

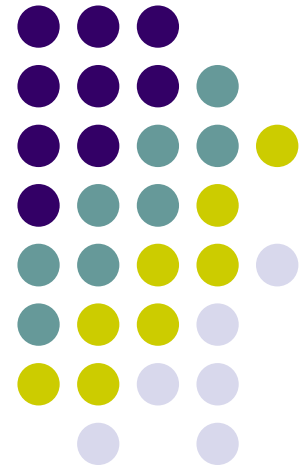
Nurses' implicit rationing of inpatient care: An empirical analysis

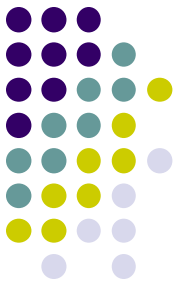
Anne Sales, RN PhD, University of Alberta,
Edmonton

Yu-Fang Li, PhD RN, VA HSR&D Northwest
Center of Excellence, Seattle, Washington

Clémence Dallaire, RN PhD, Université Laval,
Québec

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Development Service





Brief review of literature and existing methods

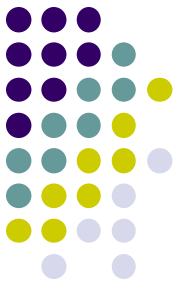
Methods in this analysis

Results

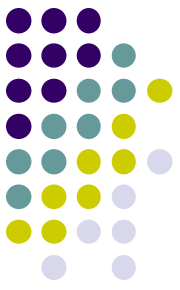
Implications for practice and policy

OVERVIEW AND BACKGROUND

Nurses report significant stress and time pressure



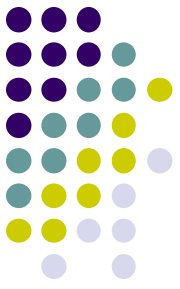
- Many studies report that staffing is perceived as inadequate
 - Creates stress for nurses
- Emerging literature on how nurses may ration care when they perceive staffing to be inadequate
 - “Implicit rationing”
 - Related to how nurses prioritize their work
 - May be related to why staffing matters
- Safety and quality of care concerns



Limited empirical research

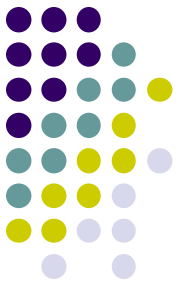
- Review of the literature on priority setting by nurses in clinical practice: Hendry and Walker, *Journal of Advanced Nursing*, 2004
- Scale to measure implicit rationing-development and reliability assessment: Schubert et al., *Nursing Research*, 2007
- Relationship of rationing to patient outcomes: Schubert et al., *International Journal of Nursing Studies*, 2008

Limited options for measuring implicit rationing



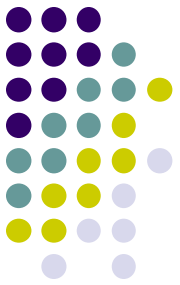
- General approach to ask nurses if they left tasks that are generally considered nursing tasks undone during their last shift
 - BERNCA scale reported by Schubert et al. (2007, 2008)
 - 20 items derived from a review of nursing literature and expert panel
 - Tasks left undone scale used in the International Hospital Outcomes Study (multiple authors, 2001-2008; survey instrument designed by group led by Linda Aiken at the University of Pennsylvania)
 - 12 items
 - Expert panel; reviewed by several different groups of nurses

12 items in Tasks Left Undone (TLU)

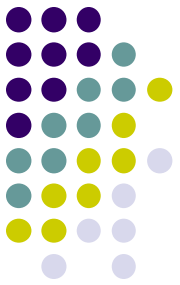


- Comfort or talk with patients
- Back rub or skin care
- Develop or update nursing care plan
- Teaching patients or family
- Adequately document nursing care
- Preparing patients or family for discharge
- Oral hygiene
- Bathing
- Starting or changing IV
- Dressing change
- Routine Foley care
- Tracheostomy care

Objective

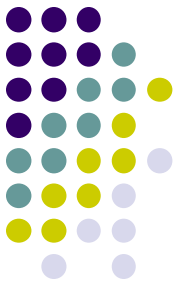


- To assess factors associated with RN report of number of tasks left undone during their last shift worked



METHODS

TLU questions included in Nurse Staffing and Patient Outcomes (NSPO) in VA study



- Retrospective, observational study
 - Large national data sets from VA
 - Survey of all nursing personnel working in VA hospitals with acute inpatient care
 - Followed design and approach of both the International Hospital Outcomes Consortium (IHOC- Linda Aiken PI) study and the Needleman and Buerhaus study in the US
 - Data collection February through June 2003

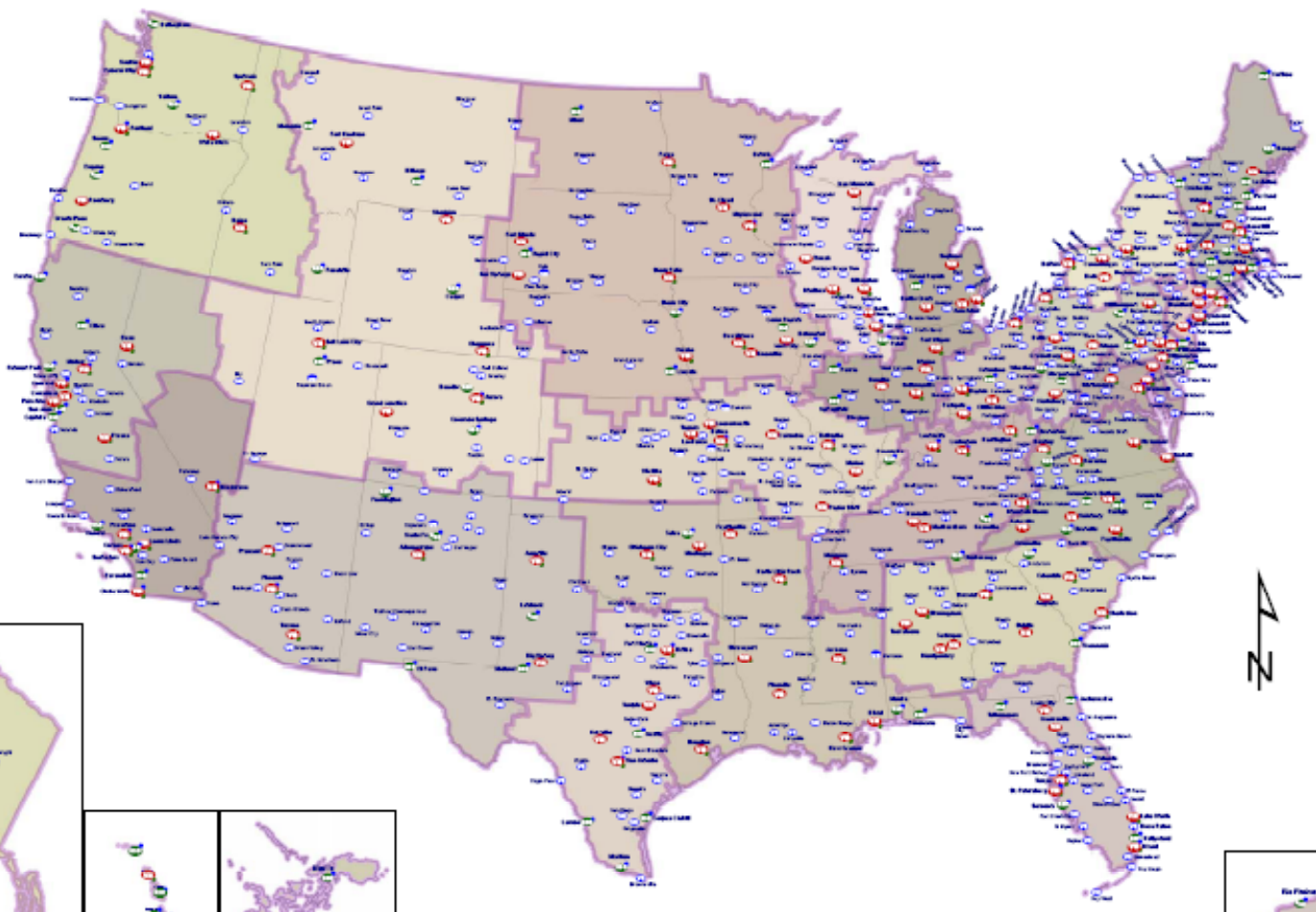
Context: the Veterans Health Administration



- Single largest vertically and horizontally integrated health care system in the US
 - 160 hospitals in each of the 50 states + District of Columbia and Puerto Rico
 - Over 800 outpatient clinics
 - 133 nursing homes
 - 42 residential rehabilitation treatment centers
 - Over 200 readjustment counseling centers
 - Serves 5-7 million veterans annually
- Annual budget of over \$30 billion
- Divided into 21 regional networks
- Largest public health care system in the US



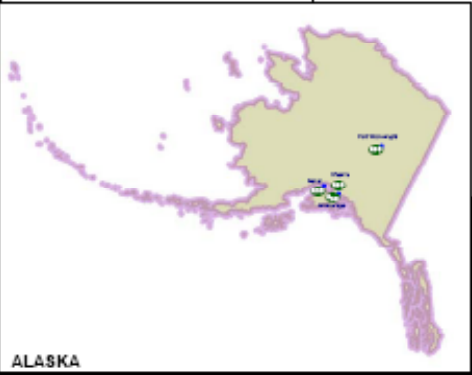
DEPARTMENT OF VETERANS AFFAIRS Veterans Health Administration Facilities



LEGEND

Composite symbols such as represent facilities that have one or more additional remote site(s).

- Hospital w/ Vet Center & Remote Clinic(s)
- Hospital w/ Vet Center
- Hospital w/ Remote Clinic(s)
- Hospital
- Vet Center w/ Remote Clinic(s)
- Vet Center
- Clinic(s)
- VISN Boundary
- State



NOTE: Information contained in this graphic presentation was prepared for the sole purpose and use of the Department of Veterans Affairs and this information may not be suitable for other purposes. Further dissemination of this data can be obtained by contacting: Planning Systems Support Group, Field 107 of the Assistant Deputy Chief Secretary for Health for Policy and Planning, Department of Veterans Affairs, 200 E. University Avenue, Suite 420, Gainesville, Florida 32601 tel: (352) 574-6280.

ALASKA

HAWAII

PHILIPPINES

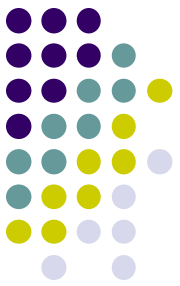
PUERTO RICO

VAHQ/ST/PLANNING/REPORT/2015

NSPO survey

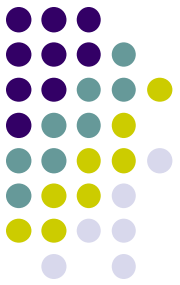


- Used instrument based on IHOC study (Aiken PI)
 - Distributed through hospital nursing services to over 44,000 nursing personnel (RNs, LPNs, aides)
 - Overall response rate 26.4%
 - RN response rate ~30%
 - Over 11,000 responses
 - ~7,000 RN responses
 - 2207 inpatient acute direct care RNs in this analysis
 - Total possible 2650
 - Missing data and other exclusions = 443
 - 399 units in 116 VA hospitals

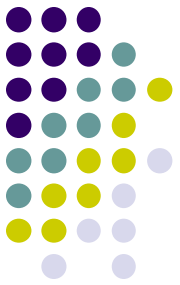


Analysis

- Examined univariate and bivariate associations
- Multivariate regression of number of tasks left undone on blocks of regressors, cluster corrected
 - Characteristics of RNs with focus on expertise (tested 15 variables)
 - Perceived resources and work environment (tested 20+ variables)
 - Characteristics of patients on the unit (tested 20 variables)
 - Including special/heavy needs of patients on last shift
 - Other tasks (non-nursing) performed during last shift (10 variables)
- Follows framework in Hendry and Walker (2004)
- Analysis using Stata 10.0



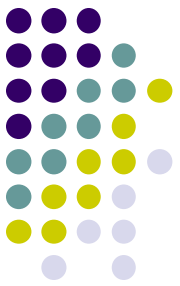
RESULTS



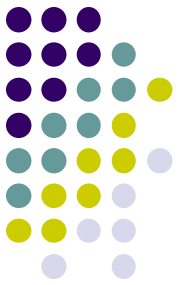
Significant differences in number of tasks left undone between
RNs working in ICU vs. non-ICU

Bivariate Findings

63 % of RNs reported TLU on last shift; on average 2.2 TLU per RN (range 0-12)



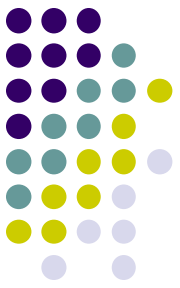
Nursing Task	% RNs reported left undone during last shift	ICU nurses	Non-ICU acute care nurses	p-value
Comfort or talk with patient	35.9%	25.2%	48.8%	<0.001
Back rub or skin care	33.3%	28.1%	39.7%	<0.001
Develop or update nursing care plan	34.1%	27.8%	41.7%	<0.001
Teaching patients or family	23.3%	19.2%	28.3%	<0.001
Adequately document nursing care	21.4%	14.5%	29.8%	<0.001
Oral hygiene	14.9%	11.1%	19.5%	<0.001
Bathing	13.2%	11.6%	15.1%	0.0077
Starting or changing IV	10.5%	7.0%	14.6%	<0.001
Preparing patients or family for discharge	9.2%	7.3%	11.5%	0.0002
Dressing change	7.5%	5.8%	9.6%	0.0003
Changing or doing routine Foley catheter care	7.1%	5.9%	8.6%	0.0091
Tracheostomy care	2.5%	2.8%	2.0%	0.1649



Many blocks of variables not significantly associated with number of tasks left undone

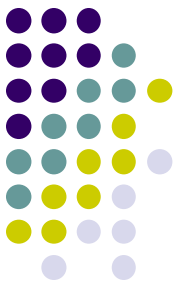
Multivariate Findings

Most RN characteristics were not associated with # TLU



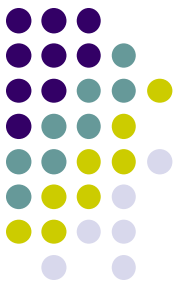
- Adjusted R^2 0.33
- Positively associated (increase -> increased # TLU)
 - Increased emotional exhaustion (burn out)
- Not significantly associated
 - Having a BSN; self-reported level of expertise; age; whether floated or not; years of experience; job satisfaction; whether or not planning to quit job in next 12 months

Perceived resources and work environment variables



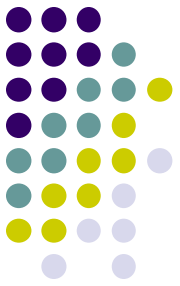
- Positively associated
 - Perceptions of physician collegiality; number of patients assigned during last shift; reporting an incident of nosocomial infection in the past year
- Negatively associated
 - Perceived staffing adequacy; satisfaction with resources; perceived quality of care last shift
- Not associated
 - Perceptions of hospital governance, quality, and management; satisfaction with facility or equipment; satisfaction with coworkers; **staffing; whether or not working in an ICU**

Only characteristics of patients on last shift were significantly associated with #TLU



- Positively associated
 - Number of patients admitted; number of patients with major compromise in status; number of patients admitted with >5 IV meds
- Not significantly associated
 - Proportion of patients on unit who are over 85, have dementia, high ADL dependency, large number of co-morbid illnesses, Charlson score 3+; number of patients on last shift who died, were transferred, on life support, or required full nursing assessment

Other tasks assigned also significantly associated with # TLU



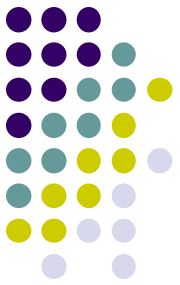
- Positively associated
 - Delivering food trays; ordering or coordinating ancillary services; starting an IV; transporting patients; cleaning rooms; working with an unlicensed provider (nurse aide) who performed nursing tasks
- Not significantly associated
 - Discharging a patient; doing ECGs; doing phlebotomy; doing clerical work; and “other” non-nursing tasks

Most significant variables associated with # TLU



Variable	Coefficient estimate	p-value	LL 95% CI	UL 95% CI
High emotional exhaustion	0.524	<0.001	0.296	0.752
Reporting an incident of nosocomial infection (last year, month, week)	0.360	<0.001	0.190	0.529
Ordering or coordinating ancillary services last shift	0.501	<0.001	0.323	0.678
Transporting a patient last shift	0.517	<0.001	0.343	0.690

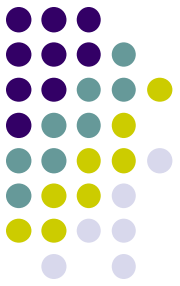
Variable	Coefficient estimate	p-value	LL 95% CI	UL 95% CI
Perceived adequacy of staffing	-0.626	<0.001	-0.780	-0.473
Perceived quality of care during last shift	-0.684	<0.001	-0.956	-0.412



More factors are positively associated with number of tasks left undone than negatively associated- more things increase # TLU

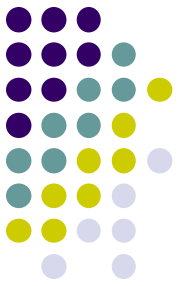
DISCUSSION

Things that are proximal in time are most highly associated



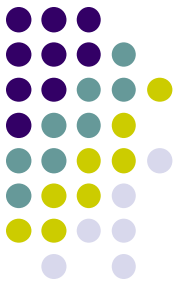
- Things that happened during the last shift are most highly associated
- Suggests that not much beyond the immediate will affect whether tasks are left undone or not
 - But a major group of factors are the number of non-nursing tasks reported being done
 - Pattern of what is highly associated makes intuitive sense
 - Example: Transporting a patient

Some work environment factors are significantly associated



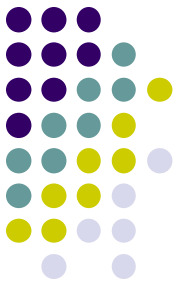
- High emotional exhaustion/burn out
 - Long term response to chronic stress
 - May be related to unmet expectations, usually over the long term
 - Studies have found associations of emotional exhaustion with adverse events
- Perceived staffing adequacy is “protective”
 - But actual staffing levels and ICU vs. non-ICU not significantly associated

Most of the hypothesized relationships not found



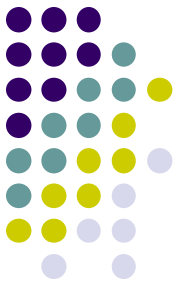
- No association with expertise in any form
 - No association with educational levels or years of experience
- No association with characteristics of patients on the unit over the 5 month period
 - Only patient related associations are with patient-related factors during last shift
 - Number of patients admitted
 - Number of patients with major compromise in status
 - Patients with complex medications admitted
- Fewer associations with resources than expected
 - Staffing not associated
 - Skill mix not associated
 - ICU/non-ICU not associated
 - This latter became insignificant when last shift factors were added

Stress and high cognitive burden are associated

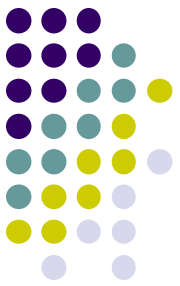


- Perceived staffing is significantly negatively associated with # TLU
 - Expertise does not seem to be a factor
- Events related to patient care that require a lot of cognitive processing are significantly positively associated with # TLU
 - Again, expertise does not seem to be a factor
- Doing many non-nursing tasks are significantly positively associated
 - But not all
 - Some are more of an issue than others
 - Time off unit (transporting patient)
 - Coordinating or supervising the work of others

Simple answers



- Increase staffing
 - But it's the perception of staffing adequacy that seems to matter
 - Actual staffing doesn't seem to matter as much
 - Perception may be more related to burn out or similar factors
- Don't assign non-nursing tasks
 - Some of these are unavoidable
 - Sometimes an RN has to transport a patient
 - Coordinating and supervising are part of RN jobs
 - But RNs may not be well prepared to do them



Limitations

- Cross-sectional, not longitudinal
 - Unable to assess temporal sequencing
- Low response rate to survey
 - Probably means these are conservative estimates of tasks left undone
- Nurses in VA may not be representative
- Very exploratory
 - We don't know much about this
- We don't know what the relationship of tasks left undone is to safety or quality
- Next steps include assessing relationship of TLU to patient outcomes

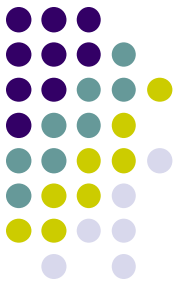


Bottom line

- Not clear what the relationship between staffing and tasks left undone is
- Need a clear conceptual model of how a factor like staffing relates to outcomes
- Findings from this study suggest that temporal proximity of events is essential
 - Requires much more granular data than we currently have
 - Rich, shift-level data on nursing environment and process to be able to understand patient outcomes

Contact information

- anne.sales@ualberta.ca



Comparing the two measures



BERNCA	TLU
<i>Activities of daily living</i>	
Bathing/skin care	Bathing
Oral or dental care	Oral hygiene
Eating	
Mobilization/changing positions	
Managing body waste	
Changing bed linen	
	Back rub or skin care
	Starting or changing IV
	Dressing change
	Changing or doing routine Foley catheter care
	Tracheostomy care
<i>Caring-support</i>	
Emotional or psychosocial support	Comfort or talk with patient
Conversations with patients or families	
<i>Rehabilitation-instruction-education</i>	
Toilet training	
Activating/rehabilitating care	
Education of patients or families about self-care	Teaching patients or family
Preparation for hospital discharge	Preparing patients or family for discharge
<i>Monitoring-safety</i>	
Adequate monitoring of patient vital signs	
Adequate monitoring of confused/impaired patients	
Coping with delayed response of physician	
Respond promptly to patient calls	
Adequate hand hygiene	
<i>Documentation</i>	
Review patient documentation at beginning of shift	
Formulate/update care plans	Develop or update nursing care plan
Documentation of performed nursing care	Adequately document nursing care