

**Ms. Linda Scott**

**Ms. Scott:** Good morning. My name is Linda Scott, and I'm a registered nurse and have been one for several years. I'm an Associate Professor of Nursing at Grand Valley State University, and I am also a member of a research team led by Dr. Ann Rogers at the University of Pennsylvania, which is the first to systematically examine the relationship between hospital staff nurse work hours and patient safety.

The purpose of my testimony today is to share with you our findings and to encourage the use of these results as you move forward to make recommendations for improving patient safety in the State of Michigan.

As you do so, I would like to recommend that you establish a standard regarding the number of hours that hospital staff nurses work, which is no more than 12 consecutive hours during a 24-hour period and no more than 60-hours during a seven-day period.

This standard or practice should be voluntarily adopted by both health care institutions and registered nurses.

The purpose of our study was to determine the current work patterns of hospital staff nurses to quantify the amount of overtime worked and then to determine whether extended work shifts and overtime had an effect on nurse-reported errors.

Our research indicates that the more -- that the more consecutive hours nurses work, the higher the risk for error.

We found that risk for error is significantly higher when nurses work more than 12 consecutive hours, when they work beyond their scheduled shift time, and when they work more than 40 hours in a week.

More specifically, our research demonstrates that the work schedules of hospital nurses are unpredictably long. 80 percent of the shifts worked involved overtime.

Work duration, overtime, and the number of hours worked per week had a significant effect on error. We found that the likelihood of making an error was three times higher when nurses work shifts exceeded 12 and a half hours; that overtime increased the odds of making at least one error, regardless of how long the original shift was scheduled; and working more than 40 hours per week significantly increased the risk of making an error.

Our findings support the current recommendations from the 2004 Institute of Medicine report, "Keeping Patients Safe: Transforming the Work Environment for Nurses."

This report recommends exactly that, that nurses should not work more than 12 hours in a 24-hour period nor should they exceed more than 60 hours in a seven-day period. This includes both voluntary and mandatory overtime.

We believe that the establishment of these work hour recommendations as a standard of practice for both health care institutions and nurses will improve patient safety.

Further support of our recommendations comes from the industrial sector. It has been documented that within the industrial sector that shifts which exceed 12 hours are not recommended when there is a narrow margin of error, when the work is complex and risky, when the work is exhausting, is physically exhausting, when there are employee shortages, and when the work force involves a large number of single parents, all of which are characteristic of the nursing profession.

We know that performance and attention levels decrease with prolonged work periods. When individuals are fatigued, they experience inattentiveness to critical details, compromised problem-solving, and decreased reaction times.

It has also been noted in the industrial sector that accident rates rise after nine hours, double after 12 consecutive hours and triple after 16 consecutive hours of work.

Furthermore, the prolonged periods of being awake have the same neurobehavioral effects as being intoxicated.

We know that in the nursing profession that several trends have occurred that created potentially hazardous conditions for patients. High acuity levels, increasing complexity of care, and a shortage of nurses pose serious challenges for the delivery of safe, effective nursing care and contribute to long work hours for hospital staff nurses.

Being alert to subtle, discreet changes in patient conditions, making accurate clinical judgments and responding in an expedient manner are essential to providing safe nursing care.

Our research is unique that the data collected quantified nurse work hours and work patterns. Although registered nurses are the largest population of health care providers, with 60 percent employed by hospital, this is the first time that we have actually looked at the impact of hospital staff nurse work hours on patient safety.

We know that from our findings that fatigued nurses put themselves at risk, their patients at risk, and the public at risk.

It is hoped that our findings will be used to establish a standard or practice for nurse work hours. Not only is it important to have sufficient numbers of registered nurses at the bedside, consideration of the number of consecutive hours worked is also critical to ensure safe patient care. Thank you for your attention.

**Mr. Wagenknecht:** Larry Wagenknecht. The study that you were talking about, was that conducted here in Michigan or elsewhere?

**Ms. Scott:** Actually, it was a national study that went across, looked at nurse work hours across the United States.