Profile of the Nursery Environment and of Care Components

Template Manual, Part I

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Introduction

The following 5-point rating scales were developed in an effort to document aspects of the physical environment and of the organization of caregiving, which infants and families experience in the course of hospitalization in an intensive or a special care nursery, or another hospital setting. The term Nursery is utilized generically and may refer to a NICU (newborn intensive care nursery), an SCN (special care nursery), and/or another hospital nursery setting, as the case maybe.

Aspects of environment and care are measured on 5-point operationally defined rating scales. A score of 1 reflects lack of consideration or misunderstanding of developmentally supportive opportunities; a score of 5 reflects a high degree of developmental support and/or sensitivity. NA (not applicable) should be marked when the particular aspect is not available to be observed, or does not apply.

The scales are grouped into the following areas:

A. Physical Environment of the Nursery
B. Physical Environment of an Infant's Bedspace
C. Specific Aspects of Infant Care Interaction

Ratings should be performed only by a trained observer, who achieved certification as NIDCAP (Newborn Individualized Developmental Care and Assessment Program) Professionals and have established reliability with a certified NIDCAP Trainer in the use of the Templates. Template scoring is appropriate after a full NIDCAP observation. The parameters measured are rated as they relate to the specific infant observed and to that infant's family at the particular time point of that observation.

Appropriate uses of the Template scales are documentation of change in the course of a nursery's adoption of developmental care as framework of care delivery; documentation of difference in care within nurseries, or across nurseries; examination of the relationship of environmental and caregiving parameters to infant, family, and staff functioning and satisfaction, and others.

The scales were originally developed in the context of the National Collaborative Research Institute on Early Childhood Intervention (NCRI-ECI) (1989–1994), entitled "Family-Focused, Individualized Developmental Care for the Very Low Birthweight Infant," funded by the U. S. Department of Education, Office of Special Education Programs (OSEP), Early Education Programs for Children with Disabilities (EEPCD). The Research Institute was directed by Dr. Heidelise Als and co-directed by Dr. Linda Gilkerson. The scales were systematically used at all five collaborating sites (4 NICUs and 1 SCN) in the context of weekly NIDCAP observations of the experimental group infants studied, in order to assess change in the course of the intervention phase. Additionally, they were used every six months in comparison of control and experimental group environments and care. The scales were found to be reliable as well as sensitive to site differences, temporal change, and to group differences. A revision of the Templates was completed in 2008 in the context of the development of the NFI-sponsored NIDCAP Nursery Certification Program and Criterion Scales, developed in order to assess nursery systems in terms of delivery of developmentally supportive care in the NIDCAP model. The Chair of the Nursery Certification Program, Ms. Karen Smith, was instrumental in fostering the revised Templates presented here.

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A. Physical Environment of the Nursery

1. Location in Relation to Labor and Delivery Suites and the Mother's Postpartum Room

(1) The Nursery is far away from the Labor and Delivery Suites, and the mother's postpartum room; or the mother is cared for at another hospital or, has been discharged from the hospital, and she and the infant's father live a distance away from the hospital.

(2) The Nursery is located adjacent to the Labor and Delivery Suites; the mother's postpartum room is in a separate location; or the mother has been discharged from the nursery, and she and/or the infant's father may stay overnight in a hospital-affiliated guesthouse.

(3) The Nursery, Labor and Delivery Suite and the mother's postpartum room are in close proximity to each other; yet accessibility of the Nursery for the postpartum mother is variable; or the mother has been discharged from the nursery, and she, the infant's father, and the infant, once stable, may stay together overnight within the hospital in a special facility or room for family-care prior to discharge.

(4) The Nursery, Labor and Delivery Suite and the mother's postpartum room are in close proximity to each other on the same floor; transport means (wheelchairs; moveable beds) for the postpartum mother are readily available and the mother may reach the infant's' bedside easily at any time; or the mother has been discharged and the parents may spent many hours a day and/or night in the infant-family room. Duration of stay is dependent on staff variability.

(5) The Nursery, Labor and Delivery Suite and the mother's postpartum room are in close proximity to each other and on the same floor. Rooming-in facilities within the nursery at the infant's bedside are available for mother, father, and infant. It is expected and supported that at least one of the parents lives in with the infant at all times. This meets with the nursery's expectations and is fully supported.

2. Overall Appearance

(1) The Nursery has a clinical appearance; walls and floors are plain and institutional; windows are bare or have institutional blinds only; fluorescent lighting is prevalent.

(2) The Nursery is clinical in appearance, some attempt is made to make the Nursery appear home-like, yet it is minimal: there may be an occasional picture or wall-hanging, there may be a patterned curtain, or an occasional personal item at a bedspace, or a chair with a soft cushion.

(3) The Nursery has a moderately home-like appearance, while some aspects appear clinical: Walls may be soft in color; some lighting may be indirect; the hallway leading to the nursery room may have pictures and home-like decor; there may be some individualization of the bedspace, and an occasional home-like chair; overall, the area appears nevertheless quite clinical.

(4) The Nursery has a definite home-like appearance: Comfortable chairs are available to the parents; walls may have home-like wallpaper, borders, and pictures; curtains on the windows are home-like in décor; and lighting is indirect. Individualization of bedspace is evident; and a reclining bed-chair or parent-bed is available at the bedside; the path to the infant from entrance to bedspace is friendly and welcoming.

(5) The Nursery has a definite home-like appearance in terms of furniture, color schemes and lighting. Furthermore, the floor may be carpeted; home-like lamps with dimmer switches provide individualized lighting for the infant's bedspace; attractive plants are appealingly arranged and are well-tended; individualization of bedspace is consistently evident; furniture at the infant's bedspace is comfortable for the parents and professional caregivers' restful care and nurturance of the infant (reclining, two-parent bed-chair or bed; outgoing telephone line; side table and cupboard for personal items etc).

3. Physical Layout of the Infant's Care Area

(1) Space in the Nursery is very crowded. Housekeeping and medical equipment storage areas, secretarial station and staff sitting spaces are part of the same space as the infant's care area; family space at the bedside is essentially absent.

(2) The location of the infant's care area provides some separation of the infant and family from other unit activities: A treatment or triage area may be designated within the Nursery space yet is open into the care area; equipment storage areas appear separate; secretarial station and staff lounges may be only partially separated from the care area and/or doors separating them may remain open; utility and conference rooms may connect directly to the infant's care space; family space at the bedside is minimal.

(3) The location of the infant's care area from other activities provides considerable separation of infant and family from interference by other unit activities: The staff lounge may be located very close to the infant's care area, etc. Family space at the bedside is available yet limited; a door to the hallway may be consistently open.

(4) There is thorough separation of the infant's care area from other unit activities. Infant and family are protected from other unit activities: Family space in the infant's care area is consistently available; furthermore a separate parent room is available for the family at any time, and the Nursery has an adequate number of parent rooms; there is an adequate changing and storage area for the family; equipment is stored away from the infant and the family; treatment or triage rooms, secretarial stations, utility and conference rooms are separate, and afford the infant and family a peaceful environment in the Nursery.

(5) Ample nursery space is available for infant and family, free of interference from other unit activities. A complete, comfortable and private rooming-in facility with bath and shower is available for the family in their individualized infant-family care room.

4. Density and Size of Bedspace

(1) The infant is in very close proximity to other infants. It is very difficult to fit a chair at the infant's bedside.

(2) The infant is in very close proximity to other infants, though it is possible to fit a chair for the parent or caregiver at the bedside; or there is enough space at the infant's bedside, yet the infant is one of many infants cared for in one large, open room.

(3) There is enough bedspace for the infant and caregiver, a chair or recliner readily fits at the bedside, yet more than six infants are cared for in the same nursery room.

(4) The infant's bedspace is one of four to six bedspaces in the nursery room; a large space is allotted to the infant and family; and the infant clearly has a distinct space, and a recliner and second chair easily fits into the bedspace.

(5) The infant is cared for in a family-like, semi-private or private room setting with one or at most two bedspaces in the spacious care area. There is ample space for the infant and family with ample sitting and sleeping space.

5. Design of Bedspace

(1) Medical equipment appears to interfere consistently with accessibility to the infant; a chair is not available at the bedspace, excess equipment is stored around the infant's bedspace in the room.

(2) Medical equipment appears to interfere to some extent with accessibility to the infant; a chair may be available at the infant's bedspace; some excess equipment may be stored around the infant's bedspace.

(3) Medical equipment sometimes interferes with accessibility to the infant; a chair is available at the infant's bedspace; excess equipment is largely stored away from the infant's bedspace.

(4) Medical equipment is well arranged, accessibility to the infant is readily available; a comfortable chair, often a recliner, is available at the infant's bedspace, excess equipment is stored away from the infant's bedspace.

(5) Medical equipment is well integrated into the design of the infant's bedspace. The room setting and furniture is family-like and semi-private or private.

6. Conduciveness for Family Participation

(1) Space is very limited. The parents of only one infant at a time may be in the room; space is too limited for the professional caregiver and parent to care for the infant.

(2) Several chairs and/or places for parent-infant interaction are available in the nursery at large, yet the infant's care room is very limited in space. A parent room is available for breastfeeding and for parent-infant interaction when the infant is well enough.

(3) A chairs and some space is available at the infant's bedspace. The bedspace may be partitioned off within the nursery room. A parent room is available when the infant is well enough.

(4) A large, comfortable chair that reclines or a bed-chair is available next to the infant's bedspace; more than one parent room is available. Overnight parent rooms are available for the family once the infant is well enough.

(5) The Nursery room is intimate, supportive, and home-like. A parent bed wide enough for both parents is part of the infant's bedspace or individual care room. There is enough space and privacy for the parents to sleep, stay overnight, and care for their infant in skin-to-skin contact. A private telephone is installed at the bedspace for the family's personal use; smaller chairs and a table are available for young siblings. The infant's care room has private bathroom facilities including a tub and shower for the parents or other family members, who are living-in with the infant.

7. Accessibility of Facilities and Services Supportive of Professionals

(1) On-call rooms, laboratories, staff offices, pharmacy, staff changing rooms, lounges, and conference rooms are in separate and often distant areas of the hospital.

(2) One or two of the staff areas and/or support service areas are near the nursery space.

(3) Some of the support services and staff areas are near the nursery space.

(4) Most of the support services and staff areas are near the nursery space.

(5) Support services (e.g., laboratories and pharmacy) and staff areas including conference rooms, on-call rooms, and staff lounges are near the nursery space.

B. Physical Environment of the Infant's Bedspace

1. Light

(1) The infant's care occurs at all times in an environment with bright fluorescent or incandescent overhead light and/or bright daylight.

(2) During rest periods, the infant is in somewhat muted light; a partial or thin blanket covering may be present over the infant's incubator or bed, or a partial blind is drawn at a window, though the room is generally bright.

(3) For periods, the infant is in semi-darkness; thick, large blankets cover the incubator or crib; the infant's eyes may be shielded from bright overhead light during alertness and/or when held, or the room is maintained at semi-dark level.

(4) During sleep, the infant is in nearly complete darkness. During alert periods, and/or when the infant is held controlled indirect lighting provides an overall muted or semi-dark environment.

(5) The infant is in darkness during sleep and there are appropriate levels of muted indirect light for alertness, and/or when the infant is held. Adjustments are titered to the individual infant's developmental progress toward increasing robustness and self-regulation. Individual bedspace lighting with dimmer capacity is used for special procedures. Lighting is indirect and controllable by the parent as well as the staff.

2. Sound

(1) Loud human voice and environmental sounds permeate the infant's bedspace at all times: Staff voices, frequent crying sounds from nearby infants, overhead speaker systems, telephone and alarms ringing, sound from the secretarial station, water rushing, doors, equipment and supply sounds, etc.

(2) Loud human voice and environmental sounds occur in the infant's bedspace much of the time; fluctuations may occur between softer and louder voices; radio, waste receptacles, and sink sounds clearly occur, as well as sounds from the secretarial station, hallway, etc.

(3) Loud human voice and environmental sounds occur some of the time; at times human voices are held at soft levels; alarms are set at lowered level; a radio or music may play at a low level; a sink may be used relatively quietly.

(4) Human voice and environmental sounds are at a minimum. Very low levels of sound are present. There appears to be felt stripping on waste receptacles and drawers. Incubator portholes and cupboard doors are closed quietly; equipment is moved quietly. Ambient staff voices are very soft. Alarms are muted. Proximity to faucets and sinks, x-ray screens, telephone, and staff movement is absent or very muted and quiet.

(5) Sounds consistently are very low. Walls and floor textures appear sound-reducing and absorbing. Monitors and telephones ring very softly, as back-up to visual and vibrating alarms. Staff voices are very quiet. Overall, the infant's care area is peaceful and quiet.

3. Activity

(1) The nursery atmosphere is hectic; activity changes continuously; visitors, staff, technical and laboratory personnel hurry about, water runs, doors open and close and equipment moves in and out of the are area.

(2) Activity levels are quite high, though at times it subsides to lower intensities.

(3) Activity levels are moderately low. There appear to be efforts to move activity away from the infant's bedspace, although this appears to be inconsistent.

(4) The nursery's atmosphere is largely calm and quiet; an exception may be an emergency situation. Rounds and staff discussions occur away from the bedside.

(5) The nursery's atmosphere is consistently very calm, quiet, and soothing. Staff handles all situations including emergency situations calmly and quietly.

4. Visual Array Inside of Incubator/Crib

(1) The walls of the crib or incubator continuously present a complex and dense array of visual stimuli. This may include numerous and./or intensely-patterned (e.g., black and white checkerboard) toys and mobiles, which are continuously within the infant's immediate visual field; or the infant's visual space is filled with equipment and bedding; or the infant's visual field is barren and essentially devoid of texture, form, and color, also when the infant is awake.

(2) Many visual inputs continuously impinge upon the infant's immediate visual field, be they from equipment or toys, mobiles, etc.; or the infant's visual space is nearly devoid of all texture, form, and color, also when the infant is awake.

(3) Several visual stimuli continuously are part of the infant's immediate visual field, whether the infant is asleep or awake.

(4) Visual stimuli including the parents and/or professional caregiver's face, present themselves when the infant becomes and/or is awake. They are muted or removed from the infant's visual field when the infant becomes drowsy, is going to sleep, and/or becomes hyper-alert or upset.

(5) Differential visual stimuli, including the parents and/or professional caregiver's face, are present, muted, and removed in support of the infant's state and self-regulatory robustness.

5. Olfactory Experience

(1) Noxious odors are frequently present in the infant's immediate olfactory field, e.g., alcohol wipes, hand-disinfectant, adhesive remover, cleaning fluids, recent painting, caregivers' perfumes, cooking odors; soiled clothing; rubber tubing, gloves, equipment and disposable staff gowns. Familial and comforting odors, such as the mother's breast and body scent, the father's body scent, are absent.

(2) Noxious odors are periodically present in the infant's immediate olfactory field; familial, comforting odors are available when the parents are near the infant.

(3) Noxious odors are infrequently present in the infant's immediate olfactory field; familial, comforting odors are available when the parents hold the infant.

(4) Noxious odors are actively eliminated from the infant's immediate olfactory field whenever possible; a familial, comforting olfactory environment is available for much of the time also when the infant is in the incubator or crib; the mother's breast pad, a blanket or cloth, and/or piece of clothing the mother or father have worn or held on their body are available to the infant much of the time. These are exchanged for fresh parent-scent-cloths regularly should they become soiled.

(5) Noxious odors are at all times actively and reliably eliminated from the infant's immediate olfactory field. A consistent familial olfactory environment of the parent's body scent is present for the infant at all times.

6. Taste Experience

(1) Noxious tastes e.g. salty, bitter, or sour are frequently present in most or all of the infant's immediate oral, gustatory fields. These may include soap, hand lotion, laundry detergent, alcohol wipes, adhesive remover, cleaning fluids, rubber tubings, gloves and equipment. Familial and comforting tastes, such as maternal amniotic fluid, mothers' breast milk and parental body tastes are absent.

(2) Noxious tastes as described above are periodically present in the infant's immediate gustatory fields; familial, comforting tastes are available when the parents are near the infant.

(3) Noxious tastes as described above are infrequently present in the infant's immediate gustatory fields; familial, comforting tastes are available when the parents hold their infant.

(4) Noxious tastes are actively eliminated from the infant's immediate gustatory fields whenever possible; familial, comforting gustatory experiences, such as breast milk and amniotic fluid are provided for much of the time. The infant experiences drops of breast milk or colostrum when held skin to skin by the mother. Additionally, infants may experience pleasant tastes from breast pads, blankets, cloths, or pieces of clothing that the mothers or fathers have worn or held on their body.

(5) Familial tastes from the mother's milk and the parents' bodies are provided consistently for all infants at all times.

7. Touch Experience

(1) Severe tactile sensations e.g. rough, abrasive, scratchy, sharp, hard, sticky, materials and/or chemical liquids irritating or abrasive to the skin, and caregiving movements e.g., abrupt, rough, hasty are frequently experienced by most or all of the infant's' cutaneous surfaces.

Materials may include rough bed linens and clothing, mattresses, sharp finger nails, chapped hands, Velcro, tape, rubber, nylon thread, out seams, old fleece, polyester, styro- and plastic foam, and disposable plastic diapers. Cleansing and care of the infant's skin is performed with one substance and protocol for all infants. Familial and comforting tactile experiences, such as parent's soft skin, soft natural sheepskin, 100% cotton, velvet, and/or silk bedding and clothing, are absent.

(2) Severe tactile sensations as described above are periodically experienced by much of the infant's cutaneous surface; familial, comforting tactile experiences are available when the parents are with the infant. The infant's experiences of NICU staff's touch during care giving procedures are repeatedly abrupt, rough, and hasty.

(3) Severe tactile sensations as described above are infrequently experienced by portions of the of the infant's cutaneous surface; familial, comforting tactile experiences are available when the parents hold their infant. Bedding and care giving materials at times are of an appropriate weight, and support the infant's developmentally appropriate tactile experiences. Some materials and substances used appear intentionally chosen to be individually appropriate for the infant's skin. NICU staff's touch during care giving procedures is infrequently abrupt, rough, and quick, and repeatedly gentle, smooth, and in tune with the infant's own movements.

(4) Severe tactile sensations are actively eliminated from the infant's immediate cutaneous experience; familial, comforting tactile experiences such as soft parental skin and natural materials are provided for some of the time. The infant experiences skin to skin touch and hand swaddling containment when with the parents or repeatedly when with professional caregivers. Bedding and care giving materials are of appropriate weight and support the infant in developmentally appropriate cutaneous sensations. Most materials and substances used appear intentionally chosen to be individually appropriate for the infant's skin. The infant may experience pleasant touch from soft cotton bedding and clothing, or natural sheepskin, silk sheets, etc. The infant's experience of NICU staff's touch during care giving procedures is frequently gentle, smooth, and in tune and well paced with the infant's own movements and tactile sensitivity.

(5) Familial tactile sensations from the parents' hands and body are provided consistently for their infant at all times. Bedding and care giving materials are consistently of an appropriate weight and always support the infant in developmentally appropriate, soothing sensations. All materials and substances used are individually appropriate and soothing for the infant's skin. The infant's experience of NICU staff's touch during care giving procedures is consistently gentle, smooth, in tune, and well paced with the infant's own movements and tactile sensitivity.

8. Nursery Temperature and Air Circulation

(1) Air temperature and circulation in the nursery room and around the infant's bed space fluctuates greatly and reaches levels that frequently challenge the infant's temperature regulation and stability.

(2) Air temperature and circulation in the nursery room and around the infant's bedspace fluctuate repeatedly in a 24 hour day and/or week, and repeatedly reach levels that challenge the infant's temperature regulation and stability.

(3) Air temperature and circulation in the nursery room and around the infant's bedspace at times fluctuate to some extent. Largely they remain fairly stable and within an acceptable range to be supportive of the infant's temperature regulation and stability

(4) Air temperature and circulation in the nursery room and around the infant's bedspace are usually steady and at an appropriate level to be supportive of the infant's temperature regulation and stability.

(5) Air temperature and circulation in the nursery room and around all the infant's bedspace are reliably stable, consistent and at an appropriate level to enhance the infant's temperature regulation and stability.

9. Bedding and Clothing

(1) Bedding and clothing utilized is independent of the infant's individual preferences and expectations; the infant may lay naked on a flat surface or may wear only an ill-sized and ill-fitted diaper; or the infant is very tightly swaddled.

(2) Bedding and clothing relate somewhat to the infant's preferences and expectations, e.g., the infant may be swaddled once cared for; however, swaddling may be quite tight and routinely applied; the infant's diaper and clothing may be too large for the infant; some nesting and boundaries may be used, apparently routinely.

(3) Bedding and clothing generally relate to the infant's preferences and expectations e.g., the infant may wear a hat and a soft one-piece infant suit and has a foot roll, although these appear to be utilized routinely, rather than chosen in specific support to the infant's organization. The parents and/or the professional caregiver may hold the infant for limited periods.

(4) Bedding and clothing are individualized, i.e. consistently related to the infant's preferences and expectations. This may include provision of options such as a water mattress, sheepskin, boundaries, "nesting," clothing with soft one-piece suits, soft hat, gentle swaddling, and appropriate bedding, and/or the parent's skin-to-skin holding of the infant for extended periods.

(5) Bedding and clothing is creatively individualized to support the infant's preferences and expectations; this includes provision of options such as a bunting, hammock, small finger-like pacifier with availability for grasping, and/or canopy, or tent to shield the infant's face from light, as well as other individualized materials supportive of the infant, such as appropriately soft and small diapers, well-fitting, soft clothing, and soft cover blankets. The parents reliably provide themselves as the infant's most well-suited 'bed' and fully live in with the infant.

10. Specific Supports for the Infant's Self-Regulation

(1) Provision of specific supports in support and facilitation of the infant's self-regulation such as use of buntings and pacifiers; holding by the parents and/or the professional caregiver; facilitation by cradling, containment and gentle hand-swaddling; opportunity to suckle on the parent's breast and/or caregiver's finger, is completely absent.

(2) Provision of specific supports in support and facilitation of the infant's self-regulation is occasional and sporadic.

(3) Provision of specific supports in support and facilitation of the infant's self-regulation is frequent yet appears routinized. The parents and/or professional caregiver at times provide some more differentiated support.

(4) Provision of specific supports in support and facilitation of the infant's self-regulation is frequent and individualized much of the time. This may include holding, facilitation by cradling, soft hand and cloth-swaddling, caressing, and containment; opportunities to suck during and between procedures and gavage feedings; and holding on to the parent or a second caregiver's finger, bedding, nest-rolls, or bunting during care actions and procedures. The professional caregiver encourages and facilitates the parents' collaboration in aiding their infant's regulation.

(5) Provision of specific supports in support and facilitation of the infant's self-regulation is consistent, reliably individualized, and sensitively adapted to the infant's expectations and requirements. Parents facilitate and support their infant's regulation at all times and hold their infant in skin-to-skin contact and support for most of the 24 hour cycle; the professional caregiver supports the parents' facilitation of the infant's self-regulation at all times, consistently performs caregiving actions and procedures in collaboration with the parent as the parent facilitates the infant, and assures that the infant's regulation is well-supported by the parent and/or a second or third professional caregiver, depending on the nature of the procedure.

C. Specific Aspects of Direct Infant Care

1. Position, Movement, and Tone

(1) The infant lays supine, prone, or on the side on a flat, bare surface at rest and/or in the course of care procedures. When the caregiver or parent hold the infant, the infant's own strength determines position, movement and tone of trunk, arms, legs, and head.

(2) The infant lays on a flat surface on the side-, prone, or in supine, at rest and/or in the course of most care-procedures. When, the caregiver or parent hold the infant, they may provide minimal alignment of head, trunk, and limbs, may make minimal or rare adjustments of shoulder and hip flexion, and rarely support the infant in facilitation of the infant's position, movement and tone of trunk, arms, legs, and head.

(3) The infant intermittently receives individualized support for physiologically well-aligned positions and movement, and for well-modulated tone. The caregiver intermittently supports the parent in facilitation of the infant's trunk, arms, legs and head position, movement and tone whether the infant lies on the side, prone, or in supine in the incubator, crib or other surface at rest and/or in the course of care procedures and/or when the infant is held by the parent or caregiver,

(4) The infant repeatedly receives individualized support for physiologically well-aligned positions and movement, and for well-modulated tone. The caregiver repeatedly supports the parent in provision of facilitation of the infant's trunk, arms, legs and head position, movement and tone, whether the infant lies on the side, prone, or in supine in the incubator, crib or another surface, at rest, and/or in the course of most care procedures, and/or when the infant is held by the parent or caregiver.

(5) The infant consistently receives highly sensitive, individualized support for physiologically well-aligned positions and movement, and for well-modulated tone. The caregiver

consistently and sensitively supports the infant and/or the parent in astute facilitation of the infant's trunk, arms, legs and head position, movement and tone, whether the infant lies on the side, prone, or in supine in the incubator, crib or on another surface, at rest, and/or in the course of all care procedures, and/or when the infant is held by the parent or caregiver.

2. Feeding (Gavage/Breast/Bottle)

(1) The infant is fed on a fixed schedule by routinized mechanically-implemented nutrition-delivery methods. The gavage feeding hangs inside the incubator, or is delivered by automated mechanical pump and flows into the infant at a pre-set rate. The infant remains in the same position throughout and after the feeding; the caregiver is away from the bedside. When bottle-feeding, the bottle may be propped in a holder or is supported by bedding, or the caregiver holds the infant at the back of the head or nape of the neck in partial sitting-position in the incubator, crib or on the caregiver's lap, in profile or face-to-face; the caregiver inserts the nipple repeatedly to initiate sucking, rotates the nipple in the infant's mouth, and/or arouses the infant by jiggling and moving the infant's head, arm or leg back and forth, tweaking the infant's feet, etc. Breastfeeding is discouraged directly or indirectly. The room may be cold, loud and/or very bright while the infant receives the feeding.

(2) The caregiver makes a few arrangements prior to, during, and after feeding in terms of equipment, room temperature, lighting and sound, preparation and facilitation of the infant's state and position, and the caregiver's attentiveness, and emotional availability. The infant may be partially shielded from light and sound; the room may be marginally warm enough, the caregiver's attention and emotion is attuned to the infant some of the time; some adjustment of the infant's position may be observed. When fed by gavage or pump, onset, rate, and termination of food-flow are independent of the level of the infant's arousal or exhaustion. When bottle or breastfeeding, the infant's hands typically are actively excluded from the feeding process. The parent may be permitted to feed the infant yet only in the way prescribed by the caregiver.

(3) The caregiver makes a number of arrangements prior to, during, and after feeding in terms of equipment, room lighting, sound and temperature; preparation and facilitation of the infant's state and position. The caregiver's attentiveness and emotional availability intermittently may lack consistency or may be partially routinized. The infant's position may be supported in advance of the feeding; however, the caregiver may provide little consistent support throughout or following feeding. The hands of the infant may only be partially freed, supported, and engaged in the feeding. The parent may be encouraged to feed the infant and breastfeeding may be valued to some degree.

(4) The caregiver makes significant arrangements prior to, during, and after feeding in terms of equipment, room lighting, sound and temperature. The caregiver's attentiveness, and emotional availability are quite consistent, as are preparation and facilitation of the infant's state, tone, movement and position, The infant's behavioral cues and states are largely well considered and supported; feeding occurs calmly and in an emotionally nurturing way; it is initiated once the infant indicated readiness. Timing and pacing of feeding are adjusted carefully to the infant's robustness and availability. The infant's hands are consistently engaged in holding on during the feeding. A pacifier may be provided, if deemed supportive. The parent is encouraged and supported as the infant's appropriate provider of nourishment and nurturance. Breastfeeding is valued and encouraged.

(5) The caregiver observes the infant closely for the infant's signals of awakening, emerging sensation of hunger, and early signs of request of feeding. The caregiver coordinates feeding consistently with the infant's state cycles and/or facilitated the infant's development of such coordination. The room is calm, warm, and muted in lighting. The infant is well-supported, held close, and snuggled securely and comfortably in the caregiver's or parent's arm or rests against their chest. The infant's hands are supported to grasp as part of the pleasure of feeding. During feeding the caregiver or parent provides and assures at all times calm, gentle containment, security, and facilitation. The infant's cues, initiative, and energy determine the timing and pace of feeding, whether feeding occurs with the aid of a pump, gavage reservoir, or by breast. When indicated, rests are built in. A pleasurable, satisfying, nurturing experience is the goal. After feeding, support continues in order to ensure the infant's well-maintained regulation and smooth transition back to sleep. Nuzzling and licking on the mother's breast are actively encouraged and valued. Successful breastfeeding is the goal; bottle feeding is the mode of last resort and resorted to only should significant medical reasons preclude the mother from breast feeding. Cup, spoon, and finger-feeding are encouraged, before bottle feeding may become an option. The parent is considered the infant's most important provider of nutrition and nurturance.

3. Burping

(1) The infant receives repeated vigorous back patting or rubbing in the course of feeding on an apparently fixed-interval schedule regardless of the infant's cues. The infant may be held sitting upright, supported under the chin, the nape of the neck, or the back of the head, with arms hanging loosely or extended, or laid across the caregiver's lap for burping. Prevention of soiling of the shirt or blanket and use of a protective cloth or bib may be an over-riding focus; or the infant may be tightly swaddled, with arms inside the blanket, lifted upright and repeatedly patted on the back. The infant may receive simultaneously considerable visual and auditory stimuli. The caregiver may appear distracted and preoccupied with other thoughts and activities most of the time.

(2) Vigorous back patting or rubbing occurs repeatedly in the course of feeding, apparently little related to the infant's cues; tone and position support is minimal, environmental stimulation is moderate, most of the time, or at times very high at other times more subdued. The caregiver may appear preoccupied with other issues much of the time, or focuses largely on the adjustment of the bib or protective cloth.

(3) The infant receives a combination of moderate back patting and rubbing. Environmental stimulation may be muted. Burping actions may be timed partly in relation to the burst-pause sucking pattern of the infant, and are performed relatively gently.

(4) Burping, when indicated by the infant, is supported by gently moving the infant upright on the caregiver's chest or shoulder, perhaps by gentle up-and down motion and/or walking. The parent is guided to always gently support the infant to burp when indicated by the infant's cues.

(5) Burping is facilitated by gently and slowly moving the infant upright, nestled on the caregiver's shoulder, or against the chest. It is always performed very softly and slowly. The position change is timed to the infant's cues, and relaxation is always the apparent aim. The parent is nurtured as the infant's most important provider of feeding and burping.

4. Diaper Changing and Skin Care

(1) Diaper change and skin care always occur on a fixed schedule in an apparent routinized manner. The caregiver leaves the bedside repeatedly, to discard the wet or soiled diaper, to fetch materials to clean the infant's skin, and again to fetch a clean diaper and fasten it on the infant. Adjustments of lighting, sound, and temperature, state preparation, and/or support to the infant's position, movement, and tone, if any, occur independently of the infant's cues. Caregiver attentiveness and emotional availability, if any, are directed elsewhere. The infant fends for him or herself in management of arousal, upset, and/or exhaustion, flaccidity, breathing difficulties, etc., which ensue during and after diaper change and skin care.

(2) Partial arrangements take place prior to, during, and after diaper change and skin care in terms of equipment and room preparation, and/or in terms of the infant's state preparation, support to the infant's position, tone and movements. Caregiver attentiveness and emotional availability at times are directed to the infant. The procedures may be performed while the infant lays on the side or in prone. The caregiver may support the infant's posture, tone and state incidentally, and/or briefly, before, during and after diaper change and skin care.

(3) Moderately effective arrangements take place prior to, during, and after diaper change and skin care in terms of state preparation, position, tone and movement support, lighting, temperature and activity. Caregiver attentiveness and emotional availability repeatedly are directed towards the infant. Whether diaper change and skin care are performed while the infant lies on the side, in supine, or prone, facilitation is provided. The materials used are partially appropriately in size, texture, and shape, and appear to be comfortable for the infant. The parent is encouraged to participate in or perform diaper change and skin care.

(4) Significant and effective arrangements take place prior to, during, and after diaper change and skin care in terms of equipment and room preparation, and in terms of state preparation, and position support. Caregiver attentiveness and emotional availability consistently focus on the infant. Diaper change and skin care are accomplished while the infant is bedded in a well-supported position, be it in prone, on the side, or in supine. The parent is encouraged, and supported in participation in or independent performance of diaper change and skin care. Support into flexion and aid towards self-regulation is provided before, during, and following the diaper change and skin care. The materials used are quite appropriate in size, texture, and shape to assure the infant's comfort.

(5) Individualized and highly infant-attuned arrangements take place prior to, during, and after diaper change and skin care in terms of consistent equipment and room preparation, state preparation, and reliable support to the infant's position, movement and tone. Caregiver attentiveness and emotional availability are continuously supportive and infant-focused. Diaper change and skin care take place while the infant is bedded comfortably with effective support of flexion and self-regulation before, during, and following diaper change and skin care. The caregiver consistently assures a calm and soothing atmosphere, and gently contains and supports the infant. The materials used are soft, attractive, and appropriate in size, texture, and shape for the infant's comfort. The parent is valued as the most appropriate person to change the infant's diaper and provide skin care. The professional caregiver assists the parent as indicated.

5. Bathing

(1) The infant fends for him or herself before, during and after sponge, tub, or sink bath; the infant may lie on the back or is held semi-upright and naked on a surface when sponge-bathed or is bathed in such positions in a tub or sink.

(2) Minimal preparation and facilitation occurs prior to, during, and after bathing in terms of equipment, room temperature, sound and lighting, and in terms of state preparation, and support to the infant's position, tone and movement. The caregiver's attentiveness and emotional availability are sporadically directed to the infant. The infant may be partially shielded from light and may receive some adjustment and/or sporadic facilitation of position, tone, and movement. The infant occasionally may receive support to maintain flexion during sponge, tub, or sink bath. The parent receives marginal encouragement to bath the infant.

(3) Moderate preparation and facilitation occurs prior to, during, and after bathing in terms of equipment, room temperature, sound and lighting, and in terms of state preparation and support to the infant's position, tone and movement.. Caregiver attentiveness and emotional availability are inconsistent and at times routinized. The infant may be shielded from light; the sound level may be low and the room warm enough; the infant's position may be supported in advance of bathing, however, the caregiver may provide little direct support throughout, or following bathing. Bathing may be individualized in frequency and timing, some flexor support may be given with partial immersion in water. The parent may be encouraged to participate in bathing the infant.

(4) Significant preparation and facilitation occurs prior to, during and after bathing in terms of equipment, room temperature, sound and lighting, and in terms of state preparation, support to the infant's position, tone and movement. Caregiver attentiveness and emotional availability are available to the infant almost consistently. The infant's behavioral cues and states are considered; bathing is performed calmly and gently. Bathing is initiated once the infant's, state, position, tone and movement are facilitated and ready. A pacifier may be provided, if deemed supportive. Bathing is individualized in frequency and timing. Deep, warm water for immersion bath may be used. The infant may be lowered into the bath swaddled in a blanket. The parents are considered the infant's best bathers.

(5) The infant receives well-implemented position support and containment prior to bathing. The room is calm, soothingly lit, and warm. During bathing the infant utilizes the calm, gentle, human and/or blanket containment provided. After bathing, well-tuned support continues in order to ensure the infant's smooth state and motor system transitions, as well as well-maintained self-regulation. Parent and infant may bathe together in the privacy of the family nursery suite. Bathing is a pleasurable family experience.

6. Timing and Sequencing of Caregiving Interactions

(1) Care procedures and interactions are implemented on a fixed nursery schedule regardless of the infant's state and level of organization; sleep is interrupted; caregiving interactions are interrupted in order to obtain necessary equipment (stethoscope, thermometer, diapers, etc.) or to rearrange space. The parents are excluded as possible facilitators of the infant.

(2) Care procedures and interactions are implemented with some consideration of the infant's state and level of organization. An occasional arrangement is made for the scheduling of a procedure in consideration of the infant's sleep cycle. Basic equipment (stethoscope, thermometer, diapers, etc.) may be placed at the bedside prior to caregiving; this reduces

interruptions during caregiving. Overall, a fixed nursery-based schedule is maintained. The parents feature minimally in the structure and facilitation of care procedures for the infant.

(3) Care procedures and interactions are at times individualized in terms of the infant's state and level of organization. Procedures are at times grouped into clusters and within a caregiving session sequenced to minimize stress; equipment and space are largely prepared prior to onset of caregiving interactions. The parents are included to some extent in the planning of caregiving procedures and in facilitation of the infant.

(4) Care procedures and interactions are individualized and consistently implemented with consideration of the infant's state and level of organization. Caregiving interactions are timed to promote developmentally appropriate periods of uninterrupted sleep and of robust awakening. Procedures are clustered to be individually supportive. The caregiver assesses each interaction in order to determine appropriate timing and pacing. The parent is supported as the infant's most important regulator.

(5) The infant's sleep-wake cycle, feeding robustness, and other emerging competencies are considered foremost when timing is planned for caregiving, including interventions of consultation specialties such as ophthalmology, neurology, ultrasound, X-ray, and others. The parent is valued and encouraged as the infant's foremost regulator and facilitator in the course of all procedures. Enhancement of the infant's sense of comfort and well-being is an important goal.

7. Transition Facilitation

(1) Timing and pace of care components, procedures and interactions are performed solely with consideration of staff schedules. Staff preferences determine the level of room lighting, sound and temperature. The infant is left to his or her own level of competence for state and energy regulation, position, movement and tone maintenance, before during, and after care procedures, between components of care, and in efforts to return to restfulness. The infant is caught behind continuously in the effort to integrate the sequences of care and the tempo of implementation.

(2) Care procedures and interactions are performed at times with some preparation of the room lighting, sound and temperature, preparation of the infant's state, position, movement and tone, and assurance of the caregiver's attentiveness and emotional availability, in the implementation of care components, the shift from one component to the next, and the return to restfulness. The infant may be partially shielded from light, the caregiver may be emotionally engaged some of the time; some adjustment of the infant's position, movement and tone, and the timing of care components is observed. The parent features minimally in providing transition facilitation. The infant is caught behind repeatedly in the effort to integrate the sequences of care and the tempo of implementation.

(3) Care procedures and interactions are performed frequently with some preparation of room lighting, sound and temperature, preparation of the infant's state, position, movement and tone, and the assurance of the caregiver's attentiveness and emotional availability in the implementation of care components, the shift from one component to the next, and the return to restfulness. This may be at times well-implemented and individualized; at other times the caregiver may rush the infant or leave it up to the infant in how to maintain regulation. The infant may be shielded from light; the sound level may be kept minimal, and the room may be warm; the infant's position, movement and tone may be supported in advance of care procedures and interactions; however, the caregiver may provide little direct support

throughout, or following procedures and interactions; or some degree of facilitation may be given fairly consistently, yet it may be removed before the infant is fully settled, restful, and comfortable. The parent may be encouraged to provide some facilitation. The infant may be caught behind at times in the effort to integrate the sequences of care and the tempo of implementation.

(4) Preparations are made prior to, during and after care procedures and interactions in terms of room lighting, sound and temperature, in terms of supporting the infant's state readiness, position, movement and tone, and in assurance of the caregiver's attentiveness and emotional availability. These preparations are consistently employed and are based on the infant's individual cues. Prior to procedures and interactions the infant may be assisted in maintaining flexion, provided an opportunity for sucking, and shielded from interruptions and stress. Procedures are performed effectively and with ongoing support to the infant before, during, and after each care component, and in transition from one component to the next. Between and after procedures, reorganization is reliably facilitated, including support to flexion opportunities to hold on and to suck as indicated. Extraneous stimulation e.g., stroking, talking, position shifts, etc. is avoided and the infant is reliably supported to become well regulated; once calm, removal of one supportive aid at a time is attempted. Much time is taken to assure the infant's re-regulation. The parents are supported as the infant's important transitions facilitators. The infant keeps up well most of the time in the effort to integrate the sequences of care and the timing and flow of the largely well-supported implementation, and the return to relaxation and rest.

(5) The infant is consistently well-supported and well-regulated prior to, during and after all care procedures and interactions. The infant receives calm, gentle containment and facilitation. Individually appropriate levels of support continue through out day and night and successfully assure the infant's smooth and competent state maintenance and state transitions, and the infant's well-maintained self regulation. The caregiver anticipates, plans for, and integrates smoothly assistance from a second caregiver in order to assure consistently effective facilitation for the infant. The caregiver may choose to postpone to a more stable time for the infant or modify more optional care components and adjust care components in their timing, sequencing, pacing, intensity and duration to the infant's levels of strengths and energy. The parent is valued and reliably included and supported as the infant's most effective facilitator. The infant appears to gain in strengths and competence from each of the caregiving interaction sequences, the facilitation between components, and their return to rest and relaxation.

8. State Organization

(1) Caregiving interventions are timed and performed with sole attention to staff schedules and preferences. The caregiver frequently and/or abruptly performs care actions and/or interacts with the infant, when the infant is sleeping or calmly awake. The caregiver always arouses and/or awakens the infant suddenly and brusquely and/or leaves the infant alone for prolonged periods when the infant is aroused, upset, crying, and/or calmly awake. The parent is assigned the role of visitor and observer.

(2) The caregiver once or twice pays attention to the infant's state when timing and performing caregiving interventions. The caregiver repeatedly may interrupt the infant's sleep or awake state. Such interruptions of sleep and alert states are partly abrupt and performed with minimal facilitation. The parent is included minimally as regulator of the infant's state organization.

(3) The caregiver pays significant attention to the infant's state regulation, which is at times somewhat inconsistent or partially individualized. The infant is protected from disturbance when in deep sleep; when more awake the infant receives some support for calm state regulation and facilitation during and after caregiving. Facilitation of transition back into sleep and/or enhancement of calm alertness may be occasionally observed. The parent is included to some extent in the facilitation of the infant's state.

(4) The caregiver consistently pays attention to the infant's state organization. The infant's deep sleep states and organization of sleep are supported by the maintenance of a calm, predictable environment and schedule. The caregiver gently and consistently assists the infant in most state transitions, in maintaining modulated calm states, and in returning to and achieving deep sleep. The parent is reliably and consistently encouraged and supported to participate in the facilitation of the infant's state regulation.

(5) The caregiver provides and supports consistent, fully individualized attention and support to the infant's emerging and increasingly autonomous state regulation. The caregiver establishes a reliable support pattern of gradual transition facilitation into and out of sleep. Steady sleep wake cycles, deep sleep achievement and maintenance, and enhancement of steady alertness receive consistent supports. All supports are carefully adjusted to the infant's current level of self-regulation. The parent is nurtured and valued as the infant's foremost state regulator.

9. Organization of Alertness by the Use of Aspects of the Physical Environment

(1) Intense light and sound consistently impinge upon the infant. The caregiver interrupts the infant's state regulation repeatedly and/or performs caregiving actions based solely on caregiver schedule and preference. The infant's hyper- alertness or strained bare eye-opening is interpreted as availability for intensely animated adult interaction. The infant may be carried around and/or 'shown off' for the benefit of other caregivers. The parent is assigned the role of visitor or observer.

(2) Minimal or sporadic protection from light and sound is provided in an apparent effort to facilitate the infant's alert state: e.g., a light blanket may cover the incubator or the room light is reduced at times when the infant awakens. When the infant attempts to open the eyes, the caregiver may comment on it, yet visual and auditory stimuli are provided inconsistently and without consideration of the infant's alert state regulation. The parent is minimally included in the facilitation of the infant's alert state.

(3) A moderate amount of protection from light and sound is provided in an apparent effort to facilitate the infant's alertness. The infant's incubator may be fully covered with a blanket or the room lighting may be significantly reduced when the infant attempts to comes to an alert state. Some attempts are made to reduce sound levels around the infant's bedside during alert periods. An occasional pleasing visual and/or auditory stimulus is provided when the infant is alert. The parent is at times encouraged to facilitate the infant's alert state with a toy or other object.

(4) Considerable protection from light and sound is consistently provided in order to facilitate the infants' alertness. The incubator may be well covered, room lighting consistently adjusted and/or the infant's eyes reliably shielded when out of the incubator; environmental sound is kept to a minimum. Individually pleasing and supportive visual and auditory stimuli are provided as enjoyed by the infant and removed when the infant begins to show the first signs of becoming tired or overwhelmed. The parent is consistently encouraged to support the infant's alert state.

(5) Consistent protection from light and sound is provided at all times in order to facilitate alertness. Individually pleasing, well-chosen visual and auditory stimuli selected by the parents or another family member or close friend, are provided in an individually appropriate well- timed fashion with the clear goal, to support and enhance the infant's pleasurable alert experiences and facilitate increasing autonomy and initiation of the alert experience. The parents are valued and fully supported as the most important nurturers of the infant's alert state.

10. Organization of Alertness by the Use of Aspects of the Social Environment

(1) Timing, kind, complexity and intensity of social interaction provided are based solely on the caregiver's schedule and preferences. Intense auditory and visual stimuli surround the infant at all times. The infant's hyper-alertness or strained bare eye-opening is interpreted as availability for intensely animated adult interaction. The caregiver moves in closely to the infant's face and speaks loudly and/or intensely. The parent is actively excluded from social contact with the infant.

(2) Timing, kind, complexity and intensity of social interaction provided, repeatedly is based on the caregiver's schedule and preferences. Little consideration is given to the infant's transition to awaken and/or be awake, and/or calmly alert. The parent is minimally included in social contact, interaction with and facilitation of the infant's alertness.

(3) Timing, kind, complexity and intensity of social interaction provided repeatedly are geared to support the infant's awakening and alert state and its maintenance and modulation. The caregiver's appropriately adept softness and animation support the infant's level of robustness of the awake and/or alert state. The parent is encouraged to enjoy, facilitate, and support the infant's awake and alert state.

(4) Timing, kind, complexity and intensity of social interaction provided consistently are adjusted to be supportive of the infant's alert state. The level of robustness and modulation of awake and alert states consistently is taken into account in all social interactions. The level and modulation of the robustness of awake and alert states during social interaction are supported consistently. Increasing stability of the infant's transitions into alertness and maintenance of modulated alertness are the goal. The infant is protected from interruptions and intrusions, when in a quiet awake and/or alert state. Social interactions proceed in a softly modulated manner and support reciprocity with the infant. The parent is consistently encouraged to enjoy, support, and facilitate the infant's alert state and social engagement.

(5) Timing, kind, complexity and intensity of social interactions provided consistently are highly individualized and supportive of the infant's current and increasingly robust and modulated level of alertness. The infant's initiation and timing of reciprocal social interactions consistently is well-supported and enhanced. Joyful, pleasurable interactions are assured by consistently individualized and modulated reciprocation and enhancement of the infant's initiations. The parents are valued as the most important nurturers of the infant's alert state, and assured that their faces and voices are the most important, increasingly familiar and reliable experience for their infant's growing social and attentive interaction competence, differentiation and modulation.

