Executive Summary

Patients suffer harm from diagnostic errors and suboptimal diagnostic journeys and yet hospitals and health systems are not working towards improving diagnostic excellence because they don’t view it as a priority or don’t have ability to measure the problem.

Moore Foundation grantees showcased innovation and methods for measurement that can inform better system design to support diagnosis. But organizations are unlikely to prioritize measurement of diagnostic quality and safety without public reporting requirements. And investigators can’t do the work to address gaps in the science of diagnosis without funding and support for research and innovation.

Through a series of presentations, it became clear that measurement of the diagnostic process can be done, but is currently hampered by low expectations for measurement, ill-defined standards for optimal diagnosis, and poor data source/structure/specificity to inform diagnostic quality.

Moving Forward

Improved healthcare data infrastructure is essential to support measurement and improvement of diagnostic quality. This is a critical role filled by The Office of the National Coordinator for Health Information Technology (ONC) and the United States Core Data for Interoperability (USCDI), and a commitment to advance data standards for diagnosis is vital. Community driven efforts, such as Codex and other Fast Healthcare Interoperability Resources (FHIR) accelerators, are other important activities that can advance these efforts.

Evolving methods, such as natural language processing and machine learning are additional tools useful for measure development and implementation but need standards for assuring their quality and effective use.

We need to focus not just on quality measures, but measurement capacity as an essential component of healthcare structure. Measurement for quality improvement is a vital part of a learning health system.

Measurement based on individual performance is best suited for giving clinicians feedback and providing opportunities for self-learning, reflection, and participation in continuous improvement with their healthcare teams and systems.

Quality measures for public reporting and value-based programs should focus on system level performance.

“We should start sending the signal, that diagnostic excellence is an important category for measurement....and an important topic that everyone should be considering.”

Michelle Schreiber, MD
Deputy Director of the Center for Clinical Standards and Quality, the Director of the Quality Measurement and Value-Based Incentives Group, CMS

The following is an overview of a listening session on Advancing Measurement for Diagnostic Quality that was hosted by the Gordon and Betty Moore Foundation (GBMF) and took place on June 5th. For more information, please contact Karen Cosby at karen.cosby@moore.org
Some diagnostic steps can benefit from quality measures, but others need investments in research and innovation. We should encourage studies to better understand and address gaps in diagnostic excellence, including:

- investigations to better understand the early signals of disease, to improve timeliness of diagnosis
- efforts to understand how and why patients choose to seek or delay care
- the role of innovative technology in prehospital diagnosis

**Unintended Consequences**
Diagnosis is a complex process, and quality measures for diagnosis need to be developed with thoughtful consideration. Attention should be paid to the risk of unintended consequences, such as:

- Favoring one parameter of quality over another (accuracy vs timeliness vs patient-centeredness)
- Failing to recognize tradeoffs between sensitivity and specificity (avoiding over-testing or under-diagnosis)
- Failure to fully appreciate the full diagnostic trajectory and potential downstream harms of diagnostic testing.
- Promoting unrealistic standards. Uncertainty is an irreducible part of diagnosis, thus clinical quality measures of diagnostic quality will need to avoid absolute extremes in performance.

These risks can be mitigated by broad stakeholder engagement (inclusive of patients) throughout measure development, from measure concept through implementation. Balanced measures, composite measures, or portfolio measures may achieve optimal results.

**Recommendations**
Quality measures will likely be most effective if they are strategically planned across the entire diagnostic trajectory and across all health care settings such that measures are aligned and coordinated. This requires a strategic vision specific to diagnostic excellence.

In addition to the recommendations above, the following specific recommendations for federal agencies, hospitals and health systems, measurement organizations and other stakeholders came out of the June 5 listening session:

- Develop and implement a strategy to build data structure in routine EMRs and registries that captures data relevant to diagnostic quality. Digitization of health data is essential to the efforts to measure diagnostic quality, but insufficient without refinement specific for the capture of rich, granular, contextual information about diagnosis. NLP can provide additional data capture not available from or suitable for structured fields.
- Develop strategies for measurement of key diagnoses across the continuum of the diagnostic trajectory and across various healthcare settings, aligning priorities for all.
- Promote research to address evidence gaps in our understanding of disease, such as early symptom detection for cancer.
- Seek information from patients about their diagnostic journeys.
- Include diagnostic excellence in the National Quality Strategy and embed it in the Universal Foundation set.

“Let’s just do something, Let’s put it into the Universal Foundation. It’s incredibly exciting to point the way...to signal to the field that we’re going forward in this direction.”

Lee Fleisher, MD
Chief Medical Officer and Director of the Center for Clinical Standards and Quality, CMS