

Research to Action

A Report from the Immigrant Worker Symposium

Action was the theme at the *Symposium on Improving Immigrant Safety and Health* held September 26-27, 2004, in Lowell, MA, a city known for its history of immigrant labor. NORA's Priority Populations Team and the University of Lowell's Department of Work Environment co-sponsored the event, which gathered almost 200 researchers, community leaders, union representatives, activists, lawyers, industry representatives, and government officials. This multinational group represented over 1,000 years of experience working to ensure the health and safety of immigrant workers.

Immigrant workers are a vulnerable segment of the workforce, suffering a disproportionately high rate of illnesses and injuries. The Lowell meeting examined the social, political, and economic factors that place foreign-born workers at high risk. Sessions focused on legal and policy barriers; language, literacy, and cultural barriers; and barriers to the reporting of work related injuries and illnesses.

However, understanding these barriers is only the first step. Participants emphasized the need for action. The Symposium discussed strategies for increasing community participation in research projects. Pam Tau Lee, a researcher from the Labor Occupational Health Program in Berkeley, CA, described a successful intervention in Las Vegas, Nevada where researchers, union officials, and workers collaborated to examine psychological and musculoskeletal stress in hotel employees. Workers were trained to administer surveys, and the group collaborated on drafting recommendations based on their research findings. Tau Lee explained that by involving the local community, her team successfully translated their research findings into health and safety solutions workers were able to adopt. She urged symposium attendees "to translate your research into action."

The conference participants are now developing recommendations for future NIOSH research that include a call for more community-based research involving immigrant workers. The conference proceedings are expected in early 2005.

Jackie Chan, from the California Department of Health, summarized the collective sentiment at the end of the meeting by noting that there was "a warm spirit about this meeting . . . It is great that NIOSH is interested in doing projects in this area and wants to incorporate individual experiences and expertise."

Dear Readers,

I am sure you will enjoy reading this issue of *NORA News*, which highlights health and safety needs of immigrant workers and those who work long hours. You will learn about a new Hazardous Drug Alert containing recommendations to protect health care workers. Finally, we describe the popular booklet that we can't keep on the shelves, *Does It Really Work?*, a practical guide for evaluating the effectiveness of health and safety interventions in workplaces. These are the accomplishments of numerous talented and dedicated NORA team members and their many partners.

At this time within NIOSH, we are interested in fully understanding the impact of NORA and are planning now for our next decade, which we refer to as NORA-2. We have been consulting with our NIOSH Advisory Board of Scientific Counselors (BSC), the NORA Liaison Committee of stakeholders, and with occupational health and safety professionals at various meetings during 2003 and 2004 regarding the nature of NORA-2. There is universal support and praise for NORA and strong encouragement to proceed to a second decade. "The process of broad stakeholder input for NORA was a success in itself, and this should be repeated," said members of our BSC. The Liaison Committee stressed the need for a fresh look to sustain enthusiasm among our partners. "You can't do 'same old...same old,' rethink the priorities and structure," said the Committee. We are taking their advice, and we are making preparations to consult nationally with our occupational safety and health stakeholders.

Each of our NORA Teams is preparing a review of the decade for the Team priority area, examining the state of the science, noting key changes, identifying NORA contributions, and making recommendations for the future. From these papers, we will prepare a document for stakeholders titled *NORA at Nine*, which will be released following NORA's ninth birthday in April 2005. *NORA at Nine* will contain a summary of each Team's review paper, discussion of gaps and lessons learned from NORA to date, and suggestions from NIOSH for consideration by our stakeholders as we work together to create the priority areas and structures of the NORA-2 decade, from 2006 to 2016.

We are planning to consult with stakeholders from June through December 2005 regarding the topics and structure and partnerships of NORA-2, both through meetings and discussions, and also via an interactive web site to allow broad input and to reach potential partners who may be new to NORA. Following decision making on the final choices, we will kick off NORA-2 at NORA's 10th birthday (and NIOSH's 35th birthday) in April 2006.

I hope all of you will take part in these deliberations.

Sincerely,

Marilyn Fingerhut

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Team Update

New Hazardous Drugs Alert for Health Care Workers

A unique partnership between NORA's Control Technology Team and the Reproductive Effects Research Team (please see profile below) has resulted in new recommendations to protect the more than 5.5 million health care workers who may be occupationally exposed to hazardous drugs in the United States. During this 4-year effort, the NORA teams worked with health care workers, researchers, government officials, and pharmaceutical companies to review existing literature and support new research on how to best protect workers who handle drugs that are known or suspected to cause adverse health effects from exposures in the workplace.

A new NIOSH Alert titled *Preventing Occupational Exposures to Antineoplastic and Other Hazardous Drugs in Health Care Settings* summarizes the group's findings. This detailed alert contains a pull-out worker fact sheet and a list of drugs considered hazardous. This list will be continuously updated on the NIOSH Web site. For more information please visit <http://www.cdc.gov/niosh/docs/2004-165> or call 1-800-35-NIOSH.

Reproductive Health Team

More than half of the children in the United States are born to working mothers, and nearly two-thirds of men and women in the workforce are of childbearing age. Yet, when the NORA Reproductive Health Research team formed in 1997, only a few large studies included occupation as a risk factor for birth defects or infertility, and only a tiny fraction of the 84,000 chemicals used at worksites had been tested for their reproductive toxicity.

With so much research needed, team leader Barbara Grajewski explains that "just simple things, like getting occupational exposures on the roadmap," can be crucial first steps for reducing workers' risk of reproductive disorders. To begin to address this need, the team of NIOSH researchers and diverse partners published a national reproductive research agenda in the June 2003 issue of *Environmental Health Perspectives*. This agenda offers recommendations to better understand and prioritize reproductive risks and the populations they affect. Key components of the agenda include

- **Understanding and prioritizing reproductive exposures.** Several team members have participated in expert panels to identify high priority chemicals needing further research.
- **Stimulating and coordinating reproductive research.** Team members have partnered with the University of

California to study boron and male fertility, and worked with CDC's National Center for Environmental Health to investigate effects of phthalate exposures on human reproduction. Team members also partnered with the NORA Control Technology team to recommend interventions to reduce reproductive risks from antineoplastic drugs among health care workers.

- **Including occupation in large epidemiologic studies.** The Harvard Nurse's Health Study and the National Children's Study now collect data on occupation as a result of involvement from team members. The large sample sizes of these landmark studies have the potential to yield more information about occupational reproductive risks than was previously possible.
- **Improving communication with workers, policymakers, employers, and researchers.** The team has launched an ambitious project with the Society of Toxicology to include reproductive risks on the Material Safety Data Sheets, the information sheets used to communicate potential chemical hazards to workers.

Team members agree their agenda is ambitious. Thousands of new chemicals, for example, are added to the workplace every year. Despite the magnitude of their task, they remain undaunted. Grajewski explains that "if we keep doing these efforts, sooner or later the message gets out that these occupational exposures affecting reproductive health matter."





9 to 5 ?

Examining Shiftwork and Overtime

Ann Feldman leaves her house at 7:15 a.m. in order to arrive at her job before 9:00 a.m., the scheduled start time at the large insurance company where she works. Each day her 40-mile commute becomes an urban expedition as traffic stalls on persistently clogged highways. Ten hours later she'll repeat this process to return home, only to spend part of her evening answering BlackBerry messages from co-workers concerned about an upcoming reorganization. By Friday she feels exhausted and overwhelmed.

Communication gadgets, productivity pressures, daunting commutes, and extended work shifts have left many people facing increased job demands and longer work days. The average couple in the United States now spends an additional 700 hours at work each year, far exceeding their counterparts in Japan and Western Europe. Not only are people working longer hours, many work night shifts in health care, security, and businesses that rely on round-the-clock production, transportation, and service.

The NORA Long Working Hours team hopes to better understand the health and safety implications of these demanding work schedules. The team partnered with the University of Maryland to sponsor *Long Working Hours, Safety, and Health: Toward a National Research Agenda*. This conference, held in Baltimore, MD, on

April 29-30, 2004, highlighted the health, social, and economic consequences of long working hours. *JAMA* covered the conference proceedings in their July 7, 2004 issue and the conference organizers expect to publish papers from the meeting in 2005.

The NORA conference coincided with the publication of *Overtime and Extended Work Shifts*, a NIOSH publication examining 52 recently published reports that studied associations between long working hours and illnesses, injuries, health behaviors, and performance. Though researchers caution more studies are needed, early findings suggest there may be reason for concern.

Health and Safety Consequences of Long Working Hours

The NIOSH review revealed that overtime was associated with poorer perceived general health, increased injury rates, more illnesses, or a rise in mortality. Workers also experienced increased health complaints, declining performance, or slower pace of work when 12-hour shifts were combined with other work-related demands, such as hot work environments, high workloads, or early start times. Previous research suggests that shiftworkers may be a particularly vulnerable segment of the workforce, because the risk for workplace errors and accidents increases at night when sleep has been lost.

Biological Clock and Sleep Need

According to NIOSH researcher Claire Caruso, PhD, RN, understanding the health and safety impact of work schedules begins with basic science about our biological clock and sleep. "From scientific information about the biological clock, we know that humans are day active," she explains. "We're hardwired biologically to be active during the day and to sleep at night."

Each day the human body experiences a careful "orchestration" of "numerous rhythms including the sleep/wake cycle, body temperature, hormonal rhythms, and others." The body synchronizes these rhythms by responding to external cues, like the rising and setting of the sun. These circadian rhythms waken us in the morning, make us ready for activity and eating, and then help us to fall asleep at night. When jobs require workers to be active at night, Caruso states the work schedule goes against human physiology, which can result in fatigue, injuries, or decreased job satisfaction.

Research findings about sleep also are important when considering work schedules. Essential processes that occur during sleep repair the body, fight pathogens, and imprint memories of learning that occurred during the day. Individuals need enough sleep time to allow these vital processes to occur. Very long working hours will restrict sleep time, which leads to sleep deprivation and the resulting health and safety risks.

"It's not desire. It's not entirely motivation," explains Caruso. "We need to recognize conflicts between work schedules and our physiology and figure out ways to schedule work that meets the needs of society and also is compatible with our basic needs for sleep and rest."

The NIOSH Stress Page contains more information about long working hours research. For more information, please visit <http://www.cdc.gov/niosh/topics/stress>.

To learn more about team, please visit the NORA Web page at <http://www2a.cdc.gov/nora> and click the Organization of Work Team.

Tips

Due to the potential health and safety risks, the National Institute for Occupational Safety and Health (NIOSH) recommends considering alternatives to shiftwork when possible. In times when shiftwork cannot be avoided, NIOSH's publication *Plain Language about Shift Work*, provides the following suggestions:

- **Keep consecutive night shifts to a minimum:** Some researchers suggest that only two to four nights in a row should be worked before a couple of days off. This keeps the circadian rhythms from being overly disturbed and limits sleep loss.

- **Avoid quick shift changes:** Research suggests a break of 24 to 48 hours is needed to transition from an early morning shift to a night shift. Most people feel very tired and sleepy on returning to work after a quick change, such as less than 10 hours.

- **Plan some free weekends:** If a seven-day-a-week schedule is required, allow one or two full weekends off each month so workers can reconnect with family and friends.

- **Avoid several days of work followed by 4 to 7 day "mini-vacations:"** Working several days in a row followed by several days off can be very fatiguing, especially for older workers.

- **Consider different lengths for shifts:** Try adjusting shift length to the workload. Heavy physical or mental work or monotonous boring work is especially difficult at night.

- **Examine start-end times:** Flexible start-end times, or "flextime," can be useful for those with childcare needs or a long commute time. Consider moving shift start-end times away from rush hour. Morning shifts should not start too early (5 to 6 a.m.) because night sleep often is cut short before an early shift.

- **Examine breaks:** Sometimes the standard lunch and coffee breaks are not enough to recover from fatigue. In jobs requiring repetitive physical work or intense concentration, brief rest breaks each hour seem to be best for recovery from muscle fatigue.



Does It Really Work?

NORA Team Promotes Effectiveness Research

Does It Really Work? How to Evaluate Safety and Health Changes in the Workplace is the latest publication of the NORA Intervention Effectiveness Research Team. This straightforward guide is designed to motivate nonresearchers in any workplace to measure the impact of their occupational safety and health efforts. Readers will learn how to form an evaluation team, collect relevant data, analyze their results, and share findings with those affected by changes. *Does It Really Work?* also includes several case studies from diverse worksites.

Team co-leader Ray Sinclair hopes the guide will illustrate the importance of knowing what to study and how to measure impact. He explains that without careful evaluation organizations easily can be deceived about the effectiveness of their safety and health interventions. A worksite, for example, may implement a policy requiring the use of safety shoes, and conclude the shoes are preventing injuries if slip and fall rates decline. This interpretation is one possibility, Sinclair explains, but if floor washers also started using signs to mark wet floor areas and the safety department conducted a poster campaign for preventing slips, then the organization might not know exactly what caused the decrease in injuries – the shoes, the signs, or the posters. Sinclair hopes recommendations outlined in *Does It Really Work?* will enable organizations to protect their workers and better use their resources.

For a free copy of the booklet, please visit <http://www.cdc.gov/niosh/pubs.html> or contact the NIOSH publication office at 1-800-35-NIOSH.

This list contains a selection of new NORA area publications available through NIOSH. To receive a free copy, visit the NIOSH Web site at <http://www.cdc.gov/niosh/pubs.html> or call 1-800-35-NIOSH.

Worker Health Chartbook, 2004

The *Chartbook* includes more than 400 figures and tables describing the magnitude, distribution, and trends of occupational injuries, illnesses, and fatalities in the United States. An essential resource for agencies, organizations, employers, researchers, students, workers, and others who need to know about occupational injuries and illnesses.

NORA Area: Surveillance Research Methods

Work-Related Roadway Crashes: Who's at Risk?

A fact sheet containing statistics about roadway crashes, which are the leading cause of occupational deaths in the United States. Recommended for general audiences.

NORA Area: Traumatic Injury

Asthma among Household Youth on Minority Farm Operations

A fact sheet describing asthma, its triggers, and how to prevent it. Recommended for farm owners and operators, parents, teachers, and community groups.

NORA Areas: Priority Populations and Asthma

Injuries to Youth on Minority Farm Operations

A fact sheet describing how to create a safe environment for youth who work on farms. Recommended for farm owners and operators, parents, teachers, and community groups.

NORA Areas: Priority Populations and Traumatic Injury

Issues Related to Occupational Exposure to Isocyanates, 1989 to 2002

A document summarizing 14 years of isocyanate-related health hazard evaluations in a concise format for easy reference. Recommended for those with an interest in research.

NORA Area: Asthma

Safe Work for Youth in Construction—Information for Employers

A fact sheet for employers describing tips for preventing traumatic injuries. Recommended for employers and safety officials.

NORA Areas: Traumatic Injury and Priority Populations

Nanotechnology and Workplace Safety and Health

A fact sheet describing NIOSH's nanotechnology efforts.

Recommended for general audiences.

NORA Area: Emerging Technologies

Preventing Falls of Workers Through Skylights and Roof and Floor Openings

An Alert describing five deaths resulting from falls and recommendations for prevention. Recommended for those with an interest in research and policy.

NORA Area: Traumatic Injury

Conference Proceedings: Prevention of Musculoskeletal Disorders for Children and Adolescents Working in Agriculture

This NORA Musculoskeletal Team document provides a summary of a research recommendations to prevent musculoskeletal injuries in children.

Recommended for those with an interest in research and policy.

NORA Areas: Musculoskeletal and Special Populations

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**A long day at work ahead of you?
You're not alone. NORA News explores
the health and safety effects of long
working hours. See pages 2-3.**