Patient CareLink

MASSACHUSETTS HOSPITAL QUALITY & PATIENT SAFETY

{3} IN A SERIES

Summary of Trends in Nurse Staffing in Massachusetts Acute Care Hospitals

FEBRUARY 2013

Hospital-specific nurse staffing data for nearly all hospitals across Massachusetts are reported at the *PatientCareLink* website (www.patientcarelink.org). The staffing plans and reports are developed using the metric of **Worked Hours Per Patient Day (WHPPD)**. This is the number of direct care hours planned for a patient from patient care team members in a 24-hour period.

For all Massachusetts **adult medical, surgical, and medical/surgical combined units** in acute care hospitals participating in *PatientCareLink*, the median hospital actual worked hours per patient day for all direct caregivers grew from 8.01 in 2006 to 8.76 2011, an increase of 9.36%. For the same time period, the median hospital actual worked hours per patient day for registered nurses (RNs) increased by 7.9%, from 5.57 worked hours per patient day to 6.01.

For all Massachusetts **adult critical care units** in acute care hospitals participating in *PatientCareLink* the actual worked hours per patient day for all direct caregivers decreased by less than half of 1% at the median and increased by less than 1% for the weighted average. The largest percentage change for all direct caregivers was an increase of 5.43% in the 75th percentile. (That is, those hospitals whose WHPPD exceeded 75% of their peers saw the greatest increase in WHPPD.) For the same period, the median hospital actual hours worked per patient day for registered nurses increased by 1.34%. The largest percentage change for registered nurses was an increase of 1.72% in the 25th percentile.

The Massachusetts Hospital Association (MHA) and the Organization of Nurse Leaders of MA-RI (ONL) have organized hospitals throughout the state in a voluntary program to report nurse staffing plans and reports, as part of the *PatientCareLink* initiative. Launched in 2005, *PatientCareLink* (PCL) helps participating hospitals provide transparent staffing and patient safety information to the public and other healthcare stakeholders, and also offers valid and reliable information on quality and safety to patients and healthcare workers alike. The principles of PCL include providing staffing that meets patient needs and making hospital data and performance measures transparent and publicly available as evidenced at www.patientcarelink.org.

Background on Staffing and Worked Hours Per Patient Day

Through *PatientCareLink* (PCL), hospitals are committed to the principles of healthcare quality and safety, providing staffing that meets patient needs, making hospital data and performance measures transparent and publicly available, developing the workforce, and promoting a safe, respectful, and supportive working environment. Hospitals are supporting these principles by voluntarily making staffing plans available to patients and the public and posting them on the PCL website, by following a common framework of measurement and reporting based on national performance measures and by monitoring and reporting progress on efforts to improve the quality of care and patient safety.

Acute care and specialty care hospitals in Massachusetts have been reporting detailed nurse staffing *plans* and *reports* since 2006 (www.patientcarelink.org/hospital-data/staffing-plans.aspx). Staffing *plans* are developed based on the anticipated patient volume and on the anticipated needs of the patients assigned to the unit. Plans are built with the understanding that they need to be flexible to account for patient care changes that occur over the course of a day and are adjusted to account for those changes. Staffing *reports* reflect the actual hours worked by care team members in providing direct care to patients. The reports also identify reasons why the actual staffing varied from the planned or budgeted staffing for time period.

Staffing plans and reports are developed using the metric of worked hours per patient day (WHPPD). This is defined as the number of direct care hours planned (or worked) for a patient from patient care team members in a 24-hour period. WHPPD is a measure that is nationally recognized and part of the National Quality Forum's Nurse Sensitive Measure Set (JCAHO, 2005[1]). All data points are for WHPPD, unless indicated otherwise.

Acute care hospitals have reported staffing data for adult critical care, adult intermediate care or step-down care, medical only, surgical only, combined medical/surgical, behavioral health, rehabilitation, and emergency department units. Rehabilitation hospitals and long-term acute care hospitals have reported staffing data for rehabilitation units and long-term acute care units, respectively.

This report focuses on (1) aggregate staffing data trends in acute care hospitals for all medical only, surgical only, and combined medicals/surgical units, as well as (2) aggregate staffing data trends for acute care hospital critical care units.

STAFFING PLANS IDENTIFY DIRECT CAREGIVERS AND ADDITIONAL TEAM MEMBERS WHO CONTRIBUTE TO THE CARE OF PATIENTS.

Many healthcare professionals care for patients as part of a team. Registered nurses provide direct care to patients 24 hours a day, seven days a week and are partners with many other healthcare professionals, including physicians, to meet varying patient needs. On staffing plans, "Direct Caregivers" may include nursing aides, assistants, and respiratory therapists, among others. Team members listed in the "Additional Care Team Member" section, such as clinical pharmacists, nutritionists, IV Therapy Teams, and Staff Educators also help coordinate and deliver patient care. This report focuses on (1) "All Direct Caregivers", which include registered nurses and all other direct caregivers who have productive hours with patient care responsibilities greater than 50% of their shift and who are replaced if sick; as well as (2) "RNs Only."

There are many variables to consider in terms of what constitutes safe, efficient staffing for a particular hospital unit. This may be addressed in the "Additional Unit Information" section of *PatientCareLink*. Every patient care unit is different based upon the types of patients cared for on that unit, and the way in which care is organized and delivered there. Staffing for individual units can vary based on the education and experience level of the staff, support from nurse

educators and nurse managers on a given unit, as well as on the unique characteristics and mission of the hospital. Because of these differences, there will be a difference in the WHPPD rates among hospitals.

Staffing trends of WHPPD are represented by the distribution of measures at the 25th, 50th (median), and 75th percentiles; and the weighted average. Percentiles represent a value on a scale that indicates the percent of a distribution that is equal to or below it. The 50th percentile (median) and the weighted average WHPPD measures best describe the trends for the hospitals as a group. For example, a score at the 50th percentile is equal to or better than 50 percent of the scores. The weighted average is the result of dividing the sum of the total actual worked hours in all hospitals by the total actual patient days of all hospitals.

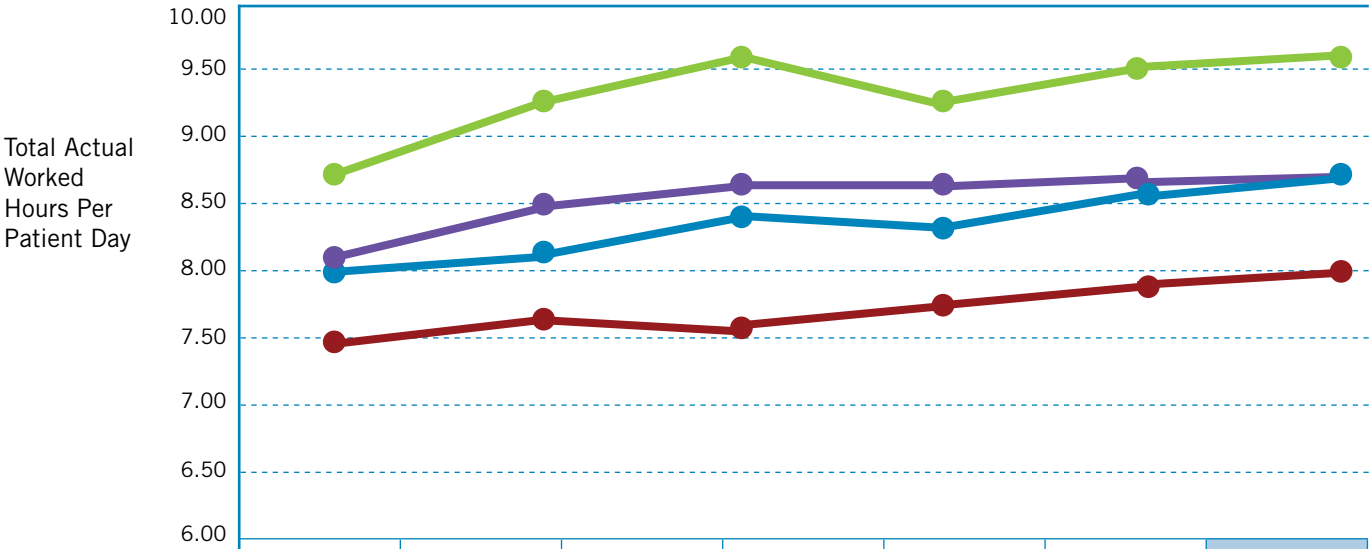
Using 2011 as a representative year, this report includes data for 61 acute care hospitals reporting on 284 medical, surgical, and medical/surgical combined units. There are 63 acute care hospitals reporting on 105 critical care units.

Findings

FIGURE 1

Adult Medical, Surgical and Med/Surg Combined Units – Staffing Trends

All Massachusetts Acute Care Hospitals Participating in *PatientCareLink*
Includes Actual Worked Hours for ***All Direct Caregivers***
2006 – 2011



	2006 (N=265)	2007 (N=271)	2008 (N=273)	2009 (N=284)	2010 (N=283)	2011 (N=284)	% Change from 2006 to 2011
75th	8.72	9.27	9.59	9.28	9.56	9.71	11.35
50th	8.01	8.17	8.43	8.38	8.62	8.76	9.36
25th	7.46	7.65	7.63	7.75	7.87	7.96	6.70
Wtd. Avg.	8.13	8.45	8.64	8.62	8.68	8.76	7.75
Std. Dev.	1.21	1.39	1.42	1.37	1.52	1.54	

Figure 1 displays the staffing trend from 2006-2011 for WHPPD for all direct caregivers in adult medical, surgical, and medical/surgical units in acute care hospitals. There were increases at the 25th, 50th, 75th percentiles and the weighted average, indicating an increase in nursing care intensity. The largest percentage increase occurred at the 75th percentile with actual worked hours growing from 8.72 in 2006 to 9.71 in 2011, an increase of 11.35%.

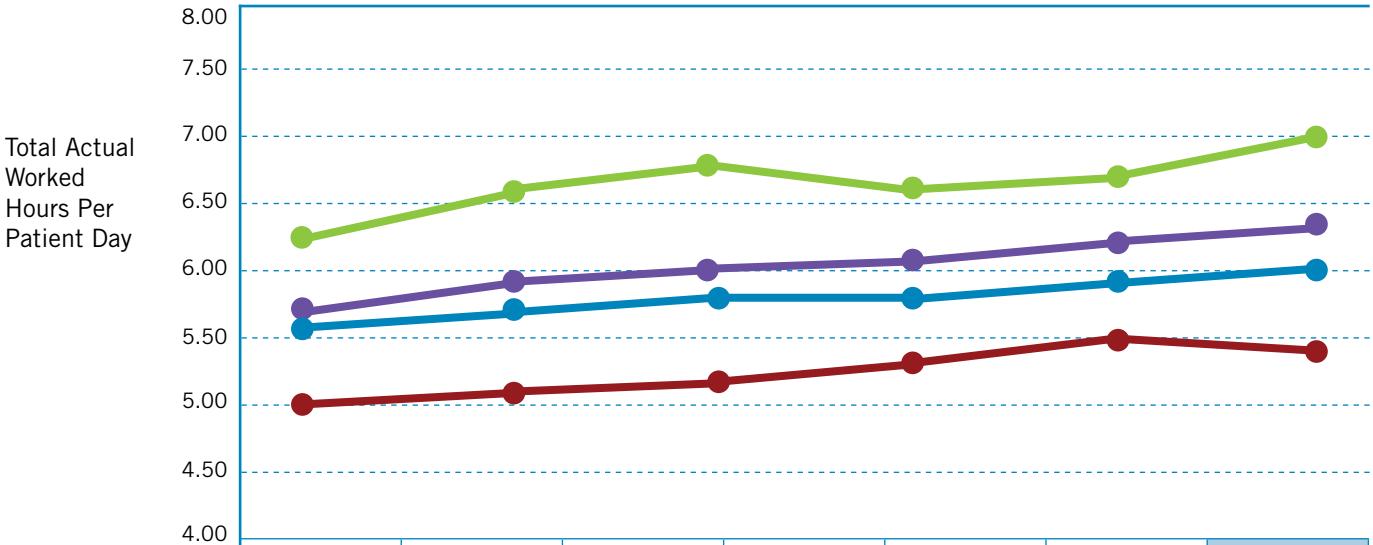
It is worth noting that the statewide acute care hospital average case-mix index (CMI) increased from 0.996 in FY 2006 to 1.044 in FY 2010 (the latest period available), an increase of 4.5%[2]. This compares with an increase of 6.8% in WHPPD for the same period (8.13 WHPPD in FY 2006 vs. 8.68 in FY 2010).

Case mix index (CMI) is the average diagnosis-related group (DRG) weight for all of a hospital's inpatients. Each DRG has a specific weight that is related to the amount of resources needed to treat that condition in a specific kind of patient. The mix of cases in a hospital reflects the diversity, clinical complexity and the needs for resources in the population of patients in a hospital.

FIGURE 2

Adult Medical, Surgical and Med/Surg Combined Units – Staffing Trends

All Massachusetts Acute Care Hospitals Participating in *PatientCareLink*
Includes Actual Worked Hours for ***RNs Only***
2006 – 2011



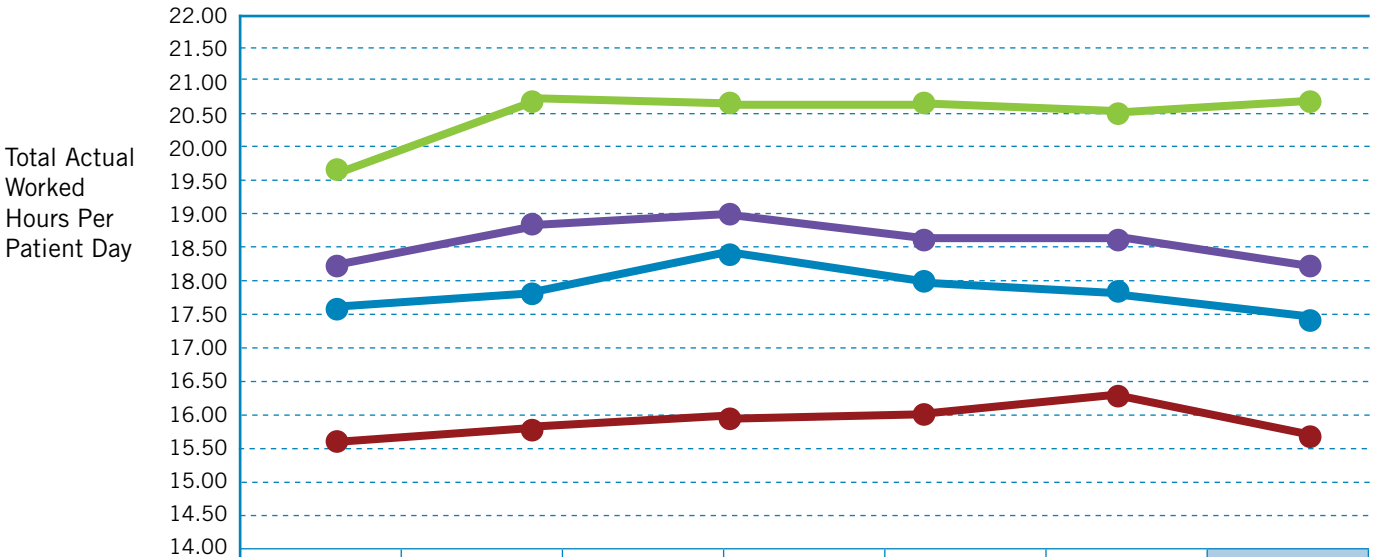
	2006 (N=265)	2007 (N=271)	2008 (N=273)	2009 (N=284)	2010 (N=283)	2011 (N=284)	% Change from 2006 to 2011
75th	6.32	6.61	6.76	6.63	6.76	6.94	9.81
50th	5.57	5.70	5.79	5.79	5.86	6.01	7.90
25th	5.01	5.09	5.16	5.28	5.44	5.44	8.58
Wtd. Avg.	5.68	5.88	6.03	6.06	6.20	6.26	10.21
Std. Dev.	1.34	1.27	1.30	1.27	1.39	1.38	

Figure 2 displays the staffing trend from 2006-2011 for WHPPD for registered nurses only in adult medical, surgical, and medical/surgical units in acute care hospitals. WHPPD increased at the 25th, 50th, 75th percentiles and the weighted average, indicating an increase in nursing care intensity. The largest percentage change occurred for the weighted average with actual worked hours for RNs growing from 5.68 in 2006 to 6.26 in 2011; an increase of 10.21%.

FIGURE 3

Adult Critical Care Units – Staffing Trends

All Massachusetts Acute Care Hospitals Participating in *PatientCareLink*
Includes Actual Worked Hours for ***All Direct Caregivers***
2006 – 2011



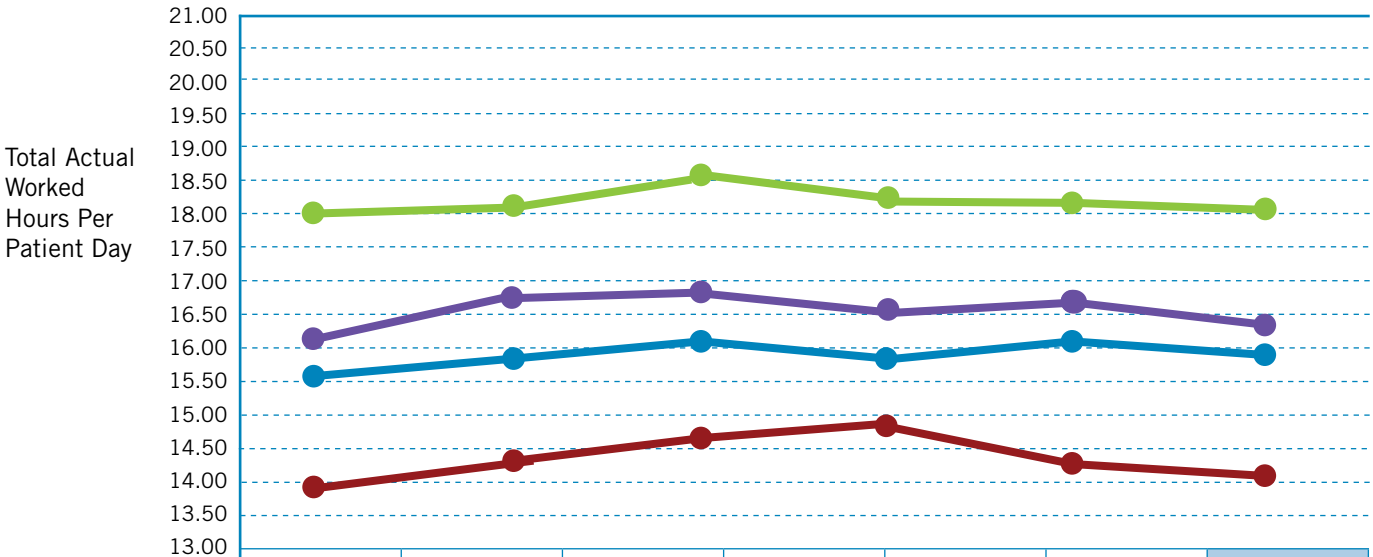
	2006 (N=111)	2007 (N=104)	2008 (N=105)	2009 (N=105)	2010 (N=104)	2011 (N=105)	% Change from 2006 to 2011
75th	19.70	20.77	20.80	20.78	20.70	20.77	5.43
50th	17.66	17.93	18.51	18.06	17.86	17.59	-.40
25th	15.62	15.82	16.02	16.02	16.34	15.74	.77
Wtd. Avg.	18.38	18.85	19.08	18.79	18.73	18.41	.16
Std. Dev.	3.67	4.00	4.09	3.79	3.59	3.63	

Figure 3 displays the staffing trend from 2006-2011 for WHPPD for all direct caregivers in critical care units in acute care hospitals. WHPPD increased at the 25th and 75th percentiles and for the weighted average, indicating an increase in nursing care intensity, though the 25th percentile and weighted average grew by less than 1%. WHPPD at the 50th percentile decreased by less than half of 1%. The number of patient care units included in the samples decreased slightly during the time period studied. The largest percentage change occurred in the 75th percentile with WHPPD increasing from 19.70 in 2006 to 20.77 in 2011, up 5.43%.

FIGURE 4

Adult Critical Care Units – Staffing Trends

All Massachusetts Acute Care Hospitals Participating in *PatientCareLink*
Includes Actual Worked Hours for ***RNs Only***
2006 – 2011



	2006 (N=111)	2007 (N=104)	2008 (N=105)	2009 (N=105)	2010 (N=104)	2011 (N=105)	% Change from 2006 to 2011
75th	18.11	18.16	18.59	18.31	18.22	18.18	0.39
50th	15.64	15.89	16.18	15.88	16.20	15.85	1.32
25th	13.97	14.45	14.63	14.73	14.36	14.21	1.72
Wtd. Avg.	16.21	16.6	16.72	16.52	16.63	16.3	0.56
Std. Dev.	3.42	3.28	3.39	3.17	3.03	3.11	

Figure 4

Figure 4 displays the staffing trend from 2006-2011 for WHPPD for all registered nurses only in critical care units in acute care hospitals. WHPPD increased at the 25th, 50th, and 75th percentiles and the weighted average, indicating an increase in nursing care intensity. The largest percentage change occurred in the 25th percentile with WHPPD increasing from 13.97 in 2006 to 14.21 in 2011, an increase of 1.72%.

Each of the figures also displays the standard deviation for WHPPD for all the hospitals. The only notable change over the 2006 – 2011 period was a drop in the standard deviation for acute care hospital critical care units for RNs only from 3.42 to 3.11. This change indicates that the distribution of WHPPD across all hospitals narrowed or became more uniform.

Summary

For all Massachusetts adult medical, surgical, and medical/surgical combined units in acute care hospitals participating in *PatientCareLink*, the WHPPD for all direct caregivers increased at the 25th, 50th, and 75th percentiles, and for the weighted average. The median hospital WHPPD for all caregivers increased by 9.36% from 2006 to 2011. For the same time period, WHPPD for registered nurses increased at the 25th, 50th, and 75th percentiles, and for the weighted average. The median hospital WHPPD for registered nurses increased by 7.9%.

For all Massachusetts adult critical care units in acute care hospitals participating in *PatientCareLink*, WHPPD for all direct caregivers increased at the 25th and 75th percentiles. WHPPD for all caregivers increased by 5.43% from 2006 to 2011 at the 75th percentile. For the same time period, WHPPD for registered nurses increased at the 25th, 50th, and 75th percentiles, and for the weighted average, though by small amounts. The actual worked hours for registered nurses in the 25th percentile increased by 1.72%.

The distribution of WHPPD for RNs only in critical care units narrowed, indicating more uniform staffing of such units across hospitals.

The public can monitor hospital-specific nurse staffing data for nearly all hospitals across Massachusetts at the *PatientCareLink* website. The information is updated on an annual basis and contains both planned staffing by unit, by shift for each day of the week, along with comparison of actual staffing versus planned staffing as measured by WHPPD.

END NOTES

[1] The Joint Commission Joint Commission on Accreditation of Healthcare Organizations. (2005), Implementation guide for the NQF endorsed nursing-sensitive care performance measures. Oakbrook Terrace, IL: The Joint Commission.

[2] Massachusetts Center for Health Information and Analysis, Hospital Summary Utilization Data Files, Case Mix Indices in Massachusetts, HSD04; www.mass.gov/chia/researcher/health-care-delivery/hcf-data-resources/hospital-summary-utilization/ , accessed December 27, 2012.

Notes

MHA Massachusetts Hospital Association

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