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Gravens by Design: Close Collaboration with Parents Intervention Improves Family-Centered Care and Increases Parent-Infant Closeness in Neonatal Intensive Care Units

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Abstract:

We introduce an intervention, Close Collaboration with Parents, targeted to the multi-professional staff of a neonatal intensive care unit to develop their skills to provide infant care collaboratively with the parents, support parenting, and develop the unit's family-centered care culture. The goals of this intervention align with the factors that parents have identified as supportive and essential for them. The intervention includes theoretical education and bedside practices with parents and infants. These practices stimulate the staff to reflect on their care culture and improvement needs. After the intervention, we have shown that family-centered care improves, and parents spend longer time with their infants in the NICU. The intervention might also improve the growth of preterm infants, shorten their length of stay, and support parents' long-term psychological well-being. The Close Collaboration with Parents intervention has been implemented in 30 units in eight countries.

How did it get started?

Three convergent visions of three professionals inspired the development of the Close Collaboration with Parents intervention. Professor Liisa Lehtonen, as the leader of the Division of Neonatology at Turku University Hospital, had a vision that the staff would benefit if they were prepared to work closely with the families before moving to the new single-family room unit under planning in 2008. Professor Zack Boukydis had experience working as a clinical psychologist within neonatology in the US for about twenty years. He had developed the approach of using joint staff-parent observations on infant behavior. This tool is used to improve individual understanding of infants and involve parents in their infant's observations and care planning (1). Associate Professor Sari Ahlqvist-Björkroth had knowledge and experience in parent-infant interaction and transition into parenthood as a developmental psychologist (2). She innovated the neonatal staff's process-like teaching, combining bedside practices, mentoring, and reflections. These methods are effective in adult learning and implementation (3, 4).

The content and structure of the original intervention were mainly designed by Dr Ahlqvist-Björkroth and Dr Boukydis (5). During the first implementation period between 2009 and 2012, it was modified by the feedback from the NICU staff at Turku University Hospital, especially by Dr Lehtonen and the first unit mentors, Sanna Pick, RN, and Eija Laine, RN. Later, Associate Professor Anna Axelin, RN, PhD, participated in the development of the content related to shared decision-making, especially during medical rounds (6, 7)

How did it expand?

The Close Collaboration with Parents intervention has been implemented in 24 NICUs in 8 countries. In addition, the staff in the delivery room, prenatal and/or postnatal wards is trained in six hospitals. Even if the core content and structures of the intervention have remained the same over the years, we have developed the implementation based on the feedback from different NICUs. The intervention started with intense face-to-face teaching and then evolved to blended teaching, including e-learning and remote teaching, in addition to face-to-face teaching.

How do we do it today?

We use a systematic approach so that all the staff members of different disciplines in one unit get the same education. This systematic training of the NICU staff aims to change attitudes and values. The care practices in the unit are not evaluated or judged by the Close Collaboration with Parents training team (CC trainers, Figure). The training's theoretical teaching and bedside practices stimulate the staff to innovate ideas about improving their family-centered care. It is entirely in the power of the unit staff to decide how they deliver their family-centered care. We have seen, however, that the NICUs improve their family-centered care as they learn to see the value of collaborating with parents and supporting parenting (8).

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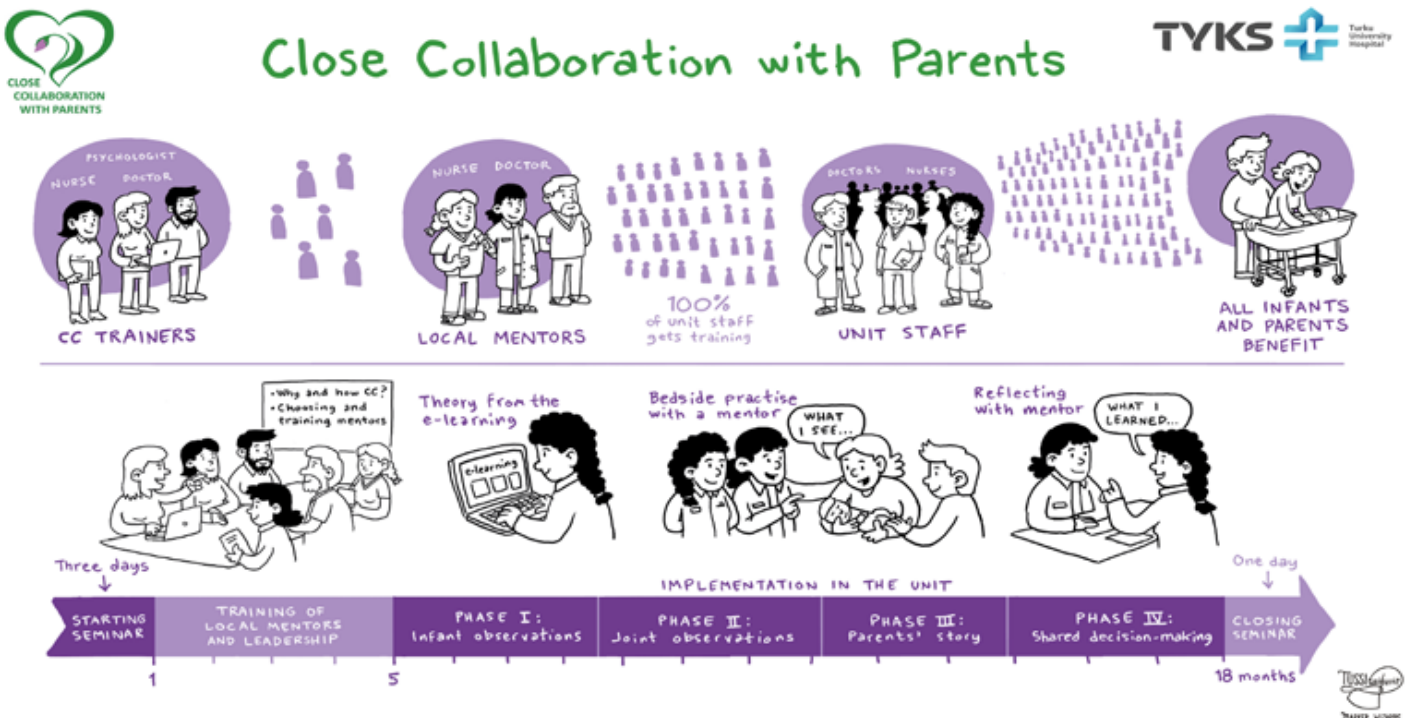
We can mention many examples of processes the units have decided to develop after learning to look at their practices from the parent's perspective. One example has been to create new ways to involve parents in transfers within and between the units. Some units make infant care recommendations with parents for the next unit and invite the parents to be present during the transfers. Another example has been a practice change during medical rounds so that the parents get the first turn to tell about their observations on the baby.

The education in the Close Collaboration with Parents advances stepwise so that the following learning goals are built on the previ-



ous goals throughout the four phases. Learning happens at the bedside, integrated with the everyday work of the staff member and a mentor. Reflections with the mentor are essential for learning. The role of reflection is to integrate the new experience and its knowledge into the existing knowledge and professional role (9).

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The learning goals of the first phase include learning to observe infant's needs and learning to communicate them among the staff systematically. The practices are infant behavioral observations with a mentor. In the second phase, the infant observations are done with a parent. The learning goal is to learn active listening skills, including open and "wondering" questions, without being didactic. The third phase focuses on understanding the individual story of the family, building empathy, and avoiding being judgmental. Understanding the unique parenting features in this family also helps to find the best ways to support parents' relationship with their infant. The fourth phase is about shared decision-making, which is practiced during medical rounds, care-taking situations, and preparing for the transition to home.

How to implement it in a NICU?

The implementation is initiated during the negotiation phase when a unit is considering whether to start the program. The decision and commitment to implement the intervention require a motivation to critically explore one's family-centered care practices and a desire to improve them.

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The main methods of implementation are education and facilitation. First, CC trainers provide the initial training for the unit that participates in the training. This initial training consists of training for the local mentors and leadership, including a visit to the NICU at Turku University Hospital and a starting seminar for the staff of the participating unit. After the local mentors have completed their training (usually in English), they start mentoring their colleagues using their native language(s). The mentoring phase for the whole staff is typically one and a half years but varies depending on the number of staff in the unit. The CC trainers provide support and help in problem-solving through remote meetings and unit visits during the implementation in the unit. When the training is completed in a unit, a closing seminar will be held to summarize the training process and the impact of the intervention. The process is visualized in the Figure.

Each staff member must go through all four intervention phases, which take about six eight-hour work shifts. Each phase includes theory, bedside practices, and reflection. The staff member can

independently learn the theoretical content by completing the e-learning modules of each phase before the bedside practices. The bedside practices are done with a local mentor during the work shift of the staff member. The practice happens with the patients of the staff member. Their parents provide immediate feedback to the staff members during the practices. After each bedside practice session, the staff member will reflect on the practice experience with his/her mentor. The mentor delivers the clinical care, an extra resource to compensate for the time for practice and reflection.

The three learning modalities are chosen based on the knowledge of adult learning. They enable the integration of the theory into everyday work and unit practices. The bedside practices provide experiential learning (3). Reflective discussions facilitate individual internalization of knowledge and reflective thinking (4).

The key elements supporting the implementation of the training were studied in eight units that had completed the Close Collaboration with Parents intervention. The researchers interviewed 51 persons consisting of medical and nursing leadership and staff members. In their opinion, the motivation of the staff and good support from the leadership formed the basis for the implementation. Choosing the right time to start the intervention was critical to avoid other simultaneous, time-consuming projects in the unit. Sufficient time allocation was also critical for the implementation. In addition, it was considered essential to have both medical and nursing staff involved and motivated mentors who are flexible, responsive, and willing to give space for the mentees in their reflections (10).

What does it change?

The primary goal of the Close Collaboration with Parents training is to develop the skills of the multidisciplinary neonatal staff to provide infant care collaboratively with the parents. The downstream effects of the training are seen as improved family-centered care practices leading to better infants' recovery and parents' well-being and more efficient use of hospital resources. As the whole staff of the unit is trained, all of the infants cared for in the unit will be exposed to the new care culture. Therefore, the effects of the training will extend to a large number of patients and their families during the following years.

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The evaluation research carried out so far has mainly focused on parents, infants, and nursing staff. The improved skills of the nursing staff have been shown in qualitative and quantitative studies after the Close Collaboration with Parents intervention. The researchers interviewed nurses at the NICU at the Turku University Hospital, which developed and implemented this training first. The nurses were asked about the effects of the training on their work. They reported that the training helped them individualize infant care, trust parents more, and give the parents agency in infant care. They reported that parents were more satisfied with the care, and infants were more stable with the parents (11).

The family-centered care skills of the nursing staff, family-centered care practices of the unit, and parent-infant closeness were studied in 9 NICUs in Finland, comparing the baseline measurements three months before the training to the post-intervention measurements after the training. It is crucial to notice that the parents were not the same in the groups before and after the intervention. The nursing staff was the same and were aware of the intervention.

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The skills of the nursing staff were studied quantitatively using the Digi-FCC tool (12, 13). The questions included, e.g., "To what extent did you listen to parents today?", "To what extent did you make it possible for parents to participate in caring for their infant today?". The nurses responded anonymously to one web question about their performance after each work shift using a Likert scale. Even if they already rated their performance high during the baseline, the total score improved statistically significantly with the training, especially to the questions about their active listening skills and emotional support and how they rated their parents' trust. The parents responded to corresponding questions by text messages (Digi-FCC tool) every evening during the hospital stay. The mother gave very high ratings already at baseline, so there was no room for improvement. The fathers' scores improved significantly in the question about shared decision-making (14). Altogether, parents and nurses gave consistent answers, showing that the training provided the nursing staff with skills to involve parents and support parenting.

Family-centered care was evaluated widely in eight hospitals using the Bliss Baby Charter audit tool before and after the training (8). The leadership, experienced staff members, and a sample of parents were interviewed about the unit's family-centered care practices. The Close Collaboration with Parents intervention significantly improved family-centered care in all ten categories of family-centered care practices as classified in the Bliss Baby Charter audit tool: 1) Active care by parent and staff, 2) Parent and family support, 3) Communication, 4) Developmental care, 5) Empowered decision making, 6) Facilities, 7) Guidelines and policies, 8) Staff skills and training, 9) Information provision, and 10) Service improvement and parent involvement. In addition to these eight hospitals, the Bliss Audit Tool has been used before and after the intervention at Trondheim University Hospital and Riga Children's Clinical University Hospital. The results showed an improvement in their family-centered care practices as well. In Riga, similarly to the eight Finnish hospitals, the training aligned the views of parents and staff about family-centered care in the unit. Before the training, the staff did not see as much need for improvement in their family-centered care practices as parents did.

After the training, the level of family-centered care improved and was rated similarly by staff and parents (Zarina R et al.: Improving family-centered care with Close Collaboration with Parents program in the NICU at the Children's Clinical University Hospital in Riga. Abstract at jENS Congress 2023).

In the nine NICUs in Finland, the parents filled in the Closeness Diary about their presence and parent-infant skin-to-skin contact during the 3-month baseline and 3-month post-intervention study periods. The results showed that the training increased both mothers' and fathers' presence and the duration of skin-to-skin contact (15). Parents' presence increased regardless of the baseline level, suggesting that this intervention improves care in units with low and high levels of family-centered care.

The downstream effects of Close Collaboration with Parents extend to infant recovery and parents' long-term psychological well-being. A register-based study showed improved infant outcomes and shorter length of stay in NICUs with the Close Collaboration with Parents intervention compared to NICUs without the intervention (Itoshima R et al.: Close Collaboration with Parents Affects the Length of Stay and Growth in preterm infants: A register-based study in Finland. Manuscript submitted). After the training, the mothers of preterm infants had lower depressive symptom scores at 4-6 months and two years after the preterm delivery, as compared to a historical cohort before the training (16,17). This finding is consistent with the finding from a multicenter study showing an association between a higher level of family-centered care and a lower level of mothers' and fathers' depressive symptoms at discharge and four months later (18).

Many units have reported that the phone calls from parents after discharge have decreased or completely disappeared after the training. Many mothers have noticed the difference in the care culture if they have had a child in the same unit before and after the training. Several mothers have spontaneously commented, "Now I feel that I can be a mother here." In addition, many units have reported that the training supported their transition to single-family room NICU.

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The studies reported here have been carried out in Finland. In addition, several ongoing studies exist in other countries, including Estonia and Japan. These studies explore the mechanisms for the positive effects of the training and a large variety of parent and infant outcomes.

Wrapping up:

Professionals have widely understood the need for interventions to improve family-centered neonatal care. This need is reflected in the widespread interest in the Close Collaboration with Parents intervention. The goals of the Close Collaboration with Parents training align with the factors parents have identified and reported as supportive and essential for them (19). The key features of the Close Collaboration with Parents intervention include its holistic approach so that it is delivered to the whole staff in a NICU. This approach is more sustainable compared with training only individual staff members. It also brings the benefits of family-centered care to all patients cared for in the unit. This approach to training the whole staff has been proven to be feasible by our experience in different contexts. We have also carried out research studies to gain evidence on the effectiveness of this intervention. The evidence base is strong about its effectiveness in improving family-centered care practices in NICUs and increasing parent-infant closeness. Our studies suggest this intervention might improve infant growth and recovery and parents' long-term psychological well-being.

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