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Supporting and Sustaining Reflective Practice

Rodd Hedlund, MEd

Reflection

Reflection or the reflective process has been described by a number of educational theorists as: “the continuing conceptualization of what one is observing and doing;”[1(p13)] “thinking on your feet;”[2(p54)] “going toward the center of what you are doing…to invest in the present moment with full awareness and concentration;”[3(p451)] “knowing in action;”[2,4] “…mindfulness, allowing one to move away from habitual or automatic behavior, from familiar formulas, and from doing routine things in a routine way;”[5(p.428)] and finally:

> *“The process of ‘feeling,’ ‘seeing,’ or ‘noticing’ what it is you are doing; then learning from what you feel, see, or notice; and finally, intelligently, even intuitively, adjusting your practice.”*[3(p436)]

As Tremmel[3] points out, to practice reflection one has to change the way one’s mind works. Reflection is an ongoing dynamic process which challenges the caregiver to pay attention to “her thoughts, feelings, inner experiences, values, and behaviors,”[6(p5)] as well as the thoughts, feelings, behaviors, and experiences of other caregivers, and of the most important people in the infant’s life, his or her parents.

The Role of Reflection in the Implementation of the NIDCAP Approach to Care

> *“Refection as a framework for practice is not typically articulated in action-oriented, intensivist care work. Yet, with the move toward developmental care, reflective practice, by necessity, becomes a focus.”*[7(p8)]

The critical importance of reflection in implementing relationship-based developmental care cannot be overstated. Reflective practice provides the foundation for the attunement and connection between caregivers and the infants and families for whom they care. As Gilkerson and Als[8] observe, the connection formed between the infant and caregiver “strengthens the capacity to nurture relatedness between parent and infant.”[(p8)] Reflective practice also strengthens the relationship between the caregiver

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NIDCAP Federation International (NFI)

Founded in 2001, the NFI is an international, non-profit membership organization. The NFI encourages the implementation of developmental care and assures the quality of the Newborn Individualized Developmental Care and Assessment Program (NIDCAP) approach in all intensive and special care nurseries around the world. The NFI serves as the authoritative leader for research, development, and dissemination of NIDCAP, and for the certification of trainers, health care professionals, and nurseries in the NIDCAP approach.

> “There are two ways of being creative. One can sing and dance. Or one can create an environment in which singers and dancers flourish.”
>
> Warren G. Bennis

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and the infant's parents, as well as other caregivers. Relationships at this level are of critical importance to the infant's growth and development. As Eggbeer[9] and her colleagues note, "The quality of the relationships that parents and professionals establish on behalf of the child can enhance or diminish the effect of whatever technical skills and knowledge practitioners bring to their work with children and their families."(p53)

Reflection also helps us examine our own practice and the way we respond to our own work. It fully engages the intellectual and emotional work inherent in relationship-based developmental care. In addition, it assists us in implementing the NIDCAP approach to care and in ***facilitating change*** in the routine based, protocol driven, high-tech environment of the intensive care nursery.

> *"To cope with and work through the changes which affect them…[professionals] must deal with the emotional process of 'letting go.'"*[10 (p 33)]

Letting go of the past and moving into the future…integrating new knowledge into practice. The act of changing is more than an "event." Change for human beings is both a psychological and an emotional process. The way a caregiver typically performs a routine or procedure has psychological meaning to her…it gives her a sense of comfort, a feeling of control and a belief in being able to effect an outcome. However, when this course or flow of interaction is interrupted via the introduction of a new innovation, there can be a chain of emotional responses, such as anxiety, loss, even anger.[10] Change may produce a sense of uneasiness, a lack of direction, a sense of unfinishedness, and insecurity. As Perlman and Takacs[10] state, "To cope with change effectively, organizations must consciously and constructively deal with the human emotions associated with it."(p33)

Als and Gilkerson[11] have identified three conceptual elements of developmentally supportive care that require changes in the individual caregiver's practice, the NICU culture, and the hospital system as a whole. These elements involve viewing developmentally supportive care as process-guided, relationship-based, and systems-oriented. "A ***process-guided*** approach to care requires a flexible mind to continuously assess the infant's behavioral and physiological needs and requires flexible procedures that allows one to creatively adapt caregiving. Implementing a process-guided rather than a task or procedurally-based model is challenging in any setting, and particularly so in an acute care environment, which by necessity, is oriented to standard protocols and caregiving routines. ***Relationship-based*** care puts into focus the connectedness and mutuality of all involved: infants, family, and the professional caregivers in the system. ***Systems-oriented*** care is implemented within the dynamics of an existing social system. To grasp the systems perspective, it is necessary to step back from the immediate situation and examine the forces operating in the larger environment—both positive and constraining forces; taking the pulse of the system before offering solutions."(p184) The NICU developmental team should have access to unit-specific training and consultation, including a process consultant and psychological support (e.g., psychiatric nurse, licensed clinical psychologist, psychiatrist, or social worker) to assist them in reflecting on the process of implementation itself as well as on the emotional content of the work.[12]

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The Practice of Reflection

> *"Developmental care is inherently reflective. There are no protocols that tell you exactly what to do. Instead, ongoing observations and continuous feedback from the baby [as well as the family] guide care [and your interactions with them]."*[5(p435)]

The successful implementation of reflection requires that reflection be practiced before, during, and after our interactions with infants, their families, and the professional caregivers who care for them.[6] Practicing the reflective process includes the following steps:

Before the Interaction: Preparing for the Moment

Preparing oneself before an interaction requires moving from a state of preoccupation of the days events, to returning to "mindful awareness;"[3] preparing oneself to invest in the upcoming interaction with full awareness and concentration. For example, in preparing for a caregiving interaction with an infant, one might consider: (1) reflecting upon the caregiving that the infant will currently be offered; (2) reflecting upon what caregiving events in the past have challenged the infant and what co-regulatory supports have been most effective in comforting and soothing the infant during necessary medical and nursing procedures; (3) reviewing past developmental reports that have been written and reflecting upon the recommendations that were made; and (4) gathering all necessary supplies that will be needed to care for the infant to ensure that the interaction is not interrupted once care has begun (e.g., leaving the infant's bedside to search for a forgotten pacifier).

In preparation for being with parents as they come to be with their infant, one might consider reflecting upon: (1) current developmental observation reports and recommendations, including the infant's apparent goals, strengths, and needs; (2) current medical/nursing recommendations and any new information concerning the infant's growth and development that might be shared with the parents; (3) how one will greet the parents, welcoming them to their infant's bedside; (4) setting up the bedside environment that will offer privacy (e.g., perhaps a screen), comfortable chairs for the parents to sit on, and a place to store their coats and personal belongings; (5) how the parents might be engaged in assisting in caregiving (e.g., feeding, bathing, diaper changing, co-regulatory support, facilitation of skin-to-skin holding, etc.); and (6) what questions the parents might have and what professionals might be available to answer specific questions pertaining to their infant's care (e.g., lactation specialist, neonatologist, social worker).

During the Interaction: In the Moment

Delivering care in an individualized and supportive manner within a relationship-based developmental framework requires the caregiver to:

> *"… be here, now, to invest in the present moment with full awareness and concentration. Bringing your mind back from its many wanderings to mindful awareness."*[3(p451)]

To be here and now for the infant during caregiving interactions: This means helping the caregiver see the experience of the care recipient[12] and responding in a developmentally supportive manner to the infant's behavioral story. As Gilkerson[13] observes, the reflective process is an effort to move beyond the task-oriented nature of intensive care toward relationship-based caregiving in intensive care nurseries. The caregiver must first, make a mindful effort to release her mind from the day's past and future events so that she can truly see, hear, and feel the "humanness" of the infant; and then, intelligently, even intuitively adjust her interactions with the infant to further enhance her relationship with the baby and his or her family.

To be here and now for the family as they come to be with their baby: This involves supporting them in what comes naturally to them, to be a mother and father, to be with and for their baby. As Lawhon[14] observes, "relationship-based caregiving implies that the nurse makes a human connection with the infant and consequently is invested in furthering the beginning parent-infant relationship. The nurse understands and appreciates the infant's apparent goals and not only modifies his or her approach, but supports the parents in helping their infant achieve these apparent goals."[(p55)]

To be here and now for the NICU staff that may be resistant, ambiguous, questioning, or unsure of the developmental process: This involves listening and "holding" their feelings and perspectives. As Bettlheim and Rosenfeld[15] reflect:

> *"We can begin to understand another person's behavior only if we start with the assumption that the reasons or motives that lie behind his actions…seem good to him (p107)…[We must] proceed on the assumption that the other person's thoughts and actions are worthy of being considered in the most positive way."*[(p119)]

It is only through the process of "walking in the shoes" of others that we may begin to understand and reflect upon the motives, and actions of the "other." By holding within "the mind's eye" another person's feelings, ideas, and concerns one can, as Belensky and colleagues reflect, "discover the experiential logic behind these ideas (feelings and concerns); the ideas become less strange and owners of the ideas cease to be strangers."[16(p115)]

After the Moment: Reflective Supervision

> *"Relationship-based developmental care requires reflection rather than action; it requires staying connected and open to the other person's feelings; it is system oriented and process based; and it demands suspension of judgement and focus on the life giving forces of the other person."*[17(p57)]

Polymorph Films, Inc., 1983

Relationship-based developmental care requires changes in the individual caregiver's practice, the NICU culture, and the hospital system. The building and nurturing of relationships at each of these three distinct levels can best be served by the creation of a Reflective Supervisor role within the NICU. As Als and Gilkerson observe, "...supervision is a relationship for learning where time is set aside on a regular basis, with an experienced and trusted professional, to explore the 'imperfect processes'[16] of professional practice and one's own responses to the work."[7 (p8)] Providing reflective supervision for each developmental team member as well as the developmental specialist and/or NIDCAP Trainer is of utmost importance. As Gilkerson[5] states:

> *"Relationship-based work makes one conscious of one's feelings in interactions—one's emotional world—and that is the very place that [most NICU caregivers] have been trained to avoid. It is my belief that the greatest challenge in infant-family work across all settings is the emotional experience of the work."*[(p426)]

The Reflective Supervisor is available to listen, reflect, and provide the emotional understanding and regulation for those professionals involved in the implementation of this relationship-based work. As Shahmoon Shanok notes, the supervisory relationship is a place where "strengths are emphasized and vulnerabilities are partnered."[18 (p40)] In speaking about the process of reflective supervision, and the role of the Reflective Supervisor, Gilkerson[5] cites Jeree Pawl's "platinum rule:" "Do onto others as you would have others do onto others."[19 (p7)]

Fenichel[1] described reflective supervision as a relationship for learning between the Reflective Supervisor and the Reflective Practitioner or Supervisee. This learning relationship consists of three essential elements: regularity, collaboration, and reflection.[5] ***Regularity*** involves: "just being there, each time and on time; being fully available, without interruptions or telephones ringing."[5 (427)] ***Collaboration*** involves: sharing power; making sure mutual expectations are clear; communicating openly. Finally, **Reflection**, which is used in four ways: reflection *before* action, reflection *in* action, reflection *on* action and reflection *for* action. ***Reflection before action*** involves preparing oneself to invest in the upcoming interaction with full awareness and concentration. ***Reflection in action*** has been described by Schön[2] as "thinking on your feet,"[(p54)] or "focusing on the present moment, simultaneously doing and learning and coming to know."[3(p438)] ***Reflection on action*** refers to "slowing down the process to reflect"[8(24)] after the interaction or a "mode of research activity undertaken in tranquility, off-line...,"[3(p446)] as experienced through individual reflection (or inter-subjective reflection) and one's participation in a reflective supervisory session; "stepping back in order to go forward."[8(p24)] ***Reflection for action*** involves integrating: (1) what one has learned before and in the moment (i.e., *reflection before and in action*) and (2) what one has learned through individual reflection and in the course of participating in a reflective supervisory session (i.e., *reflection on action*). This newly gained knowledge and insight is then applied to one's ***future interactions*** (i.e., *reflection for action*) with the infant, parents, staff, the NICU system, the hospital, and/or the community.[20] Within this framework, both the Reflective Supervisor and the Reflective Practitioner function "like researchers on the scene, not searching for certainty but focusing on the present moment, simultaneously doing, learning, and coming to know."[5 (p428)]

Gilkerson and Shahmoon Shanok[21] describe a seven-phase process to assist the Reflective Supervisor, who may not be trained in mental health, in how to incorporate the three essential elements, discussed above, as the dialogue between Reflective Supervisor and Reflective Practitioner begins. This seven-phase process consists of the following categories: (1) Preparation; (2) Greeting and Reconnecting; (3) Opening the Dialogue and Creating the Agenda; (4) Gathering Information; (5) Formulating Hypotheses; (6) Considering Next Steps; and (7) Closing (see Table, page five). As Gilkerson[17] observes, "In a range of settings and with practitioners from a variety of disciplines, we have found that reflective supervision effectively supports change toward relationship-based practice and sustains it over time."[(p426)]

A Reflection

In summary, reflective practice is a dynamic, ongoing process that includes preparing oneself before the interaction; mindfully engaging in the interaction; and thoughtful individual reflection after the interaction. It is a process that many of us have been introduced to, and practiced, as we were learning the NIDCAP approach to care in the following ways: through our observations of infant-caregiver interaction; through the development of our observational report and recommendations for care; through the process of sharing our report with staff and family members; through the implementation of the NIDCAP Advanced Practicum;[22] and through learning to administer and score the Assessment of Preterm Infants' Behavior (APIB[23]). Each one of these steps of learning called upon reflection to effectively integrate this innovative approach to care.

Just as important, however, is the mindful review and reflection of one's work with a Reflective Supervisor. This process nurtures our ability as professional caregivers to implement relationship-based developmental care. Participating in reflective supervision helps us to maintain and further refine our reflective skills, as well as support us in our day-to-day interactions with families and our colleagues. As Gilkerson[24] observes, "...one has to experience being heard, respected, and challenged within the context of safety...I do think that the quest for reflection is truly a quest...and not complete for a long, long time...if ever!"

The process of reflection and reflective supervision supports NICU professionals to learn and grow personally and professionally as they journey toward the challenging but rewarding experiences of implementing the NIDCAP approach to care. As Als[17] reflects:

> *"The implementation of relationship-based developmental care is geared toward fostering nurturing relationships among caregivers and the infants and families they care for, among the caregivers themselves, and between the developmental care facilitators and the caregivers."*(p57)

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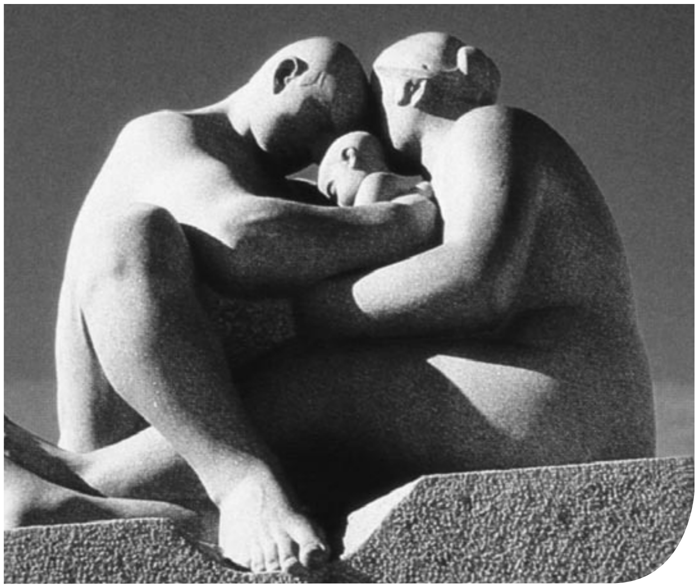

Vigeland Park, Oslo, Norway

The Supervisory Session: Regularity, Collaboration, and Reflection

Preparation	The first step is getting ready, shifting from one's present preoccupation to a state in which it is possible to be fully open to another and to take in the state of the other. We stress to each new supervisor that she will need some time, even if just a couple minutes, to get herself together---to clear her mind, clean off her desk, put the phone on "do not disturb," and begin to create a protected environment for herself and the supervisee.
Greeting and Reconnecting	The supervisor greets the supervisee in a friendly way and makes a brief but personal connection. This helps both participants prepare for what is to come. If the supervisee has just rushed from another task, the greeting helps her make the transition to the calm space of the supervision session.
Opening the Dialogue and Creating the Agenda	With experience, most supervisors settle upon a ritual way of opening the session. Their supervisor might ask, "How has this week been for you?" or simply say, "Let's begin." Just as new supervisors may need maps and guideposts, they also sometimes need to have suggested openings, ways to bridge the greeting and the serious work of the session. Since this can be an awkward moment for beginners, we suggest that supervisors find a few opening that feel both right and productive and use those as they gain comfort in the role. Then the supervisor's task is to listen carefully and attentively. What is on the supervisee's mind? What would he/she like to focus on? When the supervisee experiences, session after session, that the supervisor really will begin just where he/she is, a sense of collaboration and safety is created. Sometimes the supervisor will know just where to go; other times she will need the supervisee's help. It is better to ask than to guess: "You have shared so much. What would you like us to focus on today?"
Gathering Information	When an issue or concern has been identified, the next step is to gather the details: what exactly happened, what was said, what the supervisee experienced, what he/she observed the other experiencing, etc. It is tempting to rush in and seek solutions or to normalize, but we encourage details, he/she is also constructing the story of the event and perhaps becoming aware of his/her own attitudes and reactions for the first time.
Formulating Hypotheses	The collaboration continues as the supervisee and/or supervisor begin(s) to share hunches about what is going on and what might be helpful. Hypotheses are generated in an open, tentative exploration. The supervisee is helped to reflect on his/own position and to try on another person's perspective. There should be no rush towards closure.
Considering Next Steps	Non-clinical practitioners come to supervision with problems to solve, uncertainties to clarify, and issues that are affecting their day-to-day work. After gathering information and formulating hypotheses, the supervisor guides the conversation toward consideration of next steps. This not only gives the practitioner direction, but also helps him/herself during the session. The supervisor might ask, "In the time we have left, given all you have shared and observed, how might you approach your next home visit? What might help you to hear, validate, and contain the feelings that you anticipate the family expressing around the new diagnosis? What are some steps you might take to prepare for the home visit?" As with formulating hypotheses, this is a collaborative process. The supervisor's greater experience may be a resource at this stage, as the supervisee imagines what might happen in a situation to ones the supervisor has experienced many times.
Closing	The supervisor ends the session with some appreciation of the work done and a confirmation of the next supervision contact.

Text from Gilkerson & Shahmoon Shanok, 2000; 429-430.

Melissa Johnson, PhD

Monique Oude Reimer, RN, Co-Director of the Sophia NIDCAP Training Center in Rotterdam, Netherlands, shares this powerful story of the birth and recovery of premature twin boys, as told to her by their parents. Each paragraph provides opportunities for professionals to reflect on what can be done to support parents through this journey.

Two Precious Sons: A Dutch Family Tells Their Story

Edwin and Joyce Moen

Doug and Flenn, nestled skin to skin by their mother, with their father looking on.

On Monday, January 16, 2006 we, Edwin and Joyce, became, after a far-too-short pregnancy of twenty-five weeks and six days, the parents of our two sons, Doug and Flenn. After the burdensome delivery of our little lads, the first acquaintance was one marked by grief, in spite of the many earlier gloom and doom warnings. How could these tiny boys (30 cm, 660g and 945g, smaller than a lengthwise folded A4 sheet of paper) ever survive? After a hectic start the reality starts to dawn on us a little. We are "parents at a distance" of babies that used to be safe in their mother's womb. They received continuous care (24 hours a day, many physicians, nurses and a multitude of machinery) in the intensive care unit of the Sophia Children's Hospital in Rotterdam.

After their birth, we experienced quite contradictory feelings: happiness and anxiety; love and grief; involvement and distance; hope and fear. Next to these feelings, which fought for precedence in both of us, Joyce also suffered from physical complaints after an extremely tough delivery (forceps delivery, breech presentation, and a placenta forcefully removed under anesthesia) and was troubled by insomnia.

What followed after birth (and occurred even before birth) were the many long talks with physicians, who pointed out to us the possible consequences, complications, and chances of survival. Complications which we would have liked to tune out, because our visits to the boys made anxiety turn into some hope and happiness…. Every day was to be a day we were going to enjoy!

The second night, however, we were given terrible information. Flenn had a pulmonary hemorrhage and his heart had stopped beating. Joyce, who was still in the maternity ward, had been told that Flenn had died. Upon hearing this, Edwin dashed to the hospital from the Ronald McDonald House. Thankfully, Flenn's heart started beating again. After many hours of utter nightmare, disbelief, anger, incomprehension and lots of questions, we fortunately regained some hope—a slight chance of survival, but a stable (yet life-threatening) situation.

Miraculously, our Flenn pulled through again and again. But regrettably, in the four months in hospital this pulmonary hemorrhage was not the only setback. It proved very difficult to wean him off the ventilator, and after a viral infection at a later stage, we had to start all over (Flenn was placed back on the ventilator).

Doug, during his hospital stay, developed much better than his brother. Apart from the operation on his patent ductus arteriosis, everything, very gradually, went in the right direction. We saw him grow, and more and more band-aids and tubes disappeared.

Things that were bound to give the shivers to any parent became common to us, as if this was the most natural thing in the world for us (that realization hurt too!). In one day we witnessed ten heel pricks, one blood transfusion, replacement of the gastric and ventilator tube, and the insertion of a new central venous line—all in one day—and it just seemed as common as dirt to us. We just sat and watched helplessly…very annoyed and emotional! Every time we got our little lads quiet again something nasty would happen and the whole process started over again.

The small steps forward we saw, the steps backward we tended to trivialize. Everything was going to be all right in the end. Limitations and complications we would gladly put up with. Our boys didn't need to do well in school; they didn't have to be champions in sports. We would be content with them horsing around as healthy, happy boys in our garden. What became most important was every time our little guys had made a step in the right direction.

There were also moments when we could find enjoyment in just holding our sons. Kangaroo care was fantastic (although a bit strained due to the many wires). We tried to be with them as much as possible and gave them vitamin "L" (Love). Meanwhile, Joyce expressed milk continuously but was sometimes disappointed by the amount of milk produced. This was, however, the only thing we could do….

The boys underwent examinations that made us very anxious. Eyes, ears and bones needed to be checked and also brain scans were regularly performed. The eye check-ups were horrible. The eyes were kept open with an eye speculum so the doctor was able to inspect them with a laser (It appeared like this to parents, though the laser was not used during this examination). In our case, fortunately, there were no observable complications and anomalies in this area. There were, however, white spots on both of their brains, but this might turn out well. What a tremendous relief!

After two months of intensive care in Rotterdam the boys got promoted. We moved to the high care unit in a peripheral hospital. Still we had mixed feelings again. On the one side, we had to leave the reliable and excellent care in Rotterdam and the kind people at the Ronald McDonald House. On the other side, the great step homewards to the unknown hospital! Unknown, unloved, the latter feeling prevailed.

The ambulance transport took a lot out of the boys. The trip apparently was very tiresome and on arrival at the hospital the oxygen was firmly increased. After a few weeks we moved forward step by step. From an incubator to an open crib, from a tube to a bottle, and oh, how happy we were with every milliliter they drank. We increasingly took over care from the nurses. We gave them their bottle and were encouraged to bathe them…and then they slept together in one crib.

Still we needed a good deal of getting used to, when they came off of the saturation monitor. Now we only had our children to look at and no longer the monitor. After a few days without incidents the time came…we took our boys home to Zeeland, a coastal province in the Southwestern Netherlands. The Zeeland clay, the refreshing sea wind and our care will do them a lot of good! At the time of this writing, Doug and Flenn are nearly three years old and are doing great! Their lungs remain weak and when a virus comes along they are bound to pick it up. Several times this has led to a week's stay in the local hospital, where the boys needed to be put on oxygen. Also the Pariboy nebulizer and the sprays are regularly used.

As far as we can judge, their development, both cognitive and motor, is beyond expectation. We keep in close contact with Rotterdam, and they too are proud of this success story. We are very grateful that our children could be treated in three excellent hospitals and that we are the proud parents of these little miracles of the world.

In early 2008, Doug and Flenn became brothers to a little sister. Meg came into the world after 40 weeks gestation. We now realize how carefree such a start can be! Doug and Flenn are wonderful brothers!

And daddy and mummy…life for them will never be as carefree as in the days before the kids. Many others who had to go through all this have grown apart or, on the contrary, together. We did our thing and always put all the wood behind one arrow, or as we say in Dutch: "Put our noses in the same direction." Together we hope that Doug and Flenn will go on to surprise us in the future!

The brothers enjoying a day at the beach!

The Newborn Individualized Developmental Care and Assessment Program (NIDCAP)

The Newborn Individualized Developmental Care and Assessment Program (NIDCAP), originated in 1984 by Heidelise Als, PhD, is a developmental, family centered, and evidence-based care approach. NIDCAP focuses on adapting the newborn intensive care nursery, including all care and treatment and the physical environment, to the unique neurodevelopmental strengths and goals of each high risk newborn and his or her family, the infant's most important nurturers and supporters. For a complete description of training centers and the training process please visit our website: *www.nidcap.com.*

The Assessment of Preterm Infants' Behavior (APIB)

The Assessment of Preterm Infants' Behavior (APIB) is a comprehensive and systematic neurobehavioral assessment of preterm and fullterm newborns developed by Heidelise Als, PhD and her colleagues (published in 1982, see *www.nidcap.com* for details). The APIB requires in-depth training and provides a highly valuable resource in support of developmental care provision by professionals and families.

In Pursuit of Scientific Knowledge: The Passion of Discovery

"You are capable of more than you know. Choose a goal that is right for you and strive to be the best, however hard the path. Aim high. Behave honorably. Prepare to be alone at times, and to endure failure. Persist! The world needs all you can give."[1]

The engagement in research is thought to be addictive; and indeed it shares many characteristics with other addictive agents and activities. Why else would a researcher forgo most of life's common comforts, a decent income, the small luxuries of evenings at home, free weekends, winter vacations in the sun, and social events shared with friends just for the sake of having fun? The researcher is jealous of every minute frittered away in idleness when it might be spent in pursuit of the elusive goal, the Holy Grail, the finding of a momentary "truth," the discovery of yet another small aspect of the bigger mosaic of an emerging pattern, regularity, the all-consuming passion. The drive is great. Yet so is the simultaneous fear that must be contained, if one is not to succumb to self-doubt. Is the pattern really there? Is it too elusive to be captured; too trivial to be meaningful; too multi-dimensional; too variable, too dependent on too many uncontrollable aspects that blur its shape, or make it vanish all together? The seeds of doubt germinate unexpectedly at any time, sprout in the middle of the night; cause the poor scientist to wake up despondent, questioning the clarity of earlier thought, and the thought itself. The feeling of futility, of chasing an illusion, is familiar to everyone engaged in the pursuit of scientific discovery. Yet all it takes to overcome it, gain new hope, regain urgency and momentum, and the energy to press on, may be a validating comment, or a mere glimpse of evidence, a fleeting promise that the pattern, the heretofore elusive phenomenon, is about to reveal itself. That brings with it elation, and the endorphin release, that makes the struggle all worthwhile and simultaneously launches the next push. "There is no better high than discovery."[2]

The verification of the dreamed for pattern, the good enough probability, the significant p-value, that emerges from a rigorous design and statistical test, will release a neuro-hormonal cascade that floods brain and psyche with that wonderful feeling and rush: "That's it! It fits! It's so! Eureka! How might anyone ever have doubted it?" No sooner does the brain experience that neuro-euphoria, likely evolved through the millennia, and species-specifically human, when the newly uncovered regularity already pushes to conquer and penetrate the next still amorphous state to reveal its underlying structure, its "truth." And so the cycle continues. As soon as results indicate that what began with a hunch discloses itself as indeed orderly, possesses a reproducible and meaningful pattern that may be articulated and communicated; as soon as the validation of one's intuition, one's best clinical judgment, takes the form of replicability, the researcher feels fulfilled, gratified, and happy, at least in the moment.

Research is the cyclical and ultimate exercise and practice of year-and often decade-long delay in gratification. Each many-year cycle begins with an intuition, an insight, a flash, associated with that pleasurable, scary, neurophysiological feeling of anticipation and promise. From there it evolves to fuller articulation. This is followed by the struggle to design an "airtight" trial to test the intuition's worthiness, and to think of and build in all the controls for all the possible (i.e., currently imaginable) factors that might invalidate the thought. It goes without saying that these factors always are more numerous than ever imagined. By the time they emerge in the process of the trial, it likely is too late to bring them under control. They may well force a redesign and restart. Once the variability within the sample is greater than the variability expected, due to the phenomenon under study, the trial is jeopardized, perhaps doomed. The researcher must be brave enough to fail.

Assuming the trial is set to go, next follows the quest for the resources required to conduct the trial, which means to inspire those in possession of the means to share their resources with the dreamer, the applicant. "Normal science"[3] may prefer to distribute resources and funding to those who validate the known, the *status quo*, well-accepted truths, rather than pursue novel thoughts that might raise uncertainty and discomfort.

And finally the time arrives for trial implementation. The hardest lesson the researcher learns, often painfully and at great cost, is that conducting a trial requires that the current design and methodology (i.e. the best knowledge at the time the trial goes forward), must be held constant until the trial's completion. Inevitably, in the course of any study, the researcher learns a great deal in how to improve on procedures and methodologies, avoid pitfalls not recognized in the beginning, and add missing components, etc. Yet modification of any aspect mid-stream may well

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Dominique Haumont, MD

The Brussels NIDCAP Training Center

Newborn intensive care units became highly technological and sophisticated departments beginning in the 1960s. Comparable to what happens in adult and pediatric intensive care units, skilled and specialized staff take care of the infants' survival. However, in contrast to older patients, caregivers have very few benchmarks for preterm infants' "normal" behavior. These small patients have limited physical and undefined mental capabilities to express their suffering in ways that are understandable to their caregivers. Therefore, they are totally dependent on the healthcare team to interpret, understand and intervene to alleviate their distress.

The driving motivation of our journey toward NIDCAP was to try to better understand what preterm infants and their families experience, to diminish their suffering, and also to induce well-being. Since the late 1980s, the NICU of Saint-Pierre University Hospital, and the medical and nursing staff directors shared this common goal. Unrestricted parental access, supportive positioning of the infants, the implementation of skin-to-skin contact (i.e., Kangaroo Care), and collaboration with child psychiatrists were, at that time, common practice. In 1997, an article evaluating NIDCAP[1] drew our attention to the NIDCAP approach to care. Scandinavian countries have always had a leading position in terms of quality of newborn care in Europe, so we were quite interested in their approach to sensitive newborn care.

Initially, we wrote a NIDCAP research grant to go to Boston in order to work with Heidelise Als, PhD who designed the NIDCAP model.[2] In the meantime, we got the information that a small group from Brest, France was going to begin training in Denver and we were invited to join them. An ongoing strong friendship and collaboration with Drs. Joy Browne, Jacques Sizun and Nathalie Ratynski began in 1998.

The first steps in the NIDCAP implementation were very challenging. We had to be humble (not always easy) and admit that profound changes had to occur in our unit. We soon realized that to become a NIDCAP Training Center was the most efficient way to transform the care within our unit. Through patience, perseverance and countless hours of clinical and administrative changes, we have achieved our goal!

Dominique Haumont, MD (Training Center Director) and Delphine Druart, RN (Trainer)

Our NIDCAP Trainer is Delphine Druart, RN. She was NIDCAP certified in 2003 and received her APIB certification in 2007 with her Trainer, Deborah Buehler, PhD. Master Trainers, Joy Browne, PhD and Agneta Kleberg, RN, PhD coached her to become a Trainer. We are very grateful to her Trainers who travelled as often as needed to bring us to our goal. The Brussels NIDCAP Training Center was officially recognized in October 2007 during the NIDCAP Trainers Meeting in France. Four other members of our staff are NIDCAP certified, three are in training and more are on the waiting list.

Implementing NIDCAP is a complex and stimulating process that has had some important effects in our national as well as our own NICU activities. It helped us to structure the arguments for enhancing family centered care in our country. We convinced politicians to change the law concerning maternity leave.[3] A mother whose newborn infant is born prematurely and/or ill is now on maternity leave during the whole hospital stay and continues for 15 weeks after discharge, which is generally around the infant's "term-age." We were funded by the Ministry of Health to develop our NIDCAP Training Center, since this achievement was consistent with the goals of the national "Quality of Health Programs." From a clinical perspective, and to address the provision of painless and comfortable care, we developed a new device to put silicone catheters into the umbilical vein for long term parenteral nutrition.[4]

The diversity of European cultures and the regional differences in newborn practices were highlighted by the efforts of a European Developmental Care network led by a grant facilitated by Jacques Sizun. Resulting joint efforts from the European NIDCAP Training Centers and opinion leaders in neonatology created an irreversible move toward developmental care implementation in an increasing number of NICUs.

We have faced several challenges in implementing the NIDCAP approach, including: understanding and integrating the Synactive Theory, sustaining the NIDCAP model, and the

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Kaye Spence, AM, RN, RM, MS, FCN

Agneta Kleberg, RN, PhD

In this issue, I am pleased to profile Agneta Kleberg who is somewhat of a legend when it comes to NIDCAP training and promoting the NIDCAP philosophy. Agneta is a NIDCAP Master Trainer, at the Karolinska NIDCAP Training Center, Stockholm, Sweden, and works throughout Europe with NIDCAP Trainees. To date, she has trained 65 NIDCAP professionals (recertified more than five) and trained four NIDCAP Trainers in approximately 30 newborn intensive care units. Agneta is a very productive member of the NIDCAP team.

Kaye Spence (KS): How and when did you start your professional career?

Agneta Kleberg (AK): I became a registered nurse in 1972 at Lund which is in the very south of Sweden. My first affiliation was in Gällivare which is about 2000 kilometers away in the very north of our country. Sweden is a small country.

KS: When were you first introduced to NIDCAP?

AK: I had read the theoretical framework of the Synactive model and used it in a review article during my pediatric nurse education. After that I went to Boston in 1990 together with Björn Westrup, MD, PhD. This is where I met Heidelise Als, PhD.

KS: What are your goals for NIDCAP?

AK: To work toward improving the wellbeing and outcome of the preterm or sick newborn infant as well as supporting their parents in getting to know the language of their baby. I have a belief that healthy, happy families make the world a better place.

KS: Whom do you admire most?

AK: Nelson Mandela and people who work towards strengthening relationships.

KS: Who are your mentors in relation to NIDCAP?

AK: Heidelise Als—energetic and greatly inspiring, never ending support of my next step; Inga Warren—intelligent, reflective, analytic, and my best co-operator; and Björn Westrup—always supportive with an untiring engagement in spreading NIDCAP. All three have become very good friends.

KS: What do you see as the most exciting thing about NIDCAP?

AK: It works! You can see it at once. When applying NIDCAP, the baby relaxes and reorganizes her or himself. Salivary cortisol levels have been found to recover faster after painful procedures, as well as other physiological and behavioral measures. NIDCAP promotes brain structure and function, decreases disability and behavioral problems and promotes parent-child interaction. Isn't that exciting! Also I think NIDCAP training makes people change their minds, their attitude and their way of acting and respecting other people, including themselves.

KS: What is your most memorable experience in the last 12 months?

AK: Watching a mother grow in her role as a mother and to see her self-esteem increase after a few sessions of support. This support can be provided through APIB sessions, which include habituation and orientation items, as well as observation and reflection sessions with both the mother and father. One baby girl was born almost fullterm, but she was very small for date and was delivered by emergency caesarian section. Her situation was very critical. To see her parents grow and feel confident and happy and also to follow NIDCAP Trainees in their growth of this understanding is a very rewarding experience in my profession.

KS: If you could change something (relating to anything)—what would it be?

AK: I would like to change people's minds so the world would be more humble, humane, joyful, and happy to live in. I know this is a very big task so I try to start with changing caregivers' and parents' minds by using the NIDCAP model. I also work to change my own habits as well.

KS: Now for some personal insights, tell me about your family.

AK: Arne, my husband, is a retired ENT specialist. He is still working and travels to northern Sweden (where they do not have enough physicians) for a week at a time. Anders, our son, is studying medicine and is the joy and happiness of our life. He is engaged to Sonja, so our family has expanded, which makes us very happy.

We miss our beloved daughter Annamaria. We lost her ten years ago in a car accident. She is still an important part of our family. We often talk about her. I keep her in my heart wherever I go and I talk to her every day. She has taught me a lot about life and motherhood. I have brothers and sisters-in-laws and a wonderful mother-in-law—we have just celebrated her 100th birthday!

KS: Tell me about something that you like doing.

AK: Being out in the nature with our dog—we are expecting a new dog after the loss of Dina who lived with us for almost 12 years. I like walking by the sea, swimming and facing the sun.

KS: That sounds so relaxing, is there anything that you don't enjoy doing?

AK: I am not very fond of cleaning the house, although I very much like to have a clean house.

KS: Can you share with us any books that have left an impression on you?

AK: It depends on the period of my life. Three that come to mind are: Irving Stone's book about Vincent van Gogh's life; Villhelm Moberg's "The New Land"—about the Swedish settlement in the USA during the middle of the 19th century. He was a Nobel prize winner in literature; and Mitch Albom's "Tuesdays with Morrie."

KS: Do you have a favorite movie?

AK: "Mamma Mia" made me feel happy and I like Meryl Streep and Stellan Skarsgård (who was my schoolmate during middle grade), as well as "One Flew Over the Cuckoo's Nest."

KS: What are your favorite places?

AK: The town Helsingborg in Sweden where I live. Mölle a small village close to Helsingborg where I have spent many summer holidays during my childhood and with my own children. Pålsjö, a summer and winter outdoor bathing place (in Helsingborg) where they have saunas and restaurants—and things like that—standing on columns in the water. These three places are my biotope.

KS: That sounds so idealistic. How would you like people to remember you?

AK: As a sincere, humane, insightful, mature, thoughtful, comprehensive, generous, respectful, open person who is a good friend, a dear mother and a loving wife. I know that it is difficult to accomplish all this but this is the way I try to live my life.

KS: Thank you Agneta, I can see how you and NIDCAP complement each other.

Message from the NFI President

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invalidate the trial. It is better to do something reliably and systematically, if less than perfect, than to adapt and adjust, as one moves along the path of a trial. A systematically implemented study will yield interpretable results. A "moving feast" will yield regret and confusion and belongs in the development and pilot phase, instead of the trial itself.

Most research trials require collaborators beyond the initiator with the burning question, the principle investigator. Unless the leader is compelled by an urgent mission to uncover the phenomenon under study, he or she may fail to convince the others of its merit, the worthwhile nature of the knowledge to be gained, and the benefit of participation. It behooves the researcher to identify that the benefit outweighs the cost for those important to the trial. Of all the collaborators, one's research subjects are one's most important, most valuable and most precious assets. Shared benefits secure successful research conduct.

To conduct research is often a lonely yet always an exhilarating path that prompts one to confirm and stand up again and again for what one holds most important in one's work and perhaps even one's life. It tasks others to poke holes, and raise questions, doubts and criticism, which in turn serves to sharpen the researcher's thinking and rigor in designing and conducting the next study. When the new discovery, or insight ultimately prevails, and brings about the inevitable sea change engendered by a worthwhile finding, the next *status quo*, the new "business as usual" is in the offing and thus paves the way for the next revolution.

> *First they laugh at you, then they fight you, and then they say they knew it all along."*
>
> *Mahatma Gandhi*

Research conducted for the sake of insight and knowledge to better the state of humanity and the world will always be fulfilling, satisfying and enriching.[2]

Heidelise Als.

Heidelise Als, PhD

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Family Rounding

Tracy Price-Johnson, MA

We welcome Tracy, a member of the NFI Board of Directors, to share with us her NICU experiences and the concept of Family Rounding. She is currently a Family Centered Care Consultant at The Children's Hospital, Denver, Colorado, and is a faculty member at the University of Colorado, Denver School of Medicine.

Having been in the NICU in the early 1990's, I spent all of my days ("visiting" hours) by my daughter, Hayley's bedside. Hayley's first four and a half months of life were spent in a NICU in Oklahoma hooked up to every machine imaginable. A variety of teams flew in to figure out her diagnosis, prognosis and necessary treatment. It was a very frightening time for me as a first time mom … part of my fear was the unknown. I was never involved in any discussions at her bedside or with any of the healthcare providers. I was asked to leave during report and shift change and was told I couldn't look at her chart to formulate questions.

Today, as I visit families in the NICU in our hospital in Denver, Colorado, I see how much things have changed with NIDCAP's presence in our NICU nursery. The NIDCAP assessments and developmental supports incorporated into the care of these precious babies is a vast improvement to the care my daughter received.

In particular, the concept of "Family Rounding" has brought family members to the table to become part of the "team." Family Rounding is the concept of including families in the decision making process with regards to the well-being of their child. Families are welcomed as members of the healthcare team and are encouraged to be involved to the extent families are willing and able. Coordination of care involving the families builds capacity and opportunities to educate and encourage family involvement which benefits the family and the entire healthcare team.

Family Rounding happens routinely each morning in our NICU. Parents are involved in every step of the process and decision making. The exchange of information is critical to understanding the families' perspective for their child's care and the healthcare team's ideas for treatment. Family Rounding engages families right where they are---whether they know the "language" or not. The team works to engage families to help encourage and empower them to learn how to care for and advocate for their child's best outcomes. It is a critical step in the process of family centered care.

> *Family Rounding is the concept of including families in decision making made by healthcare providers regarding their child in the NICU.*

The differences made by NIDCAP suggestions have helped families in a multitude of ways; most importantly to feel a stronger connection with their baby. I know from my own experience, that when your child is hooked up to many foreign and frightening machines, you feel less equipped and prepared to be their parent. Being included in your child's care and care planning has proven to be the catalyst for parents feeling more competent in helping with basic things, like Kangaroo Care (i.e., skin-to-skin contact) and diaper changing.

I spoke with Ashley, a mother who received support from one of our hospital's NIDCAP Developmental Specialists and she stated, "The nurses helped me to feel like I truly am my baby's mom even though he is connected to all these machines and pumps. It is critical that they give me an understanding of my baby's cues so that I can feel confident in providing his feedings and other care."

One of our NICU physicians, John Kinsella, MD spoke of the "power of reassurance from a healthcare provider a family really trusts." This is the type of communication that is built during family rounds while a family is with their child in the NICU. This collaborative process facilitates comfort and a connection between families and staff that builds bridges of understanding to providing better care to infants with neurodevelopmental needs. Another one of our neonatologists, Peter Hulac, MD added "that Family Rounding gives the physicians and healthcare team a better understanding of what supports families need to make decisions for their child."

In speaking to Sharon Sables-Baus, PhD, PCNF-BC, a NIDCAP Developmental Specialist, she spoke of "giving families tips for understanding their babies cues, no matter how subtle." She often works one on one with families who are first time parents and supports the developing parent-infant relationship while their babies are connected to life saving equipment.

In making frequent visits to our NICU during Family Rounding, I felt encouraged as a parent of a NICU graduate. So much has positively changed from when Hayley was a patient in a newborn intensive care unit. It was evident to me that NIDCAP has made a significant difference in caring for these infants and their families. Our journey through the NICU would have been a vastly different experience if we had been exposed to NIDCAP and had the experience of Family Rounding. Our family would have benefited greatly by being included in the care plans. We would have left the NICU as more competent parents had we learned what parents are learning today. The value of the partnership is that we all learn from one another and that makes us all better at what we do.

Facilitating Interdisciplinary Communication

Carol Matthews, OTR/L and Ginny Laadt, PhD, OTR

Carol Matthews has worked as an occupational therapist for the past twenty years, and has been instrumental in implementing NIDCAP at the Children's Hospital at Providence Alaska Medical Center, Anchorage, Alaska. Virginia L. (Ginny) Laadt is recently retired from her position as Assistant Professor of Pediatrics and creator and director of the Developmental Care Program at the University of New Mexico Health Sciences Center, Department of Pediatrics, Neonatology Division in Albuquerque, New Mexico.

Advances in newborn intensive care technology and improved understanding of newborn pathophysiology have promoted increasing survival and subsequent homecoming for NICU infants and families. Increases in infant survival rates have prompted parallel increases in the number and types of specialists who attend to ongoing infant and family needs. Currently, NICU staff may include: bedside nurses and neonatologists; nurse practitioners; respiratory, occupational, and physcial therapists; speech and family therapists; educators; pediatric surgeons; ophthalmologists; cardiologists; orthopedists; and pediatric neurologists, among others. This large and multidisciplinary group of professionals provides many challenges for the effective implementation of NIDCAP..."a system wide intervention approach that strives to enhance relationships between infants and families and the professionals who care for them."[1(p133)]

To better facilitate staff, parent and infant communication within a developmental, relationship-based approach to care, Porter-O'Grady[2] proposes a model for horizontal interdisciplinary communication. This model is depicted with the infant and family dyad in the center, surrounded by overlapping circles representing each discipline. In this horizontal network, communication occurs within the moment and over time, and proactive problem-solving is carried out through shared perspectives among multiple disciplines and sub-specialties. The measure of power is connectedness within a networked conversation among all participants.

Successful implementation of this model is dependent upon strategies that enhance formal and informal interactions among NICU and consulting staff, and that are also built into the organizational structure and physical environment of the NICU. Examples of these strategies include: (1) moving from separate medical, developmental and social nursery rounds and reporting, to daily inter-disciplinary bedside rounds; (2) inviting parents to participate in their infant's interdisciplinary rounds; (3) implementing regularly scheduled (usually monthly for extended care infants) collaborative staff-family care conferences (this proactive care continuity approach is in contrast to calling conferences only when an emergency arises, or only holding a "discharge planning conference" as the infant is being discharged from the hospital); and (4) integrating discipline specific staff lounges (often informal communications over coffee among colleagues can increase personal trust across disciplines). Nurseries that have adopted the above strategies, among others, are finding that this inclusive atmosphere, rather than one of separation along discipline lines, saves staff time and diminishes parental anxiety.

In an attempt to further facilitate inter-disciplinary communication and the allocation of staff services, our Anchorage Alaska NICU is considering the use of the New Mexico System of Risk Triage (SORT).[3] "The primary use of the SORT is to guide decision making regarding allocation of staff time and effort in the nurseries and after hospital discharge. The purpose is not only to allocate and shape services in ways that match infant and family needs and preferences, but also to insure that these services are provided in an efficient, effective, and timely manner."[(p340)] The SORT promotes individualized coordinated collaborative care from NICU admission, during the entire nursery course, and through transition from nursery to home and community. Infant and family needs guide the decision making process regarding who, how, when, and at what level responses need to be orchestrated. Discipline boundaries become a non-issue and collaboration built upon mutual trust and respect among individuals as team members, becomes the norm.

In the case study below, Ian's family provides an example of how the SORT system works:

Ian's mother, Anaya, was transported from their rural remote home for delivery at the University of New Mexico Medical Center, having experienced two prior miscarriages. Ian was born at 26 weeks

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Victoria Youcha, EdD

Vicky Youcha with her mother, Geraldine.

Lessons My Mother Taught Me – Why Mother's Milk is Best

We welcome Vicky, a member of the NFI Board of Directors, who writes from her unique intergenerational and historical perspective on the importance of mother's milk. Vicky is currently the director of BrainLine, a national outreach project on traumatic brain injury at WETA, the public broadcasting station in the Washington, DC area. She has also worked as a child development specialist at Children's Medical Associates in Alexandria, Virginia for over 24 years.

I credit my mother with my ability to breastfeed my premature daughter successfully. She breastfed her three children and was so committed to the practice that I never considered anything else. Today, at 83, she is surprised when people think she was unusual. She says all her friends breastfed and it was accepted as the best and easiest way to feed your baby.

I breastfed my first child, who was fullterm, for more than one year. My second child was born at 29 weeks gestation, weighing 1191 grams or two pounds ten ounces, and I nursed her for about fourteen months. In the hospital she was a poky eater. When she came home she could only latch on at every other feeding because she was so weak. In spite of these obstacles I never doubted my ability to breastfeed her.

My mother's commitment to breastfeeding was part of her wider interest in childrearing issues, especially wet nursing. In the days before bottles and formula, wet nursing was an accepted practice and it has never really disappeared. Today, there are frequent articles and passionate online discussions about wet nursing, cross-feeding, and breast-sharing. A few months ago the actress, Salma Hayek, made headlines when she nursed a hungry infant in Africa. Google "wet nursing," and you get more than half a million results. Celebrities hire wet nurses to avoid sagging breasts. Working mothers are cross-feeding when they babysit for each other. There is even an employment agency for wet nurses.

So what does an article about premature babies have to do with wet nursing? My mother's stories about the history of wet nursing have helped me understand the magic of mother's milk. Being "a good mother" is so wrapped up with being able to feed your baby. I couldn't hold my premature daughter for more than a week and I couldn't feed her for more than a month. I expressed milk and banked it, but pumping every few hours was overwhelming, and the breast pump was a sad substitute for my baby.

Mother's milk is powerful. When my daughter was in the NICU it would have helped me to know that there are many ways to nurture, that I wasn't automatically a failure as a mother because I couldn't feed my baby. Perhaps understanding some of the history of mother's milk would have given me some comfort. I didn't know that parents of preemies are not alone -- that throughout history mothers have shared their milk. Babies have been fed by wet nurses and suckled by animals. Winston Churchill had a wet nurse and look how he turned out.

My mother's interest in the history of wet nursing and the beliefs surrounding the practice helped me understand childrearing in a new light. Can I use what I've learned about the history of infant feeding to help new parents who are off to a difficult start? Can you? Here are some of the wet nursing stories my mother told me.

From ancient times until recent history a baby was thought to acquire characteristics from its wet nurse. Instruction books warned against those with red hair because the baby would have a bad temper. Not unlike today, the ancient experts suggested looking for a candidate who was healthy, had a good disposition, and was a paragon of virtue. At one time, experts recommended avoiding the milk of animals because of the danger that the baby could start to look like a goat or a cow. Even in the twentieth century the great tenor Enrico Caruso was convinced that he had acquired his glorious voice through his wet nurse.

In the past, extended family support might also have included wet nursing. Among the Arawak Indians a mother might start nursing and then hand the baby off to her own mother. One toddler was seen going from his mother to his grandmother, to maximize his food supply.

In mid-nineteenth century France, the foundling hospital in Aix en Provence, found an ingenious way to increase the survival rate of abandoned babies. With the cradles arranged in rows, goats were let into the wards several times a day and would go bleating to their assigned "baby." They would then straddle the cradle and move back the bedclothes with their horns so the infants could nurse.

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Supporting Breastfeeding

Deborah E. Schoch RNC, MSN, IBCLC CCE, CPST

Deborah is the Lactation Consultant and Coordinator of Childbirth Education at Cooper University Hospital in Camden, New Jersey. She is also a doctoral student at Widener University in Chester, Pennsylvania. Deborah has an interest in developmental readiness for breastfeeding and how healthcare professionals teach and portray breastfeeding to patients.

Healthcare professionals have the unique opportunity to educate new parents in caring for their infant. There are so many aspects of infant care to master, and the hope is that we can move our patients to a higher level of expertise and comfort by the time they are discharged from the hospital as a family. One of the most important choices is that of infant feeding. The choice can be somewhat confusing, because parents hear and read a variety of opinions concerning both breast and bottle feeding. For those couples considering breastfeeding as the feeding method of choice for their infant, it must be understood that it is a very personal decision. It can very easily be influenced by personal experience, commercialization, and culture. When the factor of prematurity is added, the decision can be even more difficult. Parents are already dealing with a sick, immature infant. They may be facing a variety of emotions such as anger over the loss of a healthy infant, guilt that they caused the early delivery, or confusion as to what the days ahead may bring. The inability to put the infant directly to the breast, and the use of a breast pump may add to their many stresses.

The Benefits of Breastfeeding

The benefits of breastfeeding and providing breastmilk are numerous. Breastfeeding or pumping assists the mother's uterus to contract lessening her chances of postpartum hemorrhage. It increases her metabolism aiding weight loss and decreases the chance of adult onset diabetes, especially if she was a gestational diabetic. Prolonged breastfeeding decreases chances of some cancers and osteoporosis.[1] For the mother of a sick or premature infant it allows her to be part of both the team and treatment for her child. Providing breastmilk builds her confidence as a woman, allows her to provide a species specific food that protects her infant's immature body, and allows her to build a relationship with her infant that will include direct breastfeeding as her infant matures developmentally.[2]

The specificity of breastmilk outweighs formula. Even the most recent advances to produce an artificial food for infants that mimics breastmilk, has not come close to paralleling the benefits that breastmilk provides the human infant. Colostrum, the early milk, provides protein for rapid growth. It is rich in electrolytes that assist bodily functions. It provides immunoglobulins, IgA, IgG, and IgM, which provide immunity. Colostrum as well as transitional and mature breastmilk primes the gastrointestinal tract. This assists in the passage of meconium, containing higher levels of bilirubin, which if reabsorbed into the infant's body can increase jaundice. Breastmilk also primes the infant's gastrointestinal tract with specific factors such as lactobacillus bifidus and lactoferrin which promotes an environment that deters abnormal flora from binding and entering the infant's system, and thus promoting gastrointestinal health and motility. Research has proven that premature infants who receive breastmilk have less chances of developing necrotizing enterocolitis.[2, 3]

Supporting Mothers to Breastfeed

Mothers who wish to provide breastmilk should be encouraged to do so as soon as possible after delivery (ideally within six hours). This promotes adequate stimulation of the hormones prolactin and oxytocin which produce and release breastmilk from the breast. Most pumping and supply problems extend from inadequate milk removal starting on the mother's day of delivery. Impaired milk production can be divided into three categories: Preglandular which includes unfavorable hormonal production as a result of polycystic ovarian disease; glandular, which includes problems with the structure and function of the breast as a result of surgery or infection; and post glandular which includes any reason for ineffective or infrequent milk removal from the breast beginning on the day of delivery.[1] It is the post glandular problems that deal with lactogenesis, the making of breastmilk, that are the most preventable. The two main causes for postglandular problems are a delay in initiating breast pumping and ineffective emptying of the breast.

There are many reasons for a delay in initiating breast pumping. Mothers may be too sick (e.g. preeclampsia), and some may desire to rest, and some are stressed over the premature birth. However, most times, it is the healthcare provider who does not provide the correct information, perform a complete historical and physical assessment, or initiate support. It is important for the healthcare provider to support the mother of the premature infant and assist them in being successful when providing breastmilk. Mothers with the possibility of having impaired milk supply due to preglandular or glandular problems need to be assessed and followed closely during the first several weeks for milk production. Just because they present with a medical or surgical condition that may alter breastmilk supply, does not mean they cannot provide some breastmilk or breastfeeding to their infant.

Mothers who wish to provide breastmilk should be educated on its benefits, use and cleaning of the pumping equipment, the mechanics of breastmilk production, proper breastmilk storage, and the fact that they are an active participant in the care and health of their infant. Mothers should also be made aware that stress and sleeplessness could hinder breastmilk production. Measures should be taken to keep the mother well-informed about her infant's care so pumping is initiated and maintained around her rest periods. Ideally a mother should initially pump every three hours for about 15 minutes. As milk production increases, usually within two to five days, methods of ensuring that breastmilk is removed effectively from the breast can be adjusted to meet the needs of the mother.[4]

The impersonal experience of pumping can be alleviated by encouraging the mother to pump at her infant's beside or by supporting the mother to engage in skin-to-skin contact with her infant. Skin-to-skin contact enhances hormone stimulation. It also supports the infant's growth, development and learning via the mother's scent, close physical contact, and the feel of breastfeeding. Mothers should be encouraged to utilize skin-to-skin contact frequently and observe their infants for signs of feeding readiness such as sucking motions, nuzzling at the breast, licking the breast, and latching with and without milk exchange.[5] Healthcare providers are essential at this time because they can: Assist with the positioning of the premature infant throughout the course of breastfeeding (as these infants may have lower tone for optimal breastmilk extraction); support the mother to recognize positive and negative infant cues which may effect breastfeeding; and support the mother in identifying her infant's sleep and awake states so that breastfeeding can be initiated when the infant is in his most alert state. At home, mothers might consider taking warm showers, enjoying a back massage, listening to baby music, pumping in the infant's room, or experiencing the scent of the infant (e.g., clothing brought home from the hospital that the infant has worn) to increase milk supply and the milk ejection reflex.

Breastmilk is very forgiving in every sense of the word. There are very few medications that attach in amounts significant enough to risk its use. Common medications such as antibiotics, thyroid medication, most herbal preparations, blood pressure medication, and pain medication do not attach well, and therefore are not transferred easily to the infant. Mothers who may be hypothyroid, diabetic, hypertensive or who carry the herpes virus (or hepatitis b and c) can still provide breastmilk with minor medical intervention (e.g., hepatitis b vaccine and immunoglobulin the infant).[1]

The Role of the Healthcare Provider in Supporting Breastfeeding

Understanding breastfeeding allows the healthcare provider to play an important role in assisting the mother who makes choices that are important to her infant's health. Professional guidance, as well as the camaraderie of other mothers in the intensive care setting, provide an amazing support system that allows a connection between women with similar problems and similar goals, that of providing breastmilk and breastfeeding their infant. Some of the best friendships and support systems are between mothers whose infants are in intensive care, because they can relate their fears and work toward common solutions in a supportive healthcare environment.

Breastfeeding has not only grown as an art, but also as a science. As more and more mothers breastfeed, and as more women present with various lifestyles, medical problems, and knowledge, breastfeeding will need healthcare providers who can offer concrete information and evidence on its benefits for the infant. Healthcare providers should encourage mothers to: be as informed as possible on the subject of breastfeeding; discuss breastfeeding with someone who is knowledgeable such as a physician, nurse or lactation consultant; and attend classes and support groups with others who share their ideas concerning infant feeding. Mothers benefit from support and encouragement in their decision to provide breastmilk as the feeding method of choice for their infant. Our capacity to support this immensely powerful journey, the journey of childbirth and parenthood, allows us as healthcare providers to serve as catalysts to guide mothers to higher levels of skill, knowledge and confidence in the breastfeeding of their infants.

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Diane Ballweg, MSN, RNC, CCNS

Diane Ballweg is the High-Risk Newborn Development Clinical Nurse Specialist at Mayo Clinic, Rochester, Minnesota where she guides implementation and maintenance of NIDCAP-based care. Diane has successfully supported nurseries to integrate evidence-based individualized developmental and family centered care into facility systems and caregiving for over 15 years.

This column provides our readers with current information regarding resources of interest.

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Books

Nugent JK, Petrauskas BJ, & Brazelton TB. The Newborn as a Person: Enabling Healthy Infant Development Worldwide. New Jersey: John Wiley and Sons, Inc. 2009.

This new text explores the history, current understanding, and future of newborn behavioral support and research. Contributors from a variety of disciplines and countries include the editors noted above, as well as, Jean Cole, Jim Helm, John Kennell, Marie Reilly, Daniel Stern, Karin Stjernqvist, and many others.

Conferences

NICU and EI Feeding of the Medically Fragile Infant

October 2-3, 2009, Ft. Worth, Texas

The workshop presents factors impacting successful oral feeding and strategies to support preterm and ill fullterm infants in, or just discharged from, a NICU. For information please visit: *www.educationresourcesinc.com/index.cfm?event=CourseDetails&CategoryID=11&CourseID=107.*

Neonatal Oral-Motor Assessment Scale (NOMAS) 2009 Certification Courses

October 22-24, Walnut Creek, California

November 19-21, San Francisco, California

Developmental Care in the Moment

Relaxing together.

This certification course provides NOMAS® training to evaluate sucking patterns in preterm and fullterm infants and differentiation of disorganized from dysfunctional patterns. For information please visit: *www.nomasinternational.org.*

Prechtl's Method of Qualitative Assessment of General Movements Basic and Advanced Courses

September 23-26, 2009, Modena, Italy

The basic course focuses on understanding and assessing general movements at different ages. The advanced course is for those who previously attended the basic course and passed the course test. For information please visit: *www.biomedia.net* or contact Silvia Terragni at *silvia.terragni@biomedia.net* (English).

Hospitals and Communities Moving Forward with Patient- and Family-Centered Care: An Intensive Training Seminar – Partnerships for Quality and Safety

October 26-29, 2009, Minneapolis, Minnesota

Conference objectives are to increase understanding of patient- and family-centered care; explore excellence in integration into policy, program, practice, education, and facility design; learn how to integrate into hospital quality and safety programs and public reporting; and create action plans for institutional change. For information please visit: *www.familycenteredcare.org/events/seminars.html.*

The 25th Annual Developmental Interventions in Neonatal Care Conference

November 4-7, 2009, Washington, D.C.

The conference explores multidisciplinary care of high-risk newborns and presents developmental and behavioral strategies to enhance outcomes. Plenaries, concurrent sessions, and pre-conference workshops are provided. For information please visit: *www.contemporaryforums.com.*

Hot Topics in Neonatology

December 6-8, 2009, Washington, D.C.

The purpose of this annual meeting is to provide a forum for discussion and critical appraisal of interventions for infants requiring intensive care. For information please visit: *www.hottopics.org/index.php.*

The 5th International Conference on Brain Monitoring and Neuroprotection in the Newborn

January 21-23, 2010, Clearwater Beach, Florida

The conference explores the means to understand, monitor, protect, and treat the developing brain of preterm and fullterm newborns. For information please visit: *www.cme.hsc.usf.edu/brain10.*

The 23rd Annual Gravens Conference on the Physical and Developmental Environment of the High Risk Infant, in collaboration with the March of Dimes

February 3-6, 2010, Clearwater Beach, Florida

The focus of this meeting is the science of development, developmental care practice, unit design, and the influence of the environment on neurodevelopment of infants, work of caregiving staff, and support for families. For information please visit: *www.cme.hsc.usf.edu/gravens10.*

The NFI presents the

20th Annual NIDCAP Trainers Meeting

Reflection: Our Vision for Individualized Developmental Care

The Westin Chicago River North, Chicago, Illinois

October 3-6, 2009

Hosted by the University of Illinois Medical Center at Chicago NIDCAP Training Center, this year's meeting will be a celebration of the organization's history as well as its future. Program highlights include presentations by Drs. Heidelise Als, Joy Browne and Linda Gilkerson on developmental care; shared accomplishments of current training efforts across all sixteen NIDCAP Training Centers; and abstract presentations on the latest developmental care research. The 20th Anniversary of the Annual NIDCAP Trainers Meeting will be an opportunity for participants to reflect on how a unique and powerful vision evolved into an international movement that is changing the future for infants in intensive care.

Currently these meetings are open to the NFI Board of Directors, NIDCAP Trainers, Trainers-in-Training, Training Center Directors as well as those key professionals invited by them to attend. Further information may be found at: *www.nidcap.org.*

We invite you to send in information that you may encounter, such as upcoming conferences, websites, books, journals, articles, videos, etc., that may be shared with our readers. Please send items for inclusion in the Developmental Observer to Diane Ballweg at: *developmentalobserver@nidcap.org.*

The Annual Membership Meeting of the NFI

Tuesday, October 6, 2009

9:00-10:45 AM

Astor Room

The Westin Chicago River North
320 N. Dearborn Avenue
Chicago, IL 60610

All NFI Members are welcome to attend.

Inga Warren, Dip COT, MSc

Pain: Can You See It?

The NIDCAP observations are highly sensitive to infants' expressions of comfort and distress but does this mean that NIDCAP trained professionals are better at evaluating pain? Most preterm pain scales draw on specific facial, behavioral state and physiological responses, not all of which appear on the NIDCAP catalogue of behaviors.

Since Slater, Cantarella, Franck, Meek, and Fitzgerald[1] investigated the connection between cortical and behavioral activity in preterm infants during heel lance, the skeptics have given more credence to behavior as a measure of pain. Cortical haemodynamic responses were shown to correlate with behavioral components (facial expression) more than with the physiological components (heart rate and oxygenation) of a validated pain scale (Premature Infant Pain Profile[2]). Although this partly confirms other reports that facial expression is the most reliable indicator of pain[3] they also found that facial expression was not consistent, and that an infant may feel pain without a facial reaction. Others have pointed out that facial actions may be dampened in preterm infants.[4,5] Pain scales may thus underestimate pain experience.

The University of Columbia in Vancouver has a very active team researching preterm pain behaviors. They applied the NIDCAP catalogue of behaviors and the Neonatal Facial Coding System[6] to study the responses of preterm infants during blood taking.[7] Behavioral patterns varied between infants with different characteristics. Infants born at lower gestational age (<30 weeks) showed significantly more finger splaying, fisting and mouthing during the procedure than older infants. Finger splay and fisting were also more common among infants with a history of many invasive procedures. Facial twitches were more likely to be seen in infants who had been sickest.

Holsti and Grunau have built on this work to develop and validate a new system of evaluating pain—the Behavioral Indicators of Infant Pain (BIIP),[8] that includes fisting and finger splay movements, as defined for NIDCAP, in addition to other validated behavioral pain indicators (i.e., facial expressions: brow bulge, eye squeeze, nasolabial furrow, horizontal mouth and taut tongue), and behavioral state and physiological responses. Clinically it is often difficult to observe facial expression due to obstructions (e.g., attachments for affixing NCPAP, eye protection during phototherapy, or the infant's position). The addition of developmentally specific hand movements is therefore very useful, although the visibility of these actions may be hampered if an infant is swaddled. An unexpected finding was that not all the infants cried during the painful procedure.

Validation of the BIIP was carried out on a cohort of 92 infants, born between 23 and 32 weeks gestation, mostly at 32 weeks post conceptional age. The BIIP showed significant changes between baseline, lance/squeeze and recovery periods of blood taking. Inter-rater reliability was high and the authors report that this scale is easily scored by both experienced and inexperienced behavioral observers from video recordings; it is not known if it is equally easy to use at the bedside.

The BIIP has also been tested with a comparison of invasive (blood taking) and non invasive (diaper change) interventions.[9] The BIIP scores were higher during blood taking and this effect was increased if blood taking was preceded by a diaper change, This is consistent with previous research by the same team that showed heightened responses to clustered care in very preterm infants.[10] Although the time taken for both interventions was similar, the BIIP scores remained high after diaper change, suggesting that infants can have an intense and prolonged reaction to events that are assumed to be relatively innocuous.

Few pain scores have undergone such a thorough validation process as the BIIP and it is a welcome innovation. It appears to be easy to administer and the addition of hand actions makes it practical for babies whose facial behaviors cannot be easily observed, and it also compensates for the fact that some infants may not show facial responses to pain. Further research is required to look at feasibility and usefulness of the BIIP for measuring prolonged pain (e.g., post operative pain) and to establish validity with infants at younger gestational ages. A web based training video is available.

Holsti and Grunau remind us that "... from an evolutionary perspective, behavioral indicators are designed specifically to elicit caregiving," [8(p270)] and they have shown that patterns of pain response are complex, sometimes surprising, and vary according to different infant characteristics. Validated pain scales are useful, and necessary considering the lamentably poor pain management practices reported around the world. The BIIP looks like a promising clinical and research tool. Nevertheless, observation of a wider range of behaviors, in context with NIDCAP, will usefully supplement formal pain scoring, and vice versa.

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Dear Editors,

As a veteran of neonatal care, I appreciate and respect the impact NIDCAP has on the outcomes of our smallest and most fragile patients. However, the process and commitment to become NIDCAP certified is lengthy and overwhelming to most nurses. The increasing technology used in patient care and higher patient acuity is stretching our nursing staff to their limits. With updated regulations and mandates requiring constant mandatory training, the bedside nurse's ability or willingness to engage in NIDCAP's in-depth program may be limited.

I hope that the NIDCAP Federation International will consider these confounding factors and create training programs that take into account the real life barriers faced by the bedside nurse. Motivating nurses to learn developmental principles will require enhancing their reasons to learn and overcoming their perceived barriers. This can be achieved by creating short (30-45 minute) learning opportunities that give practical information on how nurses can incorporate developmental principles into their daily practice. Providing CEUs that nurses can use to maintain national certifications will enhance the attractiveness of the program.

There is great value in having nurses pursue and obtain NIDCAP certification. But it is an injustice to our patients if we do not explore ways to expose nurses to developmental principles that they can immediately incorporate into their daily care.

Susan Bedwell, MS, APN, NCNS-BC
Clinical Nurse Specialist
OU Medical Center, Neonatal Services

Editors' Response

Dear Susan,
Thank you for your letter. We appreciate your observations on the influence and impact of NIDCAP on the care of infants and their families. Since the integration of surfactant replacement and high frequency ventilation, newborn intensive care has reached a plateau in the technological advances. This may be why NICU professionals appear to be reflecting more on the "less technological" aspects of improving the care of infants and their families. Clinical and research evidence of the effectiveness of NIDCAP has led to its increased study and use in newborn intensive and special care nurseries. In addition to the benefits apparent in the "outcomes of our smallest and most fragile patients" that you described, we wish to point out there is also evidence demonstrating the value of NIDCAP with healthy and older preterm infants (Buehler et. al.[1] and Als et. al.[2]).

You describe accurately the level of commitment and professional growth inherent in the NIDCAP educational program. You are in one of the few states that provide NIDCAP training without charge to those professionals seeking this instruction. Hundreds of NIDCAP professionals have spent untold time and energy in transforming their understanding and approach into the relationship-based individualized developmentally supportive care formalized by NIDCAP. Typically, a core group of the NICU staff becomes NIDCAP Certified, and functions as a clinical resource and a team of developmental specialists, creating many different types of didactic and hands-on educational in-service programs for the NICU as a whole.

Increasingly, attention is being paid to the ways in which this model can be disseminated most effectively. In fact, our last issue of the Developmental Observer described an excellent self-paced computer CD program "NDC: Neonatal Developmental Care" developed by Terri Daniels, MEd and NIDCAP Professional. Every NIDCAP Trainer provides formal NIDCAP training as well as various professional lectures and workshops on developmental principles and implementation of individualized relationship based care. Often these lectures, as well as the educational opportunities offered annually by organizations such as Contemporary Forums' conference on Developmental Interventions in Neonatal Care, are approved for continuing education credits. The NFI which guides the dissemination of NIDCAP, continues to explore ways to reach nursery professionals and families around the world.

We invite our readers to participate in this and other developmental discussions by sharing their own observations and suggestions with us.

Sincerely,
The Editors

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From the Editors

We invite you to write us with your comments regarding the content of any of the columns presented in this newsletter. We are also interested in any suggestions that you have with regard to future topics that you would like to see addressed in the Developmental Observer. Please contact us at: *developmentalobserver@nidcap.org.*

Developmentally yours,

Rodd Hedlund, MEd
Senior Editor

Deborah Buehler, PhD
Sandra Kosta, BA
gretchen Lawhon, RN, PhD
Associate Editors

SUPPORTING AND SUSTAINING REFLECTIVE PRACTICE

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SUPPORTING FAMILIES

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gestation with an appropriate size for his age at birth (AGA) and was admitted to the NICU where individualized developmentally supportive care is provided as baseline services for all infants and families. During his first week of life, the inter-disciplinary services team determined that Ian's biomedical condition including his early gestation at birth, met the SORT infant biomedical criteria for high probability, or risk, of experiencing later neurodevelopmental disorders. For the SORT category reflecting environmental risk, the criteria for presence of high risk was met, since Ian was his parents' first live birth following two miscarriages and he would be returning to an area with scarce resources. The intersection of high biomedical and high environmental risk prompted the assignment of the neurodevelopmental occupational therapist to join Ian's basic medical care team of primary physician and nurses. The family therapist was identified as primary back-up for the team in this trans-disciplinary services model. Guided by family therapits, a dynamic plan and process were set in motion. In-depth assessment of short and longer term family financial, physical and educational needs were carried out over the next few days. Unit, hospital, community and state services available to support Ian and his family were identified, discussed with the family, and put in place along the care continuum. Per SORT profile guidelines, in addition to updates on daily rounds, conferences with all relevant providers and extended family members were held at one month intervals and prior to discharge. Plans for extended care continuity and developmental services following hospital discharge were put into place in order to facilitate Ian and his family's transition from hospital to home and community.

Thus, the two organizational models as depicted by both Porter O'Grady[1] and SORT,[3] help to facilitate inter-staff and staff-family collaborations based on infant and family needs. Both of these models make it possible for inclusive, coordinated, creative problem-solving to occur within the ever changing and complex environment of the NICU.

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NIDCAP TRAINING CENTERS FROM AROUND THE WORLD

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implementation of architectural changes that were made based on the NIDCAP approach to care (e.g., single rooms and developmentally inspired architectural concepts).[5] One of our current challenges in being a NIDCAP Training Center is to promote developmental care and NIDCAP in resistant settings. The most current criticism of traditional neonatologists towards NIDCAP is the lack of randomized controlled trials that demonstrate a better outcome for the infants.[6] On the other hand, there is substantial scientific evidence supporting the importance of care practices clearly enhanced by the NIDCAP program.[7] Therefore, we might try to study NIDCAP as a facilitator of well-accepted and important issues in newborn care. Our international collaborating networks can play an important role in this research field. It is also important to reflect on effective NIDCAP implementation and maintaining the quality of this approach with the implementation of the NIDCAP Nursery Certification Program. A further challenge that we currently face within our own setting is to identify and train a second NIDCAP Trainer.

NIDCAP has sensitized caregivers to reflect on how they provide care in the NICU. Considering the number of international visitors to our NICU and subsequent applications for NIDCAP training, this has proven to be an important introduction and promotion of the NIDCAP approach. Currently we are providing training to three university level III units and a few are already on a waiting list. Our small, but intensive experience in becoming a Training Center, allowed us to realize how strong the NIDCAP model is when implementing the different levels of co-regulation while interacting with infants, parents, caregivers, and hospital systems.

NIDCAP was introduced in our NICU more than 10 years ago. We observed important changes far beyond our initial expectations and we know that this process is ongoing. The relationship-based circle begins with the infant, the mother and father, and the caregiver, but eventually expands out to a much broader web in and outside the hospital.

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FAMILY VOICES

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The first human milk bank in America was started in 1910 by Francis Parkman Denny, a bacteriologist convinced of the power of mother's milk. And because breastmilk is so vital for preterm infants, up until the 1920s, wet nurses lived in the hospital to feed premature babies.

As my mother puts it, if prostitution is the oldest profession, wet nursing is the second oldest. It flourished for about 300 years, giving poor women a way to earn money or, at least, barter their milk for a place to stay and food to eat. On the other side of the equation the wet nurse provided the possibility of motherhood for the woman who could not nurse her own baby, and of a wider life for the woman who chose not to. It was often the only way for abandoned babies to survive. Its story touches on the position of women, attitudes about children, the power of myth and the evolution of the modern family. Even in what we think of as the modern scientific world the legacy of wet nursing and the myths surrounding it affect the way we look at breastfeeding, the balancing of motherhood and career, and the roles of husband and wife.

Sometimes it helps to step back from your problems and see the bigger picture. I hope that NICU staff will use these stories judiciously to relieve some anxiety and guilt and maybe even introduce a little humor. When talking with parents, staff may also wish to tell them my mother's list of the three best things about mother's milk—it's healthy, it's portable, and it comes in such cute packages.

Three generations, Vicky, Sara and Connor

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