Diagnostic Quality Assurance Pilot Update

Since its launch in 2016, the Diagnostic Quality Assurance Pilot ("the pilot") has aimed to create a process to compare the performance of molecular diagnostic tests for selecting targeted therapies in cancer treatment. The following memorandum provides an update on the pilot's progress, milestones achieved, and next steps.

Pilot laboratories submit results

In March 2019, 18 volunteer laboratories returned data to the pilot's technical implementation team at the College of American Pathologists (CAP), marking an end to the pilot testing phase of this initiative. The data compared performance of laboratories' validated tests with specifications set by an FDA-approved companion diagnostic (CDx). To conduct this comparison, the CAP distributed the engineered references samples, *in silico* sequence data files, and a neoplastic cellularity challenge, all of which were designed by the pilot's Scientific & Technical Working Group (STWG) experts. For the pilot, biopharmaceutical developer Amgen and Amgen's diagnostic partner Illumina volunteered their CDx, which consisted of a two-gene, multiple-variant NGS panel for a targeted cancer therapy. Please see our Frequently Asked Questions primer for more details on the pilot's background and structure.

Steering Committee meets to discuss data

In May 2019, members and liaisons of the independent, multistakeholder Steering Committee (SC) met to discuss the results of the pilot. The CAP's STWG leadership presented a summary of the dataset and lessons learned from implementing the pilot. Collectively, the group discussed the results' technical implications, and their meaning for various stakeholders and SC members' organizations. While acknowledging the pilot was *"a success,"* many also noted that the pilot raised several critical issues about the workload, timeline, and complexity of the instructions for participating laboratories. The SC also addressed whether the pilot's approach could be replicated, expanded, or sustained.

Considerations for next steps

In the immediate term, the STWG and SC members plan to examine additional queries and correlations of the dataset to understand sources of variability, further consider the pilot's scope and limitations of the design, and identify how collaboration across stakeholders might provide opportunities for the pilot's approach to be used in the future. In parallel, the SC is discussing various strategies to share the pilot's results externally with diverse stakeholders. During the May meeting, SC members reiterated that transparency is a core principle of the pilot. They are committed to sharing outcomes later in 2019 through a peer-reviewed technical publication, a

white paper, and/or by holding a summit with additional select stakeholders to further discuss implications.

For further details, please contact:

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About the Diagnostic Quality Assurance Pilot and this document

The views expressed in this document represent consolidated views of those participating in the Diagnostic Quality Assurance Pilot Steering Committee as members and liaisons. Participation in the Steering Committee and written materials reflecting the Steering Committee's activities are not intended to represent the policies or positions of the individual participants or their affiliated organizations.

Annex: Pilot Participants

Scientific Technical Working Group

- Julia A. Bridge, Professor, Director, Division of Molecular Pathology, The Translational Genomics Research Institute (TGen), Professor, Department of Pathology and Microbiology, University of Nebraska Medical Center
- Suzanne Kamel-Reid, University of Toronto, Laboratory Medicine and Pathology and Toronto General Hospital and Research Institute
- Robert D. Loberg, Executive Director, Head of Clinical Biomarkers & Diagnostics, Medical Sciences, Amgen, Inc.
- Jason D. Merker, Associate Professor of Pathology and Laboratory Medicine & Genetics, The University of North Carolina at Chapel Hill School of Medicine, Lineberger Comprehensive Cancer Center
- John D. Pfeifer, Vice Chair for Clinical Affairs, Department of Pathology, Washington University School of Medicine *(Chair)*
- Patricia Vasalos, Technical Manager, Proficiency Testing, College of American Pathologists (CAP) *(STWG Project Manager)*
- Barbara Zehnbauer, Adjunct Professor of Pathology, Emory University School of Medicine and Journal of Molecular Diagnostics, Editor in Chief *(Liaison to the Steering Committee)*

Steering Committee

Members

- Jeff Allen, President and CEO, Friends of Cancer Research
- Naomi Aronson, Executive Director, Clinical Evaluation, Innovation and Policy, Blue Cross and Blue Shield Association (BCBSA)
- Gabriel Bien-Willner, Medical Director, MolDx, Palmetto GBA
- Paul Gerrard, Medical Director and MolDx Director of Clinical Science, Palmetto GBA
- Karen Gutekunst, Vice President of Diagnostic Development, Illumina
- Daniel F. Hayes, Stuart B. Padnos Professor of Breast Cancer Research, University of Michigan Comprehensive Cancer Center; Past-President, American Society of Clinical Oncology (ASCO) 2016-2017
- Erick Lin, Medical Director, Clinical Content, Office of Clinical Affairs, BCBSA

- Robert D. Loberg, Executive Director, Head of Clinical Biomarkers & Diagnostics, Medical Sciences, Amgen
- Tom Oliver, Director, Clinical Practice Guidelines Division, ASCO
- John Pfeifer, Vice Chair for Clinical Affairs, Pathology and Immunology, Washington University School of Medicine *(Liaison to the STWG)*
- Blase Polite, Associate Professor of Medicine, Deputy Section Chief for Clinical Operations, and Executive Medical Director for Cancer Accountable Care, University of Chicago Medicine, and ASCO board member
- Girish Putcha, Chief Medical Officer, Freenome *(formerly Director of Laboratory Science, MolDx, Palmetto GBA)*
- Richard L. Schilsky, Senior Vice President and Chief Medical Officer, ASCO
- Patricia Vasalos, Technical Manager, Proficiency Testing, CAP *(Liaison to the STWG)*
- Barbara Zehnbauer, Adjunct Professor of Pathology, Emory University School of Medicine and Journal of Molecular Diagnostics, Editor in Chief *(Chair)*

Advisors to the Steering Committee and Chair

- Lindee Goh, Partner, Tapestry Networks
- Elizabeth Shaughnessy, Senior Associate, Tapestry Networks

Liaisons

- Gideon Blumenthal, Acting Deputy Director, Office of Hematology and Oncology Products (OHOP), Center for Drug Evaluation and Research (CDER), Food and Drug Administration (FDA)
- Yun-Fu Hu, Deputy Director, Division of Molecular Genetics and Pathology, Office of In Vitro Diagnostics and Radiological Health, Center for Devices and Radiological Health (CDRH), FDA
- Lisa McShane, Acting Associate Director, Division of Cancer Treatment and Diagnosis, Biometric Research Program, National Cancer Institute
- Michael Pacanowski, Associate Director, Genomics and Targeted Therapy, Office of Clinical Pharmacology, Office of Translational Sciences, CDER, FDA
- Julie Schneider, Regulatory Scientist, OHOP, CDER, FDA
- Katherine Szarama, Evidence Development Division, Coverage and Analysis Group, Centers for Medicare and Medicaid Services
- Zivana Tezak, Associate Director for Science and Technology, Personalized Medicine Policy, Office of In Vitro Diagnostic Device Evaluation and Safety, CDRH, FDA