

# Healthy Aging for a Sustainable Workforce



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## A Conference Report

November 2009

Investing in balancing work, health, and family to increase productivity, strengthen working families, and improve security for the future through anticipating the health and safety needs of an increasingly aging workforce.

## Conference Video and Visual Presentations

A video of conference highlights is available at [www.aoec.org](http://www.aoec.org).

Video and visual presentations of the plenary sessions (i.e. Power Points and summary papers) are available for viewing at [www.soeh.org](http://www.soeh.org).

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## Preface

“The new ‘retirement’ plan: Just keep working”<sup>1</sup>

“Worker, 78, Is Freed From Trench After Its Collapse”<sup>2</sup>

In 1999, the National Institute for Occupational Safety and Health (NIOSH), in cooperation with the National Institute on Aging (NIA), requested the National Academy of Science (NAS) form a Committee on the Health and Safety Needs of Older Workers to 1) define the dimensions of the older adult workforce over the next 20-30 years, 2) identify the range of policy and research issues that should be addressed, and 3) identify relationships between retirement patterns and these characteristics of the older adult workforce and of their jobs. The NAS Committee, chaired by David Wegman, University of Massachusetts at Lowell, made their comprehensive report in 2004 and we looked forward to federal initiatives to address their compelling recommendations.

Unfortunately, we have seen little movement toward addressing the Wegman report findings at the national level, and the baby boom cohort (those born between 1946 and 1964) continues on toward retirement age. With the 2008 economic crisis, the decimation of millions of retirement plans and the coinciding loss of home value from the imploding housing market, it became clearer than ever that baby boomers would stay in the workforce longer than earlier predicted. We had anticipated that many workers would stay at work longer because they wished to remain active. We now anticipate many more will remain in the workforce longer because they must in order to survive economically. The Association of Occupational and Environmental Clinics (AOEC) and the Society of Occupational and Environmental Health (SOEH) had a long standing interest in the topic of healthy aging of workers, and therefore submitted our plans for a conference with the objective to validate and encourage implementation of the 2004 NAS report.

The conference and the following report are the culmination of that effort. Conference participants strongly stressed placing emphasis on the health and well-being of **all** workers throughout their working lifetime, including addressing the urgent need to give particular attention to older workers.

The executive summary that follows here and the online video clips ([www.aoecdata.org/AoecVideos.aspx](http://www.aoecdata.org/AoecVideos.aspx)) capture the main points of the National conference. This entire report, power point presentations, and video clips will be posted on the web with links organized according to the conference program (see [www.soeh.org](http://www.soeh.org)).

We thank NIOSH and CPWR-The Center for Construction Research and Training (CPWR) for financial support and the U.S. Veteran’s Administration (VA) for its in-kind contribution of videotaping the plenary proceedings.

We also wish to express our appreciation to our other co-sponsors, AARP, the Occupational Safety and Health Administration (OSHA), the American Public Health Association (APHA), and the Work and Health Research Center (WHRC) at the University of Maryland School of Nursing for their contributions. We thank Earl Dotter for his wonderful photographs of older workers used to illustrate the true reason for the conference. We give many thanks to many of the individuals who made this conference a success. In particular, thanks to Paula Wilborne-Davis, MPH, CHES of AOEC, to Sarah Schiffert of SOEH, to the staff of the National Labor College and to Jim Kerkhoff, Executive Producer, his video editors and camera crew of the VA. We also wish to thank Pete Stafford and the staff at CPWR – Center for Construction Research and Training for their dedication and assistance with the conference.

Finally, we appreciate the commitment of the conference planning committee. We are particularly grateful to Deborah Weinstock, MDB, Inc., who kept us all on track as chair of the planning committee and to Greg Wagner of NIOSH both for acting as conference chair and for his thoughtful suggestions in writing the executive summary. Other members of the planning committee included Jim Grosch of NIOSH, Sara Rix, AARP, Michael

1 <http://today.msnbc.msn.com/id/32086450> updated 8:04 a.m. ET, Wed., July 29, 2009'

2 Washington Post, 2008 March 23 Headline, p. C5

Hodgson of the VA, Sue Dong and Jim Platner of CPWR, Kate McPhaul and Jane Lipscomb of the University of Maryland School of Nursing, Mick Smyer, Bucknell University, and Michael Silverstein of the University of Washington. Finally, we are deeply indebted to David Wegman of the University of Massachusetts-Lowell for his leadership and commitment to the health and safety needs of older workers.

Katherine Kirkland  
Executive Director, AOEC

Denny Dobbin  
President, SOEH

## Executive Summary

The Healthy Aging for Workers conference held February 17-18, 2009 at the National Labor College in Silver Spring, Maryland resulted in the following findings:

- All workers are aging, but those that are older continue to grow as a proportion of the working population.
- As the available-worker population changes, many employers have jobs for which they want to attract and retain more experienced workers.
- U.S. workers are living longer than ever before and many are staying in the workforce past age 55. The current economic crisis puts great pressure on workers' families and their retirement plans, often forcing older workers to postpone retirement and stay longer in the workforce.
- The consequences of injury are, on average, more severe for older workers. Older workers more frequently sustain severe injuries than younger workers and require more days away from work to recover. Death resulting from work-related injuries occurs at higher rates among older workers than younger workers.
- Current knowledge about keeping older workers safe and healthy at work is insufficient. Yet enough is known to mount campaigns to improve protections to support the health and well-being of the current and growing numbers of aging workers.
- The February 17-18, 2009 Conference on "Healthy Aging for Workers" validated the recommendations of the earlier 2004 National Academies of Science panel report on "Health and Safety Needs of Older Workers" and made the following recommendations:
  - » More research is needed to understand how to prevent work-related injury, illness, and fatality among aging workers.
  - » Data systems necessary to track the health and safety of aging workers and the programs that address them must be improved.
  - » Knowledge gaps need to be filled to better understand the physiochemical, biological, biomechanical, and psychosocial factors that affect aging workers;
  - » Evaluation research is needed to determine the aspects of policies, programs, and intervention techniques and strategies that are effective and those which are not effective in addressing the health and safety of aging workers.
  - » Target policy to help maintain work ability as workers age including attention to:
    - Quality and safety of the work environment;
    - Public and private insurance designed to encourage prevention and wellness;
    - Flexible work arrangements to achieve work-life balance;
    - Social context of work (commuting, family, appropriate technology, etc.).
  - » Better enforcement of existing law and new legislation to:
    - Provide tax credits for employers maintaining a tax-qualified pension or retirement plan and health insurance;
    - Promote labor force participation of older Americans;
    - Encourage use of appropriate formal, flexible work programs;
    - Update the Employee Retirement Income Security Act of 1974 (ERISA) to increase availability of COBRA\* and the Workforce Investment Act to improve training opportunities for older workers.

Focusing on the health and well-being of **all** workers throughout their working lifetime will address the needs of older workers; however, due to the rapidly increasing numbers of older workers in the workforce there is an urgent need to give particular attention to understanding and addressing the needs of older workers now.

\* COBRA means Title X of the Consolidated Omnibus Budget

Reconciliation Act of 1985, as amended. COBRA gives workers and their families who lose their health benefits the right to choose to continue group health benefits provided by their group health plan for limited periods of time under certain circumstances such as voluntary or involuntary job loss, reduction in the hours worked, transition between jobs, death, divorce, and other life events. Qualified individuals may be required to pay the entire premium for coverage up to 102 percent of the cost to the plan. See <http://www.dol.gov/dol/topic/health-plans/cobra.htm>



## Introduction

Older workers are growing in numbers and as a proportion of the working population, creating significant economic, health, and social challenges in the U.S. and internationally.

Worldwide, as the baby boom generation grows old enough, they begin to leave the workplace either by necessity—they are no longer able to work at their usual job—or by choice. Because of concerns about the loss of experienced and skilled workers with too few available replacements, and because of the recent economic downturn that has decimated many retirement funds, many older-workers opt not to leave their jobs.

Here, and in other industrial nations, employers increasingly try to keep more experienced workers in the workplace longer. Meanwhile workers worldwide are facing employment uncertainty and stress due to rising unemployment during the current (2008-2009) economic crises.

Assuring conditions at work that allow aging workers to continue to engage productively is a sound economic and social policy. First, continued employment reduces the economic and social dependence of aging citizens. Older workers contribute to economic growth and increase governmental revenues through the taxes they will pay, helping to defray some of the anticipated costs associated with increased claims on Social Security and Medicare. Promising studies show that the longer workers remain mentally and physically engaged the better their well-being and the longer they are likely to live (GAO-07-433T). The primary prevention of work-related injuries, illnesses, and fatalities extends to all workers; but for older workers extend health and well-being through working years and beyond is of additional import.

A 2004 National Academy of Science report entitled “Health and Safety Needs of Older Workers” made comprehensive recommendations for research needed for protecting the health and safety of older workers (NRC, 2004). Little has yet been done to implement these recommendations. This 2009 conference re-explored the issues raised in the NAS report and confirmed the 2004 recommendations.

It is within this context that experts from academia, labor, industry, and government gathered to consider the health and safety needs of workers as they age.

## Background: Definitions & Demographics

There is no standard definition of ‘older’ or aging worker. The U.S. Department of Labor uses >40 years in some statistics, while some Bureau of Labor Statistics (BLS) stratifications use >45 years for injury and illness reporting. The AARP defines this as 50 years or older; the U.S. Office of Aging describes older ‘citizens’ as older than 55 years; and the United Nations recognized this group as 60 years or older. Baby boomers are generally described as those born between 1946 and 1964.

The proportion of the U.S. population of people age 65 and older is projected to increase from 12.4 percent in 2000 to 19.6 percent in 2030 and continue to grow through 2050. In part this is due to increases in life expectancy. The average lifespan for men who reach age 65 is projected to increase from just over 13 years in 1970 to 20 years in 2020. While life expectancy has increased, workforce participation rates of older workers has not increased proportionally, thus workers are spending more years in retirement. Meanwhile, relatively low fertility rates contribute to the growing proportion of the elderly and the growth of the workforce. Also, contributing to the slowing of the workplace growth is the leveling off of women’s labor force participation rate. While women-related rates increased between 1950 at 30 percent and 2000 at 47 percent, their share of the labor force is projected to remain at about 48 percent. By 2025 labor force growth is expected to be less than 20 percent of what it is today.

The aging of the population may strongly affect the economy. A slowing workforce growth means fewer workers will be available to produce goods and services, slowing the potential for economic growth. Lacking advances in productivity or higher rates of immigration, low workforce growth means Medicare and Social Security resources will be strained while there will be fewer workers paying into the benefits system.

As workers live longer and spend more years in retirement, greater stress will be placed on their retirement income. More years of retirement must be financed to prevent them from running out of retirement income. About half of U.S. workers lack pension plans through their employers and those that do are increasingly covered by defined contribution plans. As we have seen in the current economic crisis, invested retirement funds are inadequate, which means many workers will have to work longer (GAO-07-433T).

Unemployment disproportionately affects workers 55 and older. When the recession began in December 2007, older workers accounted for 11.1 percent of the total unemployed but in November 2008 that share had leapt to 13 percent with more than 1.3 million older workers looking for work but unable to find a job (EPI Issue Brief #251, 2009).

Some older workers will work past retirement age because they want to. Some will work longer because their retirement resources are inadequate and they will have to. All who work longer will continue to be at risk of harm from uncontrolled workplace conditions. While older workers experience similar events leading to injury, they sustain more severe injuries than younger workers and require more days away from work to recover. Further, older workers die more frequently from workplace injuries (BLS, 2005).

## Critical Sectors

Examples of the health and safety needs of older workers are taken from two significant work sectors: construction and health care. Both sectors are pillars of the U.S. economy and significant to the future. In the near term construction workers will rebuild national infrastructure in the U.S. including the housing, transportation, public, and commercial structures needed to sustain our changing society. Health care is among the fastest growing areas of employment partly because of improved medical technology and facilities and in anticipation of the health needs of the aging baby-boom generation. Both sectors include older workers who may work longer and a need for younger workers to take care of the special needs of an aging population that is increasing in size and in proportion of younger members of the population.

## Findings for Construction Workers

Construction represents a special case in that employment is often mobile and varied. Construction projects are time-limited and phased so workers are employed for a period then must look for other work. Construction workers often work out of hiring halls locally where job availability and job sites may frequently change. They sometimes must travel to other regions in the country as economic conditions change causing demand for local jobs to be scarce but plentiful in distant locations. Mobility demanded by construction work among a variety of constantly changing job sites and employers presents difficulties in communicating with and tracking health and benefits for construction workers.

Construction has grown considerably in the past decade. U.S. construction employment has increased to 11.8 million in 2007 from 7.0 million in 1992 (Dong, 2009). Although national data is not yet available for the most recent two years, construction employment losses in the current recession are expected to exceed a million workers. Most of these are losses from the nonunion sector.

Meanwhile, construction workers are getting older and staying in their jobs longer. The average age of construction workers was 39.5 in 2007, which is 3.5 years older than in 1985. Median age in construction was 39.0 in 2007, up from 34.0 in 1985. The average age of the U.S. workforce was 40.9 in 2007, compared with 37.3 in 2007 (Dong, 2009). The younger age distribution among construction workers may be explained by the extremely hard physical demands of construction jobs that are often unsustainable with age. Recent Current Population Survey (CPS) data for 2008 indicate that the number of Hispanic workers is declining and the average age is rising (i.e., from 39.5 in 2007 to 40.2 in 2008) (Dong, 2009).

Construction workers are putting off retiring. Average retirement age in construction has increased to 61.4 in 2006 from 59.3 in 1994 (Health and Retirement Survey, 1994-2006) (Dong, 2009).

Anticipated increased economic growth in the next decade will increase demand for more skilled construction workers. For instance, in the period of 2006-2016 construction employers will need 282,263 laborers, 255,558 carpenters, 140,316 electricians, 124,558 plumbers, and 107,902 operating engineers as new workforce entrants. On average, 390,000 new construction workers will be needed annually in the next decade, but currently there are fewer than 100,000 registered apprentices enrolling in construction training programs annually. Scarcity of qualified skilled construction workers plus uncertain retirement support will keep many older construction workers working longer (BLS Current Population Survey, 2006) (Dong, 2009).

Older construction workers are increasingly at risk. The rate of fatal injuries in construction is higher among workers +55 years of age. For instance, there were 5.2 fatalities per 100,000 full time workers for falls among workers 55 and older compared to 3.1 fatalities per 100,000 full time workers in the age group 15-34 years and 3.9 fatalities per full time 100,000 workers in the age group 35-54 years (BLS Current Population Survey and BLS Census of Fatal Occupational Injuries) (Dong, 2009).

Older construction workers often lack health insurance. Approximately 613,000 construction workers who are 50 years or older, lack health insurance (Current population survey, March supplement, 2007) (Dong, 2009).

## Findings for Health Care Workers

Health care workers are an aging workforce. The health care professions not only require new workers to replace those leaving this workforce but must include additional workers to fill the demand for health services resulting from the increasingly aging population.

Health care cost-containment has meant longer work hours and increased stress among health care workers. These conditions have led to a shortage of nursing staff (Joint Commission on Accreditation of Health Care Organizations, 2002).

Thirty-nine percent of Registered Nurses (RN) are 45 years or older compared to the average of thirty-four percent for all jobs (Dohm, 2002). The average age of an RN is 47 years.

The Health Care and Social Assistance (HSCA) Sector has four subsectors including:

- Ambulatory care services - 6.1 M
- Hospitals - 5.7 M
- Nursing and residential care services - 2.5 M
- Social assistance - 3.1 M

The social assistance subsector includes child day care services (1.56M), individual and family services (1.28M), vocational rehabilitation services (0.18M); food and housing and emergency services (0.12M) for a total of 3.14M workers.

The HSCA sector includes a total of 17.4 M which is 12 percent of all workers in the U.S. Still there is a global shortage of health care workers.

More than sixteen percent of all reported nonfatal workplace injuries and nearly twenty-one percent of all nonfatal illnesses are reported in the HSCA sector (BLS, 2005 a, b and c).

Incidence rates of nonfatal occupational injuries are higher than private industry (e.g., 4.2 vs. 5.4 per 100,000 full time workers in 2006) (NORA 2009).

Incidence rates of nonfatal occupational illnesses are also higher than private industry (e.g., 24.6 vs. 40.0 per 100,000 full time workers in 2006) (NORA 2009).

Researchers' definitions of older worker varies for the HCSA Sector, ranging from >45 to >55 years but may depend more on the type of work.

The impact of normal aging on health care workers includes:

- Physical and cognitive factors (e.g., lifting patients, calculating medication doses);
- Injuries (e.g. back injuries, slips);
- Balance (e.g., standing, walking with patients);
- Vision (e.g., computer terminals, small print, handwriting);
- Hearing (e.g., loud environments, overhead pages);
- Strength and endurance (e.g. lifting; long hours);
- Work and life balance (e.g. grandchildren, spouse work or disability, care for elderly parents).

A study of health care worker shift work and age found occupational injury rates were higher on night shifts and that injury rates increase with successive night shifts. Although these injuries were fewer, they were also more serious among older workers. These findings are suggestive that older workers are at higher risk of injury on night shifts (Folkard, 2008).

A 2006 survey conducted on 308 RNs >50 years in a 2 state sample in which 47 percent worked on average 9.4 hours per day and 36.4 hours per week, with an average of 28 years in nursing. Thirty-six percent of these reported work-related health problems and 23 percent reported work-related injuries over the past 5 years. Older RNs, however, reported better physical and mental health than the national norm (Levtak, 2006).

In a study of age and work schedule in 2,273 RNs, the average age was 45 years with 36.6 percent older than 50 years. Of the >50 year and older group, 47.4 percent reported working > 8 hours per day and 34.9 percent worked > 40 hours per week. Nearly 70 percent worked 4-5 days per week and 51.2 percent worked one or more weekend day per month. Fourteen percent reported working 13 hours or more per day at least once a week or more. This is considered the norm. This leads to concern about personal and patient safety (Trinkoff, 2006).

Impressions reported include:

- HSCA workers will need to work until an older age to meet workforce shortages.
- Older workers are working similarly long hours as younger workers.
- Older RNs may be avoiding some physical demands.
- Older workers contribute skills and experience to care giving.
- Positive and flexible work organization may assist in retaining older workers in the HCSA sector.

## Moving Forward: The Concept of Workability

One way to understand how to sustain a healthy workforce among aging workers is through the concept of “workability.” Workability includes diverse factors affecting work ability and employability of aging workers. It also includes assessment of the ability to work in different occupations, and the matching of physical and cognitive capabilities with job demands. The worker’s capabilities are evaluated in the context of the nature of work itself including work demands, content, and organization. This concept arose from research in Nordic countries and presents a promising line of research and practice.

## Public Policy Options for an Aging U.S. Workforce

The aging of the baby boom generation with variably improved health status and increasing longevity that is afforded by medical technology advances and better living conditions present societal challenges. These must be addressed through public policy development. Dated current public policy is largely framed by the Employee Retirement Income Security Act (ERISA) of 1964 and the Age Discrimination in Employment Act (ADEA) of 1967, and is based on societal expectations following World War II. Yet these may be inadequate to meet societal expectations, geo-political demands, and economic conditions of the 21<sup>st</sup> Century.

Business, political, and other opinion leaders have recognized for some time that workers approaching retirement age in this generation will play a greater role in policy debates in the coming years than previously. Yet little has been done to prepare for anticipated labor and skills shortages, and for the imbalance between the number of active workers contributing to social security and private pension systems. This is also complicated by the rate of the increasing number of older workers retirement in the future. These issues must be addressed to sustain our societal goals of both healthy workplaces and healthy aging.

Four possible approaches may be considered to sustain our near term economic and societal goals:

- increase immigration of young workers, both skilled and unskilled,
- outsource work to international labor markets,
- increase reliance on automation and advanced technology, and/or
- delay retirement and retention of older workers.

Of these options, the first three address some business concerns but fail to meet the needs of presently employed aging workers who confront age-related physical and cognitive changes. These workers must choose between continuing to work if they can and retiring from work in an era of escalating health care cost and diminished pension security.

The fourth approach of delaying retirement is moderated by business decisions concerning competitiveness, skill retention, and pension and health care cost. Factors that may affect workers' delaying retirement include: the recent trend of movement to defined contribution plans from defined benefit plans and the subsequent down turn of the economy; a desire to remain active; and elimination of retirement health benefits. Factors that may make it difficult to work longer include: barriers in pension plan; short-coming in training programs; and family care-giving commitments.

In developing public employment/retirement policy we need to consider possible adverse consequences, i.e., how policies are framed for keeping older workers employed may affect worker benefits, and equity, i.e., employer discrimination against workers who may have strong needs to work longer. It should be noted that to date ADEA has been ineffective in preventing discriminatory practice arising from ERISA. We also need to consider how to ensure workers who wish to, or must, work past traditional retirement age are able to.

Policy should also consider four dimensions of work life that can help maintain work ability as workers age and can prolong the period during which they can continue to work safely and productively. These include:

- Work environment including: cognitive function, work organization, ergonomic and other human factor programs;
- Disease prevention and health promotion, including: attention to the five chronic diseases more common with aging; workplace wellness programs; health insurance that encourages prevention; change Medicare rules to not discourage work after 65;
- Flexible work arrangements to achieve work-life balance, including the ability to receive pension payment before 62 while still working part-time; the ability to reduce working hours in late career without a reduction in eventual pension benefits; and the continued eligibility for health care and other benefits if working hours are reduced in late career;

- Social context of work including: meeting transportation needs; addressing evolving family needs; rebuilding infrastructure to accommodate the aging working population; allowing older workers with very old parents to continue working.

## Current Legislative Activity/Opportunity

Current legislative activity provides the potential to apply the above strategies and considerations. Below are updates of the legislation discussed at the conference.

The Older Worker Opportunity Act of 2009 (S.502) was introduced on February 27, 2009 in the 111<sup>th</sup> Congress. This bill would promote labor force participation of older Americans, with the goals of increasing retirement security, reducing the projected shortage of experienced workers, maintaining future economic growth, and improving the Nation's fiscal outlook ([www.GovTrack.us](http://www.GovTrack.us)). It allows a tax credit for employing older workers in flexible work programs:

- Amends the Internal Revenue Code to allow employers who maintain a tax-qualified pension or retirement plan and who provide health insurance coverage a business-related tax credit for 25 percent of the first \$6,000 of the wages of employees who have attained the age of 62 and who are participating in a formal flexible work program.
- Defines "formal flexible work program" as a work program (1) that consists of core and flex time; (2) whose core time does not exceed 20 hour per week, three days per week, or 1,000 hours per year; (3) that allows participation for at least one year; and (4) that does not permit a change or reduction in the health care or pension benefits of the participating employee.

The Health Care and Training for Older Workers Act (S281) was introduced on January 16, 2009 in the 111<sup>th</sup> Congress. It would amend the Employee Retirement Income Security Act of 1974 (ERISA) to extend COBRA continuation coverage for certain older workers. It also amends the Workforce Investment Act of 1998 to revise (1) statewide employment and training activities, adding developing strategies for serving hard-to-serve populations and coordinating programs among one-stop partners; (2) local employment and training activities, with respect to intensive services and training services, and adding customer support for members of hard-to-serve populations, including individuals with disabilities; and (3) performance measures, data and reporting ([www.GovTrack.us](http://www.GovTrack.us)).

In addition, existing laws may need more effective enforcement. For instance, the Age Discrimination in Employment Act of 1967 (ADEA), which covers workers aged 40 and older, is administered by the Equal Employment Opportunity Commission (EEOC). While ADEA protects against discrimination in both hiring and work practices, enforcement has primarily concentrated on complaints about hiring practices (i.e., unfair termination from work). Now, as older workers seek to stay longer in their jobs, complaints are expected to increase about unfair work practices (e.g., flexible work arrangements, retirement options, physical and cognitive stresses, chronic illness, etc.). Discrimination in hiring and work practices may be difficult to prove without adequate monitoring systems in place at the local, state, and national level because of the difficulties in identifying an affected class of workers.

## Conclusions

- All workers are aging, but those that are older continue to grow as a proportion of the population.
- As the available worker population changes, many employers have jobs for which they want to attract and retain more experienced workers.
- U.S. workers are living longer than ever before and many are staying in the workforce past age 55. The current economic crisis puts great pressure on workers' families and their retirement plans by forcing older workers to postpone retirement and stay longer in the workforce.
- Both older and younger workers have similar frequency of work-related injury and illness, but the consequences of injury are, on average, more severe for older workers. Older workers more frequently sustain severe injuries than younger workers and require more days away from work to recover. Older workers die as a result of work-related injury at higher rates than younger workers.
- Current knowledge about keeping older workers safe and healthy at work is insufficient. Yet enough is known to mount campaigns to protect the health and well-being of the current and growing numbers of aging workers.
- Reports presented at the February 17-18, 2009 Conference on "Healthy Aging for Workers" validated the recommendations of the earlier 2004 National Academies of Science panel report on "Health and Safety Needs of Older Workers" and made the following recommendations:
  - » More research is needed to understand how to prevent work-related injury, illness and fatality among aging workers.
  - » Data systems necessary to track the health and safety of aging workers and the programs that address them must be improved.
  - » Knowledge gaps need to be filled to better understand the physiochemical, biological, biomechanical, and psycho social factors that affect aging workers.
  - » Evaluation research is needed to determine the aspects of policies, programs, and intervention techniques and strategies that are effective and those which are not effective in addressing the health and safety of aging workers.

Policy for appropriate and fair treatment of older workers requires development in three areas:

- Encouraging longer careers through rewarding delayed retirement instead of penalizing early or traditional retirement;
- Anticipating and preventing age discrimination in the workplace;
- Ensuring that those workers who choose to work longer are able to do so in work environments that enhance their work ability, safety, and health.

Focusing on the health and well-being of **all** workers throughout their working lifetime will ultimately address the needs of older workers; however there is an urgent need to give particular attention to understanding and addressing the needs of older workers now.

## Recommendations

The conference agrees with findings and recommendations of the 2004 NAS report on "Health and Safety Needs of Older Workers." More research should be supported to:

- Conduct informative research. This requires improved data base and data systems necessary to track the health and safety needs of older workers and the programs that address them.

- Provide better understanding of the factors that relate to the health and safety needs of older workers. This includes research on the physiological, pathological, and functional effects of common and potentially harmful worksite exposures – physiochemical, biological, biomechanical, and psychosocial – on older workers.
- Identify and clarify the aspects of policy, program, and intervention techniques and strategies that are effective and ineffective in addressing the health and safety needs of older workers.



## Conference Discussion Papers and Resources



## Overview of NAS report findings:

Health and Safety Needs of Older Workers  
Committee on the Health and Safety Needs of Older Workers  
David H. Wegman and James P. McGee, Editors  
National Academy Press, 2004

### Conclusions and Recommendations

Chapter 9 of this report summarizes conclusions and presents detailed recommendations pertaining to three major themes that emerge from examination of the health and safety needs of older workers as follows:

***(1) Conducting informative research requires improved databases and data systems necessary to track the health and safety needs of older workers and the programs that address them.***

- New longitudinal datasets should be developed that contain detailed information on workers' employment histories and the specific demands of their jobs, as well as objective information on the health and safety risks to workers on the job.
- Ongoing longitudinal surveys (for example, the Health and Retirement Study and the Panel Study of Income Dynamics) should either increase the information they gather on health and safety risk factors of the workplace or develop periodic modules to do so.
- The National Institute for Occupational Safety and Health (NIOSH) should collaborate with the Bureau of Labor Statistics (BLS) in conducting a comprehensive review and evaluation of occupational injury and illness or disorder reporting systems, examining the extent of, and trends in, underreporting and under-ascertainment.
- NIOSH should develop a database that characterizes types and levels of exposures associated with work; exposures considered should include chemical, physical, biomechanical, and psychosocial factors.
- The BLS should initiate reporting of workplace injury and illness or disorder rates according to demographic characteristics (for age, gender, and ethnicity at a minimum).
- The National Center for Health Statistics (NCHS) and NIOSH should develop a survey supplement on work risk factors and occupational disorders for periodic inclusion in the National Health Interview Surveys.
- The NCHS and NIOSH should collaborate in an effort to identify, using the National Health and Nutrition Examination Survey, subpopulations of older workers where chemical exposure is likely to be an important work risk factor and to develop a list of chemicals to be included in surveys of such populations in the future.
- NIOSH and the Department of Labor (DOL) should collaborate and be funded to develop a survey instrument and periodically conduct surveys to describe the prevalence of and trends in job characteristics and other workplace risk factors in a manner similar to the Quality of Employment Surveys.
- Enhanced efforts should be devoted to achieving a comprehensive, interactive O\*NET database as quickly as possible.

***(2) Research is needed to provide better understanding of the factors that relate to the health and safety needs of older workers.***

- Substantial research should be conducted on the physiological, pathological, and functional effects of common and potentially harmful worksite exposures—physiochemical, biological, biomechanical, and psychosocial—on older workers.
- A research program should be conducted to provide systematic and substantial understanding of the effects of potentially harmful workplace exposures on individual and population outcomes among older workers with existing chronic conditions.
- Targeted research should be undertaken to identify the extent to which, and mechanisms whereby, socioeconomic and demographic variables are related to health and safety risks of older workers; the degree to which these variables predict employment in hazardous occupations and industries; and how they may be associated with retirement decisions and barriers.

***(3) Research is needed to identify and clarify the aspects of policies, programs, and intervention techniques and strategies that are effective and that are not effective in addressing the health and safety needs of older workers.***

***Evaluation research should be conducted to determine the degree to which public policies intended to enable workers to remain at work safely and productively have met these objectives specifically with regard to older workers.***

- For promising job design, training, and workplace accommodation interventions, research should be conducted to determine the prevalence, effectiveness, and associated costs of intervention.
- Research should be conducted to assess the effectiveness, benefits, and costs of worksite health promotion programs and techniques tailored to older workers.
- Research should be undertaken to assess the full (direct and indirect) costs of older workers' occupational injuries and illnesses or disorders to individuals, family, and society.

Requisite funding for these efforts should be provided.

## Occupational safety and health issues among older workers

Bureau of Labor Statistics Office of Safety and Health Statistics  
Elizabeth Rogers

The presentation I gave explored data on workplace injuries, illnesses, and fatalities among older workers and was based on an article published in the *Monthly Labor Review* in October 2005. Data from the Bureau of Labor Statistics Survey of Occupational Injuries and Illnesses and Census of Fatal Occupational Injuries provide a wide range of information about occupational injuries, illnesses, and fatalities.

The Survey of Occupational Injuries and Illnesses provides the number of workplace injuries and illnesses and the rate of such incidences, based on full-time equivalent workers. Data are available for most private-industry workers. For cases that involve days away from work, which are generally considered the most serious cases, the survey also provides detailed demographic data on the worker involved and detailed characteristics of the case, such as the event that precipitated the incident and the part of body affected. Nonfatal data included in the presentation were from 2007.

The Census of Fatal Occupational Injuries provides counts of the number of workplace fatalities and the rate of such incidents per worker. Data are for private industry, governments, the resident military, and the self-employed. For each fatality, data include information on the nature and event of the injury, the demographics of the decedent, and his or her industry and occupation. Fatality data included in the presentation and in this summary are preliminary 2007 data; revised 2007 fatality data are now available.

### Workplace injuries and illnesses

Older workers required more days away from work to recover from a workplace injury or illness than did their younger counterparts. The median of days away from work for all workers was 7 days; for those aged 55–65, it was 12 days, and for those aged 65 and older, it was 16 days. Older workers have more disabling conditions, such as fractures and multiple injuries, than do younger workers; also, similar events (for example, falls) lead to more severe injuries in older workers than in others.

An example of the severity of injuries and illnesses sustained by older workers can be seen by looking at the nature of the injury or illness sustained. The *nature* of the injury or illness is defined as the principal physical characteristics of the injury or illness, such as a cut, a bruise, or a sprain. Although sprains, strains, and tears make up the largest single category at all ages, there is a notable tradeoff between that category and fractures as age increases. For older workers, the percentage suffering a sprain, strain, or tear declines as the percentage suffering a fracture increases.

### Workplace fatalities

Of the 5,488 workplace fatalities in 2007, 558—slightly more than 10 percent—were among workers aged 65 and older. But the fatality rate for older workers (9.9 fatalities per 100,000 workers) was nearly 3 times that of younger workers. The most prevalent fatal events among workers aged 65 and older were transportation incidents, falls, and contact with objects and equipment.

### Case studies

The available data on workplace injuries, illnesses, and fatalities allow for case studies of a number of variables, including specific industries, occupations, and events. The remainder of the presentation explored two examples of such case studies, one of older truck drivers, the other of falls among older workers.

Truck drivers have consistently been one of the occupations with the greatest numbers of injury and illness cases involving days away from work. Heavy and tractor-trailer truck drivers of all ages experienced more than 57,000 cases involving days away from work in 2007, and within this occupation, clear differences in the injuries and illnesses are evident among older workers. More than 15 percent of older truck drivers' injuries result in fractures, compared with 9.9 percent for all truck drivers.

## Falls on the same level

This case study indicates how falls on the same level, which might not be considered particularly serious, can have more severe effects on older workers than on younger workers. For workers aged 65 and older, 4 out of 5 falls leading to days away from work were falls on the same level; for all workers, the ratio was 2 out of 3.

Sprains, strains, and tears are the most prevalent injury resulting from a fall on the same level for all workers, as well as for those aged 45–54 and 55–64. However, for those aged 65 and older, the most prevalent injury resulting from a fall on the same level is a fracture. More than 28 percent of falls on the same level among workers in this age group led to a fracture. Consequently, the percentage of such falls that result in a sprain, strain, or tear declined with age.

Among all workers, the occupations with the greatest number of falls on the same level were heavy and tractor-trailer truck drivers and retail salespersons. For workers aged 65 and older, the occupations with the greatest number of falls on the same level were retail salespersons, waiters and waitresses, and janitors and cleaners.

Fifteen percent of all occupational fatalities were the result of falls, with only about 10 percent of the falls being on the same level. Such events do not often lead to a fatality, except among older workers. For those aged 65 and older, 19 percent of fatalities were the result of falls and 23 percent of those falls were falls on the same level. Workers who died from fatal falls on the same level often injured their heads. The physical condition resulting from a fall on the same level was often multiple intracranial injuries and fractures. For cases in which the injury affected the limbs or trunk, workers may have had complications following medical treatment that ultimately led to their death.

## Injuries, illnesses, and fatalities among older workers

Elizabeth Rogers and William J. Wiatrowski

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Older workers face many of the same workplace hazards as do other workers; the most prevalent events leading to job-related injuries or fatalities are falls, assaults, harmful exposures, or transportation incidents. But in many cases, the nature of the injury suffered by an older worker is more severe than that suffered by younger workers. Older workers who suffer a workplace injury may experience longer recovery periods than their younger counterparts. And older workers die from workplace injuries at a higher rate than do younger workers. This analysis focuses on occupational injuries, illnesses, and fatalities among older workers, and identifies differences in the severity of the events as a result of age.

Americans are living longer than ever before, and increasing numbers of older Americans are working. These facts have led to expanded interest in the activities of older Americans, and their work life. Americans born at the beginning of the 21st century can expect to live an average of 77 years, an increase of 9 years, compared with persons born a half century ago. Those aged 65 in 2000 can expect to live 18 years. Considering age 65 to be a typical retirement age, individuals can expect to live nearly 2 additional decades. Both the need to feel productive and the need for income may lead these older Americans to work during what are typically considered retirement years.<sup>1</sup>

Further, the cohort of older Americans is getting larger. There are currently 35 million Americans aged 65 and older, and another 28 million age 55–64. The baby-boom generation, those born in the years following World War II, are currently in their early 40s to late 50s. Over the next 20 years, the percent of Americans aged 65 and older will grow from the current 12 percent of the population to 21 percent. Clearly there is much interest in this group.

This excerpt is from an article published in the October 2005 issue of the *Monthly Labor Review*. The full text of the article is available in Adobe Acrobat's Portable Document Format (PDF). See [How to view a PDF file](#) for more information.

## Challenges and opportunities of aging construction workers

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### Introduction

The labor force in the United States is rapidly growing older. Construction workers are typically younger than the national labor force, but construction workers are also aging. The average age of construction workers was 39.5 years old in 2007, 3.5 years older than it was in 1985. The median age was 34 years for construction workers in 1985, while it was 39 years in 2007. The proportion of construction workers aged 45-64 years increased from 25 percent in 1985 to 34 percent in 2007. Older workers are more vulnerable to risks at worksites due to possible declining cognitive and physical abilities with age. Given the hazards at construction sites and high physical demands of the construction industry, this aging trend is a significant challenge for construction safety and health.

To better understand this special population group and identify the patterns of work-related injuries and illnesses, health insurance, and health care among older construction workers, we analyzed several large, nationally representative datasets, including the Census of Fatal Occupational Injuries (CFOI), the Survey of Occupational Injuries and Illnesses (SOII), the Current Population Survey (CPS), the March Supplement to the CPS, the National Health Interview Survey (NHIS), the Medical Expenditure Panel Survey (MEPS), and the Health and Retirement Study (HRS). We also used the BLS' Current Employment Statistics' most recent two years of data to measure the effects of the current economic downturn on construction employment. In addition, we predicted the trends of the aging construction workforce for the next decade using the BLS' Employment Projections for 2006 to 2016. Tabulations were conducted using SAS (version 9.2).

### Main Findings

#### ***Aging construction workers***

As a result of the housing boom, construction employment dramatically increased in the last 15 years from 7 million in 1992 to 11.8 million in 2007. With the employment growth, the construction workforce divided into two main demographics: the entry of a large number of young Hispanic workers and the existing workforce that is growing older. The average age of non-Hispanic construction workers was 41.2 years in 2007, about 6.6 years older than Hispanic construction workers.

Age structure varied among construction subgroups. Self-employed construction workers were much older than wage-and-salary workers (44.7 years vs. 37.9 years). About one in four construction workers were self-employed or independent contractors; a total of 2.6 million in 2007. One in three self-employed construction workers were 50 years or older. Additionally, nearly 15 percent of construction workers were unionized in 2007. Among workers who were 50 years and older, nearly 19 percent were union members, compared with only 11 percent of construction workers who were under 35 years old. On average, union members in construction were 3 years older than non-union workers (40.5 years vs. 37.5 years).

During the economic downturn, more than one million wage-and-salary construction workers lost their job. Hispanic workers and workers who were not unionized were more likely to be unemployed. The average retirement age in construction has increased to 61.4 years in 2006 from 59.3 years in 1994. It is expected that many older construction workers may delay retirement as long as the housing and stock market remain troubled and unstable. The growth of the older population combined with the increased participation rates of the elderly will cause the workforce to continually age until 2020. This challenge of an aging workforce will be considerable for the construction industry in terms of skills shortages, safety and health, and health care.



### **Skills shortages**

Despite the current economic downturn, skills shortage is still a concern in construction. A major influence on the age composition of the labor force has been by the baby-boomer generation, which includes those born between 1946 and 1964. This group has accounted for a large portion in the construction industry. In 2007, about 4 million construction workers were baby boomers, accounting for 37 percent of the construction workforce. This group is currently approaching retirement age. The data revealed that baby boomers in construction were retiring earlier than those in the overall labor force. This relatively early exit of the baby boomers in construction from the prime-aged workforce will have a profound effect since subsequent generation X, known as baby busters, who were born between 1965 and 1983, is smaller in size.

Anticipated industry growth in the next decade and replacement needs will increase the demand for more skilled construction workers. It is estimated that in the time frame of 2006-2016, construction employers will need 282,263 laborers, 255,558 carpenters, 140,316 electricians, 124,558 plumbers, and 107,902 operating engineers as new workforce entrants. On average, 390,000 new construction workers will be needed annually in the next decade, but the active number of construction apprentices in the 2008 fiscal year was only 258,109. The current economic crisis has currently reduced labor shortages, but in the long run, scarcity of qualified and skilled construction workers will hamper the recovery of the industry when the economy improves.

### **Safety and health**

The rate of work-related deaths steadily increased with age, resulting in the greatest risk for older workers 55 years and older. This trend was also observed when assessing the leading cause of death: falls. There were 5.2 fall fatalities per 100,000 full-time workers aged 55 and older, compared with 3.1 and 3.9 fall fatalities per 100,000 full-time workers for those aged 15-34 years and 35-54 years, respectively.

Nonfatal injuries yielded a different pattern. For the leading cause of nonfatal injuries (i.e., contact with objects), workers in the 15-34 year age group had a rate of 89.1 per 10,000 full-time workers, as opposed to 53.2 per 10,000 full-time workers for those aged 55 and older.

Age and health were directly associated in which health deteriorated with age. Older construction workers' perceived health leaned more towards the negative end of the spectrum when compared with their younger counterparts. Acute and chronic health conditions were generally non-occupational, but these conditions could be exacerbated by working activities and ultimately lead to absenteeism, poor performance, and exiting the workforce. Among construction workers who were above 50 years old, the prevalence of chronic diseases and ailments was found to dramatically increased in the past three months, such as low back pain (31.2 percent), joint problems (31.9 percent), hearing loss (34.4 percent), vision problems (despite corrective glasses or lens, 15.3 percent), hypertension (46.4 percent), and diabetes (8 percent for those aged 55 and older). Some health problems also caused difficulty with activities among older construction workers: lung/breathing problems (5.5 percent), musculoskeletal/connective tissue problems (7.1 percent), and arthritis/joint symptoms (21.3 percent).

### **Health insurance and health care costs**

Health care is often greatly influenced by health insurance coverage. Nearly 23 percent of construction workers aged 50 years and older were uninsured. Having insurance generally affects staying on top of health care and seeking medical attention. In a dangerous industry such as construction, being insured allows workers to combat the continual risks they face and take better care of themselves.

In general, workers aged 50 and older visited health professionals more frequently than younger workers. Health expenditures for older workers were over 2.5 times more than those of younger workers. In 2006, older workers spent \$3,336 per person on average, whereas younger workers only spent \$1,256 per person on average (2005 dollars). Therefore, uninsurance was a more serious problem for older workers than for their younger counterparts.

## Conclusion

The findings suggest that health policies and employment policies should take the aging workforce into consideration. Older workers will be critical to a successful economic recovery due to their skills and experience. Safety and health interventions (e.g., injury prevention, job redesign, and ergonomic programs) should meet the needs of older workers, especially older construction workers who face high risks and high physical demands at worksites. The value of older workers will overcome the negative effects of aging with appropriate management and cooperation among labor-management, health care providers, health and disability insurers, health educators, and researchers. It is essential to retain labor standards and conditions of employment in the face of this economic crisis. The trends of the aging workforce also bring attention to issues such as delaying retirement, retiree health benefits that are both available and affordable, and income production in retirement.

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## Special challenges of aging

Health Care and Social Assistance (HCSA) Workers  
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### Introduction

In 2004 the Institute of Medicine/National Academy of Science (NAS) Committee on Health and Safety Needs of Older Workers recommended improved data systems to track occupational exposures, injury and illnesses, and more research describing the health and safety needs of older workers. Furthermore, they pointed out that the field lacks clarity on the effectiveness of policies and programs which aim to improve the health of older workers (Wegman and McGee, 2004). These recommendations remain valid and compelling; but arguably the demographics of the healthcare and social assistance workforce together with the *nature* of human services and caregiving work require distinct research programs within the framework outlined in the 2004 NAS report. The purpose of this paper is to describe the healthcare and social assistance workforce, outline the well-documented safety hazards of this work, and conceptualize a research framework for older healthcare and social assistance workers.

### Healthcare and Social Assistance Workforce

We examine the healthcare and social assistance workforce through the lens used by the National Occupational Research Agenda (NORA). NORA is a multi-disciplinary process organized by the U. S. National Institute for Occupational Safety and Health (NIOSH) to develop a national research agenda on occupational safety and health. The U. S. workforce is divided into sectors and stakeholders from labor, academia, government and industry. A group of stakeholders from the healthcare industry and worker representatives recently reviewed the state of the healthcare and social assistance (HCSA) workforce and research needs for health and safety (NORA, 2009).

In order to fully appreciate the significance of the healthcare and social assistance workforce, it is essential to understand the dimensions of the workforce and the nature of the work. The HCSA workforce employs approximately 17.4 million workers or 12% of the U. S. workforce (HRSA, 2008). This sector is adding jobs and projected to continue growing as the U. S. population ages. Within the sector, four subsectors were identified: (1) *ambulatory care services*, which employ 6.1 million workers, (2) *hospitals*, which employ 5.7 million, (3) *nursing and residential care services*, employing 2.5 million, and (4) *social assistance*, which includes 3.1 million. Notably, the social assistance sub-sector includes child day care service providers, individual and family services and food, housing, and emergency services (NAICS Code 62).

The work is characterized by direct contact with and care of needy, sick, and vulnerable populations, and involves caring for those who cannot fully care for themselves, whether due to age, illness, economic status, or developmental disability. Workers within the subsector of HCSA vary in level of education, training and socioeconomic status, and include medical professionals, social workers, nurses, drug counselors, day care providers, and home health aides, among others. Understanding the nature of this work is key to conceptualizing research questions on the impact of job exposures on older healthcare and social assistance workers. For example, working with institutionalized persons both in the long-term and acute care settings often involves physically demanding work, twelve hours shifts, night and weekend work, as well as an intense emotional component. Working in teams, which can offset some of the demands of the job, is common in the institutional setting, but not the community and home settings, which require mobility and offer less access to assistance, support, and security.

It is well documented that the U. S. health workforce is predominantly female and suffers from shortages amongst registered nurses, nurses aides, and other practitioners (Becroft, 2008; Benjamin, 2008; Buerhaus, 2000 and

2008). Furthermore, the 2004 profile of the U. S. Health Workforce found that 18% of physicians are over 65 compared to 12.6 % of the general population. States such as California, Florida, and Arizona report that 20% of physicians are over age 65. Over 2.4 million registered nurses were employed in nursing in 2004; thirty-nine percent of Registered Nurses (RN) are 45 years or older, compared to the average of thirty-four percent for all jobs (Dohm, 2002). The average age of an RN is 47 years. These workforce demographics, combined with projections that the U. S. population has an increasing proportion of older individuals, especially those over 85, suggests that healthcare workers will be needed to work into older age to meet these demands.

As noted in other presentations, researchers vary in their definitions of “older.” Some examine workers over 45 years old, while others have used 50 and 55 to define “old.” In our view, the lack of age-specific injury and illness data by job title and other indicators of exposures for HCSA workers impedes the discussion of what age should be used to define “older HCSA workers.” In fact, until there is a general consensus on this issue, or more definitive evidence of an age-related effect within HCSA worker injuries, investigators will have to continue to use multiple cut off points and justify it according to the conceptual framework guiding their hypotheses.

## Occupational Exposures and Hazards to HCSA Workers

Working conditions in today’s healthcare work environment contribute 16.3% of all non-fatal occupational injuries and 20.7% of all non-fatal illnesses reported to the Bureau of Labor Statistics (BLS, 2005 a, b, and c). Incidence rates for non-fatal occupational injuries are consistently higher in the healthcare and social assistance workforce than those for all private industries (e.g., 5.4 vs. 4.2 per 100,000 full-time workers in 2006). Similarly, incidence rates of non-fatal illnesses for healthcare workers are 40.0 vs. 24.6 per 100,000 full-time workers. While the hazards of the healthcare work environment are detailed in the 2009 State of the Sector report (NORA, 2009), a few will also be highlighted here. Already mentioned are the workforce shortages that contribute to the need for long working hours and overtime, and result in burnout. Other issues which impact the health and safety of the healthcare and social assistance workforce are a safety culture that prioritizes patient safety over staff safety, the frequency of emergencies which frequently circumvent safety processes (such as use of engineered lifting equipment), and the way that work is organized in some healthcare settings.

The hazards of healthcare work are well documented and fall into the broad categories of chemical, biological, biomechanical, physical, and psychosocial. Chemical hazards include toxic antibacterial cleaning chemicals and sterilants, as well as dangerous antineoplastic drugs. Biological hazards include possible exposures to HIV, Hepatitis B and C via bloodborne exposures, and airborne exposures, such as influenza, tuberculosis, and SARS. Contact exposures to antibiotic resistant organisms, such as MRSA and c-difficile, are also part of the job. By far the hazards that cause the most disability are the heavy lifting and awkward postures, resulting in musculoskeletal injuries associated with patient handling. Back and other musculoskeletal injuries account for the highest proportion of injuries in this sector, with the highest musculoskeletal injury rates occurring to nursing home aides and orderlies in long-term care. Radiation, noise, microwaves, and laser exposures are found in certain health care jobs, and finally, violence from patients toward workers is endemic in many healthcare and social service settings (NORA Draft Report, unpublished).

## Impact of Age on the Health and Safety of Older HCSA Workers

Normal aging, combined with the classic work paradigm and occupational exposures of HCSA work, may adversely impact workers’ physical and mental health, quality of life, and the quality of patient or client care. The following suggested associations, with some exceptions, represent biological plausibility and deserve specific systematic investigation, but are not definitely described. For example, normal reductions in strength, coupled with a higher prevalence of joint pain in older adults, suggests that the physically demanding patient handling tasks in HCSA work will disproportionately impact older healthcare workers and increase pain and disability.

Similarly, older individuals are at higher risk of injuries from falls, further suggesting that the high incidence of slips, trips, and falls in healthcare work will impact older workers in the form of more severe injuries, lost work time, and disability. Normal decrements in balance, vision, and hearing may combine with the noise, interruptions, and poor lighting in many healthcare settings and result in stress, poor concentration, medical errors, and visual fatigue. Reductions in stamina may influence whether older workers can work twelve hour

shifts, overnight shifts, overtime, or multiple days without time off. Finally, work and life balance may be more challenging for older healthcare workers who may be responsible for the care of older parents, disabled or ill spouses, as well as children and/or grandchildren (Silverstein, 2008).

The limited investigations of older healthcare workers suggest an age effect for increased injuries with night shift work and successive night shift work (Folkard, 2008). Furthermore, a 2006 survey of 308 RNs over fifty years old in two states showed that these RNs reported better overall physical and mental health than national norms, but also found that 36% reported work-related health problems and 23% reported work-related injuries over the past 5 years (Levtak, 2006). In a study of age and work schedule in 2273 RNs, the mean age was reported as 45 years, with 36.6% older than 50. Of the group fifty and over, 47.4% reported working more than eight hours per day, and 34.9% worked greater than forty hours per week, leading to concerns about safety for both the older nurse and the patients (Trinkoff, 2006).

The European NEXT study found that Work Ability scores were lower in older nurses in all ten participating European countries and that there is an association between low perceived work ability and intention to leave (Camerino, 2006). A Danish Nurses Study found that early retirement of nurses was predicted by poor health, lower income, having an unemployed spouse, and job condition (Friss, 2007).

The University of Maryland Work and Health Research Center examined data from studies of home care RNs in Maryland and personal care assistants in a home in Illinois. Older home care RNs (>50) are just as likely to rate their health good or better as home care RNs, who are younger than fifty. With respect to work hours, however, older home care RNs are more likely to work more than five days per week, more than forty hours per week, and more than five days per week in the field. Of note, older home care RNs also have more education, do less direct care, report receiving more respect from peers and supervisors and report less burnout and lifting (McPhaul and Lipscomb, unpublished).

Older personal care assistants (PCAs) who work in the home care setting are just as likely to rate their health as good or better as their counterparts who are less than fifty. There are no differences, however, between older and younger PCAs with respect to the number of hours and number of clients per week. Older PCAs are more likely to hold a second job. Older PCAs also reported getting more respect from clients' families and clients themselves (McPhaul and Lipscomb, unpublished).

In terms of workplace violence, the exposure of workers to violent patients on the job, preliminary evidence suggests that age is protective for both home care RNs and PCAs. In addition, older PCAs report a greater level of comfort and confidence in working with difficult clients. These findings suggest that older RNs and PCAs possess valuable knowledge, demeanor, and skills in the interpersonal arena of caregiving, which must be explored further. Retention of older HCSA workers is desirable, but working conditions must also support a longer tenure in the workforce (McPhaul and Lipscomb, unpublished).

## Stakeholders Input

A break out session moderated by the authors was attended by 30-40 stakeholders from industry, professional groups, occupational medicine and nursing, and healthcare unions. A set of questions and issues was used to organize the discussion, but the stakeholders were not limited to those issues. The following summarizes the themes from this discussion.

### **Breakout Session Questions**

Healthy Aging for Workers: Anticipating the Occupational Safety and Health Needs of an Increasingly Aging Workforce

HCSA Breakout Session

Moderated by Jane Lipscomb and Kate McPhaul

### Defining “Aging” Workers

- \* How do we best define 'aging' worker for the purpose of reducing work-related injury and illness?
- At what age do we start to see evidence of impairment?
- Is there an age at which older workers experience synergistic effects due to age and hazardous occupational exposures?

### Organization of Work and Older Workers

- What aspects of organization of work are most important for aging HCSA worker?
- Can changes in organization of work help reduce work-related injury and illness among aging workers?

### Occupational Health Practice

- Are there hazardous work exposures that are more dangerous for older workers?
- Are there any important biomarkers or existing surveillance markers that should have lower “cut offs” and/or be monitored to prevent injuries in older workers?
- Are adult education approaches in occupational safety and health training adequate for older workers?
- What specific interventions can be applied now to preventing work-related injury and illness among aging workers?
- \* What changes should companies consider in preventing work-related injury and illness among aging workers?

### Policy Issues

- What disability issues are likely to be related to an aging workforce?
- \* How can age discrimination be avoided with respect to preventing age-specific work-related injury and illness?
- Are aging workers adequately protected from work-related injury and illness by current occupational safety and health standards?
- \* What opportunities are there for preventing work-related injury and illness among older workers as the Federal Government implements Economic Stimulus and Infra-Structure Re-building and other large scale programs?

### Research Gaps/Questions

- \* What are the most pressing questions that need to be researched to better protect the health and safety of an aging workforce?
- Are current work-related injury and illness and fatality surveillance systems adequate for monitoring an increasingly aging workforce?

## **Breakout Session Themes**

### Culture and Socialization of the HCSA Workforce

It is important to acknowledge that healthcare workers are predominantly female, and often view their work as a “calling” rather than a “job.” This phenomena may contribute to individuals within this workforce risking their own health on behalf of their clients. Others noted that it is important to understand the attitudes towards older workers within the institutions.

Some participants noted that there are important differences between older and younger HCSA workers. For example, “tech savvy” younger workers work side by side with older workers who may not value, appreciate or desire the technology available for communication, information retrieval, documentation and entertainment. Other differences include the fact that training needs and learning styles are different for older workers than younger workers.

Some noted that due to the economy and changing nature of the U. S. service sector that older workers are entering this field for the first time. Some note that currently there are high levels of job satisfaction among older workers. However is this also true in the HCSA sector, and if so will it persist?

From a personal health standpoint, older workers are more likely to have chronic diseases, which increases vulnerability to occupational exposures (e.g. lifting, pulmonary exposures) and also experience a decrease in immunity as they age. These health and medical differences between older and younger workers may be profound but may also be addressed in ways that keep this workforce as healthy as possible in their jobs.

### ***Healthcare is a highly hazardous sub sector***

Some in the audience articulated that the healthcare and social assistance sector is so hazardous that if the known hazards were addressed that the risks for all workers would be reduced. There was some sense that it is not aging per se, but the highly hazardous nature of the work that puts all workers at risk. There was also a sense that the physical demands of this work have increased and that work organization has intensified the physical and emotional demands of the work. For example, high staffing ratios, changing patient population (older, sicker, more overweight), working with insufficient staff, working alone forces workers to engage in dangerous and risky practices.

Ultimately, age does matter because at some point older workers can no longer perform the tasks required for the job.

### ***Programs/ Interventions for Older HCSA Workers***

It was suggested that the industry needs processes to incorporate health and safety into the work. Currently, adaptations and accommodations for older workers occurs informally, as in the case of surgeons and medical doctors who police older colleagues and either “cover” for them or move them into consultative roles with less direct care. Formal policies and programs that were suggested include:

- On-site Elder Care
- Flexible hours
- Variability in preferences of staff for shift length
- Group determination of schedule
- Accommodations for older workers responsible for elder care, just as accommodations are made for workers with young children
- Designing out hazards rather than training to avoid hazards
- Transportation for community-based workers
- Programs to reduce trips and falls
- Set expectations at practice could place aging workers at increased risk of unexpected hazards/events
- Severity of injury, increased recovery period/MD behavior on Return to Work (RTW) of older workers

### ***Research and Data Issues***

There is a dearth of quality data following this workforce for both exposures and outcomes related to working conditions or age. There was general agreement that there must be improvements in data quality for healthcare as

a whole as well as improved indicators, which may be possible via increased use of electronic medical records.

Possible areas for future research include:

- Assessing the effectiveness of training and characterizing the learning styles of older workers.
- Do musculoskeletal injuries lead to migration from bedside? What are the subsequent consequences for patient/client care quality?
- Are low paid HCSA workers more likely to lose income with career ending injuries? Are they also less likely to have health insurance?
- What are best practices for Return To Work (RTW) from occupational and non-occupational injuries and illnesses for older HCSA workers?
- What are reasonable accommodations?
- RTW based on capacity to work, not disability
- Is there an increase in uninsured among the aging?
- Can we link patient data with worker data with improved electronic medical records? Will e-records introduce increased opportunities for surveillance and research?
- Characterize the contribution of older workers to patient care quality, patient safety, and as models and trainers of younger workers.

### **Final Impressions and Recommendations**

1. Recommendations from 2004 Institute of Medicine (IOM) report have not yet been implemented. The IOM framework provides a basis for specific sub-sector research recommendations which are urgently needed for high risk sub-sectors such as Health Care and Social Assistance (HCSA).
2. The HCSA workforce is distinct in its high proportion of female workers, the inherently hazardous nature of the work, several decades of intensification of work, severe worker shortages, and the projections for rapid future growth.
3. There is no universally agreed upon age that is currently considered the cut point defining the older worker, but 45, 50 and 55 have been used in recent investigations. Alternative paradigms for defining the older worker may be needed.
4. Older HCSA workers appear to have similar work schedules as younger workers and some are working more than eight hours per day, more than 40 hours per week, as well as successive night and weekend shifts.
5. There is some evidence that older RN's are able to reduce the physical demands of their jobs; this must be characterized and understood in the context of exposure research and establishing the health and safety needs of older HCSA workers.

Given the enormous need for a skilled and experienced healthcare and social assistance workforce, research and policy should focus on those aspects of work that contribute to healthy aging while testing interventions to reduce the unhealthy impact of healthcare and social assistance work on this highly necessary and valuable workforce.

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## Ageing workers as a global condition – the European approach

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### Summary

This presentation begins with an overview of older workers' employment in the European Union (EU) and considers why the extension of working life has become increasingly important in EU policies. Increasing attention is being given to the health of the ageing workforce and its maintenance through company initiatives. The following sections consider the working conditions and health risks of older workers in the EU, and examine the diversity of approaches to age management in European workplaces – specifically in the minority of companies which have implemented specific measures. The paper concludes with a series of key messages for policy and practice, acknowledging that there is an implicit research agenda throughout the discussion.

The European Foundation is a European Union agency working across all 27 EU Member States. Its work is primarily oriented to addressing social and employment policy issues, communicating messages to policy-makers in the European institutions and the social partners, employer and trade union organisations. The Foundation has been reporting on developments for the ageing workforce since the mid-1990s with a series of studies on good practice in companies and the working conditions of the ageing workforce. A series of reports and a database of good practice are available on the Foundation's website (<http://www.eurofound.europa.eu/research/0296.htm>).

Older workers are first mentioned in EU documents in 1994 when they are identified as one of the key vulnerable groups in employment. Since the late 1990s, older workers have been the explicit focus of policy measures incorporated under the umbrella of the European Employment Strategy. The employment rate of older workers (defined in all EU policy documents as those aged 55-64) has increased fairly steadily over the last decade and is now approaching 45 percent. There are clear differences between the employment rates of male (54 percent) and female (36 percent) older workers; and while 40 percent of women aged 55-64 are working part-time, this applies to only 10 percent of men in this age group. However, the recent increases in employment rates of older workers are primarily a reflection of growing female labour force participation and correspondingly the older workforce is increasingly female. Incidentally, the employment rate of workers aged 65-69 in the EU is less than 10 percent compared with nearly 30 percent in the US.

Older worker employment rates are highest in the Nordic countries of Sweden and Denmark and are seen to be relatively high in the UK and Ireland as well. However, they are relatively low (below 40 percent) in some of the bigger Member States such as France and Italy, and are particularly low in some of the new Member States like Poland and Hungary. In part, the growing concern about employability of workers aged 55-64 reflects the fact that the age group 55-64 will grow over the next decade as a proportion of the working age population. But demographic change involves both an ageing workforce and an ageing population, and the impetus to increase employment rates among older workers is largely driven by concerns about the rapidly increasing numbers of people over the age of 65. However, there are significant differences between Member States in the projected changes in the working age and general population, with particular challenges in most of the new Member States.

The ageing workforce has moved higher on the European social policy agenda not only with regard to employment, but also because of concerns about the sustainability of pensions and healthcare and the maintenance of productivity and competitiveness. The primary focus of EU policies has moved from an orientation to tax and benefit structures towards practices of age management in workplaces and the labour market. An EU Directive to combat age discrimination is being implemented slowly in Member States and specific targets have been agreed upon for employment rates among older workers. In 2001, Ministers from the Member States agreed to increase the employment rate to 50 percent by 2010; in 2002, Ministers targeted an increase in the effective retirement age of five years by 2010. Neither of these targets is going to be achieved even if employment rates have risen markedly and the effective retirement age has increased by more than one year since 2002.

The EU debate is focused on increasing the proportion of workers staying in employment until the age of 65 – not about working beyond retirement age. Member State governments have implemented a range of new policy measures over the last decade, particularly addressed to reform of social protection systems. Changes in social security include: pension reforms, generally increasing statutory retirement ages to 65 or even 67; reduced access to early retirement; and reduced access to disability/incapacity schemes. Other measures include programmes to encourage companies to promote health, as is particularly evident in Finland and in Germany, and collective agreements to adapt workloads for older workers like in the Netherlands. In many Member States governments have taken some initiative to change attitudes towards and among older workers through awareness campaigns.

The health of the workforce has been increasingly connected to the employment agenda, including a more recent focus upon the mental health of the workforce. Over the last decade there has been growing acknowledgement of poor health as an important reason for early exit and retirement or for exclusion from employment. This raises issues of prevention, disability management, and return to work.

In the EU in 2006 there were 57 million people aged 55-64 including 25 million employed, 1.5 million unemployed, and 30 million inactive. Among workers aged 55-64, a higher proportion were working part-time (especially women) than among younger workers but fewer were on fixed term contracts. A much higher proportion of older workers are self-employed and a greater number of older workers are employed in agriculture and fewer in industry. Altogether there are a somewhat larger number of older workers in skilled non-manual occupations and fewer in low-skilled non-manual than among the younger population aged 25-54. This reflects a tendency for higher skilled people to remain in employment longer than low skilled individuals. The exodus of workers (especially men) from heavy manual work is also reflected in the working conditions of older workers. Data from the Foundation's Working Conditions Surveys demonstrate that workers aged 55-64 are less frequently exposed to physical risks to health than younger workers although the differences are relatively small. There is much interest of course in the psycho-social risks for health associated with work intensification and job insecurity but the evidence is that those older workers still in employment tend to report more job autonomy and somewhat less work intensity. This may be attributable to the "healthy worker effect" and the earlier exit of workers with high levels of work intensity – or perhaps the adaptation of work organisation to ageing.

The Foundation's research on good practice in age management looked for initiatives in public and private sector employers in both the mid 1990s and again in 2005-06. In many Member States good practice is relatively hard to find and it has been estimated that less than 10 percent of companies in Europe are ready, or even preparing themselves, for demographic change. Among the examples of good practice, it appears that initiatives for training and lifelong learning are the main focus of measures in Belgium, France, Greece, Italy and Spain, while attention to flexible working practices, work organisation, and re-thinking of working time arrangement is more common in Austria, Germany and the Netherlands. Attention to health promotion and protection and to workplace design is most evident in the Nordic countries and, to a lesser extent, in Germany and the Netherlands. However, even in companies with positive approaches to age management, there are contradictions insofar as early exit policies may still also be in place and there are inconsistencies when measures are developed for some groups in the workforce but not for others. Relatively few organisations have comprehensive and integrated approaches to age management.

Good practice in health promotion and health protection has become more widespread over the last decade and tends to include regular check-ups as well as lifestyle health promotion and measures for more ergonomic workplace design. The good practice may be preventive or meant to compensate for physical/mental health problems. Nevertheless there is relatively little explicit mention of active disability management or rehabilitation and reintegration measures. In general, companies emphasise the goal of optimising work processes and the organisation of work to enable employees to perform well and to maintain their working capacity. Altogether the most common measures for age management in companies remain in the area of training and development, but there has been increasing attention to work organisation and more flexible working time arrangements in particular. There is relatively little specific attention to low-skilled workers or to the increasing feminisation of the workforce.

It appears that most companies have introduced age management as a result of market or business needs, primarily to avoid labour and skills shortages but also to retain experience and to maximise the return from investment in training. The changing circumstances that are influencing the business case are reflected in rethinking of priorities for age management over time and in evaluations of the value of investing in an ageing workforce. There have been very few systematic evaluations of the benefits of age management but interviews with both staff and managers in companies tend to emphasise improved health, increased job satisfaction, improved teamwork and better relations between workers and managers.

The further development of age management in organisations seems inevitable given the demographic imperatives. However, there remains considerable resistance to extending working life and a culture of early exit persists in many countries. There is a continuing need to change negative attitudes towards the employment and productivity of older workers among both staff and (younger) managers. The case for age management can be strengthened through more research to demonstrate its impact and monetary value; and this evidence is likely to become increasingly essential for the sustainability of initiatives in the harsher financial climate. Not only is there a need to reinforce motivation and incentives, for management and workers to maintain working capacity of staff as they age, but to also support this orientation with effective professional services. A new role is emerging for both occupational and community health workers as part of a multidisciplinary service to maintain and promote health and to enable workers with health problems to return to work. The development of more effective practice will depend upon improved coordination between services, as well as between these services and the workplace. Support for workers with health problems demands continuity and consistency in active measures. Above all, improving opportunities for older workers hinges upon promoting more positive attitudes and combating discrimination.

In conclusion, the research on the ageing workforce in Europe underlines the diversity of situations in different sectors, countries, and groups in the workforce. The promotion of employment opportunities for older workers by public policy has contributed to the growing number of initiatives in companies. The evidence from good practice studies has shown that comprehensive approaches to strengthen, maintain and regain working capacity are possible and worthwhile; however, there is a need to extend awareness, commitment, and implementation. Policy-makers in Europe are learning that it is not enough to change exit and retirement policies – now is the time to invest in the health and employability of a changing workforce.

# The relationship between aging, job characteristics and health in construction industry: some preliminary data from the Netherlands

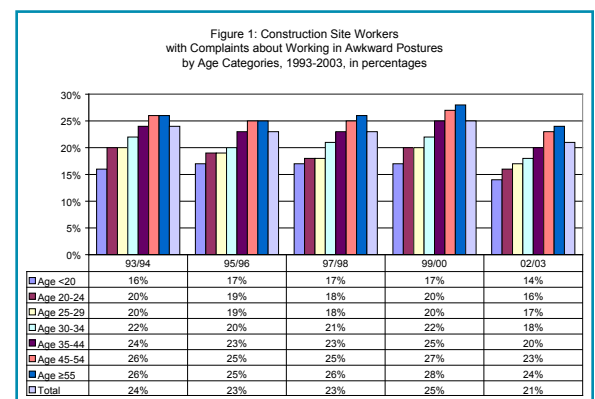
Peter Hoonakker, Cor van Duivenbooden, Henk van der Molen

The U.S. construction workforce is aging: the average age of construction workers increased from 36 years in 1985 to 39 years in 2005 (Center for Construction Research and Training (CPWR), 2007). According to data from the Bureau of Labor Statistics (BLS, 2006), in 2001, there were nearly 1 million construction workers 55 years and older. A review of the literature on older workers in the construction industry by De Zwart et al. (1999) shows a focus on fatal and nonfatal work-related *acute injuries and accidents*, and inconsistent findings concerning the relationship of age with accidents and/or mortality. The few studies on Occupational Safety and Health (OSH) of older workers in construction industry show that older workers have more work-related health complaints, including work-related musculoskeletal disorders (WMSDs), lung disorders, skin disorders, and hearing loss as compared to white collar workers and younger construction workers; they are also more likely to receive medical treatment for these disorders (Arndt, et al., 1996; De Zwart, et al., 1999; Deacon, Smallwood, & Haupt, 2005; Holmström, Moritz, & Engholm, 1995; Hoonakker & van Duivenbooden, To be published; Nurminen, 1997). Older construction workers have been identified as a vulnerable group, but little is known about workplace and individual factors that increase their likelihood of experiencing OSH problems and the methods for supporting their productive and safe participation in the workforce.

De Zwart et al. (1999) reviewed the literature on job characteristics and aging of older workers in construction industry. Results showed that increasing age is associated with changes in physical and mental/cognitive work capacity, job satisfaction and work motivation, workload, and fatigue and recovery after work. The authors also compared job characteristics and health of younger and older workers in construction industry using questionnaire data, and found that older workers reported more health complaints than younger workers. For example, older construction workers more frequently reported to be tired, to have sleep problems, hearing loss, musculoskeletal complaints, and nervous complaints. Results regarding job characteristics were less consistent. With regard to working under time pressure, lack of job satisfaction, and job future uncertainty, older workers reported more complaints, however, older construction workers reported fewer complaints about physically demanding work (De Zwart, et al., 1999). Unfortunately, in this study, the relation *between* job characteristics and health problems was not examined. Hoonakker & van Duivenbooden (To be published) conducted a 10-year monitoring study of older construction workers (see next paragraph). Results are in line with De Zwart et al.: older workers have significantly more health complaints than younger workers, but not necessarily more complaints about job characteristics. However, in both studies, the relationship between aging, job characteristics and health was not examined.

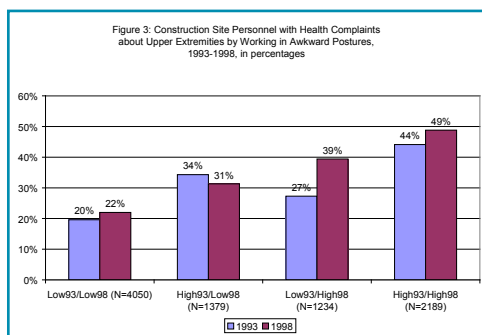
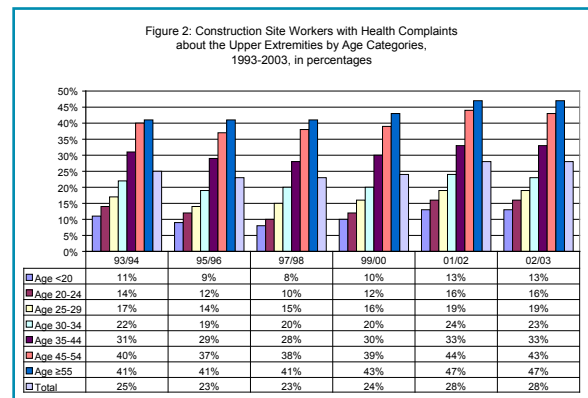
## Preliminary Studies

In an international collaboration with the Arbow Foundation in the Netherlands, we used data from the Arbow VISA database, a large database created by the Arbow Foundation to examine job characteristics and health of construction workers. The VISA database contains data on job characteristics and OSH that are collected from more than 30,000 construction workers on a yearly basis; this data collection effort began in 1993 and is still on-going. The design of the VISA database makes it possible to *monitor* job characteristics and OSH in construction industry, and to compare different occupations, age groups, company size, etc. Thus, the surveillance process can be used to identify risk factors and risk groups, and to recommend interventions at the national and organizational levels. Furthermore, monitoring job characteristics and OSH over time facilitates the evaluation of these interventions (Hoonakker & van Duivenbooden, 2006b).



Using data from the VISA database in The Netherlands, Hoonakker and his colleagues (Hoonakker, 2000, 2001, 2005; Hoonakker & van Duivenbooden, 2006a) analyzed changes in job characteristics and health of construction workers from 1993-2003. Results show that many job characteristics have improved over the last 15 years. However, the improvement in job characteristics did not result in improved health of the construction workers: most health complaints increased in the last 15 years (Hoonakker & van Duivenbooden, 2006a). This may be a result of the rapidly aging workforce, possible long-term effects of prolonged exposure, or other factors. Recently, using VISA data from 1993-2003, we compared younger and older workers with regard to musculoskeletal health (Hoonakker & van Duivenbooden, to be published). Results show that working in awkward postures (standing for a long period of time, working in the same posture for a long period of time, and working in a stooped position) was reported more frequently by older workers (see Figure 1). Results also show that the age category 45-54 years old, and to a lesser extent, the age category 35-44, report nearly as many complaints as older workers (age 55 years and older).

Results show that musculoskeletal disorders increase with age (see Figure 2). Complaints of the upper extremities have increased in the period 1993-2003. Older workers (55 years and older) report more complaints than workers in any other age category. All of these results are statistically significant. Preliminary analyses of the VISA database show that older construction workers have significantly more health complaints than younger workers. However, these studies used the repeated cross-sectional design of the VISA database. They do not help to determine whether the increase in complaints about job characteristics and musculoskeletal health is due to aging or to prolonged exposure to adverse job characteristics. We have also examined the longitudinal relationship between exposure to physical workload and environmental factors, and self-reported musculoskeletal disorders of the upper extremities among blue-collar construction workers (Hoonakker, van der Molen, & van Duivenbooden, 2007). Results show that, after controlling for age at baseline, exposure to a high physical workload, working in awkward postures and climatic factors are related to musculoskeletal disorders of the upper extremities as reported five years later. All of these results are statistically significant.



We have begun to examine the combined effects of age and exposure to physical workload on musculoskeletal disorders of the upper extremities. Preliminary results show that the increase in musculoskeletal disorders over a 5-year period is due to aging and exposure (see Figure 3). Results show the combined effect of age and exposure between 1993 and 1998 in a sample of nearly 9,000 blue collar construction workers. Construction workers with low exposure to working in awkward postures in both 1993 and 1998 reported a small increase in complaints of the upper extremities in the period 1993-1998 (from 20 percent to 22 percent). We can assume that the increase in complaints is due to aging. Interestingly,

workers who reported high exposure to working in awkward postures in 1993 and low exposure in 1998 had a *decrease* in complaints of the upper extremities (from 34 percent to 31 percent). This suggests that exposure to working in awkward postures has a stronger effect than aging, and more importantly, **once exposure decreases, workers reported fewer complaints of the upper extremities.** The group of construction workers who reported low exposure to working in awkward postures in 1993 and high exposure in 1998 had the highest increase in complaints of the upper extremities between 1993 and 1998 (from 27 percent to 39 percent). This suggests a strong, combined effect of aging and exposure. Finally, the group of construction workers who reported high exposure to working in awkward postures, both in 1993 and 1998, had the highest percentage of complaints of the upper extremities of all groups (from 44 percent to 49 percent). The differences between the groups are statistically significant. This begins to demonstrate the effect of prolonged, high exposure to negative job characteristics such as working in awkward postures.



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## Public policy options for an aging workforce

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The aging of the baby boom generation has begun to produce profound changes in our workplaces. The impact of this generational shift will escalate as the leading edge of this huge cohort enters its sixties, still relatively healthy and increasingly eager (or resigned to the need) to continue productive work.

Yet the policy framework for addressing age at work, fashioned largely by the Employee Retirement Income Security Act (ERISA) of 1964 and the Age Discrimination in Employment Act (ADEA) of 1967 has been essentially static for years. It has been a framework of laws, regulations, and collective bargaining agreements intended to support and encourage a societal expectation since World War II that the generational torch will be passed at a relatively young age. This disparity between twentieth century vision and twenty first century needs has become progressively more evident.

I recently read the proceedings of a symposium that captured quite well this mismatch and the challenge it presents. “The presidential campaign...focused attention on the socioeconomic system of the United States. Little attention, however, was directed to an important issue: the aging of the American work force. Yet this phenomenon will have a significant impact on the national economy and is already being felt today... In light of the changing demographic picture and increased longevity, much more serious consideration should be given to any number of policy initiatives ... both to preserve employment opportunities ... and to facilitate a more satisfactory transition to retirement ...”<sup>3,4</sup>

While this could easily have been written to keynote this conference, it is actually from a 1988 symposium sponsored by the Big Three auto companies, the United Automobile Workers and the U.S. Department of Labor. While the participants did a nice job of articulating the pressing policy needs, it is clear that these needs were not fully appreciated. More than 20 years later they have still been largely unaddressed.

To drive home the point that we often do better at describing problems than responding to them, here is what the Bureau of National Affairs said in 1987. “The U.S. seems unprepared to deal with the complex challenges presented by the unprecedented influx of older Americans into the workforce in the coming decades. While some corporations and governments have initiated “activist” approaches toward older workers, in general, no coherent, coordinated public or private policies have been developed in response to this projected domination of the workforce by older workers.”<sup>5</sup>

Twenty years later, in 2006, an AARP survey of business executives found the situation essentially unchanged. 83 percent of 1000 executives agreed that workers approaching traditional retirement age will play a greater role in the U.S. workforce over the next decade than previously. But, “despite an overall awareness of the potential implications of the aging workforce, few companies have taken action to prepare.”<sup>6</sup>

The two major developments recognized in the 1980s have become more apparent every year.

First is the impending labor and skills shortage, illustrated by the plain population arithmetic that projects between 2006 and 2016 an 83 percent increase in the 65-74 year old group and a 7 percent drop among the 16-24 year olds. In Washington State, for example, between 2005 and 2025 there will be an increase of more than 250,000 65-69 year olds and a decrease of nearly 50,000 45-49 year olds.

3 Bluestone I, Montgomery R, Owen J eds. The Aging of the American Work Force: Problems, Programs, Policies. Wayne State University Press, Detroit, 1990.

4 Stepp J. Older workers, new problems, new opportunities. In Bluestone I et al. eds. The Aging of the American Work Force: Problems, Programs, Policies. Wayne State University Press. Detroit, 1990.

5 Bureau of National Affairs, the Daily Labor Report. 7/9/87.

6 Business executives’ attitudes toward the aging workforce: Aware but not prepared? Survey conducted by Business Week Research Services for AARP, October 2006

Second, alongside this shift in the labor market, is the increasing fragility of our social security and private pension systems as the ratio of young workers to older retirees drops and the longevity of the retirees continues to increase.

There are four ways we might try to address these pressures.

- The first is to increase immigration of young workers, both skilled and unskilled.
- Second is to outsource work to international labor markets.
- Third is to increase reliance on automation and advanced technology to enhance productivity.
- Fourth is to delay retirement and retention of older workers.

We will certainly see proposals in the first three areas - such as guest worker programs or subsidies for automated technologies. While this will generate policy questions worth careful consideration, it is beyond the scope of this paper - except to note that while immigration and outsourcing may address some business concerns, they will not meet the needs of workers who are confronting the physical and cognitive changes of aging and must choose between continued work or retirement in the face of escalating health care costs and diminished pension security.

The fourth scenario, delayed retirement of older workers, is already well underway. For businesses this is a matter of competitiveness, skill retention, and pension costs. For individual workers it is partly the rational response to economic need and partly a choice about adapting work-life balance to increased longevity.

It is worth noting that while the pressures on workers to consider staying employed longer have been growing for some time they have sharply increased in just the past year. For example since the early 1990's defined benefit pension plans have become less common and defined contribution plans more common. While this trend would have made some workers consider delaying retirement under any circumstances, the current economic crisis has made the riskiness of market-dependent retirement income an immediately frightening reality.

While it appears inevitable that more workers will opt to keep working longer, and while some public and private incentives to do this have already emerged - for example the phased increase in the age for full social security benefits and the decrease in the post retirement earnings penalty - it remains the case (as noted by the US Senate Special Committee on Aging) that "barriers in pension law, shortcomings in job training programs, and family caregiving commitments make it difficult for older workers to keep working."<sup>7</sup>

In thinking about how to address these barriers and shortcomings it is going to be important to keep two questions in mind:

First, can we ensure that policies intended to keep people at work longer will not have adverse consequences? (e.g., we could make longer careers more attractive by fully eliminating annuity offsets for employment after retirement) and

Second, can we make early retirement less attractive? (e.g. by eliminating retiree health insurance benefits).

While both approaches discussed above might be equally effective in retaining older workers, the consequences for the workers themselves would be quite different. For instance, many defined benefit pension plans encourage relatively early retirement by capping benefits even if employees continue to work. An alternative to accomplish the same thing with less adverse consequence to the employee might be to change the accrual structure of a defined benefit plan so that there would be a net gain to staying another year or two, such as was done in the reform of the Finnish pension laws in 2005.<sup>8</sup>

7 <http://aging.senate.gov/issues/olderworkers/index.cfm>

8 Forma P, Tuominen E, Vaananen-Tomppo I. Finnish Pension Reform and Intentions of Older Workers to Continue at Work. Finnish Centre for Pensions Working Papers 2006:2.

Equity is a related concern. Employers may wish to retain older workers by offering them phased retirement options, but only for those who are especially “valuable” because of their skills, knowledge or work habits – these most valuable employees tending to be highly compensated managers. Such selective benefits might seem to discriminate against other workers perceived by the employer to be less valuable but who are in equal or greater need of continued employment to meet their basic needs. However, current U.S. law may allow such programs. Formal retirement plans under the ERISA law are prohibited from favoring highly compensated employees. Knowing this, many employers have chosen to offer special phased retirement opportunities on an informal and ad hoc basis to selected individuals outside the legal framework of ERISA. To date the ADEA has not been an effective tool in addressing the discriminatory nature of these policies.

Finally, how do we ensure that workers extending employment past traditional retirement age can do so in a working environment that allows them to perform safely and productively to the end of their careers?

There is a body of evidence, particularly work done by Ilmarinen and colleagues at the Finnish Institute of Occupational Health, suggesting that attention to four general dimensions of worklife can maintain work ability as people become older on the job and can prolong the period during which they can continue to work safely and productively.<sup>9</sup>

**The first policy dimension** is the work environment, the way that the physical, cognitive and organizational demands of work match worker capabilities. Injuries, disability and poor job performance are more likely when the physical requirements of work exceed individual capabilities, a mismatch potentially more frequent among older workers. Workplace ergonomics, human factors engineering and the principles of “universal design” can help young workers to reach older ages without injury and older workers to continue work without further harm.

Cognitive function also varies with age, particularly in the areas of complex problem solving and multitasking. Training programs, instructional materials, supervisory styles, workplace displays and signals all need to take these differences into account.

The way work and workplace relationships are organized also affects the ability of employees to perform safely and productively. Important factors include work schedules, supervisory relationships, decision control, and avenues for conflict resolution. For example, lower injury rates are associated with job autonomy, positive labor relations, low stress, low grievance rates and long-term commitments to the workforce.<sup>10</sup>

Policy attention to the job environment should include the following:

- Incentives and/or requirements for workplace ergonomics and human factors programs.
- This could come about through:
  - » legislation (e.g. the safe patient handling requirements in Washington State);
  - » increased OSHA enforcement of the “general duty” of employers to keep workplaces free of recognized hazards;

<sup>9</sup> Since 1981, a quantitative Work Ability Index (WAI), derived from a standardized, self-administered employee questionnaire, has been used in this research. The WAI at baseline has been found to be associated with disability pensions and mortality at 4 and 11 years of follow-up. WAI scores are also associated with disability and sickness absence costs as well as self-reported quality and productivity. While there is an overall decrease of WAI with age, there are several potentially modifiable variables that have been shown to enhance or inhibit this general trend. Included among the variables associated with preservation or enhancement of WAI are a) adjustments in physical work environment (physical workload, repetitive motion, and regulation of one’s own work and breaks); (b) adjustments in the psychosocial work environment (flexible work schedules); (c) health and lifestyle promotion (physical exercise, risk factor reduction,; and (d) worker skills and competency building. This evidence regarding work ability, while substantial, is somewhat indirect and little has been done in the way of rigorous study to demonstrate the effectiveness of interventions based on this work. A more full discussion about this evidence base is found in Silverstein, M, “Meeting the Challenges of an Aging Workforce,” Am J Ind Med. Published Online: Feb 12 2008. DOI: 10.1002/ajim.20569.

<sup>10</sup> Shannon H, Mayr J, Haines T. 1997. Overview of the relationship between organizational and workplace factors and injury rates. Saf Sci 26(3):291–317. Landsbergis PA. 2003. The changing organization of work and the safety and health of working people: A commentary. J Occup Environ Med 45(1):61–72.

- » or rulemaking to require age friendly workplaces. The rulemaking option is particularly challenging because of the invocation of the Congressional Review Act to invalidate OSHA's ergonomics rule and prohibit further regulations that are "substantially similar."
- Incentives and/or requirements for measures that make work organization more age friendly. Examples include limitations on mandatory overtime or worker participation on safety and health committees that are free from management domination.

**The second policy dimension** focuses on individual needs for disease prevention and health promotion. Five chronic diseases more common with aging (heart disease, cancer, stroke, chronic obstructive lung disease, and diabetes) cause almost 70 percent of all deaths. Expenditures for employees just at risk for these diseases – measured by blood pressure, body weight, and cholesterol – averages over 50 percent more than for those at low risk. Other chronic non-fatal problems of aging, such as arthritis or hearing loss, add enormous medical costs and indirect impacts of absenteeism, low productivity, employee turnover and replacement.

While workplace wellness programs have proliferated, there is a strong evidence base for only a limited set of clinical service interventions. Among those recommended by the U.S. Preventive Services Task Force are influenza immunization, colorectal cancer screening, mammography, cholesterol and blood pressure screening, which can prevent or delay disability from chronic conditions by as much as 10 years, especially when supplemented by not smoking, eating a healthy diet and moderate physical fitness.

The design of health insurance benefits can inadvertently discourage the use of these preventive services of proven value. There is evidence that small deductibles or co-pays will significantly reduce the utilization of colon cancer screening services. Such cost control measures are short sighted and should be eliminated.

Insofar as health insurance premiums increase with age, employers who choose to provide health insurance benefits may be disinclined to hire or retain older workers. If a new national health program were to mandate employer coverage, it would be important to avoid discrimination by making it clear such practices would be subject to sanctions under the Age Discrimination in Employment Act.

Current Medicare rules discourage the retention of workers who want to continue full or part time work after age 65. Because Medicare is the secondary health care payer employers who provide health care coverage have an incentive to not hire or retain these workers or to discontinue the company health insurance program. We need a careful policy review of the pros and cons of making Medicare the primary payer or allowing private benefits to wrap around Medicare by reducing some of the private benefits as long as the total package is not diminished.

**The third policy dimension** addresses flexible work arrangements with options for the way that work-life balance is achieved, that take into account employee needs that change with age, particularly as they confront the realities of increased longevity, long term health care needs, decreased pension fund stability, and multi-generational family demands. The University of Michigan Health and Retirement Study has consistently shown that three out of four older workers would prefer to reduce hours gradually and stay longer rather than retire abruptly.<sup>11</sup> Large numbers are also interested in alternative job designs like flexible hours, job sharing, seasonal work, or telecommuting that reduce job stress and allow them to balance obligations and interests within and outside work. Many would like to continue full or part time work after they begin to draw social security and private pension checks.

Notwithstanding these strong worker interests in flexible arrangements, often shared by employers who need the continued contributions of older employees, they have not flourished. As mentioned earlier, even among the largest employers formal phased retirement programs are hard to find.

Policy needs include:

- the ability to begin receiving pension payments before age 62 while still working part time,
- the ability to reduce working hours in late career without a reduction in eventual pension benefits,

<sup>11</sup> Health and Retirement Study Participant Update, Winter 2008. University of Michigan Institute for Social Research.

- and the continued eligibility for health care and other benefits if working hours are reduced in late career.

Many workers would like to be able to transition to part time work in their late fifties but are unable to do so unless they can begin to draw money out of their pension accounts to supplement their part time wages. Prior to 2006 the federal tax code and pension laws prohibited such “in service distributions” from defined benefit pension plans unless the employee had reached full retirement age (usually 65) or had fully terminated employment and took work elsewhere.

The Pension Protection Act of 2006 loosened these rules slightly, allowing distributions at age 62 (but not earlier) without terminating employment, even if this is before normal retirement age. Since 2004 a proposed change to IRS rules would take this one step further by allowing employees over the age of 59 ½ to reduce their hours by at least 20 percent while beginning to receive a percentage of their retirement benefits.

There are other disincentives to delayed or phased retirement that require policy solutions. For example, while it is easier to take money out of a defined contribution than a defined benefit pension plan while still working, this can only be done with a significant tax penalty if done before full termination of employment or age 59 ½. Also, many pension plans are specifically designed to discourage longer careers, for example by accruals that turn negative when workers are in their late fifties – i.e. the increased pension earned by working an extra year does not compensate for the fact that the person will get one less year of benefits. Many pension plans discourage workers who want to extend their careers with a few years of part time work before full retirement by calculating pension benefits based on the average earnings during the last 3-5 years of employment. If these plans modified the calculation to the highest 3-5 years of consecutive employment workers would not be penalized for reduced hours at the end of their careers.

A note of caution is warranted here. While early “in service” pension distributions may make flexible, phased retirement possible and attractive, they can have significantly adverse long term consequences for workers if they trade the early benefit for a reduction in the amount of final pension benefits when the worker fully retires. Very careful attention to the details of pension design will be needed to prevent “sleight of hand” plans that give with one hand and take with the other.

**The fourth policy dimension** is the social context of work. Many daily living tasks become more challenging with aging and can interfere with successful job performance. For example, older workers who no longer can drive to work easily have greater needs for public transportation, car pools, or telecommuting. Also, evolving family needs may become a significant distraction at work. An employee may not be able to function adequately at work without knowing that assisted living or home health care options are available for an older parent or spouse. While some measures to address these needs may be within the reach of individual employers (e.g. work-based car pools or elder care benefits), some must be addressed as broader social services such as improved access to health care, public transportation and laws to protect against discrimination

Plans for revitalizing our economy and rebuilding our infrastructure need to take into account aging at work, for example through development of regional and local public transportation systems rather than highway construction and a health care system that provides sufficient care for the elderly, allowing older workers with very old parents to continue working rather than caretaking.

With these four general strategies as context we can turn to more specific policy considerations. There is a need for new legislation. Two bills introduced in 2007 should be reintroduced and acted upon by the new Congress.

The Older Worker Opportunity Act of 2007 (S709) would:

- Amend the Employee Retirement Income Security Act of 1974 (ERISA) to extend COBRA continuation coverage for certain older workers.
- Amend the Workforce Investment Act of 1998 to take age into account (as one “hard to serve” population) in providing statewide and local employment and training services

- Direct the Secretary of labor to identify best practices for hiring and retaining older workers

The Health Care and Training for Older Workers Act (S708) would provide a tax credit of 25 percent of (first \$6000 of) wages for employing older workers (62+) in formal flexible work programs that provide a full- or part- time flexible schedule and full pension and health care benefits. No discrimination in favor of highly compensated employees would be permitted.

Also, existing laws may need more effective enforcement. The Age Discrimination in Employment Act has been in place since 1967 (with subsequent amendments that lowered the age of coverage from 65 down to 40) and is administered by the Equal Employment Opportunity Commission (EEOC). The Act eliminated a number of age-based practices, including mandatory retirement age, denial of participation in benefit programs and retirement plans based on age. While insurance benefits must be provided on an equal benefit or equal cost standard, it is lawful to provide some reduced benefits to older workers if this equalizes the costs for benefits to younger workers.

As the numbers and percentages of older workers continue to grow, special vigilance needs to be directed to the way this Act is interpreted and enforced. Although the Act protects against discrimination in hiring and work practices, complaints and litigation have concentrated on termination from work (discharges and layoffs). This is likely to change as more older workers remain on the job and experience concerns about flexible work arrangements, retirement options, physical and cognitive stresses, and chronic illnesses. Discrimination in hiring and conditions of employment may be harder to prove than unfair termination because of the difficulty in identifying an affected class of employees. Statutory changes may be required to anticipate and address this.<sup>12</sup>

There may also be new scenarios for discriminatory discharge cases. As pension funds shift from defined benefit to defined contribution designs older workers will be inclined to stay on the job longer. If employers intended this incentive for senior workers there will be no problem, but some employers who change pension plans just for an economic advantage may be unhappy when older workers stay on the job. The EEOC will need to be watchful for increased discriminatory discharges under these circumstances.

Some concluding remarks are needed to place these issues in the context of the larger changes that are approaching as the new administration and Congress wrestle with proposals for economic recovery. There should be little doubt that we will see more incentives, both public policy and private, to slow down the retirement of baby boomers, even as businesses contract in the crisis. It is in just such circumstances that adverse, unintended consequences become most possible. It will take the utmost care to ensure that workers are treated fairly and that we do not sacrifice their dignity and health in our zeal for emergency fixes to our financial systems and business models.

We need special watchfulness in three areas. First, can we encourage longer careers by rewarding delayed retirement instead of penalizing early or traditional retirement? Second, can we anticipate and prevent opportunities for age discrimination? Third, can we ensure that those workers who choose to work longer are able to do so in age friendly environments that enhance their work ability, safety, and health?

Designing the age friendly workplace of the future is a much more active process than formulating policy objectives. It means developing and implementing specific action plans with measurable performance objectives in each of the four areas I described earlier: the work environment, attention to individual health promotion and disease prevention, flexible work arrangements, and the social context of work. There is a need for some practical tools to help organizations put such action plans in place. One such tool that I have been working on for some time together with colleagues at the UW and the WA Department of Labor and Industries is a two day hands on workshop for the design of an age friendly workplace. You may have seen the poster session on this workshop and have talked about this with my colleague Ken Scott.

In closing it is worth a reminder that the concerns I have raised have been expressed repeatedly for more than twenty years. The “to do” list from the same 1987 Detroit conference that provided the opening to this talk is a fitting way to close it.

“First, there should be provisions for the continuous education and training of workers...Second, jobs and work environments can be redesigned according to ergonomic criteria which take into account the physical capabilities and limitations of individual workers. Third, older workers should be given opportunities to scale down their level of work involvement through job sharing, part time jobs and other kinds of reduced work schedules...Fourth, there should be provisions for pension portability...”<sup>13</sup>

Now, in 2009, it would be a fine time to actually do some of these things.

One final reminder is that this is not about older workers. It is about the aging workforce. It's never too late for new ways to prevent injuries and illnesses from happening or getting worse, but it is always better to start young.

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13 Stepp J. Older workers, new problems, new opportunities. In Bluestone I et al. eds. The Aging of the American Work Force: Problems, Programs, Policies. Wayne State University Press. Detroit, 1990.



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**APHA** is the oldest, largest and most diverse organization of public health professionals in the world and has been working to improve public health since 1872. The Association aims to protect all Americans and their communities from preventable, serious health threats and strives to assure community-based health promotion and disease prevention activities and preventive health services are universally accessible in the United States.

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