Designing & Delivering Neonatal Care Utilizing The Single Room Concept in a Large Inner City NICU

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First Attempt at Renovation

• 1997 – did many site visits
• Found Dayton Children’s Pinwheel Design Most Appealing
• “Nurses must be able to maintain visual control (line of sight) of infants under his/her control up to a 3:1 assignment and observational control of over 6 infants for temporary coverage”

Site of New Critical Care Tower
Retaining wall at construction site

White House of the Confederacy

View from NICU Staff Lounge
Current Challenge

• To design a collaborative environment (both physical and practical) that can support the needs of the developmentally fragile neonate while promoting the role of the family, and supporting the role of the caregiver

Collaborative Environment

• Ultimate aim of a collaborative environment is to evoke a change in practice that will ultimately optimize patient care outcomes
NICU Floor Components

- 32 Single Family Rooms
  - 14 inboard rooms
  - 18 exterior rooms
- 4 Double Patient Rooms
  - 260 sq. feet
- 2 Negative Pressure Rooms
- Procedure Room
- Palliative Care Suite
- Developmental Care Space
- Storage
NICU Floor Components

- Day Light Zones
- Family Toilet/Show
- Family Meet and Greet
- Child Play Area
- Family Lounge
- Family Resource Center

NICU Floor Components

- Separate Staff Elevators
- Staff Lounge
- Locker Room
- NICU Team Workroom
- Leadership Team Offices
- On-Call Spaces
- Conference Room
Infant Design Features

- 210 sq. ft. per room
- Breast Milk Refrigerator
- Acoustical tiled ceilings
- Varied lighting, indirect, procedural, task, adjustable
- Rubberized floors
- Dual paned/shaded windows
- Adjustable thermostat in each room

Family Design Features

- Parent workspace with internet access
- Wardrobe with Lockable Storage
- Sofa Bed with underbed linen storage
- Privacy curtain x 2
- Nurse Call
- TVs programmed out
- Closable Glass Doors
**Staff Design Features**

- Varied lighting, indirect, procedural, task, adjustable
- Rubberized floors
- Dual paned/shaded windows
- Supply cart
- Locked drawer
- Breast/Formula Fridge
- Nourishment supplies within the room
- Ergonomics
- Custom Headwall

**Customized Headwall**

- Full size Mock-up
- All NICU/Support staff through mock up room
- Ergonomics in Mind
- Suction set ups for Chest Tubes
- Angled wall behind vent for easier connects for Air/O₂
Customized Headwall

- Cord Management Box - Trip Hazards
- Corner Guards
- Solid Surface Countertops on all work surfaces
- 6 air, 6 oxygen, 5 vacuum
- Mix of emergency and regular power outlets
- Eliminated stationary IV Pole
MIRRORED ROOMS
OPPOSITE-HAND CONFIGURATION B
VCUHS NICU

MIRRORED ROOMS
SAME-HAND CONFIGURATION
VCUHS NICU
Documentation Venues

- Sub-Charting Station
- Interdisciplinary HUBS
- COWS
- Pull out writing surface
- Pull out keyboards
- Countertop

Interdisciplinary HUBS

- Hubs vs. Stations
- Isolated Med Prep Area
- Noise Reduction Measures
- Way Finding
- Incorporation of Support Services
Remaining Hurdles

• “The current “across the room” relationship between caregivers and infants will be replaced by “in another room” or “down the hall relationship”

• DON’T MAKE TECHNOLOGY DECISIONS TOO EARLY....BECAUSE EMERGING TECHNOLOGY WOULD BE MISSED

Staying in Touch is Not Optional...
It’s Essential

• We seek a system not a monitor
• Overriding objective is the creation and use of a system that will reproduce the information that can be gleaned at the bedside, regardless of the actual location of the caretaker
• To obtain vital information to make the best clinical decisions anytime, anywhere