NBSxWGS (BEACONS)

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National Institutes of Health
Office of Strategic Coordination–The Common Fund

The NIH Venture Program Announces First Award for the NBSxWGS (BEACONS) Initiative

Date

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The National Institutes of Health (NIH) Common Fund Venture Program initiative, Newborn Screening by Whole Genome Sequencing (NBSxWGS) Collaboratory, has announced its first award: BEACONS (Building Evidence and Collaboration for GenOmics in Nationwide Newborn Screening). NBSxWGS (BEACONS) is designed to assess the feasibility of integrating whole genome sequencing into the U.S. newborn screening program. The goal is to make this technology easier and more affordable for states to access, while addressing parents' and caregivers' concerns about privacy and consent issues and focusing on only those genes and variants that are treatable in the first year of life. Ultimately, NBSxWGS (BEACONS) aims to make it possible for every newborn to receive testing for serious genetic disorders at the time when treatments are most effective. Notably, another NIH Common Fund program, the Somatic Cell Genome Editing (SCGE) program, is supporting research to explore the potential

of genome editing as a future approach to treating genetic diseases. While these efforts are still at an early stage, they represent one of several avenues of research that may, over time, inform the broader landscape of possible treatments for rare genetic conditions.

Over the three years of the initiative, NIH will fund approximately $14.4 million pending successful completion of milestones and availability of funds. The Venture Program NBSxWGS (BEACONS) initiative is a cooperative effort between the Common Fund, the National Center for Advancing Translational Sciences (NCATS), and the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD).

NBSxWGS (BEACONS) will be led by multiple principal investigators: Robert Green and Nina Gold of Mass General Brigham and Harvard Medical School; Ingrid Holm of Boston Children's Hospital and Harvard Medical School; and Melissa Wasserstein of Children's Hospital at Montefiore and Albert Einstein College of Medicine. The team also includes leadership from the Association of Public Health Laboratories and additional investigators from other medical centers around the nation. The NIH budget will be supplemented by contributions from sequencing partners GeneDx and Illumina, and will bring together experts, public health labs, and community partners to study how whole genome sequencing could be integrated into newborn screening nationwide. Their research will explore how this approach can help identify treatable conditions earlier, while ensuring it is practical for health systems and trusted by families and caregivers. Another important component of this initiative is community engagement and a transparent informed consent process for parents and caregivers, alongside an ELSI (Ethical, Legal, and Social Implications) study that will examine public perceptions of whole genome sequencing as part of newborn screening.

The Venture Program NBSxWGS (BEACONS) initiative is one of two Venture initiatives launching in 2025. The second initiative, Advancing Non-Invasive Optical Imaging Approaches for Biological Systems (NIOI), will advance next-generation imaging technologies that allow deeper, clearer views inside the body without the need for invasive procedures. Both initiatives have the potential for outsized impact on biomedical science and are responsive to the shared priorities of NIH Institutes, Centers, and the Office of the Director. These initiatives focus on nimble, targeted investments—modest in scale but designed for swift implementation—that can seize emerging opportunities and rapidly accelerate scientific progress.