



## TREND WATCH

**Spring 2011**

# Private Room NICU Care: Improved Care with Minimal Additional Costs

### Community Hospital North



Community Hospital North staff and physicians in Indianapolis report a drop in central line infections since infants were moved from an open ward to a 36-bed private room NICU, and reduced noise and activity levels in the private rooms means that about 40 percent fewer alarms are being triggered.

Since first introduced nearly 20 years ago, private room neonatal intensive care units (NICUs), also known as single family room (SFR) care, have gained traction as a major trend in hospital construction. Unlike traditional units with bassinets placed in an open-bay arrangement, private room units are spacious and comfortable for families and have been credited with improved patient outcomes. However, industry analysts and health care professionals have expressed concern that private room NICUs lead to high construction costs and excessive staffing levels.

For hospitals faced with the choice of SFR or a traditional NICU arrangement, it is important to step back and develop a better understanding of SFR patient outcomes, construction costs, and staffing costs before making this important decision.

### Children's Hospital of St. Paul



Children's Hospital of St. Paul reports that about 95% of the mothers in their private room NICU learn to breastfeed. Increased levels of breastfeeding are attributed to new mothers having private space to use breast pumps or breastfeed.

## Select Listing of Private Room NICUs

Organization	Number of Private NICU Beds	Date Unit Opened
Alfred I. DuPont Hospital for Children Wilmington, Delaware	14	2009
Blank Children's Hospital Des Moines, Iowa	35	2001
Cardinal Glennon Children's Medical Center St. Louis, Missouri	60	2007
Children's Hospital of Richmond Richmond, Virginia	32	2008
Children's Hospital of St. Paul St. Paul, Minnesota	50	2004
C.S. Mott Children's Hospital Ann Arbor, Michigan	46	Opening Fall 2011
Miller Children's Hospital Long Beach, California	24	2010
Monroe Carell Jr. Children's Hospital at Vanderbilt Nashville, Tennessee	77	2004
Phoenix Children's Hospital Phoenix, Arizona	76	2008
Rainbow Babies & Children's Hospital Cleveland, Ohio	36	2009
St. Joseph's Children's Hospital Tampa, Florida	64	Opening Summer 2011
Women & Infants Hospital of Rhode Island Providence, Rhode Island	80	2009

## Components of Single Family Room or Private room NICU Care

The SFR NICU typically consists of a series of private rooms each with approximately 160 net square feet (NSF) and dedicated space for the bassinet, family, and caregivers within the room. The rooms are grouped in pods of approximately 12 rooms to facilitate efficient staffing. The overall size of the unit can range from 400 departmental gross square feet (DGSF) to 800 DGSF per bassinet depending on the scope of amenities and support areas provided outside of the NICU room.

## Benefits of Single Family Room NICU Care

The most frequently cited benefits of SFR NICU care are an improved environment for the infant and the family. Research shows that premature infants require different lighting levels based on their developmental age and protection from high noise levels. The private room setting allows the environment to be better tailored to the needs of the infant. One study of a recently completed SFR unit showed that infants in the private room unit had a higher average weight gain per day, fewer days of requiring intravenous nutrition, and a reduced rate of hospital acquired infections.

The private room setting also provides the space and privacy for parents to be more intimately involved in the care of the infant including breastfeeding and skin-to-skin contact (Kangaroo care) both of which have been shown to have health benefits for the infant. A recent study showed that increased parental involvement leads to better short- and long-term outcomes for premature infants.



PEDS IN THE NEWS

## C.S Mott Children's Hospital



Opening in the fall of 2011, C.S Mott Children's Hospital will be one of only a few hospitals in the country with a women's birthing center inside the children's hospital. The new combined children's and women's hospital facility, the length of two football fields, features 1.1 million square feet, a nine-story clinic tower, and a 12-story inpatient tower. All pediatric inpatient rooms are 300 square feet with computer and wireless access. The 46-bed NICU with all private rooms includes space for parents and other family caregivers to stay with their child 24 hours a day.



## Early Concerns Related to Single Family Room Care

Most of the early concerns about SFR care related to the ability to adequately monitor infants and the isolation families and staff may experience. Historically, direct visualization was required to monitor NICU infants; however, recent developments in wireless monitor alarms and communication systems have alleviated these concerns. Regarding isolation, a post occupancy study of two SFR NICUs revealed that the nurses working had greater job satisfaction and reported lower levels of stress. Interestingly, a related study showed that nurses actually walked less in the SFR units, indicating that by decentralizing many functions to the bedside, nurses spent less time walking and most likely had more time available for patient care. Another SFR NICU facility reported that parents perceived there was more attention to the infants personal needs and nurses and physicians kept them better informed. They also appreciated the reduced noise levels and increased privacy.

## The Cost of Constructing a SFR NICU Can Be Comparable to an Open-Bay Unit

Speculation that a SFR NICU is more expensive to construct than the traditional open bay model is not necessarily accurate. Most older NICUs constructed with open bays are woefully inadequate, often averaging less than 300 DGSF per bassinet. However, open-bay NICUs constructed within the last five years have ranged from 400 to 500 DGSF/bassinet. Although SFR NICUs range from 400 DGSF per bassinet to 800 DGSF/bassinet, several recently completed units have averaged less than 500 DGSF per bassinet making them comparable in space allocation to an open-bay unit.

The smaller SFR NICUs are not deficient in any way. One recently completed facility with only 415 DGSF/bassinet achieved this efficient level of space utilization by decentralizing many of the formerly centralized functions to the bedside in the 165 NSF rooms, so that centralized areas were minimized. Although more space is not necessarily required in a SFR unit, experience has shown that because additional partitions are required to create the private rooms, one facility reported an increase of 3% in construction costs.

## Incremental Staffing Costs are Minimal

Staffing costs are another area of major concern. One recently completed SFR facility experienced an increase of 0.5 hours per patient day, which represented approximately a 3% increase. However, since this was the first year on the new unit with a significant number of cultural changes and new systems to incorporate, it may not represent a long-term trend. Another facility with several years of experience found levels varied from year to year but they averaged very close to the original level.

## Benefits are Significant and the



Learn more about HS&S Pediatric and Children's Hospital Services

Health Strategies & Solutions is the firm of choice for hospitals and health systems striving to take pediatric services to higher levels of distinction and success. We are dedicated to understanding the unique and changing nuances of children's health care and then sharing our knowledge with the many organizations and professionals who have made caring for children their life's work.

[Strategic planning](#)

[Service line and center of excellence planning](#)

[Ambulatory care planning](#)

[Facility planning and development](#)

## Incremental Costs are Minimal

Research to date indicates that the SFR care model provides significant benefits to the infant and family. Nursing staff are very satisfied with this model of care, and early concerns about observation and family and staff isolation have not been realized. If carefully monitored, the space allocation can be kept within the range of an open-bay unit but the cost per square foot to construct may be slightly higher. Similarly, if carefully monitored, incremental staffing costs can be minimized. Therefore, a strong business case can be made for adopting the single family room model for providing neonatal intensive care services.

For more information on planning NICUs, contact [Joyce Durham](mailto:Joyce.Durham@hss-inc.com) at 734.213.3151 or [jdurham@hss-inc.com](mailto:jdurham@hss-inc.com).



**Joyce Durham**

This email was sent to: [kraible@hss-inc.com](mailto:kraible@hss-inc.com)

This email was sent by: Health Strategies & Solutions, Inc.  
1628 JFK Blvd., Suite 500, Philadelphia, PA, 19103, USA

We respect your right to privacy - [view our policy](#)

[Unsubscribe](#)