



## NEWS RELEASE

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FOR IMMEDIATE RELEASE

### HSyE Performs Vital Role in NeoQIC Human Milk Collaborative

Very low body weight (VLBW) infants, weighing 1,500 grams or less at birth, comprise 0.7% of total births. These babies are highly prone to neonatal complications including poor physical growth, immunologic immaturity, and, later on in life, diminished cognitive function. Administering human milk to preterm infants has been proven to provide benefits that support long-term health and development. For instance, human rather than bovine milk optimizes childhood neurodevelopment as well as reduces the incidence of serious intestinal and blood stream infection. Babies fed breast milk also gain weight more quickly and experience lower rates of certain complications like the potentially fatal necrotizing enterocolitis.

The advantages of human milk are well-known; even so, at the time of hospital discharge the rate of human milk use for VLBW infants is only 50-60%, with no consistency from hospital to hospital. There is significant variation, too, in the facilitation of evidence-based practices to support mothers' production of breast milk. Such practices include parental education of human milk's assets, early and frequent breast pumping and hand expression techniques, and skin-to-skin care. The scenario calls for considerable improvement of consistent and effective implementation of evidence-based hospital practices that bolster mothers' breast milk production.

The Neonatal Quality Improvement Collaborative of Massachusetts (NeoQIC) is aiming to increase breast milk consumption in VLBW babies. A consortium of eleven level 3 neonatal intensive care units (NICUs), NeoQIC provides infrastructure to lead and manage state-wide quality improvement initiatives. In 2015 NeoQIC began a 2-year project in which participating hospitals will organize local teams focused on the improvement of human milk use in VLBW infants. Healthcare Systems Engineering Institute (HSyE) will educate the teams on proper quality improvement methods as well as help them modify and measure their practices. This collaborative brings together eleven Massachusetts hospitals and eighty doctors, nurses, and data managers.

The initiative aims to increase the percentage of VLBW infants in participating NICUs receiving any human milk at discharge or transfer to  $\geq 75\%$ ; increase the percentage of VLBW infants in participating NICUs receiving exclusively human milk at discharge or transfer to  $\geq 25\%$ ; provide education regarding human milk benefits at all prenatal consultations for VLBW babies; increase the percentage of mothers of VBLW infants who pump or hand express breast milk within 6 hours of birth by 25% above baseline; increase the percentage of VLBW infants who receive oral care or enteral feeding with human milk within 24 hours of birth by 25% above baseline; provide consultation with a lactation consultant within 24 hours of birth for all mothers of VLBW infants; increase the percentage of VLBW infants receiving any of mother's own breast milk on day of life 7, 14, 21, and 28 by 25% of baseline; and increase the percentage of VLBW infants receiving skin to skin care with the mother on day of life 7, 14, 21, and 28 by 25% of baseline.

The Healthcare Systems Engineering Institute at Northeastern University partnered successfully with NeoQIC in an earlier initiative (Neonatal Abstinence Syndrome). In the current VLBW partnership HSyE takes the lead in both mathematical and teaching roles. This includes providing training on process improvement techniques, the PDSA cycle, and statistical process control (SPC). In this partnership, HSyE founding director Dr. James Benneyan teaches NeoQIC members about how to set aims, measure change,

and statistically determine whether a change is an improvement. Additionally he has taught in-services to the group on SPC methodology, provided SPC templates for data evaluation, and advised the clinical leaders on pacing and structure of their improvement projects. Dr. Susan Haas, clinician-in-residence at HSyE, explains, "Working with a statewide collaborative rather than individual hospitals multiplies and extends the benefit of using systems engineering methods."

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