



## **Workplace Stress Responsible for Up to \$190 Billion in Annual Healthcare Costs**

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**Our work can literally make us sick.** Long hours, impossible demands from bosses, and uncertain job security can take their toll on our mental and physical well-being, leading to stress-induced aches and pains and anxiety. In extreme cases, the consequences can be worse—**heart disease, high blood pressure, alcoholism, mental illness.**

**Even so, the connections between job pressures and health—and what management can do to address the problem—have been little studied.**

“We have this body of research that shows workplace stress is very bad for health, and we have this other information that says our health costs are way above that of other countries,” says Joel Goh, Harvard Business School assistant professor of business administration in the Technology and Operations Management unit. “But traditionally in the US we have not placed a lot of emphasis on the role of workplace stress in the high cost of health care.”

**In recent years, General Motors spent more on health care than it did on steel,** and across the country, companies are struggling to find affordable plans for their workers, in some cases dropping health coverage or raising premiums on employees in order to combat escalating costs. On the other hand, companies are implementing health programs in an effort to keep workers healthy—and productive.


But those programs can only work if companies aren’t at the same time undermining them with stress-inducing management practices.

**“Health care programs are no good if your guy is so stressed that he can’t take advantage of them,” says Goh.**

### **Making the stress-health connection**

Unlike in Europe, little or no data exists in the US that correlates exposure to workplace stress with health outcomes or health care costs. Goh tackles that gap in a new working

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paper, *The Relationship Between Workplace Stressors and Mortality and Health Costs in the United States*, written with Stanford business professors Jeffrey Pfeffer and Stefanos A. Zenios.

Goh specializes in developing complex mathematical models that can aid decision making, especially in the presence of uncertainty. “The idea that we can structure the world mathematically and use that to make decisions is very interesting to me,” he says. “The world is not deterministic—there is a randomness built into it. And yet, by using robust optimization techniques we can tackle a wide range of problems.”

After working for a few years analyzing business operations, he settled on the field of health care as an area where he could really make a difference. “There is no lack of problems in health care, and I think that someone with a structured analytical background can make a unique contribution,” he says. Goh has used mathematics to examine such issues as adverse drug interactions and cost-effectiveness of cancer screening. “Structuring the world mathematically can lead to insights and ideas that might not be obvious,” he says.

### Sources of stress

For their latest research, Goh, Pfeffer, and Zenios began by identifying **10 sources of stress that can affect health. Some of these contributors were directly related to on-the-job dynamics, such as long hours, lack of control, job insecurity, and perceptions of unfairness in the workplace. These factors affect health in two ways, says Goh. “They are both inherently stressful on the body, and also lead to unhealthy behaviors like alcoholism and overeating.” Other factors the researchers investigated stretched beyond the workplace, for example, work-family conflict, lack of health insurance, and layoffs or unemployment.**

Once they had these 10 factors, the researchers **scoured the medical literature to determine how these factors affect health**, looking at four outcomes: self-reported physical problems; self-reported mental problems; doctors’ diagnoses; and mortality rates. The difficulty came in determining how these factors combined.

Since workers rarely experience just one form of stress, Goh, Pfeffer, and Zenios **developed a mathematical model that enabled them to rigorously assess the impact of co-occurring factors.** After coming up with formulas to take these factors into account, the researchers finally added in data on the costs of negative health outcomes.



**They determined, among other findings, that workplace stress contributes to at least 120,000 deaths each year.** The biggest factor in this calculation is lack of health insurance (leading to lack of treatment), which contributes to 49,000 deaths; followed by unemployment, which contributes to 34,000 deaths; and job insecurity and high work demands, which each contribute to about 30,000 deaths.

**While there was more variation when it came to estimating costs, the researchers determined that workplace stress caused additional expenditures of anywhere from \$125 to \$190 billion dollars a year—representing 5 to 8 percent of national spending on health care.** The biggest factor in these costs was high demands at work, responsible for an estimated \$48 billion in spending; followed by lack of insurance, contributing to \$40 billion; and work-family conflict, contributing to \$24 billion.

**All of these numbers point to conclusions that they suspected—that workplace stress is a significant contributor to both health problems and costs.** Goh hopes that by attaching hard numbers to these effects for the first time, policymakers might place more emphasis on investigating this connection.

At the same, time, employers can help address these problems by looking beyond health care programs to changes in their management and operations structures. “The workplace is where we spend a lot of the time—a third of our day,” says Goh. “It’s an avenue for stress and an avenue for ameliorating stress, and by and large the costs are borne by employers.”

It’s in the employers’ best interest to look into this connection, both for the good of their employees and for their own organizations.

**“Companies are always looking for ways to control health costs in their organizations, and these costs are not small,” says Goh. “An integrated approach that looks at both management structures as well as internal health programs is the way forward to address these concerns.”**

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