ERRORS OF OMISSION:
MISSED NURSING CARE

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BECKER HEALTHCARE
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MISSED NURSING CARE

...Any aspect of required patient care omitted or delayed

ERRORS OF OMISSION
What we DON’T know

Nurse Staffing

Patient Outcomes

??????

University of Michigan
SCHOOL OF NURSING
CONCEPTUAL FRAMEWORK
THE MISSED NURSING CARE MODEL

HOSPITAL CHARACTERISTICS
- Size
- Teaching intensity
- Magnet

UNIT CHARACTERISTICS
- Case mix index
- Nurse staffing (HPPD, RN HPPD, skill mix)
- Type of nurse staffing (education, experience)
- Absenteeism
- Work schedules

STAFF OUTCOMES
- e.g. Satisfaction, Turnover, intent to leave

PATIENT OUTCOMES
- e.g. Falls, infections, pressure ulcers, readmissions etc.

TEAMWORK

MISSED NURSING CARE
What nursing care is being missed?
Missed Care: A Qualitative Study

9 areas of missed care

- Ambulation
- Turning
- Delayed or missed feedings
- Patient education
- Discharge planning
- Emotional support
- Hygiene
- Intake and output documentation
- Surveillance
The Development & Psychometric Testing of the "MISSCARE Survey"

- **Acceptability**
- **Validity**
  - Content validity
  - Construct validity (EFA and CFA)
- **Reliability**
  - Consistency: Cronbach’s alphas 0.88 to 0.64
  - Test-retest: 0.87
Missed Care and Reasons: 3 Hospital Study

- **Research questions**
  - What nursing care is missed?
  - What are the reasons for missing care?

- **Methods**
  - 3 hospitals in same system (459 RNs), 35 patient units
  - MISSCARE Survey-- response rate 57%

- **Findings**
  - Large amount of missed care
  - Reasons – labor, material and communication
Variations of Missed Care and Reasons across 11 Hospitals

Research Questions

- To what extent is nursing care missed?
- How does missed nursing care vary across hospitals?
- What are the reasons for missed nursing care?
- Do reasons for missed care vary across hospitals?
- Does missed nursing care vary by staff characteristics?
Study Sample

- Nursing staff on 124 adult patient care units in 11 hospitals.
- 4,412 nursing staff (3,349 RNs, 83 LPNs and 980 NAs)
- Return rate 57.3%
- Hospitals ranged from 60 to 913 beds

- Age (over 35 yrs) 55%
- Gender (female): 90%
- Nursing education (BSN or higher): 49%
- Experience (greater than 5yrs): 54%
- Occupation (RN): 73%
- Employment status (more than 30 hrs/wk): 82%
- Shift worked (day or rotating shift): 58%
Measures

- **The MISSCARE Survey**
- **Nursing Teamwork Survey (NTS)**
- **MISSCARE Survey-Patients**

  From hospital administrative data (unit level variables)
  - Actual turnover
  - HPPD, RN HPPD, skill mix
  - Unit Case Mix Index (CMI)
  - Average daily census
  - Fall rates
To what extent is nursing care missed?
## Missed Nursing Care

<table>
<thead>
<tr>
<th>Elements of Nursing Care</th>
<th>% missed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambulation three times per day or as order</td>
<td>76%</td>
</tr>
<tr>
<td>Interdisciplinary rounds</td>
<td>66%</td>
</tr>
<tr>
<td>Mouth care</td>
<td>64%</td>
</tr>
<tr>
<td>Medications administered on time</td>
<td>60%</td>
</tr>
<tr>
<td>Feeding patient when the food is still warm</td>
<td>57%</td>
</tr>
<tr>
<td>Patient teaching</td>
<td>55%</td>
</tr>
<tr>
<td>Response to call light within 5 minutes</td>
<td>50%</td>
</tr>
<tr>
<td>Patient bathing/skin care</td>
<td>45%</td>
</tr>
<tr>
<td>Emotional support to patient and/or family</td>
<td>42%</td>
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</tbody>
</table>
5 Most Often Missed Nursing Care

- Ambulation: 76%
- Interdisciplinary care conference attendance: 66%
- Mouth care: 64%
- Timely medication administration: 60%
- Turning: 59%
5 Most Least Missed Nursing Care

- Patient assessment: 9%
- Glucose monitoring: 14%
- Discharge plan: 24%
- Vital sign: 25%
- Focused reassessment: 26%
What can patients report about nursing care that is missed?

- **Sample:** 38 patients
- **Method:** In depth, semi-structured interviews
- **Fully reportable** (e.g. bathing, mouth care, pain medication)
- **Partially reportable** (e.g. hand washing, vital signs, patient education)
- **Not reportable** (e.g. nursing assessment, skin assessment, intravenous site care)


**What nursing care do patients report as missed?**

*2 hospitals, 729 patients*
Does missed care vary across hospitals?
5 MOST OFTEN MISSED
5 LEAST MISSED CARE

[Graph showing the elements of care with the following legend:
- Focused reassessments according to patient condition
- Vital signs assessed as ordered
- Patient discharge planning and teaching
- Bedside glucose monitoring as ordered
- Patient assessments performed each shift]
What are the reasons for missed nursing care?
Overall Reasons for Missed Care

- Labor resources: 92.8%
- Material resources: 89.6%
- Communication/Teamwork: 81.8%
Other Reasons

Fatigue

- Long work hours
- Mandated overtime
- Rotating shifts
- Lack of breaks
- Multiple jobs
- Moral distress
- Burnout
- Compassion fatigue
Other Reasons (continued)

- Interruptions, multitasking and task switching
- Cognitive biases
  - Omission bias, bandwagon effect, status-quo bias
- Complacency and habit: mind not on task
How do reasons for missed care vary across hospitals?
Is there a difference in missed nursing care in Magnet vs. non-Magnet hospitals?

- Magnet hospitals had significantly less missed care.
- Magnet hospital staff reported less staffing and communication problems.
Does missed nursing care impact staff outcomes?
Does missed nursing care predict job satisfaction &/or occupation satisfaction?

The more missed nursing care, the higher the dissatisfaction with their current position ($p < 0.001$) and with their occupation (OR = 0.57, 95% CI = 0.41 – 0.80).

- Males less satisfied (OR = 0.69, 95% CI = 0.53 – 0.90).
- NAs less satisfied than RNs (OR = 0.28, 95% CI = 0.20 – 0.40).
- ADN nurses more satisfied than BSN nurses (OR=1.12, 95% CI = 0.12 – 0.90).
Does missed nursing care predict intent to leave?

- Units with higher missed care ($\beta = 0.302, p<0.001$) and greater absenteeism ($\beta = 0.247, p=0.034$) had more plans to leave.
- However, units with nursing staff who worked overtime ($\beta = -0.283, p=0.001$) and were older than 35 years ($\beta = -0.270, p=0.050$) less likely to leave.
- Model accounted for 58.4% of the variation in intent to leave.
People more motivated when they witness a positive impact of their actions on their beneficiaries.

Nurses have direct knowledge.

Describe their work as protecting the welfare of others.

“Benevolent employees” motivated to give more to others than they get back.

When nurses cannot or do not provide acceptable care, they are more dissatisfied with their jobs than would be true for employees who do not have these values and service orientation.
Does missed nursing care impact patient outcomes?
Does missed nursing care mediate the relationship between staffing and patient falls?

Equation 1
R² = 9.6%
β = -0.31
(p < 0.001)

Equation 2
R² = 13.0%
β = -0.36
(p < 0.001)

Equation 3
R² = 8.7%
β = -0.20 (p = 0.030)

Equation 3
R² = 7.8%
β = -0.29
(p = 0.001)
Patient reported missed nursing care and adverse events

The higher the patient reported missed nursing care, the more adverse events

- Skin breakdown/pressure ulcers
- Medication errors
- New infections
- Falls
- IVs running dry
- IVs leaking
What difference does it make?

• **Failure to ambulate**
  - New onset delirium
  - Pneumonia
  - Delayed wound healing
  - Pressure ulcers
    - 2006, more than 500,000 hospital stays with pressure ulcer
    - 1993: 280,000 (80% increase)
  - Increased LOS
  - Increased pain and discomfort
  - Muscle wasting and fatigue
  - Physical disability

• **Failure to turn**
  - Pressure ulcers
  - Pneumonia
  - Venous stasis
  - Thrombosis
  - Embolism
  - Stone formation
  - UTI
  - Muscle wasting
  - Bone demineralization
  - Atelectasis

• **Failure to administer medications**
  - Example: Clostridium difficile missing the first two doses of vancomycin—increased LOS

• **Failure to do mouth care**
  - Reluctance to eat
  - Pressure ulcer development
  - Pneumonia, particularly in ventilated patients

• **Failure to teach**
  - Adverse events
  - Readmission
What difference does it make?

Failure to sleep
- Mental impairment
- Susceptible to infections
- Slows recovery, longer LOS

Failure to wash hands
- HAIs (CAUTIs, CLABSIs, etc.)

Failure to answer call lights
- Death, adverse events
- Falls
- Increased LOS
- Increased pain & discomfort

Failure to eat
- Greater mortality
- Higher nursing home use
- Infections
- Increased LOS
- Readmission
- Higher costs

Failure to provide emotional support
- Feelings of not being safe
- Lack of hope
- Distressed, agitated
- Inability to cope

Failure to do interdisciplinary rounds
- Adverse events
- Readmissions
- Catheters in too long
- Higher mortality
Post Hospital Syndrome

During hospitalization, patients are commonly deprived of sleep, experience disruption of normal circadian rhythms, are nourished poorly, have pain and discomfort, confront a baffling array of mentally challenging situations, receive medications that can alter cognition and physical function, and become deconditioned by bed rest or inactivity. Each of these trepidations can adversely affect health and contribute to substantial impairments during the early recovery period, an inability to fend off disease, and susceptibility to mental error (Krumholtz, NEJM, 2013).
Post Hospital Syndrome (continued)

- Hospitalization sentinel event often precipitates disability
  - Inability to live independently--basic ADLs

- Hospitalization-associated disability -- one-third of patients 70 years of age and over

- 20% readmitted; $26 billion annually
  - More than $17 billion of it pays for unnecessary readmissions
How does missed nursing care vary across countries?
How does missed nursing care in the USA compare with other countries?


Do nurse staffing levels predict missed care?

- **Bivariate analyses**
  - **Higher Hours Per Patient Day** (HPPD) associated with **less missed care** \( r=-0.32, p<0.01 \)
  - **Higher RN Hours Per Patient Day** associated with **less missed care** \( r=-0.27, p<0.01 \)
  - **Skill mix** no significant relationship

- **Multivariate analysis**
  - The higher the HPPD, the lower the level of missed nursing care \( \beta = -0.45, p = .002 \).
  - Other variables not significant predictors of missed nursing care.
  - Overall model accounted for 29.4% of the variation in missed nursing care \( p<.001 \).
Culture and leadership solutions

"Culture is everything"

- Focus on prevention, not punishment
  - Build a *culture of safety* and move beyond the culture of blame
  - Acknowledge that missed care occur
- Focus on team culture
- Need **open dialogue** supported by management
- Support of safe practices such as structured protocols (do not interrupt med administration; standardized communication processes, etc.)
TEAMWORK
How do patient care units with high vs. low levels of missed nursing care differ?

- Qualitative study
  - 5 units with the most missed care
  - 5 units with the least missed care
- Key primary difference was teamwork
Does teamwork predict missed nursing care? Controlling for occupation of staff members (e.g., RN/LPN, NA) and staff characteristics (e.g., education, shift worked, experience, etc), teamwork alone accounted for about 11% of missed nursing care.
What does nursing teamwork look like?

- 34 focus groups
- Substantiated that the Salas model of teamwork applies to inpatient nursing teams

Salas Model: 8 behaviors

1. Team leadership
2. Team orientation
3. Mutual performance monitoring
4. Back up
5. Adaptability
6. Closed loop communication
7. Shared mental model
8. Mutual trust
Team Leadership

- Team leadership refers to the structure, direction and support provided by both the formal leader and/or on the part of team members.

- Everyone should act as a leader at some point.
Team Orientation

- Team’s awareness of itself as a team
- Team’s success takes precedence over individual performance
  - Do not view themselves as isolated individuals
  - Team members first
- Team members see that part of their job is to ensure that everyone on the team can and do get their work done in a quality way.
Mutual Performance Monitoring

- The observation and awareness of team members of one another.

- Effective team members keep track of fellow team members’ work while completing their own work.
Team members help one another with their tasks and responsibilities.

Unable to perform tasks or carry out responsibilities and another team member steps in.

Can be a physical act or feedback.
Example comments when *NOT* present:

- **RN:** Sometimes I feel bad asking for help. *It looks like I am just not able to handle my job, that I am not a good nurse. And there are times when you have asked for help and you don’t get help.*

- **CNA:** I just don’t like it when a nurse walks by my blinking light, and I am in the room with a patient doing something and she walks by twice and doesn’t bother to stop by and say “May I help you.”
Adaptability

- Ability to adjust strategies and resource allocation on the basis of the information gathered from the environment.

- Example when present
  - Nursing Assistant: Some units really watch out for their NAs and make sure they are not being given too much work.

- Example when NOT present
  - RN: We have staff on both 8- and 12-hour shifts and instead of reassigning patients so the nurse coming on doesn’t have patients on all three wings, we let her run.
Closed Loop Communication

- The active exchange of information between two or more team members where both parties have the same understanding of what was communicated (closed loop).

- Essential:
  - Individually team members may have an understanding of a situation, work they need to do . . .
  - But for a team to act in concert to achieve common goals, the team must have shared information.
Shared Mental Models

What people use to organize information about the environment, the team purpose and team interdependencies.

Example when NOT present:

- RN: *A nurse floated to our unit and did things the way they do on her floor. This created a safety problem because she thought the other staff members would give her patients their medications when she took a break. She found out several hours later this was not the case.*
Shared perception that members will perform actions necessary to reach interdependent goals and act in the interest of the team.

Trust occurs when the individual has the expectation that their teammates will take actions that will most benefit the team.

Example when NOT present:

- RN: *If I work with certain people, I know a good job is being done.*
- RN: *I would like to believe the aide when she tells me she ambulated the patient, but I am not sure.*

**Team Tactics**

*intervention to increase teamwork and decrease missed nursing care*

- Team Tactics (staff nurses 3 from each unit serve as trainers)
  - Each staff member received 3 one hour sessions during work hours on their units
- Role play scenarios typical of teamwork problems
  - Patient needs bedpan, asks RN, searches for nursing assistant
  - Day shift does not do the patient’s bath and night shift staff resents it
- Debriefing
  - 8 elements of teamwork
  - What care is missed because of teamwork problems
Teamwork solutions (continued)

Does a train-the-trainer intervention increase nursing teamwork and decrease missed nursing care?
Patient and family engagement solutions

- Liberal visitation
- Interdisciplinary rounds at the bedside
- Including family members in rounds
- Permitting patients’ to read and write on their own healthcare record
- Change of shift report at the patients’ bedside
- Putting patient advocate on the care team
- Patient councils and committee memberships
Technology solutions

- Electronic Health Record
  - work lists or queues, dashboards
- Electronic reminders
- Phones, pagers, nurse call systems and other communication devices
- Barcoding
- Tracking devices (e.g. hand washing)
- Mobile technology
Systems solutions

- **Target and eliminate systems vulnerabilities**
  - We'll never eliminate all individual errors
- The goal is to design systems that are "fault tolerant," so that when an individual error occurs, it does not result in harm to a patient.
- Look for ways to break that link in the chain of events that can create a recurring problem
- Learn from close calls ("near misses")
- Focus everyone's efforts on continually identifying potential problems and fixing them.
Measurement

You get what you measure!

You cannot use information you do not have.
Unit Design

- Smaller units
How does nursing teamwork vary with the size of patient units?

- n=2,265; 53 units 4 hospitals
- The larger the unit, the less the nursing teamwork
Decrease the size of nursing teams
<table>
<thead>
<tr>
<th>Size of Group</th>
<th>Number of Sub-groups</th>
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<tr>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>8</td>
<td>247</td>
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<td>16</td>
<td>65,519</td>
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<td>24</td>
<td>16,777,191</td>
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The End

Questions?
Comments?

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