Global Economics and Evaluation of Clinical Genomics Sequencing Working Group

Overview

The Global Economics and Evaluation of Clinical Genomics Sequencing Working Group (GEECS) is made up of an esteemed group of health economists and policy researchers from major institutions across the globe who have been at the forefront of the incorporation of genomics into clinical care. The working group is chaired by Kathryn A. Phillips, PhD, Director of the Center for Translational and Policy Research on Personalized Medicine (TRANSPERS) at UCSF.

Work

A key challenge for the appropriate implementation of precision medicine is the need to evaluate its costs, benefits, and risks. However, several issues arise when measuring the value of precision medicine, particularly new genomic tests that measure multiple rather than single genes, often using next-generation sequencing (NGS) technologies.

GEECS focuses on improving the methods used for assessing the value of new genomic technologies – specifically, clinical genomics testing using NGS. The group is comprised of experts from across the globe in value assessment. Founded in 2017, GEECS includes the founding members as well as affiliated members who provide a range of perspectives from different disciplines and countries.

GEECS has published a series of papers and journal theme sections that address challenges in assessing the value of NGS by not only highlighting these challenges but also by suggesting innovative solutions to move the value assessment process forward for precision medicine. The recommendations can be applied not only by health economic researchers, but also by other stakeholders including health technology assessment organizations, payers, clinical researchers, and the biotechnology and pharmaceutical industries.

In our most recent publications, GEECS has continued its work on measuring the value of NGS with a focus on moving evaluation of precision medicine into practice. This work has resulted in a 2020 theme section in Value in Health (the official journal of the International Society for Pharmaceutical and Outcomes Research). This work leverages and continues our two previous themed sections in Value in Health from 2017 and 2018 as well as a related theme issue in Health Affairs (the leading health policy journal).

GEECS is continuing its work on value assessment with a particular emphasis on building the necessary infrastructure that can be used across the globe.

Founding Members

James Buchanan, DPhil, University of Oxford, Oxford, United Kingdom

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For further information about GEECS, please contact TRANSPERSInfo@ucsf.edu.

Center for Translational & Policy Research on Personalized Medicine

Publications

Theme Section - Methods for Moving Evaluation of Precision Medicine into Practice and Policy - Value in Health

Phillips KA. Introduction to Themed Papers: Methods for Moving Evaluation of Precision Medicine into Practice and Policy. Value Health. 2020;23(5):527-528.

Deverka PA, Douglas MP, Phillips KA. Use of Real World Evidence in U.S. Payer Coverage Decision-making for NGS-based Tests: Challenges, Opportunities, and Potential Solutions. Value Health. 2020;23(5):540-550.

Marshall DA, Grazziotin Lago L, Regier DA, Wordsworth S, Buchanan J, Phillips KA, Ijzerman M. Using Simulation and Constraint Optimization Modeling to Address Challenges in Economic Evaluation of Precision Medicine. Value Health. 2020;23(5):566-573.

Mackay Z, Dukhovny D, Parad RB, Phillips KA, Beggs AH, Green R, Christensen KA. Methods for Identifying Health Care Attributable to Unexpected Genomic Results. Value Health. 2020;23(5):559-565.

Trosman JR, Douglas MP, Liang S, Weldon CB, Kurian AW, Kelley RK, Phillips KA. Insights from a Temporal Assessment of Increases in U.S. Private Payer Coverage of Tumor Sequencing from 2015 to 2019. Value Health. 2020;23(5):551-558.

Theme Section - Assessing the Value of Next Generation Sequencing - Value in Health

Phillips KA, Deverka PA, Marshall DA, Wordsworth S, Regier DA, Christensen KD, Buchanan J. Methodological Challenges and Solutions for Assessing Economic Value of Next Generation Sequencing Tests. Value Health. 2018; 21(9):1033-1042.

Wordsworth S, Doble B, Payne K, Buchanan J, Marshall DA, McCabe C, Regier DA. Using 'big' data in the cost-effectiveness analysis of genomic-based diagnostic tests: challenges and potential solutions. Value Health. 2018; 21(9):1048-1053.

Reiger DA, Weymann D, Buchanan J, Marshall DA, Wordsworth S. Valuation of Health and Non-health Benefits from Next Generation Sequencing: Approaches, Challenges, and Solutions. Value Health 2018; 21(9):1043-1047.

Christensen KD, Phillips KA, Green RC, Dukhovny D. Cost Analyses of Genomic Sequencing – Lessons Learned from the MedSeq Project. Value Health. 2018; 21(9):1054-1061.

Trosman JR, Weldon CB, Gradishar WJ, Benson AB III, Cristofanilli M, Kurian AW, Ford JM, Balch A, Watkins J, Phillips KA. From the Past to the Present: Insurer Coverage Frameworks for Next-Generation Tumor Sequencing. Value Health. 2018; 21(9):1062-1068.

Theme Issue - Precision Medicine - Health Affairs

Ginsburg GS, Phillips KA. Precision Medicine: From Science to Value. Health Affairs. 2018;37(5): 694-701.

Phillips KA, Deverka PA, Hooker GW, Douglas MP. Genetic Test Availability And Spending: Where Are We Now? Where Are We Going? Health Affairs. 2018;37(5): 710-716.

Theme Section - Value to Decision Makers of Evaluations of Personalized / Precision Medicine: Applications to Other Emerging Technologies - Value in Health

Phillips KA. Assessing the Value and Implications of Personalized/Precision Medicine and the "Lessons Learned" for Emerging Technologies: An Introduction. Value Health. 2017;20(1):30-31.

Phillips KA, Douglas MP, Trosman JR, Marshall DA. "What goes around comes around": lessons learned from economic evaluations of personalized medicine applied to digital medicine. Value Health. 2017;20(1):32- 38.

Marshall DA, Gonzalez JM, MacDonald KV, Johnson FR. Estimating preferences for complex health technologies: lessons learned and implications for personalized medicine. Value Health. 2017;20(1):17-24.

Trosman JR, Weldon CB, Douglas MP, Deverka PA, Watkins JB, Phillips KA. Decision making on medical innovations in a changing health care environment: insights from accountable care organizations and payers on personalized medicine and other technologies. Value Health. 2017;20(1):25-31.

Rosenman MB, Decker B, Levy KD, Holmes AM, Pratt VM, Eadon MT. Lessons learned when introducing pharmacogenomic panel testing into clinical practice. Value Health. 2017;20(1):39-44.