-up
- c) All screen positive women are referred for colposcopy
- d) Is cost effective

5. A screen positive woman requiring coloscopy/histology services should be referred to:

- a) Oncology centres
- b) Secondary/tertiary level of a healthcare facility
- c) Primary level of a healthcare facility
- d) None of the above

Answer key

1 – c

2 – a

3 – b

4 – c

5 – b

Module 5: Organizing training in a cervical cancer screening programme

5.1 Module overview

This module is designed to train programme managers to design and implement a sustainable training system in a cervical cancer screening programme. The module is intended to help them understand the concept of training needs assessment, various approaches to training, and process of planning and implementing training programmes

5.2 Module contents

- Role of programme manager in training of various service providers
- Planning of training activities for cervical cancer screening programme
- Approaches to implement training
- Preparation for a training course
- Checklists:
 - Assessment of training site readiness
 - Equipment and Supplies Required for the Training

5.3 Learning objectives

By the end of this module, trainees would be able to:

- define the role of a programme manager in organizing training of various service providers;
- describe the procedure and importance of conducting a training needs assessment;
- list the steps for planning and implementing a training programme;
- Plan and prepare for a training course.

5.4 Key points for discussion

5.4.1 Role of programme managers in training of service providers

The objective of training in a cervical cancer screening programme is to generate adequate trained and competent human resources to deliver all essential services while maintaining the quality performance standards. Programme managers are required to initiate a training programme that would create a pool of expert facilitators and service providers. To ensure sustainability of the process, the training should be incorporated into the existing reproductive health training network. The major responsibilities of programme managers in cervical cancer screening training are:

- performing training needs assessment;
- planning for the trainings;
- organizing training courses including refresher training;
- involving key stakeholders;
- ensuring coordination among individuals involved in planning and implementing training;
- ensuring continuous availability of facilitators and trained service providers;
- ensuring availability of committed resources;
- determining requirements for external assistance;
- ensuring adherence to performance standards and protocols after transfer of learning.

5.4.2 Planning of training activity for a cervical cancer screening programme

Training needs assessment (TNA) is essential to plan a training programme. The purpose of a training needs assessment is to identify the demand for trained providers and the existing gaps so that available resources can be directed at the greatest areas of need to generate a pool of competent service providers. TNA process involves the steps shown in Fig. 5.1.

Fig. 5.1: Steps of a training needs assessment (TNA)



In the context of a cervical cancer screening programmes, TNA focuses on:

- identifying the existing level of knowledge, attitude and skills of various categories of healthcare providers;
- recognizing gaps in the level of knowledge and skills;
- identifying institutions or other facilities to conduct trainings;
- identifying skilled facilitators available to impart training;
- selecting appropriate training materials and teaching aids.

Based on the results of TNA, trainings for cervical cancer screening should be planned in accordance with the country's policies and service delivery guidelines. Programme managers have the responsibilities to:

- identify providers to train for each component of the programme;
- define the type of training required for various categories of providers;
- estimate the training load depending on the screening coverage target;
- identify the facilitators for each category of providers and ensure their availability;

- mobilize available resources for initiating and sustaining training activities;
- define the contents of training for each category of providers (Table 5.1);
- identify the training sites as per the training site readiness checklist;
- determine the timing and duration of training for each individual category of training;
- arrange adequate training materials;
- arrange for transfer of learning soon after training;
- set a timeline for planning training activities;
- address other administrative arrangements (e.g. travel costs, per diem, etc.);
- ensure timely availability of release letters to potential facilitators and trainees from their respective facilities.

Table 5.1: Training topics based on the component of the programme and service providers

Component of programme	Suggested service providers	Broad training topics
Community awareness and education	Community health workers and health volunteers	General information on cervical cancer prevention, importance of screening and methods of screening, counselling and recalling screen positive women
Cervical cancer screening	Nurses, midwives, other paramedical workers, physicians	Screening protocol, anatomy and physiology of female genital tract, natural history of cervical cancer, counselling, screening tests, infection prevention practices
Diagnosis	Gynaecologists, physicians, nurses	Colposcopy in addition to all the topics for cervical cancer screening
Treatment of cervical pre-cancers by cryotherapy	Gynaecologists, physicians, nurses, paramedics	Cryotherapy in addition to all the topics for cervical cancer screening
Treatment of cervical pre-cancers by LEEP	Gynecologists, physicians	LEEP, cold knife conization in addition to all the topics for cervical cancer screening and colposcopy
Monitoring and evaluation	Programme managers, information systems managers	Concept of screening and screening programme, quality assurance, programme monitoring, data management, health information system
Laboratory procedures	Pathologists and technicians	Cervical cytology, HPV DNA testing, processing of biopsy samples, laboratory quality assurance

5.4.3 Approaches to implement trainings in a cervical cancer screening programme

Depending on the training load, timing of training, availability of facilitators and financial support an approach may be selected to organize training from among:

1. Cascade training approach where training is imparted through several layers of facilitators until it reaches the final target group. For example, a select group of facilitators are identified for the training of facilitators training. These facilitators are trained as master facilitators by an external facilitator (regional, national). These master facilitators in turn are involved in the training of other service providers and also identify master-facilitators from the trainees, thus building a large pool of competent providers and facilitators and ensuring sustainability of training.
2. Facilitators of a particular region/district will train service providers of the area using existing training materials. In this approach, all service providers are trained by a single facilitator or a group of facilitators maintaining a uniform standard. Using this approach takes a longer time for capacity building of a defined area.
3. Training of service providers of a defined area may be out-sourced to an external training organization. While this approach ensures standardized training, it does not help in building the training capacity of the programme.

5.4.4 Preparation for a training course

a) Preparatory activities

- Set the training objectives and components
- Consult the facilitators' and the trainees' manuals for the selected training course
- Identify the intended trainees and the facilitators
- Arrange for funds
- Decide on the duration of training and batch size
- Procure adequate training materials and teaching aids
- Send information to participants (if necessary through the ministry of health) giving them adequate time to plan their leave and travel

b) Identifying a training site and assessing its readiness

Select a suitable training site and ensure that the site is prepared for conducting the particular training course. The readiness of a proposed training site can be assessed by the programme manager or a competent person designated by him/her using the checklist provided in Table 5.2.

Table 5.2: Checklist for assessing training site readiness:

Facility/ Item		Number where applicable	Functional Yes/No/NA	Remarks
Provision of clinical services				
1.	Service requirements depending on the type of training (e.g. VIA clinic, colposcopy clinic etc.)			
2.	In-patient admission facilities, if required			
Infrastructure for classroom teaching				
3.	Class-room with minimum seating capacity to accommodate the stipulated number of trainees, 2–3 facilitators and 1–2 observers			
4.	Class room should be well-lit and ventilated			
5.	Lights and fans or air-conditioner should be in working condition			
6.	Audio-visual facilities in classroom			
7.	Electricity (sockets and extension cords)			
8.	Toilet facilities			
9.	Drinking water supply			
10.	Electrical power backup			
Training aids				
<i>a) Audio-visual aids with accessories</i>				
11.	LCD Projector			
12.	TV Monitor or projection screen			
13.	Microphone			
<i>b) Other teaching aids</i>				
14.	Flip chart with stand			
15.	White board			
16.	Highlighters, marker pens and duster			
17.	Staplers, stapler pins, punching machine, scissors			
18.	A4 size plain papers			
19.	Coloured sticky labels, cellotapes			

<i>c) Computer facilities:</i>			
20.	Computers accessible to trainees		
21.	Internet facility accessible to trainees		
22.	Printer		
23.	Photocopier		
Library facility for trainees			
Attitude of facility staff for training			
24.	Willingness of facility manager/in-charge to make the facility a training site for cervical cancer screening and treatment		
25.	Potential facilitators among service providers willing to train		
26.	Other service providers willing to support the activities		
Availability of infrastructure, equipment and supplies for clinical services			
27.	Clinic and counselling areas well-lit and ventilated		
28.	Curtains/screens on windows and doors for privacy		
29.	Space and stools/chairs for counselling		
30.	Examination tables with mattresses, sheets and pillows		
31.	Focusing light		
32.	Equipment, instruments and supplies for colposcopy		
33.	Equipment and supplies for treatment		
34.	Infection prevention facilities		
35.	Forms, referral cards and registers		

Final assessment: Site ready

Needs additional facilities as listed in remarks column

Signature of person assessing readiness of site:

c) Selecting a course coordinator at the training site who will have the following responsibilities:

1. For classroom training

- a. Checking the audio-visual system for proper functioning
- b. Checking the availability of all training aids
- c. Ensuring that sessions are conducted as per schedule
- d. Do the introduction of the course
- e. Oversee administrative aspects including record maintenance
- f. Checking for general facilities like running water, washrooms, power back-up, etc.

2. For clinic-based training

- Checking for availability of adequate number of cases for demonstration, preparing a list and getting informed consent from
- Engaging the nursing and other staff at the clinical facility for the training
- Checking for the functioning of all the equipment
- Checking for the availability of an adequate number of instruments and adequate amount of consumables
- Planning for allocation of the cases and the trainees to different practice stations

d) Ensuring equipment and supplies in adequate number and quantity before starting the course as per the following check list

Checklist for equipment and supplies required for the training

Item	Remarks
For classroom training	
1.	Folders for participants containing:
	<ol style="list-style-type: none"> a. Trainees handbook containing the modules for different training sessions b. Trainees evaluation sheets that each trainee has to maintain during the clinical practise duly signed by the facilitator after daily practise sessions c. CD-ROMs/flash drives containing the PowerPoint presentations, digital images, videos of the procedures, checklists, sample case record forms d. CD-ROMs/flash drives containing electronic copies of different manuals and practice guidelines e. Pen, pencil, eraser, sharpener f. Writing pad

2.	Name tags of trainees and facilitators	
3.	Attendance sheet for trainees and facilitators	
4.	Pens, pencils, paper note pads, staplers, punching machine	
5.	Laptop, LCD projector, extension cords, TV monitor or projection screen	
6.	Microphone, podium	
7.	Flip charts and stand, marking pens – various colours	
8.	White board, duster, chart papers, tapes for posting papers on boards, board pins	
9.	Power point presentations, images and videos for demonstration, flash cards	
10.	Print outs of pre- and post-test questionnaire, checklists, evaluation sheets, case record forms, consent forms	
11.	Certificates for trainees	
12.	Instruments for colposcopy/ LEEP for demonstration	
13.	For clinical sessions	
14.	For preparation of dilute acetic acid (5%) - glacial acetic acid, distilled water, glass bottles, measuring cylinder, labels	
15.	Lugol's iodine, Monsel's paste	
16.	Local anaesthetic (1% xylocaine with and without adrenaline), dental syringes or disposable syringes	
17.	10% formaldehyde, biopsy vials	
18.	Normal saline	
19.	Dry chlorine powder, water, plastic buckets and mugs, teaspoon, wooden stirrer	
20.	Ethylalcohol, gluteraldehyde solution	
21.	Examination gloves, cotton swabs, lubricant jelly	
22.	Focusing lamp, examination table	
23.	Colposcope	
24.	Electrosurgical unit, loop electrodes, smoke evacuation system	
25.	Cusco's self-retaining speculum, sponge holding forceps, instrument tray	
26.	Kidney trays, galipots	

27.	Self-retaining insulated vaginal speculum	
28.	Insulated vaginal side-wall retractors	
29.	Endocervical speculum	
30.	Endocervical curette	
31.	Punch biopsy forceps, sponge holding forceps	
32.	Needle holder, suture with needle	
33.	LEEP facilitator, animal tissues for simulated learning	
34.	Sterilizer	
35.	Consent forms, case record forms, evaluation sheets, client record card	
36.	Writing desk, tools, chairs, curtains for clinic doors and windows	

Note: Some of the items e.g. colposcope, LEEP equipment etc. are not required for VIA training

Multiple choice questions

1. Training needs assessment (TNA) involves all, except:

- a) Recognizing gaps in the level of knowledge and skills
- b) Organizing trainings courses
- c) Identifying institutions or other facilities for conducting trainings
- d) Identifying skilled facilitators available for imparting training

2. Which category of service provider should be primarily trained to generate awareness on cervical cancer screening in the community?

- a) Programme managers
- b) Physicians
- c) Community health workers
- d) Nurses

3. The following are the responsibilities of a course coordinator for clinic-based training, except:

- a) Overseeing administrative aspects including record maintenance
- b) Checking for availability of adequate number of instruments and adequate amount of consumables
- c) Checking for availability of adequate number of cases for demonstration
- d) Checking for the functioning of equipment

4. The training topics suggested for community health workers include all, except:

- a) General information on cervical cancer prevention
- b) Importance of screening and methods of screening
- c) Health information system
- d) Counselling and recalling screen positive women

5. The following statement is true for cascade training approach:

- a) External training organization is engaged to impart training
- b) Does not help in building of training capacity of the programme
- c) Takes longer for capacity building of a defined area
- d) Ensures sustainability of training programmes

Answer key

1 – b

2 – c

3 – a

4 – c

5 – d

Module 6: Social and behaviour change communication

6.1 Module overview

This module is designed to educate the programme managers on the significance of social and behaviour change communication and guide them to design interventions for improving health outcomes through correct communications approach. The module is intended to help managers understand the factors that influence uptake of cervical cancer screening, compliance to follow-up and health seeking behaviour in the community.

6.2 Module contents

- Definition of social and behaviour change communication
- Strategies for social and behaviour change communication
- Role of advocacy in a cervical cancer screening programme
- Role of community mobilization in a cervical cancer screening programme
- Strategies for community mobilization
- Principles of behaviour change communication
- Role of behaviour change communication in cervical cancer screening programme
- Group learning activities:
 - Case study

6.3 Learning objectives

By the end of this module, trainees would be able to:

- state the principles of social and behaviour change communication;
- state the principles of advocacy and its role in a cervical cancer screening programme;
- describe the principles of community mobilization and its role in a cervical cancer screening programme;
- explain the principles of behaviour change communication and its role in a cervical cancer screening programme.

6.4 Key points for discussion

6.4.1 Definition of social and behaviour change communication

Social and behaviour change communication (SBCC) is the systematic application of interactive communication processes to address the dynamics of social change. SBCC uses strategies that facilitate healthy norms and choices and remove the barriers to them. SBCC targets society as a

whole rather than its individual members. In some situations, advocacy or social mobilization for policy development may provide stronger support to an issue and bring more immediate change than campaigns targeting the individuals.

6.4.2 Strategies for SBCC

SBCC interventions aim to influence factors that push an individual or a group of individuals to tip over the barriers to bring in a social change. These factors are:

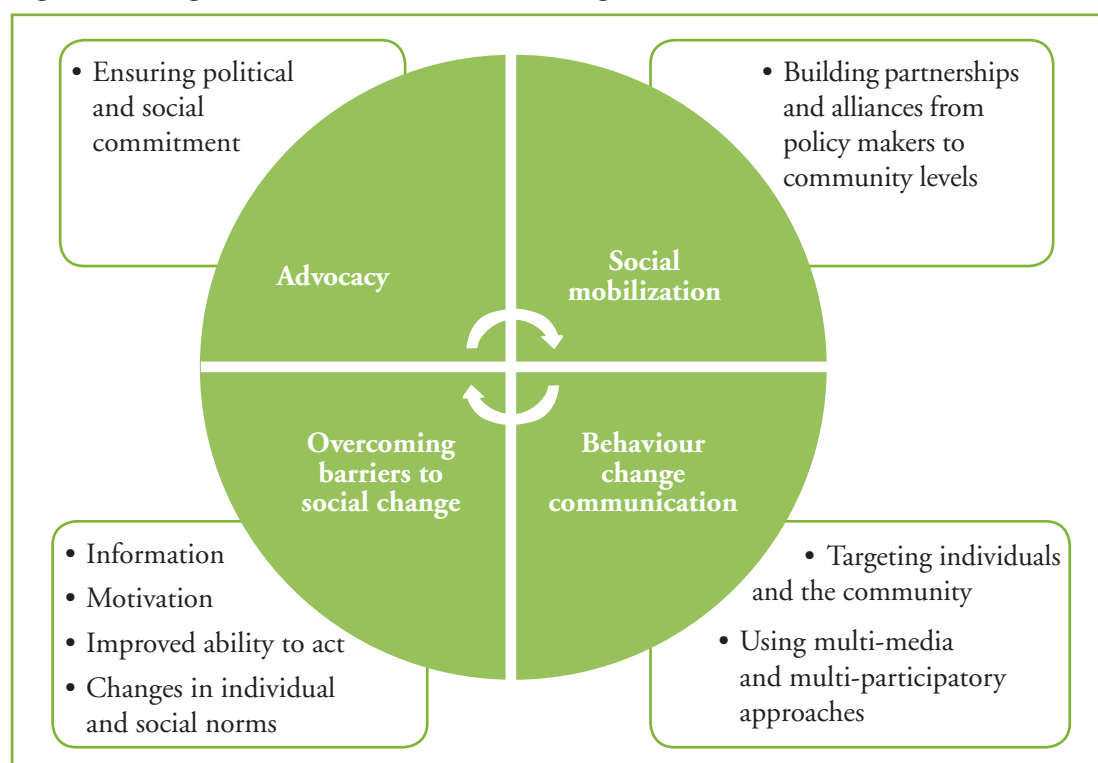
- information based on accurate knowledge;
- motivation that is dependent on attitudes and beliefs;
- ability to act to bring about social change;
- perceived socio-cultural and gender norms.

An SBCC campaign gradually builds a momentum in the target population to reach the tipping point when adoption of a changed behavior change by each individual becomes inevitable. A multi-sectoral approach of creating community awareness, dissemination of accurate information and educating opinion leaders can create such momentum for cervical cancer screening to be acceptable in the community.

SBCC uses three key strategies: (Fig. 6.1)

- Advocacy** – to raise resources as well as political and social leadership commitment to the programme
- Community mobilization** – for wider participation and coalition building
- Behaviour change communication** – for changes in knowledge, attitudes, and practices among specific audiences

Fig. 6.1: Strategies for social and behaviour change communication



6.4.3 Advocacy for cervical cancer screening programme

The purpose of advocacy is to empower policy makers to make informed decisions on programme needs, implementation and service utilization. Advocacy is also essential to ensure community participation and acceptance and generate a demand for services from within the community. A well-planned advocacy effort can get political and financial commitments from policy makers and ensure active participation from all stakeholders to the cervical cancer screening programme.

Targets for advocacy and communication efforts:

- Senior decision-makers and advisors in relevant government sectors
- Members of civil society organizations
- Members of academic institutions, and professional associations related to gynecology and obstetrics, public health, pathology, oncology etc.
- Administrators and managers at the ministry of health and hospitals
- Healthcare providers including physicians, nurses, midwives and school health workers
- Community leaders
- Media representatives.

An advocacy brief should be prepared to include focused and brief messages about country specific and regional data on cervical cancer incidence and deaths and also the fact that the disease is preventable through a comprehensive approach. (Box 6.1)

6.4.4 Community mobilization for cervical cancer screening programme

Community mobilization engages all sectors of the population in a community-wide effort to address a health, social, or environmental issue. It brings together policy-makers and opinion leaders, government functionaries, professional groups, religious groups, businesses, and individual community members. Community mobilization empowers individuals and groups to take actions that facilitate change. For implementation of a cervical cancer screening programme, community mobilization is an essential step. This helps mobilizing necessary resources, disseminating information, generating support and fostering cooperation across public and private sectors in the community for the programme. Community mobilization helps to achieve a high participation rate for screening and high coverage of the target population. This helps to dispel many myths and misconceptions and make the programme more acceptable to women.

Box 6.1: Sample advocacy brief for cervical cancer screening

Why cervical cancer screening programme is essential for our country

- Cervical cancer affects women at a relatively young age and is among the leading causes of cancer deaths among them. The human, social and economic costs of losing women in their prime are huge.
- In many of the countries in South Asia the number of women dying of cervical cancer is close to or more than those dying from complications of childbirth. While maternal mortality has substantially reduced due to pro-active measures, the number of women dying from cervical cancer has remained unchanged.
- Every cervical cancer death is unfortunate as the cancer can be prevented by systematic screening of adult women.
- Cervical cancer screening to detect the disease at a pre-cancer stage linked with treatment of the conditions is one of the most rewarding and cost-effective health interventions. Organized screening programmes have reduced cervical cancer incidence and mortality by 50–75% in various countries.
- Cervical cancer screening has been found to be as cost-effective as hepatitis B immunization or voluntary counselling and testing for HIV or malaria prevention with the use of bed nets.
- Screening and treatment facilities should be made accessible to all women belonging to a predetermined target age-group. The success of the programme will largely depend on achieving high participation rate of the target women and ensuring the availability of good quality treatment services to screen positive women. To ensure this, the capacity of the health system needs to be augmented and appropriate quality assurance measures should be instituted within the programme.
- The country has to adopt a comprehensive policy for organized cervical cancer screening. Sufficient resources must be allocated within national budgets and appropriate guidelines and service standards should be developed.
- A comprehensive cancer control programme will avoid untimely deaths of women, improve their quality of life, save the cost of treating women with advanced cancer and help the country to achieve Sustainable Development Goals

6.4.5 Steps of community mobilization

The basic steps of community mobilization involve the following:

- ***Establishing a community mobilization group***

The aim is to establish a group that can influence community mobilization activities. This usually consists of partners having a direct stake in the issue (e.g. healthcare providers), as well as influential groups and members of the community such as formal and informal leaders and religious and ethnic group leaders.

- ***Defining the problem***

The next step in community mobilization is to collect basic information about issues in community that directly or indirectly influence participation of the community in the screening programme. Knowledge, attitude and practices (KAP) survey gives an idea of the extent of the social and behavioural barriers and their underlying causes. For example in cervical cancer screening, women may avoid services due to the fear of getting a cancer diagnosis or due to the reservation against gynaecological examination. By identifying these problems and their causes, a clear statement regarding the problem and the education messages can be prepared.

- ***Designing strategies, setting objectives and selecting target groups***

Resources need to be mobilized from the community and other stakeholders to design strategies addressing the identified problem. Strategies should be target specific with well-defined objectives and aligned to the programme policy and protocol.

- ***Developing an action plan with a time line***

An action plan should link the general community mobilization plan with time-lines for the implementation of cervical cancer screening activities.

- ***Building capacity***

The existing capacity and resources to implement community mobilization should be identified. The gaps should be supplemented by capacity improvement of the community groups and other relevant stakeholders to conduct effective community mobilization.

- ***Identifying the partners***

there are various organizations and groups that work independently within the community to achieve similar goals. Therefore, it is important to identify relevant partners through a simple mapping exercise.

- ***Implementing the plan of activities***

The community mobilization action plan should be developed and implemented with all the partners. In the implementation process, a clear role for the partners should be defined and communicated to them.

- ***Monitoring and evaluation***

Monitoring and evaluation is the essential, element of community mobilization. It enables us to check whether the action plan has been implemented effectively.

Media for community mobilization

- Song, poem, story
- Poster, leaflet, banner, signboard, billboard
- Loudspeaker announcement
- Awareness rally
- Radio, television, film, newspaper
- Popular drama
- Incorporating messages in religious, social and political programmes

6.4.6 Principles of behaviour change

Individuals and communities can be persuaded through appropriate communication strategies to behave in ways that will positively impact their health. Behaviour change communication also aims to provide a supportive environment, which will enable people to initiate and sustain positive behaviours.

Behaviour change is based on the individual's perception of acquiring the disease and its severity on one-hand and his/her perception of relative cost-benefit of adopting a healthy behavior on the other hand (Fig. 6.2). The decision to change behavior and accept beneficial practices are also influenced by the following modifying factors:

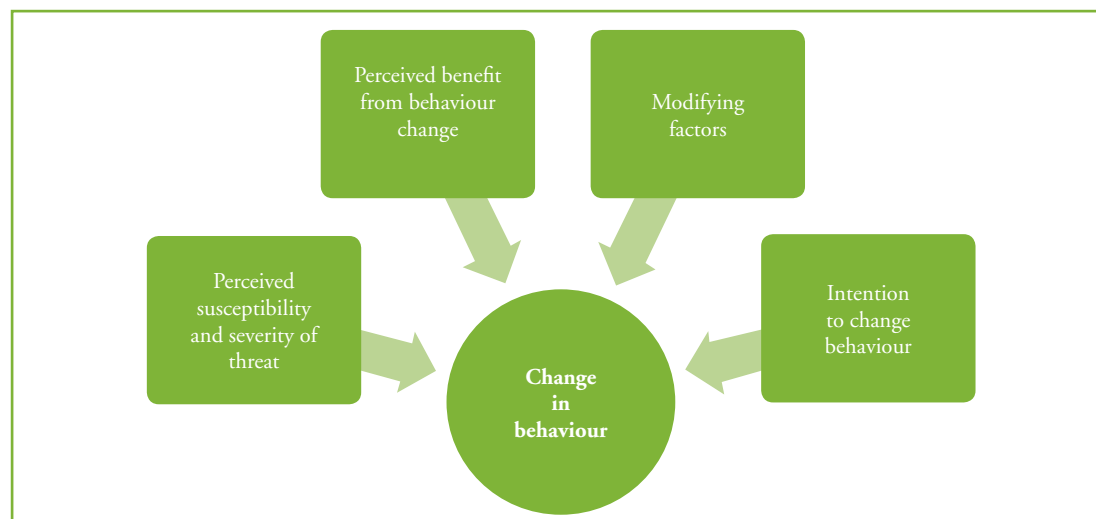
- Age
- Gender
- Knowledge
- Socio-economic status
- Previous experience

One of the primary determinants of behavior change is the individuals' intention to adopt the behavior, which in turn depends on:

- the individual's attitude towards the particular behavior;
- individual's perception of the social pressure to adopt or not to adopt the behavior;
- Individual's perceived ability to change the behavior.

Women in many societies are poorly empowered. They are unable to reach screening facilities due to several factors beyond their controls even if they are convinced of the health benefits of screening. An enabling environment has to be created through appropriate communication strategies so that close relatives of the women and society in general are supportive of their participation in the screening programme. Behaviour change communication addresses the socio-cultural context rather than passively educating only the target population.

Fig. 6.2: The health belief model for behavioural change



6.4.7 Role of behaviour change communication in a cervical cancer screening programme

Providing people with information and telling them how they should behave (teaching them) are not enough to bring about behavior change. Behaviour change is not only a matter of having information and making a personal choice. It also requires a supportive and enabling environment in the community and the society and is influenced by overall development and provision of appropriate health services.

There are several modifiable factors that prevent women from seeking cervical cancer screening services. These are misconceptions and myths surrounding cancer as a disease, lack of health seeking behaviour in general, fear of medical check-up, specially gynaecological examination, apprehension of getting a cancer diagnosis, etc. These issues can be best addressed through behaviour change communication. The attitude and beliefs of the partners and relatives of the women are also crucial to ensure the women's participation in the programme. The behaviour change communication strategy has to be targeted towards them as well. Non-compliance to treatment is also largely dependent on attitude and the beliefs of the women and their partners. A behaviour change communication strategy can bring about changes in the attitude and beliefs to make the women more compliant to treatment and follow-up advice after cervical cancer screening.

Ten Principles of SBCC

- Principle 1: Follow a systematic approach (e.g. planning)
- Principle 2: Use research, not assumptions to drive the programme
- Principle 3: Consider the social context
- Principle 4: Keep the focus on the client (s)
- Principle 5: Use theories and models to guide decisions (e.g. the socio-ecological model)
- Principle 6: Involve partners and communities throughout
- Principle 7: Set realistic communication objectives and consider cost-effectiveness
- Principle 8: Use mutually reinforcing materials and activities at many levels
- Principle 9: Choose strategies that are motivational and action-oriented
- Principle 10: Ensure quality at every step

Group learning activities

Case study

The anti-smoking campaign in Philippines is an example of social and behaviour change Communication effort in cancer control through advocacy, community mobilization and behaviour change communication. The trainees need to identify the SBCC strategies used in the campaign. They need to enumerate what SBCC strategies they will adopt to initiate/strengthen a cervical cancer screening programme in their own region/country.

Case study: BCC campaign against smoking in Philippines

Philippines has a very high incidence of lung cancer. Lung cancer is the number one cancer among men causing 25% of all cancer deaths. A survey revealed that 64.2% of the males in the country were smokers. The World Health Organization initiated the Tobacco Free Initiative (TFA) in 2003 and Philippines, along with more than 160 countries, signed the Framework Convention on Tobacco Control (FCTC). The FCTC limits the promotion, marketing, and smuggling of tobacco and tobacco products.

The Department of Health launched the Lung Cancer Control Programme (LCCP) and the main focus of the programme was an anti-smoking campaign. The campaign had three major components: public awareness; health education and legislative actions.

The LCCP initiated the 'Yosi Kadi', 'No sa yo' ('smoking is bad', 'It isn't cool to smoke') campaign in collaboration with the Departments of Education, Culture and Sports. Cancer prevention messages were included in school health education. National information and counselling centre to help the general public quit smoking was established. Statutory warning against hazards of smoking on the label of every pack of cigarettes was made mandatory. In October 2001, all the members of the Philippine Senate co-authored the Senate Bill 1859 that sought severe restriction on cigarette promotion and trade and smoking in public places. A total ban on tobacco advertisements was imposed and the new bill entitled any individual who acquired illness due to smoking to file civil law suits against the manufacturers or sellers of cigarettes for damages.

In addition, the Health Justice Philippines and the Department of Social Welfare and Development (DSWD) noted that second-hand smoke "is a form of violence against women" and that "smoking is the least explored among other forms of violence against women".

Source: Ngelangel CA et al. Cancer and the Philippine Cancer Control Programme. Jpn. J. Clin. Oncol. (2002) 32 (suppl 1): S52-S61.

Multiple choice questions

1. All of the following are influenced by social and behaviour change communication, except:

- a) Information
- b) Motivation
- c) Ability to act
- d) Resource mobilization

2. Which is not an approach for community mobilization?

- a) Loudspeaker announcement
- b) Awareness rally
- c) Home visits
- d) Signboard/billboard

3. What is the first step in community mobilization?

- a) Identify relevant partners
- b) Collect basic information about the issues in community
- c) Mobilize resources
- d) Build capacity

4. An individuals' intention to adopt the behaviour depends on all, except:

- a) Attitude towards the particular behaviour
- b) Perception of the social pressure to adopt or not to adopt the behaviour
- c) Socio-economic status
- d) Perceived ability to change the behaviour

5. All of the following fulfill the purpose of advocacy in cervical cancer screening, except:

- a) Empowerment of women
- b) Empowerment of policy makers
- c) Ensuring community participation
- d) Ensuring active participation from all stakeholders

Answer key

1 – d

2 – c

3 – b

4 – c

5 – a

Module 7: Counselling

7.1 Module overview

This module is designed to provide programme managers with an overview of the art and techniques of counselling women who attend the cervical cancer screening facilities for screening and treatment. Managers will not be required to perform counselling themselves. They should have a clear understanding of the concepts and procedure of counselling that will help them to organize services and perform supportive supervision. The module is meant to be used by trainees in conjunction with the *Comprehensive Cervical Cancer Control - Guidelines to Essential Practice (2nd Edition)*, WHO. For further reading trainees should refer to Chapter 3—Community Mobilization, Education and Counselling; Section 3.5- Counselling and Practice Sheets 3.4, 3.5, 5.1 and 5.7.

7.2 Module contents

- Necessity of counselling
- Being a good counsellor
- Steps of counselling
- Counselling messages
- Group learning activities:
 - Role play

7.3 Learning objectives

By the end of this module, trainees would be able to:

- describe the concept and importance of counselling;
- demonstrate the technique of counselling women prior to and after screening;
- demonstrate the technique of counselling the women prior to and after treatment of cervical pre-cancers.

7.4 Key points for discussion

7.4.1 Definition of counselling

Counselling is face-to-face, confidential communication in which the counsellor helps a client to make decisions and then to act on them. Counselling during cervical cancer screening is essential to educate and inform the women and help them to make informed decisions to undergo different procedures.

7.4.2 Necessity of counselling in cancer cervical screening

Women coming for cancer cervical screening need appropriate information about the disease, the tests they have to undergo and treatment procedures that may be necessary.

They need counselling so that they can make an informed decision about participation. Women in developing countries usually have limited knowledge about cancer cervix and its screening methods. There is a feeling of embarrassment at undergoing gynaecological check-ups and many are scared of the tests and procedures. Individual face-to-face counselling by health service providers is valuable in motivating women not only to avail screening, but also to receive treatment and undergo follow-up if the test results are positive. Low levels of information and poor communication between patients and health professionals may lead to negative psychological consequences in women with abnormal results. Adequate and appropriate information regarding the implications of positive tests and the availability of safe and effective treatment can help women overcome this negative feeling. Thus, counselling ensures women's compliance to available services, improves their morale and also raises their self-esteem by allowing them to decide for themselves.

7.4.3 Qualities of a good counsellor

A good counsellor should:

- Listen to what the woman has to say and encourage her to express her concerns without interrupting her.
- Let the woman know that she is being listened to and understood.
- Encourage the woman to ask questions and give her clear answers in a calm, reassuring manner.
- Ask open-ended questions (that begin with who, what, where, when, why, or how) to encourage the woman to give a more complete and meaningful response.
- Use simple language that the woman will not find difficult or embarrassing
- Avoid using medical terms as much as possible.
- Talk to the woman in a friendly way, develop a cordial relationship, and assure her that the conversation is confidential
- Use supportive nonverbal communication, such as nodding and smiling and maintain good eye contact all along
- Be sensitive to any cultural and religious considerations
- Give the woman written information (if available and appropriate) to remind her of the instructions.

Strategies for counselling

- Individual counselling
 - Ensures privacy
 - Allows responding to personal questions
 - Allows addressing specific needs
- Group counselling
 - Helps to raise general awareness about screening
 - Maximizes time
- Couple counselling
 - Enables the male partner to provide necessary support
 - Allows the woman to discuss matters freely with her partner

7.4.4 Tips for counselling

- A woman should be encouraged to discuss her problems and concerns. She should be reassured that her conversation with the counsellor or healthcare provider will be private and confidential.
- Women should be informed in advance of the type of physical examination (e.g. pelvic examination) or procedure (e.g. cryotherapy) that will be performed.
- Counselling should be carried out in an environment where privacy can be maintained
- During counselling, the woman should be informed about the role of each person in the room (e.g. healthcare providers, students, supervisors, researchers, and so on). The number of people in the room should be minimal and any interaction between health personnel present should be minimal.
- Women should be made as comfortable as possible. They should be given the opportunity to express their views about the service they receive.

7.4.5 Messages to be conveyed to a woman while counselling before VIA/HPV test

A woman who is interested in being tested by VIA/HPV test and undergo treatment, if necessary, should be given the following information:

- the cervix is a part of the uterus situated in the lower part of abdomen;
- cervical cancer is a preventable disease;
- risk factors and causes for cancer cervix;
- the role and importance of VIA or HPV testing, as applicable;
- procedures to be used, as well as their risks and benefits;
- steps of cryotherapy, if the VIA or HPV test is abnormal;
- the need for attending the higher facility, if required.;
- consequences of not being tested and/or treated;
- that she will have to give consent for the procedures.

Ensure privacy during counselling to protect the dignity of the woman and to encourage her to communicate freely.

7.4.6 Counselling a woman who has a positive VIA/HPV test and is referred for colposcopy

A VIA or HPV positive woman requires to be informed of her test results in a sensitive manner. She should be informed that she is being sent to a higher centre because the abnormality appears to be more serious and proper check-up with a colposcope is necessary. Colposcopy may be described as a specialized microscope used to visualize the cervix under magnification and confirm the diagnosis made by the VIA or HPV test. The woman needs to be informed of the possible need for biopsy. She should also be informed that if the colposcopy shows any abnormalities, treatment can be provided at the same visit by cryotherapy or loop electrosurgical excision procedure (LEEP) These procedures should be explained in simple language to the patient. Remind her that early detection of the pre-cancerous condition means it can be treated effectively.

Clear directions should be given to the woman about how to reach the colposcopy centre, the days of the week and time when colposcopy services are available and if there is any charge for the services. She should again be reassured that the condition is curable if she goes for the check-up without wasting any time.

Group learning activities

Role play by the trainees

Role play 1: Counselling a woman to undergo VIA

Participants and background situation for the role play

- Trainees should be selected from the group to perform the following roles:
 - Pushpa, a 40-year-old woman having two children, who attended the OPD of the district hospital as she often had backaches
 - Rakhi, a doctor who treats Pushpa for backache and also advises her to take a screening test for cervical cancer
 - Sheela, a nurse at the screening clinic
- The entire group, including the role players, should know the following background situation:
 - *Pushpa has been advised by Dr Rakhi to have a cervical cancer screening test known as VIA. Pushpa is not sure if this test will benefit her. She is curious to know more about the test. Dr Rakhi sends her to nurse Sheela who explains the details of VIA as a screening test.*



Focus of the role play

The focus of the role play is the interaction between Pushpa who has been advised to undergo VIA as a screening test for cervical cancer, and nurse Sheela who explains details about the test. While treating Pushpa for backache, Dr Rakhi asks Pushpa whether she knows about a test named VIA and if she ever had the test. When Pushpa tells her that she is not aware of any such test, Dr Rakhi informs her that all women above 30 years should have the test and advises her to go and meet the nurse named Sheela who would provide her with information about the test. Sheela greets Pushpa warmly and makes her sit comfortably. She asks if Pushpa has heard about the disease cervical cancer and screening tests such as VIA. Pushpa says that she has never heard of either the disease or the test. Sheela goes on to explain what cervical cancer is, its cause, women who are at risk of getting cervical cancer, and the necessity of screening tests like VIA test that can reduce the risk of getting cervical cancer. She explains that it takes approximately 10–15 years for cervical cancer to develop. The disease has a precancerous stage that can be detected by special tests like VIA. She informs Pushpa that even if cervical precancers are detected, they can be treated by very simple methods. Sheela reassures Pushpa that the test is painless, takes only few minutes and she will be informed of the test results immediately.

Time allotted for the role play: 10 minutes

Multiple choice questions

1. Counselling involves all except:

- a) Confidentiality
- b) Privacy
- c) Paraphrasing
- d) Use of medical terminology

2. Strategies for individual counselling involve all, except:

- a) Ensuring privacy
- b) Maximizing time
- c) Allowing responding to personal questions
- d) Allowing addressing of specific needs

3. A woman who seeks cervical cancer screening services should be informed about all, except:

- a) Nature of cervical cancer as a disease
- b) Risk factors of cervical cancer
- c) Screening tests available for other cancers
- d) Next steps if screening test is positive

4. During counselling prior to VIA, the client should be told about all, except

- a) Importance of VIA testing
- b) Available treatment options if VIA is positive
- c) Causes for cervical cancer
- d) Possibility of missing invasive cancer on VIA

5. Counselling messages for a screen test positive woman should include all, except:

- a) Treatment cost of cervical cancer
- b) Necessity for going to a referral centre for colposcopy
- c) Possibility of having a cervical biopsy
- d) Possibility of treatment at the same visit

Answer key

1 – a

2 – b

3 – c

4 – d

5 – a

Module 8: Ensuring quality improvement of services in cervical cancer screening

8.1 Module overview

This module is intended to help programme managers understand the importance of ensuring quality at each level of services related to cervical cancer screening. The module will facilitate learning of standard operating procedures to ensure quality of services and the roles of individual health provider to deliver efficient and safe services. The module is meant to be used by the programme managers in conjunction with the *Comprehensive Cervical Cancer Control–Guidelines to Essential Practice (2nd Edition)*, WHO. Trainees should refer to Chapter 2. Essentials for cervical cancer prevention and control programmes; Section 10.1. Programme implementation and Section 10.1. Programme monitoring and evaluation and Practice Sheet 10.1: Key performance and impact indicators of the manual for further reading.

8.2 Module content

- Ensuring quality of services by healthcare providers
- Programme monitoring and its necessity
- Indicators to monitor cervical cancer screening programme
- Quality assurance and quality control
- Framework for effective quality assurance
- Role of programme managers in quality assurance
- Supportive supervision
- Supportive supervision guidelines and tools
- Evaluation of programme performance
- Using evaluation results for quality improvement
- Group learning activities:
 - Case studies

8.3 Learning objectives

At the end of this module trainees would be able to:

- understand the importance of quality improvement and monitoring in a cervical cancer screening programme;
- list the different components of programme monitoring to implement efficient and safe service delivery;
- describe how to improve quality of services through programme monitoring and supervision;
- state the standard operating procedures to ensure quality of services and their individual roles.

8.4 Key points for discussion

8.4.1 Ensuring quality of services by healthcare providers

Quality of services can be ensured if they are performed according to the recommended standards and protocols adhered to at all times by all healthcare providers involved in the cervical cancer screening programme. Healthcare providers at different levels of the health delivery system are important stake holders in the programme. Facility managers must inform all service providers regarding the facility being a unit of performance in the larger national/regional programme and their roles to contribute to its success. (Box 8.1) Healthcare providers of all cadres in a facility need to work in coordination with each other and with the programme managers to ensure the safe and effective delivery of the services and make improvements if any gaps are identified.

Box 8.1: Role of healthcare providers in ensuring safe and effective services

All service providers in a screening programme must:

Keep knowledge and skills updated by participating in relevant trainings, refresher courses, and facility level periodic technical update meetings.

Deliver relevant screening, early detection and treatment services according to the national guidelines and service protocols.

Ensure providing the services in a timely manner maintaining confidentiality, privacy and client rights.

Adopt practices as and when updates are recommended.

Provide correct information to the individuals and community using the local language.

Ensure women avail referral services when needed and are appropriately advised.

Maintain equipment and ensure uninterrupted supply of consumables.

Follow infection prevention practices.

Maintain complete records of clients and update registers regularly.

Participate in review meetings, and continue quality services and improve them if gaps are identified.

8.4.2 Programme monitoring and its necessity in a cervical cancer screening programme

Programme monitoring is the continuous oversight of all activities related to the programme to ensure that services are delivered according to the plans and the programme achieves its objectives. Effective monitoring of a cervical cancer screening programme ensures promotion of good clinical practices and provides a framework for further improvement in quality of the services. The expected benefits of a cervical cancer screening programme, in terms of significant reductions in morbidity and mortality from cervical cancer, can only be achieved if quality is optimal at every step of the screening and treatment process.

8.4.3 Indicators to monitor a cervical cancer screening programme

To evaluate the performance of a programme a set of benchmarks or indicators are used. These indicators are classified on the basis of whether they intend to assess the process of screening, diagnosis or treatment (process indicators), the outcome of these processes (outcome or results indicator) or the final impact of the programme (impact indicators). For each of these indicators there is a standard or target against which the performance is assessed. Standards are pre-decided based on experience from earlier pilot projects, or similar programmes in other countries or based on the opinion of a group of experts. The standards may vary from programme to programme.

The **core or essential indicators** used to monitor and evaluate a cervical cancer screening programme are listed in Table 8.1.

Table 8.1: Core indicators to monitor and evaluate a cervical cancer screening programme

Indicator	Type of Indicator	Explanation	How to calculate
Screening rate	Performance indicator	Proportion of women in the target age group who were screened for the first time in a 12-month period	Number of women within the target age group screened for the first time in a 12-month period / Number of women within the target age group in the population x 100
Screening test positivity rate	Performance indicator	Proportion of women detected positive by the screening test in a 12-month period	Number of screen positive women in a 12-month period / Number of women screened in the same period x 100
Treatment rate	Performance indicator	Proportion of screen positive women treated in a 12-month period	Number of screen positive women treated in a 12-month period / number of women detected positive in the same 12-month period x 100
Coverage of target population	Outcome indicator	Proportion of eligible women who have been screened at least once. This indicator is measured through population-based surveys	Number of women in the target age group who have been screened at least once / Number of women in the target age group surveyed x 100
Age-specific cervical cancer incidence	Impact indicator	Number of new cases of cervical cancer detected in a defined population in a specified period of time	Number of cervical cancers detected in a specific age group / Number of women in the population x 100 000

8.4.4 Quality assurance and quality control

Quality assurance of any health programme ensures that the processes and systems are developed and adhered to in such a way that good quality services are rendered and the benefit to the target population is maximized. Quality Assurance (QA) is the process that refers to the tools or the series of measurements used to assess the quality of services and facilities. QA and QC are complementary to each other and these terms have replaced traditional terminologies like monitoring and evaluation.

The complete QA process for the cervical cancer screening programme involves:

- supportive supervision at various facilities;
- periodic evaluation of overall performance based on available data;
- analysis of the outcomes to compare them against predetermined standards (targets);
- dissemination and use of the results to maximize programme performance.

8.4.5 Framework for effective quality assurance

Quality assurance exercise leading to quality improvement is possible only when there is:

- a well-defined screening policy and a pragmatic protocol – conforming to evidence-based standards;
- a functioning system at all levels of service delivery to gather, store and disseminate health information;
- a system of supportive supervision to ensure adherence to performance standards by all providers;
- a capacity of local problem-solving implemented with the involvement of all providers;
- institution of remedial actions in a timely manner.

8.4.6 Role of programme managers in quality assurance

The programme manager may be responsible for the QA himself/herself or may have an independent QA manager/team. In either situation the programme manager is primarily responsible to ensure that the mechanisms of QA are in place and supportive supervision is conducted on a continuous basis by facility in-charges and periodically by external supervisors. The programme manager should coordinate with the facility in-charges to ensure that service providers are:

- delivering relevant screening, early detection and treatment services to eligible women, as prescribed by the national guidelines and service protocols;
- keeping knowledge and skills up-to-date by participating in relevant training and refresher training;
- following clinical practices as recommended in service protocols and adopting any changes made in the recommendations;
- providing correct information to the individual and community in clear terms using the local language;

- ensuring that services are provided in a timely manner and the women avail the referral services when advised;
- maintaining equipment and ensuring uninterrupted supply of consumables;
- following infection prevention practices as per protocol;
- maintaining records and registers meticulously so that monitoring indicators can be calculated to assess the programme.

By addressing clients rights and taking care of providers' needs (listed in Fig. 8.1) the programme manager can ensure continuity and quality of services resulting in high client satisfaction and participation in the programme.

However, quality assurance process is not the sole responsibility of the programme manager or the designated supervisors. It needs involvement of all categories of staff and everyone has to contribute.

8.4.7 Supportive supervision

Fig. 8.1: Quality and continuity of services can be ensured by addressing clients' rights and taking care of the providers' needs

Ensuring quality of services	
Address clients' rights Complete and accurate information Access to services Informed decision-making Safety of services Privacy and confidentiality Dignity and comfort Expression of opinion Continuity of care	Take care of providers' needs Good quality management Supervisory support Information, training and skills development Adequate supplies Equipment and infrastructure

Source: from Huezco C et al. Quality of care in family planning: Clients' rights and providers' needs. Advances in Contraception, 1993)

Supportive supervision is the sustained process of guiding, supporting and encouraging service providers to improve their performance so that they meet the defined standards of the programme. It is not a one-time event but a continued process of reviewing site-level data relating to population coverage, screening and treatment rates, quality of screening tests, loss to follow-ups and non-compliance rates, rates of complications of treatment, etc. The supervisory team has to work with staff of the health facility to solve any issues identified about the quality of the services rendered. The observed deficiencies are corrected by further training and skills development.

The guiding principles of supportive supervision are the following:

- The aim of supervision is to facilitate and improve, not finding faults at work.
- Staff should be complimented for work well done before pointing out deficiencies.
- The interaction with staff should be in a such manner so that they see and understand the same problem that supervisors can see.
- Problems should be analysed with the staff so that both the staff and team members gain good understanding of the underlying causes.
- Staff should be encouraged to suggest possible solutions to identified problems that will make them accept the solution more promptly.

8.4.8 Guidelines for performing supportive supervision

The guidelines for supportive supervision of a facility providing screening/diagnostic/treatment services in a cervical cancer screening programme are listed in Fig. 8.2.

Fig. 8.2: Guidelines to implement supportive supervision



8.4.9 Tools for supportive supervision

Certain forms and checklists are required to conduct supportive supervision of different facilities especially by external supervisors. Every programme has to develop these tools of their own depending on programme strategies and programme organization. One of these tools is a facility supervision checklist, a sample of which is shown in Table 8.2. The sample checklist is for a screening clinic performing VIA and cryotherapy. Similar checklists should also be designed for colposcopy clinics and laboratories involved in the programme.

Table 8.2: Sample facility supervision checklist for quality assurance in a screening clinic that performs VIA and cryotherapy (screen and treat)

Facility supervision checklist for VIA Clinic (Clinic name: _____; Visit date: __/__/__)		
Process to be checked	Information to be collected and/or process to be observed	Response/ observations
Client registration	Who maintains the register?	
	Is the register up to date?	
	How many women have been registered in the last 12 months?	
	How many of them had VIA?	
	Are the women issued any registers card?	
	Where are old used registers stored?	
	Check the register for neatness and completeness of entries	
Counselling and informed consent process	Who counsels the women?	
	Where is counselling done?	
	Are all the women counselled before and after the procedures?	
	Do counsellors give enough time to the women?	
	Is the informed consent form filled by all clients?	
Screening	Is VIA performed in the regular OPD or a separate clinic?	
	Who performs VIA?	
	Are providers following correct steps?	
	Are they interpreting the findings correctly?	
	Are they documenting the findings properly?	
	How many VIA screenings are done per week?	
	Number of women with positive VIA result in the last 12 months	
	Number of women suspected to have cancer on VIA in the last 12 months	
Cryotherapy	Is cryotherapy facility available on a regular basis?	
	Who performs cryotherapy?	
	Are the steps being followed properly?	
	Number of women treated in the last 12 months	
	Number of women treated on the same day as VIA	
	Is the follow-up advice appropriate?	

Infection Control	Who are responsible for infection control? Are the steps appropriately followed? Is there a standard procedure for waste disposal?	
Record-keeping and data management	Who is responsible for record-keeping? Are the records stored in registers or in computers? Are the records/databases up to date? Are the records backed-up regularly? Is the database used to track VIA positive women?	
General aspects	Is the clinic clean? Are the women treated with respect? Are the consumables and supplies adequate? Is the equipment in working condition?	

Similarly checklists are required to supervise the performance of staff involved in the programme and assess their levels of competency. A sample skills matrix for supportive supervision of staff at a primary health facility conducting VIA (screen and treat) programme is given in Table 8.3. The supervisor has to assess the knowledge, decision making capacity, attitude and skills of service providers. A simple scale may be used to rate an individual's performance and overall competence.

Table 8.3: Sample skills matrix for supportive supervision of staff at a health facility conducting VIA (screen and treat) programme

Skills matrix for supportive supervision of staff at a VIA clinic (Clinic name: _____; Visit date: __/__/__)				
Staff responsibility	Tasks	Knowledge and skills required (High/medium/low)*	Competence level of team members	Comments
In-charge	Leading the team	Leadership qualities		
	Solving problems	Taking action based on feedback from colleagues and QA team		
	Participate in QA	Understanding concept of QA and responsibilities		
	Stocktaking and ensuring regular supplies	Knowledge of consumables required and their sources		
	Maintenance of equipment	Knowledge of the necessary equipment		
	Ensuring availability of staff	Human resource management		

Clinician	Generating reports	Understanding of the health information system		
	Supervising nurses	Knowledge of VIA and treatment		
	Managing women with treatment complications	Knowledge of complications and their management		
	Supporting the in-charge in day to day work	Knowledge and skills to run the facility, if necessary		
	Participating in QA	Understanding concept of QA and responsibilities		
Nurse 1	Performing VIA	Principles, steps and interpretation of VIA		
	Performing cryotherapy	Principles and steps of cryotherapy		
	Counselling	Art of counselling		
	Documentation	Documentation after procedures, maintaining records		
	Infection control	Principles and techniques of different infection control measures		
	Participating in QA	Understanding concept of QA and own responsibilities		
Nurse 2	Performing VIA	Principles, steps and interpretation of VIA		
	Performing cryotherapy	Principles and steps of cryotherapy		
	Counselling	Art of counselling		
	Documentation	Documentation after procedures, maintaining records		
	Infection control	Principles and techniques of different infection control measures		
	Participating in QA	Understanding concept of QA and own responsibilities		

Data Manager	Maintaining records	Record and data management		
	Updating and backing up of database	Computer skills		
	Tracking of women	Generating list from database and contacting women		
	Generating reports	Data management and data synthesis		
	Participating in QA	Understanding concept of QA and own responsibilities		

***Low competence:** Can not perform activity satisfactorily or can perform only with constant supervision and assistance

Medium competence: Can perform activity satisfactorily but requires supervision with or without some assistance

High competency: Can perform activity satisfactorily without any supervision or assistance

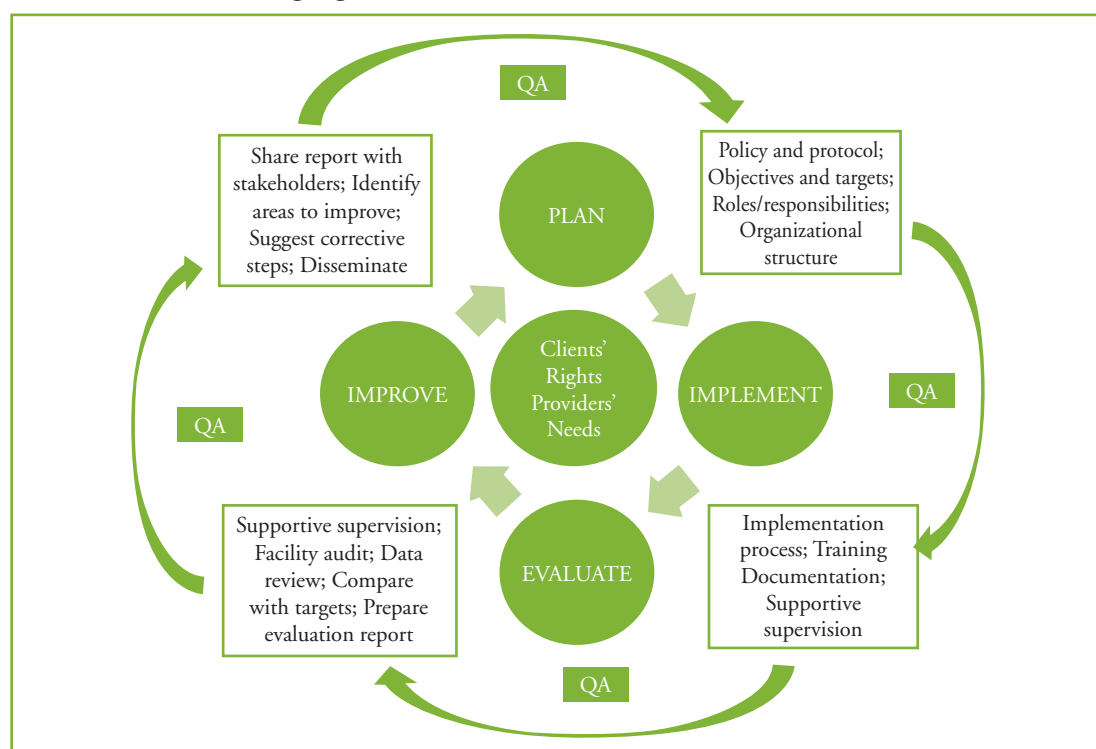
8.4.10 Post-supervision report generation

The information obtained from supportive supervision of various facilities is compiled together to generate an evaluation report. The performance data collected from supervisory visits to various facilities along with the information obtained through the health information system should be used to estimate the core indicators listed earlier. It will be useful to obtain additional information like the number of women screened per month, total number of facilities offering services under the programme, total number of trained providers, number of non-compliant women, number of pre-cancers and cancers detected, etc. All these indicators and processes should be carefully assessed against the targets and expectations. A formal SWOT (Strengths-Weaknesses-Opportunities-Threats) analysis can be very useful in mapping a future direction for improvement.

The most important part of quality assurance is to act on the basis of monitoring and evaluation reports to improve the quality of services. The ultimate aim of quality assurance is to adopt best practices. A quality assurance document should be prepared and shared with all facility in charges, programme coordinator, the members of the multi-disciplinary management team (MMT) and the stake-holder's advisory group (SAG). The areas that need improvement should be identified and appropriate modifications should be suggested. Reorientation of the staff may be required for which refresher trainings have to be organized. It is the programme managers' responsibility to ensure that the steps suggested for quality improvement are disseminated to all the facilities and the facilities take appropriate corrective actions.

The process of quality assurance is a continuous one and is an integral part of each of the components of a cervical cancer screening programme. (Fig. 8.3) Clients' rights and the providers' needs should be the key considerations.

Fig. 8.3: Quality assurance leading to quality improvement as a dynamic process in the cervical cancer screening algorithm



Group learning activities

Case study

VIA-based cervical cancer screening programmes have been introduced in Bangladesh and in one state of India. Both these programmes started as small pilot projects. Performances of the pilot projects were evaluated and, based on the evaluation results, programmes were modified at the time of scaling-up. Trainees will be divided into groups and each group will list the quality assurance indicators used in the programmes to assess the performance. The facilitator should help them understand the strengths and weaknesses of the two VIA based programmes. Finally, each group will suggest measures to improve quality.

Case study: Monitoring and evaluation of VIA-based screening programme in Bangladesh

Monitoring and evaluation of the national cervical cancer screening programme of Bangladesh was done in 2007, two years after launching of the programme. Data was collected from clinic registers and computerized databases (where available) at screening centres and colposcopy centres. Facility surveys were done and the screened women were interviewed to get their feedback related to the services. The evaluation was supervised by the National Coordinating Centre for Cervical Cancer Screening in Bangladesh (Bangabandhu Sheikh Mujib Medical University).

Information obtained from the pilot project conducted in 2004–2005 provided the basis for the development of quality control standards for the VIA-based screening programme. The pilot project was well supervised, providers of screening and colposcopy services were well trained and almost all the colposcopy, treatment and histology procedures were performed at the national coordinating centre. Therefore, the values obtained for certain key quality control indicators during the pilot project (e.g. VIA positivity rate, positive predictive value for detection of CIN2+ lesions, compliance of screen-positive women with referrals for further investigations and treatment, etc.) set the benchmark to evaluate the upscaled programme.

The key observations of the evaluation were:

- The screening programme was predominantly opportunistic with good central coordination.
- Improvement in community mobilization efforts would be required to increase the participation of women.
- A substantial proportion of the screened women were below the target age for screening.
- VIA positivity was quite variable across the screening centres.
- Colposcopy referral set-ups were well organized and easily accessible to the women, resulting in good compliance to colposcopy.
- Compliance to treatment was very low as women did not return for treatment after biopsy confirmation. The see and treat strategy of treating women based on colposcopy findings at the same visit instead of waiting for biopsy confirmation was strongly advocated to improve compliance.
- The programme should have a built-in system of monitoring and quality assurance on a regular basis.

Corrective actions were taken by programme managers after the evaluation report was shared with them.

Case study: Population based cervical cancer screening in India

Tamil Nadu is a state in the southern part of India with a high burden of cervical cancer. A pilot project to screen 30–60 year old women was initiated in 2004 in two districts of the state. Nurses and clinicians screened women at primary health centres and district hospitals using visual inspection after application of acetic acid (VIA) and Lugol's iodine (VILI) tests. Screen positive women were referred to district hospitals or medical college hospitals for colposcopy and biopsy. Treatment was planned and offered based on the biopsy results.

The participation of women in the project was good with 488 084 women screened in two years. Screening test was positive in 4.3% women. Only 56.5% of the positive women underwent colposcopy. The detection rate of CIN 2/CIN 3 was very low. The positive predictive value of the screening tests was also unusually low, suggesting poor performance of the test. The compliance of the screen-detected cases to treatment was lower than 50%.

The pilot project was funded by the World Bank. In spite of certain quality concerns, the project served as a good model to implement cervical cancer screening integrated to the existing health delivery system in India. The cervical cancer screening services have been scaled-up in the entire state as a component of the integrated non-communicable disease control package (Tamil Nadu Health Systems Project) and are now supported by the state government. Many of the quality issues have been addressed in the expanded programme.

Multiple choice questions

1. Which of the following is an impact indicator for cervical cancer screening programme?

- a) Screen test positivity rate
- b) Proportion of screen positive women treated in the same sitting
- c. Proportion of screen positive women ineligible for cryotherapy
- d. Reduction of incidence of cervical cancer

2. Which of the following statements truly defines screening rate?

- a) Number of women in the target age group who were treated for the first time in a 24-months period
- b) Number of women in the target age group who were screened for the first time in an 18-month period
- c. Number of women in the target age group who were screened for the first time in a 12-month period
- d. Number of women in the target age group who were screened for the first time

3. Which of the following statements defines the age specific cervical cancer incidence most appropriately?

- a) Number of new cases of cervical cancer detected in a defined population in a specified period of time
- b) Number of old and new cases of cervical cancer detected in a defined population in a specified period of time
- c. Number of new cases of cervical pre-cancers detected in a defined population in a specified period of time
- d. Number of new cases of cervical cancer

4. All the following statements are true regarding readiness of a facility to ensure quality screening services, except:

- a) Separate room for screening and treatment services
- b) Minimum waiting period for providing screening and treatment services
- c. Adequate number of service providers and with appropriate training
- d. VIA is performed only when 30 women have been registered for screening

5. What is treatment rate?

- a) No. of screen positive women who were treated in a 12-month period
- b) No. of women who were treated in a 12-month period
- c. No. of women referred for colposcopy in a 12-month period
- d. No. of women treated after referral to colposcopy clinics

Answer key

1 – d
4 – d

2 – c
5 – a

3 – a

Module 9: Health information system

9.1 Module overview

This module is designed to train programme managers on the importance of health information System (HIS), its various components, and how to use HIS as an essential tool for quality assurance of the cervical cancer prevention programme. The module highlights methods of assessment of different performance indicators based on data available from various health facilities.

9.2 Module contents

- Definition and importance of a health information system
- Role of programme managers in implementing HIS
- Components of HIS
- Use of HIS for cervical cancer screening programme
- Cancer registry
- Group learning activity
 - Case study

9.3 Learning objectives

By the end of this module, trainees would be able to:

- define HIS and describe importance of HIS;
- list the components of HIS;
- use HIS to assess programme indicators and outcome;
- state the role of cancer registry in a cervical cancer screening programme.

9.4 Key points for discussion

9.4.1 Definition of health information system

A health information system connects healthcare with information technology. Health information system, according to the World Health Organization (WHO), is “*an integrated effort to collect, process, report and use health information and knowledge to influence policy-making, programme action and research*”.

HIS is a combination of the following activities:

- Data generation from health facilities
- Data compilation
- Data analysis and synthesis
- Communication of results to be used for quality improvement

9.4.2 Importance of HIS

The health information system is crucial for implementation, quality assurance and quality improvement of a cervical cancer screening programme. The major benefits of an effective HIS are:

- HIS provides essential knowledge to formulate or modify the programme policy and plans.
- The performance and output of various facilities and services under the programme can be better tracked for timely corrective actions.
- Efficient HIS is indispensable for proper implementation of programme quality assurance.
- HIS increases transparency and accountability.

9.4.3 Role of programme managers in HIS

Programme managers are required to have a clear understanding of the process of data collection, data compilation and analysis and the basics of information system design and management. Managers need to be involved with the planning of the HIS for the programme as their inputs and feedback are very essential for a properly functional HIS.

Programme managers have the following key roles in the implementation of the HIS:

- ensuring data collection in programme specific data collection forms;
- training frontline health workers and other relevant service providers to ensure appropriate and accurate data collection;
- establishing and maintaining a functional system of data flow among all reporting levels;
- designating an appropriate person at each reporting level to oversee the system of data collection, timely generation of reports and communication with the programme management team;
- identifying problem areas at each reporting level and taking corrective measures;
- undertaking routine supervisory visits to monitor accuracy and completeness of data collection, client tracking, etc.;
- arranging and participating in regular feedback sessions with all reporting levels;
- developing and maintaining a system for protecting the confidentiality of collected data;
- ensuring provision of a reliable system of data storage and back-up;
- setting up a system of linking the cervical cancer screening data to cancer registries.

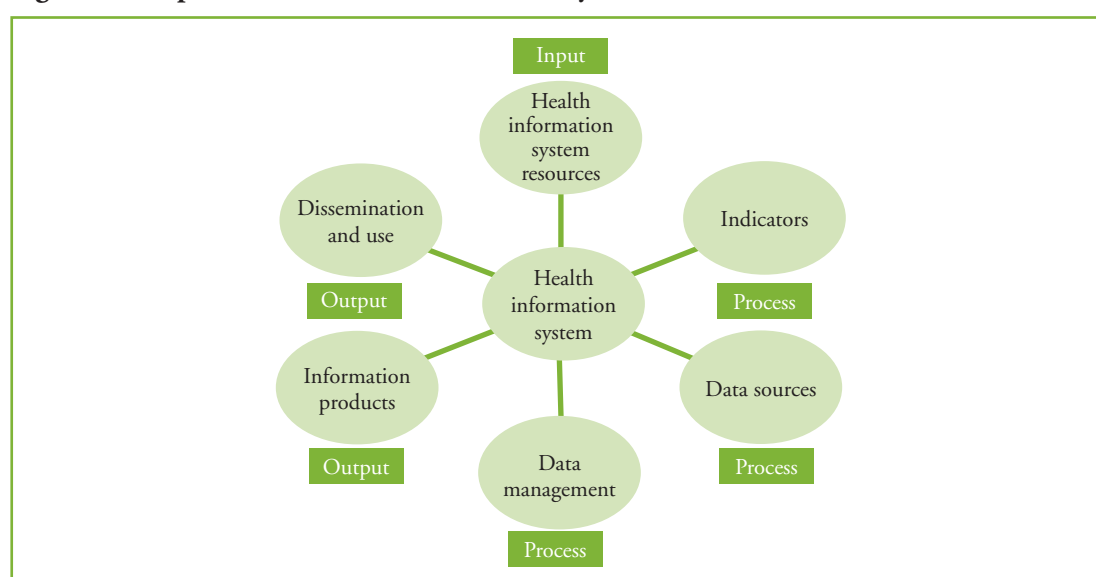
9.4.4 Components of a health information system

The Health Metrics Network (HMN), hosted by WHO, is a global partnership dedicated to strengthen national health information systems. According to the HMN a health information system (HIS) consists of the following six components (Fig. 9.1):

1. **Health information systems resources** – resources required to keep the system fully functional and productive such as personnel, financing, logistics support, information and communications technology
2. **Indicators** – a core set of indicators and related targets to assess health system inputs, outcomes and quality standards

3. **Data sources** – can be (1) population-based (censuses, civil registration and population surveys) and (2) institution-based (individual case records, service records, resource records, etc.)
4. **Data management** – covers all aspects of data handling including collection, storage, processing, compilation and analysis
5. **Information products** – information derived from the data becomes the basis for evidence and knowledge to shape health action
6. **Dissemination and use** – making the health information readily accessible to decision-makers helps them take better decisions and ensure better health

Fig. 9.1: Components of a health information system



9.4.5 Use of HIS for a cervical cancer screening programme

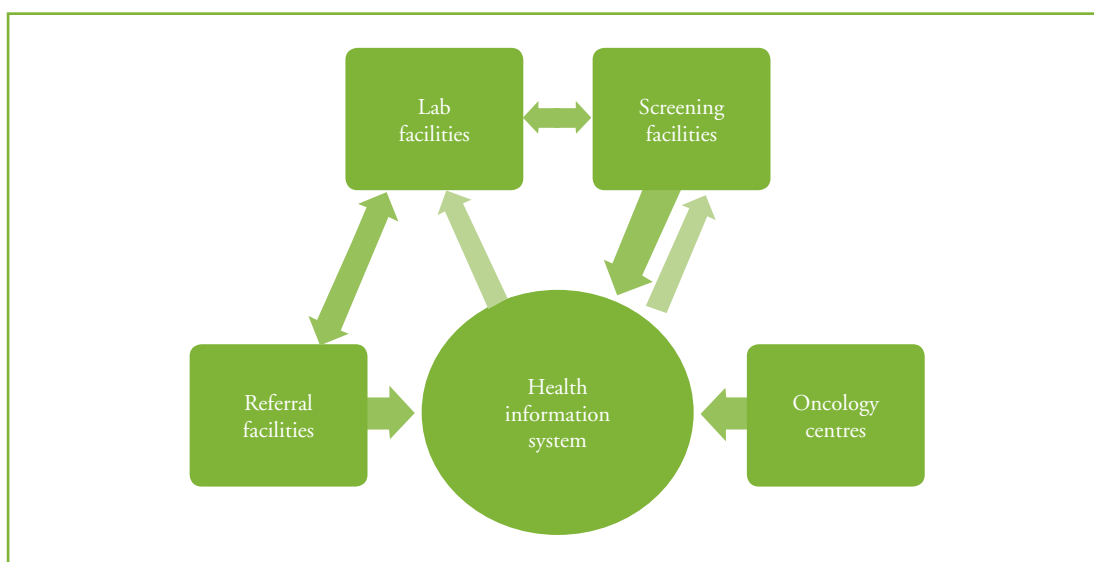
HIS used for a cervical cancer screening programme can be operational at the service delivery points or be a centralized database or both.

- **Facility level HIS** –If adequate resources are available, it is ideal to set up a computerized system of data collection and storage at all facilities providing screening, diagnostic and treatment services. However, in limited resource settings where a computerized system is not available, the process of recording client information mostly relies on paper forms and registers. Client information entered in the registers of a primary or secondary level facility can be used at regular intervals (quarterly or yearly) to calculate some of the process and outcome indicators and generate performance reports. The computerized databases or registers that should be maintained for facility-level HIS are:
 - screening register with details of the screened women;
 - referral register for tracking screen positive women;
 - follow-up register to document the clinical information of women attending for follow-up visits after treatment

- Colposcopy and treatment register
- Laboratory register for recording lab-based test results (HPV test, cytology, histopathology)
- **Centralized HIS** – In this system, data obtained from all the facilities is fed into computers linked together by a central server system. The centralized HIS may collect individual client data (preferred) or aggregated data from an individual screening or diagnostic facility. It helps in efficient data processing and automated report generation which can be further used to calculate the programme indicators at district, regional, sub-national and national levels. Collection of individual client data from the facilities has the distinct advantage of tracking screen positive women requiring diagnostic and/or treatment services as well as follow-up of treated women. It is essential to provide a unique client identification number to each registered woman so that duplication of records is avoided if she avails of screening, diagnostic or treatment services at multiple facilities. To ensure consistency, the collection of data at each facility should be done on uniform reporting formats. The screening and diagnostic facilities may enter the data directly into the centralized database through online access or may send the filled-in paper forms to the HIS nodal center for manual entry.

The flow of information to and from different facilities in a centralized HIS is shown in Fig. 9.2. The centralized HIS can be linked with different population databases like electoral roles, register of residents, insurance databases, etc. and also with cancer registries. This allows invitation of the women eligible for screening, tracking of screen positive women through different service delivery points and obtaining cervical cancer incidence and mortality rates for the screened population.

Fig. 9.2: Schematic diagram showing flow of information in centralized HIS



Source: Adapted from Alliance for Cervical Cancer Prevention (ACCP). Planning and Implementing Cervical Cancer Prevention and Control Programmes: A Manual for Managers. Seattle: ACCP; 2004.

Cervical cancer screening registry can be linked with population registers if such registers exist in the country. Population registers can be electoral roles, enlistment with the local municipality or other administrative databases that store the name, address and date of birth (age) of each individual residing in a defined area. Linkage between population registers and computerized screening registries allows systematic invitation of all eligible women, invitation of eligible women who have not undergone screening and recalling of defaulters to diagnosis and treatment. A high level of organization and coordination is necessary to implement such linkages.

9.4.6 Cancer registry

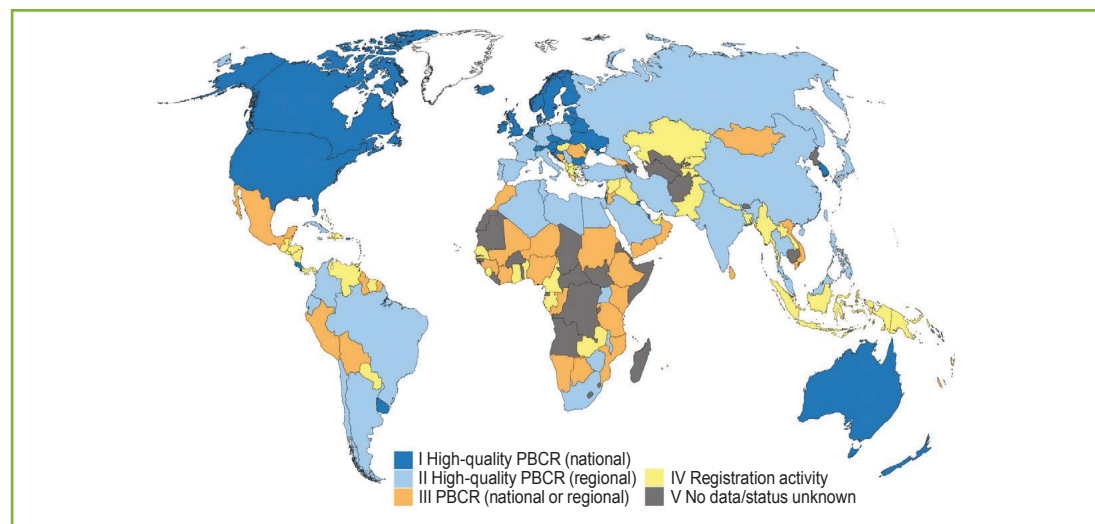
Cancer registry involves systematic collection of information about the occurrence of cancer, type of cancer, stage of cancer at the time of diagnosis and type of treatment received by a cancer patient.

Types of cancer registry:

- **Population-based cancer registry** – Involves collection of information on all new cases of cancers occurring in a well-defined population. Data is collected from various sources like cancer hospitals and other treatment facilities, pathology laboratories, clinicians, death certificates, etc. Population-based cancer registries are used to:
 - monitor cancer incidence, mortality and trends over time;
 - describe cancer burden and determine cancer patterns in different populations;
 - assist in setting up of public health priorities and help resource allocation;
 - help in planning, monitoring and evaluation of cancer control programmes;
 - provide a resource for clinical and epidemiological research studies.
- **Hospital based cancer registry** – Involves collection of information on diagnosis and treatment of cancer patients attending a particular hospital. The purpose of such registry is to document the stage distribution of cancer at diagnosis, the protocol of management for various cancers, quality of diagnostic and treatment service and outcome of treatment. Data collected in this system helps in reviewing clinical performance of a particular hospital and improving patient care.
- **Pathology-based cancer registry** – Data collected from the pathology laboratories only provides a snapshot of different cancer profiles. However, pathology-based registry does not have any value in cancer control programmes.

For cervical cancer screening programme only population-based cancer registry is of importance to assess the impact of the programme. However, the coverage of high-quality population-based cancer registry is still very low in low and middle income countries (Fig. 9.3).

Fig. 9.3: Distribution of population-based cancer registries across the globe



Source: Bray et al., Planning and developing population-based cancer registration in low- and middle-income settings. IARC Technical Publication No. 43 (2014)

9.4.7 Benefits of linking cancer registry to HIS

Population-based cancer registries play an important role in evaluation of cervical cancer screening programmes. Effectiveness of screening programmes can be monitored by linking of cancer registry to centralized HIS. The linked data can be used for:

- assessment of disease development in screen-negative population;
- measurement of cervical cancer incidence and mortality rates in the screened population;
- comparison of stage distribution of screen detected cancers compared to cancers detected in unscreened population;
- study the trends in cervical cancer incidence and mortality over time after the introduction of the screening programme.

Group learning activities

Case study

An attempt was made in Malaysia to improve participation of eligible women to the cervical cancer screening programme by linking the screening registry with the population register. Trainees need to study the use of HIS and its linkage to a population database and discuss. Strengths and weaknesses of the methods followed in Malaysia and the relevance of such initiatives in their own settings.

Case study: Attempt to improve participation of women in cervical screening in Malaysia

A pilot project was initiated in Malaysia in 2007 as an initiative to move from the opportunistic screening of cervical cancer to an organized approach with high participation of women in screening. The pilot project used the call-recall model followed by the cervical cancer screening programme in Australia and one urban and one rural area were selected for implementation.

The contact information of nearly 60 000 women aged 20–60 years was collected from the National Registry Department. All the data for the eligible women was entered in the Pap Smear Programme Information System (SIPPS). Data was then selected randomly at the district level by a trained information technology officer to generate invitation letters. Every month 1500 invitation letters were sent by ordinary post.

The letters advised the women to go to the nearest community clinic for cervical cancer screening within two months from the date of the letters sent. If any of the women failed to do so within 2 months, another reminder letter was sent giving her another 2 months to go for screening.

At the screening clinic, once the woman responded to the invitation for screening, other data were entered into the system including her phone number, other relevant medical history, etc. The result of her pap smear was entered in the database by the laboratory that examined her slides. Women who needed further intervention were contacted by healthcare workers for referral to a specialist at the nearest hospital. The same database was used to retrieve the data of the women with positive test results.

The early results suggested that the participation rate did not improve with sending the postal reminders, even though the same strategy had worked in Australia. The pilot project used data from the National Registry Department in which many of the addresses were incorrect or outdated. Using the electoral name lists to identify eligible women and their addresses could have been more efficient. Instead of relying solely on the postal system, other types of recall/reminders methods like phone calls, short messaging services (SMS) need to be explored to improve participation. Sending health workers for home visits and reminding the women is an option but programmatic feasibility of this approach needs to be evaluated.

Ref. Rashid RMA, et al. Adapting the Australian System: Is an Organised Screening Programme Feasible in Malaysia? – An Overview of the Cervical Cancer Screening in Both Countries Asian Pacific J Cancer Prev 14 (3), 2141–2146.

Multiple choice questions

1. All the following are true for a facility-level health information system (HIS), except:

- a) Client information is mostly entered in specific registers
- b) Can calculate a limited number of indicators
- c) Helps in monitoring and evaluation of specific services provided at that facility
- d) Can efficiently track screen positive women

2. Using HIS, all of the following programme elements can be assessed at screening facilities, except:

- a) Screening test quality
- b) Client satisfaction with the screening services
- c) Age distribution of the screened women
- d) Client participation rate

3. Cancer registry involves systematic collection of information about all of the following, except:

- a) Occurrence of pre-cancers
- b) Type of cancer
- c) Stage of cancer
- d) Type of treatment received

4. All the following are useful tools to help client tracking at the facility-level except:

- a) Generating a list of pending laboratory test reports
- b) Generating a list of screen positive women
- c) Generating a list of women attending screening after hysterectomy
- d) Generating a list of treated women for cervical pre-cancers

5. Which of the following statements is not true for population-based cancer registry?

- a) Involves collection of information on all new cases of cancers occurring in a well-defined population
- b) Describes cancer burden and determines cancer patterns in different populations
- c) Helps in improving patient care at oncology centre
- d) Helps in planning, monitoring and evaluation of cancer control programmes

Answer key

1 – d

2 – b

3 – a

4 – c

5 – c

Section 4: Notes for facilitators



4.1 Facilitators' profile

A facilitator should have adequate knowledge and skills in the concerned subjects. They should undergo training of the facilitators to be conversant with the objectives of the training programme, methodologies, session plans and the training materials. It is preferable that the facilitators are trained in training technology. Facilitators should be conversant with the National Cervical Cancer Control Guidelines of their respective countries.

4.1.1 Course coordinator

One of the facilitators should be designated as the course coordinator whose responsibilities will be as follows:

- For classroom teaching
 - Checking the audio-visual system for proper functioning
 - Checking the availability of all training aids
 - Ensuring that the sessions are conducted as per schedule
 - Introduce the course
 - Oversee administrative aspects including record maintenance
 - Checking for general facilities like running water, washrooms, power back-up, etc.
- For the facility tour
 - Identifying appropriate facility sites (screening clinic, laboratory, colposcopy clinic, etc.)
 - Providing information to the identified facilities regarding the time and duration of visit, number of trainees for the visit, etc.
 - Preparing a background brief of each identified facility
 - Scheduling the sequence of visit if more than one facility visit is planned
 - Assigning a facilitator for the scheduled tour
 - Arranging logistics for the facility visit, e.g. mode of transport (if required), confirmation on the number of vehicles required (if applicable), etc.

4.1.2 Facilitators' skills checklist

At the beginning of the training all selected facilitators need to fill out the facilitator's skills checklist and submit it to the course coordinator Box 4.1. The checklist serves as a self-evaluation tool by the facilitators and is also an important document for assessment of quality of training.

Box 4.1: Facilitators' skills checklist

(Please tick the statements that are appropriate for you):

- You have undergone the training for programme managers in cervical cancer screening or its equivalent at a recognized training center/medical college
- You have undergone training of facilitators
- You have been trained in training technology
- You have been involved in health programme management for at least 2 years
- You have been a facilitator for a similar course earlier (number of times ____)
- You know your subject matter and are fully prepared to conduct the training session
- You are flexible and empathetic and can adapt your plans to meet the participants' needs
- You encourage co-facilitators and participants to give feedback and constructive criticism

4.2 Record keeping

Training records provide evidence pertaining to the conduct of a training programme and can be useful in identifying training gaps. Keeping paper records during the training programme is a simple and convenient method. However, maintaining training records electronically is useful for ease of data retrieval and planning of training schedules.

Facilitators are required to maintain the following records for the training programme.

- Attendance sheet/register of the trainees
- Trainees' experience record
- Facilitators' skills checklist
- Filled in assessment questionnaires
- Knowledge assessment matrix
- Case studies worksheets
- Facility tour worksheets
- Summary performance sheet of trainees

4.3 Dos and don'ts for facilitators

Do	Don't
<ul style="list-style-type: none"> • Be conversant with the session plan and training materials prior to the start of training • Ensure that the training site is ready prior to the onset of training • Maintain a friendly and supportive environment • Call trainees by their name as much as possible • Speak clearly and loudly • Spend enough time with the participants to answer all their queries • Give simple and clear instructions to the trainees • Ensure clear visualization of the presentations by all trainees • Encourage trainees' to interact and be involved in all the sessions • Strictly adhere to the session plan and the session contents 	<ul style="list-style-type: none"> • Make adverse/negative comments on any participant • Be shy, nervous or worried • Use one way teaching without any interaction • Ignore trainees' queries • Make presentations without facing the trainees or avoiding eye contact with them • Use teaching aids or materials other than the prescribed ones • Rush through any of the sessions

4.4 Training methodologies

The training for programme managers involves knowledge development through interactive lectures and skill enhancement through group learning activities and facility tours. Training sessions will be conducted as per a pre-fixed schedule and adherence to this schedule is important for timely and efficient conduct of the sessions. Facilitators should meet daily at the end of the sessions to plan for the next day's training programme and to ensure availability of all training materials and teaching aids. All the facilitators should be in agreement about each other's roles and responsibilities prior to the start of the training programme.

The training has two components – *classroom training and facility tour*. Both the components include group learning activities for which breakout groups should be formed as instructed in Box 4.2.

Box 4.2: Formation of breakout groups

- Organize trainees into smaller groups during the opening session
- Each group should have not more than 5 trainees
- Designate one facilitator to each group (for facility tour only)
- Print a list showing the groups to which trainees and facilitator are assigned.
- Display the list in the classroom for all the trainees to see
- Instruct trainees not to change their groups

4.4.1 Guidelines for the conduct of classroom training

- Conduct all interactive lectures and 'breakout' group learning activities in the classroom
- Start each day's session in the classroom by reviewing the previous day's activities and discussing the relevant queries of the trainees. Facilitators should let the trainees initiate the review and guide the discussion.
- Plan the timetable for the day along with the trainees
- For each session:
 - Discuss the learning objectives at the beginning of each session
 - Use the PowerPoint included in the teaching aids for each module
 - Refer to the group learning activities listed at the end of each module
- At the end of each day, ask trainees to summarize the day's activities and the key points
- Brief the trainees on the next day's agenda

4.4.1.1 Guidelines for delivering PowerPoint presentations

Purpose

Power point presentations serve as excellent training tools that help in transfer of knowledge with focused content, clear messages and effective visuals. They enhance the learning process by allowing trainees to analyse, interpret and interact on topics covered.

Delivering a PowerPoint presentation

Before you begin

- a. Know the subject well by reading the corresponding module and other suggested reading materials
- b. Familiarize yourself with the content and sequence of the presentation
- c. Refer to the key points for discussion for corresponding module provided in the manual
- d. You may add your own notes to emphasize issue of local importance
- e. Rehearse the presentation so that you cover all important points within the set time limit

Delivering presentation:

- Check the seating arrangement to make sure that the slides are clearly visible to all the trainees
- Introduce yourself, if not done earlier
- Speak clearly and ensure that all trainees can hear you
- Inform trainees that they are free to ask you questions and should do so by raising their hands anytime during the presentation
- Introduce the topic and give an overview of the content of the presentation
- Face trainees and not the slides while giving presentations
- You may use a pointer, stick or pencil to indicate a specific part of the presentation
- Explain each slide slowly highlighting the key points
- Never read out from slides or from the notes
- Make sure you cover all the information provided in the notes accompanying each slide
- Maintain the logical order of ideas in the presentation
- Do not give extra information except about updated information or relevant national guidelines
- Make the presentation interactive by interacting with the trainees in between slides
- Keep the interactive discussion focused on the topic of the presentation
- Strictly adhere to the time limit of the presentation
- Summarize the key points at the end of the session
- Allow time for questions from trainees and answer them completely
- Thank trainees after the presentation

4.4.1.2 Guidelines for conducting role plays

Purpose

Role plays will be conducted to give trainees an opportunity to learn the proper technique of counselling. Programme managers are not expected to counsel women themselves, but knowledge of counselling is essential for them to be able to provide supportive supervision.

Organizing role plays

- Check the suggested role play provided at the end of the module
- Identify the group that will perform the role play
- Identify trainee–(s) who will enact the specified roles
- Brief trainees about the background situation and focus of the role play as described in the module
- Clearly describe each role to the trainees
- Allow adequate time for trainees to develop the script for the given situation

- Ask other participants of the group to observe the role play for the purpose of participating in the discussion after the act
- Set a time limit for the role play
- Ask trainees to speak loudly and clearly
- Ensure that the role play is kept focused to the given situation
- Thank the group after the role play is over
- Do the debriefing with necessary corrections after completion of the act
- Encourage all participants of the group to ask questions and give feedback

4.4.1.3 Guidelines for conducting case studies

Purpose

The purpose of case studies is to allow trainees to analyse the planning, implementation or quality assessment exercise from real programmes. Case studies are summaries of published information on cancer control programmes of different countries. Trainees may get more information on the programme from the list of references given after each case study summary. Case studies are preferably handled by small groups to allow everyone to participate, including those who might not speak in a larger group.

Performing case studies

- Check the suggested summary case study provided at the end of the corresponding module
- Circulate printed copies of the full article(s) based on which the summary has been prepared (if the article can be accessed through Internet)
- Divide trainees into break-away groups and assign tasks to each group
- Allow trainees to go through the programme details and ask them to prepare responses to the questions listed with each case study. Each group has to select a rapporteur who will present the group response
- Provide necessary corrections with explanations
- Ask trainees to make a final brief summary of the case study and the inferences drawn
- Encourage all participants of the group to ask questions and give feedback

4.4.2 Guidelines for conducting a facility tour

Purpose

The purpose of a facility tour is to demonstrate the different operational aspects of a cervical cancer screening programme, identify potential problem areas and learn ways to address them. A well-structured facility tour provides realistic learning opportunities for trainees on the systematic functioning of various service delivery set-ups.

Organizing a facility tour

Before you begin

- Prepare a background brief of the identified facilities to be visited
- Prepare a draft plan of the tour (schedule, sequence if a multiple facility visit is planned, list of persons to meet), etc
- Confirm the schedule of the visit with the facilities
- Discuss the logistics and activities with the on-site facility in-charge
- Take print-outs of the facility tour worksheets (Annex 3)

Conducting the tour

- Brief trainees about the background of the facilities to be visited and the tour plan
- Ask trainees to maintain their respective groups and assign a facilitator for each group
- Assign a group leader for each group who, at the end of the tour, would be responsible for:
 - Presenting the overall experience
 - Providing feedback from the group
- On reaching the identified facility, introduce trainees to the on-site facility in-charge and staff
- Distribute the facility tour worksheets to the trainees and explain how they should fill it
- Guide the tour as per plan with focus on the important operational aspects of a cervical cancer prevention programme:
 - Client registration process
 - Counselling and obtaining informed consent process
 - Equipment and consumables required for screening, diagnosis and treatment
 - Screening clinic set-up and screening process
 - Review of client records
 - Infection prevention practices
 - Diagnosis and treatment methods
 - Functioning of laboratories (for HPV DNA test, cytology, histopathology)
 - Referral pathways
 - Data collection process and record maintenance, HIS
- Ask each group leader to collect all facility tour worksheets from his/her group members for the purpose of preparing individual group presentations
- Conduct a wrap-up meeting on-site
- Ask the group leader of each group to thank the on-site facility in-charge and staff for providing the opportunity to use the facility
- Arrange for return of all trainees to the training venue for individual group presentations

4.5 Evaluation of trainees

Evaluation of trainees is an essential component of the training programmes and helps in assessing whether trainees have achieved the desired level of competence. The purpose of evaluation is to analyse gaps in both training and learning processes. Evaluation helps to assess how effective the training efforts have been in enhancing the knowledge and related skills of the trainees and to what extent the objectives of the training programme have been achieved.

The evaluation process includes:

- pre-training assessment of trainees by administration of the knowledge assessment questionnaire (on Day1);
- post-training assessment of trainees by administration of knowledge assessment questionnaire and through the case study (on Day 3).

4.5.1 Guidelines for conducting pre-training knowledge assessment

- Prepare a set of 20 multiple choice questions (MCQs) from the sample MCQs listed in each module in the manual before commencement of the training programme
- Distribute the question sheets to the trainees and explain how to tick the correct responses
- Allow 30 minutes for them to answer the questions
- Evaluate the responses using the knowledge assessment matrix (Box 4.3). Ask your fellow facilitators for help, if necessary
- Identify the knowledge gaps from the evaluation matrix and share there with the trainees

Box 4.3: Knowledge assessment matrix

Note: Put a ✓ in the row of each participant for the questions that have a correct response.

Trainee number	Correct response to question no.																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

4.5.2 Guidelines for conducting post-training assessment

- **Before you begin** keep the following ready in the classroom
 - Copies of post-training assessment questionnaire (The same questionnaire administered during pre-test may be used or a new set of questions may be prepared)
 - Copies of the case study for post-training assessment
 - Blank sheets
 - Print outs of the knowledge assessment matrix
 - Copy of the summary performance of trainees
 - Flip charts and marker pens
- Inform trainees about the purpose of the evaluation
- Brief them on the components of the evaluation process (multiple choice questions and case study)
- Distribute the assessment questionnaire to all the trainees and explain how to respond to all the questions by putting a tick (✓) against the correct response
- Allow trainees 30 minutes to answer the questions. Collect all the completed questionnaires after the specified time
- Go on to the next part of the evaluation (case study) and follow the guidelines given later for conducting case study assessments
- After the case study, ask trainees to relax but remain seated while you and your colleagues evaluate the responses and fill out the knowledge assessment matrix
- Identify the knowledge gaps from the evaluation sheets and write them down on the flip chart
- Discuss the points one by one with the trainees
- Thank the trainees after the evaluation

Case study for post-training assessment: Analysing a programme evaluation report

How to proceed	How to assess
<ul style="list-style-type: none"> • Distribute a copy of the case study and blank sheets of paper to all the trainees • Explain that the case study is part of the summary evaluation report for a pilot screening programme in a country • Inform trainees that they should go through the case study thoroughly and answer the following questions in their own language: <ul style="list-style-type: none"> ▪ <i>As programme manager, what steps will you take after getting the report?</i> ▪ <i>How will you try to solve the problems identified?</i> ▪ <i>List some of the quality control indicators that supervisors have tried to look at.</i> • Trainees should only list the points and not try to be descriptive • Allow 30 minutes to answer the questions. Collect all the completed questionnaires after the specified time 	<ul style="list-style-type: none"> • The facilitator has to judge the trainees' performance by the completeness and appropriateness of their answers • For each trainee, rate of their answers each question using the following rating scale: <ul style="list-style-type: none"> ▪ 1 – needs substantial improvement ▪ 2 – generally correct but needs improvement in knowledge and concept ▪ 3 – has good knowledge and concept

Box 4.4: Sample case study

Case study: SWOT analysis of a pilot project on cancer screening in a South-East Asian country

The government of the country launched the pilot project 'Advancing Cancer Control in women' in the capital province in April 2014 with support from external donors. The aim of the project is to screen women between 35 years and 54 years of age for breast and cervical cancer at least once in a lifetime. Women are screened for cervical cancer by nurses/ midwives using VIA and for breast cancer by clinicians using clinical breast examination (CBE) at primary health centres. VIA positive women are sent to the district hospital for colposcopy and CBE positive women are sent to cancer hospitals for further investigations.

Evaluation followed by a SWOT analysis of the ongoing project was performed by an external supervisor jointly with the project coordinator and all the project staff in August 2015. The key observations were as follows:

Strengths

- The project is endorsed by the Ministry of Health and has national oncology institutions of repute as stakeholders.
- The project is being implemented in convergence with the existing health infrastructure.
- The average number of women being screened per clinic is between 150 and 200.
- The community mobilization strategy is reasonably effective with nearly 50% of the invited women participating in the first round of screening.
- Screening clinics at health centres are well organized and the process of registration, counselling and examination of women is well coordinated.
- The system of referral has been developed and there is a mechanism of tracking the women through the referral chain.
- The project management structure has been established with responsibilities fixed at all levels of service delivery.
- A large number of healthcare providers have already been trained to do screening.
- The project is linked with the population-based cancer registry in the province.

Weaknesses

- There is no contingency plan to ensure participation of women non-compliant to screening in the first round.
- CBE is being performed by clinicians from the district health centres and not by nurses. This may not be sustainable during scaling-up of the programme.
- Training conducted by the project team is not recognized by the authorities so certification is not done. CBE and VIA should be performed by certified trainees only.
- The originally planned screen and treat algorithm cannot be implemented, as national regulations do not permit treatment at the community health stations.
- VIA positivity is too high (15.2%).
- Treatment of cervical pre-cancer and histopathology facilities are not available at the district hospitals. Women with positive colposcopy are referred to the cancer hospital.
- Surgeons and gynecologists at cancer hospitals are involved in further investigation and management of the women referred from the project. They have not been formally informed about the *project objectives and protocol*.
- Getting follow-up information of screen positive women from the cancer hospitals is a major challenge to the project.
- The storage of records should be more organized. Data entry is not up-to-date.

Opportunities

- The pilot project will provide valuable information on feasibility, acceptability, programme logistics and quality assurance of a population-based screening programme that will help in scaling-up in the future.
- The project provides a unique opportunity to address some key formative and implementation research questions; such as acceptability of CBE and VIA, effectiveness of the community mobilization plan, reasons for non-compliance, etc.

Threats

- *A national group is developing a new cancer screening policy and protocol. A strong recommendation to introduce pap smear cytology-based cervical cancer screening and mammography-based breast cancer screening in the new protocol will make implementation of the project difficult.*

Table 4.1: Summary performance of trainees

No. of trainees	Pre-training assessment	Post-training	assessment
	Score of pre-training knowledge assessment questionnaire	Score of post-training knowledge assessment questionnaire	Score of analysing a programme evaluation report – case study
1			
2			
3			
...			
10			

To be eligible for certification, a trainee needs to have an overall post-training assessment score of 70% or above. Those securing less than this would be required to undergo re-orientation before final certification.

Section 5: Annex



Annex 1

Pathogenesis of cervical cancer

Human papillomavirus (HPV) and cervical cancer

Nearly 100% of cervical cancers and pre-cancers are caused by infection with a virus known as HPV. It is a common sexually transmitted infection that does not cause any symptoms. The symptoms appear only when the infection causes diseases like genital warts or cancer. However, all women with HPV infection do not develop cervical cancer, as a majority of the infected women can clear the infection due to natural immunity. In fact, cervical cancer is a rare outcome of HPV infection. Since cervical cancer does not occur without infection from cancer causing types (oncogenic) of HPV, oncogenic HPV infection is considered as the "necessary" cause of cervical cancer.

Spread of HPV infection

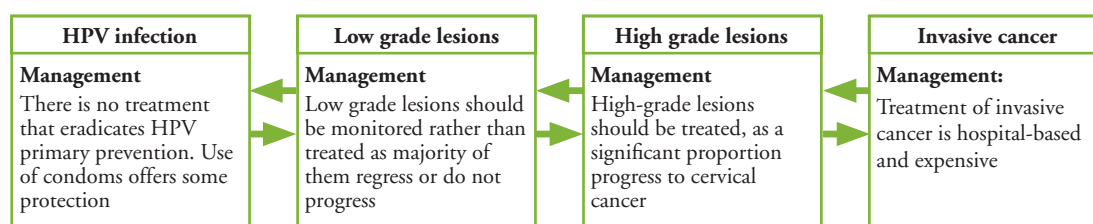
HPV infection spreads through sexual contact. In fact, HPV is the most common sexually transmitted infection in men and women. Penetrative sex is not necessary for the virus to be transmitted between sex partners. The virus can be transmitted through genitalia-to-genitalia, skin-to-skin or skin-to-genitalia contact. Women are at highest risk of acquiring HPV infection when they initiate their sexual life. Male circumcision and use of condoms give partial protection against infection and transmission of HPV.

Natural history of cervical cancer

More than 150 types of HPV have been identified. Of these 14 types are associated with almost all the cervical cancers and these types are known as oncogenic or high risk types. Types 16 and 18 are implicated in more than 70% of all cervical cancers and are considered to be the most virulent types. Among the low risk or non-oncogenic types, Types 6 and 11 are responsible for more than 90% of the genital warts. Majority of HPV infected women clear the infection due to natural immunity in the body. It takes nearly 1–2 years to clear the HPV infection. Women who cannot clear the infection and have persistent infection of the cervix are at the highest risk of developing cervical cancer. It takes approximately 10–15 years for HPV infection to progress through low grade and high grade pre-cancers to cervical cancer. (Fig. 1) The detailed knowledge of the natural history of cervical cancer has led to the introduction of two preventive strategies against cancer. (Fig. 2). Vaccination of young girls against HPV can prevent persistent HPV infection and subsequent development of cervical neoplasias (primary prevention). Systematic screening of women above 30 years of age can detect the disease at a premalignant stage when treatment can be very effective and prevent further progression of the disease to cancer (secondary prevention).

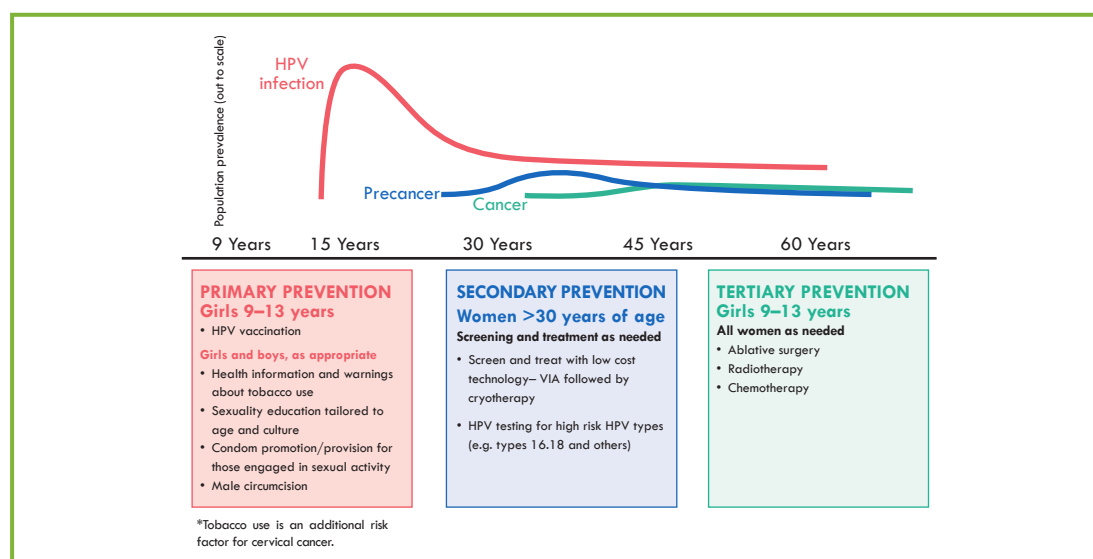
Fig. 1: Natural history of cervical cancer

HPV infection	Low grade lesions	High grade lesions	Invasive cancer
HPV infection is extremely common among women in the reproductive age. The infection can persist, lead to cervical abnormalities, or resolve on its own	Low-grade lesions are usually temporary and disappear over time. Some cases, however, progress to high-grade lesions	High-grade lesions, the true precursors to cervical cancer, are significantly less common than low-grade lesions	Invasive cancer develops over the course of several years and is most common among women in their 50s and 60s.



Source: Adapted from PATH. Planning Appropriate Cervical Cancer Prevention Programmes, USA 2000

Fig. 2: Interventions to prevent HPV infection and cervical cancer



Source: WHO guidance note—comprehensive cervical cancer prevention and control: A healthier future for girls and women. WHO 2013

HPV vaccine

Two types of vaccines are available for the prevention of HPV infection (Table 1). HPV vaccination of girls before the initiation of sexual activity is an important method of preventing cervical cancer and should be an integral part of a comprehensive cervical cancer control programme. WHO recommends HPV vaccination for 9–13 year old girls. As vaccines do not protect against all types of HPV, screening will be required later in life even for the vaccinated population, though much less frequently. A 9-valent vaccine with wider spectrum of protection against cervical cancer is also available.

Table 1: Characteristics of HPV vaccines

Type of vaccine	Quadrivalent	Bivalent
HPV types targeted by the vaccine	HPV 6,11,16,18	HPV 16,18
Dose and route of administration	0.5 ml, intramuscular, upper arm, deltoid	0.5 ml, intramuscular, upper arm, deltoid
Schedule (9–13 years of age)	0 and 6 months	0 and 6 months

*Girls of more than 15 years of age will need 3 doses of HPV vaccine.

Annex 2:

Infection prevention practices

Importance of infection prevention

Infection prevention is of paramount importance in all health interventions, especially in cervical cancer screening as the instruments come in contact with body fluids and secretions. Spread of infection can occur if proper precautions are not taken to prevent transmission of microorganisms from an infected person or a contaminated object to another person. All microorganisms, including normal flora, can cause infection or disease. Normal flora may cause infection when introduced into an area of the body where they are not normally found.

As healthcare professionals are frequently exposed to potentially infectious material, it is mandatory that appropriate infection prevention procedures are practised to reduce risk of infection transmission.

The following are standard universal precautions of infection prevention:

- Washing hands before and after examining each client (See illustration on steps of hand washing)
- Wearing of gloves when touching broken skin, mucous membranes, blood or other body fluids, soiled instruments, gloves and medical waste. (Illustration)
- Processing of instruments after use
- Disposal of wastes as per standard guidelines
- Safe work practices
- Maintaining environmental cleanliness

Processing of instruments for cervical cancer screening clinics for infection prevention

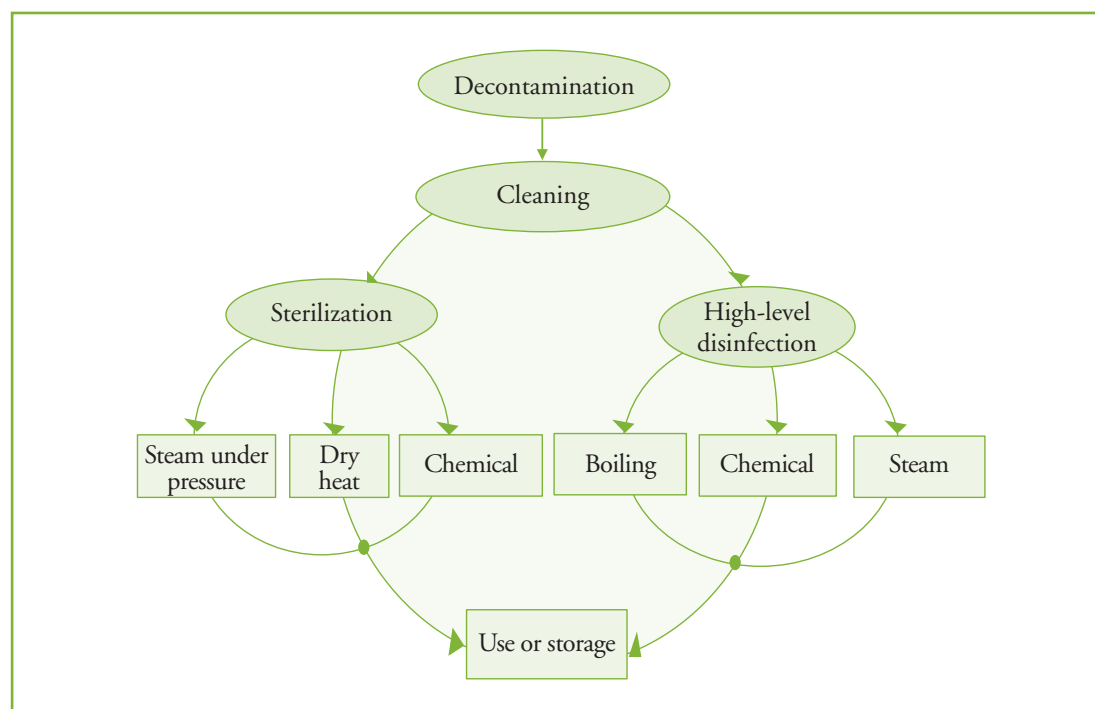
Several steps must be taken to reduce the risk of transmission of infections from used instruments and other items to healthcare workers and clients. The basic steps for processing instruments, surgical gloves and other items are shown in Fig. 1. The details of these steps are as follows:

1. Decontamination – It is the first step in handling soiled surgical instruments and other items to make objects safer for handling by healthcare staff. Immediately after use, the instruments and other items should be placed in a 0.5% chlorine solution for 10 minutes. This step rapidly inactivates microorganisms like hepatitis B virus, hepatitis C virus and HIV and makes items safer to handle. Surfaces of procedure tables, parts of any equipment/instrument that may have come in contact with body fluids should also be decontaminated by wiping with 0.5% chlorine solution or 90% ethyl alcohol before reuse.
2. Cleaning – Cleaning refers to scrubbing the instruments with a brush (an old tooth brush works well), detergent and water to remove blood, other body fluids, organic material, tissue and dirt. In addition, cleaning greatly reduces the number of microorganisms (including bacterial endospores) on items. Items should be thoroughly rinsed with water to remove detergent residue, which can interfere with chemical disinfection. Wear utility gloves while cleaning. All staff should be careful to protect their eyes from splashes of contaminated water.

Instruments should not be soaked in chlorine water for more than 10 minutes as chlorine has a corrosive action. If providers are busy, supportive staff can remove the instruments from chlorine water, wash with clean water and do the cleaning later.

3. Sterilization – This procedure eliminates all microorganisms (bacteria, viruses, fungi, and parasites), including bacterial endospores, from instruments and other items. Sterilization should be performed on any item or instrument that comes in contact with the bloodstream or tissues under the skin. Sterilization can be performed using steam (autoclaving), dry heat, or chemicals:
 - *High-pressure saturated steam sterilization* using autoclaves is recommended for sterilization. Unwrapped instruments should be exposed for 20 minutes and wrapped instruments for 30 minutes to temperatures around 121°C at a pressure of 106 kPa (15 lb/inch²). However, the pressure settings may vary slightly from machine to machine and manufacturer's instructions should be followed. Sterilized instruments should be put in sterile containers.
 - *Chemical sterilization* by soaking in 2% glutaraldehyde for 8 hours or in 8% formaldehyde for 24 hours is an alternative to steam sterilization. Instruments thus sterilized should be rinsed with sterile water before use.
4. High-level disinfection (HLD) – HLD is the process that eliminates all microorganisms (including bacteria, viruses, fungi and parasites), but does not reliably kill all bacterial endospores, which cause diseases such as tetanus and gas gangrene. HLD is suitable for instruments and items that come in contact with broken skin or intact mucous membranes. *If sterilization is not available, HLD is the only acceptable alternative.*

Fig. 1: Instrument processing cycle



Methods of high-level disinfection (HLD)

High-level disinfection by boiling, steaming or using chemicals is acceptable for final processing of instruments and surgical gloves in cervical cancer screening clinics. Two methods of HLD are detailed here:

i) HLD by boiling

Boiling is a simple method of HLD that can be performed in any location that has access to clean water and a heat source. Using this method, instruments and other items are submerged in a covered pot or boiler and the water is heated for 20 minutes after it reaches boiling point.

Use instruments immediately or keep them in a covered, dry, high-level disinfected container. (The container used for drying the instruments can be used for storage only if there is no water at the bottom of the container.) These instruments can be stored for 7 days if the container remains tightly covered and for 24 hours if the lid of the container is opened.

Steps of HLD by boiling

- Submerge the cleaned instruments in water contained in a covered pot or boiler.
- Boil the water for 20 minutes. Timing should begin when the water is at a rolling (bubbling) boil and all items should be covered by the water.
- Do not add or remove any item after the water begins to boil.
- After boiling for 20 minutes, remove boiled items using high-level disinfected forceps and place in a high-level disinfected container.
- Allow the items to cool and air dry.

ii) HLD by soaking in a chemical solution

Chemical HLD is used for heat-sensitive items or when a heat source is not available. Instruments can be soaked for 20 minutes in 0.1% chlorine solution or 2% glutaraldehyde solution, then thoroughly rinsed in water and air dried:

- 0.1% chlorine solution – The solution is very effective against hepatitis B virus (HBV), hepatitis C and human immunodeficiency virus (HIV), inexpensive and readily available. A major disadvantage is that chlorine solutions can discolour metals and cause rust. Because chlorine solutions lose their effectiveness with time, fresh solutions should be made at least daily or more often if the solution is visibly cloudy. To prepare a high-level disinfected container, fill a plastic container with 0.1% chlorine solution and soak for 20 minutes. (The chlorine solution can be transferred to a plastic container and reused.) Rinse the inside thoroughly with boiled HLD/ sterile water. Air-dry or dry with a sterile cloth before use.
- 2% glutaraldehyde solution – The contact time with the instruments for HLD is 20 minutes. The solution forms a residue on the instruments which is toxic to tissues. Any instrument soaked in 2% glutaraldehyde solution should be rinsed thoroughly with sterile/HLD water and air dried or dried with a sterile cloth before use. The solution has a shelf life of two weeks after preparation (follow manufacturer's instructions). The solution is expensive.

Steps of HLD by chemical agents

- Decontaminate instruments that have been in contact with blood or body fluids.
- Thoroughly clean and dry all instruments.
- Cover all items completely with the correct dilution of high-level disinfectant that has been properly stored.
- Soak for 20 minutes.
- Remove using high-level disinfected forceps or gloves.
- Rinse well with boiled HLD or sterile water and air dry/dry with a sterile cloth.
- Use promptly or store for up to 7 days in a high-level disinfected, covered container or up to 24 hours if the lid is opened.

Table 1: A guide to processing instruments used for VIA/colposcopy for infection control

Instruments/ consumables	Process required	Suggested procedures
Vaginal speculum, biopsy forceps, endocervical curette, endocervical speculum, vulsellum forceps, insulated speculum, vaginal side-wall retractor	Decontamination, cleaning followed by sterilization or HLD	Autoclaving or HLD by boiling
Gloves	Decontamination, cleaning followed by sterilization	Autoclaving in wrapped packs
Colposcope, LEEP equipment, cryotherapy equipment, cryo gas cylinder, cold coagulator with probe, examination table, halogen lamp, instrument trolley, trays	Decontamination	Wipe with ethyl alcohol

Managing healthcare wastes of screening clinics

- Step-1: After completing patient examination, and while still wearing gloves, dispose off the contaminated objects (swabs and other waste items) in properly marked leak proof container.
- Step-2: Immerse both gloved hands in the bucket containing 0.5% chlorine solution and then carefully remove gloves by turning them inside out. If disposing off the gloves, place them in the leak proof container. If the gloves are for reuse, submerge them in the chlorine solution for 10 minutes for decontamination.

Step-3: Daily collection of wastes from screening clinics is encouraged. Long storage of wastes within the premises should be avoided. The leak proof container/plastic bag should be sent for proper disposal/incineration.

Disposal of biomedical wastes

There are different categories of biomedical wastes which need to be treated differently as shown in the table below.

Option	Treatment and disposal	Waste category
Cat. No. 1	Incineration /deep burial	Human tissues, organs, body parts
Cat. No. 2	Incineration /deep burial	Animal tissues, organs, body parts
Cat. No. 3	Local autoclaving/ micro waving/ incineration	Wastes from laboratory, human and animal cell culture used in research and infectious agents from research and industrial laboratories
Cat. No. 4	Disinfection (chemical treatment/autoclaving/ micro waving and mutilation shredding	Needles, syringes, scalpels blades, glass and other sharp items that may cause punctures and cuts.
Cat. No. 5	Incineration/destruction and drugs disposal in secured landfills	Discarded medicines and drugs used for cancer chemotherapy
Cat. No. 6	Incineration/autoclaving/micro/ waving	Items contaminated with blood and body fluids including cotton, gauze, dressings, sanitary napkins, etc.
Cat. No. 7	Disinfection by chemical treatment auto claving/ micro/waving and mutilation shredding.	Waste generated from disposable items (other than the sharp items) such as tubing, catheters, intravenous sets, etc.
Cat. No. 8	Disinfection by chemical treatment and discharge into drain	Waste generated from clinic and washing, cleaning, house-keeping and disinfecting activities
Cat. No. 9	Disposal in municipal landfill	Ash from incineration of any bio-medical waste
Cat. No.10	Chemical treatment and discharge into a drain for liquids and secured landfill for solids	Chemicals used in production of biological, chemicals, used in disinfection,etc.

For further reading the programme managers are encouraged to consult- 'Safe management of wastes from healthcare activities / edited by Y. Chartier et al. – 2nd ed; 2014 WHO Press; Geneva.'

Annex 3

Facility tour worksheet

1. Name of health facility: _____
2. Services delivered at the facility:
 - a. Education and awareness Yes/No
 - b. Screening Yes/No
 - c. Colposcopy Yes/No
 - d. Treatment of precancers Yes/No
 - e. Laboratory Yes/No
 - e. Others (specify) _____
3. Name of trainee: _____
4. Date: [][]/[][]/[][][][]
5. Comments on observed services:

Services	Important observations	Strengths	Deficiencies if any
Reception and waiting area			
Counselling activities			
Cervical cancer screening			
Post-screening activities			
Colposcopy/treatment			
Post-colposcopy/treatment activities			
Sample transfer to the laboratory (if applicable)			
Sample processing at the laboratory (if applicable)			
Laboratory report generation and report distribution (if applicable)			
Infection prevention activities			
Documentation and record keeping			
Reporting system/HIS			
Quality assurance activities			

Facilitator's Signature:

Annex 4

Trainees' Feedback Form

We value your comments to evaluate and improve our training programme. Please take time to complete the feedback form.

Part A:

Rate the following as per the scale starting from 1 (Sub-standard) to 9 (Excellent)

Training contents and materials

1. Quality of presentations material materials	1	2	3	4	5	6	7	8	9
2. Relevance of presentations to my background	1	2	3	4	5	6	7	8	9
3. Quality of printed materials	1	2	3	4	5	6	7	8	9
4. Usefulness of facility tour	1	2	3	4	5	6	7	8	9
5. Time spent for facility tour	1	2	3	4	5	6	7	8	9
6. Overall time for the sessions and courses	1	2	3	4	5	6	7	8	9

Comments.

Facilitators

7. Expertise on the topic	1	2	3	4	5	6	7	8	9
8. Facilitator's ability to stay focused on the topic	1	2	3	4	5	6	7	8	9
9. Time allowed for me to ask all my questions	1	2	3	4	5	6	7	8	9
10. My questions were appropriately answered	1	2	3	4	5	6	7	8	9
11. Assistance during facility tour	1	2	3	4	5	6	7	8	9

Comments.

Training Venue

12. The cleanliness and comfort of the venue	1	2	3	4	5	6	7	8	9
13. Air conditioning or heating settings	1	2	3	4	5	6	7	8	9
14. Projection equipment settings (focus and view)	1	2	3	4	5	6	7	8	9
15. The provision of food and drinks	1	2	3	4	5	6	7	8	9
16. Clinical training facility adequately equipped	1	2	3	4	5	6	7	8	9

Comments.

Part B:

List 3 skills (or knowledge) you have improved upon during this training

- 1.
- 2.
- 3.

How do you propose to apply the skills learnt during this training at your own facility?

(Encircle the appropriate response (s))

1. I am already working in a managerial capacity for cervical cancer screening at my facility and my quality of work will improve.
2. I will join as facility manager for the existing screening/colposcopy services after the course.
3. I will initiate screening/colposcopy services at my facility.
4. I will train my colleagues and support staff at my facility.

Suggestions for making this training more effective in the future

- 1.
- 2.
- 3.

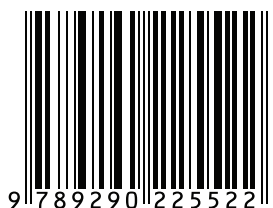


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