NATIONAL QUALITY FORUM

Memo

June 4, 2018

To: Consensus Standards Approval Committee (CSAC)

From: Improving Attribution Models Project Team

Re: Improving Attribution Models

NQF will provide an informational update to the CSAC on the Improving Attribution Models project at its June 4-5, 2018 meeting.

This memo includes a summary of the project. Accompanying this memo is the draft white paper, which is also available on the project webpage.

Background

In recent years, public and private payers have looked to value-based purchasing (VBP) and alternative payment models (APMs) as methods to reduce the growth of healthcare costs and to incentivize high-quality care. However, successful implementation of value-based purchasing and alternative payment models requires an understanding of who is responsible for a patient's outcomes and healthcare costs. Attribution is a methodology to assign patients, encounters, or episodes of care to a healthcare provider or practitioner. An attribution methodology seeks to accurately determine the relationship between a patient and his or her team to ensure that the correct entity or entities are accountable for the patient's outcomes and cost.

In 2017, NQF issued its first guidance report on attribution models and defined the elements of an attribution model. While the contributions of the first effort were substantive, the Committee recognized the need for further guidance. This project builds on the first report and explores a set of key attribution challenges, contributes to the development and dissemination of best practices, and spells out the key considerations for evaluating attribution models with the goal of developing a white paper that explores these issues.

Methodology

The draft white paper was developed using multiple inputs, specifically, a systematic evidence review, input from the Improving Attribution Models Advisory Panel, and qualitative data analysis including key informant interviews and a survey of experts including clinicians, providers, attribution model implementers, health services researchers, and measure developers.

Literature Review

The literature review identified publications after 2015 that explored new attribution models, and offered new insights into testing and implementation of existing models. NQF added additional search terms based on the issues selected for focus in this effort, broadened the search to identify articles that incorporate attribution models as part of more general work on

best practices, outcome and cost measurement, and measure alignment. NQF's search included a review of publications in grey literature, including foundational work by the Robert Wood Johnson Foundation (RWJF), and the Agency for Healthcare Research and Quality (AHRQ).

Use Cases

The Attribution Advisory Panel recommended exploring use cases, or real-life examples of the implementation of attribution models, in order to bolster an otherwise limited evidence base, and help identify implementation issues as they arise. Two use cases were explored. They helped to test the robustness of the NQF Attribution Model Selection Guide, which was an output of the 2017 report, and highlighted key issues for consideration.

Qualitative Interviews

Given that the evidence available in the peer-reviewed, published literature continues to be limited, NQF selected five key informants to participate in a semistructured phone interview. The interviews focused on topics and stakeholder viewpoints that may not be available in the literature and helped to illuminate examples and opportunities for a path forward for the challenges identified.

Surveys

NQF conducted a survey to gather additional feedback from measure developers on the use of the Attribution Model Selection Guide and challenges they face with designing attribution models. The standardized survey was distributed online to nine participants who were selected based on their known expertise in successfully developing NQF-endorsed measures that are evidence-based, reliable, valid, feasible, and usable.

Summary of Findings

The report explores a series of recommended evaluative considerations for attribution models through the examination of some key challenges with designing an approach. These considerations lay the groundwork for what should be evaluated and what best practices may look like to facilitate a multistakeholder review of attribution models. These potential evaluation considerations build on the results of the environmental scan and NQF's first attribution report.

Evaluation Consideration 1: Does the attribution model assign accountability to an entity that can meaningfully influence the results?

The panel emphasized the need to carefully balance incentivizing change by holding a clinician or provider accountable for outcomes that can be influenced by outside factors with what that clinician or provider can reasonably control. The first consideration for the evaluation of an attribution model is whether or not it assigns accountability to an entity that can meaningfully influence the results and if there is reasonable evidence to support attributing responsibility to that entity. The Panel noted the current lack of evidence to support attribution and emphasized that when designing an attribution model, the conceptual rationale supporting the linkage

between the measured health outcome and an intervention that the accountable unit can undertake is critical.

The Panel laid out potential ways to support the conceptual basis behind an attribution model: how the accountable entity can influence results, why a given set of rules was selected, and the consideration of consequences. Multistakeholder review should be used to evaluate the conceptual basis. The Panel noted that the degree of multistakeholder input needed may depend on how aspirational an attribution model is or if the measure will be used in a mandatory high-stakes accountability program.

This evaluation consideration also addresses how a model handles expensive and/or complex cases. Health needs, disease complexity, and social determinants of health can all complicate attribution. Attribution models must balance including as many patients as possible with ensuring that providers are compared to those treating similar patient populations. The Panel emphasized that fair comparisons are critical to assess quality. The Panel suggested attribution models should be evaluated for appropriate exclusion criteria, risk adjustment, and/or stratification to ensure fair comparisons across providers. However, the inclusion of complex cases could be more feasible at higher levels of analysis. Finally, there is a need to consider patients who are not attributed. Many of the most vulnerable or complex patients will not be included in attribution models because algorithms are traditionally triggered by claims.

The Panel also explored the implications of team-based care for attribution models under this evaluation consideration.

Evaluation Consideration 2: How has the model been tested?

In the first report, NQF noted the need to test attribution models to ensure goodness of fit, scientific rigor, and mitigation of any unintended consequences, as research has demonstrated that different attribution rules can influence how an accountable entity may perform in an accountability program. However, limited evidence exists to support testing methodologies for attribution models. In this report, the Expert Panel put forth guidance for testing attribution models.

First, the Panel noted that the goal of testing is to determine the effectiveness of the attribution model to approximate the patient and provider relationship. Thus, for each measured outcome, testing should quantify the patient and provider interactions, and the evidence should conceptually evaluate whether those interactions can have a meaningful impact on the outcome being measured. The Panel further clarified that testing of the attribution model should be done through both the performance measure specifications and the program. The attribution model at the measure level identifies the individual patients who will be included in the denominator of the measure, the accountable unit, and the data used to determine the provider and patient relationship. At the program level, the attribution model depends on the time period selected, and the data or services used to identify patients and their associated providers.

The Panel also discussed the potential for evidence generated by empirical testing. The Panel indicated that measure developers or program implementers should consider multiple attribution models and consider what the outcome may look like under different attribution rules. Panel members expressed a need to understand which patients would be covered under different rules. Sensitivity testing of the parameters may include testing the included patient population across methods, risk scores, and measure scores for a provider across multiple attribution model approaches. Highlighting the differences from testing the attribution parameters can help inform conversations and decisions about which is the best attribution model specification.

The goal of validity testing of an attribution model through a performance measure specification is to assess the effectiveness of the attribution model to approximate the patient and provider relationship. Retrospective models attempt to determine a historic relationship and how a person's care was delivered. Chart review may be the most valued standard of data-derived options to determine the patient/provider relationship; however, testing a model this way may not always be feasible. NQF's first attribution report noted the potential need for an adjudication process to challenge potentially inaccurate results of an attribution model to allow clinicians and providers the opportunity to question incorrect results that can affect their payment or reputation. For prospective models, there is potential value in patient and clinician attestation as a way of validating the results of an attribution model. Alternatively, multistakeholder input to ensure the face validity of a model may be the most feasible way to test the validity of an attribution model.

Evaluation Consideration 3: What data were used to support the attribution model?

Data play an essential role in the implementation of an attribution model. Available data sources and data quality should be considered when designing and selecting an attribution model. The Panel highlighted benefits and disadvantages of different data sources, noting that claims data are the most common source of data to support an attribution model. However, claims data may not accurately reflect a patient/provider relationship and may not be granular enough to reflect clinical severity. Other types of data that should be considered include prospective patient-defined relationships, data from electronic health records as well as both patient and clinician attestation of relationships. Emerging data sources such as EHRs, CMS's patient relationship codes, and increased use of the National Provider Identifier could help to support improved attribution models.

The data challenges associated with attribution are inherently linked to the data challenges with performance measures. First, setting-specific data may not be available to all applicable parties. Alternatively, some models use patient-reported data to allow the patient to identify a relationship. However, models based on patient attestation may face challenges resulting from differing opinions of the patients and their providers on the relationship or the scope of the provider's practice. Therefore, the patient identification of a primary care physician can conflict

with the provider attestation or validation of this relationship. More practical challenges with data integrity relate to the timeliness and availability of the data to the attributable entities such that these data enable timely improvements to practice patterns.

Evaluation Consideration 4: Does the model align with the context of its use?

Attribution models should be designed and used in the specific program context for which they are intended. They should take into account the program goal, whether the program is mandatory or voluntary, the accountability mechanism used (e.g., payment or public reporting), and the intended behavior change. Given the limited evidence to support the selection of one attribution model over another, stakeholder input is essential to ensure buy-in and transparency.

Alignment of the program and measure inclusion criteria and target populations is critical to ensure that proper financial and quality incentives are created. When selecting a performance measure for a bundled payment program based on episodes of care, the target population for the program must be represented in the performance measure inclusion criteria. Quality performance measures help to monitor negative unintended consequences from financial incentives to reduce or skimp on needed care for patients. However, if the population included in the payment program is not represented in the quality measures, the measures will not monitor quality for all patients included in the program.

Evaluation Consideration 5: Have potential unintended consequences of the model been explored, and have negative consequences been mitigated?

Improperly designed attribution models carry a risk of negative unintended consequences to patients. Attribution models should not diminish access to care or detract from the patient-centeredness of care. Attribution models can also have negative unintended consequences for clinicians and providers. Attribution models that assign incorrect results can cause high performers not to receive the scores they deserve, leading to demoralization, burnout, and a lack of confidence in measure results, and potentially undermining the relevance of the performance measurement enterprise. Conversely, inaccurate models could also assign poor performers falsely positive results that do not inform where improvement efforts may be needed. Misattribution can have significant impact on accountable entities, as high-stakes consequences may include publicly reported data based on a flawed attribution model, posing reputational risk and even resulting in payment adjustments.

Attribution models can also have consequences for the healthcare system broadly. Providers may wish to gain more control over the patient care they are held accountable for or may wish to avoid shared attribution. These desires can lead to market consolidation as providers feel forced to merge to protect themselves from the consequences of misattribution. These mergers could result in a possible decrease in care quality and access over the long run. Safeguards in

attribution models can include exclusion criteria or risk adjustment for high-risk or complex patients.

Evaluation Consideration 6: Is the model transparent to all stakeholders?

Stakeholders have observed that details of attribution model algorithms currently are not available to all affected parties. This lack of transparency makes it difficult to understand the results of the model and for accountable entities to improve their performance. Insufficient transparency also prevents patients from knowing who is held accountable for their care and can prevent them from being empowered consumers. As part of a multistakeholder review, the details of the algorithm should be made available. NQF's first report on attribution also noted the need for attribution models to be implemented with an adjudication process. The opportunity to appeal potentially inaccurate results would help to ensure buy-in and foster greater confidence in the results.

Path Forward

The evidence base to support the choice of one model over another remains limited. Similarly, methods to test an attribution model have not been established. In light of the lack of evidence and challenges to testing, stakeholders have stressed the importance of gaining input and support before implementing an attribution model. This second report builds on the previous guidance of the NQF Attribution Committee that developed NQF's first attribution report.

By providing additional guidance on the evidence for, testing of, and selection of an attribution model, this report lays the groundwork to implement attribution into NQF's work. Currently, NQF processes do not explicitly address attribution. However, opportunities exist to build on current processes to allow for multistakeholder review of attribution models. Attribution considerations could be addressed through the measure evaluation criteria used in the Consensus Development Process (CDP) and through the Measure Applications Partnership's (MAP) Measure Selection Criteria.

CSAC Action Required

NQF is seeking the CSAC's input during the June 4-5, 2018 meeting, specifically:

- Does the CSAC have any general reflections on the second attribution report?
- Does the CSAC agree with the evaluation considerations put forth by the Attribution Advisory Panel?
- Does the CSAC have any thoughts/guidance on potentially incorporating attribution into future measure evaluation criteria?

Comments and Their Disposition

NQF received nine comments from five member organizations pertaining to the draft report.

Key themes from the comments included:

- Ensuring attribution models include a more patient-centered focus on the consumer/patient's impact on their own care
- The need to define criteria and specifications for attribution models in NQF's measure endorsement criteria
- Inclusion of further guidance and/or recommendations on best practices to address and minimize the risks and issues associated with attribution
- Inclusion of specific considerations for patients with cancer diagnoses when discussing attribution

A table of the comments submitted during the comment period, with the proposed responses to each comment will be posted to the project page prior to the May 30 post-comment call with the Panel.

Next Steps

NQF will finalize the report and submit the final deliverable to HHS by August 31, 2018.