Missed Nursing Care: Errors of Omission

Beatrice Kalisch, PhD, RN, FAAN
Titus Professor of Nursing and Chair
University of Michigan
Nursing Business and Health Systems

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bkalisch@umich.edu
Presentation Outline

- Previous Studies
- Conceptual Framework
- Study Questions
- Study Methods
- Findings
  - Missed nursing care: 11 hospitals
  - Missed nursing care and staffing levels
  - Missed nursing care and satisfaction
  - Missed nursing care and intent to leave and turnover
  - Missed nursing care and teamwork
  - Missed nursing care and patient falls
- Implications
What we DON’T know

Nurse Staffing

???

Patient Outcomes
MISSED NURSING CARE

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

ERRORS OF OMISSION
PREVIOUS STUDIES
STUDY 1
Missed Care: A Qualitative Study

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

7 themes for reasons for missed care
- Too few staff
- Time required for a nursing intervention
- Poor use of existing staff resources
- “It’s not my job syndrome”
- Ineffective delegation
- Habit
- Denial
STUDY 2

A Concept Analysis

STUDY 3

MISSCARE Survey Development & Psychometric Testing

STUDY 4

Missed Care and Reasons: 3 hospital study

Missed Care and Reasons: 3 hospital study

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

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

- **Findings**
  - Significant amount of missed care
  - Consistency across the 3 hospital sample in amount and specific elements of care as well as reasons
MISSED NURSING CARE: 11 HOSPITAL STUDY
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

**MISSED NURSING CARE**

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

**PATIENT OUTCOMES**
- e.g. Falls

**TEAMWORK**
RESEARCH QUESTIONS
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**?
- Do nurse **staffing levels** predict missed care?
Research Questions (continued)

• Does missed nursing care predict job satisfaction?
• Does missed nursing care predict intent to leave and/or turnover?
• Does teamwork predict missed nursing care?
• Does missed nursing care mediate the relationship between staffing levels and patient falls?
STUDY METHODS
Study Sample

- Nursing staff on 124 adult patient care units (medical-surgical, rehabilitation, intermediate and intensive care units) in 11 hospitals.
- 4,412 nursing staff (3,349 RNs, 83 LPNs and 980 NAs)
- Return rate 57.3% (61.7% for RNs & LPNs, 53.4% for NAs)
**Study Sample** (continued)

Total number of patient care units = 124

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>347</td>
<td>60</td>
<td>760</td>
<td>317</td>
<td>304</td>
<td>411</td>
<td>880</td>
<td>433</td>
<td>479</td>
<td>913</td>
<td>330</td>
</tr>
<tr>
<td>Units in study</td>
<td>5</td>
<td>2</td>
<td>15</td>
<td>11</td>
<td>6</td>
<td>8</td>
<td>22</td>
<td>9</td>
<td>14</td>
<td>18</td>
<td>14</td>
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</tbody>
</table>
Study Sample (continued)

- Predominantly female (90.0%)
- Over 35 years of age (53.5%)
- Working full time (81.0%)
- RNs baccalaureate degree (53.9%)
- RNs more than 10 years of experience (35.1%)
Measures

- **The MISSCARE Survey**
- **Nursing Teamwork Survey (NTS)**
- **From hospital administrative data** (unit level variables)
  - Actual turnover
  - HPPD, RN HPPD, skill mix
  - Unit Case Mix Index (CMI)
  - Average daily census
STUDY FINDINGS
Research Question 1

*To what extent is nursing care missed?*
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 signs: 25%
- Focused reassessment: 26%
## Extent of missed nursing care

### Elements of Nursing Care

<table>
<thead>
<tr>
<th>Element</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambulation three times per day or as ordered</td>
<td>76%</td>
</tr>
<tr>
<td>Attend interdisciplinary care conference whenever held</td>
<td>66%</td>
</tr>
<tr>
<td>Mouth care</td>
<td>64%</td>
</tr>
<tr>
<td>Medications administered within 30 minutes before or after scheduled time</td>
<td>60%</td>
</tr>
<tr>
<td>Turning patient every 2 hours</td>
<td>59%</td>
</tr>
<tr>
<td>Feeding patient when the food is still warm</td>
<td>57%</td>
</tr>
<tr>
<td>Patient teaching about procedures, tests and other diagnostic studies</td>
<td>55%</td>
</tr>
<tr>
<td>Full documentation of all necessary data</td>
<td>54%</td>
</tr>
</tbody>
</table>
### Elements of Nursing Care

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response to call light is initiated within 5 minutes</td>
<td>50%</td>
</tr>
<tr>
<td>Monitoring intake/output</td>
<td>49%</td>
</tr>
<tr>
<td>Assess effectiveness of medications</td>
<td>49%</td>
</tr>
<tr>
<td>Assist with toileting needs within 5 minutes of request</td>
<td>49%</td>
</tr>
<tr>
<td>Patient bathing/skin care</td>
<td>45%</td>
</tr>
<tr>
<td>PRN medication requests acted on within 15 minutes</td>
<td>43%</td>
</tr>
<tr>
<td>Emotional support to patient and/or family</td>
<td>42%</td>
</tr>
<tr>
<td>Setting up meals for patients who feed themselves</td>
<td>35%</td>
</tr>
</tbody>
</table>
### Extent of missed nursing care (continued)

<table>
<thead>
<tr>
<th>Elements of Nursing Care</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV/central line site care and assessments according to hospital policy</td>
<td>34%</td>
</tr>
<tr>
<td>Skin/wound care</td>
<td>32%</td>
</tr>
<tr>
<td>Hand washing</td>
<td>27%</td>
</tr>
<tr>
<td><strong>Focused reassessments according to patient condition</strong></td>
<td>26%</td>
</tr>
<tr>
<td>Vital signs assessed as ordered</td>
<td>25%</td>
</tr>
<tr>
<td>Teach patient about plans for their care after discharge and when to call after discharge</td>
<td>24%</td>
</tr>
<tr>
<td>Bedside glucose monitoring as ordered</td>
<td>14%</td>
</tr>
<tr>
<td>Patient assessments performed each shift</td>
<td>9%</td>
</tr>
</tbody>
</table>
Staff Characteristics by Missed Nursing Care

- Gender: No difference
- Age: Under 35 reported less missed care than those over 36
- Education: No difference
- Experience: less than 6 months reported the least amount of missed care
- Work schedules:
  - Night shifts reported less missed
  - Less than 12 hour shift reported less missed care
- Absenteeism: Staff missing more shifts, reported more missed care
Research Question 2

Does missed care vary across hospitals?

Elements of Care Most- and Least-Frequently Missed

- The solid bars represent the means across all hospitals, and the range-lines indicate the standard deviations.
Research Question 3:

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%
**Reasons For Missed Care**

<table>
<thead>
<tr>
<th>Labor resources - Overall</th>
<th>92.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Level of staffing) Inadequate number of staff</td>
<td>91</td>
</tr>
<tr>
<td>Urgent patient situations (e.g. a patient's condition worsening)</td>
<td>92</td>
</tr>
<tr>
<td>Unexpected rise in patient volume and/or acuity on the unit</td>
<td>95</td>
</tr>
<tr>
<td>Inadequate number of assistive personnel (e.g. nursing assistants, techs, unit secretaries etc.)</td>
<td>94</td>
</tr>
<tr>
<td>Heavy admission and discharge activity</td>
<td>93</td>
</tr>
</tbody>
</table>
### Reasons For Missed Care (continued)

<table>
<thead>
<tr>
<th>Material resources – Overall</th>
<th>89.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medications were not available when needed</td>
<td>95</td>
</tr>
<tr>
<td>Supplies/equipment not available when needed</td>
<td>90</td>
</tr>
<tr>
<td>Supplies/equipment not functioning properly when needed</td>
<td>84</td>
</tr>
</tbody>
</table>
## Reasons For Missed Care (continued)

<table>
<thead>
<tr>
<th>Communication – Overall</th>
<th>81.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>(The method of making patient assignments) Unbalanced patient assignments</td>
<td>91</td>
</tr>
<tr>
<td>Inadequate hand-off from previous shift or sending unit</td>
<td>88</td>
</tr>
<tr>
<td>Other departments did not provide the care needed (e.g. physical therapy did not ambulate)</td>
<td>85</td>
</tr>
<tr>
<td>Lack of back up support from team members</td>
<td>80</td>
</tr>
<tr>
<td>Tension or communication breakdowns with other ancillary/support departments</td>
<td>80</td>
</tr>
<tr>
<td>Tension or communication breakdowns within the nursing team</td>
<td>76</td>
</tr>
<tr>
<td>Tension or communication breakdowns with the medical staff</td>
<td>82</td>
</tr>
<tr>
<td>Nursing assistant did not communicate that care was not done</td>
<td>85</td>
</tr>
<tr>
<td>Caregiver off unit or unavailable</td>
<td>70</td>
</tr>
</tbody>
</table>
Research Question 4

How do reasons for missed care vary across hospitals?
# Reasons for Missed Care across 11 Hospitals

<table>
<thead>
<tr>
<th>Reason</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
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</thead>
<tbody>
<tr>
<td><strong>Labor Resources</strong></td>
<td>92%</td>
<td>96%</td>
<td>87%</td>
<td>92%</td>
<td>92%</td>
<td>94%</td>
<td>96%</td>
<td>94%</td>
<td>96%</td>
<td>94%</td>
<td>95%</td>
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<tr>
<td>(Total: 93%)</td>
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<td></td>
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</tr>
<tr>
<td><strong>Material Resources</strong></td>
<td>84%</td>
<td>91%</td>
<td>88%</td>
<td>86%</td>
<td>88%</td>
<td>90%</td>
<td>91%</td>
<td>94%</td>
<td>93%</td>
<td>89%</td>
<td>92%</td>
</tr>
<tr>
<td>(Total: 90%)</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Communication</strong></td>
<td>79%</td>
<td>75%</td>
<td>80%</td>
<td>79%</td>
<td>80%</td>
<td>83%</td>
<td>84%</td>
<td>78%</td>
<td>84%</td>
<td>83%</td>
<td>82%</td>
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<tr>
<td>(Total: 82%)</td>
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</table>
Research Question 5

Do nurse staffing levels predict missed care?

Actual Nurse Staffing and Missed Care

- **Bivariate analyses**
  - **Higher Hours Per Patient Day** (HPPD) was associated with less missed care ($r=-0.32$, $p<0.01$)
  - **Higher RN Hours Per Patient Day** (RNHPPD) associated with less missed care ($r=-0.27$, $p<0.01$)
  - **Skill mix** no significant relationship
Actual Nurse Staffing and Missed Care (continued)

- **Multivariate analysis**
  - The overall model accounted for 29.4% of the variation in missed nursing care ($p<.001$).
  - **The higher the HPPD, the lower the level of missed nursing care** ($\beta = -.45$, $p = .002$).
  - Other variables in the model were not significant predictors of the dependent variable, missed nursing care.
Research Question 6

Does missed nursing care predict job satisfaction and occupation satisfaction?

Satisfaction with current position

- 4 independent variables were significantly related
  - Missed nursing care ($r=-.32$, $p<.01$)
  - Age ($r=-.32$, $p<.05$)
  - Perceptions of staffing adequacy ($r=.33$, $p<.01$)
  - Type of unit ($F=15.462$, $p<.003$)
### Predictors of Satisfaction with Current Position *(n = 4074)*

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Coefficient</th>
<th>Robust Std. Err.</th>
<th><em>P</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Missed Care Overall mean</strong></td>
<td>-0.483</td>
<td>0.061</td>
<td>0.000</td>
</tr>
<tr>
<td>Age</td>
<td>0.111</td>
<td></td>
<td>0.111</td>
</tr>
<tr>
<td><strong>Staff Adequacy</strong></td>
<td>0.326</td>
<td>0.194</td>
<td>0.000</td>
</tr>
<tr>
<td><strong>Type of unit</strong></td>
<td></td>
<td></td>
<td>0.003</td>
</tr>
<tr>
<td>Medical-Surgical (R)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermediate</td>
<td>0.045</td>
<td>0.039</td>
<td>0.253</td>
</tr>
<tr>
<td>Intensive Care</td>
<td>0.099</td>
<td>0.042</td>
<td>0.021</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>-0.121</td>
<td>0.054</td>
<td>0.026</td>
</tr>
<tr>
<td><strong>Hospital</strong></td>
<td></td>
<td></td>
<td>0.000</td>
</tr>
</tbody>
</table>

*Note: R² = 0.224, F (18, 109) = 55.22, p < 0.001. (R) is the reference variable.*
Missed nursing care and job satisfaction (continued)

- The overall model accounted for 22.4% of the variation ($F_{[18, 109]} = 55.22$, $p < 0.001$).
- 3 independent variables were significant predictors of satisfaction with current position
  - The more missed nursing care, the higher the dissatisfaction level with their current position ($p < 0.001$).
  - The more staff felt staffing was inadequate, the higher the missed nursing care ($p < 0.001$).
  - The type of unit:
    - ICUs: higher levels of satisfaction ($p < 0.05$)
    - Rehabilitation units: lowest levels of satisfaction ($p < 0.05$).
Satisfaction with occupation

- Based on preliminary analysis, this model included 5 independent variables
  - Missed nursing care ($r=-.16$, $p<.01$)
  - Gender ($t=3.36$, $p<.01$)
  - Job title ($t=8.57$, $p<.01$)
  - Education ($F=5.42$, $p<.01$)
  - Perceptions of staffing adequacy ($r=.20$, $p<.01$)
The overall model accounted for 6.47% of the variation, based on the pseudo $R^2$ ($\chi^2[16] = 252.71, p < 0.001$).

Staff who reported less missed care were more satisfied with occupation (OR = 0.57, 95% CI = 0.41 – 0.80).

When staffing perceived to be inadequate, the higher the level of occupation dissatisfaction (OR = 1.49, 95% CI = 1.35 - 1.64).

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).
Research Question 7

Does missed nursing care predict intent to leave and/or turnover?

Missed nursing care and turnover

**Nurse turnover**

- In bivariate analysis, 5 variables were significantly associated with turnover
  - Missed care ($r= .23$, $p< .05$)
  - Skill mix ($r= .32$, $p< .01$)
  - Gender (Female) ($r= -.20$, $p< .05$)
  - Absenteeism ($r= .35$, $p< .01$)
  - Intent to leave ($r= .30$, $p< .01$)
Missed nursing care and turnover (continued)

- Model accounted for 46.5% of the variation in nurse turnover \( (p<.0001) \).
- A greater percentage of females on the unit associated with lower turnover rates \( (\beta = -.235, p = .010) \).
- Missed care not significant
Missed nursing care and intent to leave

- **Intent to leave**
  - 8 variables significantly related to intent to leave in bivariate analysis
    - Missed care ($r = .40, p < .01$)
    - CMI ($r = .22, p < .05$)
    - Skill mix ($r = .34, p < .01$)
    - Education (BSN or higher) ($r = .23, p < .01$)
    - Age (above 35 years) ($r = -.33, p < .01$)
    - Experience (greater than 5 years) ($r = -.35, p < .01$)
    - Overtime ($r = -.31, p < .01$)
    - Absenteeism ($r = .40, p < .01$)
**Missed nursing care and intent to leave** (continued)

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>$SE_B$</th>
<th>$\beta$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Missed care</strong></td>
<td>.181</td>
<td>.048</td>
<td>.302</td>
<td>3.758</td>
<td>.000</td>
</tr>
<tr>
<td>CMI</td>
<td>.007</td>
<td>.009</td>
<td>.072</td>
<td>.784</td>
<td>.435</td>
</tr>
<tr>
<td>Skill mix</td>
<td>.043</td>
<td>.129</td>
<td>.055</td>
<td>.332</td>
<td>.741</td>
</tr>
<tr>
<td>Education (above BSN)</td>
<td>.050</td>
<td>.075</td>
<td>.069</td>
<td>.662</td>
<td>.510</td>
</tr>
<tr>
<td><strong>Age (above 35 years)</strong></td>
<td>-.175</td>
<td>.088</td>
<td>-.270</td>
<td>-1.985</td>
<td>.050</td>
</tr>
<tr>
<td>Experience (more than 5yrs)</td>
<td>.000</td>
<td>.078</td>
<td>-.001</td>
<td>-.009</td>
<td>.993</td>
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<tr>
<td><strong>Overtime</strong></td>
<td>-.215</td>
<td>.062</td>
<td>-.283</td>
<td>-3.479</td>
<td>.001</td>
</tr>
<tr>
<td>Absenteeism</td>
<td>.168</td>
<td>.078</td>
<td>.247</td>
<td>2.154</td>
<td>.034</td>
</tr>
</tbody>
</table>

$R^2 = .584$

$F(p) = 7.284 (.000)$
Missed nursing care and intent to leave (continued)

- Model accounted for 58.4% of the variation in intent to leave ($p<.0001$).
- Units with higher missed care ($\beta = 0.302, p<.0001$) and greater absenteeism rates ($\beta = 0.247, p=0.034$) had more staff with plans to leave.
- However, units with nursing staff who worked overtime ($\beta =-0.283, p=0.001$) and were older than 35 years ($\beta =-0.270, p=.050$) were less likely to have staff intending to leave their position.
Research Question 8

Does teamwork predict missed nursing care?

Teamwork and missed care

A sample of 2,216 nursing staff members on 50 acute care patient care units in 4 hospitals completed the Nursing Teamwork Survey and the MISSCARE Survey (response rate was 59.7%).

Controlling for occupation of staff members (eg, RN/LPN, NA) and staff characteristics (eg, education, shift worked, experience, etc), teamwork alone accounted for about 11% of missed nursing care.
Research Question 9

Does missed nursing care mediate the relationship between staffing and patient falls?
Missed Nursing Care and Patient Falls (continued)

**Equation 1**
\[ R^2 = 9.6\% \]
\[ \beta = -0.31 \quad (p < 0.001) \]

**Equation 2**
\[ R^2 = 13.0\% \]
\[ \beta = -0.36 \quad (p < 0.001) \]

**Equation 3**
\[ R^2 = 8.7\% \]
\[ \beta = -0.20 \quad (p = 0.030) \]
In summary...

- An extensive amount of nursing care is missed.
- The reasons for missed care are inadequate labor and material resources and communication/teamwork.
- Both amount and type of missed nursing care and reasons are similar across hospitals.
In summary...

- The higher the staffing levels, the less the missed nursing care.
- More missed care leads to less satisfaction and less intent to leave.
- Higher teamwork results in less missed nursing care.
- Missed nursing care mediates the relationship between staffing levels and patient falls.
DISCUSSION
Discussion

- The amount of missed nursing care represents errors of omission; standard nursing care not being completed
- Leads to negative patient outcomes
  - Failure to do mouth care
    - Leads to a reluctance to eat that in turn impacts risk of pressure ulcer development and/or pneumonia, particularly in ventilated patients.
  - Failure to ambulate linked to:
    - New onset delirium
    - Pneumonia
    - Delayed wound healing
    - Pressure ulcers
    - Increased length of stay and delayed discharge
    - Increased pain and discomfort
    - Muscle wasting and fatigue
    - Physical disability
Discussion (continued)

- The least missed elements of care
  - Obvious to others when missed
  - Routinely audited by nursing units

- The most frequently missed elements of care
  - Not routinely documented: i.e. ambulation of patients; less opportunity for others to notice
  - Ambulation and turning are often time-consuming; may require assistance from other providers
  - Possibly but not likely perceived as unimportant by nursing staff, despite their strong correlation with patient outcomes.
Consistent across hospitals
- Tells us that it is probably a system issue

Reasons also similar across hospitals
- Same organization and culture issues exist which must be difficult to resolve

Staffing -- research that links nurse staffing to patient morbidity and mortality
- Higher rates of missed care reported by day shift workers -- an imbalance in responsibilities?
Discussion (continued)

- **Job and occupation satisfaction and intent to leave**
  - Relational job theory: People more motivated when they witness a positive impact of their actions on their beneficiaries (Grant, 2007).
  - Nurses have direct (and many times immediate) knowledge (They cannot avoid it except by denial)
  - People in service work often describe their work as protecting the welfare of others
Discussion (continued)

- Some researchers refer to these individuals as “benevolent employees” who are 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.

- Higher **absenteeism** report more missed care
  - Avoiding the unit because unhappy?
  - Or miss care because disengaged
IMPLICATIONS
Acknowledgement  The first step is to admit we have a problem.

Measurement  "You can’t use information you don’t have."

Determine impact of missed care on patient outcomes
Exposure of the issue

- The patient safety movement has benefited from
  - open disclosure of systemic problems in care,
  - media pressure, and
  - expert panels of clinician groups

Need open dialogue supported by management in non-punitive environment

Develop a culture of mindfulness in nursing

Ensure adequate staffing
  - Deal effectively with flows in patient acuity and volume
Develop interventions to decrease missed care and increase teamwork.
The End

QUESTIONS?