U.S. Department of Veterans Affairs

Staffing Methodology for VHA Nursing

Beth Taylor, DHA, RN, NEA-BC
Acting Chief Nursing Officer, VHA

NURSE STAFFING METHODOLOGY BACKGROUND AND TIMELINE

- 1980's-Early 1990's: Industrial engineering model (time studies)
- 1991: Consultants' Group established Nurse Staffing Guidelines
- 1996: An Expert Panel-Based Methodology Implementation Guide 

- 2004: OIG issued a Healthcare Inspection Report
  - OIG recommended that VHA "develop and oversee the implementation of a national nurse staffing policy that applies a single staffing methodology to generate consistent facility staffing standards".

NURSE STAFFING METHODOLOGY BACKGROUND AND TIMELINE

- 2007: ONS conducted preliminary review of staffing literature
- July 2007: Incorporated into National Nursing Strategic Goals
- 2008: Systematic literature review by Haddock & Fasoli
- Feb 2008: ONS chartered a Staffing Steering Committee
- July 2010: VHA Directive 2010-034
- September 2011: Full directive implementation
- December 20, 2017 Directive 1351

STAFFING METHOD DEVELOPED

- 2010 Inpatient & CLC
- 2014 Operating Room
- 2017 Spinal Cord Injury & Disease Process
- 2017 Mental Health Rehabilitation & Recovery Treatment Programs
- 2017 Emergency Department
- 2018 Post Anesthesia Care Unit

WHY DOES THIS MATTER

- Effective and efficient management of nursing personnel.
- Lower nurse-to-patient staffing ratios are associated with higher rates of adverse events.
- Higher hours of RN care per patient day linked to decreased morbidity and mortality.
- Too much staff can also lead to adverse patient events.

AMERICAN NURSES ASSOCIATION WHITE PAPER (2015)

- Nurses comprise the largest clinical subgroup in hospitals, and common cost containment strategy is to reduce professional nurse labor hours and their associated costs.
- This strategy, however, is shortsighted as appropriate nurse staffing levels are essential to optimizing quality of care and patient outcomes.

NURSE STAFFING METHODOLOGY

- The Office of Nursing Services (ONS)has led the effort to develop and implement a staffing methodology for nursing personnel that will standardize the approach to staffing decisions.

- Staffing Methodology for VA Nursing Personnel utilizes
  - Specific Nursing Sensitive Indicators
  - Data-driven Assessment Metrics
  - Expert-panel Review

AMBULATORY CARE MODELS

- PACT- Model
- Nursing staff vs Team approach productivity model (Beginning Phases in conjunction with ICEP initiative (Improving Capacity, Efficiency and Productivity in VA))
- Procedure areas such as Cath Lab, Chemo Therapy

STAFFING METHODOLOGY: KEY FACTORS

- Is a budgeting and forecasting tool to approximate adequate FTEE and skill mix.
- Requires a unit based patient focused, data driven approach (not one size fits all): ANA supports this method.
- Requires unit analysis to determine a recommendation to determine staffing needs

COMPLEXITY OF NURSE STAFFING

- Ratios are a crude and insufficient approximation of nursing time.
- No true benchmarks for nurse staffing.
- Multiple variables that influence the adequacy of any staffing number.
- Variables differ between units within the same organization.
- Accurate comparisons across facilities is difficult.

VARIABLE CATEGORIES CONSIDERED

- Patient Population: frequency, intensity and duration of care requirements.
- Nursing Staff: Novice/expert. students/trainees. Skill mix.
- Support Staff: RT, Transport, Housekeeping, MSA, ECG, Lab, Providers.
- Physical Plant: Efficiency/inefficiency considerations.

LOCAL SYSTEM WIDE NURSE STAFFING PLAN

- Is a document providing recommendations initiated by facility expert panels representing respective clinical sections and approved by ADPCS/CNE
- The staffing plan is presented to the ADPCS/CNE to the facility/health care system director and executive leadership team

EXPERT PANEL

An advisory group comprised of individuals with in-depth knowledge of evidence-based factors impacting staffing needs at the point of care

The panel is best-suited to make judgments to deliver recommendations regarding staffing levels and overseeing outcome analysis and modifications to staffing recommendations

EXPERT PANEL

- **Unit Expert Panel:** Involves staff at the point of service in evaluation of work practices
- Evaluates unit specific indicators
- **Facility Expert Panel:** Reviews unit recommendations for system impact
- Seeks clarification or moves recommendation to senior leadership
- Flexible, not prescriptive
- Connected to desired patient outcomes that are driven by evidenced-based practice

ASSOCIATE DIRECTOR OF PATIENT CARE SERVICES RESPONSIBILITIES

- Establishing acceptable NHPPD ranges
- Review staffing plan annually; execution daily
- Ensure full expert panel process is conducted at least biennially
- Provide concurrence/non-concurrence with the facility panels recommendations
- Provide feedback to the unit and facility panel regarding the approved plan
- Assure safe effective patient care

OFFICE OF NURSING SERVICE RESPONSIBILITIES

- Holds primary responsibility for national policy
- Development and review of NHPPD ranges
- Develop staffing models for all areas of practice
- Evaluate the effectiveness
- Provides expert consultation services

WHAT IS NEEDED TO CALCULATE NURSE STAFFING

- Unit Based Panel Member Selected
- Calculator forecasting information required for each area to include determining appropriate Nursing Hours Per Patient Day (NHPPD)
  - Excluding the Emergency Department which uses admissions, discharge and length of stay data
- Tools developed to assist in this process:
  - Convertor Tool
  - Replacement Factor
  - Skill Mix
  - Average Daily Census or Planned Census
  - Payroll data FTEE cost per discipline
  - Programmatic assessment – what will change in the next FY?

OUTPATIENT CONSIDERATIONS

- Hours of operation
- Number of bed/bays/chairs/rooms in operation/day.
- Nursing requirements (dose) per type of procedure.
- Prep and recovery time.
- Consideration of variables which impact efficiency of operations – provider schedules.

REPLACEMENT FACTOR TOOL

INPATIENT REPLACEMENT FACTOR		
Enter unit here		
	RN Staff	GS Staff
FTEE hours	2080	2087
AL	208	104
SL	50	70
Holiday	40	40
Education	40	40
Systems Improvement *	20	20
Other **	20	20
Other		0
Other	0	0
Other	0	0
	378	294
Replacement FTEE	1.22	1.16
Staff mix	56%	44%
	0.68	0.51
Weighted replacement	1.20	
Replacement factor	1.20	

SUMMARY STAFFING ANALYSIS

INPATIENT	Enter unit here
Replacement Factor (from prev sheet)	1.2
Planned Census	35
Total Nursing Hours per patient day (HPPD)	8.2
RN HPPD	4.59
NURSING HRS/DAY (RN)	160.72
RN %	56%
LPN %	24%
NA %	20%

CURRENT BUDGETED FTEE CEILING	
Existing RN Ceiling	38.0
Indirect Care RNs: (list here)	2.0
RN Supervisor (Indirect Care)	1.0
Existing LPN Ceiling	13.0
Indirect Care LPNs: (list here)	
Existing NA Ceiling	5.0
Indirect Care NAs: (sitters, monitor tech)	

DIRECT FTEE REQUIREMENTS	
RN	33.8
LPN	14.5
NA	12.1

NEW INDIRECT FTEE REQUIREMENTS	
(Provide description in narrative justification)	
RN	5
LPN	0
NA	3

FTEE VARIANCE	Enter unit here
RN Variance	(0.8)
LPN Variance	(1.5)
NA Variance	(10.1)
TOTAL Variance	(12.4)

CURRENT AVERAGE TOTAL COSTS	AVERAGE RN COST (Salary + Benefits)	$ 80,000
	AVERAGE LPN COST (Salary + Benefits)	$ 60,000
	AVERAGE NA COST (Salary + Benefits)	$ 50,000
CURRENT ANNUAL WORK UNIT COSTS	RN WORK UNIT COST	$ 3,280,000
	LPN WORK UNIT COST	$ 780,000
	NA WORK UNIT COST	$ 250,000
	TOTAL WORK UNIT COST	$ 4,310,000
PROJECTED ANNUAL WORK UNIT COSTS	PROJECTED RN WORK UNIT COST	$ 3,347,513.85
	PROJECTED LPN WORK UNIT COST	$ 870,272.31
	PROJECTED NA WORK UNIT COST	$ 754,355.77
	TOTAL PROJECTED WORK UNIT COST	$ 4,972,142
VARIANCE PROJECTED - CURRENT WORK UNIT COSTS	COST VARIANCE RN	(67,513.85)
	COST VARIANCE LPN	(90272.31)
	COST VARIANCE NA	(504,355.77)
	TOTAL COST VARIANCE	(662,141.92)

Outpatient Chemotherapy Unit Configuration

Chair	Room Description	Hours of Operation per day	Days per Week	Staffed Hours per Week	Staff per chair	Working Hours per Week
1	Chemo Chair	11	4	44	0.25	11
2	Chemo Chair	11	4	44	0.25	11
3	Chemo Chair	11	4	44	0.25	11
4	Chemo Chair	11	4	44	0.25	11
5	Chemo Chair	11	4	44	0.25	11
6	Chemo Chair	11	5	55	0.25	13.75
7	Chemo Chair	11	5	55	0.25	13.75
8	Chemo Chair	11	5	55	0.25	13.75
9	Chemo Chair	11	5	55	0.25	13.75
10	Chemo Chair	11	5	55	0.25	13.75
11	Chemo Chair	11	5	55	0.25	13.75
12	Chemo Chair	11	5	55	0.25	13.75
13	Chemo Chair	11	5	55	0.25	13.75
14	Chemo Chair	11	5	55	0.25	13.75
15	Chemo Chair	11	4	44	1	44
16	Chemo Chair	11	4	44	1	44
17	Chemo Chair	11	4	44	1	44
18	Chemo Chair	11	5	55	1	55
						365.75

Cath Lab Configuration

	A	B	C	D	E	F	G
1	**Room Description**	**Hours of Operation per day**	**Days per Week**	**Staffed Hours per Week**	**RN Staff per room**	**GS Staff per room**	**Working Hours per Week**
2	107 - complexity level	8	5	40	1	2	120
3	Gen Lab - Heavy (Mon and Wed)	10	2	20	2	1	60
4	Gen Lab - Light (Tues and Thurs)	10	2	20	2	1	60
5	Gen Lab - EP (Friday)	10	1	10	2	1	30
6	EP Lab (Monday)	10	1	10	2	1	30
7	EP Lab (Wednesday)	11	1	11	3	1	44
8	EP Lab - Shared (-T-Th-)	10	3	30	2	1	90
9	Administrative Task (Billing, Scans, etc.)	1	5	5	4	2	30
10				0			0
11					17	8	344
12				Skill Mix	68%	32%	

Emergency Department

Navigation Menu

1. Replacement Factor Calculator
2. FTEE Calculator
3. Total FTEE & Costs
4. Print Out

Legend

Yellow Cells to Enter Data

Orange Cells linked from Other Cell

Grey Cells are Calculated Fields

Green Text means Over Staffed

Red Text means Under Staffed

Direct Care

ED Direct Care Data	Source	Value
RN Replacement Factor		1.20
GS Replacement Factor		1.20
ED Count for 12 Months	EMMT Report Link	0
Admissions Count for 12 Months		0
Discharges Count for 12 Months		0
Median LOS for Admissions in Minutes		0
Median LOS for Discharges in Minutes		0
Total Nursing Hours		**0.00**

Skill Mix	Value
RN %	0%
LPN %	0%
ICT %	0%
NA/HT %	0%
Total %	**0%**

Current Budgeted Direct Care FTEE Ceiling	Source	Value
Existing RN Ceiling	Org Chart	0.00
Existing LPN Ceiling		0.00
Existing ICT Ceiling		0.00
Existing NA/HT Ceiling		0.00
Total Current Budgeted FTEEs		**0.00**

Projected Direct FTEE Requirements	Value	Variance
RN	0.00	0.00
Quick Look RN	0.00	
LPN	0.00	0.00
ICT	0.00	0.00
NA/HT	0.00	0.00
Total Direct FTEEs	**0.00**	**0.00**

Microsoft Excel no-Enabled Workl

Indirect Care

Current Budgeted Indirect Care FTEE Ceiling	Source	Value
RN Nurse Manager	Org Chart	0.00
Indirect Care RN Ceiling		0.00
Indirect Care LPN Ceiling		0.00
Indirect Care ICT Ceiling		0.00
Indirect Care NA/HT Ceiling		0.00
Total Current Budgeted FTEEs		**0.00**

Projected Indirect FTEE Requirements	Value	Variance
RN Nurse Manager	0.00	0.00
RN	0.00	0.00
LPN	0.00	0.00
ICT	0.00	0.00
NA/HT	0.00	0.00
Total Indirect FTEEs	**0.00**	**0.00**

Stand-Alone (Not Considered in Calculator)

Multi-use Indirect Care FTEE Calculator	
Type of Indirect Care Use	Sitter
Avg. Number of Patients	0
Avg. Indirect Hrs/Day/Patient	0
Operational Days/Week	0
Hours/Week	0
Standard Work Week	40
FTEEs	0
Replacement Factor	1.20
Recommended FTEEs	**0**

Quick Look Calculator	W/ RF
Name of Quick Look	Quick Look
# Hours Staffed Per Day	
Days Per Week	
FTEEs	**0.00**
Replacement Factor	1.20
Recommended Total FTEEs	**0.00**

COMPARISON DATA TOOLS

- Provides sites that do not have previously established Nursing Hours Per Patient Day (NHPPD) a frame of reference as accurate NHPPD ranges are needed across the system for comparative analysis within VHA.

- LMI (Labor Management Institute) and NDNQI (National Database of Nursing Quality Indicators) data are also used for comparative analysis with community standards outside the VHA.

- MCAO provides comparison tools using labor mapping associated with like units.

FUTURE STATE

- Maximize Technology
- VHA Resource Management System
- Real time utilization
- Virtual sitter surveillance
- Productivity staffing Models
- Interdisciplinary Team Models of Care

FUTURE STATE

- Evaluation of method efficacy.
- Strengthen the consistency of meeting NHPPD
- Improve Reliability of method
- Refine considerations for physical plant and support staff variables.
- Use expert panel process for units without validated tools (specialty clinics, Endo/Cath Lab, emerging roles i.e. navigators, Chemo, Dialysis, interdisciplinary teams)
- Explore creative deployment strategies.

REFERENCES

- Adomat, R., & Hewison, A. (2004). Assessing patient category/dependence systems for determining the nurse/patient ratio in ICU and HDU: a review of approaches. *Journal Of Nursing Management*, *12*(5), 299-308.
- Aiken, L., Cimiotti, J., Sloane, D., Smith, H., Flynn, L., & Neff, D. (2011). Effects of nurse staffing and nurse education on patient deaths in hospitals with different nurse work environments. *Medical Care*, *49*(12), 1047-1053.
- Annis, A., Robinson, C., Yankey, N., Krein, S., Duffy, S., Taylor, B., Sales, A. (2017). Factors associated with the implementation of a nurse staffing directive. Journal of Nursing Administration. 47(12), 636-644.
- Brisley, T., Hargraves, M., Long, C., Morton, C., Poulton, G., Rogers, M., & ... Yates, P. (2003). Nurse staffing levels in outpatient chemotherapy settings: a review of the literature. *Australian Journal Of Cancer Nursing*, *4*(2), 11-14.
- Checkley, Martin, Brown, Chang, Dabbagh, Fremont, & Sevransky, (2014). Structure, process, and annual ICU mortality across 69 centers: United States critical illness and injury trials group critical illness outcomes study. *Critical Care Medicine*, *42*(2), 344-356.
- Cho, Hwang, & Kim, (2008). Nurse staffing and patient mortality in intensive care units. *Nursing Research*, *57*(5), 322-330.
- Diya, Van den Heede, Sermeus, & Lesaffre, (2012). The relationship between in-hospital mortality, readmission into the intensive care nursing unit and/or operating theatre and nurse staffing levels. *Journal Of Advanced Nursing*, *68*(5), 1073-1081.
- Department of Veterans Affairs, Veterans Health Administration (2010). Staffing methodology for VHA nursing personnel. VHA Directive 2010-034.
- Douglas, K. (2010). Ratios – if it were only that easy. *Nursing Economic$, 28*(2), 119-125.

REFERENCES

- Duffin, C. (2014). Increase in nurse numbers linked to better patient survival rates in ICU. *Nursing Standard*, *28*(33), 10.
- Everhart, D., Schumacher, J. R., Duncan, R. P., Hall, A. G., Neff, D. F., & Shorr, R. I. (2014). Determinants of hospital fall rate trajectory groups: A longitudinal assessment of nurse staffing and organizational characteristics. *Health Care Management Review*, *39*(4), 352-360.
- Frith, K. H., Anderson, E. F., Fan, T., & Fong, E. A. (2012). Nurse Staffing Is an Important Strategy to Prevent Medication Errors in Community Hospitals. *Nursing Economic$*, *30*(5), 288-294.
- Kelly, Kutney-Lee, McHugh, Sloane, & Aiken, (2014). Impact of critical care nursing on 30-day mortality of mechanically ventilated older adults*. *Critical Care Medicine, 42*(5), 1089-1095.
- Kiekkas, Sakellaropoulos, Brokalaki, Manolis, Samios, Skartsani, and Baltopoulos, (2008). Association between nursing workload and mortality of intensive care unit patients. *Journal Of Nursing Scholarship* , *40*(4), 385-390.
- Labor Management Institute. 2013 Annual Survey of Hours.
- Lake, E., Shang, J., Klaus, S., & Dunton, N. (2010). Patient falls: association with hospital magnet status and nursing unit staffing. *Research In Nursing & Health*, *33*(5), 413-425
- Robinson, C., Annis, A., Forman, J., Krein, S., Yankey, N., Duffy, S., Taylor, B., and Sales, A. (2016). Factors that affect implementation of a nurse staffing directive: results from a qualitative multi-case evaluation. Journal of Advanced Nursing. 72(8) 1886-1898. doi: 10-1111/jan.12961.
- Taylor, B., Yankey, N., Robinson, C., Annis, A., Haddock, K., Alt-White, A., Krein, S., & Sales, A. (2015). Evaluating the Veterans Health Administration's staffing methodology: a reliable approach. Nursing Economic$. 33(1), 36-40.