The California Wellness Foundation

Grantmaking for a Healthier California

Reflections

On the Connections Between Work and Health

The California Wellness Foundation

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June 2000 • Volume 1 • No. 3

In 1995, The California Wellness Foundation's board of directors identified Work and Health as one of its five initial funding priority areas. A total of $20 million was authorized for a five-year strategic grantmaking program known as the Work and Health Initiative. The Foundation also allocated $1 million per year for responsive grantmaking to support work and health projects originating in communities around the state. As part of its recent strategic planning process, our board chose to continue work and health as a funding priority of the Foundation for at least an additional five years, beginning in July 2001.

As we approach the final year of the Work and Health Initiative, this is an appropriate time to reflect on the original impetus for our work in this emerging field. When the Foundation first announced its interest in the intersection of work and health, not many institutions or programs had identified themselves in quite that way. Although there was a significant body of work in occupational health, we also wanted to look at employment-related factors that might influence health beyond the immediate workplace.

Cross-disciplinary work is difficult in the best of circumstances, let alone when one is attempting to meld together such traditionally separate universes as economics and health. To help us better understand the topography of this largely uncharted territory, we undertook an examination of the relevant social science literature. A synthesis of that scan (with accompanying references) constitutes the heart of this paper, along with some initial observations on the challenges we have identified as part of our first few years of grantmaking in work and health.

Our efforts in this fascinating arena are still very much a work in progress, and this piece is submitted in that spirit. We hope to facilitate dialogue, to stimulate interest by other funders, and to encourage the ongoing efforts of the growing number of creative individuals and institutions who are building a legitimate field of inquiry and practice at the critical juncture of work and health.

As always, we welcome your comments.

Tom David, Executive Vice President
The California Wellness Foundation

Reflections On the Connections Between Work and Health

By Ruth Brousseau and Irene Yen

Work and health are two important aspects of individual lives. In a public health context, the phrase "work and health" often connotes occupational health and safety. When The California Wellness Foundation's board of directors decided upon Work and Health as a priority area, it stretched this traditional meaning of "work and health" by funding a broad array of interventions to improve the health of Californians through approaches related to employment.

Through the many funding applications we have reviewed, grants we have made and conversations we have held with researchers and practitioners around the state, we have identified a number of important connections between the domains of work and health in addition to the traditional public health starting point of occupational health and safety. The purpose of this paper is to share what we have learned about the multiple relationships between work and health and some of the challenges we face working in this area.

Work is clearly an important component of most Californians' lives. In the year 2000 the California economy is booming, bringing unprecedented levels of employment to most of our citizens. There are 16 million people employed in our state, which equals nearly three-quarters of the population ages 18 to 64.[1] Many people work long days. Nearly three in 10 people (29%) are working more than a standard 40 hours per week year-round, amounting to about one-third of employees working the equivalent of a 15-month year.[2] Yet in the midst of this unprecedented prosperity some 800,000 are unemployed, and welfare reform and time limits have underscored the importance of obtaining work for those who do not have jobs.

Work is also very much a part of family life. Because of changing patterns of employment over the last thirty years, particularly among women, work and family life are closely intertwined. Fifty-four percent of mothers with children under the age of 18 living with them are employed. Moreover, as the 1998 federal welfare reform provisions begin to take full effect, some 700,000 adult aid recipients, most of them mothers with young children, are already entering the workforce or beginning to make the transition to employment.

Work affects neighborhoods and communities. The presence or absence of work and how it is distributed has an influence on the quality of life within the geographic boundaries that people consider home. Consequently, people's social networks, neighborhoods and communities also affect the resources upon which people can rely to find a job and move up economically. Clearly, work is a critical plank in people's place in society.

A healthy workforce is also important to a healthy economy. Health expenditures in California were estimated to be $137 billion in 1996, accounting for approximately 12 percent of California's gross domestic product. Private employers bear a significant portion of those costs, including man-

dated contributions to short- and long-term disability insurance as well as workers compensation and voluntary provision of health insurance benefits. They must also absorb the cost of workdays lost to illness and other conditions such as depression, which can undermine productivity.

Given the central importance of work in the lives of individuals, families, communities, neighborhoods and society, we believe that it is important to understand its multiple relationships to health. The approach we use below is threefold: l) to describe some of the connections between work and health in the research literature; 2) to provide a brief outline of TCWF's grant-making in this area to date, and 3) to share some initial observations about possible challenges for funders who might choose to work in this dynamic area.

TWELVE WORK AND HEALTH THEMES FROM THE RESEARCH LITERATURE

Work and health are connected through both direct and indirect causal relationships.

In addition to the broad factors referenced above, social scientists have identified multiple relationships between work and health. From a scan of the research literature, we have identified 12 themes that provide a platform of knowledge for improving health through interventions related to work. They are summarized below.

1. Work is central to social status, one of the most powerful predictors of heath outcomes.

A current resurgence of interest and proliferation of research in public health addresses the large disparities in health among U.S. citizens that depend upon individuals' social standing. Health and wealth go together, and poor health outcomes are clustered at the low end of the social spectrum. The very strong linear relationship between positive health and higher social status (referred to more technically as socioeconomic status or SES) holds in every society, past and present, where it has been measured.[3] Socioeconomic status is typically determined as a function of a person's education, occupation, income or a combination of these factors. Since education influences occupation and occupation in turn affects income, there is considerable overlap among these three factors.

The knowledge that education, occupation and income directly influence SES, and in doing so affect health outcomes, places a new, critical importance on advancing individuals' SES as a means of reducing health disparities. It is important to note that there are exceptions to the linear relationship between high SES and positive health for some health outcomes and populations. Overall, however, the robust relationship between social standing and health makes a strong case for the importance of education and training, economic development, job placement, retention and advancement as strategies for improving long-term health outcomes.

2. Unemployment is associated with a large number of health risks.

Ever since Emile Durkheim observed in 1897 that increases in unemployment are associated with rising suicide rates,[4] an important line of social research has focused on the health impacts of unemployment. Across a broad range of research methodologies, from case studies to econometric modeling, this research consistently shows that unemployment has a strong, deleterious association with health. In a meta-analysis of this research, Jin and colleagues[5] reviewed 46 epidemiological studies reporting the association between unemployment and many adverse health outcomes including low self-esteem, high rates of depression, excess suicides, increased alcohol consumption and some measures of poor physical health such as depressed immunological functioning. Moreover, a number of studies indicate that unemployed people have higher mortality rates than employed individuals,[6, 7, 8] and in studies based on self-reports, laid-off workers report more stress, ill-health and disability than their employed counterparts.[9, 10, 11] Even people who are still employed but threatened with job loss suffer adverse health consequences such as increased weight, heart disease,[12] and high cholesterol levels.[13, 14] One study links unemployment to increased rates of violence.[15] This convergence of evidence across a variety of research methods and measures lends confidence to the assertion that unemployment is associated with poor heath.

3. Inadequate employment is also associated with poor health outcomes.

An important breakthrough in work/health research makes the critical point that simple comparisons between the health of people working and those who are unemployed fail to capture the complexity of the range of individuals' experiences in the labor force. Indeed, in 1999, only a third of California workers held what many would consider "traditional" jobs (i.e., single full-time jobs year-round, working a day shift as permanent employees).[16] To expand the breadth of research linking health and employment, Dooley, Fielding and Levi[17] identified a typology of work experience reflective of individuals' changing work patterns that merit more research attention. Rather than a simple dichotomy between employment and unemployment, the researchers proposed a continuum of employment ranging from overemployment (too much overtime, holding multiple jobs) to long-term unemployment. Between these extremes are a number of categories such as underemployment (working fewer hours than desired or for incomes less than education and training would predict) and contingent employment (working on a temporary or contract basis). Some research has begun to focus on categories within this typology. Dooley and Prause, for example, found that underemployment, similar to unemployment, results in increased alcohol consumption but at less extreme levels than unemployment.[18]

4. The degree of control that employees exercise over their work influences health.

Many scientists have focused research on different working conditions and their effects on health and mental health. These include, for example, workload and pace, work schedule, job complexity, role ambiguity, career security factors, interpersonal relations and job content.[19]

Robert Karasek and Töres Theorell have spearheaded a fruitful area of research focused on two important dimensions of working conditions: the amount of work employees are expected to accomplish ("job demands") and the extent of their decision-making authority over how to complete the work ("decision latitude"). Studies researching the interplay of these factors have found that workers who have high demands and low decision latitude, which they term "job strain," are at risk for a number of poor health outcomes. Job strain has been found to be particularly associated with cardiovascular disease.[20, 21] Other research has identified relationships between job strain and all-cause mortality,[22, 23] exhaustion and depression,[24] poor perceived health,[25] poor mental health and physical functioning,[26] and alcohol abuse.[27] Some research has suggested that unemployment rates result in poorer health even among those who are working because high unemployment causes changes in job structures that reduce decision latitude and increase job demands for those who are working.[28]

5. At least one study indicates that every step up the occupational ladder has positive health consequences.

An intriguing line of research was pioneered by Michael Marmot in England and published in a series of articles called the "Whitehall Studies." Examining mortality rates due to coronary heart disease for government workers in Britain's civil service, the research found that employees experience increased longevity at every step increase in this finely graded employment hierarchy.[29] This current research, similar to that of Karasek and Theorell, hypothesizes that the increased control over one's work that comes with each rung of the occupational ladder best explains the health advantages of higher occupational standing.

6. Access to health insurance comes primarily through the workplace and has important health consequences.

Work is the portal for a number of health-related benefits and programs, the most important of which is health insurance. The percentage of Californians receiving health insurance through employment trails the nation by 11 percentage points, yet remains the vehicle through which most Californians (58 percent) are insured.[30] Access to health insurance has important implications for health behaviors and, ultimately, health outcomes. Nearly one-third of uninsured, nonelderly adults in California report that in 1999 they did not seek medical care when they needed it. Uninsured adults are also less likely to have access to preventive care than those with health insurance coverage, resulting in lower rates of receiving blood pressure checks, routine checkups, Pap smears, dentist visits, teeth cleanings and preventive counseling. Lack of preventive care is particularly significant for the uninsured because they report higher rates of unhealthy behaviors than the insured, including smoking and being overweight, which place them at significantly higher risk for future disease and premature death. Finally, uninsured adults in California are more than twice as likely as the insured to report their health as fair or poor and less likely to report their health as excellent or good than are insured Californians.

7. Worksite health promotion programs improve the health of those who have access to them.

Over the past several decades, corporations have recognized the benefits of programs that improve the health of their employees. Many programs began as worksite safety programs to guard against the risks and hazards of specific jobs and, over time, expanded to address a broader range of health needs such as immunizations and training in smoking cessation, stress management, exercise, nutrition and back care. Fielding makes distinctions among programs that prevent disease (such as clinical screenings), promote health (such as smoking cessation programs) and protect health (such as injury prevention).[31] Donaldson, Gooler and Weiss observe that prior to 1991, analyses of health promotion programs were generally critical of their effectiveness but since that time research studies have shown positive benefits associated with health promotion programs.[32] A review of 316 studies that evaluated worksite health promotion programs found positive results for weight control programs, borderline positive results for nutrition, exercise and cholesterol programs, and weak results for health risk appraisals.[33] Other literature reviews of smaller numbers of studies have reported overall positive impacts of worksite programs.[34, 35] In California, significant job-growth is occurring in small businesses, and important attention is beginning to be directed to the practice of instituting health promotion in these smaller organizations.[36]

8. Despite its overall health benefits, work can be hazardous to health.

In 1998, 617 Californians died as a result of injuries in the workplace, and 1,358,350 were injured while working.[37] The accumulated costs for workplace deaths and injuries have only recently been calculated for California and are awaiting publication.[38] A reasonable estimate can be reached by taking California's share of the U.S. total estimated costs. The most recent national figures are from 1992 and place the total cost of U.S. workplace injury and illness at $171 billion.[39] California's share of this would be 12.1 percent, or more than $20.5 billion. Some of the most prevalent work-related health conditions include asthma and other lung disorders, low back disorders, traumatic injury and fertility and pregnancy abnormalities.[40] According to a 1995 study, violence has become the leading cause of occupational fatalities in California.[41]

9. Work influences the health of families and children.

A large and important body of research focuses on work-life connections. Since World War II, there has been a dramatic increase of women, especially mothers, participating in the labor force. In California 62 percent of working-age women were part of the paid labor force in 1999,[42] and 45 percent of households with at least one employee included children.[43] Rosalind Barnett, a prominent researcher of work and family life, poses the question of why, since so many people who work live in families, so much of the research focuses on single employees.[44] She points out that some of the work and health findings that hold for individuals also hold for families. For example, some research has shown unemployment to have negative influences on the health of

family members in addition to that of the person who lost a job. In another example of the influence of work on families, asbestos workers who brought home asbestos dust on their clothing contaminated their spouses and children and endangered their health. In general, however, Barnett points to the need for an expanded and integrated model that takes into account the multiplicity of variables that influence the relationships between work and family. One area of particular concern in the work/family literature is the negative impact of working nonstandard hours (evening shifts, employer-arranged irregular schedules, night shifts and rotating shifts). In California, 23 percent of employees work evening, night or rotating shifts, and 30 percent of people who work nonstandard shifts are parents.[45] Rotating schedules and nonstandard shifts have been linked to risk of coronary heart disease[46, 47] and increased fatigue and disrupted sleep patterns.[48, 49]

10. Health conditions affect work status.

In much of the research reviewed above, there has been an implicit assumption that workplace conditions affect health and the major causal arrow points from work to health. Relatively few studies have actually used methodologies that allow for assessing causal direction, and in many cases it is plausible to believe that health also influences work status. It is well-documented that individuals with disabilities often have a difficult time finding good employment. In California, 76 percent of people ages 18 to 64 are employed, compared with 46 percent for people with disabilities. Work-related health impediments are not always visible. Depression stands out as a significant barrier to employment in a meta-analysis of 20 random assignment welfare-to-work and welfare reform studies in a report to be released by the U.S. Department of Health and Human Services this year.[50]

It is likely that if research methodologies were sophisticated enough to capture the complexity of individuals' experiences over time, we would find a great deal of interplay between work and health status with causal arrows in both directions. For example, an individual may experience some health impairment that causes him or her to drop back to less than full-time work. This could result in a loss of health insurance that might decrease access to health services that could then result in a further loss of health even leading to disability. Fortunately, analytic strategies are consistently improving to include increased capacity to more thoroughly examine the long-term, complex and reciprocal effects of work and health.

11. Income inequality affects health.

A comparatively new line of research indicates that health is influenced not only by absolute levels of wealth, but also by relative levels of wealth. Wilkinson first reported that countries with high levels of income inequality have higher death rates than countries in which income is more evenly distributed in the population.[51] In this country, Lynch, Kaplan and colleagues have similarly found that states and regions with greater distances between rich and poor have poorer health outcomes than those with less income dispersion.[52]

Income inequality is an important issue for California — only four states have a greater disparity of income between the rich and poor; and between 1969 and 1989, inequality increased by a greater degree in California than in any state except Michigan.[53] These findings pose important questions about how and why large gaps between the rich and poor influence health. The considerable numbers of research studies being launched to address this finding[54] will doubtless elucidate important pathways through which income distribution affects communities, social networks and service systems to ultimately have an impact upon the health of the overall population.

12. An emerging social science framework integrates labor market conditions, employment experiences and health.

A recent article by Amick and Lavis on work and health provides a framework for integrating labor market conditions, workplace conditions and benefits, and health.[55] Significantly, the framework assumes ongoing, reciprocal relationships between work and health and points to the importance of longitudinal information to assess the interactive nature of these domains over the course of time. It allows for different levels of information about work — including regional and local economic conditions and specific job-related conditions such as degree of autonomy — as well as different aspects of health conditions. This framework makes a significant contribution to the research because it integrates the disciplines of economics and health to demonstrate their interplay; provides a context for the myriad discrete relationships that comprise the work and health literature; generates hypotheses across disciplines; and invites a variety of methodological approaches to specifying these relationships. Barnett creates a similar model for reciprocal influences between work and family.[56]

TCWF'S INITIAL GRANTMAKING IN WORK AND HEALTH

TCWF's grantmaking addresses many aspects of the relationship between work and health.

The centerpiece of our grantmaking in work and health has been the Work and Health Initiative. Authorized by TCWF's board in 1995 for a total of $20 million over five years, this grantmaking program has four distinct components, complemented by an Initiative-wide evaluation that is being conducted by a team of investigators from Claremont Graduate University. All of our Initiative grantees were selected via competitive statewide requests for proposals.

Additionally, we have provided $1 million per year in general grants for a range of work and health-related projects proposed by agencies throughout the state, including some grants for core operating support of key organizations in the field. These grants have included support for projects to improve the working conditions of immigrant and low-wage laborers, worksite health promotion programs for employees in small businesses, addressing mental health barriers for

people making the transition from welfare to work, and expanding employment opportunities for people with disabilities.

The components of the Work and Health Initiative are listed below and correlated with the work and health themes reviewed above.

Computers In Our Future. Good jobs in California increasingly require computer skills, and surveys indicate that access to computers and technology training are unevenly distributed in the population. Youth from middle- and high-income families have far more experience with computers and training in technological skills than youth from low-income communities.[57] To offer California youth from low-income communities greater access to computers and computer training, and thereby enhance their educational and employment opportunities, TCWF has funded 11 community computing centers in geographically diverse areas of California. These centers provide many low-income youth and adults access to training and opportunities to develop technological skills that are anticipated to have long-term positive impacts on their health. This program intervention draws upon a number of the findings in the research literature, including themes one through five and 11 above, which relate employment status and income to health.

Health Insurance Policy Program. Because of its centrality as an access point to health coverage for most Californians, as well as its volatility in a rapidly changing health marketplace, it is critically important to have a solid base of information about employer-sponsored health insurance—its availability, cost and quality. It is also important to explore and support those groups in California using creative methods to increase the number of individuals who have access to insurance through the workplace. The Health Insurance Policy Program funds researchers at the University of California at Berkeley and at Los Angeles to research and publish an annual inventory of health insurance in California with recommendations for policies to expand its availability.[58] A grant to the Center for Governmental Studies for the Insure the Uninsured Program supports action-oriented strategies to increase access to health insurance.[59] The health rationale for this strategy of improving the health of Californians is provided in theme number six above.

Winning New Jobs. California's economy has rebounded from the serious recession in the early 1990s to produce significant numbers of new jobs. While this growth is good for the overall economy, it masks considerable turbulence in some industries and professions that continues to result in people losing their jobs. Despite a booming California economy in 1999 that has brought record lows in unemployment rates, a fifth of California workers reported in 1999 that they had been displaced from a job in the past three years, and of those, about half had lost jobs in the past year.[60] The Winning New Jobs program funds an intervention developed and evaluated at the University of Michigan and implemented in California at three sites coordinated by Manpower Demonstration Research Corporation. This program helps workers who have recently lost their jobs gain the skills necessary to successfully become reemployed and to buffer themselves against the negative health and mental health consequences so frequently associated with job loss. This

program is being implemented in California at the NOVA Private Industry Council in Silicon Valley, the Los Angeles County Office of Education, and Proteus in Fresno and other Central Valley communities, and aims to serve 5,000 individuals. The social science research described in themes two and three above support this funding approach.

Future of Work and Health Program. The goal of the Future of Work and Health Program is to understand the rapidly changing nature of work and its impact on the health of Californians. To accomplish this, the Foundation has made grants and brought together various groups to focus their attention on the work and health of Californians. A panel of experts in economics and health—including researchers and practitioners — was convened to advise the Foundation on those issues most important to the future work and health of Californians. The panel identified three critical trends: 1) significant numbers of Californians are being left behind in a boom economy; 2) income inequality is increasing in California at a pace faster than the rest of the nation; and 3) significant changes in the contract between employer and employee are leaving many Californians without basic forms of social insurance and creating barriers to upward mobility. Based on this information, TCWF has made seven grants to research and service organizations to develop a deeper understanding about these trends. Finally, we awarded a grant to the Institute for Health Policy Studies at the University of California, San Francisco to fund a three-year longitudinal survey — the California Work and Health Survey — that assesses the work and health of Californians. The broad scope of this program builds on all of the research findings described above.

PRELIMINARY OBSERVATIONS ABOUT GRANTMAKING IN WORK AND HEALTH

Many grants at the intersection of work and health spotlight important issues that do not surface when a cross-diciplinary lens is not used.

The cross-disciplinary aspect of bridging work and health has its share of challenges.

We have found that the cross-disciplinary aspect of work and health poses particular challenges for funders both in health and in economic development/employment. For health funders, perhaps the biggest challenge is that many interventions related to employment can be expected to demonstrate health effects only many years after the intervention. Youth training programs, for example, may open up jobs, high-quality employment and careers to youth, but the health effects of this upward mobility may only be visible many years into a service recipient's career. It is challenging to convince boards of health foundations that placement into jobs with upward mobility is an intervention that competes with the power of direct health services, such as providing immunizations. But that is precisely the case that needs to be made if work and health is to be considered a serious area of investment. In this emerging

area of work and health, program evaluators and boards of directors either need to find satisfaction in short- and intermediate-term measures of success that will probably not be health outcomes, or commit to following samples over a period of time long enough to determine the program's health effects.

For employment and economic development funders, the common assumption is that "it's all about jobs." A working philosophy of many in this field is that if people were only employed, other aspects of their lives would fall into place. The challenge here may be widening the lens to incorporate what is known from the field of health. This could take the form of considering health education and mental health interventions or referrals as part of basic training programs for jobseekers through employment agencies. Many agencies working with welfare recipients going back to work have done precisely this. Employment service agencies could also develop a focus on "healthy jobs" that meet some of the criteria described above, with the aim of placing jobseekers in employment that enhances health. This would create an opportunity for both employers, employees and employment service agencies to focus on characteristics of jobs that promote health and wellness rather than simply filling job openings.

California's diversity challenges our assumptions about work and health.

We have found that, because of the diversity of California's labor force (55 percent non-Hispanic white; 26 percent Latino, 10 percent Asian/Pacific Islander and 7 percent African American in 1999),[61] the state provides an interesting laboratory within which to understand work and health as it differs by race and ethnicity. Much of the work and health literature is based on samples of the population as a whole in which Caucasians have dominated the statistical power. California's workforce is quickly becoming non-majority white, a preview of where much of the rest of the country is headed. With this diversity, important opportunities arise to examine racial and ethnic trends in work and health. Some of them are surprising.

Morales has pointed out that Latina immigrant farmworkers give birth to healthy babies despite fitting a demographic profile that is very high risk, including frequently receiving little or no prenatal care.[62] This finding calls for further questions into what the Latina population is doing that can be transferred to other demographically high-risk groups. Operario and Adler analyzed 1998 California Work and Health Survey data to examine the relationship between occupation and health.[63] As anticipated based on previous research, a strong linear relationship was found for the sample as a whole: increasing occupational status was associated with positive health. When this gradient was decomposed for specific ethnic groups, the linear relationship still existed but changed in important ways. They found that not all ethnic groups reap the health rewards of increasing occupational status found in the general population, and the question is why. Using the same data source, Goto created an index measuring discrimination in the workplace and found that among an Asian-American sample, the reported experience of discrimination resulted in poorer health outcomes and higher rates of depression.[64] Together, these examples point to the

importance of disaggregating samples to understand patterns of work and health that vary by ethnic and cultural groupings, creating a more complex picture of relationships between work and health that is critical for California.

Work and health relationships are dynamic and require ongoing monitoring.

We have been impressed with the fact that workforce participation has a dynamic status affected by many different forces and conditions. It changes across different life stages and generations, is deeply affected by the economy and the availability of jobs, and is influenced by family characteristics and governmental policies. As described above, if the traditional model of work is full-year, full-time employment, it is a picture that currently applies to only one-third of all Californians. Challenging the traditional notion of employment as a job for life, fully 40 percent of Californians have been at their current jobs for fewer than three years.[65] Different eras require different sets of skills to gain employment and to advance occupationally. In the hottest economic areas of California, for example, graduate education is increasingly considered time lost in comparison to the opportunities for fast fortunes in high-tech startups. Age, experience and longevity at one job — traditional hallmarks of "good employees" — are considered factors that could work against people searching for jobs in Silicon Valley.[66]

Given the dynamism of work and individuals' relationships to work, it is important to monitor relationships between work and health over time. It is critical to know how people work, what their employment experiences are and how these relate to their health. Because of its vibrant and diversified economy, California is an ideal location to identify emerging trends in work and the health implications of those trends. While some national surveys have rich detail about employment and others include many aspects of health, few resources exist that make it possible to examine work and health together. Especially because of the important questions concerning causality between work experience and health conditions, it is important to follow individuals over time in longitudinal research. Lastly, most labor markets are regional, which makes it important for sample sizes to be large enough to include information about the regional context for employment.

It is important to articulate work and health policies.

The proposition developed in this paper that good jobs are one of California's best health promotion strategies has important policy implications. The economy itself plays a substantial role in determining the availability of jobs, salaries and workplace benefits. Many factors of work are also regulated by government policies, making it important to identify those policies most central to the work and health of Californians and to clearly articulate the connections. Seen through a work and health lens, policies that boost income, such as a minimum wage increase and the earned income tax credit, are not only economic policies but also health policies. Policies concerning health insurance also have important economic and health considerations, as do workplace health and safety issues. The availability of high-quality child care to enable women to

go to work and raise healthy children is a work and health issue. We recognize that it is not easy to translate strategies about effective work and health interventions into policy, and the diversity of California makes this an even more complicated task.[67] In the funding that we have done thus far, we have only begun to focus on the policy dimensions of work and health and much remains to be accomplished.

CONCLUSION

In this paper, we have mapped out some of the most central connections between work and health. We have also described approaches that The California Wellness Foundation is using to improve health through employment-related strategies. Finally, we have identified some of the challenges we have experienced in this cross-disciplinary endeavor. We hope that through this paper and other products of the Work and Health Initiative, we can help build recognition of the profound connections between employment and health, the qualities of jobs that enhance health, and the influence of the economic environment on both work and health.

Ruth Brousseau is Senior Program Officer at The California Wellness Foundation where she and Program Officer Lucía Corral Peña manage the Work and Health Initiative. Prior to coming to TCWF in 1996, Brousseau was program executive for The San Francisco Foundation where she managed a grantmaking program in Community Health and designed the Lifeline Initiative for Children and Youth. Prior to working in philanthropy, Brousseau served as executive director of the Mental Health Association of San Francisco. She has a longstanding interest in the mental health correlates of work and has conducted and published original research on the relationship between work and depressive symptoms among mothers of young children with incomes at poverty levels.

Irene Yen is a social epidemiologist at the UC San Francisco Institute for Health and Aging. Her research focuses on the influence of neighborhood and work social environments on health behaviors and health status and the health effects of racial discrimination. She has worked as a consultant for philanthropic foundations and community organizations including the Yunnan Province Women's Reproductive Health and Development Program funded by the Ford Foundation and the Oakland-based Center for Elders Independence, an adult day health care center.

ENDNOTES

Please note that articles and written products that have resulted from grants of the Work and Health Initiative are indicated below with asterisks.

1 U.S. Department of Labor, Bureau of Labor Statistics. Available at www.cal.mis.cahw.net.gov.

*2 Yelin, E. and Trupin, L. Analysis of data from the 1999 California Work and Health Survey. Available at http://medicine.ucsf.edu/program/cwhs.

*3 Proceedings from the Future of Work and Health Conference, April 1998. Convened by The California Wellness Foundation and Institute of Regional and Urban Studies. Available at www.irus.org.

4 Durkheim, Emile. 1897. Suicide. In Simpson (ed.). New York: The Free Press; 1951.

5 Jin, R. L., Shah, C. P., Svoboda, T. J. 1997. The impact of unemployment on health: A review of the evidence. *Journal of Public Health Policy* 18:275301.

6 Iversen, L., Andersen, O., Andersen, P. K., Christoffersen, K., Keiding, N. 1987. Unemployment and mortality in Denmark, 197080. *British Medical Journal* 295:879-84.

7 Martikainen, P. T. 1990. Unemployment and mortality among Finnish men, 1981-85. *British Medical Journal* 301:407-411.

8 Moser, K. A., Goldblatt, P. O., Fox, A. J., Jones, D. R. 1987. Unemployment and mortality: comparison of the 1971 and 1981 longitudinal study census samples. *British Medical Journal* 294:86-90.

9 Grayson, J. P. 1985. The closure of a factory and its impact on health. *International Journal of Health Services* 15:69-93.

10 Iversen, L., Andersen, O., Andersen, P. K., Christoffersen, K., Keiding, N. 1987. Unemployment and mortality in Denmark, 1970-80. *British Medical Journal* 295:879-884.

11 Westin, S., Norum, D., Schlesselman, J. J. 1988. Medical consequences of a factory closure: illness and disability in a four-year follow-up study. *International Journal of Epidemiology* 17:153-161.

12 Zeitlin, L. 1995. Organizational downsizing and stress-related illness. *International Journal of Stress Management* 2:207-219.

13 Ferrie, J. E., Shipley, M. J., Marmot, M. G., Stansfeld, S. A., Smith, G. D. 1998. An uncertain future: The health effects of threats to employment security in white-collar men and women. *American Journal of Public Health* 88:1030-1036.

14 Mattiasson, I., Lindgarde, F., Nilsson, J. A., Theorell, T. 1990. Threat of unemployment and cardiovascular risk factors: longitudinal study of quality of sleep and serum cholesterol concentrations in men threatened with redundancy. *British Medical Journal* 301:461-466.

15 Catalano, R. and Dooley, D. 1983. Health effects of economic instability: A test of economic stress hypothesis. *Journal of Health and Social Behavior* 24:46-60.

*16 Yelin E. and Trupin, L. Analysis of data from the 1999 California Work and Health Survey. Available at http://medicine.ucsf.edu/program/cwhs.

*17 Dooley, D., Fielding, J. and Levi. 1996. Health and unemployment. *Annual Review of Public Health* 17:449-465.

*18 Dooley, D. and Prause, J. 1998. Underemployment and alcohol abuse in the national longitudinal survey of youth. *Journal of Studies on Alcohol* 59:69-680.

19 Sauter, S., Murphy, L., Hurrell, J. 1990. Prevention of work-related psychological disorders. *American Psychologist* 45:1146-1158.

20 Karasek, R., Baker, D., Marxer, F., Ahlbom, A., Theorell, T. 1981. Job decision latitude, job demands, and cardiovascular disease: A prospective study of Swedish men. *American Journal of Public Health* 71:694-705.

21 Lynch, J., Krause, N., Kaplan, G. A., Salonen, R., Salonen, J. T. 1997. Workplace demands, economic reward, and progression of carotid atherosclerosis. *Circulation* 96:302-307.

22 Theorell, T., Tsutsumi, A., Hallquist, J., Reuterwall, C., Hogstedt, C., et al. 1998. Decision latitude, job strain, and myocardial infarction: A study of working men in Stockholm. *American Journal of Public Health* 88:382-388.

23 Astrand, N. E., Hanson, B. S., Isacson, S. O. 1989. Job demands, job decision latitude, job support and social network factors as predictors of mortality in a Swedish pulp and paper factory. *British Journal of Industrial Medicine* 46:334-340.

24 Schnall, P. L., Landsbergis, P. A., Baker, D. 1994. Job strain and cardiovascular disease. *Annual Review of Public Health* 15:381-411.

25 Karasek, R. 1979. Job demands, job decision latitude, and mental strain: Implications for job redesign. Administration Sciences Quarterly 24:285-308.

26 Schechter, J., Green, L. W., Olsen, L., Kruse, K., Cargo, M. 1997. Application of Karasek's demand/control model to a Canadian occupational setting including shift workers. *American Journal of Health Promotion* 11:394-399.

27 Amick, B.C., Kawachi, I., Coakley, E.H., Lerner, D., Levine, S., Coldistz, G.A. 1998. Relationship of job strain and iso-strain to health status in a cohort of women in the United States. *Scandinavian Journal of Work, Environment and Health* 24:54-61.

28 Fenwick, R. and Tausig, M. 1994. The macroeconomic context of job stress. *Journal of Health and Social Behavior.* 35: 266-282.

29 Marmot. M.G. 1994. Social differentials in health within and between populations. *Daedelus: Proceedings of the American Academy of Arts and Sciences.* 123:197-216.

*30 Schauffler, H. and Brown, E. R. 1999. The State of Health Insurance in California. Berkeley: Regents of the University of California, January 2000. All statistics in this paragraph are taken from this source. Available at www.chpps.berkeley.edu/hipp.

31 Fielding, J. 1991. Health promotion at the worksite. *Work, Health, and Productivity.* New York: Oxford University Press, pp. 256-285.

*32 Donaldson, S., Gooler, L. and Weiss, R. 1998. Promoting heath and well-being through work: Science and practice. In Arriaga and Oskamp (eds.). Addressing Community Problems: Psychological Research and Intervention. Thousand Oaks, CA: Sage Publications, 160-194.

33 Wilson, M.G., Holman, P.B., Hammock, A. 1996. A comprehensive review of the effects of worksite health promotion on health-related outcomes. *American Journal of Health Promotion* 10:429-435.

34 Glanz, K., Sorensen, G., Farmer, A. 1996. The health impact of worksite nutrition and cholesterol intervention programs. *American Journal of Health Promotion* 10:453-470.

35 Heaney, C. A., Goetzel, R.Z. 1997. A review of health-related outcomes of multi-component worksite health promotion programs. *American Journal of Health Promotion* 11:290-307.

*36 Stokols, D., McMahan, S. and Phillips, K. (in press). Workplace health promotion in small businesses. In O'Donnell (ed.). Health Promotion in the Workplace (3rd ed.). Albany, NY: Delmar Publishers, Inc.

37 California Department of Industrial Relations. Available at www.dir.ca.gov.

38 Personal communications. Jim Cone, M.D., MPH, Director of Occupational Health and Safety, California Department of Health Services, and Dr. Paul Leigh, Department of Epidemiology and Preventive Medicine at the UC Davis School of Medicine.

39 Leigh, J.P., Markowitz, S. B., Fahs, M. 1997. Occupational injury and illness in the United States. Archives of Internal Medicine 157:1557-1566.

40 Leigh, J. P., Markowitz, S. B., Fahs, M. 1997, ibid.

*41 Cited in Greiner, B. Psychosocial work factors and health: Building bridges between disciplines. Unpublished paper prepared for The California Wellness Foundation, September 1996.

*42 Yelin E. and Trupin, L. 1999, ibid.

*43 Yelin E. and Trupin, L. 1998, ibid.

44 Barnett, R.. 1998 Toward a review and reconceptualization of the work/family literature. *Genetic, Social and General Psychology Monographs.* 124:125-182.

*45 Yelin, E. and Trupin, L. 1999, ibid.

46 Kawachi, I., Colditz, G.A., Stampfer, M.J., Willett, W. C., Manson, J.E., et al. 1995. Prospective study of shift work and risk of coronary heart disease in women. *Circulation* 92:3178-3182.

47 Tenkanen, L., Sjoblom, T., Kalimo, R., Alikoski, T., Harma, M. 1997. Shift work, occupation and coronary heart disease over 6 years of followup in the Helsinki Heart Study. *Scandinavian Journal of Work Environment and Health* 23:257-265.

48 Budnick, L. D., Lerman, S. E., Baker, T. L., Jones, H., Czeisler, C. A. 1994. Sleep and alertness in a 12-hour rotating shift work environment. *Journal of Occupational Medicine* 36:1295-1300.

49 Rosa, R.R., Bonnet, M.H., Cole, L.L. 1998. Work schedule and task factors in upper-extremity fatigue. *Human Factors* 40:150-158.

50 Michalopoulos, C. and Schwartz, C. What works best for whom: Impacts of 20 welfare-to-work programs by subgroup. U.S. Department of Health and Human Services, Washington D.C., forthcoming 2000.

51 Wilkinson, R.G. 1996. Unhealthy Societies: The Afflictions of Inequality. London: Routledge, 255 pp.

52 Lynch, J.W., Kaplan, G.A., Pamuk E., Cohen, R.D., Heck, K., Balfour, J.L., Yen, I.H. 1998. Income inequality and mortality in metropolitan areas of the United States. *American Journal of Public Health* 88:1074-1080.

53 California Budget Project. Unequal gains: The state of working California. Available at www.cbp.org/reports/9809uneq.html.

54 Marmot, M. and Wilkinson, R.G. (eds). 1999. Social Determinants of Health. Oxford: Oxford University Press, 291 pp.

55 Amick, B. and Lavis, J. 1999. Labor markets and health: A framework and set of applications. In A. Tarlov (ed.). *Society and Population Health.* New York: The New Press, forthcoming 2000.

56 Barnett, R., 1998, ibid.

57 Moller, R.M. 2000. Profile of California computer and internet users. California State Library. California Research Bureau. Sacramento, CA.

*58 The principal investigators of this program are Helen Schauffler, Ph.D., UC Berkeley, and E. Richard Brown, UCLA. Information on their various products can be accessed through the website of The California Wellness Foundation (www.tcwf.org) or directly at www.chpps.berkeley.edu/hipp/.

*59 The principal investigator for this program is Lucien Wulsin, J.D. Information on this program can be accessed through the website of The California Wellness Foundation (www.tcwf.org) or directly at www.work-and-health.org/itup.

*60 Yelin, E. and Trupin, L. 1999, ibid.

*61 Yelin, E. and Trupin, L. 1999, ibid.

*62 Morales, L. Proceedings from the Future of Work and Health Conference, April 1998. Convened by The California Wellness Foundation and Institute of Regional and Urban Studies. Available at www.irus.org.

*63 Operario, D. and Adler, N.E. The occupational-health gradient: How your job can get under your skin. Unpublished manuscript available from the authors at the University of California, San Francisco, Health Psychology Program.

*64 Goto, S., Kim, C.Y., James, I., Abe-Kim, J.S., Park, C.H. Asian American experiences with racial and ethnic discrimination at work: Prevalence, predictors, and health outcomes. Unpublished manuscript available from the authors at Pomona College.

*65 Yelin, E. and Trupin, L. 1999, ibid.

*66 Personal communication. Judi Gentry, Program Quality and Operations Manager, and Vonna L. Gissler, Employment and Training Program Coordinator at the NOVA Private Industry Council in Silicon Valley.

*67 Proceedings from the "Demographic Diversity, Work and Health in California" Conference, May 1999. Convened by The California Wellness Foundation and Institute of Regional and Urban Studies. Available at www.irus.org.

Special thanks to the following individuals for providing data or comments:

Tom Backer, Human Interaction Research Institute

Robin Baker and *Aimee Tucker,* UC Berkeley Labor Occupational Health Program

E. Richard Brown, UCLA Center for Health Policy Research

Roni Cleland, Tom David, Lucía Corral Peña and *Gary Yates,* The California Wellness Foundation

Stewart Donaldson and *Laura Gooler,* Claremont Graduate University

Laura Trupin and *Ed Yelin,* UC San Francisco's Institute for Health Policy Studies

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