How to Identify and Recruit Test Sites for Electronic Clinical Quality Measures (eCQMs)

During new measure development, eCQMs are tested in two phases: alpha and beta testing. However, the line between alpha and beta testing is sometimes blurred and likely iterative. In both phases, test sites are needed. *Alpha testing* starts as early as the conceptualization phase. During alpha testing, measure developers recruit test sites to provide insights about feasibility and face validity of a measure and give feedback to help improve the measure specifications. This may be in the form of focus groups or key informant interviews. Measure developers must also conduct workflow assessments to better understand how care is delivered at various sites and whether collection of the measure's data elements occurs during the typical clinical workflow. Measure developers then use the information from alpha testing to refine their measure specifications before engaging in beta testing. *Beta testing* is a more involved phase of testing that usually requires the collection of patient-level data to quantitatively assess the measure's scientific acceptability (validity and reliability) as well as to collect additional information about feasibility. Bonnie, using synthetic data, may be used to test that the measure logic works as expected. However, Bonnie testing alone is insufficient to test measure validity.

The beta testing phase presents the most challenges. It requires a large enough sample size to assess the validity and reliability of individual data elements and the overall measure performance score. However, given challenges associated with recruiting and contracting with test sites, this type of testing is frequently limited and does not consistently provide the information needed to determine whether implementation will be successful or not. This article discusses the ideal features of an eCQM beta test site and provides examples of ways to mitigate some key challenges.

Test Sites

In selecting test sites, there are a few points to consider:

- **Setting or practice type.** A measure should be tested in the setting where it is to be implemented. If the measure is specific to the hospital setting, then you should seek acute care hospitals or health systems with multiple hospitals to test your measure. If developing a pediatric outpatient measure, then ideal test sites might be pediatric clinician practices.
- **Experience with eCQMs.** Sites familiar with eCQMs—especially those that already report on similar measures—may be well-positioned to serve as test sites. While alpha test sites should be diverse in terms of their readiness to implement these measures, beta test sites must be able to collect and report on the measure data elements. It may be beneficial to hold detailed conversations with clinical and technical staff at each potential test site to understand the current availability of electronic data elements at each site, and to get a sense for their willingness and capacity to take on testing.
- **Availability of clinical and technical staff.** Beta testing can be a time- and resource-intensive activity for test sites, one that involves regular meetings and status updates to monitor data extraction and review data for quality and completeness. As such, it is crucial that test sites designate appropriate staff to support this work. The ideal team may vary from site to site,

but typically each team should include (1) a clinician who can speak to clinical workflows on-site, (2) IT or informatics staff who can electronically extract data, and (3) a staff person, like a quality assurance officer, who understands their facility's eCQM reporting processes and requirements. In some cases, one person may fill more than one role. If testing more than one measure at a given site, the on-site teams may need to be larger or more varied.

- **Timeline.** Beta testing can take many months to complete, so it is important to communicate clearly with potential test sites about the expected time investment that will be required. Consider time required for contracting, data sharing agreements, and obtaining Institutional Review Board (IRB) approval in addition to the time required to extract, review, clean, and analyze the data. Not all sites have access to an internal IRB so the measure developer may need provide the IRB.

- **Variety.** CMS and NQF require that beta testing be conducted with multiple test sites representing two or more different EHR systems. When choosing sites to participate in testing, consider not only EHR type, but also geography, rurality/urbanicity, practice/hospital size, ownership type (e.g., non-profit, academic, private and for-profit), and so on. This variation helps make a stronger case for the likelihood that the measure is valid, reliable, and can be successfully implemented without causing undue burden.

Recruitment

It can be difficult to identify and recruit appropriate test sites within a measure development timeline. In general, it is beneficial to cast a wide net through various channels to maximize the number of hospitals or practices that will learn about the opportunity. For example:

- Advertise opportunities on the eCQI Resource Center , which often posts announcements for eCQM testing opportunities.
- CMS-contracted measure developers can advertise a call for test sites via the MMS Newsletter or the MACRA Bulletin by emailing MMSsupport@battelle.org with the request.
- Conduct targeted outreach to clinician specialty societies and gauge their interest for a potential contractual agreement for testing or their willingness to share information about a testing opportunity with their members.
- Identify "champions" for a given condition or treatment that are willing to connect you to potential test sites. These individuals are often those who publish frequently about the topic of interest or who participate in technical expert panels or work groups related to that topic.

Alternatives

While it is considered best practice to test measures in the environment where they are slated to be implemented, developers may consider alternatives to demonstrate proof-of-concept for their measures. Some alternatives include:

- **Registry data.** Using registry data (in an electronic format) provides a large repository of data elements that are usually clean and can demonstrate proof of concept. However, if the measure is not a registry measure, CMS may not include it for pre-rulemaking as measures are required to be tested in the setting for which they are designed.

- **Patient portals**. Using patient portals, especially for patient-reported outcome-based performance measures (PRO-PMs), are common among practices, and the data are entered electronically. However, for eCQMs, the portal must be integrated with the EHR system or be an EHR module certified by the Office of the National Coordinator for Health Information Technology (ONC), not only to satisfy testing requirements but also to be accessible to measure developers.
- **NQF Incubator®.** Consider using the NQF Incubator® facilitates measure development and testing through collaboration and partnership.

Conclusions

Beta testing with test site data can be a challenge for all clinical quality measures. For eCQMs, this challenge is more significant given the limitations of some electronic health record systems at test sites, which can make it difficult to identify sites that have the data necessary to test a given eCQM. By building in sufficient time in project timelines and carefully considering test site characteristics, measure developers can mitigate these challenges and collect data to demonstrate the scientific acceptability of their measures. Please contact MMSsupport@battelle.org if you have questions or suggestions related to eCQM beta testing. For more information about testing eCQMs, review the MMS Blueprint.