LIMINALITY INNOVATIONS

Summary of Evidence for Merge™

Peer-reviewed published literature

'Gold Standard' evidence of effectiveness of Merge

Merge™ was tested in a cluster randomized controlled trial in 10 Level II neonatal intensive care units (NICU) with 654 mothers and 765 infants. We found:

- A 2.55-day reduction in moderate and late preterm infant hospital length of stay favoring Merge™
    - No concomitant increases in emergency department visits or hospital readmissions.
- Mothers were less distressed
- Mothers were more confident in the care of their infant

Healthcare providers making decisions about family centered care initiatives in their NICU can be confident that Merge™ will improve quality of family centered care, reduce preterm infant length of stay, and avoid health system costs.

An Actionable Model of Family Integrated Care

Merge™ is an actionable model of family integrated care that empowers parents to partner with the healthcare team in the care of their infant, from the time of admission.

With Merge™, infants were first placed skin-to-skin earlier, achieved full enteral feeds more quickly, and spent less time on Total Parental Nutrition.

To achieve value-based healthcare, it is increasingly important to implement effective models of care. Merge™ improves neonatal and maternal outcomes, without downstream healthcare utilization, all of which may reduce healthcare system costs.

Value-based Healthcare Optimized: A Case Study

Did you know it normally takes 17 years for an idea about how to improve healthcare to be put into practice?

We present Merge™ as a case study of value-based health care optimized through a learning health system framework. Value-based health care is a way of organizing health systems to transform outcomes and achieve the highest quality of care and the best possible outcomes with the lowest cost. With predictable processes and structures to facilitate evidence to implementation and finally sustainability, Merge™ realized a positive return on investment, creating $1.16 million in value over 2 years for the Alberta health system by freeing up costly NICU capacity through length of stay reductions.

Typically, health care decision makers must choose between quality and cost. With Merge™, the health system receives higher quality family centered care at a lower cost.

Merge™ was known in research and development as Alberta Family Integrated Care (FICare)™

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Provincial Scale and Spread of Merge™: From Cluster Randomized Controlled Trial to Health System Partnership **(See volume 4, pp. 16 – 19)**

Merge™ is a clinical-trial validated and family centered approach to integrating families into the care of their newborn in the neonatal intensive care unit (NICU). We describe moving from a cluster randomized controlled trial (cRCT) to full partnership with the health system as part scale and spread of Merge™ across all 14 NICUs in the province of Alberta, Canada.

The Maternal Newborn Child and Youth Strategic Clinical Network™ (MNCY SCN) enhanced this unique collaborative opportunity first as the knowledge user in the cRCT and then as full partner for scale and spread. The Innovation Pipeline in Alberta Health Services provided funding, networks, and support structures to identify gaps, generate evidence, and then rapidly move to provincial scale and spread.

Based on this provincial scale and spread experience we provide three integrated knowledge translation recommendations:

1. Engaging early and often contributes to stakeholder knowledge and understanding
2. Listening, emphasizing the positive, and being genuine, adaptable, and practical contributes to stakeholder trust and commitment, and
3. forming a true partnership with knowledge users is key to negotiating and mitigating barriers.

The Health Care System is Making "too much noise" to Provide Family Centered Care

The complexity of health systems interferes with good intentions and capacity to provide family centered care.

Prior to evaluating Merge™, healthcare providers and hospital administrators from 10 level II NICUs told us about how they needed to direct their efforts to meet requirements of the health care system. In addressing requirements of the health care system, providers lost sight of family centered care and patient outcomes.

As the next evolution in family centered care, Merge™ provides the training, tools, and strategies to adopt this family integrated model of care into practice.

Accelerated Journey to Home from the Neonatal Intensive Care Unit

Neonatal intensive care units (NICUs) are highly technological critical care environments that can be overwhelming for parents during an already stressful time.

We explored mothers' experiences of parenting in the NICU grouped by model of care (Merge™ and standard care). A core social process of Journey to Home was identified.

With Merge™, mothers experience an enhancement to standard care related to building reciprocal trust that formed the foundation for relationships with healthcare providers that accelerated their journey to home. Relational communication, a component unique to Merge™ training, may be critical to teach healthcare providers how to build trusting relationships with parents of infants in NICUs. To facilitate integration of parents into the NICU care team and accelerate the journey to home, NICU leaders may wish to consider embedding Merge™ training in staff orientation.

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Facilitators and barriers to implementation of Alberta family integrated care (FICare) in Level II neonatal intensive care units: a qualitative process evaluation substudy of a multicentre cluster-randomised controlled trial using the consolidated framework for implementation research (2021)

Implementation of family centered care initiatives is often challenging due to a poor understanding of contextual factors of the implementing organization.

Neonatal care providers and hospital administrators described key facilitators and barriers to implementing Merge™.

Facilitators	Barriers
• Absorptive capacity for change • Compatibility of the innovation with the implementing organization • Available resources • Access to knowledge for neonatal care providers • Engagement of key stakeholders • Evaluation	• Design and delivery of staff training • Relative priority against competing initiatives • Learning climate of the implementing organization

These findings reinforce that contextual factors are fundamental influencers of implementation of family centered initiatives in healthcare settings. Therefore, context should be assessed and strategically managed. Liminality uses a standardized process to support operationalization of Merge™ with fidelity.

Merge™ Improves Longer-Term Preterm Infant Development (2022)

Compared with their full-term counterparts, moderate and late preterm infants are at increased risks of developmental delay, cognitive delay, communication impairments, and behaviour challenges.

With Merge™, the risk of communication delay was significantly lower for infants between 6- and 24-months corrected age compared with standard care.

More Confident and Satisfied Fathers in the NICU (2022)

Upon admission of their infant to the neonatal intensive care unit (NICU), fathers have reported shock and anxiety, a general sense of lack of control, difficulty transitioning into fatherhood as a result of the critical care needs of their infant, and a lack of information exclusive to them.

Merge™ is an actionable model of family integrated care that empowers parents to partner with the healthcare team in the care of their infant, from the time of admission. Fathers' experiences in the NICU emerged across seven themes: fear of the unknown, mental preparation, identifying the father's role, parenting with supervision, effective communication, post-neonatal intensive care transition, and family life.

With Merge™, fathers attributed their level of confidence and positive NICU experience, which continued post-discharge, to the care and attention they received during hospitalization.

Merge™ was known in research and development as Alberta Family Integrated Care (FICare)™

Scoping Review of Education for Women About Return to Driving After Abdominal Surgery (2023)

This scoping review explores the education and the evidence informing the education that is given to women about when to return to driving after abdominal surgery. After a comprehensive search of scientific databases and the relevant grey literature, we found that the education given to women was varied. Women were told to return to driving from 1 to 10 weeks after abdominal surgery; this education was primarily provided by health care providers, although some education was provided in leaflets. Additionally, education about return to driving had a weak evidence base, where provided evidence was based on common sense, traditional practice, perceptions of insurance policies, a woman's comfort level, or her ability to deploy an emergency brake. There is a need for more research to inform the criteria used to assess driver fitness after abdominal surgery, especially to support family-centered care in NICUs. Unnecessarily delaying return to driving after an abdominal surgery such as caesarean birth may limit the opportunities for mothers to parent their infant in the NICU.

Relational Communications Strategies to Support Family-Centered Neonatal Intensive Care (2016)

This article gives voice to the art and science of relational communications with parents of critically ill newborns who require neonatal intensive care. Benzies describes how healthcare providers can rethink communications patterns to meaningfully involve parents in the neonatal care team. Through the art of circular questioning, Benzies reveals strategies that contribute to the development of mutually beneficial trusting relationships with parents during their hospital stay. Benzies challenges healthcare providers to reinforce parental self-efficacy in the care of their critically ill newborn through the application of commendations. Benzies recommends relational communication training, including tools and strategies, in initiatives designed to increase parental involvement in the care of their critically ill newborn.

The Work of Mother in the NICU: A Critical Analysis of Alberta Family Integrated Care Parent Journals (2022)

Integrating parents in the care of their infant in the neonatal intensive care unit (NICU) with Merge™ has demonstrated positive outcomes for parents, infants, and the health system. Considering these positive effects, Ringham and colleagues use institutional ethnography to analyze 101 parent journals and describe how mothers' work in the NICU was coordinated by institutional processes – or the organizational rules and procedures that influence a set of human interactions. This type of inquiry ensures that mothers' experiences are captured to describe what is actually happening, rather than to find meaning in the experiences. Three dominant discourses emerged: (1) feeding policies and practices, (2) roller coaster of emotions, and (3) the work of mothering in the NICU. Every day NICU rules and institutional activities coordinated mothers' work in the NICU, including decision-making and infant feeding. Mothers' activities were coordinated by practices that prioritize progression toward discharge rather than supporting them through the roller coaster of emotions and practical challenges of being present in the NICU. With Merge™, healthcare providers learn relational communication practices to understand the challenges parents encounter in the NICU and support them to navigate constant and unexpected changes.

Does Breastfeeding Self-Efficacy Theory Apply to Mothers of Moderate and Late Preterm Infants? A Qualitative Exploration (2020)

In this article, Brockway and colleagues shared the stories of 14 mothers' experiences with breastfeeding their preterm infant in a Level II neonatal intensive care unit. In some cases, these stories are heart wrenching and demonstrate how societal pressures of 'breast is best' and institutional influences created a rift in relationships that erodes the ability of healthcare providers to provide breastfeeding support for women. When the role of mothers is relegated to providers of milk to their critically ill newborn, adoption of maternal identity is compromised. To maintain human milk feeding after discharge, mothers articulated the importance of direct breastfeeding at discharge. Except for vicarious learning, Brockway and colleagues mapped mothers' experiences of feeding their critically ill newborn onto breastfeeding self-efficacy theory. While breastfeeding self-efficacy theory is relevant to mothers of preterm infants, health care providers need to be aware of institutional culture and policies that negatively affect breastfeeding self-efficacy and feeding outcomes.