The University of Iowa Neonatal biorepository was initiated in 1999 and has a long history of successfully recruiting participants, collecting samples, and generating data that has resulted in numerous publications and externally funded grants for investigators within the Stead Family Department of Pediatrics and in other departments or at other institutions. As of January 1, 2023, the NICU biorepository includes nearly 6,000 consented participants (2325 infants/children, 2073 mothers, 1163 fathers) with at least one biological sample (primarily blood or saliva). Infant blood samples are typically obtained from discarded umbilical cord blood and peripheral blood draws, resulting in a quantity of DNA that is sufficient for innumerable sequencing, single nucleotide polymorphism, and epigenetic studies. The NICU biorepository and database remains a centralized resource used for the design (preliminary data) and implementation of many investigations. It is a critical resource, as the samples and data that are held within are important in the continued progress toward precision care in neonatal medicine.