

# Measuring Breast, Cervical, and Colorectal Cancer Screening Rates in Health System Clinics

## Guidance Document

CDC RFA DP15-1502 Organized Approaches to Increase Colorectal Cancer Screening  
CDC RFA DP17-1701 National Breast and Cervical Cancer Early Detection Program

Centers for Disease Control and Prevention  
National Center for Chronic Disease Prevention and Health Promotion  
Division of Cancer Prevention and Control  
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## Purpose

The purpose of this document is to provide guidance to grantees of CDC's National Breast and Cervical Cancer Early Detection Program (NBCCEDP) and Colorectal Cancer Control Program (CRCCP) for measuring baseline and, thereafter, annual cancer screening rates within participating health system clinics. Given the emphasis on partnering with health systems to implement evidence-based strategies, this guidance is centered in that context. Organizations outside of the NBCCEDP and CRCCP may also find this guidance useful for effectively monitoring screening rates.

## Reporting Requirements

An important purpose of the NBCCEDP and CRCCP is to increase breast, cervical, and colorectal cancer screening rates (a priority outcome) within partner health system clinics that serve priority population(s). NBCCEDP and CRCCP grantees are required to implement evidence-based interventions (EBIs) in partnership with health system clinics to increase screening rates. In addition, grantees are required to report baseline and annual data for every participating clinic to CDC. These data include a clinic-level screening rate.

Health system partners may include Federally Qualified Health Centers (FQHCs), Community Health Centers (CHCs), health care/hospital networks, Indian Health Service (IHS), local health department clinics, and others. Health systems often have multiple clinics (also referred to as “sites” among FQHCs). As grantees may intervene with only a single or subset of these clinics and may implement different activities in different clinics, a baseline cancer screening rate is expected to be measured and reported for **every clinic** within a health system, rather than for the overall health system, where NBCCEDP or CRCCP activities will be implemented. After baseline data have been reported, report an updated cancer screening rate annually thereafter. These data will allow grantees and CDC to monitor changes in cancer screening rates in all clinics where EBIs are implemented and allow us to demonstrate the impact of the NBCCEDP and CRCCP.

## Selecting a Cancer Screening Rate Measure and Using It Consistently

This section describes the importance of selecting a specific measure or method to calculate the screening rate at baseline, and then using that same measure or method consistently throughout the grant reporting period. The section offers two options for reporting cancer screening rates:

1. Using an existing measure, such as the Health Resources and Services Administration's (HRSA's) Uniform Data System (UDS).
2. Calculating a new rate based on the National Quality Forum (NQF)-endorsed measure.

As part of initial assessment efforts conducted with a partner health system, identify the option that is most appropriate for each clinic where program activities are planned.

### Selecting a Cancer Screening Rate Measure

Several measures exist to monitor breast, cervical, and colorectal cancer screening rates within a health system or clinic. Appendix 1 provides a comprehensive overview of these measures. If there are collaborations with a health system clinic that already reports one of these measures, such as UDS or the Healthcare Effectiveness Database and Information System (HEDIS), this measure may be reported to CDC. This may help to facilitate partnership development and build on the existing health system/clinic structure. However, work closely with partner health systems or clinics to improve the quality of their reporting, particularly if there is evidence of imprecision or inconsistency in breast, cervical, and/or colorectal cancer screening rate reporting (see section below titled Electronic Health Record, or [EHR, validation](#)). Also, be aware that HRSA requires FQHCs to submit a screening rate for the health system as a whole; CDC requires screening rates for the clinic/site.

When using an existing cancer screening rate measure such as UDS for a given clinic, report the measure for the same 12-month time period as was reported to the external system (for example, for UDS, reporting is to HRSA for the calendar year, January through December) and follow the same guidelines recommended for calculating that measure (see Appendix 1). For example, let's say there is a partnership with a FQHC health system that has six clinic sites and program activities are implemented in four of them. In this example, report the UDS screening rates for the time period January through December *for each* of the four clinics to CDC. Even if the FQHC reported a single, aggregate screening rate for the entire health system to HRSA, **provide the clinic-level rate for each of the four clinics to CDC**. Again, report to CDC the values representing the same 12-month measurement year that was used to report to HRSA. **Do not** report a number that has been updated to represent a different and/or longer measurement year.

**Important Note:** In CDC's data collection, grantees report both the numerator and denominator population sizes (raw data) for calculating the screening rate at baseline and annually.

## Baseline Time Period

Grantees need to determine a baseline screening rate for each participating clinic *prior* to implementing NBCCEDP or CRCCP program activities (EBIs). Specifically, the baseline measurement year represents the most recent 12-month measurement year that precedes intervention activities. For instance, program activities in a given FQHC clinic that began in November 2017 would report a baseline screening rate (such as UDS) for the time period January through December 2016.

## Reporting an Annual Screening Rate

After a baseline screening rate is reported for a given clinic, provide annual data to CDC for that clinic, including an annual screening rate, every year through the end of the five-year program period, regardless of whether your program implements activities for that entire period<sup>1</sup>. For instance, a clinic is identified in program year (PY) 1, and, based on assessment activities, patient and provider reminder systems are implemented over a three-year period. In this scenario, a baseline screening rate for the clinic during PY1 would be reported prior to implementing activities followed by annual data, including an annual screening rate, for PY2 through PY5. This allows grantees and CDC to track screening rates over time and assess the full impact of the EBIs that were implemented.

**Note:** CDC requires grantees to report screening rates annually. However, these rates may be monitored more frequently (monthly or quarterly) and provide feedback to clinics on their progress.

## Measuring Consistently

Grantees may use different screening measures for different clinics (such as HEDIS for Clinic 1 and UDS for Clinic 2). However, after selecting the most appropriate measure for a given clinic, **that same measure (and calculation) and the same 12-month measurement period must be used for reporting in all subsequent years.** For example, if the HEDIS 2017 screening measure is used as the baseline screening rate for Clinic 1 for the calendar year (January 1 through December 31, 2017), the HEDIS screening measure needs to be reported for that clinic for all subsequent years (calendar years 2018, 2019, 2020, and so on). The 12-month measurement period for the screening measure does **not** need to match the NBCCEDP or CRCCP program year.

## Calculating NQF-Endorsed Breast Cancer Screening Rate Measure

As of June 2016, the NQF-endorsed measure is the National Committee for Quality Assurance (NCQA) measure for breast cancer screening (HEDIS measure)<sup>2</sup>. If a partner health system and/or clinic does not report a breast cancer screening measure, or if a different measure is

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<sup>1</sup> There is an exception for clinics that are formally terminated and for which grantees cannot collect data in future years. CDC provides additional information on termination in a set of frequently asked questions made available to NBCCEDP and CRCCP grantees.

<sup>2</sup> For more information regarding NQF (including background information, measure definitions, and relevant CPT codes), visit [www.qualityforum.org/Measures\\_Reports\\_Tools.aspx](http://www.qualityforum.org/Measures_Reports_Tools.aspx).

preferred, CDC encourages following the NQF's endorsed measure definition. Please follow the guidance below to calculate this measure.

### **Step 1. Determining the Measurement Year**

The NQF-endorsed measure uses the calendar year (January 1 to December 31) as the 12-month measurement year.

### **Step 2. The NQF-Endorsed Breast Cancer Screening Rate Measure Definition**

The NQF describes the breast cancer screening rate measure as the percentage of women 50 to 74 years of age who are up-to-date with appropriate screening for breast cancer. The screening rate is calculated using the numerator and denominator definitions described below. As a reminder, both the numerator and denominator population sizes, not just the screening rate, will be reported to CDC at baseline and annually.

### **Step 3. Defining the Denominator**

The number of women **52 to 74**<sup>3</sup> years of age with a medical visit during the measurement year.

#### ***NOTE: Exclusion Criteria***

Do not include women with a bilateral mastectomy or two unilateral mastectomies in the denominator.

### **Step 4. Defining the Numerator**

The number of patients (**aged 52 to 74**) with appropriate screening for breast cancer, who had at least one medical visit during the measurement year.

#### ***What Is Appropriate Breast Cancer Screening?***

Appropriate screening is defined as having a screening mammography in the measurement year or one year prior to the measurement year.

## **Calculating NQF-Endorsed Cervical Cancer Screening Rate Measure**

As of January 2017, the NQF-endorsed measure is the NCQA measure for cervical cancer screening (HEDIS measure)<sup>4</sup>. If a partner health system and/or clinic does not report a cervical cancer screening measure, or if a different measure is preferred, CDC encourages following the NQF's endorsed measure definition. Please follow the guidance below to calculate this measure.

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<sup>3</sup>Although the measurement definition encompasses ages 50 to 74, the actual calculation covers patients ages 52 to 74 to allow for women to be screened within two years of turning 50 and before reaching age 74. For example, if your 12-month measurement year runs from January 1 to December 31, 2016, only patients with a date of birth between January 1, 1942 and December 31, 1964 should be included in the calculation.

<sup>4</sup> For more information regarding NQF (including background information, measure definitions, and relevant CPT codes), visit [www.qualityforum.org/Measures\\_Reports\\_Tools.aspx](http://www.qualityforum.org/Measures_Reports_Tools.aspx).

### Step 1. Determining the Measurement Year

The NQF-endorsed measure uses the calendar year (January 1 to December 31) as the measurement year.

### Step 2. The NQF-Endorsed Cervical Cancer Screening Rate Measure Definition

The NQF describes the cervical cancer screening rate measure as the percentage of women 21 to 64 years of age who are up-to-date with appropriate screening for cervical cancer. The screening rate is calculated using the numerator and denominator definitions described below. As a reminder, both the numerator and denominator population sizes, not just the screening rate, will be reported to CDC at baseline and annually.

### Step 3. Defining the Denominator

The number of women **24 to 64**<sup>5</sup> years of age with a medical visit during the measurement year.

#### *NOTE: Exclusion Criteria*

Do not include women who have had a complete hysterectomy with no residual cervix in the denominator.

### Step 4. Defining the Numerator

The number of women (**aged 24 to 64**) with appropriate screening for cervical cancer, who had at least one medical visit during the measurement year.

#### *What is Appropriate Cervical Cancer Screening?*

Appropriate screening is defined as having either:

- Pap test within the measurement year or previous two years for women 21 to 64 years of age.
- Pap / HPV co-testing within the measurement year or previous four years for women 30 to 64 years of age.

## Calculating NQF-Endorsed CRC Screening Rate Measure

As of December 2014, the NQF-endorsed measure is the National Committee for Quality Assurance (NCQA) measure for CRC screening (HEDIS measure)<sup>6</sup>. If a partner health system and/or clinic does not report a CRC screening measure, or if a different measure is preferred, CDC encourages following the NQF's endorsed measure definition. Please follow the guidance below to calculate this measure.

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<sup>5</sup>Although the measure definition encompasses ages 21 to 64, the actual calculation covers patients ages 24 to 64 to allow for women to be screened within three years of turning 21 and before reaching age 64. For example, if your 12-month measurement year runs from January 1 to December 31, 2016, only patients with a date of birth between January 1, 1950 and December 31, 1992 should be included in the calculation.

<sup>6</sup> For more information regarding NQF (including background information, measure definitions, and relevant CPT codes), visit [www.qualityforum.org/Measures\\_Reports\\_Tools.aspx](http://www.qualityforum.org/Measures_Reports_Tools.aspx).

### Step 1. Determining the Measurement Year

The NQF-endorsed measure uses the calendar year (January 1 to December 31) as the measurement year.

### Step 2. The NQF-Endorsed CRC Screening Rate Measure Definition

The NQF describes the CRC screening rate measure as the percentage of patients 50 to 75 years of age who are up-to-date with appropriate screening for colorectal cancer. The screening rate is calculated using the numerator and denominator definitions described below. As a reminder, both the numerator and denominator population sizes, not just the screening rate, will be reported to CDC at baseline and annually.

### Step 3. Defining the Denominator

The number of patients **51 to 75**<sup>7</sup> years of age with a medical visit during the measurement year.

#### *NOTE: Exclusionary criteria*

Do not include patients with a diagnosis of colorectal cancer or a total colectomy in the calculation.

### Step 4. Defining the Numerator

The number of patients (**aged 51 to 75**) with one or more appropriate screenings for colorectal cancer, who had at least one medical visit during the measurement year.

#### *What is Appropriate CRC Screening?*

Appropriate screening is defined as having any of the following CRC screening tests:

- **Fecal occult blood test (FOBT)**, including fecal immunochemical test (FIT), during the measurement year.
- **Flexible sigmoidoscopy** during the measurement year or the four years prior to the measurement year.
- **Colonoscopy** during the measurement year or the nine years prior to the measurement year.

## Measurement Considerations for FOBT/FIT

To qualify as receiving appropriate screening, sufficient evidence of **test kit results** is needed. Evidence solely of mailing a FOBT/FIT kit to a patient or use of in-office obtained stool specimens (such as a digital rectal exam) are insufficient. As an additional quality consideration, adhere to the quality criteria for a given kit type regarding the number of fecal samples is required. Information available in the patient's medical chart, including patient-reported screening history, represents adequate evidence of appropriate screening as long as a test date is recorded in the medical record or chart.

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<sup>7</sup>Although the measure definition encompasses ages 50 to 75, the actual calculation covers patients ages 51 to 75 to allow for people to be screened within a year of turning 50 and before reaching age 75. For example, if your 12-month measurement year runs from January 1 to December 31, 2015, only patients with a date of birth between January 1, 1941 and December 31, 1964 are included in the calculation.

## Measurement Considerations for Electronic Health Records (EHRs)

Health system use of EHRs is increasing. A functional EHR system, especially in clinics with large patient populations, is integral to building an organized screening system. EHRs may represent a potential source of data for calculating cancer screening rates. The accuracy of data extracted from EHRs can vary for many reasons, including how data are documented and entered into the EHR. CDC strongly encourages working with partner health systems to improve the accuracy of EHR-generated cancer screening rates and their functional use.

The National Colorectal Cancer Roundtable's (NCCRT) summary report, *"Use of Electronic Medical Records to Facilitate Colorectal Cancer Screening in Community Health Centers,"*<sup>8</sup> documents several other potential problems that could lead to calculating an inaccurate cancer screening rate using an EHR: the system is not optimized to track cancer screening easily, poor documentation of previous screening received outside of the health system, lack of staff training, and family history data are not easily accessible. Refer to this guide for additional information that may help mitigate these problems on extracting data from EHRs.

Assess the quality of the EHR system to determine whether it can be used to calculate a cancer screening rate for reporting to CDC. CDC suggests that the EHR system adhere to the following criteria:

- **Length of time the EHR has been operational.** Preferably, an EHR system is fully operational for at least two calendar years (or data for this time period must be imported into the system). If this criterion is not met, conduct a medical chart review as an alternative to calculate a breast, cervical, and/or colorectal cancer screening rate.
- **Format of data.** The EHR system needs to have the functionality to identify all breast, cervical, and/or colorectal cancer screening tests performed in the clinic or by other providers within a specified time frame. For instance, assess whether data are input into a specific data field or fields or if breast, cervical, and/or colorectal cancer screening test results have been scanned in to the EHR. Also, determine whether the data fields are used consistently across providers. The EHR must provide accurate data.
- **Identify exclusions.** The EHR system needs to allow for exclusions as part of a query (for example, patients who have had bilateral mastectomy or a hysterectomy).

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<sup>8</sup> National Colorectal Cancer Roundtable, American Cancer Society, and National Association of Community Health Centers. *"Use of Electronic Medical Records to Facilitate Colorectal Cancer Screening in Community Health Centers."* Available at <http://nccrt.org/wp-content/uploads/NCCRT-Summary-EMR-Report-Final.pdf>

- **Comprehensive collection.** The EHR system needs to be able to identify breast, cervical, and/or colorectal cancer screening data from prior years to determine if patients meet standards of being up-to-date with appropriate screening.

### **Validating the EHR Rate**

Validation is an important step in determining the accuracy of the EHR-generated screening rate. Given the EHR issues described above, EHR-generated screening rates may not be accurate. To validate the accuracy of an EHR-generated breast, cervical, and/or colorectal cancer screening rate, we suggest comparing it to a screening rate calculated via medical chart review. This type of validation is especially beneficial for EHR systems that have been in place for a short amount of time (less than two years) or have not been shown to meet the criteria detailed above. EHR validation is an ongoing process, not a one-time event. Validation may require multiple iterations to achieve accuracy. Thus, we understand that the process of validating a clinic's EHR system may overlap with the implementation of EBIs. If discrepancies between the EHR rate and the chart review rate exist, report medical chart review results to CDC. Validation results can be used subsequently to make improvements and/or enhancements to the EHR system. After the EHR has been improved and can produce accurate screening rates, report the EHR-generated rate to CDC.

## Using Medical Chart Review to Estimate Cancer Screening Rate

Guidance for conducting a medical chart review or abstraction is detailed below. This process can also be followed when conducting medical chart reviews to validate an EHR. For more specific information and tools (including sample chart audit templates), refer to the NCCRT's manual *Steps for Increasing Colorectal Cancer Screening Rates: A Manual for Community Health Centers*.<sup>9</sup> While this manual is specific to CRC and situated in the context of community health centers, information related to sampling methods and tracking chart audits can be applied to other types of cancer and in other health systems.

### Proportion of Medical Charts to Review

To ensure an accurate cancer screening rate, determine the appropriate number of charts to review before starting the review process. Many statistically rigorous approaches can be used, such as by specifying the confidence level and measurement of error based on the clinic population size. Apply these approaches if you have the necessary capacity or access to staff with statistical expertise. If those resources are unavailable, then, at a minimum, review 10% of the charts for adults who meet the denominator definition for the measure used (for example, for the HEDIS breast cancer screening rate, 10% of charts for women ages 52 to 74, who had at least one medical visit during the measurement year). If the clinic population for that group (women ages 52 to 74) exceeds 1,000 patients, then the sample can be limited to 100 patients. Because CDC requires reporting of clinic-level screening rates, draw a sample from *each clinic* where intervention activities are planned or implemented. In other words, conduct independent chart reviews for each clinic. The number of charts reviewed will be used as the denominator for screening rate calculations.

**Note:** Remember to oversample (pull more charts than the number initially identified) to account for patients who will be excluded from the denominator (such as patients with a bilateral mastectomy for breast cancer screening).

### Selecting Appropriate Charts

This section describes a process for selecting the medical charts that will be used for the sample: determining the appropriate population, identifying the number to sample, conducting a random or systematic sample, identifying available data sources, or replacing excluded patients.

#### Determine the Sampling Frame

The sampling frame includes all patients in the clinic population for which it is appropriate to sample. The sampling frame provides the larger patient population list from which samples will be pulled. Inclusion criteria must be identified prior to generating the list of patients. Additional criteria can be added as appropriate (for example, the sampling frame must include patients

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<sup>9</sup> National Colorectal Cancer Roundtable and American Cancer Society. *Steps for Increasing Colorectal Cancer Screening Rates: A Manual for Community Health Centers*. Available at <http://nccrt.org/about/provider-education/manual-for-community-health-centers-2/>.

who received contracted medical services during the 12-month measurement year). A patient initially listed in the sampling frame may be removed if, upon further inspection, he or she does not meet the inclusion criteria.

### **Sampling Method**

After determining the appropriate population to sample (the sampling frame), select a sampling method that will generate a representative sample of the entire population of patients who meet the selection criteria. Random sampling or systematic sampling are two recommended options. A random sample takes a randomly assigned subset of the population identified in the sampling frame. This is typically accomplished by assigning a random number to each patient in the sampling frame. Random numbers can be generated in many ways, such as a random number table, web apps, and spreadsheet software.

A systematic sample puts every patient in the sampling frame in some order, for example, alphabetically or by patient ID number, and then selects every  $n^{\text{th}}$  patient. To determine the best interval, a general rule is to divide the number of patients in the sampling frame by the number of patients needed in the sample. For example, if a clinic has 800 patients in the sampling frame and needs 80 patients in the sample, you would divide 800 by 80 and select every 10<sup>th</sup> patient. As noted earlier, you may need to select 1% to 5% more patients to replace those who meet exclusion criteria).

### **Measurement Year**

The defined 12-month measurement year is the basis for the medical chart abstraction. Do not extract data before the end of the measurement year because this could exclude patients who are screened near the end of the measurement year. We suggest that the abstraction is conducted within two months after the end of the measurement year. For example, if the measurement year runs from January 1 to December 31, 2016, chart reviews need to be completed by March 1, 2017.

## Additional Considerations

### **Assessing Data Reliability**

No method for abstracting data is perfect. CDC anticipates limitations and challenges in calculating a screening rate regardless of the method used (medical chart abstraction or EHR-generated rate), and we expect screening rate estimates to improve over time as a health system's EHR is improved and chart abstraction methods are strengthened. Consequently, when calculating a cancer screening rate, it will be beneficial to assess the perceived reliability of the data reported. Identifying and documenting potential issues with the collection or extraction of cancer screening rate data will provide important context to changes in these rates over time. Additionally, if you use an EHR-generated rate, CDC requires you to report on the reliability of the data reported as part of the clinic data record.

## Tools and Resources

The following list of resources (many of which are referenced in this document) may be helpful when collaborating with health system partners and clinics.

- National Colorectal Cancer Roundtable and American Cancer Society. *Steps for Increasing Colorectal Cancer Screening Rates: A Manual for Community Health Centers*. <http://nccrt.org/about/provider-education/manual-for-community-health-centers-2/>
- National Colorectal Cancer Roundtable, American Cancer Society, and National Association of Community Health Centers. *Use of Electronic Medical Records to Facilitate Colorectal Cancer Screening in Community Health Centers*. <http://nccrt.org/resource/report-use-medical-records-facilitate-colorectal-cancer-screening/>
- Centers for Disease Control and Prevention. *Increasing Colorectal Cancer Screening: An Action Guide for Working with Health Systems*. [www.cdc.gov/cancer/NBCCEDP/action-guides.htm](http://www.cdc.gov/cancer/NBCCEDP/action-guides.htm)
- Centers for Disease Control and Prevention. *Increasing Population-based Breast and Cervical Cancer Screenings: an Action Guide to Facilitate Evidence-Based Strategies*. [www.cdc.gov/cancer/nbccedp/pdf/breastcanceractionguide.pdf](http://www.cdc.gov/cancer/nbccedp/pdf/breastcanceractionguide.pdf)
- U.S. Health Resources and Services Administration. *Breast Cancer Screening*. [www.hrsa.gov/quality/toolbox/508pdfs/breastcancerscreening.pdf](http://www.hrsa.gov/quality/toolbox/508pdfs/breastcancerscreening.pdf)
- U.S. Health Resources and Services Administration. *Cervical Cancer Screening*. [www.hrsa.gov/quality/toolbox/508pdfs/cervicalcancerscreening.pdf](http://www.hrsa.gov/quality/toolbox/508pdfs/cervicalcancerscreening.pdf)
- North Carolina Department of Health and Human Services. *The Breast and Cervical Cancer Screening Manual: A Guide for Health Departments and Providers*.
- American Cancer Society, Iowa get Screened, Iowa Cancer Consortium, and Upper Midwest Public Health Training Center. *How to Increase Cancer Screening Rates: a Quality Improvement Toolkit for Busy Office Practices*.

## Information Sources

Information in this document was informed by the following sources:

- *DP17-1701 FOA: Organized Approaches to Increasing Cancer Screening*
- National Colorectal Cancer Roundtable, American Cancer Society, and National Association of Community Health Centers report: *Use of Electronic Medical Records to Facilitate Colorectal Cancer Screening in Community Health Centers*
- American Cancer Society and National Colorectal Cancer Roundtable's manual: *Steps for Increasing Colorectal Cancer Rates: A Manual For Community Health Centers*
- National Quality Forum's Quality Positioning System
- NCQA's Healthcare Effectiveness Data and Information Set (HEDIS) 2015 Performance Measurement Specifications
- HRSA's Uniform Data System (HEDIS) 2014 Manual: *Reporting Instructions for Health Centers*
- IHS' Clinical Reporting System's 2013 National GPRA Developmental Report

**Appendix 1. Breast Cancer Screening Rate Measures**

<b>Measure</b>	<b>Reporting Period</b>	<b>Performance Measure</b>	<b>Numerator</b>	<b>Denominator</b>	<b>Appropriate Screening Definition</b>
<b>Government Performance and Reporting Act (GPRA)<sup>a</sup> used by Indian Health Service</b>	July 1 to June 30	The proportion of eligible patients who have had mammography screening	Patients who had a mammogram documented in the past two years	American Indian/Alaska Native female patients, ages 52 to 74, with at least two clinic visits in the past three years  <i>Exclusions: women with a documented bilateral mastectomy or two unilateral mastectomies</i>	Biennial screening mammography for women ages 50 to 74
<b>Health Care Effectiveness Data and Information Set (HEDIS)</b>	January 1 to December 31; measures reported to NCQA <sup>1</sup> in June	The percentage of women ages 50 to 74 who had a mammogram to screen for breast cancer	Patients in the denominator who had at least one mammogram any time on or between October 1 two years prior to the measurement year and December 31 of the measurement year	Women ages 52 to 74 as of December 31 for the measurement year  <i>Exclusions: women with bilateral mastectomies or two unilateral mastectomies</i>	Mammogram within the measurement year or one year prior
<b>National Quality Forum (NQF)-Endorsed Measure</b>	January 1 to December 31	The percentage of women 50 to 74 years of age who are up-to-date with appropriate screening for breast cancer	Number of patients (aged 52 to 74) with appropriate screening for breast cancer, who had at least one medical visit during the measurement year.	The number of women 52 to 74 years of age with a medical visit during the measurement year.  <i>Exclusions: Women with a bilateral mastectomy or two unilateral mastectomies</i>	Screening mammography in the measurement year or one year prior to the measurement year.

**Appendix 2. Cervical Cancer Screening Rate Measures**

Measure	Reporting Period	Performance Measure	Numerator	Denominator	Appropriate Screening Definition
<b>Government Performance and Reporting Act (GPRA) used by Indian Health Service</b>	July 1 to June 30	The proportion of eligible patients who have had a Pap test at least once in the past three years	Patients who had one or more screenings for cervical cancer documented	American Indian / Alaska Native female patients, ages 25 to 64, with at least two clinic visits in the past three years  <i>Exclusions: documented history of hysterectomy; women who refused screening</i>	Pap test within the measurement year or three years prior; Pap/HPV co-testing within the measurement year or five years prior if the patient is 30 to 64 years of age
<b>Health Care Effectiveness Data and Information Set (HEDIS)</b>	January 1 to December 31; measures reported to NCQA in June	Percentage of women 21 to 64 years of age who were screened for cervical cancer using cervical cytology or cervical cytology / HPV co-testing	Patients in the denominator who received one or more screenings for cervical cancer	Women ages 24 to 64 as of December 31 during the measurement year  <i>Exclusions: women who have had a complete hysterectomy with no residual cervix</i>	Pap test within the measurement year or prior two years; Pap/HPV co-testing within the measurement year or prior four years
<b>Uniform Data System (UDS)</b>	January 1 to December 31; measures reported to HRSA <sup>2</sup> in February	Percentage of women 21 to 64 years of age who received one or more Pap tests to screen for cervical cancer	Women with one or more Pap tests during the measurement period or two years prior to the measurement period	Women ages 23 to 64 of age with an office visit during the measurement period  <i>Exclusions: Women who had a hysterectomy with no residual cervix</i>	Pap test in the measurement year or previous two years
<b>National Quality Forum (NQF) Endorsed Measure</b>	January 1 to December 31	Percentage of women 21 to 64 years of age who are up-to-date with appropriate screening for cervical cancer	Women (aged 24 to 64) with appropriate screening for cervical cancer, who had at least one medical visit during the measurement year	The number of women 24 to 64 years of age with a medical visit during the measurement year.  <i>Exclusions: Women who have had a complete hysterectomy with no residual cervix</i>	Either: <ul style="list-style-type: none"> <li>- Pap test within the measurement year or previous two years for women 21 to 64 years of age</li> <li>- Pap / HPV co-testing within the measurement year or previous four years for women 30 to 64 years of age</li> </ul>

### Appendix 3. Colorectal Cancer Screening Rate Measures

Measure	Reporting Period	Performance Measure	Numerator	Denominator	Appropriate Screening Definition
<b>Government Performance and Results Act (GPRA) used by Indian Health Service</b>	July 1 to June 30	Proportion of clinically appropriate patients ages 50 to 75 who have received colorectal screening	Patients who have had any colorectal cancer screening	American Indian/Alaska Native patients ages 50 to 75, with at least two clinic visits in the past three years  <i>Exclusions: documented history of colorectal cancer or total colectomy</i>	Fecal occult blood test (FOBT) or Fecal Immunochemical Test (FIT) during report period; Flexible Sigmoidoscopy in past 5 years; Colonoscopy in past 10 years
<b>Health Care Effectiveness Data and Information Set (HEDIS)</b>	January 1 to December 31; measures reported to NCQA in June	Percentage of adults ages 50 to 75 who had appropriate screening for colorectal cancer	Patients in the denominator who received one or more screenings for colorectal cancer	All patients 51 to 75 years of age as of December 31 during the measurement year  <i>Exclusions: Colorectal cancer or total colectomy</i>	FOBT during the measurement year; flexible sigmoidoscopy during the measurement year or the four years prior to the measurement year; colonoscopy during the measurement year or the nine years prior to the measurement year; computerized tomography (CT) colonography during the measurement year or the four years prior to the measurement year; fecal immunochemical test (FIT)-DNA test (Cologuard®) during the measurement year or the two years prior to the measurement year
<b>Uniform Data System (UDS)</b>	January 1 to December 31; measures reported to HRSA in February	Percentage of patients ages 50 to 75 who had appropriate screening for colorectal cancer	Number of active patients 51 to 74 years of age who have received appropriate colorectal cancer screening	Number of patients who were 51 to 74 years of age at some point during the measurement year, who had at least one medical visit during the reporting year  <i>Exclusions: Have or have had colorectal cancer</i>	Guaiac-based FOBT, or FIT, during the measurement year; flexible sigmoidoscopy during measurement year or previous four years; colonoscopy during measurement year or previous nine years
<b>National Quality Forum</b>	January 1 to December 31	Percentage of adults ages 50 to 75 years who had appropriate	Number of patients with one or more	Number of patients 51 to 75 years of age with a visit during the measurement year	FOBT, including FIT, during the measurement year; Flexible Sigmoidoscopy during the measurement

Measure	Reporting Period	Performance Measure	Numerator	Denominator	Appropriate Screening Definition
<b>(NQF)-Endorsed Measure</b>		screening for colorectal cancer	screenings for colorectal cancer	<i>Exclusions: Colorectal cancer or total colectomy</i>	year or the four years prior to the measurement year; colonoscopy during the measurement year or the nine years prior to the measurement year

<sup>1</sup> National Committee for Quality Assurance (NCQA)

<sup>2</sup> Health Resources and Services Administration (HRSA)