New Pediatric Nursing Care Delivery Model for a New Hospital: Modified Total Care/Team Nursing

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Current state in C.S. Mott Children’s Hospital acute care units:
- Total care model of nursing care delivery with assistance from unlicensed personnel
- Staffing ratio 1:3-4 on day/ev; 1:4-5 on nights
- Rooms accommodate two or more patients
- Stable ventilator patients in 4-bed and 2-bed clusters for direct observation
- Long straight hallways with direct line of sight
- Centrally located nursing staff room; easy to access and coordinate help with care
- Single medication, clean supply, and soiled utility rooms centrally located
- Architectural design partitions units into distinct subsections that segment staff
- Much larger geographic area with long distances between unit subsections
- Multiple medication, clean supply and soiled utility rooms to support unit sections
- Single patient rooms, including ventilator-dependent patients
- Single staffing ratios

Future state in new C.S. Mott Children’s Hospital:
- Architectural design partitions units into distinct subsections that segment staff
- Much larger geographic area with long distances between unit subsections
- No centrally located nursing staff room for coordination of requests for assistance
- Increased technological support with system of additional external ventilator alarms and ventilator alarm pagers for RNs to carry

Practice changes were consistent with philosophical foundation of our pediatric nursing care and particularly supported the pillars of quality, collaboration, and innovation.

Implementation Strategies

6 Mott was the unit chosen to pilot the practice changes because the larger size of the unit accommodated a simulated division into 3 geographic sections and the stable ventilator population allowed simulation of handling complex care patients in single patient rooms.

- Divided work on changes for assignments, workflow, communication, and stable ventilator patient care among 4 subgroups of staff nurses on 6 Mott
- Communicated and coordinated with the larger Nursing Care Delivery Model Project team
- Developed assignment sheets and charge nurse report sheets for total care/team model
- Worked with biomedical staff to design and test ventilator alarm and pager systems
- Worked with Peds Pulmonary service to clarify criteria for ventilator patients on 6 Mott and assure stability
- Informed ICUs and parents of patients in Pediatric Home Ventilator Program of planned changes to stable ventilator patient placement and monitoring
- Educated 6 Mott staff about all practice changes and supporting evidence
- Staggered rollout of practice changes March-April 2010

Changes

- Developed evidence-based modified total care/team model of nursing care delivery
- Divided unit into 3 geographic sections based on architectural design of new hospital and availability of medication and other supply rooms
- Maintained total care assignments for RNs but divided staff into 3 teams, one for each geographic section of unit
- Incorporated communication strategies described on accompanying poster – huddles, bedside report, and safety checklists
- Tested brief team meetings after report to set up coordination of help within teams
- Placed stable ventilator patients in separate rooms within one geographic team
- Increased technological support with system of additional external ventilator alarms and ventilator alarm pagers for RNs to carry

Results

Qualitative data
- 77% of staff nurses interviewed in September-October 2010, 6 months after implementation of the practice changes.
- RNs like total care model for own patient assignment and having nurses nearby in their team to help with care
- Consistency of caregivers for patients is difficult when patients have to be moved in and out of teams due to precautions, age, gender, etc.
- Assignment of nurses into teams was difficult for charge nurses due to frequent patient moves and trying to achieve consistent assignments
- Care of stable ventilator patients in multiple rooms within one team can be done safely
- Geographic teams make it easier to find staff members for report
- Still seek help from staff in central staff room, but feel teams will help replace this source when staff room is not as available in new hospital
- Team meetings to coordinate care after report did not work because staff finish report at different times

Objective Data
- Nursing quality indicators for 6 Mott did not show significant change during 6 months of pilot changes.
- There were no codes called for ventilator patients during implementation.
- Ventilator response to ventilator alarms has been < 40 sec.

Conclusions

1. New modified total care/team nursing model has potential for meeting design challenges in the new hospital
2. Consistency of patient assignments in nursing teams should be easier to achieve with single patient rooms and fewer patient moves
3. Ventilator alarm and pager system and placement in a geographic team help support safe care of complex stable ventilator patients in single patient rooms
4. Further evaluation will be needed after implementation in the new patient care environment

References


Synthesis of Literature

In a systematic review of studies of nursing models, Jennings (2008) reported that total care models can minimize fragmentation and increase patient satisfaction, but can isolate nurses when more assistance is required. Coordination of care depends on consistency of assignments. Team nursing usually involves division of work among different skill levels of staff. It offers efficiencies and spreads knowledge of patients among staff, but can lead to fragmentation of care. Design literature and time studies support geographic containment of assignments and resources to decrease nurse travel time.

Gursacio-Howard & Malchock (2007) compared units with a centralized nursing station and a total care model to units with a decentralized nursing station and a team model. Latter provided more RN time with patients, greater patient satisfaction, and better team communication, but less contact with other RNs on unit. Literature also supports close proximity and communication with other RNs as factors in decreasing feelings of isolation, fatigue, and stress (Leonard, M. et al., 2009).