



### Ergonomics in nursing: The importance of a safe and healthy work environment

#### Executive summary

HPro, Inc., in Marblehead, MA, recently conducted a survey among 23 nursing professionals in the healthcare industry about their training, practices, and challenges related to ergonomics. The results presented in this report reflect the growing importance of safe practices and a safe environment across healthcare organizations of various sizes in acute care, critical access, long-term care, ambulatory, home health, and rehabilitation settings.

Although the data reported in this document do not dissect the particulars at any one institution, they do display a comprehensive look at the methods and practices being used among a variety of facilities. The survey included questions about job-related injuries, safe practices, training, workplace safety, and attention given by administration to these increasingly crucial matters.

The results show that although injuries are down among those organizations surveyed, a number of steps including regular proper training, appropriate employee break time, noise control, and better attention to the layout of the unit could all have a positive effect on the workplace. The biggest challenge among those surveyed (mostly nurse managers and senior nurse executives) was getting staff nurses to follow proper procedures when handling patients.

When asked about the relationship between ergonomics and turnover, most respondents felt that ergonomics was not an influential factor in staff turnover at their facility. Furthermore, 70% of respondents felt that there was adequate support from senior-level executives in making the necessary improvements that lead to an ergonomically sound workplace.

#### Demographics

The section that follows provides an overview of the demographic data provided by the survey respondents. From organizational setting and type to age range of nurses, these data helped frame the information shared by the participants throughout this report.

The majority of respondents work in either rural or community teaching settings. There was no representation from

Figure 1

	Rural	Community teaching	Community nonteaching	Urban teaching	Urban nonteaching
Acute care	47%	24%	6%	18%	6%
Critical access	62%	25%	0%	0%	12%
Long-term care	60%	20%	0%	0%	20%
Ambulatory	75%	25%	0%	0%	0%
Home health	75%	25%	0%	0%	0%
Rehab	43%	57%	0%	0%	0%

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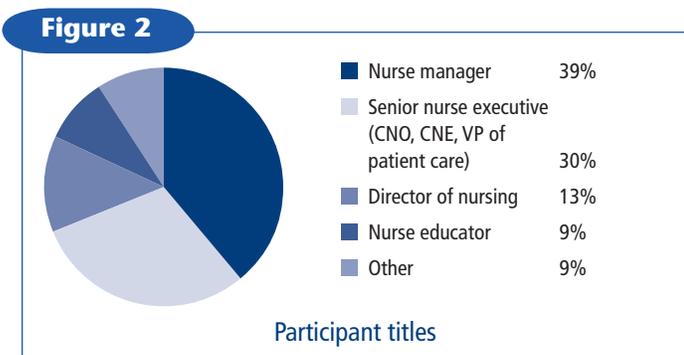
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community nonteaching or urban teaching facilities in critical access, long-term care, ambulatory home health, or rehab, and no representation from urban nonteaching facilities in ambulatory, home health, or rehab. Please see **Figure 1** on the previous page for a complete breakdown.

### Participant titles

The 23 respondents ranged from nurse managers to nurse educators, although the bulk of participants were either nurse managers or senior nurse executives. Here is a breakdown by title:



### How many RNs does your organization employ and what age range do they encapsulate?

According to the results, the largest number of participants (34.8%) employ fewer than 100 nurses at their facility, and at the majority of these organizations, most of the nurses range from 40 to 49 years of age. Among the 30% of respondents whose organizations employ 101–300 nurses, most are 30–39 years of age.

The numbers fall in line with the growing nursing shortage that is threatening the country’s healthcare system. None of the organizations responded that most of their nurses were over 50 years of age, and none responded that most of their nurses were under 30. The average age of RNs rose to nearly 47 in 2004, the highest average since 1980. This figure is 10 years older than the median age of the general public.<sup>1</sup> For a complete breakdown of the comparison between the number of RNs employed and the age range, see **Figure 3**.

**Figure 3** Age range of majority of nurses?

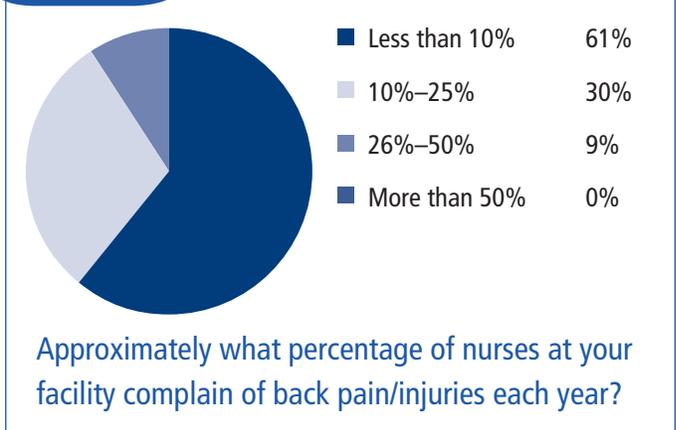
How many RNs does your organization employ?	20–29 years of age	30–39 years of age	40–49 years of age	50 or older
Fewer than 100	0.00%	22.20%	42.90%	0.00%
101–300	0.00%	55.60%	14.30%	0.00%
301–500	0.00%	0.00%	14.30%	0.00%
501–700	0.00%	11.10%	14.30%	0.00%
701–900	0.00%	0.00%	7.10%	0.00%
More than 900	0.00%	11.10%	7.10%	0.00%

### Injuries and prevention

Along with being stressful and emotional, nursing can be a physically exhausting profession. From lifting patients, miles of walking, and too few or no breaks in a 12-hour shift, nursing can have decidedly negative long-term effects on bones, joints, and muscles. However, according to the results, the majority of respondents (61%) said that less than 10% of their nurses complain of back pain/injuries each year. Furthermore, 65% of respondents said that less than 10% of their nurses miss a day of work each year due to chronic back pain or other on-the-job injuries. None said it happens to more than 50% of their nurses, whereas 34% of responses were in the 10%–50% range. **Figures 4 and 5** depict these results.

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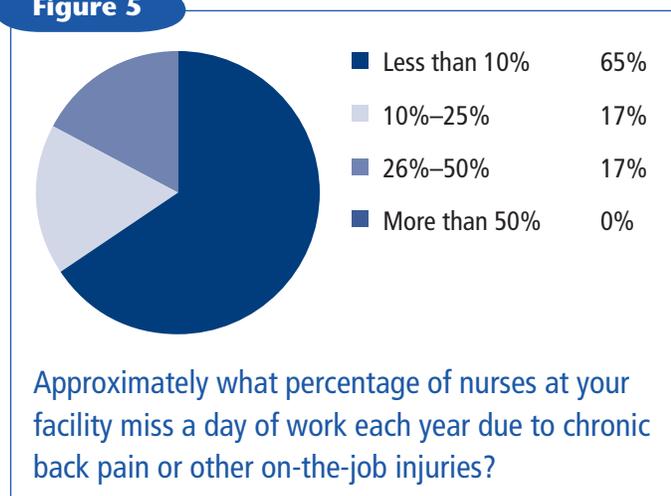
**Figure 4**



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**Figure 5**



### Other ailments

Of the nagging injuries other than back problems that do draw complaints or force employees to miss work, tendinitis was the most common, drawing 36% of the 11 responses to this question. Carpal tunnel syndrome was second with 27% of the responses. Twenty-seven percent of respondents listed other injuries, which include:

- Shoulder injuries
- Muscle strain
- Stress

### Techniques to minimize risk of injury from transferring/repositioning patients

Technology and new best practices continue to change the way patients are handled in facilities today. The bulk of respondents (74%) said sliding boards were

used as a way to minimize the risk of injury for nurses. Twenty-six percent employ the use of lift teams. Nine percent of respondents admitted no techniques are in place at their facility. A number of respondents wrote in responses, which include:

- Mechanical lifts (2)
- Hoyer lifts (3)
- Other lift equipment, including portable lifts (2)
- Ceiling lifts
- Gait belts
- Air mattresses
- Philly slides
- Bariatric equipment
- Glide sheets
- Hoverjack™

### When is staff at your facility trained in proper techniques to lift and reposition patients?

The data suggest that smaller organizations make training staff in proper techniques more of a priority than the larger organizations surveyed. Eighty-five percent of respondents from facilities that employ fewer than 300 nurses regularly train staff in lifting techniques in orientation. In contrast, only 14% of respondents at facilities that employ more than 500 nurses train staff during orientation.

See **Figure 6** below for a comparison of the number of employees with the frequency of training.

Seventeen percent of respondents chose “other,”

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**Figure 6**

When is staff at your facility trained in the proper techniques to lift and reposition patients?						
Number of RNs	Orientation	Monthly	Quarterly	Yearly	As needed	Never
Fewer than 100	42.90%	0.00%	100.00%	20.00%	0.00%	0.00%
101–300	42.90%	0.00%	0.00%	20.00%	40.00%	100.00%
301–500	0.00%	0.00%	0.00%	20.00%	0.00%	0.00%
501–700	14.30%	0.00%	0.00%	40.00%	0.00%	0.00%
701–900	0.00%	0.00%	0.00%	0.00%	20.00%	0.00%
More than 900	0.00%	0.00%	0.00%	0.00%	40.00%	0.00%

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explaining that training was done during multiple time frames. Those included:

- Orientation, annually, and as needed (2)
- Orientation and yearly
- Orientation and as needed

### Healthy environments

With regard to appropriate breaks during a shift, the data suggest that smaller organizations make this more of a priority than the larger organizations surveyed. At organizations with fewer than 100 nurses, 80% rated their facilities as “excellent” in the category. See **Figure 7** for a breakdown of the number of employees at an organization and the attention given to appropriate breaks. Overall, the bulk of respondents (48%) rated their facilities as “good” with regard to appropriate breaks. One participant rated his or her facility as “poor.”

**Figure 7**

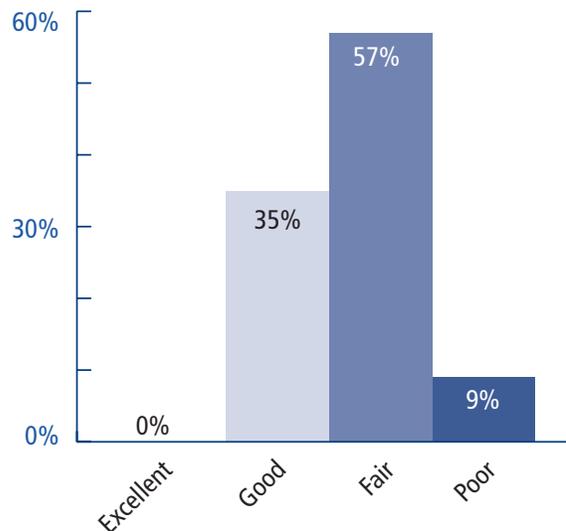
Appropriate breaks throughout a shift?

Number of RNs	Excellent	Good	Fair	Poor
Fewer than 100	80.00%	18.20%	16.70%	100.00%
101–300	0.00%	27.30%	66.70%	0.00%
301–500	20.00%	9.10%	0.00%	0.00%
501–700	0.00%	18.20%	16.70%	0.00%
710–900	0.00%	9.10%	0.00%	0.00%
More than 900	0.00%	18.20%	0.00%	0.00%

### Keeping the noise down on units

None of the respondents rated their facility as “excellent” in terms of keeping noise down on individual units. According to the Robert Wood Johnson Foundation (RWJF) publication titled *Wisdom at Work: The Importance of the Older and Experienced Nurse in the Workplace*, which was released in June 2006, “noise decreases productivity and increases errors. [It is important] to attend to the acoustics of a unit through wall coverings, use of pagers, and the like.”<sup>2</sup> Most respondents chose “fair” in rating their individual facility. See **Figure 8** above for a complete breakdown.

**Figure 8**



Rate your facility on practices and techniques to keep the noise down on units.

### Well-organized supply closets

The survey asked whether supply closets at individual facilities were well organized, thus cutting down on foot traffic and frustration from nurses. Sixty-one percent of participants responded yes, and 39% responded no. Poor placement of supplies, as noted in the RWJF publication, is one of the largest physical inconveniences on units. According to the paper, “nurses walk too much, often up to 12 miles per shift, and this is frequently related to finding supplies and equipment. Physical design has to reduce burden.”

In this case, the data suggest that larger organizations (those employing 501 or more nurses) organize their supplies in a better fashion, as 83% of those six respondents answered yes to the question. For a complete breakdown of cross tabulation between number of employees and organization of supplies, see **Figure 9** on p. 5.

### Long-term effects

As the average age of staff nurses continues to increase, it is becoming imperative to pay attention to

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**Figure 9**

How many RNs does your organization employ?						
Are the supply closets at your facility well organized?	Fewer than 100	101–300	301–500	501–700	701–900	More than 900
Yes	62.50%	42.90%	50.00%	100.00%	100.00%	50.00%
No	37.50%	57.10%	50.00%	0.00%	0.00%	50.00%

the health of the work environment. The survey asked about the most challenging aspect of ergonomic conditions, and the bulk of respondents (52%) selected “RN’s who don’t follow appropriate procedures for lifting and moving patients.”

Nineteen percent of respondents selected “lack of funding/support for improvements,” 10% chose “the effect of injuries on staffing,” and 5% marked “costs resulting from injuries.”

Three “other” responses include:

- ▶ All of the above
- ▶ Volume of obese and morbidly obese patients
- ▶ Staff members feel they don’t have time to use the lifts

Further cross tabulation of the data reveals that most respondents who chose “RN’s who don’t follow

appropriate procedures for lifting and moving patients” train staff “annually,” “as needed,” or “never.”

Respondents from those facilities that train at orientation saw a balance between the choices, giving weight to the argument that more training yields better ergonomic results. See **Figure 10** below for a complete breakdown.

### Ergonomics as it relates to turnover

Only 17% of respondents said that inadequate ergonomic conditions directly related to turnover at their organization. Some responses were based on evidence, and others were anecdotal.

See **Figure 11** on p. 6 for a complete breakdown of positive versus negative responses.

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**Figure 10**

When is staff at your facility trained on the proper techniques to lift and reposition patients?						
Most challenging aspect of ergonomic conditions	Orientation	Monthly	Quarterly	Yearly	As needed	Never
	Costs resulting from injuries	0.00%	0.00%	0.00%	0.00%	20.00%
The effect of injuries on staffing	28.60%	0.00%	0.00%	0.00%	0.00%	0.00%
Lack of funding/support for improvements	28.60%	0.00%	0.00%	40.00%	0.00%	0.00%
RN’s who don’t follow appropriate procedures for lifting and moving patients	28.60%	0.00%	0.00%	60.00%	60.00%	100.00%
Other	14.30%	0.00%	0.00%	0.00%	20.00%	0.00%

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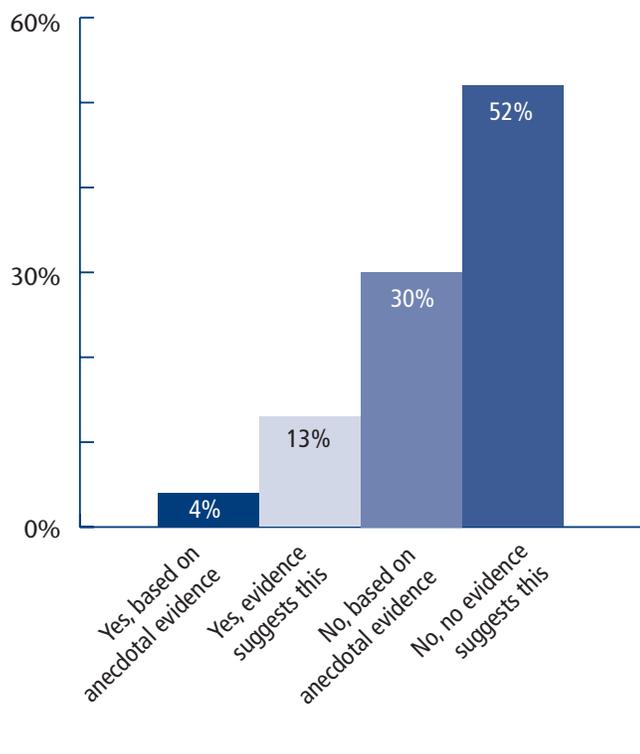
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### Adequate support from senior-level executives

Seventy percent of respondents feel that there is adequate support from senior-level executives to fund improvements in ergonomic conditions. Thirty percent responded negatively. The data suggest that smaller organizations, those that employ fewer than 100 RNs,

**Figure 11**

Do you think that inadequate ergonomic conditions directly relate to nursing turnover at your organization?



receive the best support, as 87.5% of those respondents answered yes.

### Conclusion

The importance of ergonomics in the workplace continues to grow as the nursing shortage and staff burnout are increasingly finding the healthcare spotlight. The rise in the average age of nurses—now over 47—also contributes to the need for safer conditions, better physical designs, and a greater focus on training and technological improvements.

The data from this report show that although positive steps are already being taken at many facilities, on-the-job injuries, poor training, and poor techniques are having a detrimental effect on the workplace—at both large and small organizations.

Although turnover is not greatly related to ergonomics, worker health and satisfaction are closely tied to these conditions. In the long term, greater attention to the design of the workplace and the health of the worker will generally create better environments for generations of nurses to come. ■

### Resources

1. Webber, N. (2007). "Survey reveals trends in nursing." *New York Nurse*. Available at [www.nysna.org/publications/newyorknurse/apr/trends.htm](http://www.nysna.org/publications/newyorknurse/apr/trends.htm). Accessed September 26.
2. Hatcher, B., et al. (2006). *Wisdom at Work: The Importance of the Older and Experienced Nurse in the Workplace*. Robert Wood Johnson Foundation. Available at [www.rwjf.org/files/publications/other/wisdomatwork.pdf](http://www.rwjf.org/files/publications/other/wisdomatwork.pdf). Accessed September 26.

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