Journal of Health Economics 37 (2014) 123–136

Contents lists available at ScienceDirect

Journal of Health Economics

journal homepage: www.elsevier.com/locate/econbase

Bargaining for health: A case study of a collective agreement-based health program for manual workers

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ARTICLE INFO

Article history:
Received 13 June 2013
Received in revised form 10 June 2014
Accepted 10 June 2014
Available online 19 June 2014

JEL classification:
I12
J22
J28
J52

Keywords:
Private sector health program
Work-related injury
Difference-in-differences
Collective agreements
Manual workers

ABSTRACT

This paper examines the short- and medium-term effects of the PensionDanmark Health Scheme, the largest privately administered health program for workers in Denmark, which provides prevention and early management of work-related injuries. We use a difference-in-differences approach that exploits a natural variation in the program rollout across collective agreement areas in the construction sector and over time. The results show only little evidence of an effect on the prevention of injuries requiring medical attention in the first 3 years after the program was introduced. Despite this, we find evidence of significant positive effects on several labor market outcomes, suggesting that the program enables some work-injured individuals to maintain their work and earnings capacity. In view of its low costs, the program appears to be cost-effective overall.

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1. Introduction

Work-related injuries and illnesses are an unfortunate consequence of labor market activity. Although recent trends suggest that the workplace has become a healthier place to be, millions of individuals are unintentionally injured or become ill at work every year; in 2012, nearly 3 million nonfatal work-related injuries and illnesses were reported by private sector employers in the United States (BLS, 2013). Work-related injuries and illnesses may be both privately and socially costly. Affected workers often become unable to return to ordinary work directly, require extensive medical attention, or have permanent disabilities that affect their on-the-job productivity and earnings capacity (e.g., Boden and Galizzi, 2003; Butler et al., 2006). In the United States, the total productivity losses resulting from work-related injuries[1] are estimated to be $183 billion in 2007, while the medical costs amounted to $67 billion (Leigh, 2011).

In response to these perceived costs, governments have undertaken extensive efforts to improve outcomes of work-injured individuals. The policy interventions that have received the most attention from economists are public rehabilitation programs (e.g., Aakvik et al., 2003; Frölich et al., 2004; Laun and Thoursie, 2014), workplace accommodation programs (e.g., Høgelund et al., 2010), economic incentives of public cash benefit programs (e.g., Boden and Ruser, 2003; Galizzi and Boden, 2003; Meyer et al., 1995; Puhani and Sonderhof, 2010), and health and safety regulations (e.g., Auld et al., 2001; Lanoie, 1992; Smith, 1979). In a parallel effort, many firms have adopted an array of interventions to help employees prevent, detect, and minimize injuries.[2] These private sector health programs could offer a low-cost solution to an important problem, but despite the obvious policy relevance, little is

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[1] In the remainder of the paper, the term "injury" indicates both injuries and illnesses, unless otherwise noted.

[2] See Kenkel and Supina (1992) for a study for why certain firms choose to provide health programs more generally.

http://dx.doi.org/10.1016/j.jhealeco.2014.06.004
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known about the potential benefits for employees, employers, or the public system.[3]

In this paper, we examine the short- and medium-term effects of the PensionDanmark Health Scheme (PDHS), the largest privately administered health program for workers in Denmark. As described in greater detail subsequently, the PDHS is a secondary prevention program that provides work-injured individuals with access to various non-medical support services, such as physical exercises, education, and manual therapy to avoid disability from some typical musculoskeletal injuries. Launched in 2005, the PDHS is administered by a large labor market pension fund and has been adopted successively in a number of blue-collar collective agreement areas primarily in the construction and transportation sectors. By 2013, more than 240,000 manual workers, or about 9% of the Danish labor force, were enrolled in the program, a group of individuals for whom this program is likely to be particularly important. As manual workers, they are qualified primarily for low-wage physically demanding jobs–jobs which nonetheless are less likely to come with access to means of relieving health problems (e.g., Case and Deaton, 2005; Fletcher et al., 2011; Gupta et al., 2012; Morefield et al., 2012).

The study is made feasible by access to confidential individual pension records with information on program enrollment combined with rich administrative register data on a broad range of health and labor market outcomes for individual workers for up to 3 years after they enrolled. In the absence of a randomized trial, empirical identification of a causal relationship between PDHS-style programs and enrollee outcomes is complicated by selectivity problems, both on the worker and the firm sides. A set of institutional features of the PDHS rollout, however, provides a unique research opportunity to study the effects of the program on enrollee outcomes. While centrally designed and administered, the PDHS was adopted in different collective agreement areas in the construction sector at different times, giving rise to a difference-in-differences approach. We use this source of natural variation to conduct what is, to the best of our knowledge, the first empirical study of a PDHS-style program in the economics literature.

To summarize our conclusions, we find little evidence of an effect of the availability of the PDHS on the prevention of medically attended injuries. Interestingly, however, we find evidence of a significant reduction in episodes of health-related job absenteeism conditional on employment and a small positive effect on total income. Further results suggest that the effects are not universal across collective agreement areas and increase by firm size, possibly because large firms have more resources and social networks to support the program. In addition, we find suggestive evidence that enrollees are less likely to transition out of their pre-program job, particularly those who might value the program; however, no significant association is found with experiencing permanent disability in the short- and medium-term. Generally, these results suggest that although the PDHS did not prevent injuries requiring medical attention, it might have helped some affected workers to maintain their work and earnings capacity. In view of its low costs, the program appears to be cost-effective overall.

We begin by presenting some background on the PDHS in Section 2. The data are described in Section 3, and the empirical strategy is presented in Section 4. Section 5 contains the main empirical findings, and Section 6 concludes the paper.

[3] A number of studies have examined the effect of workplace "wellness" programs that offer primary prevention of lifestyle diseases (e.g., Baicker et al., 2010; Cawley and Price, 2013).

2. Background

The PensionDanmark Health Scheme (PDHS) we study provides work-injured individuals with access to various non-medical support services in addition to medical care provided by the public health care system, which is available to all individuals. It was launched at the end of 2005 as a partnership between a not-for-profit labor market pension fund, co-owned by a number of labor unions and employer associations, and a private health care provider. The labor market pension fund believed that its work-injured active members needed additional opportunities for preventive care and early management if they were to avoid serious disability from some typical musculoskeletal injuries such as low back injuries. Although not uniquely caused by work, these injuries occur disproportionately in jobs with rapid work pace, repetitive motion patterns, heavy lifting, and forceful manual exertion and typically develop gradually over time due to repeated overuse and wear and tear of the body (Punnett and Wegman, 2004). These types of injuries account for more than 40% of all granted disability pensions among the labor market pension fund's active members.

The PDHS was designed by physical therapists, chiropractic caregivers, reflexologists, and massage therapists at the private health care provider and is paid by employers as part of the defined labor market pension plan. The annual premium of the program is 300 DKK ($55) per enrollee, which is exempt from individual income taxation for workers as well as tax deductible for employers in order to encourage a wide adoption of such programs in Denmark (Danish Ministry of Taxation, 1995). Some examples of services available to work-injured individuals include resistance training and the teaching of physical self-care exercises designed to strengthen muscles and educate workers about the appropriate management of their injuries as well as massage therapy, electrotherapy, joint manipulation, and soft tissue treatment designed to relieve pain and discomfort, improve blood circulation, and restore function to the affected body parts. The services are provided at offsite private health clinics located near the worksites. The available services are delivered within 24 h in the event of acute injury, whereas for non-acute injury, services delivered within 4 days. The decision to engage with the program is voluntary and is not required to be reported to either employers or labor unions and there are no co-payments for the use of the program on behalf of workers. In addition, there are no restrictions on the number of treatment sessions received, and the services are provided without physician referral. However, to qualify for a tax exemption, the PDHS must be used only for the prevention and management of *work-related* injuries—i.e., the program must not be used to treat injuries that occur outside of working hours (Danish Ministry of Taxation, 1995).

In addition, the PDHS provides access to 24-h telephone psychological counseling regarding mental health problems and stress; an anonymous helpline for substance abuse; and advice on the public health system on matters that include waiting lists, free choice of hospital, reimbursement of medicinal products, and rehabilitation. These services are delivered by psychologists, nurses, and substance-abuse counselors.

In the absence of PDHS-provided services, some opportunities for preventive care and early management are available for work-injured individuals in the public health care system. For example, physical therapy is reimbursed at a rate of 40% when prescribed by a physician, whereas chiropractic care is reimbursed with a maximum rate of 25% without physician referral. A main role of PDHS-like programs in Denmark is therefore to expand the opportunity set available to workers by reducing out-of-pocket payments, increasing amenities, and reducing waiting times for treatment. We might expect this to induce a greater and more

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