American Medical Association (AMA)-convened
Physician Consortium for Performance Improvement® (PCPI®)
American Urological Association (AUA)

Prostate Cancer
Performance Measurement Sets

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Physician Performance Measures (Measures) and related data specifications have been developed by the American Medical Association (AMA)-convened Physician Consortium for Performance Improvement® (PCPI®). These Measures are not clinical guidelines and do not establish a standard of medical care, and have not been tested for all potential applications.

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Prostate Cancer
Measure Development Work Group*

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Intended Audience, Care Setting, and Patient Population

These measures are designed for use by physicians and for calculating reporting or performance measurement at the individual physician level. When existing hospital-level or plan-level measures are available for the same measurement topics, the PCPI attempts to harmonize the measures to the extent feasible.

These measures are designed for urologists and other physicians managing the ongoing care of male patients with a current diagnosis of prostate cancer. Male patients of all ages are included.

The PCPI also encourages the use of these measures by health care professionals in addition to physicians, where appropriate.

Prostate Cancer Measures

Measure #1: Initial Evaluation
This measure is stewarded by the American Urological Association. It has been removed from this document.

Measure #2: Initial Evaluation, New Diagnoses
This measure is stewarded by the American Urological Association. It has been removed from this document.

Measure #3: Avoidance of Overuse of Bone Scan for Staging Low Risk Prostate Cancer Patients

Measure #4: Treatment Options for Patients with Clinically Localized Disease
This measure is stewarded by the American Urological Association. It has been removed from this document.

Measure #5: Adjuvant Hormonal Therapy for High Risk Prostate Cancer Patients
This measure is stewarded by the American Urological Association. It has been removed from this document.

Retired Measures

Measure #6: Three-Dimensional Radiotherapy has been retired.

Measure Specifications

There are several data sources available for collecting performance measures; generally different data sources require different sets of measure specifications, due to the structure of the systems storing the data.

Quality measure technical specifications for administrative data sources are developed with administrative code sets – ICD-9-CM, ICD-10-CM, CPT, for example. A measure intended for administrative data source use or reporting may have significant differences in the specifications due to the nature of the various data sources. In administrative data sources, administrative or billing codes are typically used to identify eligible populations and reported immediately following the provision of care.

Quality measure technical specifications for electronic data sources are developed in alignment with national standards for clinical quality measures. Based on a measure's intended data sources, coding terminology recommendations and tools are used to create specifications to allow for clinical quality measure reporting. In electronic clinical data sources, data can be aggregated over a specific time period and also allow for greater ability to express certain types of data through use of the recommended terminologies for electronic sources.

The Centers for Medicare and Medicaid Services (CMS) developed *A Blueprint for the Measures Management System*, which provides guidance related to the development, implementation, and maintenance of clinical quality measures. Specific to eCQMs, this resource includes the recommended vocabularies used to develop the value sets used in the measures. The Blueprint can be found at the following webpage: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/MMS/MeasuresManagementSystemBlueprint.html

When expressing clinical concepts found within a measure, specifically for those electronically specified, the Value Set Authority Center (VSAC) is used as a repository for the value sets. The VSAC serves as a repository for value sets in various stages of development, from draft to published, and allows for maintenance of value sets as updates are made to terminologies. It also allows measure developers to search for value sets currently in the VSAC and stewarded by another organization which could potentially be reused in a measure, as an effort towards harmonization with existing value sets so as not to duplicate value sets already in use with the same or similar clinical concepts. The VSAC can be accessed at the following webpage: https://vsac.nlm.nih.gov/

The Quality Data Model (QDM) is a framework used to categorize clinical concepts used in quality measures, as well as the relationships among them for electronic specification. The QDM allows for an Health Quality Measures Format (HQMF) rendering of logic using the Measure Authoring Tool (MAT) to express complex measure logic, and subsequently export measures in several formats, currently including a human-readable document, which can be viewed in a web browser, and the XML.
Links to these tools are found below:
QDM: https://ecqi.healthit.gov/qdm

MAT: https://www.emeasuretool.cms.gov/

CMS and the Office of the National Coordinator for Health IT (ONC) host a website, the Electronic Clinical Quality Information Resource Center (eCQI Resource Center), which is designed to serve as a one-stop shop for all resources related to eCQM development.
The eCQI Resource Center can be accessed at: https://ecqi.healthit.gov/ecqm

Measure Exclusions and Exceptions

Measure Exclusions

The PCPI distinguishes between measure exceptions and measure exclusions. Exclusions arise when the intervention required by the numerator is not appropriate for a group of patients who are otherwise included in the initial patient or eligible population of a measure (ie, the denominator). Exclusions are absolute and are to be removed from the denominator of a measure and therefore clinical judgment does not enter the decision.

Measure Exceptions

Exceptions are used to remove a patient from the denominator of a performance measure when the patient does not receive a therapy or service AND that therapy or service would not be appropriate due to patient-specific reasons. The patient would otherwise meet the denominator criteria. Exceptions are not absolute, and are based on clinical judgment, individual patient characteristics, or patient preferences.

For ***process measures***, the PCPI provides three categories of exception reasons for which a patient may be removed from the denominator of an individual measure.

- **Medical reasons**
  Includes:
  - not indicated (absence of organ/limb, already received/performed, other)
  - contraindicated (patient allergic history, potential adverse drug interaction, other)

- **Patient reasons**
  Includes:
  - patient declined
  - social or religious reasons
  - other patient reasons

- **System reasons**
  Includes:
  - resources to perform the services not available
  - insurance coverage/payor-related limitations
  - other reasons attributable to health care delivery system

These measure exception categories are not available uniformly across all measures; for each measure, there must be a clear rationale to permit an exception for a medical, patient, or system reason. For some measures, examples have been provided in the measure exception language of instances that would constitute an exception. Examples are intended to guide clinicians and are not all-inclusive lists of all possible reasons why a patient could be excluded from a measure. There are different approaches for reporting measure exceptions, depending on whether the measure is being reported from an electronic clinical data source or an administrative data source.

Electronic Clinical Data Sources:
Value sets are included in the electronic clinical data source specifications for Medical Reason, Patient Reason and System Reason. These have been specified in SNOMED-CT and include a broad list of reasons that pertain to each type of exception and cover various situations. The contents of these value sets are broad, and facilitate re-use of the Medical, Patient, and System Reason value sets across measurement sets.

Administrative Data Sources
Exceptions reported from administrative data sources can be reported using a Quality Data Code (QDC), which may be a CPT Category II code or a G-code.

Where CPT Category II codes are used, the exception of a patient may be reported by appending the appropriate modifier to the CPT Category II code designated for the measure:

- **Medical reasons:** modifier 1P
- **Patient reasons:** modifier 2P
- **System reasons:** modifier 3P

Although this methodology does not require the external reporting of more detailed exception data, the PCPI recommends that physicians document the *specific* reasons for exception in patients' medical records for purposes of optimal patient management and audit-readiness. The PCPI also advocates the systematic review and analysis of each physician's exceptions data to identify practice patterns and opportunities for quality improvement. For example, it is possible for implementers to calculate the percentage of patients that physicians have identified as meeting the criteria for exception.

Please refer to documentation for each individual measure for information on the acceptable exception categories and the codes and modifiers to be used for reporting.

Measures #1-5 in the Prostate Cancer measurement set are process measures.
For ***outcome measures***, the PCPI specifically identifies all acceptable reasons for which a patient might be excluded from the denominator. Each specified reason is reportable with a CPT Category II code designated for that purpose.

There are no outcome measures in the Prostate Cancer measurement set.

The PCPI continues to evaluate and likely will evolve its methodology for handling exclusions and exceptions as it gains experience in the use of measures.

Measures Testing

The AMA-convened PCPI collaborated on a measure testing project in 2011 with ASTRO and AUA, to ensure one Prostrate Cancer measure was reliable and evaluated for accuracy of the measure numerator, denominator and exception case identification. The testing project was conducted utilizing chart, claims, and EHR data. Inter-rater reliability was tested. Five sites participated in the testing of the measures. Two sites were in suburban settings, two sites were in urban settings, and one had multiple practice sites in urban, rural and suburban settings. Site A was a hospital-based practice with 21 physicians. Site B was a physician-owned private practice with four physicians. Site C was a physician-owned private practice with 41 physicians. Site D was an academic practice with nine physicians. Site E was an academic practice with 14 physicians.

Measures Tested

- Prostate Cancer: Avoidance of Overuse Measure – Isotope Bone Scan for Staging Low-Risk Patients

Reliability Testing

The purpose of reliability testing was to evaluate whether the measure definitions and specifications, as prepared by the PCPI, yield stable, consistent measures. Data abstracted from chart records were used to calculate inter-rater reliability for the measures.

Reliability Testing Results

Prostate Cancer: Avoidance of Overuse– Isotope Bone Scan for Staging Low-Risk Patients

There were 94 observations from five sites used for the denominator analysis. The kappa statistic value was found to be non-calculable resulting from the inability to divide-by-zero in the statistic formula when only one response was used.

Of the 94 observations that were initially selected, 94 observations met the criteria for inclusion in the numerator analysis. The kappa statistic value was found to be non-calculable resulting from the inability to divide-by-zero in the statistic formula when only one response was used.

Reliability: N, % Agreement, Kappa (95% Confidence Interval)

Overall Reliability: 94, 100%, Non-Calculable (Non-Calculable, Non-Calculable)*
Denominator: 94, 100.00%, Non-Calculable (Non-Calculable, Non-Calculable)*
Numerator: 94, 100.00%, Non-Calculable (Non-Calculable, Non-Calculable)*
Exception: 94, 100.00%, Non-Calculable (Non-Calculable, Non-Calculable)*

This measure demonstrates perfect reliability, as shown in results from the above analysis.

*Cannot calculate kappa statistics when only one response (Yes/Yes) was used, as this causes a divide-by-zero error in the statistic formula.

Prostate Cancer Measure #1-#2 have been removed from this document

Prostate Cancer

Measure #1: Initial Evaluation
This measure has been removed from this document as it is maintained by the American Urological Association (AUA).

Measure #2: Initial Evaluation, New Diagnoses
This measure has been removed from this document as it is maintained by AUA.

Measures transitioned to the American Urological Association (AUA)

The Prostate Cancer measures transitioned to AUA are available at:

http://www.auanet.org/resources/aua-developed-measures.cfm

All measure inquiries may be sent to Suzanne Pope at spope@auanet.org

Measure #3: Avoidance of Overuse of Bone Scan for Staging Low Risk Prostate Cancer Patients

Measure Description

Percentage of patients, regardless of age, with a diagnosis of prostate cancer at low risk of recurrence receiving interstitial prostate brachytherapy, OR external beam radiotherapy to the prostate, OR radical prostatectomy, OR cryotherapy who did not have a bone scan performed at any time since diagnosis of prostate cancer

Measure Components

Numerator Statement	Patients who did not have a bone scan performed at any time since diagnosis of prostate cancer
Denominator Statement	All patients, regardless of age, with a diagnosis of prostate cancer at low risk of recurrence receiving interstitial prostate brachytherapy, OR external beam radiotherapy to the prostate, OR radical prostatectomy, OR cryotherapy Definition: Risk Strata Definitions: Low, Intermediate, or High - Low Risk - PSA <= 10 ng/mL; AND Gleason score 6 or less; AND clinical stage T1c or T2a.[1] Intermediate Risk - PSA > 10 to 20 ng/mL; OR Gleason score 7; OR clinical stage T2b, and not qualifying for high risk.[1] High Risk - PSA > 20 ng/mL; OR Gleason score 8 to 10; OR clinically localized stage T3a.[2] External beam radiotherapy - external beam radiotherapy refers to 3D conformal radiation therapy (3D-CRT), intensity modulated radiation therapy (IMRT), stereotactic body radiotherapy (SBRT), and proton beam therapy.
Denominator Exclusions	None
Denominator Exceptions	Documentation of reason(s) for performing a bone scan (including documented pain, salvage therapy, other medical reasons, bone scan ordered by someone other than reporting physician)
Supporting Guidelines	The following clinical recommendation statements are quoted verbatim from the referenced clinical guidelines and represent the evidence base for the measure: Routine use of a bone scan is not required for staging asymptomatic men with clinically localized prostate cancer when their PSA level is equal to or less than 20.0 ng/mL.[3] For symptomatic patients and/or those with a life expectancy of greater than 5 years, a bone scan is appropriate for patients with any of the following: 1) T1 disease with PSA over 20 ng/mL or T2 disease with PSA over 10 ng/mL; 2) a Gleason score of 8 or higher; 3) T3 to T4 tumors; or 4) symptomatic disease.[4] (NCCN Category 2A)

Measure Importance

Relationship to desired outcome	The process of identifying the patient´s risk strata prior to ordering any imaging studies is related to improved outcomes, including cost reduction and reduction of radiation exposure.

Measure Designation

Measure purpose	Accountability Quality Improvement
Type of measure	Process
Level of Measurement	Clinician: Individual Clinician: Group/Practice
Care setting	Ambulatory Care: Ambulatory Surgery Center (ASC), Ambulatory Care: Clinician Office/Clinic, Other
Data source	Electronic health record Registry Administrative Claims

Prostate Cancer Measure #4-#5 have been removed from this document

Prostate Cancer

Measure #4: Treatment Options for Patients with Clinically Localized Disease
This measure is stewarded by AUA. It has been removed from this document.

Measure #5: Adjuvant Hormonal Therapy for High Risk Prostate Cancer Patients
This measure is stewarded by AUA. It has been removed from this document.

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All measure inquiries may be sent to Suzanne Pope at spope@auanet.org

Evidence Classification/Rating Schemes

NCCN Categories of Evidence and Consensus

Category 1: The recommendation is based on high-level evidence (e.g. randomized controlled trials) and there is uniform NCCN consensus.

Category 2A: The recommendation is based on lower-level evidence and there is uniform NCCN consensus.

Category 2B: The recommendation is based on lower-level evidence and there is no uniform NCCN consensus (but no major disagreement).

Category 3: The recommendation is based on any level of evidence but reflects major disagreement.

References

[1] American Urological Association (AUA). Guideline for the Management of Clinically Localized Prostate Cancer: 2007 update. J Urol. 2007;177:2106-2131.
[2] National Comprehensive Cancer Network (NCCN). Clinical Practice Guidelines in Oncology: Prostate Cancer. Version 4.2011. Available at www.nccn.org
[3] American Urological Association Education and Research, Inc. PSA testing for the pretreatment staging and posttreatment management of prostate cancer: 2013 Revision of 2009 Best Practice Statement. Linthicum, MD: American Urological Association Education and Research, Inc. 2013. Available at: https://www.auanet.org/common/pdf/education/clinical-guidance/Prostate-Specific-Antigen.pdf
[4] National Comprehensive Cancer Network (NCCN). Clinical Practice Guidelines in Oncology: Prostate Cancer. Version 1.2015. Available at www.nccn.org

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APPENDIX A

Prostate Cancer Performance Measurement Specifications

Coding Reviewed and Updated: August, 2015

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Prostate Cancer

Measure #3: Avoidance of Overuse of Bone Scan for Staging Low Risk Prostate Cancer Patients

A. Specifications for Administrative Data Sources

Denominator (Eligible Population)	All patients, regardless of age, with a diagnosis of prostate cancer at low risk of recurrence, receiving interstitial prostate brachytherapy, OR external beam radiotherapy to the prostate, OR radical prostatectomy, OR cryotherapy **Definitions:** Risk Strata Definitions: Low, Intermediate, or High - Low Risk - PSA <= 10 ng/mL; AND Gleason score 6 or less; AND clinical stage T1c or T2a. (AUA, 2007) Intermediate Risk - PSA > 10 to 20 ng/mL; OR Gleason score 7; OR clinical stage T2b, and not qualifying for high risk. (AUA, 2007) High Risk - PSA > 20 ng/mL; OR Gleason score 8 to 10; OR clinically localized stage T3a. (NCCN, 2011) External beam radiotherapy - external beam radiotherapy refers to 3D conformal radiation therapy (3D-CRT), intensity modulated radiation therapy (IMRT), stereotactic body radiotherapy (SBRT), and proton beam therapy. **Denominator Criteria:** Any male patient, regardless of age **AND** Diagnosis for prostate cancer (ICD-9-CM) [reportable through 9/30/2015]: 185 Diagnosis for prostate cancer (ICD-10-CM) [reportable beginning 10/1/2015]: C61 **AND** Patient encounter during the reporting period (CPT): 55810, 55812, 55815, 55840, 55842, 55845, 55866, 55873, 55875, 77427, 77435, 77776, 77777, 77778, 77787 **AND** **Report CPT Category II code:** 3271F: Low risk of recurrence, prostate cancer
Denominator Exclusions	None
Numerator	Patients who did not have a bone scan performed at any time since diagnosis of prostate cancer **Report CPT Category II code:** 3270F: Bone scan not performed prior to initiation of treatment nor at any time since diagnosis of prostate cancer
Denominator Exceptions	Documentation of reason(s) for performing a bone scan (including documented pain, salvage therapy, other medical reasons, bone scan ordered by someone other than reporting physician)

	Append modifier to CPT Category II code: 3269F-1P: Documentation of medical reason(s) for performing a bone scan (including documented pain, salvage therapy, other medical reasons) 3269F-3P: Documentation of system reason(s) for performing a bone scan (including bone scan ordered by someone other than reporting physician)

B. Specifications for Electronic Clinical Data Sources

As of the date of the posting of this document, this measure is currently in use in CMS' EHR Incentive Program (Meaningful Use). The specifications are updated on a regular basis and published on the CMS website. To download the electronic specifications for this measure, visit CMS' eCQM Library and view the most recent publishing:
http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/eCQM_Library.html

Additional resources for eCQM implementation can also be found at the eCQI Resource Center webpage: https://ecqi.healthit.gov/

Accompanying value sets are available in the Value Set Authority Center (VSAC) found at the following webpage: https://vsac.nlm.nih.gov/