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# CALCULATING PERFORMANCE MEASURES

A Protocol for use in Conducting Medicaid External Quality Review Activities

Department of Health and Human Services
Centers for Medicare & Medicaid Services

## Final Protocol
## Version 1.0

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# CALCULATING PERFORMANCE MEASURES

## I. PURPOSE OF THE PROTOCOL

This protocol specifies activities to be undertaken by an external quality review organization (EQRO)[1] in order to:

1. Calculate measures of Managed Care Organization (MCO) or Prepaid Inpatient Health Plan (PIHP) performance in accordance with specifications prescribed by the State Medicaid agency, and

2. Provide information to the State on the extent to which the MCO's/PIHP's Information Systems (ISs) provided accurate and complete information necessary for the calculation of performance measures.

## II. ORIGIN OF THE PROTOCOL

This protocol was derived from protocols and tools commonly used in the public and private-sectors for auditing performance measures. These include:

- The National Committee for Quality Assurance's (NCQA) 1999 Health Plan Employers Data and Information Set (HEDIS)® publication: *Volume 5, HEDIS Compliance Audit™ Standards and Guidelines*;
- Tools used by the Island Peer Review Organization (IPRO) in their audits of HEDIS measures for Medicare; and
- Documents from the MEDSTAT Group, Inc., published in conjunction with work performed in 1997 and 1998 for the Centers for Medicare & Medicaid Services (CMS) (formerly the Health Care Financing Administration (HCFA)).

A review of these tools found that, while there were differences, these documents had much in common.

Both NCQA's and IPRO's documents address the validation of HEDIS measures only. They assess:

- The structure and integrity of the MCO's/PIHP's underlying information system (IS),
- MCO/PIHP ability to collect valid data from various internal and external sources;

[1] It is recognized that a State Medicaid agency may choose an organization other than an EQRO as defined in Federal regulation to calculate Managed Care Organization (MCO) prepaid inpatient health plan (PIHP) performance measures. However, for convenience, in this protocol we use the term, "EQRO" to refer to any organization that calculates performance measures.

- Vendor (or subcontractor) data and processes, and the relationship of these data sources to those of the MCO/PIHP,
- MCO/PIHP ability to integrate different types of information from disparate data sources into a data repository or set of consolidated files for use in constructing MCO/PIHP performance measures, and
- Documentation of the MCO's/PIHP's processes to: collect appropriate and accurate data, manipulate those data through programmed computer queries, internally validate the results of the operations performed on the data sets, follow specified procedures for calculating the specified performance measures, and report the measures appropriately.

The MEDSTAT publications focus primarily on validation of encounter-level data, and the use of those data in Medicaid MCO performance measures, regardless of whether the performance measures are based on the NCQA Medicaid HEDIS measures or have been developed by other groups or organizations. However, the MEDSTAT publications do not provide detailed instructions or guidelines that an EQRO might use to validate the MCO/PIHP performance measures once the encounter data are validated.

The protocol presented here is consistent with the approaches used in the IPRO and NCQA documents, but is designed with a MEDSTAT-like approach in that it describes how to calculate all performance measures - HEDIS measures as well as non-HEDIS measures. It varies from the IPRO and NCQA protocols in that one component of performance measure calculation may be performed as a part of this protocol or accomplished through some other mechanism(s) used by the State. Specifically, an assessment of the MCO's/PIHP's IS is required as part of this protocol. This IS assessment may be conducted as a part of this protocol by the EQRO calculating the performance measures, or the EQRO may review an assessment of the MCO's /PIHP's IS conducted by another party.

## III. OVERVIEW OF THE PROTOCOL

The protocol assumes that the State Medicaid agency will prescribe: 1) the performance measures to be calculated by the EQRO, 2) the specifications and methodology to be followed in calculating the measures, and 3) the format and mechanisms for reporting these measures to the State. Protocol activities include:

1. Determining the extent to which the MCO's or PIHP's IS is capable of collecting and integrating data from all components of its network, in order to enable valid measurement of its performance on dimensions of care specified by the State;

2. Validly measuring MCO/PIHP performance on the dimensions specified by the State through adherence to technical specifications defined by the State;

3. Timely reporting to the State the specified performance measures in the format defined by the State; and

4. Reporting the findings of the EQRO activities in a manner that facilitates understanding of the MCO's/PIHP's performance against any State-established minimum levels for performance.

The protocol consists of three phases: Pre-Onsite, Onsite and Post-Onsite activities. For each of the three audit phases, the protocol specifies outcomes or objectives and lists the activities to be performed. Methods of evaluation are suggested and tools and worksheets are provided throughout the protocol and as attachments to the protocol.

**Pre-Onsite** activities are directed to assessing the MCO's/PIHP's capabilities to collect and integrate complete and accurate medical, financial, member, and provider information, covering both clinical and service-related data, from internal and external sources. Data in these areas are frequently needed to validly calculate performance measures. In general, these activities include:

1. Communicating with the State to ensure that the EQRO understands the measures to be calculated, specifications and any other methodological instructions to be followed when calculating each measure, and the required format for reporting calculated performance measures to the State; and

2. Either conducting an assessment of, or reviewing the results of a prior assessment of, the MCO's/PIHP's underlying IS.

**Onsite** activities focus on: 1) following-up on IS findings identified in the Pre-Onsite activities as being potentially problematic or in need of further review or clarification; and 2) validly calculating the State-mandated performance measures according to the State's specifications. These activities involve:

1. Reviewing and assessing the policies and procedures an MCO/PIHP has in place for collecting and integrating medical, financial, member and provider information, covering both clinical and service-related data, from internal and external sources; and

2. Calculating denominators, numerators and performance measurement rates whether using an administrative, hybrid, or medical record review methodology.

**Post-Onsite** activities focus on the submission of the performance measure calculations and supporting documentation to the State. Activities include:

1. Evaluating gathered information and preparing preliminary findings,

2. Submitting preliminary findings to the MCO/PIHP for review prior to submission to the State,

3. Evaluating gathered information and preparation of findings for the State, and

4. Submitting reports to the State.

## IV. PROTOCOL ACTIVITIES

### *PRE-ONSITE ACTIVITIES*

**Objectives for Pre-Onsite Activities:**

The EQRO will:

- Understand the technical specifications for each performance measure required by the State;
- Understand the State's requirements for performance measure reporting by the EQRO to the State (e.g., report template, electronic submission format, etc.); and
- Conduct and review an assessment (or review the results of a previously conducted assessment) of the MCO's/PIHP's IS.

**PRE-ONSITE ACTIVITY 1: Review the State's requirements for performance measurement and reporting.**

The EQRO will need to obtain from the State a list of all performance measures that the State requires the EQRO to produce. The EQRO will also need to obtain the State's instructions (specifications) on how the EQRO is to calculate each performance measure.

The specific performance measures that a State requires its EQRO(s) to calculate will depend on a number of factors unique to each State. If a State chooses to use a set or subset of established standardized MCO/PIHP performance measures, there are a number of options from which to choose. These include the NCQA's HEDIS measures, measures identified by the Foundation for Accountability (FACCT), measures found in the Agency for Healthcare Research and Quality's (AHRQ's) CONQUEST database, or measures suggested by MEDSTAT in its publication, *A Guide for States to Assist in the Collection and Analysis of Medicaid Managed Care Data*[2]. In addition, States with the resources and expertise to develop and test the detailed specifications necessary for valid and reliable performance measures may establish their own performance measures. Regardless of the type or number of performance measures chosen by the State, the EQRO must understand the State's specifications (e.g., sampling guidelines, instructions for calculating numerators and denominators) for each performance measure, as well as the State's instructions for reporting the required performance measures to the State.

[2]Prepared under CMS Contract #500-92-0035. December 1998.

Four basic data collection methodologies typically are used to produce MCO/PIHP performance measures: 1) use of administrative data, 2) review of medical records, 3) use of administrative data together with medical record review (commonly called the "hybrid" methodology), and 4) use of surveys.

Use of administrative data requires access to data contained in MCO/PIHP management information system(s) to calculate both the denominator and numerator of a given performance measure. Such data includes encounter or claims data (transaction data) as well as other automated enrollee and provider information. The rate that is reported is based on information found solely in these administrative data sources.

Calculating performance measures from medical record review requires the visual inspection of the medical records of a sample of MCO/PIHP enrollees (denominator) to determine if each enrollee received the service(s) in question (typically, this is the numerator of the performance measure). Because medical record reviews are time-consuming and costly, most developers and users of performance measures are attempting to use, to the extent feasible, performance measures that can be calculated from administrative data. If medical record review is unavoidable, the less costly and less burdensome "hybrid" methodology can be used.

The hybrid methodology combines the use of administrative data with a review of medical records. The denominator of the measure is first identified using administrative data for a sample of eligible members. The numerator is then determined using data from both administrative and medical record reviews. Typically, MCO/PIHP administrative data is first queried for evidence of the numerator event for all individuals included in the denominator sample. For any member of the sample who is missing an administrative notation that the numerator service was received, the medical record is reviewed.

Finally, surveys also are used to produce MCO/PIHP performance measures. Surveys may include information collected directly from enrollees, relatives, primary caregivers of enrollees, or providers of healthcare services. Administration and validation of surveys are complex subjects and are discussed in separate external quality review (EQR) protocols.

States may require or allow EQROs to report performance measures to the State in different ways. A State may choose to have MCO/PIHP performance measures reported to it in an electronic format, such as a comma-delimited, ASCII file; or it may establish a set of electronic reporting "shells" that EQROs fill out and send to the State. States could also allow hardcopy submission of calculated performance measures.

States will also determine the timing of the submission of the calculated performance measures. Typically, States require performance measures to be calculated and submitted annually. The annual submissions may be timed to coincide with the end of the State fiscal year, the calendar year, or another reporting cycle, such as the reporting cycle used by NCQA for HEDIS submissions. It is incumbent on the EQRO to understand the expected dates and report format for performance measure reporting.

To facilitate its calculation of performance measures, the EQRO should create a "List of Performance Measures to be Calculated" (such as that shown in TABLE 1 below) in order to understand: 1) the measures required by the State, 2) which method or methods the State allows the EQRO to use to calculate the measures, and 3) the reporting frequencies and format mandated by the State.

**TABLE 1**

## List of Performance Measures to be Calculated (EXAMPLE)

| SAMPLE MEASURES | METHOD FOR CALCULATING PERFORMANCE MEASURES | | | | |
|---|---|---|---|---|---|
| | **Administrative Data** | **Medical Record Review** | **Hybrid** | **Survey** | **Reporting Frequency and Format** |
| ***The table should have a row for each measure to be calculated and reported by the EQRO, as illustrated below:*** | | | | | |
| Childhood immunization rate | | | | | |
| Adolescent immunization rate | | | | | |
| Percentage of enrollees with at least one PCP visit | | | | | |
| Lead screening rate | | | | | |
| Breast cancer screening rate | | | | | |
| Initiation of prenatal care | | | | | |
| Comprehensive diabetes care | | | | | |
| Availability of language interpretation services | | | | | |
| Follow-up after hospitalization for mental illnesses | | | | | |
| Women's chlamydia screening rate | | | | | |
| Rate of adverse asthma events | | | | | |

For each performance measure in the list, the EQRO should construct a companion performance measurement worksheet that contains the calculation elements and State-mandated specifications for a given measure. The elements of performance measure calculation include the following:

| | | |
|---|---|---|
| 1. | Data collection methodology: | Measurement plans and programming specifications that include data sources, programming logic, computer source code |
| 2. | Sampling methodology (if used): | Specifications for sample size and replacement methodologies |
| 3. | Denominator: | Appropriate and complete data sources used (e.g., claims files, medical records, provider files, pharmacy records)<br><br>Denominator components such as member ID, age, gender, continuous enrollment calculation, clinical codes such as ICD-9, CPT-4, member months calculation, member years calculation, and adherence to specified time parameters. |
| 4. | Numerator: | Data sources used (e.g., member ID, claims files, medical records, provider files, pharmacy records, including those for members who may have received the services outside the MCO's/PIHP's network)<br><br>Numerator components such as clinical codes (such as ICD-9, CPT-4, DSM-IV), pharmacy data, relevant time parameters such as admission/discharge dates or treatment start and stop dates, adherence to specified time parameters, number or type of provider.<br><br>If medical record abstraction included, the documentation/tools used |
| 5. | Calculated rates | |

Each of these components should be customized to include appropriate and specified measure elements, as defined by the State-mandated performance measure. An example of a completed Performance Measure Calculation Worksheet for a performance measure of Breast Cancer Screening is contained in TABLE 2, next page.

# TABLE 2

## Completed Example of a Performance Measure Calculation Worksheet

***Note: This worksheet assumes that the State has adopted the HEDIS methodology for this performance measure.***

**PERFORMANCE MEASURE TO BE CALCULATED: BREAST CANCER SCREENING**

| METHODOLOGY FOR CALCULATING MEASURE (check one): | ADMINISTRATIVE | MEDICAL RECORD REVIEW | HYBRID |
|---|---|---|---|

| PERFORMANCE MEASURE ELEMENT | PERFORMANCE MEASURE SPECIFICATIONS |
|---|---|
| **DENOMINATOR** | |
| 1. Population | • Medicaid population appropriately segregated from commercial/Medicare<br>• Population defined as effective Medicare enrollment as of Dec. 31, 2000<br>• Dual Medicaid and Medicare beneficiaries are included |
| 2. Geographic Area | • Includes only those Medicaid enrollees served in the MCO's/PIHP's Medicaid service and reporting area. |
| 3. Age & Sex | • Members aged 52-69 as of 12/31/00 (i.e., born between 1/1/31 & 12/31/48<br>• Only females selected |
| 4. Enrollment Calculation | • Was member of plan on 12/31/00<br>• Was continuously enrolled from 1/1/99 to 12/31/00 with one break, per year, of up to 45 days allowed<br>• Switches between populations (Medicare, Medicaid, and commercial) are not counted as breaks |
| 5.Data Quality | • Based on the IS process audit findings, are any of the data sources for this denominator inaccurate? |
| 6. Proper Exclusion Methodology in Administrative Data (if no Exclusions were taken, check NA) | • Only members with contraindications or data errors may be excluded.<br>• Contraindication exclusions are allowed only as per current State specifications<br>• Only the codes listed in specifications defined by State are counted as contraindications |
| **NUMERATOR** | |
| 7. Administrative Data: Counting Clinical Events | • Utilize the standard codes listed in State specifications or properly map all internally developed codes. (Intended to reference appropriate specifications as defined by State)<br>• Members are counted only once; double counting of mammograms is prevented |
| | • Record abstraction tool requires notation of the date that the mammogram was |

| PERFORMANCE MEASURE ELEMENT | PERFORMANCE MEASURE SPECIFICATIONS |
|---|---|
| 8. Medical Review Documentation Standards | performed<br>• Record abstraction tool requires notation of the mammogram result or finding |
| 9. Time Period | • Mammogram performed on or between 1/1/99 & 12/31/00 |
| 10. Data Quality | • Properly identify enrollees |
| | • Based on the IS process audit findings, are any of the data sources used for this numerator inaccurate? |
| **SAMPLING** | |
| 11. Unbiased Sample | • As specified in State specifications, systematic sampling method is utilized |
| 12. Sample Size | • After exclusions, sample size is equal to (1) 411, (2) the appropriately reduced sample size, which used the current year's administrative rate or preceding year's reported rate, or (3) the total population |
| 13. Proper Substitution Methodology in Medical Record Review (If no exclusions were taken, check NA) | • Only exclude members for whom medical record review revealed (1) contraindications that correspond to the codes listed in Table XX or (2) data errors. (Intended to reference appropriate specifications as defined by State)<br>• Substitutions are made for properly excluded records and the percentage of substituted records is documented |

**CALCULATED RATE =**

**PRE-ONSITE ACTIVITIES 2: Prepare the MCO/PIHP for EQRO Onsite Activities.**

Prior to conducting onsite activities, the EQRO will contact the MCO/PIHP in order to:

- Explain the procedures and time line for performance measure calculation activities,

- Request identification of personnel within the MCO/PIHP who will be responsible for responding to EQRO requests for documentation or information, as well as scheduling activities and interviews, and

- Communicate the EQRO's policies and procedures with respect to safeguarding confidential information.

An introductory letter to the MCO/PIHP should discuss the above issues and explain the EQRO's potential need to interview MCO/PIHP personnel, so that interviewees are prepared in terms of time and information. Potential interviewees include any MCO/PIHP or vendor staff whose areas of expertise or responsibility relate to performance measurement and whose insights might improve the EQRO's understanding of MCO/PIHP processes to collect and integrate the information necessary for calculating performance measures. These include, for example: the Director of Health/Medical Information Systems, IS programmers or operators, Director of Member/Patient Services, Director of Utilization Management, and the Director of Quality Improvement.

In addition, the EQRO will provide three other documents to the MCO/PIHP in preparation for its onsite activities:

1. **A list and description of all State-required performance measures to be calculated by the EQRO;** a completed Table 1 should be sent to the MCO/PIHP, and

2. **An Information Systems Capabilities Assessment Tool (ISCA).**

The EQRO will send an ISCA tool to the MCO/PIHP, to be completed and returned to the EQRO prior to the onsite visit. The ISCA consists of questions and requested documentation to provide the EQRO with background information on the MCO's/PIHP's policies and processes pertaining to data collection and integration that are necessary for calculating performance measures. The ISCA is discussed in detail, in Pre-Onsite Activity 3. A recently conducted ISCA by another party can be used.

**3. A list of documents that the EQRO may potentially review during onsite activities.**

The EQRO also will forward to the MCO/PIHP a list of documents that the EQRO might review during the course of analyzing and understanding ISCA findings. This list is intended to assist the MCO/PIHP in preparing for the calculation of performance measures by the EQRO. This list is found as Attachment I.

**PRE-ONSITE ACTIVITY 3: Assess the integrity of the MCO's/PIHP's information system.**

Complete and accurate data are keys to valid and reliable performance measurement. If these two data characteristics are not maintained, then calculated measures are at risk of being biases, and their validity jeopardized. Therefore, prior to calculating individual performance measures, the EQRO must first have knowledge of the integrity of the MCO's/PIHP's IS and the completeness and accuracy of the data contained in that system.

**Methods of Evaluation**

Prior to conducting the onsite visit, the EQRO should send to the MCO/PIHP an ISCA such as that located in Appendix Z. The ISCA asks questions of and requests documentation from the MCO/PIHP in order to provide information on how the MCO/PIHP collects and integrates data. This will help the EQRO to calculate performance measures. The ISCA found in Appendix Z corresponds to the key objectives identified in this protocol. The first section of the ISCA provides general background information on the MCO/PIHP. Subsequent sections address the structural components of the IS, focusing on the collection of administrative, encounter, and clinical data, and the consolidation or coordination of those data files for use in performance measurement and quality improvement activities.

The ISCA also requests information from the MCO/PIHP concerning the conduct and timing of any other recent, independent, documented assessment of its IS. An assessment may already have been conducted by the State itself or by another entity. IS assessment could have been performed as a component of validating encounter data or determining compliance with Medicaid standards pertaining to MCO/PIHP ISs. If the MCO/PIHP has not had an IS capability assessment completed, or has not had one completed within a time frame that meets State specifications[3], the EQRO will conduct an IS evaluation as part of this protocol, using an IS assessment tool, such as that in Appendix Z. Alternatively, if the MCO/PIHP recently had an evaluation of its IS, the EQRO could review the results of this prior assessment.

[3] Each State will determine the frequency with which it wants an MCO's/PIHP's IS capability assessment to take place (thereby determining the length of time such an assessment is valid). On the one hand, the process is time- and resource-intensive, so limiting the burden on the MCO/PIHP should be a factor in the determination. On the other hand, IS technology changes rapidly, so the State should ensure that changes to an MCO's/PIHP's IS are assessed frequently enough to ensure that the structure and function continue to be adequate for the State-required tasks.

The EQRO should assess the MCO's/PIHP's IS using questions and approaches such as those contained in Appendix Z, or review the results of a recent IS assessment consistent with the content in Appendix Z. This will ensure that auditors are familiar with the strengths and weaknesses of the MCO's/PIHP's IS. As the EQRO reviews the IS assessment report, it should pay close attention to the strengths and weaknesses of the MCO's/PIHP's IS with respect to the types of data frequently used in MCO/PIHP performance measures, such as data on: membership/enrollment, providers, claims/encounters, laboratory and pharmacy services, and medical record data. Some of the characteristics commonly associated with these data elements that may affect the calculation of performance measures are:

- **Membership/Enrollment Data.** Elements of the membership or enrollment database will vary by MCO/PIHP. However, for the purposes of MCO/PIHP performance measurement, the membership or enrollment database should capture at least the following information:
    - age/date of birth.
    - enrollment and/or termination dates. ***(Note: The MCO's/PIHP's data system should be able to track multiple enrollment and termination dates)***.
    - primary care provider (e.g., name, provider identification number).
    - member identification number such as the member's social security number, MCO- or PIHP-designated number, State-issued Medicaid number, CMS-issued Medicare number. ***(Note: Be aware of cases in which more than one member may exist under the same identification number within the system; or in which the same member may exist under more than one identification number within the system; or in which a member's identification number may change through re-enrollment, name change, or switch in product-line coverage)***.

  The EQRO also should be aware of whether the MCO/PIHP has processes in place to periodically ensure that enrollment/membership data are current and accurate, particularly at the time it runs its source code/computer programs to identify denominators for MCO/PIHP performance measures.

  Further, the EQRO should be aware of changes in the MCO's/PIHP's membership data systems that might affect the production of the MCO/PIHP performance measures. Major changes, upgrades, or consolidations within the system, or acquisitions/mergers with other MCOs/PIHPs may impact the accuracy or completeness of any of the data elements, which, in turn, may impact the validity of the reported measures.

- **Provider Data.** Elements of the provider data set should typically include:
    - Designation as a primary care physician and/or providers' specialty.
    - Provider identification number, such as a Tax ID number, or MCO- or PIHP-designated number. (Note: Though it may be less common to see duplication of provider numbers within a provider database than duplication of member identifications within a membership/enrollment database, the EQRO should be

aware of any circumstances in which more than one provider can exist with the same identification number within the system, or circumstances in which the same provider may have more than one identification number within the system).
  - Providers with more than one office location.
  - Providers with closed panels (i.e., provider availability).
  - Provider start and termination dates.
  - Provider certification data such as licensure, provider residency/fellowship, date, and specialty of Board Certification status.

The EQRO should be aware of whether the MCO/PIHP has processes in place to periodically ensure that provider data are current and accurate for all types of providers (individual providers, provider groups, provider networks, contracted vendors). This becomes particularly important at the time the MCO/PIHP runs its source code/computer programs to identify elements of MCO/PIHP performance measures.

Further, the EQRO should be aware of changes in the MCO's/PIHP's provider data systems that might affect the production of the performance measures. Major changes, upgrades, or consolidations within the system, or acquisitions/mergers with other MCOs/PIHPs may impact the accuracy or completeness of any of the data elements, which, in turn, may impact the validity of the reported measures.

- **Claims Data and Encounter Data.** Claim/encounter data should cover all types of services offered by the MCO/PIHP, such as behavioral health, family planning, home health care, hospital, laboratory, pharmacy, primary care, radiology, specialty care, vision care. These data typically include the following elements:

| | |
|---|---|
| - Patient ID | - Name |
| - Sex | - Age |
| - Date of birth | - First date of service |
| - Last date of service | - Place of service |
| - Primary diagnosis | - Secondary diagnosis |
| - Primary procedure | - Secondary procedure |
| - Revenue codes | - Provider ID |
| - Provider specialty | - Discharge status |

For each type of claim/encounter data captured, the EQRO should be aware of: 1) the total number of diagnosis and procedure codes that can be captured by the system; 2) whether or not principal or secondary diagnosis or procedure codes can be accurately distinguished in the system; and 3) the maximum number of digits or characters the system captures for each type of claim/encounter. For many MCO/PIHP performance measures, the accuracy and validity of the measure may be adversely affected if the MCO's/PIHP's IS is unable to collect and/or differentiate among a sufficient number of codes.

The various coding systems and forms used by the MCO/PIHP and its vendors to capture clinical information through its claims and encounter databases are relevant to validating MCO/PIHP performance systems. *Coding systems are formal, standardized approaches (such as ICD-9, CPT-4, DSM-IV, revenue codes, or internally developed codes) to categorize types of encounters and procedures by data elements such as inpatient and ambulatory diagnoses and procedures for medical, surgical, or mental health/substance abuse encounters/claims.* ***(Note that internally developed codes may be particularly problematic)***. The EQRO should understand how the MCO's/PIHP's IS translates or maps these codes back to standard codes for MCO/PIHP performance measure reporting, and how it ensures the accuracy of these translation processes.

- **Medical Record Data.** In cases where medical records are accessed to obtain information for calculating MCO/PIHP performance measures, the EQRO should be aware of how the MCO/PIHP retrieves information from medical records. For example, the training and tools that medical record review staff receives may affect the accuracy and completeness of the data retrieval and inter-rater reliability. A second area of concern is how medical record data is entered into any database that will be used to produce the performance measures.

- **Pharmacy and Laboratory Data.** A key issue commonly encountered with pharmacy and laboratory data for Medicaid managed care MCOs/PIHPs is that these services are frequently contracted out to a variety of providers. Ideally, pharmacy data will use standardized codes for prescription drugs such as those promulgated by the National Council for Prescription Drug Programs (NCPDP), and laboratory services will use a similar, nationally recognized system of coding. However, the diverse nature of the size, type, and ownership of pharmacy and laboratory providers should lead the EQRO to anticipate wide variations in the use of standardized coding and a multitude of unique "home grown" codes. These non-standard coding schemes require that the MCO/PIHP have a system to develop crosswalks among these different codes in order to store the necessary information in its performance measure database. As with the assessment of the claims/encounter data systems, the EQRO should understand not only the MCO's/PIHP's system of mapping non-standard pharmacy and lab codes to standardized codes, but the mechanism the MCO/PIHP uses to ensure the accuracy of these translation processes.

  If pharmacy or laboratory data are not collected through an administrative or claims database, pharmacy or lab data may be present in medical records. However, relying on medical records to supply pharmacy or laboratory data is problematic because of obstacles such as non-standard coding and terminology and poor coordination of records and record linkages between primary care and specialist providers. The EQRO should be aware of these issues and question providers on the reliability of medical record data and pharmacy data as appropriate.

In addition, for many MCO/PIHP performance measures, the IS will need to be able to link these different sources of data. These linked data sets are used to generate comprehensive reports and information capable of being segmented by member identification and characteristics, site of

delivery, primary and secondary diagnoses, primary and secondary procedures, and provider identification. For example, in order to identify enrollees with diabetes, an MCO/PIHP may have to combine diagnosis code data from inpatient or ambulatory encounters (not all ongoing conditions are reported at every encounter) with pharmacy data, lab data, and/or a disease registry if one exists. To determine whether these diabetic enrollees have received a retinal examination from an ophthalmologist or optometrist within the previous year, the MCO/PIHP would have to link procedure code data from either encounter forms, medical records, or claims with information about the specialty of the providers that performed the examinations for these members.

The EQRO will analyze the results of the assessment of the MCO's/PIHP's IS and determine the implications of the findings for the calculation of the performance measures specified by the State. The EQRO will evaluate MCO/PIHP answers against IS capabilities necessary to accurately and completely calculate and report the specific MCO/PIHP performance measures mandated by the State, and will identify any problem areas or items in need of clarification. Where an answer seems incomplete, or indicates an inadequate process, the EQRO notes this issue for follow-up and further review during the onsite activities. This will help the onsite activities focus on the areas most likely to be an issue in calculating performance measures.

## ONSITE ACTIVITIES

Key Outcomes and Objectives

- The EQRO will validate that the MCO/PIHP has adequate data integration and control necessary for accurate reporting of performance measures.

- The EQRO will completely and accurately document data and processes used to collect, calculate, and report performance measures.

- The EQRO will appropriately and correctly implement processes to calculate and report MCO/PIHP performance measures.

### ONSITE ACTIVITY 1: Assess Data Integration and Control Necessary for Accurate Calculation of Performance Measures

Methods of Evaluation

The emphasis of this activity is not whether the MCO/PIHP is capable of performing the data integration and control necessary for collecting the performance measures. Rather, the emphasis is on determining whether the MCO/PIHP has utilized those proven capabilities in a manner that assures that the MCO/PIHP can reliably and validly capture the entire population without

systematically excluding a subset or subsets of the entire population. In this way, the EQRO can assure that calculations based on those data sets are also reliable and valid.

In Pre-Onsite Activity 1, the EQRO confirms that the MCO/PIHP's IS has the capacity to collect valid data from sources internal to the organization as well as those external to the organization. This first onsite activity assesses the MCO's/PIHP's capability of linking the data from multiple sources in order to proceed with the calculation of the State-mandated performance measures. During this activity, the EQRO will:

- Examine the details of the MCO's/PIHP's processes to accurately and completely transfer data from the transaction files (i.e., membership, provider, encounter/claims) into the repository used to keep the data until the calculations of the performance measures have been completed and validated.

- Examine samples of data to assess completeness and accuracy.

- Investigate the MCO's/PIHP's processes to consolidate diversified files, and to extract required information from the performance measure repository.

- Compare actual results of file consolidations or extracts to those that should have resulted according to documented algorithms or specifications.

- Review procedures for coordinating the activities of multiple subcontractors in ways that ensure the accurate, timely, and complete integration of the data into the performance measure database.

- Review computer program reports or documentation that reflect these vendor coordination activities, and spot check to verify that no data necessary to performance measure reporting are lost or inappropriately modified during transfer.

- If the MCO/PIHP uses one, evaluate the structure and format of the performance measure data repository (or data warehouse), and examine program flow charts to determine the extent to which the repository/warehouse enables analyses and reports.

- Assess the extent to which proper linkage mechanisms have been employed to join data from all necessary sources (e.g., identifying a member with a given disease/condition).

- Examine program flow charts and source code to assess the extent to which the data repository/warehouse has enabled analyses and report preparation.

Potential interviewees in support of this activity might include the Director of Health/Medical Information Systems, system programmers or operators, and selected sub-contractors.

Tools and Worksheets

- Attachment II: MCO/PIHP Documentation for Review Worksheet (Onsite Activity 1)
- Attachment III: Interview Guide Background Information and Data Integration and Control Worksheet (Onsite Activity 1)
- Attachment IV: Data Integration Necessary for Accurate Reporting of Performance Measures Worksheet (Onsite Activity 1)
- Performance Measure Calculation Worksheets as designed by EQRO during Pre-Onsite Activity 1 (Table 2). These will differ for each State, depending on the performance measures mandated, and the specifications or definitions used by the individual State for reporting.

## ONSITE ACTIVITY 2: Assure complete and accurate documentation of data and processes used to collect, calculate and report performance measures

Methods of Evaluation

In the context of this protocol, documentation includes all elements of the production process, beginning with the data collection from various sources (i.e., membership, enrollment, provider, claims, or encounter records; medical records; laboratory and/or pharmacy records; consumer survey results; or MCO/PIHP financial information). It includes the steps taken to integrate the required data into a performance measure data set or data repository, as well as procedures or programs that may be implemented to query the data set/data repository to identify denominators, generate appropriate samples, determine numerators, and apply proper algorithms to the data in order to produce valid and reliable performance measures.

During this activity the EQRO will:

- Create or confirm that all measurement plans and policies include:
    - Data file and field definitions used for each measure.
    - Maps to standard coding if standard codes were not used in original data collection.
    - Statistical testing of results, and any corrections or adjustments made after processing.

- Develop documentation (which may be either a schematic diagram or in narrative form) of programming specifications for each measure, to ensure that they include at least the following information:

    - A project or measurement plan for each performance measure, including workflow.

    - All data sources for each measure, including external data (whether from a vendor, public registry, or other outside source), and any prior years' data (if applicable).

    - Documentation of the original universe of data that includes the original universe of data that includes record-level patient identifiers that can be used to validate entire programming logic for creating denominators, numerators, and samples.

    - Detailed medical record review methods and practices, including the qualifications of medical record review supervisor and staff; reviewer training materials; completed copies of each record-level reviewer determination; all case-level critical performance measure data elements used to determine a positive or negative event or exclude a case from same; and inter-rater reliability testing procedures and results.

    - Detailed computer queries, programming logic, or source code used to create all denominators, numerators, and samples (if applicable to the measure). For example, depending on the measure specifications, these could include a process for identifying the population or sample for the denominator and/or numerator.

    - If sampling is used, a description of sampling techniques, and documentation that assures the reviewer that samples used for baseline and repeat measurements of the performance measures were chosen using the same sampling frame and methodology.

    - Documentation of calculation for changes in performance from previous periods (if applicable), including statistical tests of significance.

There is no suggested MCO/PIHP documentation for review during this activity, nor are there any specified interviews.

Tools and Worksheets

- Attachment V: Complete and Accurate Documentation of the Data and Processes used to Prepare and Submit Performance Measures Worksheet (Onsite Activity 2)
- Performance Measure Calculation Worksheets as designed by EQRO during Pre-Onsite Activity 1 (Table 2). These will differ for each State, depending on the performance measures mandated, and the specifications or definitions used by the individual State for reporting.

**ONSITE ACTIVITY 3: Assure the validity of processes used to identify denominators of performance measures**

Methods of Evaluation

The core task in calculating the denominator(s) of performance measures is ensuring that the appropriate data, including linked data from separate data sets, is used to identify the entire at-risk population. The "appropriate data" will vary from measure to measure, depending on criteria such as age, gender, diagnosis, or procedure; the data may be adjusted to exclude certain patients for other reasons specified in the measure. In some cases, the EQRO may have to estimate portions of the population, such as newborns who cannot be uniquely counted.

During this activity, the EQRO will:

- Assure that all members who were eligible to receive the specified services were included in the initial population from which the final denominator was produced. This "at risk" population will include both members who received the services, as well as those who did not. This same activity applies to provider groups or other relevant populations identified in the specifications of each performance measure.

- Write or collaborate with MCO/PIHP IS staff to program logic or source code for each measure that identifies, tracks, and links member enrollment within and across product lines (e.g., Medicare and Medicaid), by age and gender, as well as through possible periods of enrollment and disenrollment, in order to appropriately comply with the specifications of each performance measure.

- Correctly carry out and apply calculations of continuous enrollment criteria to each measure (if applicable).

- Properly use mathematical operations that determine patient age or range.

- Correctly identify the variable(s) that define the member's gender in every file or algorithm, and note what classification is carried out if neither of the required codes is present.

- Correctly calculate member months and member years, if applicable to the performance measure.

- Estimate the completeness and accuracy of any codes used to identify medical events, such as diagnoses, procedures, or prescriptions, and assure that these codes are appropriately identified and applied as specified in each performance measure.

- Adhere to any time parameters required by the specifications of the performance measure are adhered to (e.g., cut off dates for data collection, counting 30 calendar days after discharge from a hospital, etc.).

- Follow performance measure specifications or definitions in excluding members from a denominator. For example, if a measure relates to receipt of a specific service, the denominator may need to be adjusted to reflect instances in which the patient refuses the service or the service is contraindicated.

- When appropriate, use valid systems or methods to estimate populations when they cannot be counted accurately or completely (e.g., newborns).

Potential interviewees in support of this activity might include the Director of Health/Medical Information Systems, system programmers or operators, and selected sub-contractors.

Tools and Worksheets

- Attachment VI: MCO/PIHP Documentation for Review Worksheet (Onsite Activity 3)
- Attachment VII: Interview Guide Performance Measures Calculation (Onsite Activities 3-5)
- Attachment VIII: Proper Identification of Denominator Worksheet (Onsite Activity 3)
- Performance Measure Calculation Worksheets as designed by EQRO during Pre-Onsite Activity 1 (Table 2). These will differ for each State, depending on the performance measures mandated, and the specifications or definitions used by the individual State for reporting.

**ONSITE ACTIVITY 4: Assure the validity of processes used to determine numerators of performance measures (for administrative and hybrid methodologies)**

Methods of Evaluation

The primary activity in the calculation of the numerator is correctly identifying and evaluating qualifying medical events (e.g., diagnoses, procedures, and prescriptions) in order to include the value in the numerator of the performance measure. These "medical events" may be identified through membership/enrollment data, claim/encounter data, and/or provider data. They may also be identified through data extracted from medical records, or through a combination of both administrative data and medical record abstraction, which is commonly referred to as the "hybrid" method of data collection.

As with the denominator, appropriate, accurate, and complete data collection is vital to this element of MCO/PIHP performance calculation. For population-based measures that include sampling in the methodology, the entire at-risk population must have an equal chance to be included in the numerator. For some measures, particularly those frequently focused on women and children in the Medicaid population, the member may have received the specified service outside of the MCO/PIHP provider base (e.g., children receiving immunizations through public health services or schools), so an effort must be made to include these events in the numerator.

If a hybrid methodology is chosen for the numerator determination, this component of the protocol may involve the EQRO reviewing a sample of medical records to abstract information not found in the administrative data set for a given sample of the denominator. Following the performance measure technical specifications and guidelines, the EQRO will develop a medical record abstraction tool. It will also develop the mechanisms for assuring that the data are collected accurately and completely. The actual medical record abstraction activities may vary from MCO/PIHP to MCO/PIHP, or from State to State. In some cases, the abstraction may be done using the resources of the MCO/PIHP. In other cases, the EQRO will hire, train, and oversee the data abstraction activities. However, the MCO/PIHP's IS staff will be involved in assuring that the data are properly integrated into the MCO/PIHP's IS in a way that facilitates the calculation of performance measures.

During this activity, the EQRO will:

- Assure the use of appropriate data, including linked data from separate data sets, to identify the entire at-risk population that meets the specified criteria for inclusion in the numerator.

- Assuring the presence of, or creating, procedures to capture data for those performance indicators that could be easily under-reported due to the availability of services outside the MCO/PIHP, and following those procedures.

- Confirm that the MCO's/PIHP's use of codes used to identify medical events (such as diagnoses, procedures, prescriptions, etc.) are complete, accurate, and specific in correctly describing what has transpired and when. More to the purpose of this protocol, however, is ensuring that these codes are correctly evaluated and applied when classifying members for inclusion or exclusion in the numerator.

- Avoid or eliminate double-counted members or numerator events.

- Through a review of the programming logic or a demonstration of the program, confirm that non-standard codes are mapped to standard codes in a manner that is consistent, complete, and reproducible.

- Adhere to any time parameters required by the specifications of the performance measure (i.e., that the measured event occurred during the time period specified or defined in the performance measure).

- Confirm that medical record reviews and abstractions are carried out in a manner that facilitates the collection of complete, accurate, and valid data by assuring that:

    - Record review staff are properly trained and supervised for the task.

    - Record abstraction tools require the appropriate notation that the measured event occurred.

    - Record abstraction tools require notation of the results or findings of the measured event (if applicable).

    - Ensure that the process of integrating administrative data and medical record data for the purpose of determining the numerator is consistent and valid.

Potential interviewees in support of this activity might include the Director of Health/Medical Information Systems, system programmers or operators, and selected sub-contractors.

Worksheet and Tools

- Attachment VII: Interview Guide Performance Measures Calculation (Onsite Activities 3-5)
- Attachment IX: Proper Determination of Numerator Worksheet (Onsite Activity 4)
- Performance Measure Calculation Worksheets as designed by EQRO during Pre-Onsite Activity 1 (Table 2). These will differ for each State, depending on the performance measures mandated, and the specifications or definitions used by the individual State for reporting.

**ONSITE ACTIVITY 5: Except for measures calculated through administrative data alone, assure the validity of processes used to sample the appropriate population for calculation of performance measures**

Methods of Evaluation

The basic task related to the sampling methodology for performance measures is assuring that the sampled data are valid. Do the data validly reflect (a) the performance of all practitioners and providers who serve Medicaid enrollees and whose activities are the subject of the indicator, and (b) the care given to the entire population (including special populations with complex care needs) to which the indicator is relevant?

As in the previous activity of validating the population included in a denominator, the sampling methodology employed should not exclude any population subgroups to which the topic area and indicators apply. For example, when studying well child care, an MCO's/PIHP's sample should not exclude children with special care needs whose primary care provider is a specialist other than a pediatrician or family practitioner.

During this activity, the EQRO will:

- Ensure that the sampling methodology employed produced an unbiased sample which is representative of the entire at-risk population.
    - Assure that each relevant member or provider has an equal chance of being selected; no one is systematically excluded from the sampling.
    - Assure that the specifications set forth in the performance measure regarding the treatment of sample exclusions and replacements are followed, and that if any activity takes place involving replacements of or exclusions from the sample, that adequate documentation of that activity is kept.
    - Assure that each provider serving a given number of enrollees has the same probability of being selected as any other provider serving the same number of enrollees.
    - Examine sample for bias, and if any bias is detected, provide documentation that describes any efforts taken to correct it.
- Assure that the sampling methodology employed treats all measures independently, and that there is no correlation between drawn samples. (This is not intended to be a validation of the prescribed sampling methodology included in the performance measure specifications, since the assumption is that it is a valid methodology. The EQRO efforts focus on the implementation of that sampling methodology, to assure that it correctly follows the specifications.)
    - Confirm that relevant members or providers who were not included in the sample for the baseline measurement have the same chance of being selected for the follow-up measurement as providers who were included in the baseline.
- With the MCO/PIHP IS staff, develop and implement policies and procedures to maintain files from which the samples are drawn in order to keep population intact in the event that a sample must be re-drawn, or replacements made, and documentation that the original population is intact.

- Assure that the sample sizes collected conform to the methodology set forth in the performance measure specifications.

    - Assure that sample sizes meet the requirements of the specifications.

    - Appropriately handle the documentation and reporting of the measure if the requested sample size exceeds the population size.

    - Assure proper oversampling in order to accommodate potential exclusions.

- Follow proper substitution methodology in medical record review (for measures using the hybrid methodology).

    - Assure that substitution applies only to those members who met the exclusion criteria specified in the performance measure definitions or requirements.

    - Assure that substitutions are made for properly excluded records and the percentage of substituted records is documented.

Potential interviewees in support of this activity might include the Director of Health/Medical Information Systems, system programmers or operators, and selected sub-contractors.

Tools and Worksheets

- Attachment VII: Interview Guide Performance Measures Calculation (Onsite Activities 3-5)
- Attachment X: Proper Sampling Techniques Worksheet (Onsite Activity 5)
- Performance Measure Calculation Worksheets as designed by EQRO during Pre-Onsite Activity 1 (Table 2). These will differ for each State, depending on the performance measures mandated, and the specifications or definitions used for reporting.

**ONSITE ACTIVITY 6: Properly submitting required performance measure reports to the State**

Methods of Evaluation

Once the EQRO calculates the required performance measures, it must report them to the State in the manner prescribed. This includes reporting the measures in a proper format, whether through the use of a hardcopy "shell" report designed by the State, or in the electronic medium and format required by the State, or some combination of both. During the pre-onsite phase of the review, the EQRO familiarizes itself with the State's requirements of the proper format and reporting mechanisms for the MCO's/PIHP's performance measures.

- Assure that measures are reported to the State in the manner and form prescribed by the State

Worksheets and Tools

- Attachment XI: Proper Submission of Required Reports to State Agency Worksheet (Onsite Activity 6)
- Performance Measure Calculation Worksheets as designed by EQRO during Pre-Onsite Activity 1 (Table II). These will differ for each State, depending on the performance measures mandated, and the specifications or definitions used by the individual State for reporting.

## POST-ONSITE ACTIVITIES

Key Outcomes and Objectives

- The EQRO will evaluate all gathered information and prepare a summary report of findings for the State

- The EQRO will submit its report of the MCO/PIHP's MCO/PIHP performance measures to the State

### POST-ONSITE ACTIVITY 1: Referring to Pre-Onsite and Onsite information regarding State processes with the EQRO, complete worksheets and summarize findings in a report

Methods of Evaluation

Within one month of the onsite activities with respect to calculating the MCO's/PIHP's MCO/PIHP performance measures, the EQRO summarizes its preliminary findings in a report that will be sent back to the MCO/PIHP for review. The format of the report follows the outline of the key objectives, and the specific activities associated with each. In its reply, the MCO/PIHP may offer comments and documentation to support correction of any factual errors and omissions in the EQRO report.

Once the MCO's/PIHP's review is complete, and its comments have been incorporated where appropriate, the EQRO will submit its findings to the State in a final report that should follow the format specified by the State.

### POST-ONSITE ACTIVITY 2: Submit a final report to the State

This final report format will vary by State, but will probably include the following elements:

- A general summary of the onsite activities, including: a list of the EQRO team members and performance measurement pre-audit strategy and considerations, a list of measures offered for calculation (it is possible that an EQRO was unable to calculate on all required measures for some reason which would be explained to the State), a list of interviewees, and any other facts relevant to the onsite process

- Details and results of the medical record abstractions conducted as a part of this protocol

- In addition to the final report, the EQRO might also be asked to submit all of its worksheets and tools as supporting documentation to the report

## END OF PROTOCOL TEXT

**ATTACHMENT I**

# Potential Documents For Review

In order to better understand an MCO's/PIHP's IS and its implications for calculating performance measures, the EQRO might need to review a number of data sources and processes. The MCO/PIHP should ensure that the following documents and data are available for the EQRO. The EQRO will use its discretion in selecting which ones to review.

*Integration and Control of Data for Performance Measurements*

- Procedures and standards for all aspects of data repository, including building, maintaining, managing, testing, and production of performance measures.
- Manuals covering application system development methodology, database development and design and decision support system utilization.
- Control system documentation including flow charts and codes for backups, recovery, archiving, and other control functions.
- Procedures to consolidate information from disparate transaction files to produce intended result.
- Record and file formats and descriptions, for entry, intermediate, and repository files.
- Electronic formats and protocols.
- Electronic transmission procedures documentation.
- Processes to extract information from the repository to produce intended result.
- Source code data entry, data transfer, and data manipulation programs and processes.
- Descriptive documentation for data entry, data transfer, data manipulation programs and processes.
- If applicable, procedures for coordinating activities of multiple subcontractors in a way that safeguards the integrity of the performance measure data.
- Samples of data from repository and transaction files to assess accuracy and completeness of the transfer process.
- Comparison of actual results from file consolidation and data abstracts to those which should have resulted according to documented algorithms.
- Documentation of data flow among vendors to assure proper implementation of procedures for coordinating activities to safeguard the integrity of the performance measure data.
- Documentation of data cutoff dates.
- Documentation of proper run controls and of staff review of report runs.
- Copies of files and databases used for performance measure calculation and reporting.

**ATTACHMENT I**

*Collection, Calculation, and Documentation of Performance Measurements*

- Policies to assign unique membership ID that allows all services to be properly related to the specific appropriate recipient, despite changes in status, periods of enrollment or disenrollment, or changes across product lines (e.g., Medicare and Medicaid).
- Procedures to identify, track and link member enrollment by product line, product, geographic area, age, gender, member month, and member years.
- Procedures to track individual members through enrollment, disenrollment, and possible re-enrollment.
- Procedures to track members through changes in family status, changes in employment or benefits or managed care type (if they switch between Medicaid coverage and another product within the same MCO/PIHP).
- Methods to define start and cessation of coverage.
- Procedures to link member months to member age.
- Member database.
- Provider data (including facilities, labs, pharmacies, physicians, etc.)
- Database record layout and data dictionary.
- Survey data.
- Procedures for mapping non-standard codes to standard coding to ensure consistency, completeness, and reproducibility.

## ATTACHMENT II

**MCO/PIHP Documentation for Review Worksheet (Onsite Activity 1)**

| Documents | Reviewed | Not Reviewed | Comments |
|---|---|---|---|
| **Data Integration and Control** | | | |
| Procedures and standards for all aspects of data repository, including building, maintaining, managing, testing, and production of performance measures | | | |
| Manuals covering application system development methodology, database development and design and decision support system utilization | | | |
| Control system documentation including flow charts and codes for backups, recovery, archiving, and other control functions | | | |
| Procedures to consolidate information from disparate transaction files to produce intended result | | | |
| Record and file formats and descriptions, for entry, intermediate and repository files | | | |
| Electronic formats and protocols | | | |
| Electronic transmission procedures documentation | | | |
| Processes to extract information from the repository to produce intended result. | | | |
| Source code data entry, data transfer, and data manipulation programs and processes | | | |
| Descriptive documentation for data entry, data transfer, data manipulation programs and processes | | | |
| If applicable, procedures for coordinating activities of multiple subcontractors in a way that safeguards the integrity of the performance measure data | | | |
| Samples of data from repository and transaction files to assess accuracy and completeness of the transfer process. | | | |
| Comparison of actual results from file consolidation and data abstracts to those which should have resulted according to documented algorithms | | | |
| Documentation of data flow among vendors to assure proper implementation of procedures for coordinating activities to safeguard the integrity of the performance measure data | | | |

**ATTACHMENT III**

## Interview Guide

## Background Information

Plan Name:

Date:

Location:

Year of First Medicaid Enrollment:

Year of First Medicare Enrollment:

Year of First MCO/PIHP Performance Report:

Auditors:

Interviewees:

Has the plan ever undergone an audit of its State performance measure reporting process? If so, when did the audit take place and who conducted it?

Other general issues:

## Data Integration and Control (Onsite Activity 1)

1. How is performance measure data collection accomplished:

   - By querying the process system on-line?
   - By using extract files created for analytical purposes? If so, how frequently are the files updated? How do they account for claim/encounter submission and processing lags? How is the file creation process checked for accuracy?
   - By using a separate relational database or data warehouse? If so, is this the same system from which all other reporting is produced? Are reports created from a vendor software product? If so, how frequently are the files updated? How are reports checked for accuracy?

2. Review the procedure for consolidating claims/encounter, member, and provider data for performance reporting (whether it be into a relational database or file extracts on a measure-by-measure basis).

    - How many different sources of data are merged together to create reports?
    - What control processes are in place to ensure that this merger is accurate and complete?
    - Compare samples of data in the repository to transaction files. Are any members, providers, or services lost in the process?
    - Is the required level of coding detail maintained (e.g., all significant digits, primary and secondary diagnoses remain)?

3. If the plan uses a performance measure repository, review the repository structure. Does it contain all the key information necessary for performance measure reporting?

4. How does the plan prevent loss of claim and encounter data when systems fail?

5. What administrative data back-up systems are in place?

6. What types of authorization are required to be able to access claims/encounter, provider, membership, and performance measure repository data?

7. Other issues:

Described Documentation Review and Demonstrations Provided:

**ATTACHMENT IV**

## Data Integration Necessary For Accurate Reporting Of Performance Measures Worksheet (Onsite Activity 1)

| Audit Element | Met | Not Met | N/A | Comments |
|---|---|---|---|---|
| Accuracy of data transfers to assigned performance measure repository | | | | |
| • MCO's/PIHP's processes accurately and completely transfer data from the transaction files (i.e., membership, provider, encounter/claims) into the repository used to keep the data until the calculations of the performance measures have been completed and validated | | | | |
| • Samples of data to assess completeness and accuracy | | | | |
| Accuracy of file consolidations, extracts, and derivations | | | | |
| • Accuracy of MCO's/PIHP's processes to consolidate diversified files, and to extract required information from the performance measure repository | | | | |
| • Comparison of actual results of file consolidations or extracts to those which should have resulted according to documented algorithms or specifications | | | | |
| • Procedures for coordinating the activities of multiple subcontractors ensure the accurate, timely, and complete integration of the data into the performance measure data base | | | | |
| • Computer program reports or documentation reflect vendor coordination activities, and no data necessary to performance measure reporting are lost or inappropriately modified during transfer | | | | |

| Audit Element | Met | Not Met | N/A | Comments |
|---|---|---|---|---|
| If the MCO/PIHP uses one, the structure and format of the performance measure data repository facilitate any required programming necessary to calculate and report required performance measures | | | | |
| • Review the repository's design, and examine program flow charts to evaluate the extent to which the repository enables analyses and reports | | | | |
| • Assess the extent to which proper linkage mechanisms have been employed to join data from all necessary sources (e.g., identifying a member with a given disease/condition) | | | | |
| • Examine program flow charts and source code to assess the extent to which the data repository has enabled analyses and report preparation | | | | |
| Assurance of effective management of report production and of the reporting software | | | | |
| • Examine and assess the adequacy of the documentation governing the production process, including MCO/PIHP production activity logs, and MCO/PIHP staff review of report runs | | | | |
| • Review documentation that confirms that prescribed data cutoff dates were adhered to | | | | |
| • Demonstration that the MCO/PIHP has retained copies of files or databases used for performance measure reporting, in the event that results need to be reproduced | | | | |

**ATTACHMENT IV**

| Audit Element | Met | Not Met | N/A | Comments |
|---|---|---|---|---|
| • Review documentation standards that assure that the reporting software program is properly documented with respect to every aspect of the performance measurement reporting repository, including building, maintaining, managing, testing, and report production | | | | |
| • Review the MCO's/PIHP's process and documentation to assure that they comply with the MCO/PIHP standards associated with reporting program specifications, code review, and testing | | | | |

## ATTACHMENT V

**Complete and accurate documentation of the data and processes used to prepare and submit performance measures (Onsite Activity 2)**

| Measure Element | Comments |
|---|---|
| Measurement plans and policies, which stipulate and enforce documentation of data requirements, issues, validation efforts, and results. These include: | |
| • Data file and field definitions used for each measure | |
| • Maps to standard coding if not used in original data collection | |
| • Statistical testing of results, and any corrections or adjustments made after processing | |
| Documentation of programming specifications (which may be either a schematic diagram or in narrative form) for each measure includes at least the following: | |
| • All data sources for each measure, including external data (whether from a vendor, public registry, or other outside source), and any prior years' data (if applicable) | |
| • Detailed medical record review methods and practices, including the qualifications of medical record review supervisor and staff; reviewer training materials; audit tools used, including completed copies of each record-level reviewer determination; all case-level critical performance measure data elements used to determine a positive or negative event or exclude a case from same; and inter-rater reliability testing procedures and results | |
| • Detailed computer queries, programming logic, or source code used to identify the population or sample for the denominator and/or numerator | |
| • If sampling used, description of sampling techniques, and documentation that assures the reviewer that samples used for baseline and repeat measurements of the performance measures were chosen using the same sampling frame and methodology | |

| Measure Element | Comments |
|---|---|
| • Documentation of calculation for changes in performance from previous periods (if applicable), including statistical tests of significance | |
| • Data that are related from measure to measure are consistent (e.g., membership counts, provider totals, number of pregnancies and births) | |
| • Appropriate statistical functions are used to determine confidence intervals when sampling is used in the measure | |
| • When determining improvement in performance between measurement periods, appropriate statistical methodology is applied to determine levels of significance of changes | |

**ATTACHMENT VI**

# MCO/PIHP Documentation for Review (Onsite Activity 3)

| Documents | Reviewed | Not Reviewed | Comments |
|---|---|---|---|
| **Denominator** | | | |
| Policies to assign unique membership ID that allows all services to be properly related to the specific appropriate recipient, despite changes in status, periods of enrollment or disenrollment, or changes across product lines (e.g., Medicare and Medicaid) | | | |
| Procedures to identify, track, and link member enrollment by product line, product, geographic area, age, gender, member months, member years | | | |
| Procedures to track individual member through enrollment, disenrollment, and possible re-enrollment | | | |
| Procedures to track members through changes in family status, changes in employment or benefits or managed care type (if they switch between Medicaid coverage and another product within the same MCO/PIHP) | | | |
| Methods to define start and cessation of coverage | | | |
| Procedures to link member months to member age | | | |
| Member database | | | |
| Provider data (including facilities, labs, pharmacies, physicians, etc.) | | | |
| Database record layout and data dictionary | | | |
| Survey data | | | |

**ATTACHMENT VII**

**Interview Guide**

**Performance Measure Calculation (Onsite Activities 3-5)**

1. Do you have any concerns about the integrity of the information used to create any of the measures? Please describe.

Other issues.

Names and Titles of Individuals Interviewed:

Describe Documentation Review and Demonstrations Provided:

**ATTACHMENT VIII**

## Proper Identification of Denominator Worksheet (Onsite Activity 3)

| Measure Element | Comments |
|---|---|
| All members of the relevant populations identified in the performance measure specifications are included in the population from which the denominator is identified | |
| • All members who were eligible to receive the specified services must be included in the initial population from which the final denominator was produced. This "at risk" population will include both members who received the services, as well as those who did not. This same activity applies to provider groups, or other relevant populations identified in the specifications of each performance measure. | |
| Adequate programming logic or source code exists to appropriately identify all "relevant" members of the specified population | |
| • Employ appropriate programming logic or source code for each measure which identifies, tracks, and links member enrollment within and across product lines (e.g., Medicare and Medicaid), by age and gender, as well as through possible periods of enrollment and disenrollment according to the specifications of each performance measure | |
| • Correctly carry out and apply calculations of continuous enrollment criteria to each measure (if applicable) | |
| • Ensure proper use of mathematical operations that determine patient age or range | |

| Measure Element | Comments |
|---|---|
| • Assure identification of the variable(s) that define the member's gender in every file or algorithm, and explain what classification is carried out if neither of the required codes is present | |
| Correct calculation of member months and member years | |
| • Assure correct calculation of member months and member years, if applicable to the performance measure | |
| Completeness and accuracy of the codes used to identify medical events has been identified and, the codes have been appropriately applied | |
| • Assure proper evaluation of the completeness and accuracy of any codes used to identify medical events, such as diagnoses, procedures, or prescriptions, and that these codes have been appropriately identified and applied as specified in each performance measure | |
| Specified time parameters are adhered to | |
| • Assure that any time parameters required by the specifications of the performance measure are adhered to (e.g., cut off dates for data collection, counting 30 calendar days after discharge from a hospital, etc.) | |
| Exclusion criteria included in the performance measure specifications have been followed | |
| • Assure that performance measure specifications or definitions are followed in excluding members from a denominator. For example, if a measure relates to receipt of a specific service, the denominator may need to be adjusted to reflect instances in which the patient refuses the service or the service is contraindicated | |

**ATTACHMENT VIII**

| Measure Element | Comments |
|---|---|
| Systems to estimate populations which cannot be accurately counted exist and are utilized when appropriate | |
| • Employ valid systems or methods to estimate populations when they cannot be accurately or completely counted (e.g., newborns) | |

## ATTACHMENT IX

**Proper Determination of Numerator Worksheet (Onsite Activity 4)**

| Measure Element | Comments |
|---|---|
| Appropriate data are used to identify the entire at-risk population | |
| • Use the appropriate data, including linked data from separate data sets, to identify the entire at-risk population | |
| • Assure that the there are procedures to capture data for those performance indicators which could be easily under-reported due to the availability of services outside the MCO/PIHP, and those procedures are followed | |
| Qualifying medical events (such as diagnoses, procedures, prescriptions, etc.) are properly identified and confirmed for inclusion in terms of time and services | |
| • Assure that the MCO's/PIHP's use of codes used to identify medical events are complete, accurate, and specific in correctly describing what has transpired and when | |
| • Assure that medical event codes are correctly evaluated when classifying members for inclusion or exclusion in the numerator | |
| • Avoid or eliminate all double-counted members or numerator events | |
| • Through a review of the programming logic or a demonstration of the program, confirm that any non-standard codes used in determining the numerator are mapped to a standard coding scheme in a manner that is consistent, complete, and reproducible | |
| • Adhere to any time parameters required by the specifications of the performance measure (i.e., that the measured event occurred during the time period specified or defined in the performance measure) | |

## ATTACHMENT IX

| Measure Element | Comments |
|---|---|
| **Medical record data extracted for inclusion in the numerator are properly collected** | |
| • Assure that medical record reviews and abstractions are carried out in a manner that facilitates the collection of complete, accurate, and valid data | |
| • Assure that record review staff are properly trained and supervised for the task | |
| • Assure that record abstraction tools require the appropriate notation that the measured event occurred | |
| • Assure that record abstraction tools require notation of the results or findings of the measured event (if applicable) | |
| • Assure that process of integrating administrative data and medical record data for the purpose of determining the numerator is consistent and valid | |

## ATTACHMENT X

**Proper Sampling Techniques (If Applicable) Worksheet (Onsite Activity 5)**

| Measure Element | Comments |
|---|---|
| Follow the specified sampling method to produce an unbiased sample which is representative of the entire at-risk population | |
| • Assure that each relevant member or provider has an equal chance of being selected; no one is systematically excluded from the sampling | |
| • Follow the specifications set forth in the performance measure regarding the treatment of sample exclusions and replacements, and that if any activity takes place involving replacements of or exclusions from the sample, that adequate documentation of that activity is kept | |
| • Assure that each provider serving a given number of enrollees has the same probability of being selected as any other provider serving the same number of enrollees | |
| • Examine all sampled files for bias and if any bias is detected, be able to provide documentation that describes any efforts taken to correct it | |
| • Assure that the sampling methodology employed treats all measures independently, and that there is no correlation between drawn samples | |
| • Assure that relevant members or providers who were not included in the sample for the baseline measurement have the same chance of being selected for the follow-up measurement as providers who were included in the baseline | |

| Measure Element | Comments |
|---|---|
| • Assure that the MCO/PIHP has policies and procedures to maintain files from which the samples are drawn in order to keep population intact in the event that a sample must be re-drawn, or replacements made, and documentation that the original population is intact | |
| Sample sizes collected conform to the methodology set forth in the performance measure specifications, and the sample is representative of the entire population | |
| • Assure that sample sizes meet the requirements of the performance measure specifications | |
| • Appropriately handle the documentation and reporting of the measure if the requested sample size exceeds the population size | |
| • Assure proper oversampling in order to accommodate potential exclusions | |
| For performance measures which include medical record reviews (i.e., hybrid data collection methodology), proper substitution methodology was followed | |
| • Assure that substitution applies only to those members who met the exclusion criteria specified in the performance measure definitions or requirements | |
| • Assure that substitutions are made for properly excluded records and the percentage of substituted records is documented | |

## ATTACHMENT XI

**Proper Submission of Required Reports to State Agency Worksheet (Onsite Activity 6)**

| Measure Element | Comments |
|---|---|
| • Measures are reported to the State in the manner and form prescribed by the State | |

**END OF DOCUMENT**