**Jason Adelman**

R01 HD094793-01: Effectiveness of Pictographs for Preventing Wrong-Patient Errors in the NICU.

Wrong-patient errors pose a serious threat to patient safety, and newborns in the neonatal intensive care unit (NICU) are at greatest risk. Half of infants in the NICU on any given day are estimated to be at risk of a wrong-patient error as a result of having similar identifiers. A major contributing factor is the use of temporary, nondistinct first names, e.g., Babyboy/Babygirl, that are assigned to newborns at birth and remain unchanged throughout their hospital stay. Use of a distinct newborn naming convention that incorporated the mother's first name (e.g., Wendysgirl) reduced the risk of wrong-patient orders in the NICU by 36%. However, the distinct naming convention conferred benefit only for singletons—multiple births remained at high risk as a result of siblings sharing the same name distinguished by a single character (e.g., 1Wendysgirl, 2Wendysgirl).

Displaying patient photographs in electronic health records (EHRs) is a promising strategy to improve patient identification. However, photographs are unlikely to be an effective identifier in the NICU where an additional identifier is urgently needed. In place of patient photographs, we propose **BabySAFE Pictographs** as a "photo equivalent" for newborns in the NICU. Pictographs consist of three elements: 1) a pictorial image of a readily identifiable, distinctive, and easy-to-remember object; 2) the infant's given name; and 3) a colorcoded border indicating the infant's sex. Pictographs will be displayed at the bedside and in the EHR to serve as a visual cue when providers place orders. Parents will select a Pictograph for their infants for the duration of their hospital stay, with no two infants having the same Pictograph at the same time in the same NICU. We propose conducting a cluster randomized controlled trial to assess the effectiveness of Pictographs for reducing wrong-patient orders in the NICU.

We will use the automated Wrong-Patient Retract-and-Reorder measure, developed and validated by the Principal Investigator of this proposal, as the primary outcome measure. Our main hypothesis is that Pictographs will reduce the frequency of wrong-patient orders in the NICU, including among siblings of multiple births. We propose the following specific aims:

**Aim 1:** To conduct a multi-site, cluster randomized controlled trial to compare the frequency of wrongpatient orders in the NICU between providers randomized to view verification screens with versus without BabySAFE Pictographs, as identified by the Wrong-Patient Retract-and-Reorder measure.

**Aim 2:** To conduct subgroup analyses of the effectiveness of BabySAFE Pictographs for reducing the frequency of wrong-patient orders among siblings of multiple births in the NICU.

**Aim 3:** To conduct a qualitative evaluation to examine the perceptions and experiences of healthcare providers and parents about BabySAFE Pictographs as an additional identifier for newborns in the NICU. This proposal addresses research gaps identified by the National Institute of Child Health and Human Development, which seeks projects to develop novel and improved methods of neonatal patient identification