SECTION 3

PATIENT AND PROGRAMME MONITORING

INTRODUCTION

Programme monitoring is a systematic means of capturing service delivery data, analysing it with appropriate aggregation and reporting tools, and using the resulting information to make strategic choices regarding programme management. The guiding information and tools in this section are intended to support comprehensive cervical cancer prevention programme monitoring using a facility-level health management information system (HMIS), while ensuring that the information gathered also supports clinical decision-making and patient management.

The package of operational resources presented in this section is applicable to programmes implementing or planning to implement any of the screen-and-treat strategies presented in the *WHO guidelines for screening and treatment of precancerous lesions for cervical cancer prevention* [WHO, 2014]:

1. Screen with VIA alone

2. Screen with cytology or HPV test, followed by colposcopy

3. Screen with HPV test, followed by VIA

4. Screen with HPV test alone

Additionally, this package is applicable to programmes employing an updated traditional strategy, referenced in *Integrating HPV testing in cervical cancer screening programs: a manual for program managers* [PAHO, 2016]: screen with HPV test, followed by cytology, and referral of those positive on both to colposcopy and biopsy to determine treatment.

Many countries have in place monitoring and evaluation (M&E) strategies, patient monitoring protocols, and health management information systems; but these may be nascent, lacking standardization, or lacking cervical cancer data and indicators. The tools and guiding information in this section are not intended to replace existing systems, but rather to build on and improve them.

Reasons to Invest in Improved Data Collection and Reporting:

- **What gets measured gets done**
- **If you don't measure results, you can't tell success from failure, and you can't identify gaps and find solutions**
- **If you can't see success, you can't learn from it and share it.**
- **If you can't see success, you can't reward it.**
- **If you can't reward success, you are tolerating failure.**
- **If you can't recognize failure, you can't correct it.**
- **If you can demonstrate cost effective results, you can scale up.**

Note on New Screening and Treatment Technologies: This section addresses the screening and precancerous lesion treatment technologies currently recommended by WHO. As technologies continue to advance, the tools included can be adapted to address these new technologies. Screening and triage techniques and adjuvants such as digital cervicography or smart-phone-based mobile colposcopy, can be monitored by adapting and expanding the VIA- and colposcopy-related data elements and indicators. These tools may also be adapted to include new precancerous lesion treatment technologies, such as thermal coagulation, by adapting the cryotherapy-related elements. Where these new technologies are being piloted and tested, it is vital that findings be made available in order to strengthen the global evidence base.

Patient and programme monitoring is a systematic means of capturing service delivery data, analysing it with appropriate aggregation and reporting tools, and using the resulting information to make strategic choices regarding programme management.

ROLES AND RESPONSIBILITIES FOR M&E

Before initiating cervical cancer prevention programmes, it is necessary to ensure availability of the resources needed to monitor, evaluate, and apply course corrections to the programme. Table 3.1 outlines the major M&E roles and responsibilities in a typical cervical cancer programme.

TABLE 3.1
Roles and responsibilities for M&E

ENTITY	M & E ROLE/RESPONSIBILITY
Community: Clients	Participate by providing information to providers based on previous screening or treatment history, demographics and contact information. Receive feedback about the use of cervical cancer prevention services in their community.
Facility Staff: Providers (Doctors, Nurses, and Midwives), Data Entry Clerks, and Charge Nurses	Providers are the primary data collectors, completing the source document (client forms) during the client visit. Data entry clerks help with transcription from the completed client form to the register and the calculation of indicators on the monthly summary form. Charge Nurses should meet with providers to review and use data for decision-making at the facility level. Discuss challenges related to the programme highlighted by the routine service delivery statistics.
Subnational Staff: Supervisors and Staff	Ensures that data are checked and verified through periodic data quality assessments or audits, ideally carried out during supportive supervision visits. Helps facility providers understand the data collected and its implications. Helps and trains facility staff to complete monthly reporting. Aggregates facility-level data captured on Monthly Summary Forms into an electronic system such as DHIS 2[1] (some facility staff may also have this capacity) for data visualization and use. Works with national and regional/provincial government to develop subnational and facility-level targets related to Screening Rate and Coverage based on trends and programme direction.
National and Regional/Provincial Government	Uses aggregate data from facilities and subnational level to guide overall cervical cancer prevention programming. Uses data to inform budget allocations. Identifies lessons learned and makes strategic recommendations and decisions. Ensures that feedback on the data flows back to district supervisors. Works with subnational staff to develop subnational and facility-level targets related to Screening Rate and Coverage based on trends and programme direction.
Programme Technical Staff and Implementing Partners	Collaborates with M&E team on indicator development and selection to guide programme implementation. End-user of the information for decision-making. Participates in monitoring visits. Advises MoH on progress towards national targets. Informs the development of targets. Provides technical assistance to MoH to implement and improve the programme based on M&E results.
M&E Point Person(s)	Coordination role. Provides training to providers and other programme staff on standardized data collection. Leads analysis and synthesis of data at the subnational and national levels. Provides results against targets and benchmarks to donors and the MoH as well as the individual facilities generating the data. Helps establish and build ownership and buy-in for the overall M&E system. Develops and updates manuals, guidelines, training materials, and reports for programme M&E. Informs the development of targets.

[1] DHIS 2 is a flexible, web-based open-source information system with visualization features, charts and pivot tables.

INDICATORS

The primary purpose of monitoring cervical cancer prevention programmes is to support continuous quality improvement of services. Timely data collection, aggregation, and review, leveraging the national HMIS, allows for prompt remediation of problems, and should thus be included in regular programme activities [WHO, 2013]. Successful integration of cervical cancer data into existing national HMIS requires standardized data practices – including a standardized set of indicators. A list of suggested indicators can be found in list format in Table 3.2, with expanded information on method of measurement in reference tables in the package of Implementation Tools and Materials at the end of this section. These indicators are calculated using data derived from the provision of screening and treatment services, and demonstrate quantitatively how a programme is progressing towards expected outputs and outcomes.

The purpose of the list of suggested indicators and accompanying guiding information in this section is to support the selection of appropriate routine service delivery and programme indicators that can generate meaningful, actionable data for decision-making. The indicator should be used by ministries of health, implementing partners, and other stakeholders to establish M&E systems for new cervical cancer programmes, or can be cross-referenced by existing programmes to enhance M&E systems through the adaptation, deletion or addition of indicators according to need.

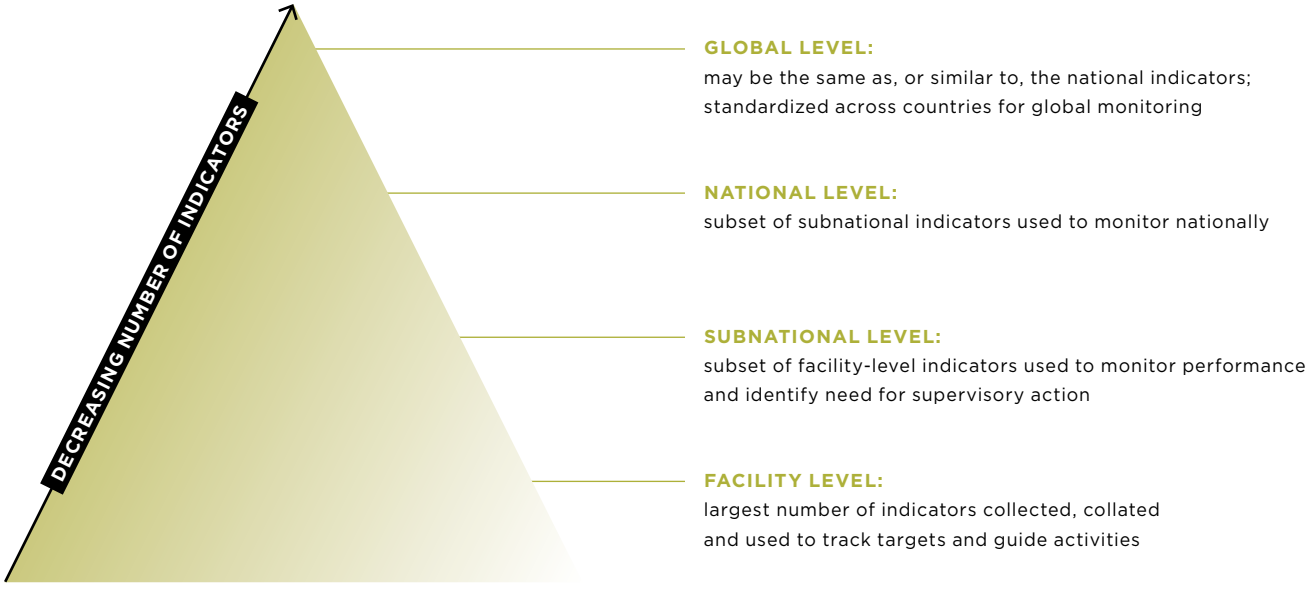
Data required to calculate the indicators should be collated and reported on a monthly, quarterly, or annual basis as appropriate, and analysed in a timely manner. The required variables for the numerators and denominators of the percent-based indicators should be integrated into the existing HMIS for consistency of calculation. With regular reporting and monitoring, appropriate indicator targets and benchmarks can be determined for facilities, districts (or relevant subnational unit), and national programmes.

INDICATORS AT GLOBAL, NATIONAL, SUBNATIONAL, AND FACILITY LEVELS

Service delivery data are generated at the health facility level, and these primary data will inform facility, subnational and national decision-making; however, not all indicators are used at all levels. For example, while knowing the number of postponed cryotherapy cases is useful at the facility level to improve communication and outreach to clients, those data are not necessarily useful at the subnational or national levels.

Figure 3.1 demonstrates graphically how information flows from the facility level to the national level, and is used to report globally.

FIGURE 3.1
Indicator aggregation and flow of strategic information



GLOBAL-LEVEL INDICATORS

WHO recommends the collection of performance, result and impact indicators to monitor cervical cancer prevention and control programmes nationally and globally. The performance indicators recommended by WHO are related to coverage, screening, and treatment of precancerous lesion. The recommended impact indicator assesses mortality.

See Section 2, Population-based Survey Modules for tools and guiding information to support the collection of data to measure the prevalence of screening through population-based surveys.

Data sources for the global coverage and impact indicators fall outside the scope of routine service delivery data collection and aggregation. The indicator for coverage is approached in the Section 2 of this toolkit, Population-Based Survey Modules; and the impact indicator requires population-level or sentinel hospital-based cancer registry data to calculate, placing it outside the scope of this toolkit. Cancer registries support collection of data on cancer cases and deaths that can be analysed to inform disease occurrence and trends in a defined population. For more information on cancer registration, consult the website of the Global initiative for Cancer Registry Development (GICR) of the International Agency for Research on Cancer (IARC) [WHO, 2014].

Additional guidance on the WHO core global indicators for coverage and impact can be found in *Comprehensive cervical cancer control: a guide to essential practice* [WHO, 2014] and *Monitoring national cervical cancer prevention and control programmes: quality control and quality assurance for visual inspection with acetic acid (VIA-) based programmes* [WHO, 2013].

NATIONAL-LEVEL INDICATORS

National programmes calculate country-level indicators using data aggregated from monthly facility summary forms that are fed into the national health management information system (HMIS). The indicators monitored at national level are typically a small set of core indicators which provide a focused yet comprehensive overview that informs programme tracking and management.

SUBNATIONAL-LEVEL INDICATORS

A larger set of indicators is monitored at the subnational level to provide a broader view of programme activities (e.g. training, facility-based surveillance, etc.) and routine service delivery. Using these indicators, subnational units can review facility-level data and trends and respond rapidly to any issues identified.

FACILITY-LEVEL INDICATORS

The majority of indicator data are collected at the facility level using a client form and a register or logbook. Data from these sources are summarized through a monthly summary form, which then allows calculation of indicators at the facility level as well as reporting of summary data to subnational and national levels. At the subnational, national and global levels, data aggregated across facilities are used to calculate key indicators for monitoring.

PRIORITIZING INDICATORS

A large set of indicators which measure more than just the basic programmatic aspects will provide useful information; however, the collection, management and analysis of data for additional indicators requires significantly more time and resources. Additionally, information systems can only collect a finite amount of information in a consistent and usable manner. Fewer fully disaggregated and well analysed indicators, collected consistently using aligned data tools, can improve programmes more than a large amount of poorly collected, poorly linked, and unused information [WHO Consolidated Strategic Information Guidelines, 2015]. This trade-off should be carefully considered when building a nationally standardized set of indicators. With this consideration in mind, the indicators in this section are organized into **Global (G), Core (C)**, and **Optional (OPT)** categories. Table 3.2 presents the short forms of the indicators to illustrate their placement in the overall cascade of indicators and continuum of care. To best support prioritization, reference tables with expanded detail on the method of measurement for each indicator can be found in the package of Implementation Tools and Materials at the end of this section.

TABLE 3.2
List of global, core, and optional indicators

INDICATOR G = Global; C = Core; OPT = Optional	WHAT IT MEASURES
SCREENING	
C0.0 Number Screened	Number of women screened [by screening visit type and age group or range] in a given time period
G1.0 Screening Rate	Percentage of women aged 30-49 years screened for the first time in a 12-month period
C1.0 Screening Rate	Percentage of women within the target age range screened for the first time in a given time period
OPT1.0.1 Screening Test Failure*	Percentage of women whose sample was tested more than once due to error
OPT1.0.2 Inadequate Sample*	Percentage of women whose sample was inadequate for screening test completion
OPT1.0.3 Received Results*	Percentage of women who received screening test results
OPT1.1 Screened Within Target Age Range	Proportion of total women screened for the first time who were within the target age range
OPT1.2 Progress Toward Target Screening Rate	Percentage of screening target reached in the last year, quarter, month
OPT1.3 Rescreened Within Target Interval	Percentage of women who were rescreened within the recommended screening interval
OPT1.4 Precancerous Lesion Post-treatment Follow-up	Percentage of women treated for precancerous lesions who return for a 1-year post-treatment follow-up screening test
SCREENING RESULTS AND REFERRALS	
G2.0 Screening Test Positivity Rate	Percentage of screened women aged 30-49 years with a positive result in a 12-month period
C2.0 Screening Test Positivity Rate	Percentage of [first time] screened women [within the target age range] who received a positive screening result in a given time period
OPT2.0.1 Precancerous Lesion Cure Rate	Percentage of women who received a negative screening result at their 1-year post-treatment follow-up
C2.1 Received Triage Examination**	Percentage of screen-positive women who received a triage examination
C2.2 Triage Examination Percent Positive **	Percentage of women who received a triage examination with a positive result in a given time period
OPT2.2.1 Triage Examination Provision**	Percentage of screen-positive women referred for triage who attended the triage visit and received a triage examination
OPT2.2.2 Triage Referral Compliance**	Percentage of screen-positive women referred for triage who attended the triage visit
OPT2.2.3 Referred for Triage**	Percentage of screen-positive women who were referred for triage
OPT2.2.4 Received Triage Results**	Percentage of women who received triage examination results
OPT2.3 Screened Women Requiring Treatment**	Percentage of women screened [for the first time] who received a positive triage examination result in a given time period
C2.4 Suspected Cancer Cases	Percentage of [first time] screened women [within the target age range] with suspected cervical cancer
TREATMENT AND REFERRALS	
G3.0 Treatment Rate	Percentage of screen-positive women who have received treatment in a given time period
C3.0 Treatment Rate	Percentage of screen-positive women who have received treatment in a given time period
OPT3.1 Precancerous Lesion Treatment	Percentage of screen-positive women with lesions eligible for cryotherapy or LEEP who received that treatment
OPT3.2 Post-treatment Complication	Percentage of women receiving cryotherapy or LEEP who returned with a post-treatment complication

* Applicable to screening, triage, or diagnostic methods requiring sample collection and processing (HPV testing, Pap smear/cytology, biopsy)

** Applicable to screening strategies which include a triage step between screening and treatment (e.g. HPV test followed by VIA; HPV test or cytology followed by colposcopy)

*** Applicable to HPV testing with client self-sampling

INDICATOR G = Global; C = Core; OPT = Optional	WHAT IT MEASURES
OPT3.3 Treatment with Cryotherapy	Percentage of screen-positive women with lesions eligible for cryotherapy who received cryotherapy
OPT3.3.1 Single Visit Approach Rate	Percentage of VIA-positive women with lesions eligible for cryotherapy treated during the same visit
OPT3.3.2 Postponed Cryotherapy	Percentage of VIA-positive women with lesions eligible for cryotherapy who postponed cryotherapy
OPT3.3.3 Cryotherapy After Postponement	Percentage of VIA-positive women with lesions eligible for cryotherapy who received cryotherapy after postponing
OPT3.3.4 Did Not Return for Cryotherapy	Percentage of VIA-positive women with lesions eligible for cryotherapy who did not return for cryotherapy after postponing
OPT3.4 Treatment for Large Lesions	Percentage of screen-positive women referred for large lesions who received LEEP
OPT3.4.1 Large Lesion Treatment Eligibility	Percentage of screen-positive women referred for large lesions who were eligible for LEEP
OPT3.4.2 Large Lesion Referral	Percentage of screen-positive women referred for large lesions (lesions not eligible for cryotherapy)
OPT3.5 Suspected Cancer Treatment/ Follow-up	Percentage of women with suspected invasive cancer who completed appropriate treatment or follow-up
OPT3.5.1 Suspected Cancer Referral Compliance	Percentage of screen-positive women referred for suspected cancer who attended the referral visit
OPT3.5.2 Suspected Cancer Referral	Percentage of screen-positive women referred for suspected cancer
OPT3.6 Colposcopy Referral Compliance	Percentage of screen-positive women referred for colposcopy who attend the colposcopy visit
OPT3.6.1 Colposcopy Referral	Percentage of screen-positive women referred for colposcopy
OPT3.7 Confirmed Cancer	Percentage of screen-positive women referred for suspected cancer who were diagnosed with cancer
PROGRAMME AND SERVICE DELIVERY	
C4.0 Proportion of Facilities Providing Services	Proportion of health facilities that are providing the cervical cancer services they are designated to provide
OPT4.1 Trained Service Providers	Proportion of service providers trained in screening and treatment services who are providing services
OPT4.2 Static Facility Screenings	Proportion of cervical cancer screenings conducted at a static facility
OPT4.2.1 Mobile Screenings	Proportion of cervical cancer screenings conducted through routine outreach using a mobile approach
OPT4.3 Community Campaigns	Number of community campaigns (including mass screening campaigns/periodic outreaches) carried out
OPT4.4 Self-sampling***	Proportion of screening tests conducted using a self-collected sample
FACILITY AND LABORATORY LINKAGES	
OPT5.0 Results Turn-around Time*	Number of days between sample collection and return of results to screened women
OPT5.0.1 Sample Submission Time*	Number of days between sample collection and transport of sample to laboratory
OPT5.0.2 Laboratory Processing Time*	Number of days between laboratory receipt of sample and return of results to facility
OPT5.0.3 Results Communication Turn-around Time*	Number of days between facility receipt of results and return of results to screened women
HIV SERVICE INTEGRATION	
OPT6.0 First Time Screening for Women with HIV	Percentage of women enrolled in HIV Care and Treatment who were screened for cervical cancer for the first time
OPT6.1 PITC Service Provision	Percentage of women with previously unknown HIV status who received provider-initiated testing and counseling (PITC) and now know their status
OPT6.2 Linkage to HIV Services	Percentage of clients linked to HIV Care and Treatment after receiving an HIV positive result through PITC

INDICATOR DENOMINATORS

There are two broad categories of denominators used to calculate the indicators: population-level denominators and programme-level denominators.

Population-level denominators: The denominator is the number of people in a group, regardless of whether or not those people have encounters with the health-care system. This type of denominator is relevant to the Screening Rate indicator. When calculating the Screening Rate, the denominator should be the number of women within the target age range in the facility catchment area for facility level statistics, and the number of women within the target age range captured within the district or national census for subnational or national statistics.

Programme-level denominators: This type of denominator is derived from the cervical cancer data system, and is relevant to the majority of suggested indicators. For example, in the Screening Test Positivity Rate indicator, the denominator is the aggregate number of women (in the target age range) who were documented as having received a screening test (for the first time in their life) within the specified time period.

INDICATOR DISAGGREGATION

Disaggregation uses data elements to break up aggregate indicator data into component parts in order to identify and highlight differences that may exist [WHO Consolidated Strategic Information Guidelines, 2015]. To ensure that the strategic information generated by the programme monitoring system is useful for programme management and service improvement, and sensitive to the populations most vulnerable to cervical cancer, recommended data elements for disaggregation are noted for each indicator.

Common elements for disaggregating cervical cancer data include:

- **Age group or age range**: inside the target age range, outside the target age range; or discrete age ranges based on national epidemiology or data practices (e.g. <20, 20–29, 30–39, 40–49, >49)
- **Geography or Location**: Province, region, district, or other appropriate administrative boundaries to facilitate key analysis and feedback; rural or urban (*Note: Geography, Facility Level and/or Facility Name should be considered required disaggregates at the subnational and national level, and therefore have not been noted for each indicator*)
- **HIV status**: HIV positive, HIV negative, or HIV unknown
- **Screening method** (*where multiple methods are in use*): VIA, VILI, HPV testing, cytology
- **Screening visit type**: first time screenings, post-treatment follow-up at 1 year, routine rescreening (after last screening was negative)
- **Service delivery point**: Static facility, mobile outreach *(Note: where applicable, this element may be expanded to include settings or points of integrated service delivery, such as HIV Care and Treatment, Family Planning, STI Services, etc. to enhance usability of key indicators*)

Indicator disaggregation requires the collection of key data elements in a standardized format at the individual client level, integration of those key elements into standardized summary and reporting processes, and methods to ensure data integrity throughout summary and aggregation. Standardized forms for data collection, aggregation and reporting (such as the examples shown in the Implementation Tools and Materials at the end of this section) coupled with training and regular data reviews are key to ensuring high-quality data. Where accessible, an electronic HMIS linked to electronic patient record systems can significantly enhance data quality and reduce staff burden through automated data aggregation and indicator calculation.

The same principles applied to prioritizing indicators should be applied to determining what indicators should be disaggregated by which data elements – *quality* should be emphasized over *quantity*. Examining how disaggregation impacts an indicator's scope can help to inform whether the information gained is worth any additional investment in data collection, management, and quality assurance. For example:

At its base level, the Screening Test Positivity Rate indicator (indicator C2.0 in Table 3.2) is intended to monitor screening test quality by measuring the percentage of screened women with a positive screening test result in a given time period. As shown in Table 3.3, in order to be sensitive to the population most vulnerable to cervical cancer, the indicator definition can be restricted to women *within the target age* range while still fulfilling its intended purpose of monitoring test quality:

TABLE 3.3
Screening test positivity rate – target ages only

INDICATOR AND COMPONENTS	VALUE
C2.0 SCREENING TEST POSITIVITY RATE	**8.8%**
C2.0 NUMERATOR: Total Number of Women Within Target Age Range with a POSITIVE Screening Test Result	35
C2.0 DENOMINATOR *(Also C0.0)*: Total Number of Women Screened Within Target Age Range	400

Programmes may aim to provide screening services only to those women within a target age range; in which case, the indicator as calculated above may provide all the information needed. However, if women outside of the target age range are provided with screening services, calculating as above leaves significant gaps. Broadening the basic indicator starts to create a different view, as shown in Table 3.4:

TABLE 3.4
Screening test positivity rate – all ages

INDICATOR AND COMPONENTS	VALUE
C2.0 SCREENING TEST POSITIVITY RATE	**12.5%**
C2.0 NUMERATOR: Total Number of Women with a POSITIVE Screening Test Result	100
C2.0 DENOMINATOR *(Also C0.0)*: Total Number of Women Screened	800

The indicator as written in Table 3.4 is still fulfilling its purpose, while also providing more comprehensive information that can support forecasting of required resources; however, because the sensitivity to the vulnerable target population at the aggregate level has been lost, disaggregation would make this information more useful. In some cases, disaggregating the numerator alone provides enough information. As shown in Table 3.5, disaggregating the numerator alone by Age Group only allows calculation of the overall Screening Test Positivity Rate and the contribution of each Age Group to the overall rate:

TABLE 3.5
Numerator disaggregation

INDICATOR AND COMPONENTS		VALUE	PROPORTION OF TOTAL
C2.0 SCREENING TEST POSITIVITY RATE		**12.5%**	
C2.0 NUMERATOR: Total Number of Women with a POSITIVE Screening Test Result		**100**	
Age Group Disaggregation	Within Target Age Range	35	35.0%
	Outside of Target Age Range	65	65.0%
C2.0 DENOMINATOR *(Also C0.0)*: Total Number of Women Screened		**800**	

The limited disaggregation highlights a very high proportion of positive tests in women outside of the target age range; however, additional information is still needed to contextualize the issue. Going one step further – as in Table 3.6 – and disaggregating both the numerator and denominator by Age Group fills key gaps by enabling monitoring of the overall Screening Test Positivity Rate and the Screening Test Positivity Rate for each Age Group (including those most vulnerable). Each group's contribution to total positives and total number screened can also be easily calculated:

TABLE 3.6
Numerator and denominator disaggregation

INDICATOR AND COMPONENTS		VALUE	PROPORTION OF TOTAL
C2.0 SCREENING TEST POSITIVITY RATE		**12.5%**	
Age Group Disaggregation	Screening Test Positivity Rate – Within Target Age Range	8.8%	
	Screening Test Positivity Rate – Outside of Target Age Range	16.3%	
C2.0 NUMERATOR: Total Number of Women with a POSITIVE Screening Test Result		**100**	
Age Group Disaggregation	Within Target Age Range	35	35.0%
	Outside of Target Age Range	65	65.0%
C2.0 DENOMINATOR *(Also C0.0)*: Total Number of Women Screened		**800**	
Age Group Disaggregation	Within Target Age Range	400	50.0%
	Outside of Target Age Range	400	50.0%

Fully disaggregated indicator data increases the complexity of data collection, management and aggregation processes; however, as seen in this example, disaggregation can enable identification of significant issues requiring further investigation – in this case, the high proportion of women screened outside of target age group, and the high test positivity rate for that population – which would not have been identified using either of the simple aggregate indicators. It should be noted that a suggested optional indicator (OPT1.1 Screened within the Target Age Range) would identify the high proportion of women screened outside of the target age range; however OPT1.1 would not identify the high test positivity rate in that population.

Ultimately, the approach taken to generating strategic information of appropriate sensitivity and scope is dependent on programme context, priorities, and resources; programmes must weigh information needs for patient and programme monitoring against the capacity for staff and systems to collect and manage quality data. Harmonization with existing approaches must also be considered. Programmes with nascent monitoring systems may be best served by fully disaggregating the Core indicators by key elements, while limiting disaggregation of additional indicators above the facility level. Again, quality over quantity should be a key guiding principle when establishing data practices.

AGE RANGES

As seen in the example above, the age range or group is often a key indicator component or disaggregate as it informs programme effectiveness in reaching the target population and supports monitoring of those most vulnerable to cervical cancer. The target age range used in calculating or disaggregating relevant Core and Optional indicators should be based on national cervical cancer epidemiology and guidelines. In high HIV-prevalence contexts, adaptation of target age range based on HIV positive status should align with national or global guidelines.

In order to allow for cross-country comparison and global monitoring, WHO designates that globally-reported screening data should reflect only women within the target age group of 30–49 years; however, WHO recommends that all HIV positive women should receive a VIA screening when they are first identified as HIV positive, regardless of age.

When the WHO-recommended and national target age ranges for screening do not align, data systems should be designed with the capacity to calculate the global Screening Rate, Test Positivity Rate and Treatment Rate indicators as defined in order to report.

HIV STATUS

Given that the highest burden of cervical cancer is found in countries with high HIV prevalence, the majority of the indicators recommend disaggregation by HIV status to ensure that information is sensitive to the high-risk population of women (and girls) living with HIV. In countries where HIV prevalence is relatively low, disaggregation by HIV status may not be of programmatic importance and its inclusion may be reconsidered.

As shown in the example below (Table 3.7), disaggregation by HIV status allows for the calculation of a Screening Test Positivity Rate specific to HIV-positive women. In this case, disaggregation by HIV status *and* Age Group highlights a plausible

correlation between HIV positive status and the high proportion screened *outside the target age range*, and the high test positivity rate noted in previous example.

TABLE 3.7
Example disaggregation by HIV status and age group

INDICATOR AND COMPONENTS		VALUE			PROPORTION OF TOTAL
		WITHIN TARGET AGE RANGE	OUTSIDE TARGET AGE RANGE	TOTAL	
C2.0 SCREENING TEST POSITIVITY RATE		**8.8%**	**16.3%**	**12.5%**	
HIV Status Disaggregation	Screening Test Positivity Rate – HIV Positive	14.3%	17.1%	16.5%	
	Screening Test Positivity Rate – HIV Negative	7.1%	8.0%	7.2%	
	Screening Test Positivity Rate – Women with Unknown HIV Status	10.0%	16.0%	14.0%	
C2.0 NUMERATOR: Total Number of Women with a POSITIVE Screening Test Result		**35**	**65**	**100**	
HIV Status Disaggregation	HIV Positive	10	47	57	57.0%
	HIV Negative	20	2	22	22.0%
	HIV Unknown	5	16	21	21.0%
C2.0 DENOMINATOR *(Also C0.0)*: Total Number of Women Screened		**400**	**400**	**800**	
HIV Status Disaggregation	HIV Positive	70	275	345	43.1%
	HIV Negative	280	25	305	38.1%
	HIV Unknown	50	100	150	18.8%

SCREENING VISIT TYPE

Many programmes aggregate data on services delivered into simple overall totals for monitoring, without consideration of the client's screening history. Aggregation by all screenings would thus include women who attended a screening visit for the first time, women who attended a screening visit in follow-up to treatment for precancerous lesions, and women who attended a routine rescreening visit following a previous negative screening test. At the facility level and above, this aggregate number is important for understanding the demand for screening and treatment services and planning for the human and material resources needed to meet that demand.

Other programmes consider only data relevant to first-time screenings in aggregate totals and indicators. Focusing on first-time screenings is key to accurately monitor whether a programme is reaching those at highest risk (i.e. those in the target age range who have never been screened before) and informs disease burden in the screening naïve population. The indicators recommended by WHO focus on first-time screenings in order to align to the goals of most programmes (e.g. to screen all women in the target age range at least once), and because this information is key to a coordinated global cervical cancer response.

Both aggregation strategies provide valuable information; however, neither strategy alone supports comprehensive monitoring:

- Monitoring total screenings without further disaggregation provides an imprecise view of the screening test positivity rate across risk subsets of the target population (i.e. women screened for the first time, rescreened after previous negative test, or post-treatment follow-up)

- Monitoring treatment resulting from total screenings without further disaggregation hinders a programme's ability to monitor treatment success and estimate efficacy. Critical issues, such as a high percentage of women requiring retreatment due to a positive result on a 1-year post-treatment follow-up screening, would be missed (see example in Table 3.8).

- It is vital that all women who require follow-up and treatment (i.e. those screen-positive and/or triage-positive) receive follow-up and treatment. Limiting indicator counts to first-time screenings alone does not allow for the monitoring of this key patient care and outcomes component.

- Restricting indicators to first-time screenings provides only part of the information necessary to advocate and plan for programme resources to meet the full demand, and change management including policies.

The ideal, and more complex, approach integrates both strategies by aggregating data related to all screenings into one total (e.g. Total Women Screened, Total with a Positive Result on a Screening Test, etc.), while maintaining the ability to disaggregate that total into its component "screening visit types": first-time screening, rescreening, and post-treatment follow-up screening. The value in this approach can be seen below in Table 3.8, where the extremely high Test Positivity Rate at post-treatment follow-up screenings would have been missed without disaggregation of the numerator and denominator by Screening Visit Type.

TABLE 3.8
Example disaggregation by screening visit type (and HIV status)

INDICATOR AND COMPONENTS		NUMBER AND PERCENTAGE				PROPORTION OF TOTAL
		HIV +	HIV -	HIV Unk	TOTAL	
C2.0 SCREENING TEST POSITIVITY RATE		**14.7%**	**2.0%**	**9.0%**	**12.5%**	
Screening Visit Type Disaggregation	Test Positivity Rate – Screened for the First time	12.5%	2.5%	7.8%	**10.7%**	
	Test Positivity Rate – Screened at 1 year post-treatment	53.3%	0.0%	40.0%	**40.0%**	
	Test Positivity Rate – Routine Rescreens	12.5%	0.0%	0.0%	**10.0%**	
C2.0 NUMERATOR: Total Number of Women with a POSITIVE Screening Test Result		**81**	**1**	**18**	**100**	
Screening Visit Type	Number screened for the first time who had a positive result	60	1	14	**75**	**75.0%**
	Number screened 1 year post-treatment who had a positive result	16	0	4	**20**	**20.0%**
	Number routinely rescreened (after previous negative screening) who had a positive result	5	0	0	**5**	**5.0%**
C2.0 DENOMINATOR *(Also C0.0)*: Total Number of Women Screened		**550**	**50**	**200**	**800**	
Screening Visit Type	Number screened for the first time	480	40	180	**700**	**87.5%**
	Number screened 1 year post-treatment	30	10	10	**50**	**6.3%**
	Number of routine rescreens	40	0	10	**50**	**6.3%**

STANDARDIZING TERMINOLOGY: SCREENING TEST RESULTS

In order to monitor patients and programmes, the terminology for classifying the results of cervical cancer screening tests must be standardized across service delivery points. Providers and others responsible for data collection and management should receive training on how to accurately classify and aggregate screenings and their results.

VIA RESULTS

For the purpose of monitoring, the possible results for VIA are categorized into the following three options:

1. Negative

2. Positive (eligible for cryotherapy/not eligible for cryotherapy)

3. Positive, suspected cancer

Options 2 and 3 are both considered a positive result. Women with a VIA screening (or triage) test result of positive or positive, suspected cancer are therefore considered screen-positive (or triage-positive) for indicator calculation purposes. Positive results are broken into precancer and suspected cancer because the care pathways for each are different, with suspected cancer requiring further evaluation (colposcopy, biopsy, diagnosis) before treatment options can be considered. Clinical definitions can be found in *Comprehensive cervical cancer control: a guide to essential practice* [WHO, 2014].

Inconclusive or Indeterminate VIA result

Inconclusive (or indeterminate) VIA results should be rare, but can impact the count for positive results. The options for addressing an inconclusive result include:

1. Reapply the acetic acid.

If the result is still inconclusive:

2. Seek immediate consultation from a colleague or distant consultation.

If options 1 and 2 are unavailable

3. Classify the result as positive.

PAP SMEAR/CYTOLOGY RESULTS

For the purpose of monitoring, the possible results for cytology are categorized into the following two options:

1. Normal (negative for intraepithelial lesions or malignancy)

2. Abnormal (any epithelial cell abnormality[1])

In order to standardize language across indicators, any epithelial cell abnormality is considered a positive result. While it is possible to determine degrees of abnormality and even identify precancer from cytology, both precancer and suspected cancer are captured as a positive result. Women with an abnormal result on a Pap smear screening test are therefore considered *screen-positive*. If feasible, disaggregating relevant indicators can provide the more granular results information.

Programmes employing a screening strategy of cytology, followed by colposcopy may choose to adapt the indicators to capture the ASCUS[2] screening result threshold recommended for referral to colposcopy triage.

HPV TEST RESULTS

For the purpose of monitoring, the possible results for an HPV test are categorized into the following three options:

1. Negative

2. Positive

3. Retest required

STANDARDIZED TERMINOLOGY AND DATA QUALITY

Errors in reporting results which impact the quality of monitoring data can occur when:

1. Screening visits where cancer is suspected based on initial speculum examination are not classified as "completed screening visits";

2. A screening that could not be completed due to cervicitis or other infection is counted as a "completed screening"; and

3. Suspected cancer cases are not classified as positive screening results.

As an example, a woman attends a VIA screening visit. During the initial speculum examination, and prior to the application of acetic acid, the provider identifies a cauliflower-like mass, determines that invasive cancer is suspected, and recommends that the woman be referred for further evaluation and diagnosis.

Although acetic acid was not applied in this case, the defined purpose of the screening was fulfilled (i.e. to identify individuals with increased probability of having either the disease itself or a precursor of the disease); and therefore, the visit should be considered a completed screening, with a result of positive, suspected cancer. Had the provider not classified the visit as a completed screening, it would not be counted in the aggregate total number of screenings for the facility.

If, alternatively, a provider identifies cervicitis during an initial speculum examination and therefore does not apply acetic acid, but rather prescribes medication and asks the woman to return for screening, the defined purpose of the screening visit was not fulfilled and should not be considered a completed screening. Furthermore, the provider should document when acetic acid has not been applied at a VIA screening visit.

Screening is intended to identify women at risk for cervical cancer *before* they experience symptoms; however, a woman may present for a screening *because* she is experiencing symptoms. In cases such as these, it is important for the provider to document that the woman was experiencing symptoms, in addition to any action taken, in order to conduct appropriate patient follow-up and to understand trends in seeking screening services.

[1] Please refer to the Bethesda classification system for clinical definition of results: Nayar R, Wilbur DC (eds): The Bethesda system for reporting cervical cytology: definitions, criteria, and explanatory notes, ed 3. New York, Springer, 2015.

[2] Atypical squamous cells of undetermined significance, 2001 Bethesda System

STANDARDIZING TERMINOLOGY: REFERRAL, POSTPONEMENT, AND LOSS TO FOLLOW-UP

After a woman receives a positive screening result, there may be the need for treatment postponement or referral – which are most often the points where women are lost to follow-up. These terms may be defined in several ways. The indicators in Table 3.2 and the sample Monthly Summary Forms in the Implementation Tools and Resources at the end of this section use the following definitions:

Postponed treatment:

- Client refusal to receive immediate treatment due to personal reasons; or
- Provider/facility inability to provide immediate treatment due to a temporary lack of resources.

Referral:

- Referral to a second facility for a service the referring facility is not designated to provide; or,
- Referral to a second facility for a service the referring facility is designated to provide, but cannot due to a temporary or extended lack of resources.

Referrals may be initiated at the screening site (for example, a screen-positive woman with large lesions not eligible for cryotherapy is referred for LEEP) or at the treatment site (a woman referred for LEEP is found to have suspected cancer at the LEEP visit and is referred for further evaluation). The term "referral" may also be used to classify a movement between different providers or points of service within the same facility.

In the absence of global standards defining the point in time when an incomplete referral or a failure to return for postponed treatment transitions to the "lost to follow-up" category, programmes must develop their own standardized definitions. For example, "lost to follow-up" may be defined as "client does not return for scheduled referral visit"; or "client does not return for scheduled treatment visit after postponement". More robust time-bound definitions, which consider the impact of disconnected facilities and poor referral feedback mechanisms, may classify a woman as lost to follow-up if she does not comply with a referral or attend a treatment visit within 6 months of her screening visit.

In order to ensure both high-quality data and high-quality patient care, nationally standardized definitions for "treatment postponement", "referral", and "lost to follow-up" should be developed based on health system structure, referral mechanisms, and screening and treatment algorithms. Providers and data entry and management staff should be trained how to appropriately classify referrals, treatment postponement, and loss to follow-up.

MONITORING SCREENING AND TREATMENT STRATEGIES: CLASSIFYING PROCEDURE PURPOSE

Several recommended screening strategies incorporate a triage examination step (following the primary screening test) to determine the need for treatment and the type of treatment for which the woman is eligible [WHO, 2014]. The list of indicators includes several which are specific to monitoring the additional complexities of screen-triage-treatment strategies. Other more general indicators may require additional consideration or adaptation. Information and examples to guide the adaptation of non-specific indicators can be found in the reference tables and other tools in the Implementation Tools and Materials at the end of this section.

Many countries establishing only an organized national programme, or transitioning from one screening strategy to another, may have multiple screening methods and/or strategies employed across existing providers; for example, VIA may be used as a primary screening test and as a triage test; cytology may also be used as a primary screening test, a triage/secondary screening test, and where VIA is contraindicated.

When VIA or cytology are used for multiple purposes within one programme, the terminology for classifying results does not change; however, the addition of an accurate classification of procedure purpose (e.g. screening or triage) is necessary to avoid quality issues once data are aggregated.

VISUAL ASSESSMENT FOR TREATMENT: AN ADDITIONAL CONSIDERATION FOR CLASSIFYING PROCEDURE PURPOSE

In addition to its use as primary screening test or as a triage test, VIA may be used as visual assessment for treatment (VAT) in screen- or triage-positive

women referred for precancerous lesion treatment. As an example, a woman receives a VIA screening, and is found to be VIA-positive with a large lesion that is ineligible for cryotherapy. She is referred to a second facility for potential LEEP treatment of the large lesion. At the second site, the LEEP provider uses acetic acid to visualize the lesion and confirm eligibility prior to LEEP treatment. Misclassification of the VAT as a VIA screening test would result in two screenings being counted for the woman in the aggregate total for the programme, thereby negatively impacting the quality of data for monitoring.

The applicability and use of colposcopy for multiple purposes (e.g. as triage to determine if precancerous lesion treatment is required, as further evaluation for large lesions or suspected cancer, as VAT and/or biopsy guidance, etc.) similarly requires vigilance in classifying and recording the reason for colposcopy referral and the purpose the procedure serves.

Ensuring consistent and accurate documentation of procedure purpose through standardized terminology and data collection forms, training, and supportive supervision is key to ensuring appropriate patient management, and avoiding duplicate-counting and other data quality issues.

SPECIAL CONSIDERATIONS FOR AREAS WITH HIGH HIV PREVALENCE

Countries with a high HIV prevalence have additional factors to consider when adapting the suggested indicators and establishing standardized data practices, such as:

- How does the nationally recommended screening interval for women with HIV positive or unknown status compare with that for HIV negative women? How does this effect data collection and aggregation?

- Is the screening target age range for women with HIV positive or unknown status different from that of HIV negative women? How can suggested indicators best be adapted or disaggregated in order to generate useful information?

- Level of cervical cancer and HIV programme integration.

Additionally, deviation from globally accepted benchmarks will need to be considered in the context of HIV prevalence. For example, in a general population with low HIV prevalence the benchmark for VIA test positivity rate is 5–25% (see Table 3.9) [ACCP, 2004]. In a general population with high HIV prevalence, the VIA positivity rate may be higher than 25%, particularly in a screening naïve population.

These considerations have been highlighted throughout this section; additional resources, such as the UNAIDS global AIDS monitoring 2017 guidance[1] or the WHO guide for monitoring and evaluating national HTC programmes[2] are available to further guide monitoring of integration with HIV services.

[1] See: http://www.unaids.org/sites/default/files/media_asset/2017-Global-AIDS-Monitoring_en.pdf

[2] See: http://apps.who.int/iris/bitstream/10665/44558/1/9789241501347_eng.pdf

ROUTINE SERVICE DELIVERY DATA COLLECTION, AGGREGATION, AND REPORTING

This section describes a basic health information system through which data flows from the client to the national programme level by way of interlinked tools aligned to clinical needs and national indicators (Figure 3.2). The tools described here include an individual client form, a collating register or logbook, and a summary form for reporting and entry into HMIS. In addition to these three basic tools, programmes should develop additional forms or logbooks to capture more detail on referrals and follow-up, laboratory processes (e.g. for quality control), supply chain processes, and invasive cancer management; however, because these additional tools are highly dependent on programme context, they are not addressed in depth in this section.

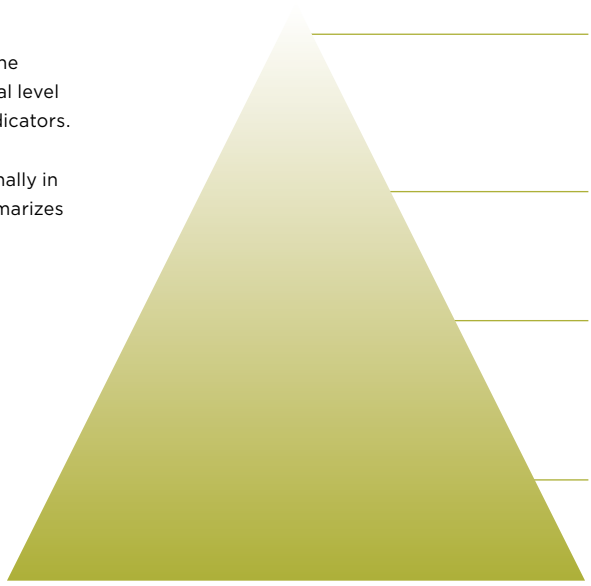
FIGURE 3.2
Flow of information through data collection and aggregation tools

MONTHLY SUMMARY FORM:
Summarizes client visits at a facility over the previous month. Aggregated at subnational level and fed directly into HMIS and national indicators.

ANNUAL SUMMARY FORM:
Used to report globally and monitor nationally in countries with nascent programmes. Summarizes client visits over the previous year.

REGISTER:
Facility-level logbook where the Client Screening Form data are summarized. Creates aggregated data source for capture in HMIS (via summary form).

CLIENT SCREENING FORM:
Documentation of client visits and data on screening, referral and treatment.



GLOBAL LEVEL:
may be the same as, or similar to, the national indicators; standardized across countries for global monitoring.

NATIONAL LEVEL:
subset of subnational indicators used to monitor nationally.

SUBNATIONAL LEVEL:
subset of facility-level indicators used to monitor performance and identify need for supervisory action.

FACILITY LEVEL:
largest number of indicators collected, collated and used to track targets and guide activities.

The Implementation Tools and Materials at the end of this section provide practical resources for reference during the design and improvement of basic data collection and aggregation tools – with the aim of increasing the availability of high-quality data for patient and programme monitoring.

CLIENT LEVEL DATA COLLECTION

CLIENT SCREENING AND TREATMENT FORMS

The first point of data collection is the Client Form. Client forms are used by providers and facility staff to document client visits and collect data on screening, referral, and precancerous lesion treatment. Data elements captured on the client form are entered into the register, which is ultimately used to complete the monthly summary form. Nationally-standardized client forms ensure that the same data are collected at all sites in a format that enables information exchange, aggregation and reporting. All client data captured on these forms and in the register should be stored in an area with controlled access, or in a secure database or electronic system, to protect client confidentiality.

Client forms should meet the following criteria for ease of use and standard data collection:

- The form should be laid out in chronological order to follow the client flow through health facilities and visits, from intake to screening to precancer treatment or referral.
- The form should trigger a comprehensive assessment, standard clinical decision-making, and improved continuity of care.
- All data elements should provide either clinical management support to the provider and/or feed into the indicators. Every additional data element added to the form has an associated cost for collection, collation, analysis, form reproduction, etc.
- Specific fields to capture client details, HIV status, visit type, and screening and treatment procedures through answer choice options are preferred over unstructured notes written freehand by a provider.
- The layout should be user-friendly for providers and data entry staff.

CLIENT LEVEL DATA ELEMENTS

The minimum data elements captured on the client form fall into several broad categories applicable to any screening and treatment strategy, and are comprised of elements required to:

- uniquely identify the point of service (e.g. facility name, provider name)
- uniquely identify the client and allow for future contact (e.g. client unique ID, client phone number)
- support clinical decision-making at the current visit (e.g. date of last menstrual period, screening history)
- monitor the provision of services (e.g. screening visit type, screening completed, treatment provided)
- monitor the next steps in client care and service provision (e.g. treatment eligibility, referral)

The Client Form Data Elements Checklist (in the Implementation Tools and Materials) contains the set of minimum data elements required to monitor the core indicators for screening and treatment of precancerous lesions. While these minimum data elements are sufficient to support standard clinical decision-making, additional optional elements for capturing more detailed aspects of patient care and to support the calculation of additional optional indicators have been included for consideration. This checklist can be used by countries and programmes to 1) develop new client screening and treatment forms; 2) determine whether existing screening and treatment forms are adequate; and 3) provide options for improving or modifying current forms.

In order to ensure usability of the client form for both patient and programme monitoring, those tasked with ensuring that all data collection tools are uniform across sites should work with service providers in the implementation of the checklist. Once a client form has been developed, it is vital that it be field-tested before being formally rolled out at a national programme level.

Programmes should also develop, or adapt existing, additional purpose-driven client data forms such as referral forms and laboratory linkage forms (e.g. forms capturing key client data to accompany laboratory samples).

The Implementation Tools and Materials provide sample forms which illustrate options on how minimum data elements, and some optional elements, can be structured to collect client level data. The Implementation Tools and Materials also contain an abridged data dictionary with expanded data element definitions which can be used as a companion to the checklist tools when incorporating data elements into an electronic medical record, register or HMIS.

Considerations for Programmes Utilizing Self-collected Samples for HPV testing

When developing data collection forms for programmes utilizing self-collected (home-based or facility-based) samples, it is crucial to ensure that the necessary data elements are captured on a client level form – whether this form is completed by the client and returned with her sample to the facility, or whether the form is completed by facility staff when the woman returns her sample.

In a strategy where women do not submit their self-collected sample for HPV testing to facility personnel directly (e.g. women place their sample in a drop box, or the sample is mailed to the facility), it is essential that the minimum data elements be captured on a form (or label) which accompanies the sample.

FACILITY LEVEL DATA COLLATION

REGISTER

Screening and Treatment Registers or logbooks. These are facility-level documents used to collate a subset of data from the client form, and are not to be confused with a national cancer registry.[1] A subset of data from the register is fed into a summary form, which matches the reporting requirements of the

[1] A cancer registry collects detailed information about cancer patients and the treatments they receive, and stores it in an electronic format (CDC).

MOH and other stakeholders. Register data can also be used by providers monitor patients and by facility data staff to calculate or validate the indicators for monitoring.

The register should use the same wording and flow as the client form. Data elements used for disaggregation should be built in, as should a method to support tallying (e.g. rows for column totals at the bottom). Once a register has been developed, it is vital that it be field-tested before being formally rolled out at a national level.

The register should be designed to collate data according to the indicator components that are captured on a Monthly Summary Form, which will ultimately be captured and aggregated above the facility level (ideally in an electronic HMIS). To avoid lost information and to improve accuracy, the daily completion of registers is recommended.

The organization of registers for different programmes will differ primarily based on screening methodology. For example, the register for a cytology programme must be able to capture information about an individual client over time because screening results are not provided immediately. This longitudinal (or client-based) register must be organized by client name, and record time elements such as: date the sample was sent to the laboratory; date the results were received; date the client was notified of results; and date treatment or referral was provided. Registers for a VIA-based programme, on the other hand, may only record client information at one point in time because screening, results, and ideally treatment are offered in the same visit for the majority of clients. Therefore, a VIA register is typically a simple visit-based register, organized by date.

REGISTER DATA ELEMENTS

The Implementation Tools and Materials at the end of this section provide a Register Data Elements Checklist which includes a set of minimum, and additional optional, data elements that can be used to develop a register if one does not currently exist, or to determine whether current registers include all necessary fields. As with the Client Form Data Elements checklist, the Register Data Elements Checklist should be used by the individuals tasked with ensuring that all data collection tools are uniform across sites.

The Implementation Tools and Resources also provide sample registers which illustrate how data elements can be organized to collate individual client data at the facility level. Depending on the strategy for service delivery, programmes may wish to have separate registers for screening and for precancerous lesion treatment, or may wish to incorporate cervical cancer data elements into other existing registers for integrated service delivery.

DATA AGGREGATION AND REPORTING

MONTHLY SUMMARY FORM

Each month, trained personnel should record cleaned, verified and accurate totals from the facility Register on the Monthly Summary Form for transmission to a central point (e.g. district office, national programme office, data hub) on an established schedule. Health-care providers and clinic staff who have been trained in data documentation, cleaning, and reporting are best equipped to prepare the summary. If healthcare providers and clinic staff have not completed the necessary training, the summary can be prepared jointly with an M&E advisor as part of the data review and verification process of supportive supervision, until providers are comfortable preparing the summary independently.

The sample Monthly Summary Forms in the Implementation Tools and Materials at the end of this section illustrate how client visits can be summarized over the previous month to feed directly into the national HMIS for calculation of the national indicators. If a country programme already has a monthly summary form in place, it can be cross-referenced with the sample Monthly Summary Form and the indicators suggested in Table 3.2 to ensure that the existing form captures all necessary data. A MoH, M&E staff member responsible for data collection should work with an M&E technical advisor to adapt and implement the Monthly Summary Form.

ANNUAL SUMMARY FORM

The sample Annual Summary Forms in the Implementation Tools and Materials at the end of this section provide country programmes, in the early stages of development and implementation, with a simplified standardized data aggregation tool for reporting on core indicators. This form is intended to be an intermediate option to satisfy fundamental programme monitoring goals while the more robust system described in this component is being established. The Annual Summary Form can be used by M&E staff at the facility and subnational levels to aggregate and report national indicator data; and by M&E staff at the national level as a tool for reporting global indicator data annually to WHO. The core indicator C4.0 (Proportion of Facilities Providing Services) is not included in the sample Annual Summary Form; this is because it may be most feasible for the aggregation of data for this indicator to occur at the national level, rather than the subnational level, during initial phases of programme implementation.

DATA ANALYSIS, VISUALIZATION, AND USE

The ultimate purpose of data collection is to provide policy-makers, programme decision-makers, and service providers with the information needed to make informed decisions, improve programmes, and provide high-quality patient care. However, it can be difficult to track trends and identify critical entry points for interventions when looking at raw data. Effective data analysis and visualization facilitates decision-making, and can improve reporting and communication with stakeholders.

INDICATOR BENCHMARKS

Benchmarks may be global standards established through research and global expert consensus, or references based on country trends monitored over time, which provide the optimum range or target for particular indicators. Comparison of indicator data to these optimum ranges allows programmes to effectively target resources, identify gaps in performance, and ultimately provide high quality services. The benchmarks provided in Table 3.9 have been established through research and global expert consultation, and can be used as reference by cervical cancer screening and treatment providers, subnational supervisors, and national level policy- and decision-makers to track performance and determine need for corrective action. Routine collection and monitoring of quality indicator data over time will allow for the development of targets and benchmarks at the national, subnational and facility levels which are specifically responsive to the country epidemiological context [see ACCP, 2004 for additional guiding information on target estimation].

TABLE 3.9
Benchmarks for key indicators

INDICATOR	BENCHMARK	TRIGGER POINTS FOR ACTION	POTENTIAL CAUSE OF OVER/UNDER BENCHMARK	ACTION TO BE CONDUCTED
• **Percentage of women screened for the first time who were within the target age range**	• Screen at least **70%** of women nationally within the target age group within 10 years of initiating the programme [WHO, 2013]	• Caution and continue to monitor: 51–69% • Immediate action needed: <50%.	• Incorrect age group targeted for screening. • Incorrect messaging or no messaging about target age group.	• Develop appropriate information, education and communication (IEC) materials for women in the target age group. • Train and incentivize community health workers (CHW) to identify and recruit women in the target age range for cervical cancer screening.
• **Percentage of screening target reached for the last month**	• At least **85%** of monthly screening target reached [WHO, 2013]	• Caution and continue to monitor: 75–84% • Immediate action needed: <75%	• Inadequate days during the week providing the service. • Inadequate number of providers providing the service. • Limited community mobilization.	• Increase number of days per week the service is provided. • Increase number of providers trained. • Increase community mobilization by working with women's health groups and CHWs.
• **Percentage of first time screened women aged 30–49 years with a positive screening test result**	• **VIA: 5–10%** in women aged 30–60 [WHO, 2013]; **5–25%** in general population;* could be higher in targeted screening to HIV positive women [ACCP, 2004] • **Cytology:** 1–5% HSIL [ACCP, 2004] • **HPV DNA Test**: 5–25% [ACCP, 2004]	• **VIA**: Caution and continue to monitor: 3–4% or 10–19% • Immediate action needed: <3% or >20%.**	• Age distribution, previous negative screening. • HIV prevalence • Poor provider skill/ confidence • High prevalence of cervical neoplasia. • Inadequate vinegar potency, Poor light source.	• Review provider's clinical diagnosing skills during supportive supervision using direct observation or by using images. Provide retraining. • Check the facility's equipment and supplies (vinegar strength, light source etc.) during facility-based survey.

Table 3.9 continued

INDICATOR	BENCHMARK	TRIGGER POINTS FOR ACTION	POTENTIAL CAUSE OF OVER/UNDER BENCHMARK	ACTION TO BE CONDUCTED
• ***All indicators measuring treatment***	• At least **90%** of **VIA-positive** lesions and invasive cancers receive treatment [WHO, 2013] • **90–100%** receiving treatment within 6 months of screening positive [ACCP, 2004]	• Caution and continue to monitor: 71–89% • Immediate action needed: <70%.	• Equipment malfunctioning; no gas. • Treatment provider not available. • Passive client re-call system. • Messaging around need for treatment is weak. • Challenges on client side (including: lack of funds; lack of permission; psychosocial, etc.)	• Supervisor or facility manager should check the facility's equipment and provider availability during supportive supervision and facility based surveys. • Set-up active follow-up of clients that postpone cryotherapy. • Strengthen messaging.
• **Percentage of first time screened VIA-positive women aged 30–49 years with lesions eligible for cryotherapy treated with cryotherapy during the same visit (Single Visit Approach)**	• **At least 80%** of women eligible for cryotherapy and found to be VIA+ should receive treatment the same day as screening [Anderson, 2015]	• Caution and continue to monitor: 61–79% • Immediate action needed: <60%	• Equipment malfunctioning; no gas. • Treatment provider not available. • Community messaging not informing women that they could be treated on the same day. • Male partners not informed in advance of screening, • Cost for treatment.	• Supervisor or facility manager should check the facility's equipment and provider availability during supportive supervision and facility based surveys. • Strengthen messaging to entire community. • Train community health workers to support women with treatment-related financial planning.

RESULTS AT-A-GLANCE POSTER

The Results-at-a-Glance Poster gives service providers a means to highlight time-trend data related to key actionable and easily calculated indicators using the facility register or monthly summary form.

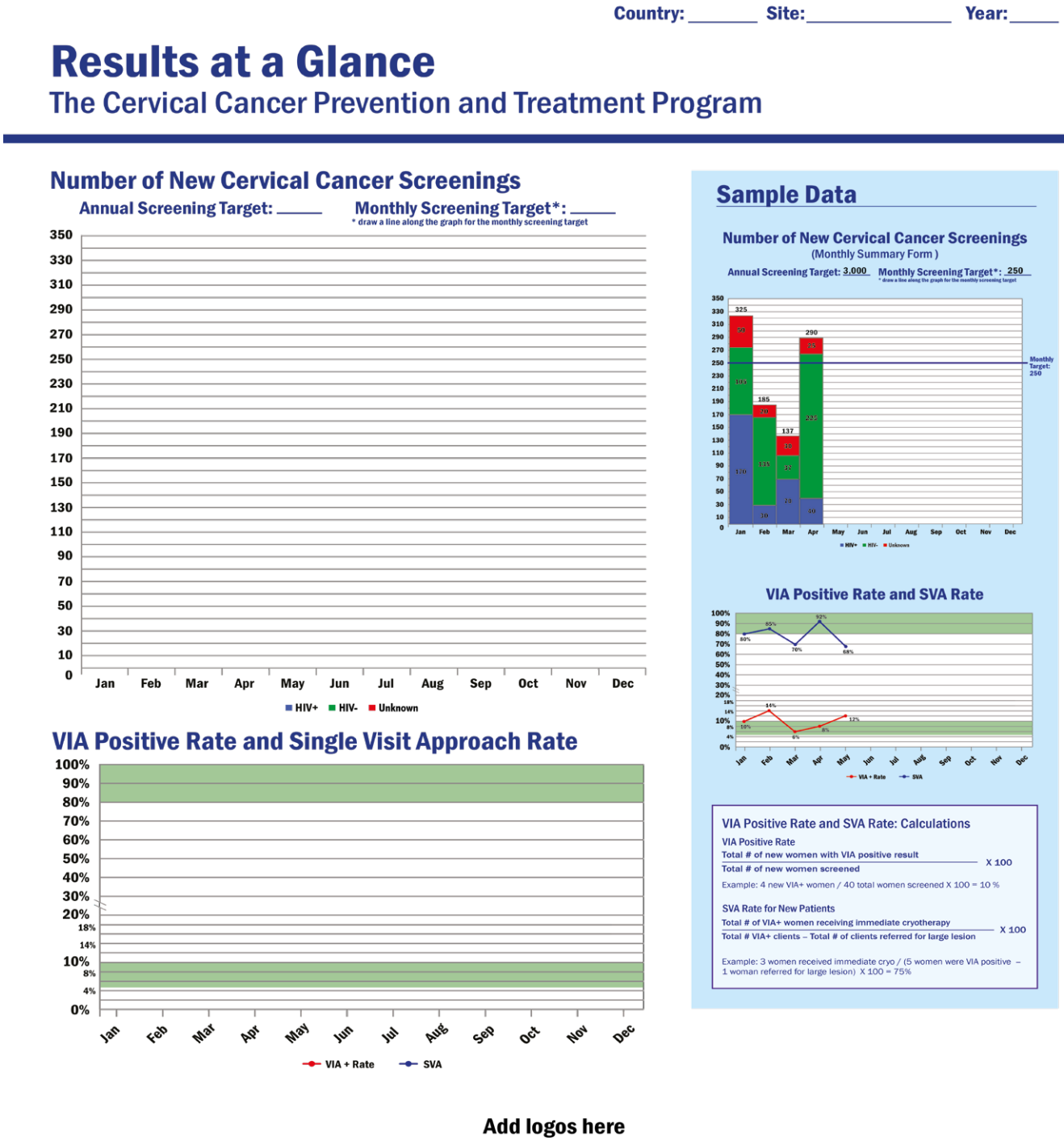
In reviewing data on a Results-at-a-Glance poster, facility staff can quickly assess performance and trends; for example, whether the number of screenings is going up or down in relation to the monthly target, or whether the relative proportion of screenings provided to HIV positive women each month is changing. A downward trend in the number of screenings may prompt an investigation into why women are not accessing screening. An upward trend in the number of screenings may indicate a need to add providers if client demand exceeds existing provider capacity.

The Results-at-a-Glance Poster should be printed out in poster format (45.72 cm x 57.15 cm) on heavy bond paper; ideally, printed in full colour with bleed, and laminated for use with a dry-erase marker. Grommets can be added to the four corners to make hanging or mounting easier. Staff add data points to the graph based on the monthly data.

The Results-at-a-Glance Poster in Figure 3.3 was developed for use with VIA-based screening programmes, but programmes using any or multiple screening methodologies could create similar posters by aligning with and using data collected on their Monthly Summary Form.

* This is an example based on a previously unscreened general population with standard risk factors; it may differ based on target population and other factors influencing prevalence.
** These percentages are based on the expectation that the general population will have a 5–10% test positivity rate, which may change depending on the population being screened.

FIGURE 3.3
Results-at-a-Glance poster – VIA-specific



ELECTRONIC HMIS: SUGGESTED DHIS 2 MODULE AND VISUALIZATION

To be used for decision-making, data must be collected and made available in an understandable, useful, and timely manner. To do this, many countries have implemented an electronic HMIS that facilitates aggregation, analysis, reporting, and visualization of data. One popular example of this type of a system is "DHIS 2" – an open-source, web-based database designed to facilitate health data interpretation and use. DHIS 2 provides tools that facilitate the entire health information process, from data entry to analysis and presentation of data in a form that is standardized, secure, and available on the internet.

The possible configuration of a module for cervical cancer prevention and control programmes described in the following can be customized and added to an active DHIS 2 instance, or can be used as a model for developing similar modules for other electronic HMIS. The electronic module is intended to pick up where a paper-based data collection system typically leaves off, starting with the input of data from monthly summary forms and moving through data analysis and visualization. The module is designed to be an extension of the HMIS that aids data flow and use from the facility to the national level. The data can be entered at the lowest level possible, and then it aggregates up to the highest level automatically. In this way, all of the data are stored in one place, which allows for the greatest transparency and speed of analysis.

Intended users are the HMIS developers at the MOH who are responsible for ensuring that the HMIS collects all relevant data for MOH programmes.

DESCRIPTION OF THE MODULE

This module is structured around a hierarchy that mimics that of the health system, vis-à-vis the respective arrangement of levels from the health facilities to subnational divisions. The entire module can be customized for the needs of a given location, while maintaining those elements that are required for the proper functioning of the overall system. The examples provided are from a module for a VIA-based screening programme, but can be used to inform a programme using any type of screening methodology.

DATA ENTRY

The module includes a set of data entry screens that facilitate collection of data, as seen in Figure 3.4 of note is that the illustration shows only a fraction of the entire data entry form.

If a paper-based monthly summary form is in use, the DHIS 2 data entry page should mirror the paper-based form in order to facilitate ease of use and consistency in the data that are captured. As with the indicators, countries should ensure the module is adapted to their needs and reflects the screening methodologies that are in use in the country.

FIGURE 3. 4
Sample DHIS 2 data entry screen

Data Entry

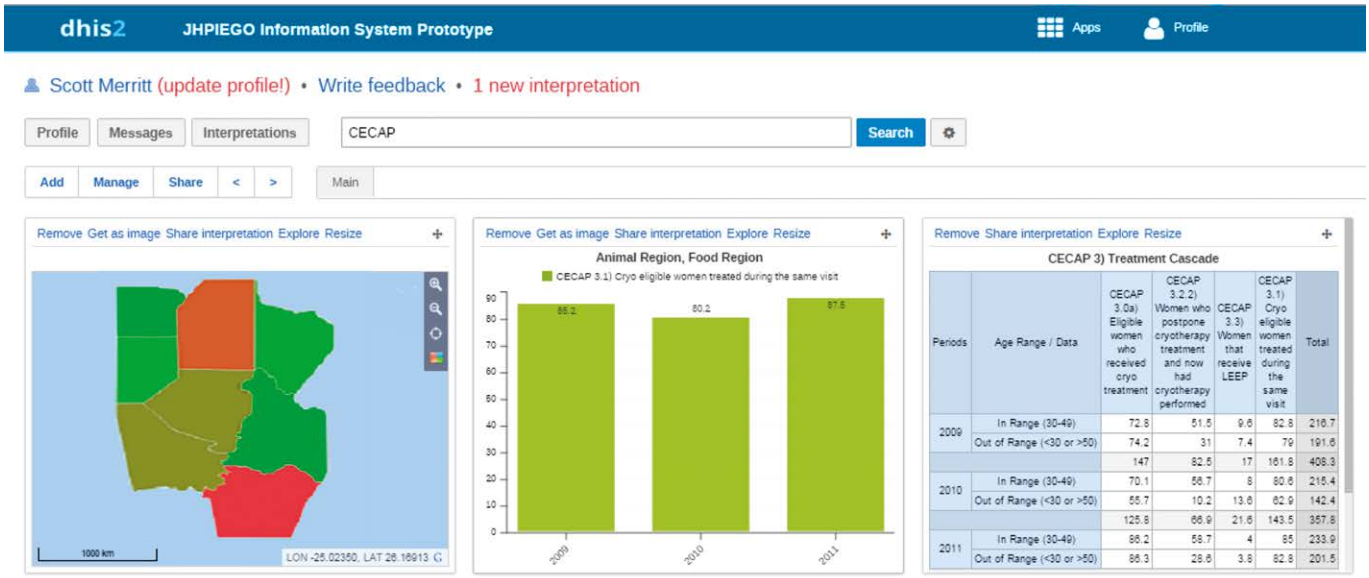
Organisation Unit: Cookie Site
Data Set: CECAP - Monthly Summary
Period: October 2011 | Prev year | Next year

No.	Indicator	Visit	HIV+		HIV-/ Unknown		Total
			In Age Range (30< and <49)	Out of Range (<30 or >49)	In Age Range (30< and <49)	Out of Range (<30 or >49)	
1	Number of clients who received a SCREENING * Exclude VIA triage	New / First Screening	14	2	37	4	57
		1 Year Follow-Up Post Treatment	1		3		4
		Routine Visit (previous negative result)				1	1
2	Number of clients with POSITIVE screening result *Include suspect cancer cases	New / First Screening	2		1		3
		1 Year Follow-Up Post Treatment					0

DASHBOARDS

Once data are entered into the electronic module, DHIS can output them in the form of dashboards, tables, maps, and graphs to facilitate visualization of trends and identification of patterns. Various tables and graphs can be used at the facility and subnational level to identify gaps in performance or worrying trends, or at the national level for oversight and reporting purposes. Figure 3.5 illustrates how the DHIS 2 module facilitates data visualization in the form of maps, graphs, and tables.

FIGURE 3.5
DHIS 2 dashboard



DATA TABLES

Table 3.10 illustrates the quarterly data for key indicators of one facility with stoplight colour-coding related to indicator benchmarks in a dashboard format. Red indicates action needed, yellow indicates more information needed or "watch," and green indicates that the benchmark has been met and no action is necessary. Dashboards can be customized to populate tables with subnational or national data, with designated access for different levels according to need.

TABLE 3.10
Key indicator quarterly dashboard for VIA, by HIV status, month and totals

INDICATOR	HIV STATUS	APRIL	MAY	JUNE	TOTAL
Number of new clients screened with VIA Monthly Total Target: 220 Quarterly Total Target: 700 Green: 75%-125% of Target; Yellow: 26%-74% of Target; Red: <25% or >125% of Target	HIV+	16	82	53	**151**
	HIV-	140	104	96	**340**
	Unknown	45	42	33	**120**
	TOTAL	**201**	**228**	**182**	**611**
Number of new clients screened with a VIA + result	HIV+	2	21	14	**37**
	HIV-	15	12	12	**39**
	Unknown	2	4	3	**9**
	TOTAL	**19**	**37**	**29**	**85**
Number of VIA+ clients treated with cryotherapy on the same day as screening	HIV+	1	11	11	**23**
	HIV-	10	5	9	**24**
	Unknown	0	3	3	**6**
	TOTAL	**11**	**19**	**23**	**53**
Total Number of clients referred for large lesions	HIV+	1	2	2	**5**
	HIV-	2	0	0	**2**
	Unknown	1	0	0	**1**
	TOTAL	**4**	**2**	**2**	**8**

Table 3.10 continued

INDICATOR	HIV STATUS	APRIL	MAY	JUNE	TOTAL
VIA Positive Rate *Numerator: # of new VIA+ clients* *Denominator: # of new clients screened* Benchmark: 5–25% HIV • Yellow: 3–4% or 10–19% • Red: below 3% or above 19%	HIV+	13%	25%	26%	**25%**
	HIV-	11%	12%	13%	**12%**
	Unknown	4%	10%	9%	**8%**
	TOTAL	**9%**	**16%**	**16%**	**14%**
Single Visit Approach Rate *Numerator: # of VIA+ screened clients treated on the same day as screening* *Denominator: # VIA+ clients (-) # referred for large lesions* Benchmark: at least 80% • Yellow: 61–79% • Red: 60% or below	HIV+	100%	58%	92%	**72%**
	HIV-	77%	42%	75%	**65%**
	Unknown	0%	75%	100%	**75%**
	TOTAL	**73%**	**54%**	**85%**	**69%**
Large Lesion Referral Rate *Numerator: # of VIA+ clients with large lesions* *Denominator: # VIA+ clients*	HIV+	50%	10%	14%	**14%**
	HIV-	13%	0%	0%	**5%**
	Unknown	50%	0%	0%	**11%**
	TOTAL	**21%**	**5%**	**7%**	**9%**

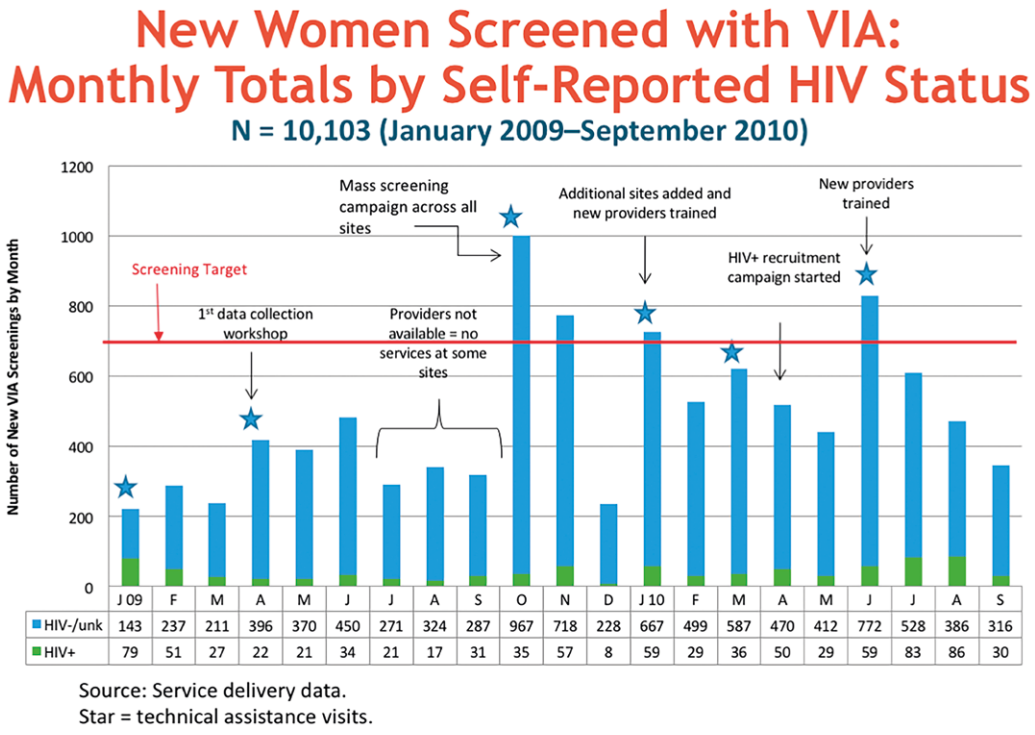
DATA GRAPHS

Data produced by the DHIS 2 module can be exported into a spreadsheet programme, such as Excel, to create complex graphic representations of trends, patterns, successes and challenges to facilitate discussion and decision-making. Graphs can be developed for any indicator of interest as long as accurate and complete data are housed within an HMIS.

Figure 3.6 is a subnational level graph of new women screened with VIA over a 21-month period disaggregated by HIV status, including key events that took place in the sub district during the time period. The graph indicates the screening target in order to make it easier to identify how activities implemented by the programme (e.g. mass screening campaigns, additional providers trained) impacted the number of women screened.

FIGURE 3.6

Sample graph for visualization of data from HMIS, transferred to Excel and presented in Power Point



Source: Service delivery data.
Star = technical assistance visits.

DATA QUALITY

Data should be accurate, reliable, precise, timely, and complete; they should be easy to collect and free of bias. Ensuring data quality involves the following: 1) standardized and ethical data collection, maintenance, and analysis procedures; 2) training on data collection, maintenance, and analysis; and 3) data quality reviews. Routine data quality assurance measures should be instituted at each health facility as well as at each point of aggregation (facility, subnational, and national levels). Comparison of past-year or previous quarterly results by facility, and progress towards targets and benchmarks, will identify any inconsistencies that could be indicative of a data quality problem, data entry error, or gaps in knowledge, skills, or other programme components.

DATA QUALITY STRENGTHENING

Establishing systems for standardized data collection is critical to ensuring good data quality; however, users of such systems must also be comfortable and competent in their use. One of the best ways to ensure user comfort and quality is to involve users in the design phase, with initial and ongoing training to ensure data quality. Managing M&E and strategic information requires that sufficient staff at all levels be trained in high quality, ethical data collection, data management, and analysis methods. The primary data collectors within cervical cancer screening and treatment programmes are the screening and treatment providers themselves. When providers clearly see that the data they collect during client visits and feed into the system informs and improves their work in meaningful ways, they will be more invested in collecting high quality data. Provider investment in data quality will lead ultimately to more complete and accurate results at all levels of the M&E system.

In some countries, it may be possible to integrate training on how to collect, analyse, interpret, and use high quality data into the initial provider training on screening and treatment; this is ideal, and strongly recommended. Other countries may choose to have providers return for a second mini-training, following their initial provider training, to focus on data quality strengthening. Key areas of focus for training can be found in the Indicators section.

DATA QUALITY ASSURANCE

Routine data quality assurance measures should be instituted at each health facility as well as at each point of aggregation (facility, subnational, and national). Data quality review and data strengthening are an integral part of supportive supervision, and should be incorporated into supportive supervision visits for cervical cancer services and activities at all levels. Supervisors should use these visits as an opportunity to review facility-level data results and quality with staff, and make corrections and mentor facility staff in data collection as necessary. Specific attention should be paid to those items for which action plans were developed during the previous visit and to common documentation errors found in the facility's monthly data reporting. For further guiding information on conducting supportive supervision see Section 4, Facility-based Surveys.

In addition to conducting data review as part of supportive supervision on no less than a quarterly basis, MoH M&E district staff should conduct more comprehensive data quality audits on an annual or biannual basis to assess the quality of facility-level data. Data quality should be assessed using a comprehensive data quality assessment (DQA) or an external quality assessment (EQA) tool. Existing comprehensive DQA tools, including PRISM, can be applied to assess the quality, completeness, timeliness, and accuracy of the data being reported through the cervical cancer screening and treatment programme.

The data quality review (DQR) framework, described by WHO, the Global Fund to fight AIDS, Tuberculosis and Malaria, and Gavi Vaccine Alliance, provides a framework for assessing data quality across a variety of health sector approaches. The framework refers to dimensions of quality: validity, accuracy, availability, completeness, and timeliness. The DQR approach, which recommends both routine and annual assessments of data, recommends desk review of data and system assessment methods.[1]

[1] Further information on the DQR Framework and Approach can be found in the WHO publication, *Consolidated Strategic Information Guidelines for HIV in the Health Sector*, 2015. Available at: http://apps.who.int/iris/bitstream/10665/164716/1/9789241508759_eng.pdf.

DATA PROTECTION

Patient and programme monitoring require the collection, entry, storage, and sharing of medical data, some of which can be highly personal and sensitive. Assigning and ensuring responsibility for data maintenance is one of the most important ethical considerations when conducting patient and programme monitoring. In order to guarantee client confidentiality, data management must be conducted in an ethical and client-centred manner.

Each country has its own standards, procedures and laws related to the protection of medical data and these should be consulted when developing data management and storage protocols. However, as shown in Table 3.11, fundamentally, data protection principles are standard across contexts.

TABLE 3.11
Data protection principles

DATA PROTECTION PRINCIPLE	EXPLANATION
Propriety	• Data should be collected and processed in a just manner and in accordance with the law. • All data collection and management should be conducted with the patient's interest in mind and in accordance with the country's medical-information protection laws and standards.
Utility	• Data collected should be "adequate, relevant and not excessive." • As discussed in the earlier subsection, Prioritizing Indicators: Core vs. Optional, information systems can only collect a finite amount of information in a consistent and usable manner. Limiting data collected to only the information needed not only helps ensure data quality, but also protects patients from the burden associated with unnecessary data collection.
Accuracy	• All personnel working with data should do their part to ensure accuracy, and prevent the falsification, manipulation or alteration of data to misrepresent results.
Privacy	• Data should be kept secure. • As included in the **Data Management** standard of the **Facility-Based Surveys** section, data management and storage should ensure the privacy of client information at the facility level and throughout the M&E system. Medical data collected at the facility are clearly identifiable and will typically include client name and contact information. As data flow "upwards" through the health information system (i.e. from the facility to the global level) data should become decreasingly identifiable.
Transparency	• Processes and results should be shared with appropriate parties to whom the information is applicable.
Timeliness	• M&E data, and results of analysis, should be shared in a timely manner.
Use Limitation	• Data should not be kept longer than is necessary. • Countries will have their own processes for determining when certain data are no longer useful or relevant and should be destroyed.
Accountability	• For those with access to data, the type and content of data they can access must be clearly defined. Professional ethical responsibilities should be clearly communicated and upheld.
Impartiality	• All data collection principles should be applied consistently at all levels of data collection, entry, analysis and dissemination.

ETHICAL CONSIDERATIONS FOR PROGRAMME INTEGRATION

In most cervical cancer programmes, particularly those integrated with HIV programming, HIV status will be documented on data collection forms, and linked to an individual's cervical cancer data at the facility level (and possibly above) health information system. Some countries may have specific ethical protections for people living with HIV/AIDS which need to be taken into consideration when developing ethical data collection and management processes for integrated programmes.

ETHICAL CONSIDERATIONS FOR CHILDREN AND ADOLESCENTS LIVING WITH HIV/AIDS

Because cervical cancer screening is recommended for all sexually active women living with HIV/AIDS, regardless of age, screening and treatment data on underage girls may be routinely collected in countries with high HIV prevalence. Ethical protections for minors are often more complex and robust than those for adults. Countries targeting HIV-positive women for cervical cancer screening should consult their national ethical standards related to the protection of medical data collected from minors.

ETHICAL CONSIDERATIONS FOR ELECTRONIC SYSTEMS

Electronic information systems have unique privacy and confidentiality vulnerabilities. Countries using electronic records will have administrative, physical and technical safeguards in place to protect against cyber threats. Cervical cancer data collection and management tools and processes must be compatible with the electronic security systems in place.

IMPLEMENTATION TOOLS AND MATERIALS

REFERENCE SHEETS FOR WHO GLOBAL INDICATORS FOR CERVICAL CANCER PREVENTION AND CONTROL

INDICATOR 1	SCREENING RATE
What it measures	Percentage of women aged 30–49 years who have been screened for the first-time with a cervical screening test in a 12-month period targeting women in this age range
Numerator (NUM)	Number of women aged 30–49 years who have been screened for the first time in a 12-month period
Denominator (DEN)	Number of women aged 30–49 years in the population
Data Source	**NUM**: HMIS **DEN**: population census
Frequency	Annual – Calculating this information annually will allow for measurement of a cumulative screening incidence over time.
Comments	**Note on Limitations** Population census data may not be available for the reporting period. Programmes may choose to use weighted screening prevalence data collected as part of a population based survey to estimate screening coverage within the population. Without an electronic registry, determining whether a screening is *first time* will depend on client self-report, which can introduce misclassification bias for which the data may need to be adjusted. **Notes on Disaggregation** **Age**: Some programmes have broader national target age ranges, particularly those in countries with high rates of HIV. This indicator can be adapted at the national level to reflect the national target age range. The modified indicator can be disaggregated by age in order to report globally using the WHO indicator. **First time screened**: Some programmes may be interested in measuring all screenings – in addition to first time screenings – at a national, subnational or facility level. This indicator can be adapted accordingly and disaggregated by first-time, versus all, screenings. **Time frame**: Programmes will need to monitor screening rate more frequently at the national, subnational or facility level. National level indicators can adapt to reflect the programme's time-frame reporting needs. The modified indicator can be disaggregated by time-frame in order to report globally using the WHO indicator. **HIV Status**: Because HIV-positive women are at a higher risk for cervical cancer, programmes in countries with high rates of HIV should collect data on HIV status from all women screened. This indicator can be disaggregated by HIV status at the national, subnational and facility levels based on programme need. **Result**: The Screening Rate can be disaggregated by result in order to determine Screening Test Positive Rate.
Example for VIA-specific Programme	Percentage of women aged 30–49 years who have been screened for the first-time with VIA in a 12-month period targeting women in this age range *[Screening Rate, WHO 2013]* **NUM**: Number of women aged 30–49 years who have been screened for the first time in a 12-month period **DEN**: Number of women aged 30–49 years in the population

INDICATOR 2	SCREENING TEST POSITIVITY RATE
What it measures	Percentage of screened screen-positive women aged 30–49 years with a positive result in a 12-month period
Numerator (NUM)	Number of women aged 30–49 years reported positive in a 12-month period
Denominator (DEN)	Total number of women aged 30–49 years screened in a 12-month period
Data Source	**NUM**: HMIS **DEN**: HMIS
Frequency	Annual
Comments	**Note on Definitions:** *Positive result* includes suspect cancer and invasive cancer. **Notes on Disaggregation:** **First-time Screen Positivity Rate benchmark**: The range of VIA test positivity is 5–10% for women aged 30–60 years [WHO, 2013]; however test positivity rate will vary depending the age distribution of screened women, HIV prevalence in the area, practitioner experience, and screening method and algorithm. In order to understand how country-level screening test positivity rate compares to the expected test positivity rate and to determine what corrective action may be needed, countries should consider adapting the indicator based on country-level epidemiology, disaggregating by age, HIV status and screening method as needed. **Age**: Some programmes have broader national target age ranges, particularly those in countries with high rates of HIV. These indicators can be adapted at the national level to reflect the national target age range. The modified indicator can be disaggregated by age in order to report globally using the WHO indicator. **Time frame**: Programmes will need to monitor screening test positivity rate more frequently at the national, subnational or facility level. National level indicators can adapt the indicator to reflect the programme's time-frame reporting needs, and disaggregate by time-frame in order to report globally on the WHO indicator. **HIV Status**: Because HIV-positive women are at a higher risk for cervical cancer, programmes in countries with high rates of HIV should collect data on HIV status from all women screened. This indicator can be disaggregated by HIV status at the national, subnational and facility levels based on programme need.
Example for VIA-specific Programme	Percentage of VIA-screened women aged 30–49 years with a positive result *[VIA Test Positivity Indicator, WHO 2013]* **NUM**: Number of women aged 30–49 years who reported positive on a VIA screening in a 12-month period **DEN**: Total number of women aged 30–49 years who were VIA screened in a 12-month period

INDICATOR 3	TREATMENT RATE
What it measures	Percentage of screen-positive women who have a received treatment in a given year *(Benchmark: at least 90%)*
Numerator (NUM)	Number of screen-positive women aged 30–49 years completing appropriate treatment in a 12-month period
Denominator (DEN)	Number of screen-positive women aged 30–49 years in a 12-month period.
Data Source	**NUM**: Screening programme data (HIS) and cancer registry treatment information **DEN**: Screening programme data (HIS)
Frequency	Annually
Comments	**Note on Definitions** *Treatment* includes cryotherapy (including Single Visit Approach and cryotherapy received after postponement), LEEP, cold knife conisation for precancerous lesions, and surgery, chemotherapy and radiotherapy for invasive cancer. **Notes on Methodology** Countries should ensure that the numerator and denominator mirror one another. This can be achieved by including target age range in both the numerator and the denominator. Where multiple screening methods or strategies exist, attention must be paid to ensure that the treatment rate is accurately monitoring whether the women who needed treatment received treatment. For example, when there is a mixture of screen-and-treat with VIA alone, and screen-triage-treat with HPV Testing and VIA, all women positive at VIA screening need treatment BUT not all women who screen positive with an HPV Test need treatment – only those who also tested positive on the VIA triage examination need treatment; therefore the denominator should count all positives on VIA screening and all positives on VIA triage and NOT all positives screened with HPV Test. **Notes on Disaggregation:** **Age**: Some programmes have broader national target age ranges, particularly those in countries with high rates of HIV. This indicator can be adapted at the national level to reflect the national target age range. The modified indicator can be disaggregated by age in order to report globally using the WHO indicator. **Time frame**: Programmes will need to monitor treatment rate more frequently at the national, subnational or facility level. National level indicators can adapt this indicator to reflect the programme's time-frame reporting needs, and disaggregate by time-frame in order to report globally on the WHO indicator. **Treatment type**: Programmes offering multiple treatment options, may want the ability to report on individual treatment types at the national, subnational or facility level. Programmes can adapt the indicator to include the treatment type of interest, or disaggregate on treatment type.
Example for VIA-specific Programme	Percentage of VIA-positive women aged 30–49 years who have received treatment in the previous 12-month period *[Treatment Rate Performance Indicator, WHO, 2013]* **NUM**: Number of VIA-positive women aged 30–49 years completing appropriate treatment in a 12-month period **DEN**: Number of VIA-positive women aged 30–49 years in a 12-month period

REFERENCE TABLES FOR GLOBAL, CORE, AND OPTIONAL INDICATORS FOR CERVICAL CANCER PREVENTION AND CONTROL

GLOBAL INDICATORS

The Global indicators are the three globally standardized performance indicators recommended by WHO as fundamental to monitoring a cervical cancer prevention programme: 1) Screening Rate; 2) Screening Test Positivity Rate; and 3) Treatment Rate. In order to ensure the ability to monitor trends across countries, these indicators should be used as set out by WHO and should not be adapted or changed. Where programme priorities can be addressed by these indicators as written (see previous guiding information on Indicator Disaggregation), they may be considered the Core national indicators for Screening Rate, Screening Test Positivity Rate, and Treatment Rate.

TABLE 3.12

Global indicators: screening and treatment – all screening strategies and methods

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
G1.0 SCREENING RATE	**ALL SCREENING METHODS:** Percentage of women aged 30–49 years who have been **screened for the first time with a cervical cancer screening test** in a 12-month period targeting women aged 30–49 years. *[Screening Rate Indicator, WHO, 2014]*	**NUMERATOR**: Number of women aged 30–49 years who have been screened for the first time with a cervical screening test in a 12-month period. **DATA SOURCE**: Cervical cancer service delivery data (screening facility). **DENOMINATOR**: Number of women aged 30–49 years in the population. **DATA SOURCE**: Population census. **FREQUENCY**: Annually. **DISAGGREGATION**: HIV Status, Screening Method *(if more than one in use)*. **CONSIDERATIONS**: • May be used without adaptation at national, subnational, or facility levels, where national target age range is 30–49 years • Recommended to be calculated over a 12-month period or more frequently depending on quality assurance (QA)/quality improvement (QI) needs. Measuring screening rates annually will permit measurement of a cumulative incidence of women screened.
	VIA: Percentage of women aged 30–49 years who have been **screened for the first time with VIA** in a 12-month period. *[Screening Rate Performance Indicator, WHO, 2013]*	**NUMERATOR**: Number of women aged 30–49 who have been screened for the first time with VIA in a 12-month period. **DATA SOURCE**: Cervical cancer service delivery data (screening facility) **DENOMINATOR**: Number of women aged 30–49 years in the population. **DATA SOURCE**: *Facility level*: Facility catchment area; *Subnational and National level*: Population census **FREQUENCY**: Annually. **DISAGGREGATION**: HIV Status. **CONSIDERATIONS**: • May be used without adaptation at national, subnational, and facility levels, where national target age range is 30–49 years • Recommended to be calculated over a 12-month period or more frequently depending on QA/QI needs. Measuring screening rates annually will permit measurement of a cumulative incidence of women screened.
G2.0 SCREENING TEST POSITIVITY RATE	**ALL SCREENING METHODS:** Percentage of **screened** women aged 30–49 years with a positive result in a 12-month period *[Cervical Cancer Screening Test Positivity Rate Indicator, WHO, 2014]*	**NUMERATOR**: Number of women aged 30–49 years reported positive in a 12-month period. **DATA SOURCE**: Cervical cancer service delivery data (screening facility). **DENOMINATOR**: Total number of women aged 30–49 years screened in a 12-month period. **DATA SOURCE**: Cervical cancer service delivery data (screening facility). **FREQUENCY**: Annually. **DISAGGREGATION**: HIV Status, Screening Method, Screening Visit Type. **CONSIDERATIONS**: • Recommended to be calculated over a 12-month period or more frequently depending on QA/QI needs.

Table 3.12 continued

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
	VIA: Percentage of screened women aged 30–49 years with a **positive VIA test result in the previous 12-month period.** *[VIA Positivity Rate Performance Indicator, WHO, 2013]*	**NUMERATOR**: Number of women aged 30–49 reported positive in a 12-month period. **DATA SOURCE**: Cervical cancer service delivery data (screening facility). **DENOMINATOR**: Total number of women aged 30–49 years screened in a 12-month period. **DATA SOURCE**: Cervical cancer service delivery data (screening facility). **FREQUENCY**: Annually. **DISAGGREGATION**: HIV Status, Screening Visit Type. **BENCHMARK**: 5–25% in previously unscreened population (see Table 3.9). **CONSIDERATIONS**: • Recommended to be calculated over a 12-month period or more frequently depending on QA/QI needs.
G3.0 TREATMENT RATE	**ALL SCREENING METHODS** Percentage of screen-positive women who have **received treatment** in a given year *[Treatment Rate Indicator, WHO, 2014].*	**NUMERATOR**: Number of screen-positive women aged 30–49 years completing appropriate treatment in a 12-month period. **DATA SOURCES**: Cancer registry (invasive cancer treatment) + cervical cancer service delivery data (screening and precancerous lesion treatment) **DENOMINATOR**: Number of screen-positive women in a 12-month period. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage facility) **FREQUENCY**: Annually **DISAGGREGATION**: Age Group or Range, HIV Status, Screening Method, Treatment Type, Screening Visit Type **BENCHMARK**: At least 90% eligible for treatment receiving treatment (see Table 3.9) **CONSIDERATIONS** • This indicator is intended to monitor whether all those requiring treatment received treatment. For strategies where the decision of whether or not to treat is dependent on the results of a triage test, this indicator must be adjusted to capture those who are both screen-positive and triage-positive (i.e. those who required treatment). Where a combination of screen-treat and screen-triage-treat strategies are in use, the indicator wording can be adapted as needed, but must still measure: - Numerator: the number of women who required treatment and received treatment - Denominator: the number of women who required treatment • Treatment options include: cryotherapy (single-visit approach [SVA], previously postponed, and referred-in), LEEP, cold knife conisation, and surgery for precancerous lesions; and surgery, chemotherapy, and radiotherapy for invasive cancer.
	VIA: Percentage of **VIA-positive women who have received treatment** in a given year *[Treatment Rate Performance Indicator, WHO, 2013*	**NUMERATOR**: Number of VIA-positive women aged 30–49 years completing appropriate treatment in a 12-month period. **DATA SOURCES**: Cancer Registry (invasive cancer treatment) + cervical cancer service delivery data (screening and precancerous lesion treatment) **DENOMINATOR**: Number of VIA-positive women in a 12-month period. **DATA SOURCE**: Cervical cancer service delivery data (screening facility) **FREQUENCY**: Annually **DISAGGREGATION**: Age Group or Range, HIV status, Treatment Type, Screening Visit Type **BENCHMARK**: At least 90% of VIA-positive lesions and invasive cancers receive treatment (see Table 3.9) **CONSIDERATIONS** • Treatment options include: cryotherapy (SVA, previously postponed, and referred-in), LEEP, cold knife conisation, and surgery for precancerous lesions; and surgery, chemotherapy, and radiotherapy for invasive cancer.

CORE INDICATORS

The Core indicators are a small set of basic indicators which are considered the bare minimum, and fundamental to all programmes. The suggested Core indicators align with the Global indicators, while allowing flexibility to adapt the indicators to fit programme context. This limited set of indicators represents the minimum typically monitored at the National level.

TABLE 3.13
Core indicators: screening and treatment – all screening strategies and methods

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
C0.0 NUMBER SCREENED	Number of women screened in a given time period	**DATA SOURCE**: Cervical cancer service delivery data (screening facility) **FREQUENCY**: Annually, Quarterly, Monthly **DISAGGREGATION**: Age Group or Range, HIV Status, Screening Method, Screening Visit Type **CONSIDERATIONS** • This basic number is vital for understanding and estimating the demand for screening services, and forecasting and planning for the resources required to meet that demand and the resulting treatment needs. Disaggregation enhances sensitivity of this indicator in order to help identify the need for further outreach, as well as trigger further situational investigation at lower levels of the health system. • Because this total and its disaggregated subtotals are used as components for calculation of a number of screening and treatment indicators, this indicator does not need to be monitored directly or separately in programmes which have data systems with the capacity to retrieve these totals as needed for forecasting; therefore this indicator should be considered most useful for countries with nascent systems with limited capacity, without current capacity to fully disaggregate relevant aggregate indicators.
C1.0 SCREENING RATE	Percentage of women **within the national programme target age range** who have been screened for the first time in a given time period	**NUMERATOR**: Number of women *within the national programme target age range* who have been screened for the first time in a given time period. **DATA SOURCE**: Cervical cancer service delivery data (screening facility) **DENOMINATOR**: Total number of women *within the national programme target age range* in the population in a given time period. **DATA SOURCES**: *Facility level monitoring*: Facility catchment area; *Subnational and National level monitoring*: Population census **FREQUENCY**: Annually, Quarterly, Monthly **DISAGGREGATION**: HIV Status, Screening Method **CONSIDERATIONS** • Indicator should be adapted to the national programme target age range • Recommended to be calculated over a 12-month period or more frequently depending on QA/QI needs. Measuring screening rates annually will permit measurement of a cumulative incidence of women screened.
C2.0 SCREENING TEST POSITIVITY RATE	Percentage of [first time] screened women [within the national programme target age range] who received a **positive screening result** in a given time period	**NUMERATOR**: Number of [first time] screened women [within the national programme target age range] who received a positive screening result in a given time period. **DATA SOURCE**: Cervical cancer service delivery data (screening facility) **DENOMINATOR**: Number of [first time] screened women [within the national programme target age range] in a given time period. **DATA SOURCE**: Cervical cancer service delivery data (screening facility) **FREQUENCY**: Annually, Quarterly, Monthly **DISAGGREGATION**: Age Group/Range*, HIV Status, Screening Method, Screening Visit Type* *See "Considerations" below, and Indicator Disaggregation guiding information **CONSIDERATIONS** • Calculating this indicator (and other indicators in this cascade) including the language in brackets allows programmes to monitor test quality by measuring the test positivity rate for the screening naïve within the target population; however, monitoring patient care and clinical management is better supported by excluding the language within brackets in order to capture all test positives regardless of age or screening history. Where systems have capacity for high-quality data aggregation, the indicator may be broadened and disaggregated by Age Group or Range and Screening Visit Type to allow for granularity.

Table 3.13 continued

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
C2.4 SUSPECTED CANCER	Percentage of [first time] screened women [within the national programme target age range] with suspected cervical cancer	**NUMERATOR**: Number of [first time] screened women [within the national programme target age range] with suspected cervical cancer in a given time period. **DATA SOURCE**: Cervical cancer service delivery data (screening, triage, or referral facility, depending on strategy) **DENOMINATOR**: Number of [first time] screened women [within the national programme target age range] in a given time period. **DATA SOURCE**: Cervical cancer service delivery data (screening facility) **FREQUENCY**: Annually (National level), Quarterly, Monthly **DISAGGREGATION**: Age Group or Range*, HIV Status, Screening Visit Type* *See "Considerations" below, and Indicator Disaggregation guiding information **CONSIDERATIONS** • Calculating this indicator as written allows programmes to monitor suspected cancer in screening naïve women within the target population; however, monitoring patient care and clinical management is better supported by excluding the language within brackets and capturing all suspected cancer cases regardless of age or screening history. The broader indicator should then be disaggregated by Age Group or Range and Screening Visit Type to allow for granularity and comparison of rates of suspected cancer cases in the different populations. • Data collection for this indicator should be implemented based on the screening strategy employed – for example, cases of suspected cancer may be identified at the screening step for VIA-based strategies, but for HPV test-based strategies, cases may be identified at the triage step or at VAT.
C3.0 TREATMENT RATE	Percentage of screen-positive women who have **received treatment** in a given time period	**NUMERATOR**: Number of screen-positive women who have **received treatment** in a given time period. **DATA SOURCES**: Cancer Registry/Hospital (invasive cancer treatment) + cervical cancer service delivery data (screening and precancerous lesion treatment) **DENOMINATOR**: Number of screen-positive women in a given time period. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage facility) **FREQUENCY**: Annually **DISAGGREGATION**: Age Group or Range, HIV status, Screening (or Triage) Method, Treatment Type, Screening Visit Type **BENCHMARK**: At least 90% eligible for treatment receiving treatment (see Table 3.9) **CONSIDERATIONS** • This indicator is intended to monitor whether all those who required treatment received treatment – it is vital that all women who require treatment are provided with treatment. For strategies where the **decision to treat is determined by triage** examination, only women who tested positive on **both** the primary screening test and the triage examination will require treatment, and should be counted in the numerator – programmes may adjust the wording of these indicators to better suit the context (e.g. replace *screen-positive* with *triage-positive*). In countries where both screen-treat and screen-triage-treat strategies are in use, the indicator wording can be adapted to better suit the context, but must still measure: - Numerator: the number of women who required treatment and received treatment - Denominator: the number of women who required treatment • Treatment options include: cryotherapy, LEEP, cold knife conisation, and surgery for precancerous lesions; and surgery, chemotherapy, and radiotherapy for invasive cancer.

TABLE 3.14
Core indicators: programme – all screening strategies and methods

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
C4.0 PROPORTION OF FACILITIES PROVIDING SERVICES	Proportion of **health facilities** that are providing the cervical cancer services they are designated to provide	**NUMERATOR**: Total number of health facilities that are providing cervical cancer services. **DATA SOURCES**: Facility-based Surveys (Service Availability and Facility-readiness tools, Health Facility Census, etc.); HMIS; Facility Registry (if current) **DENOMINATOR**: Total number of health facilities that are designated to provide cervical cancer services. **DATA SOURCES**: Facility-based Surveys (e.g. Supportive supervision/facility-readiness survey in this toolkit; Health Facility Census, etc.); HMIS; Facility Registry (if current) **FREQUENCY**: Every 5 years *(and as baseline/monitoring when scaling-up services)* **DISAGGREGATION**: Facility Level, Public or Private Facility, Screening and Treatment Services, Service Provision Schedule (e.g. Full-time, Part-time; or 1–3 days per week, 3+ days per week; etc.) **CONSIDERATIONS**: • May be adapted to monitor facility compliance with national reporting policy by increasing frequency (based on reporting schedule) and adjusting numerator and denominator. • This indicator, when calculated as written, monitors facility readiness to provide services. As seen in Facility-based Surveys section of this toolkit, when the denominator is changed to *the total number of health facilities in the country*, the indicator has been adapted to monitor cervical cancer service availability.

In addition to the Core indicators above, the following indicators should be considered Core for screening strategies which include a triage step between screening and treatment of precancerous lesions (e.g. HPV Testing followed by VIA; cytology or HPV Testing followed by colposcopy). In strategies where the results of a primary screening test, secondary screening test (sequentially or concurrently), and triage test determine the need for precancerous lesion treatment, these indicators may be used as models to create two additional Core indicators in order to monitor the *secondary screening test* or *complementary screening test*.

TABLE 3.15

Core indicators: screening and treatment – screen, triage and treat; all methods

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
C2.1 RECEIVED TRIAGE EXAMINATION (CORE)	Percentage of screen-positive women who received a triage examination	**NUMERATOR**: Number of screen-positive women who received a triage examination. **DATA SOURCE**: Cervical cancer service delivery data (triage facility) **DENOMINATOR**: Number of screen-positive women. **DATA SOURCE**: Cervical cancer service delivery data (screening facility) **FREQUENCY**: Annually, Quarterly, Monthly **DISAGGREGATION**: Age Group or Range*, HIV Status, Triage Method, Screening Visit Type* *See "Considerations" under C2.0, and Indicator Disaggregation guiding information **CONSIDERATIONS** • This indicator is applicable to screening strategies that include a triage (or secondary screening) step between the primary screening test and precancerous lesion treatment or further evaluation and diagnosis. • This indicator measures whether all those who needed a triage examination (i.e. all screen-positives) received a triage examination. For indicators monitoring the triage referral process, see the additional Optional indicators in the triage cascade (OPT2.2.1–2.2.2).
C2.2 TRIAGE EXAMINATION POSITIVITY RATE (CORE)	Percentage of screen-positive women with a **positive triage examination result** in a given time period	**NUMERATOR**: Number of screen-positive women with a **positive triage examination result** in a given time period. **DATA SOURCE**: Cervical cancer service delivery data (triage facility) **DENOMINATOR**: Number of screen-positive women who received a triage examination in a given time period. **DATA SOURCE**: Cervical cancer service delivery data (triage facility) **FREQUENCY**: Annually, Quarterly, Monthly **DISAGGREGATION**: Age Group or Range*, HIV Status, Triage Method, Screening Visit Type* *See "Considerations" under C2.0, and Indicator Disaggregation guiding information **CONSIDERATIONS** • This indicator is applicable to screening strategies that include a triage (or secondary screening) step between the primary screening test and precancerous lesion treatment or further evaluation and diagnosis. • This indicator monitors test quality by measuring the positivity rate of the triage test. Slight adaptation of the numerator or denominator allows calculation of additional statistics that can assist in the monitoring of trends and the prospective estimation of material and financial resources (see OPT2.3)

OPTIONAL INDICATORS

The majority of Optional indicators are most useful when monitored only at the facility and/or subnational levels. Indicators related to invasive cervical cancer may be monitored at national level, in addition to tertiary or secondary care facilities and subnational level. Optional indicators can be incorporated into the M&E system based on programme maturity, data system functionality, and available resources. Programmes may also choose Optional indicators based on the need to monitor specific priorities – such as integration with HIV services.

Many of the suggested Optional indicators monitor process at a granular level, and therefore the benefit of collecting and analysing the additional data should be carefully weighed against the costs and the capacity to collect and manage quality data. For example, a programme lacking access to an electronic medical or health record system for exchange of patient data between facilities may decide against choosing a set of Optional indicators which monitor each step of a referral process (e.g. OPT2.2.1–OPT2.2.4); a feasible alternative may be to use one indicator from the set with data sourced from a single location (e.g. OPT2.2.1) or a Core indicator (e.g. C2.1) to act as a proxy and flag the need for more in-depth investigation.

TABLE 3.16
Optional indicators: screening – all strategies and methods

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
OPT1.1 SCREENED WITHIN TARGET AGE RANGE	Proportion of women screened for the first time who were within the national programme target age range	**NUMERATOR**: Number of women screened for the first time who were within the national programme target age range at the time of screening. **DATA SOURCE**: Cervical cancer service delivery data (screening facility) **DENOMINATOR**: Total number of women screened for the first time. **DATA SOURCE**: Cervical cancer service delivery data (screening facility) **FREQUENCY**: Annually, Quarterly **DISAGGREGATION**: HIV Status, Screening Method **BENCHMARK**: At least 70% of the women screened are within the target age group (see Table 3.9) **CONSIDERATIONS** • While this indicator is similar to Indicators G1.0 and C1.0, the different denominators allow the monitoring of different programme aspects.
OPT1.2 PROGRESS TOWARD SCREENING TARGET	Percentage of screening target reached in the past year, quarter, or month	**NUMERATOR**: Number of women who have been screened in the past year, quarter, or month. **DATA SOURCE**: Cervical cancer service delivery data (screening facility; subnational or national aggregate data) **DENOMINATOR**: Annual, quarterly or monthly screening target. **DATA SOURCE**: Facility, subnational, or national level monitoring plan **FREQUENCY**: Annually, Quarterly, Monthly **DISAGGREGATION**: HIV Status, Screening Method **CONSIDERATIONS** • The numerator should carry the same parameters as the denominator; for example, if the annual (or quarterly or monthly) screening target is restricted to women aged 30–49; only the number of women aged 30–49 who have been screened in that time period should be included in the numerator.
OPT1.3 RESCREENED WITHIN TARGET INTERVAL	Percentage of women who were rescreened (after a previous negative result) within the recommended screening interval	**NUMERATOR**: Number of women who have been rescreened within the recommended screening interval. **DATA SOURCE**: Cervical cancer service delivery data (screening facility) **DENOMINATOR**: Number of women who have been rescreened. **DATA SOURCE**: Cervical cancer service delivery data (screening facility) **FREQUENCY**: Annually **DISAGGREGATION**: Age Group or Range, HIV Status **CONSIDERATIONS** • As a programme matures, countries should consider adding an additional performance indicator which measures whether women that **should** return for routine rescreening in a given time period **are returning in that time period** (e.g. number of rescreened women in a given time period, over the number of women who were expected to be rescreened in the same time period) • WHO recommends that women who receive a negative cervical cancer test result be rescreened every 3–5 years, and every 3 years for HIV-positive women or women of unknown HIV status. If population-specific screening intervals are used by the national programme, each should be monitored by its own specific indicator.
OPT1.4 PRECANCEROUS LESION POST-TREATMENT FOLLOW-UP	Percentage of women treated for precancerous lesions who returned for a **post-treatment follow-up screening test at 1 year**	**NUMERATOR**: Number of women treated in the previous year for precancerous lesions who returned for a post-treatment follow-up screening test at 1 year. **DATA SOURCE**: Cervical cancer service delivery data (screening facility) **DENOMINATOR**: Number of women treated in the previous year for precancerous lesions. **DATA SOURCE**: Cervical cancer service delivery data (treatment facility or screening facility – referral feedback) **FREQUENCY**: Annually **DISAGGREGATION**: Age Group or Range, HIV Status, Treatment Type **CONSIDERATIONS** • Some programmes require post-treatment follow-up screening at intervals other than or in addition to 1 year (e.g. 6 months and 12 months) – this indicator should be adjusted to match national guidelines for post-treatment follow-up screening.
OPT2.0.1 PRE-CANCEROUS LESION CURE RATE	Percentage of women who **received a negative screening test result at their post-treatment follow-up at 1 year**	**NUMERATOR**: Number of women who received a negative screening test result at their post-treatment follow-up at 1 year. **DATA SOURCE**: Cervical cancer service delivery data (screening facility) **DENOMINATOR**: Number of women treated in the previous year for precancerous lesions. **DATA SOURCE**: Cervical cancer service delivery data (treatment facility or screening facility – referral feedback) **FREQUENCY**: Annually **DISAGGREGATION**: Age Group or Range, HIV Status, Screening Method, Treatment Type **CONSIDERATIONS** • For the purpose of this indicator, the "cure rate" is the percentage of women treated in the previous year that return for routine rescreening and have a negative result at the second screening; this does not require that resolution of precancerous lesions be definitively confirmed by histopathology. • This indicator is specific to treatment for precancerous lesions, and does not include treatment for invasive cancer.

TABLE 3.17
Optional indicators: Screen and/or triage – screen, triage and treat strategies; HPV testing and cytology

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
OPT1.0.1 SCREENING TEST FAILURE	Percentage of women whose sample was tested more than once due to error	**NUMERATOR**: Number of women whose sample was tested more than once due to error (e.g. technician error, power failure). **DATA SOURCE**: Cervical cancer service delivery data (feedback on laboratory linkage form accompanying sample) and/or laboratory data **DENOMINATOR**: Total number of women with a laboratory/cytology screening test (HPV test, Pap smear) result. **DATA SOURCES**: Cervical cancer service delivery data (feedback on laboratory linkage form accompanying sample) and/or laboratory data **FREQUENCY**: Annually, Quarterly **DISAGGREGATION**: Procedure Purpose (screening or triage) **CONSIDERATIONS** • This indicator is applicable to screening methodologies which require sample collection and processing (e.g. HPV testing, Pap smear/cytology). • This indicator monitors process from the **screening programme side** using feedback from the laboratory. The laboratory side may also use this indicator, in addition to other indicators for monitoring laboratory test performance and quality. For laboratory monitoring, adaptation of the numerator and denominator to focus on samples only (rather than "women") may be considered. It is important to ensure that double-counting between the screening facility and the laboratory does not occur during reporting (e.g. if ***both*** the screening facility ***and*** the laboratory report into the same system on this indicator).
OPT1.0.2 INADEQUATE SAMPLE	Percentage of women whose sample was inadequate for test completion	**NUMERATOR**: Number of women whose sample was inadequate for test completion. **DATA SOURCE**: Cervical cancer service delivery data (feedback on laboratory linkage form accompanying sample) and/or laboratory data **DENOMINATOR**: Number of women from whom a sample was obtained. **DATA SOURCES**: Cervical cancer service delivery data (screening or triage facility) **FREQUENCY**: Annually, Quarterly, Monthly **DISAGGREGATION**: Age Group or Range, HIV Status, Procedure Purpose (screening or triage), Sample Collection Method (for HPV testing – self-collected, provider collected) **CONSIDERATIONS** • "Inadequate" means that a sample was obtained but could not be processed due its condition – this includes lost samples, improperly fixed slides, and spilled samples. • This indicator is applicable to screening methodologies which require sample collection and processing (e.g. HPV testing, Pap smear/cytology). • This indicator monitors process from the **screening programme side**, and allows providers to ensure that they are obtaining quality samples. The laboratory side may use this indicator, as well as additional indicators for monitoring laboratory test performance and quality. For laboratory monitoring, adaptation of the numerator and denominator to focus on samples only (rather than "women") may be considered. It is important to ensure that double-counting between the screening facility and the laboratory does not occur during reporting (e.g. if ***both*** the screening facility ***and*** the laboratory report into the same system on this indicator).
OPT1.0.3 RECEIVED TEST RESULTS	Percentage of women who received their screening test results	**NUMERATOR**: Number of women who received the results of their screening test. **DATA SOURCE**: Cervical cancer service delivery data (screening facility) **DENOMINATOR**: Total number of women with a screening test result. **DATA SOURCES**: Cervical cancer laboratory data or service delivery data (screening facility) **FREQUENCY**: Annually, Quarterly, Monthly **DISAGGREGATION**: Age Group or Range, HIV Status, Screening Method, Screening Visit Type **CONSIDERATIONS** • This indicator is important for monitoring whether patients are returning to obtain results, as well as for monitoring the linkages between the screening facility and the laboratory, and therefore is most applicable to screening methodologies that do not allow for immediate or same-day return of screening results. • If monitored frequently at the facility, this indicator can be used to flag the need for active follow-up with screened women who do not know their results.
OPT5.0 RESULTS TURN-AROUND TIME	Number of days between sample collection and return of results to screened women	**NUMBER**: Average number of days between sample collection and return of results to screened women. **DATA SOURCE**: Cervical cancer programme data (screening or triage facility) **FREQUENCY**: Annually, Quarterly, Monthly **DISAGGREGATION**: Facility Level *(or Facility Name)*, Laboratory or Pathology Procedure *(or Type of Sample)* **CONSIDERATIONS**: • This indicator is intended to monitor results turn-around-time for screening (or triage) tests, but may also be adapted for monitoring results turn-around-time for other testing (e.g. biopsy). • For strategies using HPV testing with self-collected HPV samples routed through health facilities, "sample collection" refers to the date the woman collected her sample, and NOT to the date that the sample was received by the routing facility.

Table 3.17 continued

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
OPT5.0.1 SAMPLE SUBMISSION TIME	Number of days between sample collection and transport of sample to laboratory	**NUMBER**: Average number of days between sample collection and transport of sample to laboratory. **DATA SOURCE**: Cervical cancer programme data (screening or triage facility) **FREQUENCY**: Annually, Quarterly **DISAGGREGATION**: Facility Level *(or Facility Name)*, Laboratory or Pathology Procedure *(or Type of Sample)* **CONSIDERATIONS**: • This indicator is intended to monitor sample transport for screening (or triage) tests, but may also be adapted for monitoring transport for other testing (e.g. biopsy) For strategies using HPV testing: • Test manufacturers' manuals should be consulted to determine the optimal amount of time for sample viability – this can be used as a benchmark against which this indicator can be monitored. • For self-collected HPV samples routed through health facilities, "sample collection" refers to the date the woman collected her sample, and NOT to the date that the sample was received by the routing facility.
OPT5.0.2 LABORATORY PROCESSING TIME	Number of days between laboratory receipt of sample and return of results to facility	**NUMBER**: Average number of days between laboratory receipt of sample and return of results to facility. **DATA SOURCE**: Cervical cancer programme data (screening or triage facility) **FREQUENCY**: Annually, Quarterly **DISAGGREGATION**: Facility Level *(or Facility Name)*, Laboratory or Pathology Procedure *(or Type of Sample)* **CONSIDERATIONS**: • For strategies using HPV testing, test manufacturers' manuals should be consulted to determine the optimal amount of time for sample viability – this can be used as a benchmark against which this indicator can be monitored. • This indicator is intended to monitor screening (or triage) test processing time and return, but may also be adapted for monitoring processing and return for other testing (e.g. biopsy)
OPT5.0.3 RESULTS COMMUNICATION TURN-AROUND TIME	Number of days between facility receipt of results and return of results to screened women	**NUMERATOR**: Average number of days between facility receipt of results and return of results to screened women. Data source: Cervical cancer programme data (screening or triage facility or laboratory) **FREQUENCY**: Annually, Quarterly **DISAGGREGATION**: Facility Level *(or Facility Name),* Laboratory or Pathology Procedure, Method of Results Provision *(e.g. SMS message, In-Person)* **CONSIDERATIONS** • This indicator is intended to monitor screening (or triage) results communication, but may also be adapted for monitoring results communication for other testing (e.g. biopsy)

OPT2.2.1–OPT2.2.3 measure each step in the referral process and require data from multiple sites. Where an electronic patient medical or health record systems is not in use, an indicator such as C2.1 may be monitored as a proxy in order to flag need for more in-depth investigation.

TABLE 3.18
Optional indicators: Triage – screen, triage and treat strategies; all methods

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
OPT2.2.1 TRIAGE EXAMINATION PROVISION	Percentage of screen-positive women who attended the triage visit and received a triage examination	**NUMERATOR**: Number of screen-positive women who attended the triage examination visit and received a triage examination. **DATA SOURCE**: Cervical cancer service delivery data (triage facility) **DENOMINATOR**: Number of screen-positive women who attended the triage examination visit. **DATA SOURCE**: Cervical cancer service delivery data (triage facility) **FREQUENCY**: Annually, Quarterly **DISAGGREGATION**: HIV Status, Age Group/Range, Screening Method, Screening Visit Type **CONSIDERATIONS** • This indicator is applicable to screening strategies that include a triage step between the primary screening test and precancerous lesion treatment or further evaluation and diagnosis. • This indicator monitors service provision and referral process by measuring completion of a triage examination for women attending a triage visit. This is useful in identifying issues with triage examination provision due to a number of reasons (e.g. stockouts, women presenting for triage with cervicitis or other infection preventing examination completion, etc.). Note that this indicator and OPT2.2.2 and OPT2.2.3 differ from C2.1 in that they have been restricted to focus on the referral process.

Table 3.18 continued

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
OPT2.2.2 TRIAGE REFERRAL COMPLIANCE	Percentage of screen-positive women referred for triage who attended the triage visit	**NUMERATOR**: Number of screen-positive women referred for triage examination who attended the triage visit. **DATA SOURCE**: Cervical cancer service delivery data (triage facility) **DENOMINATOR**: Number of screen-positive women referred for triage examination. **DATA SOURCE**: Cervical cancer service delivery data (screening facility) **FREQUENCY**: Annually, Quarterly **DISAGGREGATION**: HIV Status, Age Group/Range, Screening Method, Screening Visit Type **CONSIDERATIONS** • This indicator is applicable to screening strategies that include a triage step between the primary screening test and precancerous lesion treatment or further evaluation and diagnosis. • This indicator monitors referral process by measuring referral compliance. Note that this indicator and OPT2.2.1 and OPT2.2.3 differ from C2.1 in that they have been restricted to focus on the referral process.
OPT2.2.3 REFERRED FOR TRIAGE	Percentage of screen-positive women who were referred for triage examination	**NUMERATOR**: Number of screen-positive women who were referred for triage examination. **DATA SOURCE**: Cervical cancer service delivery data (screening facility) **DENOMINATOR**: Number of screen-positive women. **DATA SOURCE**: Cervical cancer service delivery data (screening facility) **FREQUENCY**: Annually, Quarterly, Monthly **DISAGGREGATION**: HIV Status, Age Group/Range, Screening Method, Screening Visit Type **CONSIDERATIONS** • This indicator is applicable to screening strategies that include a triage step between the primary screening test and precancerous lesion treatment or further evaluation and diagnosis. • This indicator monitors referral process by measuring whether those requiring referral obtained referral. Note that this indicator and OPT2.2.1 and OPT2.2.2 differ from C2.1 in that they have been restricted to focus on the referral process.
OPT2.2.4 RECEIVED TRIAGE RESULTS	Percentage of women who received their triage examination results	**NUMERATOR**: Number of women who received the results of their triage examination. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage facility – depending on national protocol) **DENOMINATOR**: Total number of women with a triage examination result. **DATA SOURCES**: Cervical cancer laboratory data or service delivery data (triage facility) **FREQUENCY**: Annually, Quarterly, Monthly **DISAGGREGATION**: Age Group or Range, HIV Status, Triage Method **CONSIDERATIONS** • This indicator is important for monitoring whether patients are returning to obtain results, as well as for monitoring the linkages between the screening/triage facility and the laboratory, and therefore is most applicable to triage methodologies that do not allow for immediate or same-day return of results. • If monitored frequently at the facility, this indicator can be used to flag the need for active follow-up with women who do not know the results of their triage examination.
OPT2.3 SCREENED WOMEN REQUIRING TREATMENT	Percentage of screened women with a **positive triage examination result** in a given time period	**NUMERATOR**: Number of screened women with a **positive triage examination result** in a given time period. **DATA SOURCE**: Cervical cancer service delivery data (triage facility) **DENOMINATOR**: Number of screened women. **DATA SOURCE**: Cervical cancer service delivery data (screening facility) **FREQUENCY**: Annually, Quarterly, Monthly **DISAGGREGATION**: Age Group or Range*, HIV Status, Screening Visit Type*, Triage Method *See Considerations under C2.0, and Indicator Disaggregation guiding information **CONSIDERATIONS** • This indicator is applicable to screening strategies that include a triage step between the primary screening test and precancerous lesion treatment or further evaluation and diagnosis. • While this indicator seems similar to C2.2, the changes to the numerator and denominator allow the measurement of the percentage of [first time] screened women who ultimately required treatment a trend key to the prospective estimation of material and financial resources. - An additional companion statistic can also be calculated by adjusting the denominator to capture *screen-positive women*, rather than *screened women*. This adaptation allows the measurement of the "percentage of screen-positives who received a positive triage examination result"; thereby supplementing the information provided by OPT2.3 and strengthening ability to monitor trends and forecast need and required resources.

OPT3.4.1–OPT3.4.2 and OPT3.5.1–OPT3.5.2 measure each step in the referral process and require data from multiple sites. Where an electronic patient medical or health record systems is not in use, indicators such as 3.4 and 3.5 may be monitored as proxies in order to flag need for more in-depth investigation.

TABLE 3.19

Optional indicators: Treatment – all screening strategies and methods

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
OPT3.1 PRECANCEROUS LESION TREATMENT	Percentage of screen-positive women who are eligible for cryotherapy or LEEP who receive cryotherapy or LEEP	**NUMERATOR**: Number of screen-positive women with lesions eligible for cryotherapy or LEEP who received that treatment in a given time period. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage facility and/or precancerous lesion treatment referral facility) **DENOMINATOR**: Number of screen-positive women with lesions eligible for cryotherapy or LEEP in a given time period. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage facility and/or precancerous lesion treatment referral facility) **FREQUENCY**: Annually, Quarterly **DISAGGREGATION**: Age Group or Range, HIV status, Screening Method, Screening Visit Type, Treatment Method **BENCHMARK**: At least 90% eligible for treatment of precancerous lesions receiving treatment (see Table 3.9) **CONSIDERATIONS** • It is vital that all women requiring treatment for precancerous lesions receive the treatment for which they are eligible – the purpose of this indicator is to monitor whether women requiring (and eligible for) treatment for precancerous lesions received treatment. Programmes using either a screen-triage-treat strategy, or a combination of screen-treat AND screen-triage-treat strategies may adapt this indicator to better suit the context, while still maintaining the purpose of the indicator (e.g. replace *screen-positive* with *triage-positive* – see earlier Monitoring Screening and Triage Strategies subsection). • The considerations for OPT3.3 Treatment with Cryotherapy and OPT3.4 Treatment with LEEP include information to guide calculation of additional statistics that can assist in tracking service delivery trends and estimating need for precancerous lesion services in order to forecast the resources and supplies needed to meet that demand. • Recommended to be calculated over a 12-month period or more frequently depending on QA/QI needs.
OPT3.2 POST-TREATMENT COMPLICATION	Percentage of women receiving cryotherapy or LEEP who returned with a **post-treatment complication**	**NUMERATOR**: Number of women receiving cryotherapy or LEEP who returned with a post-treatment complication. **DATA SOURCE**: Cervical cancer service delivery data (screening or precancerous lesion treatment facility) **DENOMINATOR**: Number of women receiving cryotherapy or LEEP. **DATA SOURCE**: Cervical cancer service delivery data (precancerous lesion treatment facility or screening facility referral feedback) **FREQUENCY**: Annually **DISAGGREGATION**: HIV Status, Treatment Type

Table 3.19 continued

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
OPT3.3 TREATMENT WITH CRYOTHERAPY	Percentage of screen-positive women with lesions eligible for cryotherapy who **received cryotherapy**	**NUMERATOR**: Number of screen-positive women with lesions eligible for cryotherapy who received cryotherapy in a given time period. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage or cryotherapy facility) **DENOMINATOR**: Number of screen-positive women with lesions eligible for cryotherapy in a given time period. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage or cryotherapy facility) **FREQUENCY**: Annually, Quarterly, Monthly **DISAGGREGATION**: Age Group or Range, HIV status, Screening Method, Screening Visit Type **CONSIDERATIONS** • It is vital that all women requiring treatment for precancerous lesions receive the treatment for which they are eligible. Programmes using either a screen-triage-treat strategy, or a combination of screen-treat AND screen-triage-treat strategies, may adapt this indicator to better suit the context (e.g. replace *screen-positive* with *triage-positive* – see earlier Monitoring Screening and Triage Strategies subsection) while still maintaining the purpose of the indicator: **to monitor whether all women eligible for cryotherapy received cryotherapy**. • Received cryotherapy includes women receiving same-day treatment (SVA), women who received cryotherapy after postponing, and women who received cryotherapy as the result of a referral- all within a given time period. • Should be calculated and reviewed frequently with high facility caseload. • To track trends in service delivery, and support forecasting of resources and supplies to meet the expected demand, additional statistics can be calculated by adapting the numerator and denominator of this indicator: - Percentage of **screen-positive** women **eligible for cryotherapy** in a given time period (Numerator: Number of screen-positive women with lesions eligible for cryotherapy in a given time period; Denominator: Number of **screen-positive** women in a given time period) - Percentage of **screened** women **eligible for cryotherapy** in a given time period (Numerator: Number of screen-positive women with lesions eligible for cryotherapy in a given time period; Denominator: Number of **screened** women in a given time period) - Percentage of **screened** women who **received cryotherapy** in a given time period (Numerator: Number of screened women who received cryotherapy in a given time period; Denominator: Number of **screened** women in a given time period)
OPT3.4 TREATMENT FOR LARGE LESIONS	Percentage of screen-positive women eligible for LEEP who received LEEP	**NUMERATOR**: Number of screen-positive women eligible for LEEP who received LEEP in a given time period. **DATA SOURCE**: Cervical cancer service delivery data (LEEP facility) **DENOMINATOR**: Number of screen-positive women eligible for LEEP in a given time period. **DATA SOURCE**: Cervical cancer service delivery data (LEEP facility) **FREQUENCY**: Annually, Quarterly, Monthly **DISAGGREGATION**: Age Group or Range, HIV status, Screening Visit Type **CONSIDERATIONS** • Programmes using either a screen-triage-treat strategy, or a combination of screen-treat AND screen-triage-treat strategies, may adapt this indicator to better suit the context (e.g. replace *screen-positive* with *triage-positive* – see earlier Monitoring Screening and Triage Strategies subsection) while still maintaining the purpose of the indicator: **to monitor whether all women determined eligible for LEEP received LEEP**. • To track trends in service delivery, and support forecasting of resources and supplies to meet the expected demand, additional statistics can be calculated by adapting the numerator and denominator of this indicator: - Percentage of **screened** women **eligible for LEEP** in a given time period (Numerator: Number of screen-positive women with large lesions eligible for LEEP in a given time period; Denominator: Number of **screened** women in a given time period) - Percentage of **screened** women who **received LEE**P in a given time period (Numerator: Number of screen-positive women who received LEEP in a given time period; Denominator: Number of **screened** women in a given time period) • Should be calculated and reviewed quarterly or monthly with high facility caseload.

Table 3.19 continued

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
OPT3.4.1 LARGE LESION TREATMENT ELIGIBILITY	Percentage of screen-positive women referred for large lesions who were eligible for LEEP	**NUMERATOR**: Number of screen-positive women referred for large lesions who were determined eligible for LEEP at the referral visit. **DATA SOURCE**: Cervical cancer service delivery data (LEEP facility) **DENOMINATOR**: Number of screen-positive women referred for large lesions. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage facility) **FREQUENCY**: Annually **DISAGGREGATION**: Age Group or Range, HIV Status, Screening Method, Screening Visit Type **CONSIDERATIONS** • Programmes using either a screen-triage-treat strategy, or a combination of screen-treat AND screen-triage-treat strategies, may adjust the wording of these indicators to better suit the context (see below and earlier Monitoring Screening and Triage Strategies subsection) while still maintaining the purpose of the indicator: **to monitor the number of women identified as having large lesions (not eligible for cryotherapy) who are determined eligible for LEEP treatment**. • Indicators monitoring referral processes should be adapted to fit programme context: - Depending on screening strategy, women may be referred for evaluation of large lesions at the screening visit, or at the triage visit. Additional disaggregation may be used to monitor the point of referral. - Women may be referred to colposcopy for evaluation of large lesions – programmes may choose to use this indicator, or may adapt and use the colposcopy-specific indicators (OPT3.6 and OPT3.6.1).
OPT3.4.2 LARGE LESION REFERRAL	Percentage of screen-positive women **referred** for large lesions (lesions not eligible for cryotherapy)	**NUMERATOR**: Number of screen-positive women referred for large lesions (lesions not eligible for cryotherapy). **DATA SOURCE**: Cervical cancer service delivery data (screening or triage facility) **DENOMINATOR**: Number of screen-positive women with large lesions (lesions not eligible for cryotherapy). **DATA SOURCE**: Cervical cancer service delivery data (screening or triage facility) **FREQUENCY**: Annually, Quarterly, Monthly **DISAGGREGATION**: Age Group or Range, HIV Status, Screening Method, Screening Visit Type **CONSIDERATIONS** • Programmes using either a screen-triage-treat strategy, or a combination of screen-treat AND screen-triage-treat strategies, may adjust the wording of these indicators to better suit the context (see below and earlier Monitoring Screening and Triage Strategies subsection) while still maintaining the purpose of the indicator: **to monitor whether all women identified as having large lesions (not eligible for cryotherapy) are referred for LEEP eligibility determination**. • Indicators monitoring referral processes should be adapted to fit programme context: - Depending on screening strategy, women may be referred for evaluation of large lesions at the screening visit, or at the triage visit. Additional disaggregation may be used to monitor the point of referral. - Women may be referred to colposcopy for evaluation of large lesions – programmes may choose to use this indicator, or may adapt and use the colposcopy-specific indicators (OPT3.6 and OPT3.6.1).
OPT3.5 SUSPECTED CANCER TREATMENT AND FOLLOW-UP	Percentage of women with **suspected invasive cancer on VIA* who completed appropriate treatment or follow-up** *[Additional VIA indicator, WHO, 2013]*	**NUMERATOR**: Number of women with suspected invasive cancer on VIA* who complete appropriate treatment or follow-up. **DATA SOURCES**: Cancer Registry or Hospital (diagnostics + treatment) + Cervical cancer service delivery data (screening + referral + diagnostics) **DENOMINATOR**: Number of women with suspected invasive cancer on VIA* **This indicator is presented as written in the WHO guidance, however it may be adapted to include other screening methods, or to monitor treatment and follow-up of those suspected of having invasive cancer at a triage visit.* **DATA SOURCES**: Cervical cancer service delivery data (screening/referring site) **FREQUENCY**: Annually **DISAGGREGATION**: Age Group or Range, HIV Status, Treatment Type, Screening Visit Type **CONSIDERATIONS** • The complexity of this indicator requires that patient screening result, referral outcome, and treatment/follow up outcome be tracked across both the service delivery data as well as the cancer registry data.

Table 3.19 continued

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
OPT3.5.1 SUSPECTED CANCER REFERRAL COMPLIANCE	Percentage of screen-positive women referred for suspected cancer who attended the referral visit	**NUMERATOR**: Number of screen-positive women referred for suspected cancer who attended the referral visit. **DATA SOURCE**: Cervical cancer service delivery data (referral facility) **DENOMINATOR**: Number of screen-positive women referred for suspected cancer. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage facility) **FREQUENCY**: Annually, Quarterly **DISAGGREGATION**: Age Group or Range, HIV Status, Screening Visit Type **CONSIDERATIONS** • While similar to C2.4 Suspected Cancer Cases, this indicator is intended to monitor referral processes. • Programmes using either a screen-triage-treat strategy, or a combination of screen-treat AND screen-triage-treat strategies, may adapt this indicator to better suit the context (see below and earlier Monitoring Screening and Triage Strategies subsection) while still maintaining the purpose of the indicator: **to monitor whether all women referred for further evaluation of lesions suspicious for cancer attended the referral visit**. • Indicators monitoring referral processes should be adapted to fit programme context: - Depending on screening strategy, women may be referred for suspected invasive cancer at the screening visit, or at the triage visit. Additional disaggregation may be used to monitor the point of referral. - Women are commonly referred to colposcopy for evaluation of large lesions – programmes may choose to use this indicator, or may adapt and use the colposcopy-specific indicators (OPT3.6 and OPT3.6.1).
OPT3.5.2 SUSPECTED CANCER REFERRAL	Percentage of screen-positive women **referred** for suspected cancer	**NUMERATOR**: Number of screen-positive women referred for suspected cancer. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage facility) **DENOMINATOR**: Number of screen-positive women with suspected cancer. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage facility) **FREQUENCY**: Annually, Quarterly **DISAGGREGATION**: Age Group or Range, HIV Status, Screening Visit Type **CONSIDERATIONS** • While similar to C2.4 Suspected Cancer Cases, this indicator is intended to monitor referral processes. • Programmes using either a screen-triage-treat strategy, or a combination of screen-treat AND screen-triage-treat strategies, may adapt this indicator to better suit the context (see below and earlier Monitoring Screening and Triage Strategies subsection) while still maintaining the purpose of the indicator: **to monitor whether all women with lesions suspicious for cancer were referred for further evaluation**. • Indicators monitoring referral processes should be adapted to fit programme context: - Depending on screening strategy, women may be referred for suspected invasive cancer at the screening visit, or at the triage visit. Additional disaggregation may be used to monitor the point of referral. - Women are commonly referred to colposcopy for evaluation of large lesions – programmes may choose to use this indicator, or may adapt and use the colposcopy-specific indicators (OPT3.6 and OPT3.6.1).
OPT3.6 COLPOSCOPY REFERRAL COMPLIANCE	Percentage of screen-positive women referred for colposcopy who attend the colposcopy visit	**NUMERATOR**: Number of screen-positive women referred for colposcopy who attended the colposcopy visit. **DATA SOURCE**: Cervical cancer service delivery data (referral facility) **DENOMINATOR**: Number of screen-positive women referred for colposcopy. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage facility) **FREQUENCY**: Annually, Quarterly **DISAGGREGATION**: Age Group or Range, HIV Status, Screening Visit Type **CONSIDERATIONS** • Programmes using either a screen-triage-treat strategy, or a combination of screen-treat AND screen-triage-treat strategies, may adapt this indicator to better suit the context (see below and earlier Monitoring Screening and Triage Strategies subsection) while still maintaining the purpose of the indicator: **to monitor whether all women referred for further evaluation with colposcopy attended the colposcopy visit**. - If colposcopy is being used as a triage examination (i.e. to determine *if* the women will be treated), the wording of this indicator does not need to be adapted – all women with a positive primary screening test should be counted under *screen-positive*. • Indicators monitoring referral processes should be adapted to fit programme context: - Depending on screening strategy, women may be referred for colposcopy at the screening visit, or at the triage visit. Additional disaggregation may be used to monitor the point of referral. - Women are commonly referred to colposcopy for evaluation of large lesions or suspected cancer – programmes may choose to use colposcopy specific indicators (OPT3.6 and OPT3.6.1), or may adapt and use other indicators monitoring referral processes

Table 3.19 continued

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
OPT3.6.1 COLPOSCOPY REFERRAL	Percentage of screen-positive women who were referred for colposcopy	**NUMERATOR**: Number of screen-positive women **referred** for colposcopy. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage facility) **DENOMINATOR**: Number of screen-positive women. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage facility) **FREQUENCY**: Annually, Quarterly, Monthly **DISAGGREGATION**: Age Group or Range, HIV Status, Screening Visit Type **CONSIDERATIONS**: • For programmes using either a screen-triage-treat strategy, or a combination of screen-treat AND screen-triage-treat strategies, may adapt this indicator to better suit the context (see below and earlier Monitoring Screening and Triage Strategies subsection) while still maintaining the purpose of the indicator: **to monitor whether all women requiring further evaluation with colposcopy were referred for a colposcopy visit**. - If colposcopy is being used as a triage examination (i.e. to determine *if* the women will be treated), the wording of this indicator does not need to be adapted – all women with a positive primary screening test should be counted under *screen-positive*. Where colposcopy is used as triage, this indicator assists in tracking trends and forecasting demand and resources. • Indicators monitoring referral processes should be adapted to fit programme context: - Depending on screening strategy, women may be referred for colposcopy at the screening visit, or at the triage visit. Additional disaggregation may be used to monitor the point of referral. - Women are commonly referred to colposcopy for evaluation of large lesions or suspected cancer – programmes may choose to use colposcopy specific indicators (OPT3.6 and OPT3.6.1), or may adapt and use other indicators monitoring referral processes
OPT3.7 CONFIRMED CANCER	Percentage of screen-positive women diagnosed with cancer	**NUMERATOR**: Number of screen-positive women diagnosed with cancer. **DATA SOURCES**: Cancer Registry or Hospital (confirmed diagnosis) + Cervical cancer service delivery data (screening and diagnosis) **DENOMINATOR**: Number of screen-positive women. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage facility) **FREQUENCY**: Annually **DISAGGREGATION**: Age Group or Range, HIV Status, Screening Visit Type **CONSIDERATIONS** • It is important for both patient and programme monitoring to be able to compare the rate of cancer in first time screenings, rescreenings and post-treatment 1 year follow-up screenings, therefore disaggregation by Screening Visit Type is strongly recommended. • For programmes using a screen-triage-treat strategy *screen-positive* refers to all women testing positive on a primary screening test. • To track trends in service delivery, and support forecasting of resources and supplies to meet the expected demand, additional statistics can be calculated by adapting the numerator and denominator of this indicator: - Percentage of **screened** women **diagnosed with cancer** in a given time period (Numerator: Number of **screened** women diagnosed with cancer; Denominator: Number of **screened** women in a given time period) - Percentage of **triage-positive** women **diagnosed with cancer** in a given time period (Numerator: Number of **triage-positive** women diagnosed with cancer in a given time period; Denominator: Number of **triage-positive** women in a given time period)

TABLE 3.20
Optional indicators: Treatment – all screening strategies; methods which allow same-day results

These indicators are most applicable for screening or triage methods which allow same day results and determination of the need for precancerous lesion treatment (e.g. VIA, colposcopy without biopsy, some methods of HPV testing); however, OPT3.3.2–OPT3.3.4 can be adapted to other methods.

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
OPT3.3.1 SINGLE VISIT APPROACH RATE	Percentage of VIA-positive women with lesions eligible for cryotherapy treated during the same visit *[Additional VIA indicator, WHO, 2013]*	**NUMERATOR**: Number of VIA-positive women with lesions eligible for cryotherapy who were treated with cryotherapy during the same visit. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage facility) **DENOMINATOR**: Number of VIA-positive women with lesions eligible for cryotherapy. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage facility) **FREQUENCY**: Quarterly, Monthly **DISAGGREGATION**: Age Group or Range, HIV status, Screening Visit Type **CONSIDERATIONS** • This indicator is intended for use by programmes using a VIA Alone screening strategy, but could potentially be used by programmes using an HPV Test Alone strategy, provided HPV Test results are available at the same visit (for example, through point-of-care testing via GeneXpert[1]). Programmes using VIA (or colposcopy) as triage can also use this indicator to monitor the Single Visit Approach Rate at triage visits. • Should be calculated and reviewed quarterly or monthly with high facility caseload.
OPT3.3.2 POSTPONED CRYOTHERAPY	Percentage of VIA-positive women, with lesions eligible for cryotherapy who **postponed cryotherapy**	**NUMERATOR**: Number of VIA-positive women with lesions eligible for cryotherapy, who postponed cryotherapy. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage facility) **DENOMINATOR**: Number of VIA-positive women with lesions eligible for cryotherapy. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage facility) **FREQUENCY**: Quarterly, Monthly **DISAGGREGATION**: Age Group or Range, HIV status, Screening Visit Type **CONSIDERATIONS** • This indicator is primarily applicable to programmes using a VIA Alone screening strategy, with a Single Visit Approach. Programmes using VIA as triage can also use this indicator to monitor treatment postponement at triage visits. Programmes using other screening and treatment strategies may adapt the indicator for use, provided that the meaning of "postponed treatment" is clearly defined for the context.
OPT3.3.3 CRYOTHERAPY AFTER POSTPONEMENT	Percentage of VIA-positive women, with lesions eligible for cryotherapy who **were treated with cryotherapy after postponing**	**NUMERATOR**: Number of VIA-positive women with lesions eligible for cryotherapy who were treated with cryotherapy after postponing. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage or cryotherapy facility) **DENOMINATOR**: Number of VIA-positive women with lesions eligible for cryotherapy who postponed cryotherapy. **DATA SOURCE**: Cervical cancer service delivery data (screening or triage or cryotherapy facility) **FREQUENCY**: Annually, Quarterly **DISAGGREGATION**: Age Group or Range, HIV Status, Screening Visit Type **CONSIDERATIONS** • This indicator is primarily applicable to programmes using a VIA Alone screening strategy, with a Single Visit Approach. Programmes using VIA as triage can also use this indicator to monitor treatment postponement at triage visits. Programmes using other screening and treatment strategies may adapt the indicator for use, provided that the meaning of "postponed treatment" is clearly defined for the context.
OPT3.3.4 DID NOT RETURN FOR CRYOTHERAPY	Percentage of VIA-positive women, eligible for cryotherapy who **did not return for cryotherapy** after postponing	**NUMERATOR**: Number of VIA-positive women, with lesions eligible for cryotherapy, who did not return for cryotherapy after postponing. Data source: Cervical cancer service delivery data (screening or triage or cryotherapy facility) **DENOMINATOR**: Number of VIA-positive women, with lesions eligible for cryotherapy, who postponed cryotherapy. Data source: Cervical cancer service delivery data (screening or triage or cryotherapy facility) **FREQUENCY**: Annually, Quarterly **DISAGGREGATION**: Age Group or Range, HIV status, Screening Visit Type **CONSIDERATIONS** • This indicator is primarily applicable to programmes using a VIA Alone screening strategy, with a Single Visit Approach. Programmes using VIA as triage can also use this indicator to monitor treatment postponement at triage visits. Programmes using other screening and treatment strategies may adapt the indicator for use, provided that the meaning of "postponed treatment" is clearly defined for the context.

[1] GeneXpert is a molecular diagnostic platform from Cepheid (Sunnyvale, CA, USA)

TABLE 3.21
Optional indicators: Programme and service delivery – all screening strategies and methods

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
OPT4.1 PROPORTION OF TRAINED SERVICE PROVIDERS PROVIDING SERVICES	Proportion of service providers trained in cervical cancer screening and treatment services who are currently providing those services	**NUMERATOR**: Number of service providers trained in cervical cancer screening and treatment services who are currently providing those services. **DATA SOURCES**: Facility or programme data; Provider Registry (if current); Facility-based survey tools (See Section 4 of Toolkit) **DENOMINATOR**: Number of service providers trained in cervical cancer screening and treatment services. **DATA SOURCES**: Facility or programme data; Provider Registry (if current); Facility-based survey tools (See Section 4 of Toolkit) **FREQUENCY**: Annually, Quarterly **DISAGGREGATION**: Cadre, Facility Level, Provider Screening and Treatment Services, Service Provision Schedule (e.g. Full-time, Part-time; or 1–3 days per week, 3+ days per week; etc.) **CONSIDERATIONS** • The numerator and denominator should reflect the level at which this indicator is being monitored (e.g. For Subnational level: Total number of trained providers currently providing services in the **District**, over the total numbers of trained providers in the **District**) • In some cases, trained service providers rotate between different facilities, therefore de-duplication is key in order to have an accurate picture of service provider availability.
OPT4.2 PROPORTION OF STATIC FACILITY SCREENINGS	Proportion of cervical cancer screenings conducted at a static facility site	**NUMERATOR**: Total number of cervical cancer screenings conducted at a static facility site. **DATA SOURCE**: Cervical cancer programme data **DENOMINATOR**: Total number of cervical cancer screenings. **DATA SOURCE**: Cervical cancer programme data **FREQUENCY**: Annually, Quarterly **DISAGGREGATION**: Age Group or Range, Facility Level, HIV Status, Screening Method **CONSIDERATIONS** • The numerator and denominator should reflect the level at which this indicator is being monitored (e.g. For Subnational level: Total number of facility screenings conducted in the **District**, over the total numbers of screenings in the **District**)
OPT4.2.1 PROPORTION OF MOBILE SCREENINGS	Proportion of cervical cancer screenings conducted through routine outreach using a mobile screening approach	**NUMERATOR**: Total number of cervical cancer screenings conducted through outreach using a mobile screening approach. **DATA SOURCE**: Cervical cancer programme data **DENOMINATOR**: Total number of cervical cancer screenings. Data source: Cervical cancer programme data **FREQUENCY**: Annually, Quarterly **DISAGGREGATION**: Age Group or Range, HIV Status, Screening Method **CONSIDERATIONS** • The numerator and denominator should reflect the level at which this indicator is being monitored (e.g. For Subnational level: Total number of screenings conducted through outreach in the **District**, over the total numbers of screenings in the **District**)
OPT4.3 NUMBER OF COMMUNITY CAMPAIGNS	Number of **community campaigns** including mass screening campaigns/ periodic outreaches	**DATA SOURCE**: Cervical cancer service delivery data **FREQUENCY**: Annually **DISAGGREGATION**: Campaign Type (e.g. mass media, screening campaign), Target Audience (e.g. women within or outside of the target age group, men, HIV positive, pregnant women, etc.)

TABLE 3.22
Optional indicators: Programme and service delivery – all screening strategies; HPV testing

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
OPT4.4 PROPORTION OF SELF-COLLECTED SAMPLES	Proportion of HPV screening tests conducted using a self-collected sample	**NUMERATOR**: Total number of samples tested with an HPV screening test that were self-collected. **DATA SOURCE:** Cervical cancer programme data (screening facility or laboratory) **DENOMINATOR**: Total number of samples tested with an HPV screening test *Total includes only those samples that were obtained from a client for the purposes of screening – does not include any "control" or "reference" samples.* **DATA SOURCE:** Cervical cancer programme data (laboratory) **FREQUENCY**: Annually, Quarterly **DISAGGREGATION**: Age Group or Range, HIV Status*, Screening Visit Type *If self-collected samples (and therefore patient information) are not collected at a facility, considerations must be made to protect patient privacy and confidentiality. If confidentiality cannot be ensured, HIV status should not be collected.

TABLE 3.23
Optional indicators: HIV service integration – all screening strategies and methods

INDICATOR	DEFINITION	METHOD OF MEASUREMENT
OPT6.0 FIRST TIME SCREENING RATE FOR WOMEN LIVING WITH HIV/ AIDS	Percentage **of HIV positive women** enrolled in HIV care and treatment who received their **first cervical cancer screening in a given time period**	**NUMERATOR**: Total number of HIV positive women enrolled in HIV care and treatment *within the target age range* screened for the first time for cervical cancer in a given time period. **DATA SOURCES**: Cervical cancer service delivery data (screening facility) + HIV care and treatment service delivery data (HIV care and treatment site) **DENOMINATOR**: Total number of HIV positive women enrolled in care and treatment *within the target age range* in a given time period. **DATA SOURCES**: HIV care and treatment service delivery data (HIV care and treatment site) **FREQUENCY**: Annually, Quarterly **DISAGGREGATION**: Age Group or Range, Progress Toward Target
OPT6.1 PITC SERVICE PROVISION	Percentage of women with previously **unknown HIV status who received PITC at their cervical cancer screening visit**, and now know their HIV status	**NUMERATOR**: Number of women with previously unknown HIV status who received a Positive or Negative PITC result at their cervical cancer screening visit in a given time period. **DATA SOURCES**: Cervical cancer service delivery data (screening facility) **DENOMINATOR**: Total number of women with unknown HIV status attending cervical cancer screening in a given time period. **DATA SOURCES**: Cervical cancer service delivery data (screening facility) **FREQUENCY**: Annually, Quarterly, Monthly **DISAGGREGATION**: Age Group or Range, HIV Status (*final PITC result*) **CONSIDERATIONS** • *Unknown HIV Status* typically includes those who have never been tested and those who received a negative result more than 3 months ago; however national guidelines should be referenced for definition.
OPT6.2 LINKAGE TO HIV SERVICES	Percentage of clients that **were linked to HIV Care and Treatment after receiving HIV positive result** at PITC during cervical cancer screening	**NUMERATOR**: Number of clients that were linked to HIV Care and Treatment after receiving **HIV positive result at** PITC during cervical cancer screening in a given time period. **DATA SOURCES**: Cervical cancer service delivery data (screening facility) + HIV care and treatment service delivery data (HIV care and treatment site) **DENOMINATOR**: Number of clients receiving HIV positive result at PITC during cervical cancer screening in a given time period. **DATA SOURCE**: Cervical cancer service delivery data (screening facility) **FREQUENCY**: Annually, Quarterly, Monthly **DISAGGREGATION**: Age Group or Range

MINIMUM DATA ELEMENTS CHECKLIST FOR CLIENT LEVEL DATA COLLECTION

The checklist below shows the minimum set of data elements **(in bold)** that should be included in a client screening and treatment form (or forms) to make immediate clinical decisions for patient management and to calculate core (and some optional) indicators for programme monitoring. Additional optional data elements (in green) may be included in a programme's standardized minimum data set as needed. Development of a standardized minimum dataset should include key stakeholders and be developed based on programme screening and treatment methods, referral system structure, and programme priorities. Compare this checklist with the form(s) currently used to determine gaps and support comprehensive monitoring.

CLIENT SCREENING AND TREATMENT FORM DATA ELEMENT CHECKLIST		
✓	DATA ELEMENT	COMMENT
FACILITY AND CLIENT INTAKE DATA		
	Facility name	
	Facility code	
	District	

Table continued

✓	DATA ELEMENT	COMMENT
	Visit date	
	General visit purpose (Screening, Triage, Treatment, or Post-treatment Complication)	
	Provider name	
	Client name (first, middle, last)	
	Client identification number *(national identification number or other unique identifier used by the facility)*	
	Client phone number(s)	
	Client next of kin phone number	
	Client age *(to classify clients as in or out of the target age range of years, or range set by the country)*	
	Client birth date	
	Date of last menstrual period	
	Client physical address *(physical address may be more useful than mailing address)*	
	Marital status	
	Demographic information (e.g. education, ethnicity, etc.)	
HIV Status		
	Last HIV test result (Positive; Negative [<3 months ago]; Unknown [negative: >3 months ago; inconclusive: never tested])	
	If last HIV test result is positive:	
	Date of positive test	
	Initial CD4count[a]	
	Initial CD4 date	
	Latest CD4 count	
	Latest CD4 date	
	On antiretroviral therapy (ART) or not on ART	
	Client referred for care and treatment	
	Where PITC[b] is offered: If last HIV test result is unknown, PITC accepted (yes, no)	
	If yes, date of PITC test	
	PITC final result (positive, negative)	
	PITC result received by client	
	FINAL HIV status (positive, negative, unknown)	
	Where PITC is not offered: If last HIV test result was negative [>3 months ago], inconclusive, or client has never been tested, client referred for HIV testing (yes, no)	
Client History		
	Screened for cervical cancer in the past (yes, no, not sure)	
	If yes, method of last screening (VIA or VILI, cytology/Pap smear, HPV DNA test, not sure)	
	If yes, result of last screening (positive, negative, not sure)	
	If yes, date of last screening	
	If last screening was positive, was treatment performed? (yes, no, not sure)	
	Is today's visit due to post-treatment complication?	
	If yes, method of treatment (cryotherapy, loop electrosurgical excision procedure [LEEP], not sure)	
	If yes, date of treatment	
	Reproductive health history and risk factors (e.g. gravidity, parity, contraception/family planning method, history of STIs[c], smoking, etc.)	
	Experiencing any symptoms (e.g. pelvic/lower abdominal pain, discharge, abnormal vaginal bleeding, etc.)	

Table continued

✓	DATA ELEMENT	COMMENT
SCREENING AND TRIAGE		
	Screening visit type (first-time screening; post-treatment follow-up screening at 1 year; rescreening [after last screening was negative])	
	Screening completed (yes, no [if no, give reason])	
	Symptoms of invasive cancer reported	
Colposcopy – See Treatment and Management		
Cytology		
	Purpose (screening, triage)	
	Specimen quality	
	Specimen code	
	Specimen collection date	
	Date specimen sent to laboratory	
	Date specimen received by laboratory	
	Date specimen processed	
	Results (Normal, ASCUS, ASC-H, LSIL, HSIL, Invasive Carcinoma, Inadequate, Inflammation)	
	Patient contacted about results management (yes, no)	
	Date results provided to screening site	
	Results communicated to client (yes, no)	
	Date results communicated to client	
	Name of provider communicating results	
	Date of expected rescreening (*according to national guidelines*)	
HPV Test		
	Purpose (screening, triage)	
	Specimen code	
	Specimen collection date	
	Date specimen sent to laboratory	
	Date specimen received by laboratory	
	Date specimen processed	
	Specimen collection method (by client, by provider)	
	HPV test kit number	
	Test result (negative, positive, retest required)	
	Date results provided to screening site	
	Results communicated to client (yes, no)	
	Date results communicated to client	
	Name of provider communicating results	
	Date of expected rescreening (*according to national guidelines*)	
VIA		
	Purpose (screening, triage)	
	Acetic acid not applied (yes, no [if no, give reason]) NOTE: *If acetic acid was not applied due to suspicion of cancer on speculum examination, screening should still be considered completed*	
	VIA result (negative; positive; positive, suspected cancer)	
	If positive, eligible for cryotherapy (yes, no)	
	Screening map	

Table continued

✓	DATA ELEMENT	COMMENT
	Findings (e.g. % cervix covered by lesion, entire lesion can be seen)	
	Digital cervicography performed (yes, no)	
	Date of expected rescreening (*according to national guidelines*)	
VILI		
	VILI result (negative; positive; positive, suspected cancer)	
	If positive, eligible for cryotherapy (yes, no)	
	Screening map	
	Findings (e.g. % cervix covered by lesion, entire lesion can be seen)	
	Date of expected rescreening (*according to national guidelines*)	
Other Clinical		
	External genital and speculum examination results	
	Clinical diagnosis and prescriptions	
REFERRAL		
	Name of site referred to and reason for referral	
	Referred for triage	
	Referred for cryotherapy	
	Referred for large lesion (not eligible for cryotherapy)	
	Referred for suspected cancer	
	Referred for invasive cancer	
	Referred for colposcopy	
	Referred for other gynaecological problem	
	Date referred and date of referral appointment	
TREATMENT AND MANAGEMENT		
Cold knife conisation		
	Treated with cold knife conisation (CKC) today	
Colposcopy *(histopathology results are core on laboratory results form)*		
	Purpose (triage, large lesion referral, suspected cancer referral or diagnosis)	
	Colposcopy done today (yes, no [if no, give reason])	
	Date of Colposcopy visit	
	Enhanced digital imaging done today (yes, no)	
	Colposcopy result (negative, positive for precancer, positive – suspected invasive cancer) *OR use categories for colposcopy impression*	
	Colposcopy impression (normal, inflammation, atypia/CIN1/condyloma/wart /leukoplakia/HPV change, CIN2-3, invasive carcinoma, inconclusive)	
	Colposcopy findings (e.g. SCJ[d] seen entirely, lesion thickness, % coverage, extension, atypical vessels, mosaicism, etc.)	
	Biopsy performed today (yes, no)	
	Location and number of biopsies	
	Endocervical curettage performed today (yes, no)	
	Histopathology result (e.g. normal, CIN 1, CIN 2. CIN 3, ASCUS, ASC-H, AGC, AIS, Sq. carcinoma, adenocarcinoma)	
	Follow-up plan (e.g. treatment, next screening)	
	Examiner's name	
Cryotherapy		

Table continued

✓	DATA ELEMENT	COMMENT
	Cryotherapy performed at screening visit *(for Single Visit Approach)* *or* **Cryotherapy performed today**	
	Cryotherapy performed at triage visit	
	Cryotherapy postponed *or* **No treatment performed** (insert reason)	
	Previously postponed cryotherapy performed today	
	Referred-in cryotherapy performed today	
	Referral for cryotherapy from (site name)	
	Date cryotherapy performed	
	Cryotherapy provider initials	
	Date of expected rescreening *(according to national guidelines)*	
LEEP		
	Eligible for LEEP (yes, no)	
	LEEP performed (yes, no)	
	Date LEEP performed	
	LEEP provider initials	
	LEEP excision and histology *(if applicable)*	
	Date of expected rescreening *(according to national guidelines)*	
Other Clinical		
	Prescriptions provided	
NOTES/FOLLOW-UP		
	Open text field for provider notes	

[a] CD4 count: number of CD4 cells in a cubic millimetre of blood; [b] PITC: provider-initiated testing and counselling; [c] STI: sexually-transmitted infection; [d] SCJ: squamocolumnar junction

REGISTER (OR LOGBOOK) MINIMUM DATA ELEMENTS CHECKLIST

This checklist shows the minimum set of data elements **(in bold)** that should be included in a facility screening and treatment register (or registers). The standardized minimum dataset for registers should be a subset of the minimum dataset for client level form(s), and should be sufficient to tally individual services and calculate indicators for programme monitoring. Additional optional data elements (in green) may be included in a programme's standardized minimum data set as needed. Development of a standardized minimum dataset should include key stakeholders and be developed based on programme screening and treatment methods, referral system structure, and programme priorities. Compare this list with the register(s) currently used to determine gaps and support comprehensive monitoring.

REGISTER DATA ELEMENTS CHECKLIST

✓	DATA ELEMENT	COMMENT
FACILITY INTAKE DATA		
	Facility name	
	Facility code	
	District	
	Month	
	Year	
CLIENT INTAKE DATA		
	Visit date	
	Purpose of visit (Screening, Triage, Treatment, Post-treatment complication [cryotherapy or LEEP])	

Table continued

✓	DATA ELEMENT			COMMENT
	Client identification number			
	Client name	Surname/ family name	First/ given name(s)	
	Phone number			
	Client next of kin phone number			
	Age	Date of Birth		
	Last HIV test result (positive, negative, unknown)			
	PITC accepted			
	Final HIV Status (positive, negative, unknown)			
SCREENING AND TRIAGE				
	Screening provider's initials			
	Screening visit type completed (First-time screening, 1 year follow-up post-treatment, Rescreening)			
	Screening not completed			
	Symptoms reported			
Colposcopy – see Treatment and Management				
Cytology				
	Purpose (screening, triage)			
	Specimen code			
	Specimen collection date			
	Date specimen sent to lab			
	Date specimen received by lab			
	Date specimen processed			
	Date results communicated to client			
	Result (Normal, ASCUS, ASC-H, LSIL, HSIL, Invasive Carcinoma, Inadequate, Inflammation)			
	Date results communicated to client			
	Date of expected rescreening *(according to national guidelines)*			
HPV Test				
	Purpose (screening, triage)			
	Specimen code			
	Specimen collection method (by client, by provider)			
	Specimen collection date			
	Date specimen sent to laboratory			
	Date specimen received by laboratory			
	Date specimen processed			
	Date results provided to screening site			
	Date results communicated to client			
	Result (negative, positive, retest required)			
	Date of expected rescreening *(according to national guidelines)*			
VIA				
	Purpose (screening, triage)			
	Acetic acid not applied. NOTE: *If acetic acid was not applied due to suspicion of cancer on speculum examination, screening should still be considered completed*			

Table continued

✓	DATA ELEMENT	COMMENT
	Result (negative, positive – eligible for cryotherapy, positive – not eligible for cryotherapy, positive – suspected cancer)	
	Date of expected rescreening *(according to national guidelines)*	
VILI		
	Purpose (screening, triage)	
	Lugol's not applied. NOTE: *If Lugol's was not applied due to suspicion of cancer on speculum examination, screening should still be considered completed*	
	Result (negative, positive – eligible for cryotherapy, positive – not eligible for cryotherapy, positive – suspected cancer)	
	Date of expected rescreening (*according to national guidelines*)	
Other clinical		
	Clinical diagnosis	
REFERRAL		
	Referred for triage	
	Referred for cryotherapy	
	Referred for large lesion not eligible for cryotherapy	
	Referred for suspected cancer	
	Referred for invasive cancer	
	Referred for other gynaecological issue	
	Referred for colposcopy	
	Date of referral and date of appointment	
TREATMENT AND MANAGEMENT		
Cold knife conisation (CKC)		
	CKC performed	
Colposcopy		
	Purpose (triage, large lesion referral, suspected cancer referral or diagnosis)	
	Colposcopy performed	
	Date colposcopy performed	
	Enhanced digital imaging done today	
	Colposcopy result (negative; positive; positive suspected invasive cancer)	
	Colposcopic impression	
	Biopsy performed	
	Date biopsy performed	
	Date biopsy specimen sent to lab	
	Endocervical curettage performed today	
	Date ECC performed	
	Date specimen sent to histology/pathology	
	Date histology/pathology result returned	
	Histology result/Pathology description	
	Colposcopy provider initials	
Cryotherapy		
	Cryotherapy performed at screening visit *(for Single Visit Approach)* *or* **Cryotherapy performed today**	
	Cryotherapy performed at triage visit	
	Cryotherapy postponed *or* **No treatment performed**	

Table continued

✓	DATA ELEMENT	COMMENT
	Previously postponed cryotherapy performed today	
	Referred-in cryotherapy performed	
	Date cryotherapy performed	
	Cryotherapy provider initials	
LEEP		
	Eligible for LEEP	
	LEEP performed onsite	
	LEEP performed at referral site	
	Date LEEP performed	
	LEEP provider initials	

DATA COLLECTION, AGGREGATION, AND REPORTING TOOLS

These tools are intended to support the development or improvement of data collection, aggregation and reporting tools for cervical cancer screening and the treatment of precancerous lesions. Each practice sheet is tailored to a screening and treatment strategy, and provides a set of indicators and corresponding example tools for collecting and collating patient data, and summarizing and reporting the services delivered. The list of strategy-specific indicators are adaptations of those in Tables 3.2 and 3.12-3.23. For details on indicator method of measurement, please refer to Tables 3.12-3.23 (in Implementation Tools and Materials).

The example client forms and registers illustrate the operational use of the general and strategy-specific core (and relevant optional) elements listed in the Data Elements Checklists – these examples, and the monthly and annual summary example forms, are not intended to be used without further development, stakeholder engagement, and testing within a specific country context.

The Abridged Data Dictionary and the Suggested DHIS2 Module supplement these resources with information targeted to enhancing electronic systems.

GENERAL NOTES ON ADAPTATION OF THE SAMPLE MONTHLY SUMMARY FORM

The monthly summary form may be adapted to include additional components in order to calculate optional indicators which have been included in the nationally standardized set of indicators. Additionally, space and guidance for indicator calculation can be included directly on the form to enable monitoring at the facility level, and to support data verification.

Adapting the form components for a particular country context may include:

- Adding explicit rows and sub-rows related to:
  - Number of clients screened positive for precancerous lesions.
  - Number of clients with a NEGATIVE screening result in order to cross check calculations. (Total screening should equal POSITIVE (including suspected cancer) screen + NEGATIVE screen.)
  - Number of VIA positive cryotherapy-eligible clients that chose to postpone cryotherapy.
- Adding or deleting sub-rows depending on screening methodologies used in the country. For example, if a country only offers VIA, all other screening methods can be removed from the form.
- Adding rows or sub-rows related to services provided at the facility:
  - Biopsy
  - Confirmed cancer
  - Other treatment methods (Cold Coagulation, surgery, chemotherapy, radiation)
- Modifying sub-row names for combined screening methodologies. For example, *VIA/VILI*, and *VIA/Cervicography (or Digital Photography)*.
- Modifying disaggregation columns by:
  - Adding detailed subdivision of Target Age Group (e.g. ages *<30*, *30–49* and *>50; finer disaggregation of age ranges; etc.*).
  - Using country-specific target age groupings.
- Removing HIV status disaggregate, where HIV prevalence is low and integration is not a programme priority

TOOLS FOR VIA-BASED SCREEN-AND-TREAT

PROGRAMME

This package of tools is applicable to a VIA-based screen and treat programme, using the Single-Visit Approach (i.e. screen with VIA and treat precancerous lesions in the same visit). The flowchart below illustrates the steps in this strategy for women with HIV-positive status or unknown HIV status in areas with high endemic HIV infection [*WHO Guidelines for screening and treatment of precancerous lesions for cervical cancer prevention,* 2013].

The example single-use/single-visit client form includes all minimum, and some additional, data elements to document VIA screening, cryotherapy or LEEP treatment, and basic referral elements. Programmes should determine whether all elements may be captured on one form, or whether each service should have its own data collection form – or how elements should be incorporated into forms for integrated programming. Additional forms for referral (e.g. for suspected cancer, or other gynecological problem) and referral feedback must also be created, based on the programme and health system context.

The example visit-based register includes data elements to document VIA screening, cryotherapy or LEEP treatment, and referrals. Because the register is visit-based, care must be taken to ensure de-duplication during tallying and data aggregation. If programmes wish to create longitudinal registers to aid in patient care, the registers should be organized by client name or national unique ID number, rather than by visit date; this shift also warrants consideration for replacing "tick one" options with entry of dates.

The example monthly summary form captures facility totals of individual services provided. These totals are tallied from the facility register, and are reported to the subnational level for aggregation (typically through an electronic HMIS) and indicator calculation, and monitoring across facilities – with feedback provided to facilities. Attention must be paid to avoid double-counting of services – particularly if screening and precancerous lesion treatment services are provided at separate locations. Though facility registers and systems may capture the full range of services and outcomes for each woman in order to support patient care and follow-up, services should only be counted and reported by the facility which provides them (unless otherwise determined by national policy). Aggregate data for the entire country/programme is accessed at the national level (through the HMIS or other reporting mechanism) for the monitoring of a limited set of indicators. The example annual summary form captures only the core indicators (with limited disaggregation) typically monitored at the national level, and Global indicators as an intermediate reporting tool where systems are nascent.

FIGURE 3.7

Flowchart for screen-and-treat strategy (HIV-positive status or unknown HIV status in areas with high endemic HIV infection): Screen with VIA and treat with cryotherapy, or LEEP when not eligible for cryotherapy

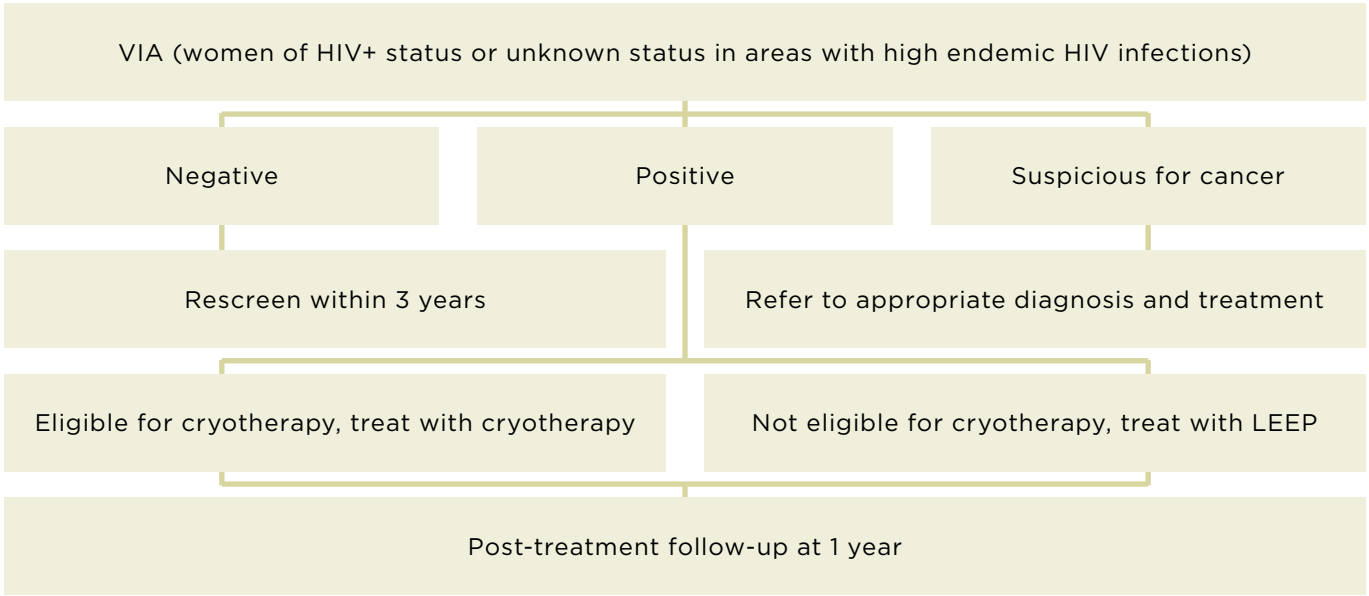


TABLE 3.24

List of global, core, and optional indicators for screen with VIA and treat with cryotherapy

INDICATOR G = GLOBAL; C = CORE; OPT = OPTIONAL	WHAT IT MEASURES
GLOBAL	
G1.0 Screening Rate	Percentage of women aged 30–49 years screened for the first time in a 12-month period
G2.0 Screening Test Positivity Rate	Percentage of VIA-positive women aged 30–49 years with a positive result in a 12-month period
G3.0 Treatment Rate	Percentage of VIA-positive women who have received treatment in a given time period
CORE	
C0.0 Number Screened	Number of women screened [by screening visit type and age group or range] in a given time period
C1.0 Screening Rate	Percentage of women *within the target age range* screened for the first time in a given time period
C2.0 Screening Test Positivity Rate	Percentage of [first time] screened women [within the target age range] with a positive screening test result in a given time period
C2.4 Suspected Cancer Cases	Percentage of [first time] screened women [within the target age range] with suspected cervical cancer
C3.0 Treatment Rate	Percentage of VIA-positive women who have received treatment in a given time period
C4.0 Proportion of Facilities Providing Services	Proportion of health facilities that are providing the cervical cancer services they are designated to provide
OPTIONAL	
OPT1.1 Screened Within Target Age Range	Proportion of total women screened for the first time who were *within the target age range*
OPT1.2 Progress Toward Target Screening Rate	Percentage of screening target reached in the last *year, quarter, month*
OPT1.3 Rescreened Within Target Interval	Percentage of women who were rescreened within the recommended screening interval
OPT1.4 Precancerous Lesion Post-treatment Follow-up	Percentage of women treated for precancerous lesions who return for a 1 year post-treatment follow-up screening test
OPT2.0.1 Precancerous Lesion Cure Rate	Percentage of women who received a negative screening result at their 1 year post-treatment follow-up
OPT3.1 Precancerous Lesion Treatment	Percentage of VIA-positive women with lesions eligible for cryotherapy or LEEP who received that treatment
OPT3.2 Post-treatment Complication	Percentage of women receiving cryotherapy or LEEP who returned with a post-treatment complication
OPT3.3 Treatment with Cryotherapy	Percentage of VIA-positive women with lesions eligible for cryotherapy who received cryotherapy
OPT3.3.1 Single Visit Approach Rate	Percentage of VIA-positive women with lesions eligible for cryotherapy treated during the same visit
OPT3.3.2 Postponed Cryotherapy	Percentage of VIA-positive women with lesions eligible for cryotherapy who postponed cryotherapy
OPT 3.3.3 Cryotherapy After Postponement	Percentage of VIA-positive women with lesions eligible for cryotherapy who received cryotherapy after postponing
OPT3.3.4 Did Not Return for Cryotherapy	Percentage of VIA-positive women with lesions eligible for cryotherapy who did not return for cryotherapy after postponing
OPT3.4 Treatment for Large Lesions	Percentage of VIA-positive women referred for large lesions who received LEEP

Table 3.24 continued

INDICATOR G = GLOBAL; C = CORE; OPT = OPTIONAL	WHAT IT MEASURES
OPT3.4.1 Large Lesion Treatment Eligibility	Percentage of VIA-positive women referred for large lesions who were eligible for LEEP
OPT3.4.2 Large Lesion Referral	Percentage of VIA-positive women referred for large lesions (lesions not eligible for cryotherapy)
OPT3.5 Suspected Cancer Treatment/Follow-up	Percentage of women with suspected invasive cancer who completed appropriate treatment or follow-up
OPT3.5.1 Suspected Cancer Referral Compliance	Percentage of VIA-positive women referred for suspected cancer who attended the referral visit
OPT3.5.2 Suspected Cancer Referral	Percentage of VIA-positive women referred for suspected cancer
OPT3.6 Colposcopy Referral Compliance	Percentage of VIA-positive women referred for colposcopy who attend the colposcopy visit
OPT3.6.1 Colposcopy Referral	Percentage of VIA-positive women referred for colposcopy
OPT3.7 Confirmed Cancer	Percentage of VIA-positive women referred for suspected cancer who were diagnosed with cancer
OPT4.1 Trained Service Providers	Proportion of service providers trained in screening and treatment services who are providing services
OPT4.2 Static Facility Screenings	Proportion of cervical cancer screenings conducted at a static facility
OPT4.2.1 Mobile Screenings	Proportion of cervical cancer screenings conducted through routine outreach using a mobile approach
OPT4.3 Community Campaigns	Number of community campaigns (including mass screening campaigns/periodic outreaches) carried out
OPT6.0 First Time Screening for Women with HIV	Percentage of women enrolled in HIV Care and Treatment who received their first cervical cancer screening
OPT6.1 PITC Service Provision	Percentage of women with previously unknown HIV status who received PITC and now know their status
OPT6.2 Linkage to HIV Services	Percentage of clients linked to HIV Care and Treatment after receiving an HIV positive result through PITC

VIA SCREENING AND CRYOTHERAPY/LEEP TREATMENT FORM

FACILITY AND VISIT INFORMATION

Facility name: _____ Client identification number: _____
Visit date: _____ Provider name: _____
Purpose of visit:
☐ Screening ☐ Treatment (Cryotherapy or LEEP) ☐ Post-treatment Complication (Cryotherapy or LEEP)

CLIENT INFORMATION

Client name: _____ Client identification number: _____
Phone: _____ Client age: _____ Date of Last Menstrual Period: _____
Physical address: _____

HIV Status

Last HIV Test Result: ☐ Positive ☐ Negative (< 3 months ago)
☐ Unknown *(Negative > 3 months ago, Inconclusive, or Never Tested)*

Client Screening History

Screened for cervical cancer in the past: ☐ Yes ☐ No ☐ Not Sure
If yes, screening was through: ☐ VIA ☐ Pap smear ☐ HPV Test ☐ Not Sure
Result of past screening: ☐ Positive ☐ Negative ☐ Results not received ☐ Not Sure
If positive, was treatment performed? ☐ Yes ☐ No ☐ Not Sure
Type of treatment performed? ☐ Cryotherapy ☐ LEEP ☐ Not Sure
When was the last screening? Date: _____ *Last treatment? Date:* _____

SCREENING

Screening **visit type:**
☐ First-time Screening ☐ Post-treatment Follow-up Screening (at 1 year)
☐ Rescreening (after last screening was negative)

VIA screening completed today?
☐ Yes (enter results below) ☐ No (list reason): _____

VIA Result
☐ Negative ☐ Positive
Eligible for cryotherapy? ☐ Yes ☐ No ☐ Positive, Suspected Cancer

Draw findings/lesion on cervix diagram above.

TREATMENT

For screening visit

☐ Cryotherapy performed at screening visit ☐ Cryotherapy postponed (reason): _____

For postponed/referred-in cryotherapy visit

☐ Previously postponed cryotherapy performed today ☐ Referred-in cryotherapy performed today
☐ No treatment performed (reason): _____
FOR LEEP/LARGE LESION REFERRAL VISIT
Eligible for LEEP: ☐ Yes ☐ No LEEP performed today: ☐ Yes ☐ No (reason): _____

REFERRAL

Referral to (name of site):
Reason for referral:
☐ Cryotherapy ☐ Large lesion (not eligible for cryotherapy) ☐ Suspected cancer ☐ Other Gynaecological Issue

NOTES/FOLLOW-UP

_____

CERVICAL CANCER SCREENING AND TREATMENT PROGRAM - VIA/CRYOTHERAPY/LEEP REGISTER

Facility name: _____ Month: _____ Year: _____

INTAKE														SCREENING			
No.	Visit Date	Purpose of Visit (tick applicable purpose)				Client Information								Screening Provider Initials	Screening Completed (tick one)		
		Screening	Treatment	Post-treatment complication		Client ID	Client Family Name	Client Given Name	Phone Number	Age	Last HIV Test Result (tick one)				First-time screening completed	1 year post-treatment follow-up screening completed	Rescreening completed
				Cryo	LEEP						Pos	Neg	Unk				
	A	B	C	D1	D2	E	F	G	H	I	J1	J2	J3	K	L	M	N
1																	
2																	
3																	
4																	
5																	
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17																	
18																	
19																	
20																	
COLUMN TOTALS						Total Unique Clients				Total Within-in Age Range							
KEY TOTALS (for cross-check)			Total unique individuals seeking screening								Total Unknown Status				Total screened (L+M+N)		

SCREENING				REFERRAL				TREATMENT							
VIA Result (tick one)				Reason (tick one)				Cryotherapy (tick one)					LEEP (tick one)		
Negative	Positive - eligible for cryo	Positive - not eligible for cryo	Positive - Suspected Cancer	Referred for large lesion	Referred for suspected cancer	Referred for cryo	Referred for other gynecological issue	Cryo performed at screening visit	Cryo postponed	Postponed cryo performed today	Referred-in cryo performed today	Cryo Provider Initials	Eligible for LEEP	LEEP Performed	LEEP Provider Initials
O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
Total positive (P+Q+R)				Total referrals (S+T+U+V)				Total cryotherapy procedures (W+Y+Z)							

MONTHLY SUMMARY FORM FOR VIA SCREENING PROGRAMME

Facility Name:
Subnational Unit:
Month:
Year:

Services provided at facility:
☐ VIA
☐ Cryotherapy
☐ LEEP

INDICATOR COMPONENT	DISAGGREGATION		HIV+		HIV -		HIV Unknown		Totals
			IN Target Age Group	OUT of Target Age Group	IN Target Age Group	OUT of Target Age Group	IN Target Age Group	OUT of Target Age Group	
Number of clients who received a CERVICAL CANCER SCREENING	First time screening								
	1 year Post-treatment Follow-Up								
	Rescreening (previous negative result)								
	TOTAL								
Number of clients with POSITIVE screening result	First time screening	Eligible for Cryotherapy							
		Not Eligible for Cryotherapy							
		Suspected Cancer							
	1 year Post-treatment Follow-Up Screening	Eligible for Cryotherapy							
		Not Eligible for Cryotherapy							
		Suspected Cancer							
	Rescreening (previous negative result)	Eligible for Cryotherapy							
		Not Eligible for Cryotherapy							
		Suspected Cancer							
	TOTAL								
Number of clients TREATED WITH CRYOTHERAPY	First time screening	*Treated at screening visit*							
		Treated after postponing							
	1 year Post-treatment Follow-Up Screening	*Treated at screening visit*							
		Treated after postponing							
	Rescreening (previous negative result)	*Treated at screening visit*							
		Treated after postponing							
	Referred-in from other site/service								
	TOTAL								
Number of clients with LARGE LESIONS (not eligible for cryotherapy)	Treated with LEEP on-site								
	Referred for treatment								
	TOTAL								
Number of clients with a POST-TREATMENT COMPLICATION	Cryotherapy								
	LEEP								
	TOTAL								

ANNUAL SUMMARY FORM FOR VIA PROGRAMME

Facility Name:
Subnational Unit:
Month:
Year:

Services provided at facility:
☐ VIA
☐ Cryotherapy
☐ LEEP
☐ Cancer Diagnostics and Treatment

Indicator Component		**Number**
A	Number of women AGED 30–49 YEARS in the population	
B	Number of women screened	
B1	Number of screened women AGED 30–49 YEARS	
B2	Number of women screened for the FIRST TIME	
B3	Number of women AGED 30–49 YEARS who were screened for the FIRST TIME	
C	Number of women with a POSITIVE screening result (INCLUDES suspected cancer)	
C1	Number of women AGED 30–49 YEARS with a POSITIVE screening result (INCLUDES suspected cancer)	
C2	Number of women AGED 30–49 YEARS who were screened for the FIRST TIME and received a POSITIVE screening result (INCLUDES suspected cancer)	
D	Number of women who received TREATMENT for PRECANCEROUS LESIONS (e.g. Cryotherapy or LEEP)	
D1	Number of women AGED 30–49 YEARS who received TREATMENT for PRECANCEROUS LESIONS (e.g. Cryotherapy or LEEP)	
E	Number of women with SUSPECTED CANCER at screening	
E1	Number of women AGED 30–49 YEARS screened for the FIRST TIME with SUSPECTED CANCER at screening	
F	Number of women who received TREATMENT FOR INVASIVE CERVICAL CANCER	
F1	Number of women AGED 30–49 YEARS who received TREATMENT FOR INVASIVE CERVICAL CANCER	

Indicators	**Percent (or #)**
C0.0 Number of Women Screened (Total): B	
Number of Women Screened (For the First Time): B1	
Number of Women Screened (For the First Time Within Target Age Range): B3	
G1.0 and **C1.0** Screening Rate: B3 / A x 100	%
G2.0 Screening Test Positivity Rate: C1 / B1 x 100	%
C2.0 Screening Test Positivity Rate (Overall): C / B x 100	%
Screening Test Positivity Rate (Women Screened for the First Time Within the Target Age Range): C2 / B3 x 100	%
C2.4 Suspected Cancer Cases (Overall): E / B x 100	%
Suspected Cancer Cases (Women Screened for the First Time Aged 30–49 years): E1 / B1 x 100	%
G3.0 Treatment Rate: D1 + F1 / C x 100	%
C3.0 Treatment Rate: D + F / C x 100	%

TOOLS FOR HPV TEST, FOLLOWED BY VIA TRIAGE AND TREATMENT

This package of tools is applicable to a screen-triage-treat programme, using HPV testing as the primary screening test followed by VIA to determine whether or not treatment is offered, as well as cryotherapy eligibility. The flowchart below illustrates the steps in this strategy for women with HIV-positive status or unknown HIV status in areas with high endemic HIV infection [*WHO Guidelines for screening and treatment of precancerous lesions for cervical cancer prevention*, 2013].

The example client form includes all minimum, and some additional, data elements to document HPV test-based screening, VIA screening, triage with VIA, cryotherapy or LEEP treatment, and basic referral elements. This form is intended to be printed on carbon copy paper to support patient care and documentation across multiple visits and sites. If the form will be used as a single-use/single-visit form, certain elements (e.g. facility name, visit date, provider initials) may be consolidated and reorganized for simplicity (see the Minimum Data Elements Checklist for Client Level Data Collection). Programmes should determine whether all elements may be captured on one form, or whether each service should have its own data collection form – and if applicable, how elements should be incorporated into forms for integrated programming. Additional forms to accompany the HPV specimen and results to and from the laboratory, as well as forms for referral and referral feedback, must also be created based on the programme and health system context.

The example client-based register includes data elements to document screening with HPV test, screening with VIA, triage with VIA, treatment with cryotherapy or LEEP, referrals, and referral feedback (to support patient management by providers). Programmes should determine whether combined or separate forms and registers should be used for each service. Care must be taken to ensure identification of unique patients and de-duplication during tallying and data aggregation. Attention must also be paid to avoid double-counting of services – particularly if screening and precancerous lesion treatment services are provided at separate locations. Though longitudinal client-based facility registers and systems may capture the full range of services and outcomes for each woman in order to support patient care and follow-up, services should only be reported to the central level by the point of service delivery (unless otherwise determined by national data management or M&E policy).

The example monthly summary form captures facility totals of individual services provided. These totals are tallied from the facility register, and are reported to the subnational level for aggregation (typically through an electronic HMIS) and monitoring across facilities – with feedback provided to facilities. Aggregate data for the entire country/programme is accessed at the national level (through the HMIS or other reporting mechanism) for the monitoring of a limited set of indicators. The example annual summary form captures only the core indicators (with limited disaggregation) typically monitored at the national level, and Global indicators as an intermediate reporting tool where systems are nascent. This example form presents an additional complexity through the presumption that the WHO target age range for screening does not align with the national target age range.

For reference by programmes transitioning from a strategy of VIA alone to HPV Testing Followed by VIA triage, data elements to differentiate between use of VIA as primary screening and VIA as triage have been included in the sample forms. Programmes using a strategy of HPV Testing Alone may adapt the sample forms by removing the VIA triage elements and indicator components or may adapt the VIA elements to capture VAT (see section on *Additional consideration for VIA Purpose – visual assessment for treatment [VAT]*). Programmes using cytology as a secondary screening or triage test may adapt these sample forms by replacing the VIA elements with those relevant to cytology (see the Data Elements Checklists). Colposcopy data elements may also be added as appropriate.

FIGURE 3.8

Flowchart for screen-and-treat strategy (HIV-positive status or unknown HIV status in areas with high endemic HIV infection): Screen with an HPV test followed by VIA and treat with cryotherapy, or LEEP when not eligible for cryotherapy.

When an HPV test is positive, then VIA is provided as a second screening test to determine whether or not treatment is offered. Treatment is only provided if both the HPV test and VIA are positive.

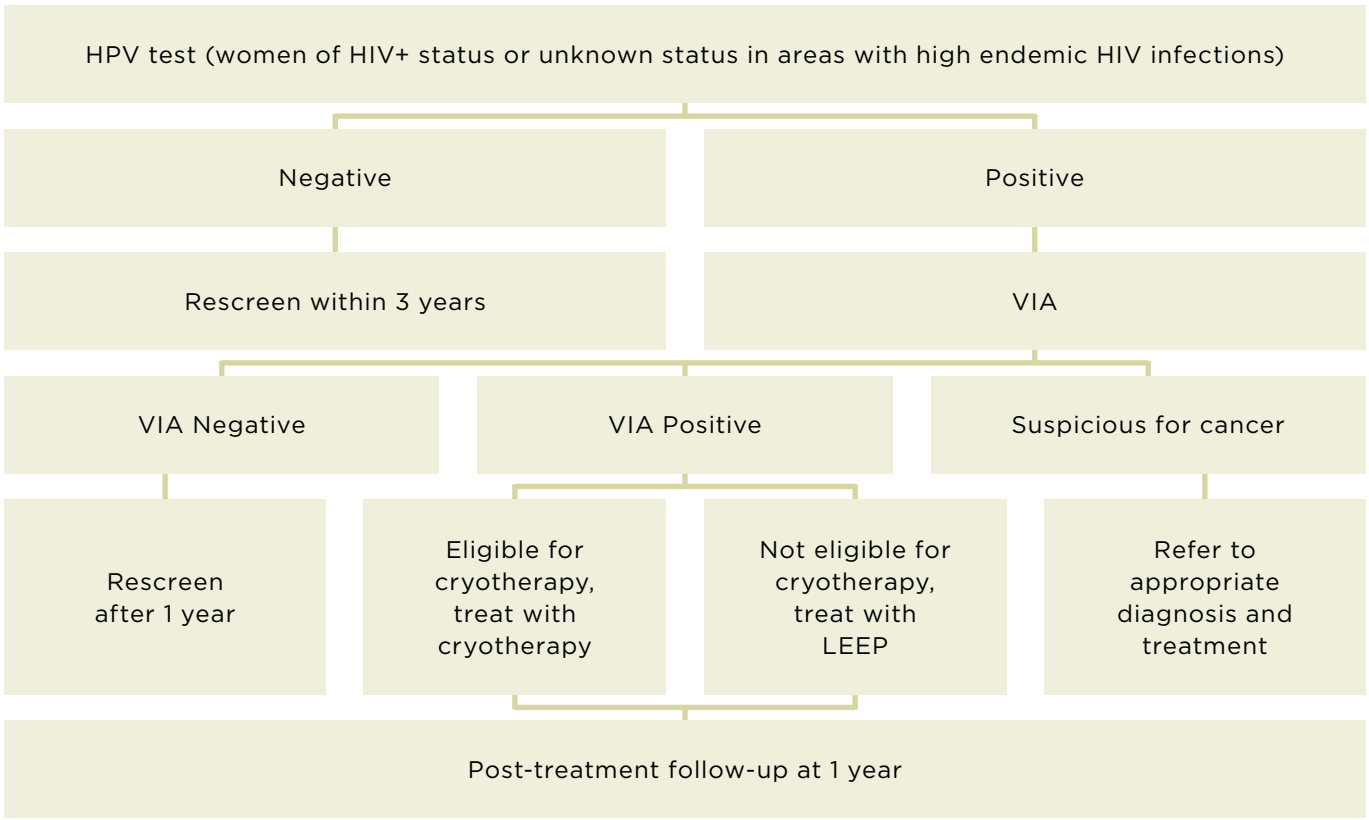

TABLE 3.25

List of global, core, and optional indicators for screen with HPV test followed by VIA and treat with cryotherapy

INDICATOR (G=GLOBAL; C=CORE; OPT=OPTIONAL)	WHAT IT MEASURES
GLOBAL	
G1.0 Screening Rate	Percentage of women aged 30–49 years screened for the first time in a 12-month period
G2.0 Screening Test Positivity Rate	Percentage of HPV or VIA screen-positive women aged 30–49 years with a positive result in a 12-month period
G3.0 Treatment Rate	Percentage of VIA screen-positive and VIA triage-positive women who have received treatment in a given time period
CORE	
C0.0 Number Screened	Number of women screened [by screening visit type and age group or range] in a given time period
C1.0 Screening Rate	Percentage of women within *the target age range* screened for the first time in a given time period
C2.0 Screening Test Positivity Rate	Percentage of [first time] screened women [within the target age range] with a positive HPV or VIA screening test result in a given time period
C2.1 Received Triage Examination	Percentage of HPV screen-positive women who received a VIA triage examination
C2.2 Triage Examination Positivity Rate	Percentage of women who received VIA triage and had a positive test result in a given time period

Table 3.25 continued

INDICATOR (G=GLOBAL; C=CORE; OPT=OPTIONAL)	WHAT IT MEASURES
C2.4 Suspected Cancer Cases	Percentage of [first time] screened women [within the target age range] with suspected cervical cancer
C3.0 Treatment Rate	Percentage of VIA screen-positive and VIA triage-positive women (i.e. all women identified as requiring treatment) who have received treatment in a given time period
C4.0 Proportion of Facilities Providing Services	Proportion of health facilities that are providing the cervical cancer services they are designated to provide
OPTIONAL	
OPT1.0.1 Screening Test Failure	Percentage of women whose sample was tested with an HPV screening test more than once due to error
OPT1.0.2 Inadequate Sample	Percentage of women whose sample was inadequate for HPV screening test completion
OPT1.0.3 Received Results	Percentage of women who received HPV screening test results
OPT1.1 Screened Within Target Age Range	Proportion of total women screened (HPV Test or VIA) for the first time who were within the target age range
OPT1.2 Progress Toward Target Screening Rate	Percentage of screening target reached in the last *year, quarter, month*
OPT1.3 Rescreened Within Target Interval	Percentage of women who were rescreened within the recommended screening interval
OPT1.4 Precancerous Lesion Post-treatment Follow-up	Percentage of women treated for precancerous lesions who return for a 1 year post-treatment follow-up screening test
OPT2.0.1 Precancerous Lesion Cure Rate	Percentage of women who received a negative screening result at their 1 year post-treatment follow-up
OPT2.2.1 Triage Examination Provision	Percentage of HPV screen-positive women who attended a VIA triage visit and received VIA
OPT2.2.2 Triage Referral Compliance	Percentage of HPV screen-positive women referred for triage who attended the VIA triage visit
OPT2.2.3 Referred for Triage	Percentage of HPV screen-positive women who were referred for VIA triage
OPT2.3 Screened Women Requiring Treatment	Percentage of women screened [for the first time] with an HPV test who received a positive VIA triage examination result in a given time period
OPT3.1 Precancerous Lesion Treatment	Percentage of VIA screen-positive and VIA triage-positive women with lesions eligible for cryotherapy or LEEP who received that treatment
OPT3.2 Post-treatment Complication	Percentage of women receiving cryotherapy or LEEP who returned with a post-treatment complication
OPT3.3 Treatment with Cryotherapy	Percentage of VIA screen-positive and VIA triage-positive women with lesions eligible for cryotherapy who received cryotherapy
OPT3.3.1 Single Visit Approach Rate	Percentage of VIA screen-positive and VIA triage-positive women with lesions eligible for cryotherapy treated during the same visit
OPT3.3.2 Postponed Cryotherapy	Percentage of VIA screen-positive and VIA triage-positive women with lesions eligible for cryotherapy who postponed cryotherapy
OPT 3.3.3 Cryotherapy After Postponement	Percentage of VIA screen-positive and VIA triage-positive women with lesions eligible for cryotherapy who received cryotherapy after postponing
OPT3.3.4 Did Not Return for Cryotherapy	Percentage of VIA screen-positive and VIA triage-positive women with lesions eligible for cryotherapy who did not return for cryotherapy after postponing
OPT3.4 Treatment for Large Lesions	Percentage of VIA screen-positive and VIA triage-positive women referred for large lesions who received LEEP
OPT3.4.1 Large Lesion Treatment Eligibility	Percentage of VIA screen-positive and VIA triage-positive women referred for large lesions who were eligible for LEEP
OPT3.4.2 Large Lesion Referral	Percentage of VIA screen-positive and VIA triage-positive women referred for large lesions (lesions not eligible for cryotherapy)

Table 3.25 continued

INDICATOR (G=GLOBAL; C=CORE; OPT=OPTIONAL)	WHAT IT MEASURES
OPT3.5 Suspected Cancer Treatment/Follow-up	Percentage of VIA screen-positive and VIA triage-positive women with suspected invasive cancer who completed appropriate treatment or follow-up
OPT3.5.1 Suspected Cancer Referral Compliance	Percentage of VIA screen-positive and VIA triage-positive women referred for suspected cancer who attended the referral visit
OPT3.5.2 Suspected Cancer Referral	Percentage of VIA screen-positive and VIA triage-positive women referred for suspected cancer
OPT3.6 Colposcopy Referral Compliance	Percentage of VIA screen-positive and VIA triage-positive women referred for colposcopy who attend the colposcopy visit
OPT3.6.1 Colposcopy Referral	Percentage of VIA screen-positive and VIA triage-positive women referred for colposcopy
OPT3.7 Confirmed Cancer	Percentage of HPV Test or VIA screen-positive women diagnosed with cancer
OPT4.1 Trained Service Providers	Proportion of service providers trained in screening and treatment services who are providing services
OPT4.2 Static Facility Screenings	Proportion of cervical cancer screenings conducted at a static facility
OPT4.2.1 Mobile Screenings	Proportion of cervical cancer screenings conducted through routine outreach using a mobile approach
OPT4.3 Community Campaigns	Number of community campaigns (including mass screening campaigns/periodic outreaches) carried out
OPT4.4 Self-sampling	Proportion of HPV screening tests conducted using a self-collected sample
OPT5.0 Results Turn-around Time	Number of days between HPV sample collection and return of HPV test results to screened women
OPT5.0.1 Sample Submission Time	Number of days between HPV sample collection and transport of sample to laboratory
OPT5.0.2 Laboratory Processing Time	Number of days between laboratory receipt of HPV sample and return of results to facility
OPT5.0.3 Results Communication Turn-around Time	Number of days between facility receipt of HPV test results and return of results to screened women
OPT6.0 First Time Screening for Women with HIV	Percentage of women enrolled in HIV Care and Treatment who were screened for cervical cancer for the first time
OPT6.1 PITC Service Provision	Percentage of women with previously unknown HIV status who received PITC and now know their status
OPT6.2 Linkage to HIV Services	Percentage of clients linked to HIV Care and Treatment after receiving an HIV positive result through PITC

HPV SCREENING, VIA TRIAGE AND CRYOTHERAPY/LEEP TREATMENT FORM

CLIENT INFORMATION

Client name: _____ Client identification number: _____
Client age: _____ Date of Last Menstrual Period: _____ Phone 1: _____ Phone 2: _____
Physical address: _____

HIV Status

Last HIV Test Result:
☐ Positive ☐ Negative (< 3 months ago) ☐ Unknown *(Negative > 3 months ago, Inconclusive, or Never Tested)*

Client Screening History

Screened for cervical cancer in the past:	☐ Yes	☐ No	☐ Not Sure	
If yes, screening was through:	☐ VIA	☐ Pap smear	☐ HPV Test	☐ Not Sure
Result of past screening:	☐ Positive	☐ Negative	☐ Results not received	☐ Not Sure
If positive, was treatment performed?	☐ Yes	☐ No	☐ Not Sure	
Type of treatment performed?	☐ Cryotherapy	☐ LEEP	☐ Not Sure	

Is today's visit due to post-treatment complication? ☐ Yes ☐ No
When was the last screening? *Date*: _____
Last treatment? *Date*: _____

SCREENING AND TRIAGE

HPV Test

Facility name: _____ District: _____ Provider name: _____
☐ First-time Screening
☐ Post-treatment Follow-up Screening at 1 year
☐ Rescreening (after last screening was negative)
Specimen collection method: ☐ By client ☐ By provider *or* ☐ Specimen not collected (reason): _____
Specimen collection date: _____ Visit date: _____ *or* ☐ Same as collection date
Specimen code: _____ Date sent to lab: _____
Date rec'd by lab: _____ Date tested: _____ HPV kit #: _____
Results provided to client: _____ ☐ Yes (date provided): _____ ☐ No (reason): _____

HPV Test Result:

☐ Negative ☐ Positive ☐ Retest required
Date of facility report: _____
Technician initials: _____

VIA

Facility name: _____ District: _____
Provider name: _____ ☐ Triage *or* ☐ First-time screening
☐ Post-treatment Follow-up Screening at 1 year
☐ Rescreening (after last screening was negative)
Screening completed?
☐ Yes (visit date):_____ ☐ No (list reason): _____

VIA Result:

☐ Negative ☐ Positive
Eligible for cryotherapy? ☐ Yes ☐ No ☐ Positive, Suspected Cancer
☐ Acetic acid not applied (list reason): _____
Draw findings/lesion on cervix diagram above.

TREATMENT

For VIA screening or triage visit

Cryotherapy performed at:

☐ Screening visit ☐ Triage visit *or* ☐ Cryotherapy postponed (reason): _____

For postponed/referred-in cryotherapy visit

Facility name: _____ Visit date: _____ Provider initials: _____

☐ Previously postponed cryotherapy performed today

☐ Referred-in cryotherapy performed today ☐ No treatment performed (reason): _____

For leep/large lesion referral visit

Facility name: _____ Visit date: _____ Provider initials: _____

Eligible for LEEP: ☐ Yes ☐ No

LEEP performed today: ☐ Yes ☐ No (reason): _____

REFERRAL AND FOLLOW-UP

Referral to (name of site/s): _____

Reason for referral and date referred: _____

☐ Triage (date): _____ ☐ Cryotherapy (date): _____ ☐ Large lesion (ineligible for cryotherapy) Date: _____

☐ Suspected cancer (date): _____ ☐ Other Gynaecological Issue (date): _____ ☐ Invasive cancer (date):

Date of appt at referral site: _____

Completed after screening, triage, or treatment:

Next screening visit in: ☐ 1 year ☐ 3 years ☐ 5 years

NOTES/FOLLOW-UP

_____

CERVICAL CANCER SCREENING AND TREATMENT PROGRAM - HPV/VIA/CRYOTHERAPY/LEEP REGISTER

Facility name: _____ Month: _____ Year: _____

INTAKE										
No.	Client Information								Visit due to post-treatment complication (enter date below)	
	Client Family Name	Client Given Name	Client ID	Phone Number	Age	Last HIV Test Result (tick one)				
						Pos	Neg	Unk	Cryo	LEEP
	A	B	C	D	E	F1	F2	F3	G1	G2
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
COLUMN TOTALS										

SCREENING AND TRIAGE																	
Screening Visit Type and Date (enter date below)			Type of Screening Test Used (tick one)		HPV Test												
First-time screening completed	1 yr post-treatment screening completed	Re-screening completed	HPV Test	VIA	HPV Test Provider Initials	Specimen code	Collection Method (tick one)		Date specimen collected	Date specimen sent to lab	Date specimen received by lab	Date specimen processed	Date results reported to facility	Date results provided to client	Result (tick one)		
							Self	Provider							Negative	Positive	Rest-est Required
H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y

CERVICAL CANCER SCREENING AND TREATMENT PROGRAM - HPV/VIA/CRYOTHERAPY/LEEP REGISTER

Facility name: _____ Month: _____ Year: _____

SCREENING AND TRIAGE						REFERRAL					
VIA Test						Reason and Date of Referral (enter date below)					
VIA Provider Initials	IF VIA IS TRIAGE Date VIA triage performed	Result (tick one)				Referred to other site for cryo	Referred for large lesion	Referred for suspected cancer	Referred for other gynecological issue	Referred for triage	Referred for colposcopy
		Negative	Positive - eligible for cryo	Positive - not eligible for cryo	Positive - Suspected Cancer						
Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK

TREATMENT								REFERRAL FEEDBACK - DO NOT TALLY					
Cryotherapy				Cryo Provider Initials	LEEP		LEEP Provider Initials	Cryo performed at different site (enter date)	LEEP performed at different site (enter date)	Colposcopy			
Cryo performed at triage visit (Y or N)	Cryo postponed (Y or N)	Postponed cryo performed today (enter date)	Referred-in cryo performed today (enter date)		Confirmed eligible for LEEP (Y or N)	LEEP performed onsite (enter date)				Colposcopy performed at different site (enter date)	Colposcopy result (tick one)		
											Negative	Positive for pre-cancer	Positive for cancer
AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY

MONTHLY SUMMARY FORM FOR HPV SCREENING/VIA TRIAGE AND VIA SCREENING PROGRAMME

Facility Name:
Subnational Unit:
Month:
Year:
Services provided at facility

- ☐ VIA
- ☐ HPV Test
- ☐ Cryotherapy
- ☐ LEEP
- ☐ Cancer Diagnostics and Treatment

Indicator Component	DISAGGREGATION		HIV+		HIV -		HIV Unknown		TOTALS
			IN Target Age Group	OUT of Target Age Group	IN Target Age Group	OUT of Target Age Group	IN Target Age Group	OUT of Target Age Group	
Number of clients who received a cervical cancer **SCREENING** with **HPV TEST**	First time screening								A
	1 year Post-treatment Follow-Up								B
	Rescreening (previous negative result)								C
	TOTAL SCREENED WITH HPV TEST								D
Number of clients who received a cervical cancer **SCREENING** with **VIA**	First time screening								E
	1 year Post-treatment Follow-Up								F
	Rescreening (previous negative result)								G
	TOTAL SCREENED WITH VIA								H
TOTAL screened for FIRST TIME (A + E)									I
TOTAL screened 1 YR POST-TREATMENT (B + F)									J
TOTAL RESCREENED (C + G)									K
TOTAL WOMEN SCREENED (I + J + K) OR (D + H)									L
Number of clients with a **POSITIVE HPV SCREENING TEST** result	First time screening								M
	1 year Post-treatment Follow-Up								N
	Rescreening (previous negative result)								O
	TOTAL POSITIVE HPV SCREENING								P
Number of clients with **POSITIVE VIA SCREENING** result	First time screening	Eligible for Cryo							Q
		Not Eligible for Cryo							R
		Suspected Cancer							S
	1 year Post-treatment Follow-Up Screening	Eligible for Cryo							T
		Not Eligible for Cryo							U
		Suspected Cancer							V
	Rescreening (previous negative result)	Eligible for Cryo							W
		Not Eligible for Cryo							X
		Suspected Cancer							Y
	TOTAL POSITIVE VIA SCREENING								Z
POSITIVE screening result: First time screening (M+Q+R+S)									AA
POSITIVE screening result: 1yr post-treatment (N+T+U+V)									AB
POSITIVE screening result: Rescreened (O+W+X+Y)									AC
TOTAL SCREEN-POSITIVE WOMEN (AA + AB + AC) OR (P + Z)									AD
Number of clients with **POSITIVE VIA TRIAGE** result	First time screening	Eligible for Cryo							AE
		Not Eligible for Cryo							AF
		Suspected Cancer							AG
	1 year Post-treatment Follow-Up Screening	Eligible for Cryo							AH
		Not Eligible for Cryo							AI
		Suspected Cancer							AJ
	Rescreening (previous negative result)	Eligible for Cryo							AK
		Not Eligible for Cryo							AL
		Suspected Cancer							AM
	TOTAL POSITIVE VIA TRIAGE								AN

Indicator Component	DISAGGREGATION		HIV+		HIV -		HIV Unknown		TOTALS
			IN Target Age Group	OUT of Target Age Group	IN Target Age Group	OUT of Target Age Group	IN Target Age Group	OUT of Target Age Group	
ELIGIBLE FOR CRYO: First-time screening (Q + AE)									AO
ELIGIBLE FOR CRYO: 1yr post-treatment screen (T + AH)									AP
ELIGIBLE FOR CRYO: Rescreened (W + AK)									AQ
TOTAL ELIGIBLE FOR CRYO (AO + AP + AQ)									AR
NOT ELIGIBLE FOR CRYO: First-time screening (R + AF)									AS
NOT ELIGIBLE FOR CRYO: 1yr post-treatment screen (U + AI)									AT
NOT ELIGIBLE FOR CRYO: Rescreened (X + AL)									AU
TOTAL NOT ELIGIBLE FOR CRYO (AS + AT + AU)									AV
SUSPECTED CANCER: First-time screening (S + AG)									AW
SUSPECTED CANCER: 1yr post-treatment screen (V + AJ)									AX
SUSPECTED CANCER: Rescreened (Y + AM)									AY
TOTAL SUSPECTED CANCER (AW + AX + AY)									AZ
TOTAL WOMEN NEEDING CRYOTHERAPY OR LEEP TREATMENT (AR + AV)									BA
TOTAL WOMEN NEEDING TREATMENT (AR + AV + AZ)									BA
Number of clients TREATED WITH CRYO-THERAPY	First time screening	Treated at VIA visit (screening or triage)							BB
		Treated after post-poning							BC
	1 year Post-treat-ment Follow-Up Screening	Treated at VIA visit (screening or triage)							BD
		Treated after post-poning							BE
	Rescreening (previous nega-tive result)	Treated at VIA visit (screening or triage)							BF
		Treated after post-poning							BG
	TOTAL								BH
Number of clients with LARGE LESIONS (not eligible for cryo)	First time screening	Treated with LEEP on-site							BI
		Referred for treat-ment							BJ
	1 year Post-treat-ment Follow-Up Screening	Treated with LEEP on-site							BK
		Referred for treat-ment							BL
	Rescreening (previous nega-tive result)	Treated with LEEP on-site							BM
		Referred for treat-ment							BN
	TOTAL								BO
TREATED WITH CRYO/LEEP: First time screening (BB + BC +BI)									BP
TREATED WITH CRYO/LEEP: 1yr post-treatment screen (BD + BE + BK)									BQ
TREATED WITH CRYO/LEEP: Rescreen (BF + BG + BM)									BR
TOTAL TREATED WITH CRYO OR LEEP (BP + BQ + BR)									BS
Number of clients with a POST-TREAT-MENT COM-PLICATION	Cryotherapy								BT
	LEEP								BU
	TOTAL								BV

ANNUAL SUMMARY FORM FOR HPV SCREENING/VIA TRIAGE AND VIA SCREENING PROGRAMME

Facility/Subnational Unit:
Month:
Year:
Services provided at facility

- ☐ VIA
- ☐ HPV Test
- ☐ Cryotherapy
- ☐ LEEP
- ☐ Cancer Diagnostics and Treatment

Indicator Component		Number
A	Number of women AGED 30–49 YEARS in the population	
B	Number of women screened	
b_1	Number of women screened *with HPV Test*	
b_2	Number of women screened *with VIA*	
B1	Number of women AGED 30–49 YEARS screened (aged 30–49 years screened with *HPV Test* + aged 30–49 years screened with *VIA*)	
B2	Number of women screened for the FIRST TIME (First time screens *HPV Test* + First time screens *VIA*)	
B3	Number of women AGED 30–49 YEARS who were screened for the FIRST TIME	
$b_{3.1}$	Number of women AGED 30–49 YEARS screened for the FIRST TIME (*HPV Test*)	
$b_{3.2}$	Number of women AGED 30–49 YEARS screened for the FIRST TIME (*VIA*)	
C	Number of women with a POSITIVE screening test result (INCLUDES suspected cancer)	
c_1	Number of women with a POSITIVE HPV screening test result	
c_2	Number of women with a POSITIVE VIA screening test result (INCLUDES suspected cancer)	
C1	Number of women AGED 30–49 YEARS with a POSITIVE screening result (INCLUDES suspected cancer)	
C2	Number of women AGED 30–49 YEARS who were screened for the FIRST TIME and had a POSITIVE screening result (INCLUDES suspected cancer)	
$c_{2.1}$	Number of women AGED 30–49 YEARS who were screened for the FIRST TIME and had a POSITIVE HPV screening test result	
$c_{2.2}$	Number of women AGED 30–49 YEARS who were screened for the FIRST TIME and had with a POSITIVE VIA screening test result (INCLUDES suspected cancer)	
D	Number of women who received a VIA TRIAGE examination	
E	Number of women with a POSITIVE VIA TRIAGE examination result	
F	Number of screened women who received TREATMENT for PRECANCEROUS LESIONS (e.g. Cryotherapy or LEEP)	
F1	Number of screened women AGED 30–49 YEARS who received TREATMENT for PRECANCEROUS LESIONS (e.g. Cryotherapy or LEEP)	
G	Number of women with SUSPECTED CERVICAL CANCER	
G1	Number of women AGED 30–49 YEARS screened for the FIRST TIME with SUSPECTED CERVICAL CANCER	
H	Number of women who received TREATMENT for INVASIVE CERVICAL CANCER	
H1	Number of women AGED 30–49 YEARS who received TREATMENT for INVASIVE CERVICAL CANCER	
Core and Global Indicators		Percent (or #)
C0.0 Number of Women Screened (TOTAL): (*sum of* $b_1 + b_2$)		
Number of Women Screened (FIRST TIME): B2		
Number of Women Screened (FIRST TIME, WITHIN TARGET AGE RANGE): B3 (*sum of* $b_{3.1} + b_{3.2}$)		
G1.0 and **C1.0** Screening Rate: B3 / A x 100		%
G2.0 Screening Test Positivity Rate: C1 / B1 x 100		%
C2.0 Screening Test Positivity Rate (OVERALL – *all screening methods*): C / B x 100		%
Screening Test Positivity Rate (OVERALL – *HPV Test*): c_1 / b_1 x 100		%
Screening Test Positivity Rate (FIRST TIME, WITHIN TARGET AGE RANGE – *HPV Test*): $c_{2.1}$ / $b_{3.1}$ x 100		%

Table continued

Indicator Component	Number
Screening Test Positivity Rate (OVERALL – *VIA Test*): c_2 / b_2 x 100	%
Screening Test Positivity Rate (FIRST TIME, WITHIN TARGET AGE RANGE – *VIA*): $c_{2.2}$ / $b_{3.2}$ x 100	%
C2.1 Received Triage Examination: D / b_1 x 100	%
C2.2 Triage Examination Positivity Rate: E / D x 100	%
C2.4 Suspected Cancer Cases (OVERALL): G / B x 100	%
Suspected Cancer Cases (FIRST TIME, WITHIN TARGET AGE RANGE– *all screening methods*): G1 / B3 x 100	%
G3.0 Treatment Rate: F1 + H1 / C x 100	%
C3.0 Treatment Rate: F + H / c_2 + E x 100	%

ABRIDGED DATA DICTIONARY FOR VIA PROGRAMME

NAME	DEFINITION	DATA TYPE (POSSIBLE VALUES)	MAPPING CF = Client Form REG = Register SUM = Summary Form IND = Indicator
FACILITY AND CLIENT INTAKE DATA			
Facility name	Full standardized name of the facility	**Text** *or drop-down*	**CF to REG to SUM**
Facility code	Standardized numeric or alpha-numeric code for the facility assigned at the national or subnational level	COUNTRY DEPENDENT	CF to REG to SUM
District	Official district (or equivalent) name	**Text** *or drop-down*	**CF to REG to SUM**
Visit date	Day, Month, and Year of the client visit	**Date**	**CF to REG to SUM**
Purpose of visit	Element to orient form and register completion. Can also be used (in conjunction with unique identifier) to monitor clients accessing services.	Categorical Response (SCREENING, TREATMENT, POST-VISIT COMPLICATION)	CF to REG
Provider name	Given Names and Surnames of screening provider	**Text**	**CF to REG to SUM**
Client name	Given Names and Surnames of client Note: for an electronic client record, Given Names and Surnames should be captured in separate fields to avoid inconsistencies (also applicable to paper-based forms/registers)	**Text**	**CF to REG**
Client identification number	National identification number or other unique client identifier used by the facility, programme, or country	**COUNTRY DEPENDENT**	**CF to REG**
Phone	Primary contact information for client collected for follow-up purposes	**Numeric**	**CF to REG**
Client next of kin phone number	Alternate client contact information for the purpose of follow-up	Numeric	CF
Client age	Age of client in years Identifies clients as inside or outside of the WHO recommended screening target age range of years; If country target age range is different, age can be used to disaggregate total results in order to calculate both Global and National indicators	**Numeric or Calculated*** **see Date of birth*	**CF to REG; Tally from REG to SUM; IND**
Client birth date	Day, Month, and Year of client birth Note: Depending on country context date of birth, age, or both should be captured. In client level electronic systems, date of birth alone can be captured as this will allow for an automated, accurate calculation of age.	Date	CF to REG; Tally from REG to SUM; IND
Date of last menstrual period	Self-reported [by client] Day, Month, and Year of client's last menstrual period. Used to determine possible pregnancy/need for pregnancy test, as well as other potential abnormalities.	**Date**	**CF**

Table continued

NAME	DEFINITION	DATA TYPE (POSSIBLE VALUES)	MAPPING CF = Client Form REG = Register SUM = Summary Form IND = Indicator
Physical address	Current primary address/home of client for the purpose of follow-up and/or geographical analysis. Note: Physical address may be more useful than mailing address	**Text**	**CF to REG**
CLIENT SCREENING HISTORY			
Screened for cervical cancer in the past	Client history of cervical cancer screening (ever screened). Note: This element is self-reported [by client], unless electronic medical record (or other high-quality longitudinal client record) is being used and can be accessed. If data are pulled from a system, the response category of "NOT SURE" may be removed.	**Categorical Response** (YES, NO, NOT SURE)	**CF** *(cross-check for "first-time screening completed" element)*
If YES, screening was through	Method used in client's last screening. This element is captured for clinical management and can be used to monitor screening frequency and client follow-up/rescreening. See "Note" under "Screened for cervical cancer in the past" element.	**Categorical Response** (VIA, PAP SMEAR, HPV DNA TEST, NOT SURE)	**CF**
Result of past screening	Result of client's last screening. This element is captured for clinical management and can be used to monitor client treatment/follow-up. See "Note" under "Screened for cervical cancer in the past" element.	**Categorical Response** (POSITIVE, NEGATIVE, NOT SURE)	**CF**
If POSITIVE, was treatment performed	Action following POSITIVE result at client's last screening. This element is captured for clinical management and can be used to monitor client treatment/follow-up. See "Note" under "Screened for cervical cancer in the past" element.	**Categorical Response** (YES, NO, NOT SURE)	CF
[If YES] Type of treatment was performed	Type of treatment provided following POSITIVE result at client's last screening. This element is captured for clinical management and can be used to monitor client treatment/follow-up. See "Note" under "Screened for cervical cancer in the past" element.	**Categorical Response** (CRYOTHERAPY, LEEP, NOT SURE)	CF
When was the last screening	Day, Month, and Year of client's last screening. This element is captured for clinical management and can be used to monitor screening frequency and client follow-up/rescreening. Can be adapted to a categorical response variable (e.g. <1 year ago, 1–3 years ago, 3–5 years ago, >5 years ago) if EMR is not in use and in-country field testing shows that it is difficult for women to report exact date. See "Note" under "Screened for cervical cancer in the past" element.	**Date**	CF
[When was the last] Treatment	Day, Month, and Year of client's last treatment. This element is captured for clinical management and can be used to monitor client treatment/follow-up. Can be adapted to a categorical response variable (e.g. <1 year ago, 1 year ago, >1.5 years ago) if EMR is not in use and in-country field testing shows that it is difficult for women to report exact date. See "Note" under "Screened for cervical cancer in the past" element.	**Date**	CF
Is today's visit for a post-treatment complication?	Indicates that the client is returning due to post-treatment complication. Used to monitor post-treatment complications.	**Categorical Response** (YES, NO)	**CF to REG; Tally from REG to SUM; IND**
Gravidity	Element in reproductive health history indicating number of times a woman has been pregnant	Numeric	CF

Table continued

NAME	DEFINITION	DATA TYPE (POSSIBLE VALUES)	MAPPING CF = Client Form REG = Register SUM = Summary Form IND = Indicator
Parity	Element in reproductive health history indicating the number of pregnancies that the women has carried to a viable gestational age	Numeric	CF
HIV STATUS			
Last HIV Test Result	Self-reported result of Client's most recent HIV test. Captured in order to monitor patient care and integration of cervical cancer and HIV services. Used as a primary element for indicator disaggregation. If PITC is integrated into cervical cancer screening, use PITC elements below (from WHO Guide for M&E of National HTC Programmes). **Transfer to Register**: "Last HIV Test Result" response of NEGATIVE [>3 months ago], INCONCLUSIVE, NEVER TESTED or UNKNOWN on the client form is captured in the Register as UNKNOWN. **Note**: This element is self-reported [by client], unless electronic medical record is being used.	**Categorical Response** (POSITIVE, NEGATIVE [<3 months ago], UNKNOWN)	**CF to REG; Tally from REG to SUM; IND**
If Last HIV Test Result = POSITIVE	*FOR PITC: The cascade below is initiated through a "POSITIVE" response for self-reported "Last HIV Test Result", and is used for clinical management and patient monitoring.*	*N/A*	*N/A*
Date of last positive HIV test result	Day, Month, and Year of client's last HIV Test with a POSITIVE result. **Note**: This element is self-reported [by client], unless electronic medical record (or other high-quality longitudinal client record) is being used and can be accessed.	Date	CF to REG
Enrolment in HIV care and treatment services	HIV Positive client HIV care and treatment enrolment status. Enrolment in HIV care and treatment services is proxied as: client received clinical assessment or CD4 count or viral load testing following HIV Positive diagnosis; or client is currently receiving ART (see WHO Consolidated SI Guidelines http://apps.who.int/iris/bitstream/10665/164716/1/9789241508759_eng.pdf) See "**Note**" under "Date of last Positive HIV test result" element.	Categorical Response or Calculated (RECEIVED CLINICAL ASSESSMENT, RECEIVED CD4 COUNT, RECEIVED VIRAL LOAD or CURRENTLY RECEIVING ART; NOT ENROLLED)	CF to REG
Earliest CD4 count [or viral load]	CD4 count at the time of HIV Positive diagnosis; or first CD4 count taken at the time of enrolment into HIV care and/or treatment Where CD4 counts are not performed at the same time (and in the same venue) as the HIV test, the CD4 count nearest to the time of diagnosis is considered the count "at enrolment in care"; See "Note" under "Date of last Positive HIV test result" element.	Numeric	CF to REG
Earliest CD4 [or viral load] test date	Day, Month, and Year of first CD4 count (at time of diagnosis or at time of enrolment) See "**Note**" under "Date of last Positive HIV test result" element.	Date	CF to REG
Most recent CD4 count [or viral load]	Most recent CD4 count See "**Note**" under "Date of last Positive HIV test result" element.	Numeric	CF to REG
Most recent CD4 [or viral load] test date	Day, Month, and Year of most recent CD4 count See "**Note**" under "Date of last Positive HIV test result" element.	Date	CF to REG
If not enrolled, client referred for care and treatment	See definition of "enrolment" proxy under "Enrolment in HIV care and treatment services"	Categorical Response (YES, NO)	CF to REG

Table continued

NAME	DEFINITION	DATA TYPE (POSSIBLE VALUES)	MAPPING CF = Client Form REG = Register SUM = Summary Form IND = Indicator
If Last HIV Test Result = UNKNOWN	*FOR PITC: The cascade below is initiated through an "UNKNOWN" (includes: negative [over 3 months ago], inconclusive, never tested), response for self-reported "Last HIV Test Result", and is used for clinical management and patient monitoring.*	*N/A*	*N/A*
Provider-initiated testing and counselling (PITC) accepted (yes, no)	Eligible client acceptance/non-acceptance of PITC offered at cervical cancer screening visit. Captured in order to monitor patient care and integration of cervical cancer and HIV services. **Note**: PITC should be offered if client's reported previous HIV test result was INCONCLUSIVE, **or** if NEGATIVE test result was more than 3 months ago, **or** if client has NEVER TESTED.	Categorical Response (YES, NO)	CF to REG; Tally from REG to SUM; IND
If YES, PITC Test Date	Day, Month, and Year of PITC HIV Test captured to monitor PITC provision at screening visits.	Date	CF to REG
PITC Final Result	Final result of HIV test performed during cervical cancer screening visit (see Final HIV Status below).	Categorical Response (POSITIVE, NEGATIVE, INCONCLUSIVE)	CF to REG; Tally from REG to SUM; IND
PITC result received by client	Documents that the client received their HIV test result. Captured in order to monitor PITC provision at point of screening service.	Categorical Response (YES, NO)	CF to REG
Final HIV Status	Used as a primary element for indicator disaggregation. Final HIV Status is captured as: • POSITIVE if Previous HIV test result was POSITIVE or if PITC test result was POSITIVE • NEGATIVE if Previous HIV Test Result was NEGATIVE [<3 months ago] or if PITC test result was NEGATIVE • UNKNOWN if Previous HIV Test Result was INCONCLUSIVE or NEVER BEEN and PITC test was refused. Note: When previous HIV test result (self-reported) is captured on the same client form as PITC HIV test results, this element captures the Final HIV Status value that will be entered into the register/logbook.	Categorical Response (POSITIVE, NEGATIVE, UNKNOWN)	CF to REG; Tally from REG to SUM; IND
If Last HIV Test Result = UNKNOWN	*WHERE PITC IS **NOT** AVAILABLE: The optional element below is initiated through an "UNKNOWN" (includes: negative [over 3 months ago], inconclusive, never tested) response for self-reported "Last HIV Test Result", and is used for clinical management and patient monitoring.*	*N/A*	*N/A*
Client referred for HIV testing	Referral for HIV testing if HIV testing is not available through PITC and Previous HIV Test Result was NEVER TESTED or INCONCLUSIVE, or most recent NEGATIVE test was >3 months ago. Captured in order to monitor integration of cervical cancer and HIV services where PITC is not offered at cervical cancer screening service delivery point.	Categorical Response (YES, NO)	CF to REG; Tally from REG to SUM; IND
SCREENING			
Screening visit type	Indicates the type of screening visit the client is attending, based on their screening (and treatment) history. The screening visit type set of data elements is used for disaggregation of indicators. Most indicators either designate screening visit type to be captured, or include considerations for disaggregation. These elements are captured on paper-based forms in separate fields in order to ease tallying and aggregation; however they may be included in an electronic system as either: 1) individual Categorical Response (YES/NO) variables; or 2) as multiple answer values for one consolidated Categorical Response variable.	**Categorical Response** (FIRST-TIME, 1 YEAR POST-TREATMENT FOLLOW-UP, RESCREENING)	**CF to REG; Tally from REG to SUM; IND**
Screening Completed	Indicates status of screening Client-level source for calculation of Screening Rate indicator (NUMERATOR) and Screening Test Positivity Rate indicator (DENOMINATOR)	**Categorical Response** (YES, NO)	**CF to REG; Tally from REG to SUM; IND**

Table continued

NAME	DEFINITION	DATA TYPE (POSSIBLE VALUES)	MAPPING CF = Client Form REG = Register SUM = Summary Form IND = Indicator
If NO, (incomplete screening) list reason:	Open text field to capture reason for screening deferral Usually refers to gynaecological issue for which screening is contra-indicated (e.g. cervicitis)	**Text**	**CF**
VIA RESULT			
VIA result	Result of VIA-based cervical cancer screening Client-level source for calculation of Test Positivity Rate indicator (NUMERATOR) and Treatment Rate indicator (DENOMINATOR)	**Categorical Response** (NEGATIVE; POSITIVE; POSITIVE, SUSPECTED CANCER)	**CF to REG; Tally from REG to SUM; IND**
[If positive] Eligible for cryotherapy	Indicates whether client is eligible for cryotherapy treatment for precancerous lesion, or requires LEEP for larger lesions not eligible for cryotherapy	**Categorical Response** (YES, NO)	**CF to REG; Tally from REG to SUM; IND**
Screening map	Provider documents findings/lesion on basic cervix diagram/map	**Image**	**CF**
Clinical diagnosis	Clinical diagnosis of gynaecological problem (potentially resulting in screening deferral)	Text	CF
External genital and speculum examination results	Results of clinical pelvic exam	Text	CF
REFERRAL			
Referral to:	Name of site client is referred to for further services. Used for follow-up on client outcomes, and to monitor client referrals	**Text String**	**CF**
Referred for large lesions (not eligible for cryotherapy)	Date of and reason for client referral – large lesion ineligible for cryotherapy and requiring LEEP. Used to monitor client referrals; and disaggregate total number of referrals	**Date**	**CF to REG; Tally from REG to SUM; IND**
Referred for suspected cancer	Date of and reason for client referral – suspected invasive cancer. Used to monitor client referrals; and as a disaggregate for total number of referrals	**Date**	**CF to REG; Tally from REG to SUM; IND**
Referred for Cryotherapy	Date of and reason for client referral	**Date**	**CF to REG; Tally from REG to SUM; IND**
Referred for Other Gynaecological Issue	Date of and reason for client referral	Date	CF to REG; Tally from REG to SUM; IND
CRYOTHERAPY			
Cryotherapy completed at Screening Visit	Indicates that cryotherapy was performed on the same day as VIA screening The treatment and referral Categorical Response elements are captured on paper-based forms in separate fields in order to ease tallying and aggregation; however, they may be included in an electronic system as either: 1) individual dichotomous Categorical Response (YES/NO) variables; or 2) as multiple response choices for one consolidated Categorical Response variable.	**Categorical Response** (YES, NO)	**CF to REG; Tally from REG to SUM; IND**
Reason:	Reason cryotherapy was postponed. Used for follow-up on client treatment and outcomes, and to monitor client return.	**Text**	**CF**
Cryotherapy postponed	Indicates that VIA screening was completed, but cryotherapy was postponed. Used for follow-up on client treatment and outcomes, and to monitor expected client return.	**Categorical Response** (YES, NO)	**CF to REG; Tally from REG to SUM; IND**

Table continued

NAME	DEFINITION	DATA TYPE (POSSIBLE VALUES)	MAPPING CF = Client Form REG = Register SUM = Summary Form IND = Indicator
Postponed cryotherapy completed today	Indicates that the client received cryotherapy treatment that had been postponed after receiving a positive screening result. Used to monitor treatment of precancerous lesions (and impact on precancerous lesion treatment completion using "Single Visit" or "Same Day Screen and Treat" approaches)	**Categorical Response** (YES, NO)	**CF to REG; Tally from REG to SUM; IND**
Referred-in Cryotherapy Completed Today	Indicates that the client has received cryotherapy treatment as a result of a referral.	**Categorical Response** (YES, NO)	**CF to REG; Tally from REG to SUM; IND**
Referral for cryotherapy from:	Name of the site to which the client is being referred for cryotherapy. May be included where cryotherapy is not performed ONLY as part of a "Single Visit" or "Same Day Screen and Treat" Approach	Text	CF to REG; Tally from REG to SUM; IND
Cryotherapy provider's initials	Abbreviation of treatment provider: Given name/s and Surname/s Transferred from client screening form	**Text**	**CF to REG**
LEEP			
Eligible for LEEP	Indicates that the client was eligible for LEEP upon visualization at LEEP visit	Categorical Response (YES, NO)	**CF to REG**
LEEP performed	Indicates that LEEP was provided for the treatment of precancerous lesions. Used to monitor LEEP service provision and precancerous lesion treatment.	**Categorical Response** (YES, NO)	**CF to REG; Tally from REG to SUM; IND**
LEEP provider's initials	Abbreviation of treatment provider: Given name/s and Surname/s	**Text**	**CF to REG**
NOTES/FOLLOW-UP			
Notes/follow-up	Open text field to capture provider notes	**Text**	**CF**