



The impact of a closed formulary on prescribing patterns in the treatment of injured workers



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HIGHLIGHTS

- I study the impact of a closed formulary in the Texas workers' compensation system.
- The formulary lowers the use of and spending on non-preferred drugs.
- Spending on preferred drugs and on non-pharmacy medical care does not increase.

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ABSTRACT

Prescription drug spending accounts for nearly twenty percent of workers' compensation (WC) health care costs, and prescription drug overdose is a leading cause of death in the United States. To guide physicians to prescribe safer, less addictive, and more cost-effective drugs, Texas WC implemented one of the first formularies tailored specifically for the treatment of work-related injuries by establishing a list of non-preferred drugs that require preauthorization before they can be prescribed. I draw on Texas WC administrative data on medical and pharmacy bills to examine the impact of the formulary on health care bills paid for through WC several months after a worker's initial injury. I find that the closed formulary results in workers being half as likely to use non-preferred drugs and reduces average spending on non-preferred drugs by half several months after claims begin. I find no evidence that spending on preferred drugs or spending on non-pharmacy medical care increase to compensate for the decreased spending on non-preferred drugs. The lack of a shift towards preferred drugs suggests that doctors were not choosing non-preferred drugs over preferred drugs prior to the formulary. Instead, non-preferred drugs were one of multiple approaches doctors used in treating work-related injuries.

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1. Introduction

At \$272 billion in 2013, spending on prescription drugs in the United States is growing faster than other sources of health care spending and currently makes up 10% of total health care expenditures (Centers for Medicare and Medicaid Services, 2015; Kaiser Family Foundation, 2012). With workers' compensation (WC) insurance, spending on prescription drugs makes up nearly 20% of total health care costs. Reducing prescription drug spending is a priority both nationally and for WC systems. But when insurance pays for a large share of prescription costs, individuals and physicians do not have incentives to reduce spending. In an effort to reduce prescription drug costs and to lower prescription drug abuse, many WC systems are considering implementing drug formularies (Yotis, 2014). Despite the interest in drug formularies,

little is known about their ability to lower costs for the treatment of occupational injuries.

In this paper, I examine the impact of a closed formulary on WC prescribing behavior several months after workers' initial injuries in Texas, which was one of the first states to implement a formulary for WC claims. From September 1, 2011, until August 31, 2013, all new claims were subject to the closed formulary, while all older claims were not. I use administrative data on WC medical and pharmacy bills from January 2013 to August 2013 for claims that began in March 2011 to February 2012. I take advantage of the fact that the implementation of the formulary resulted in two sets of workers being subject to different formulary regimes at the same time to implement a regression discontinuity design to estimate the impact of the formulary several months after the initial injury. I focus on effects several months after initial injuries because part of the rationale for the formulary is to decrease the use of addictive drugs. Comparing injured workers on different formulary regimes over the same time period ensures that unobservable changes – such as the introduction of new drugs or unobserved WC policy

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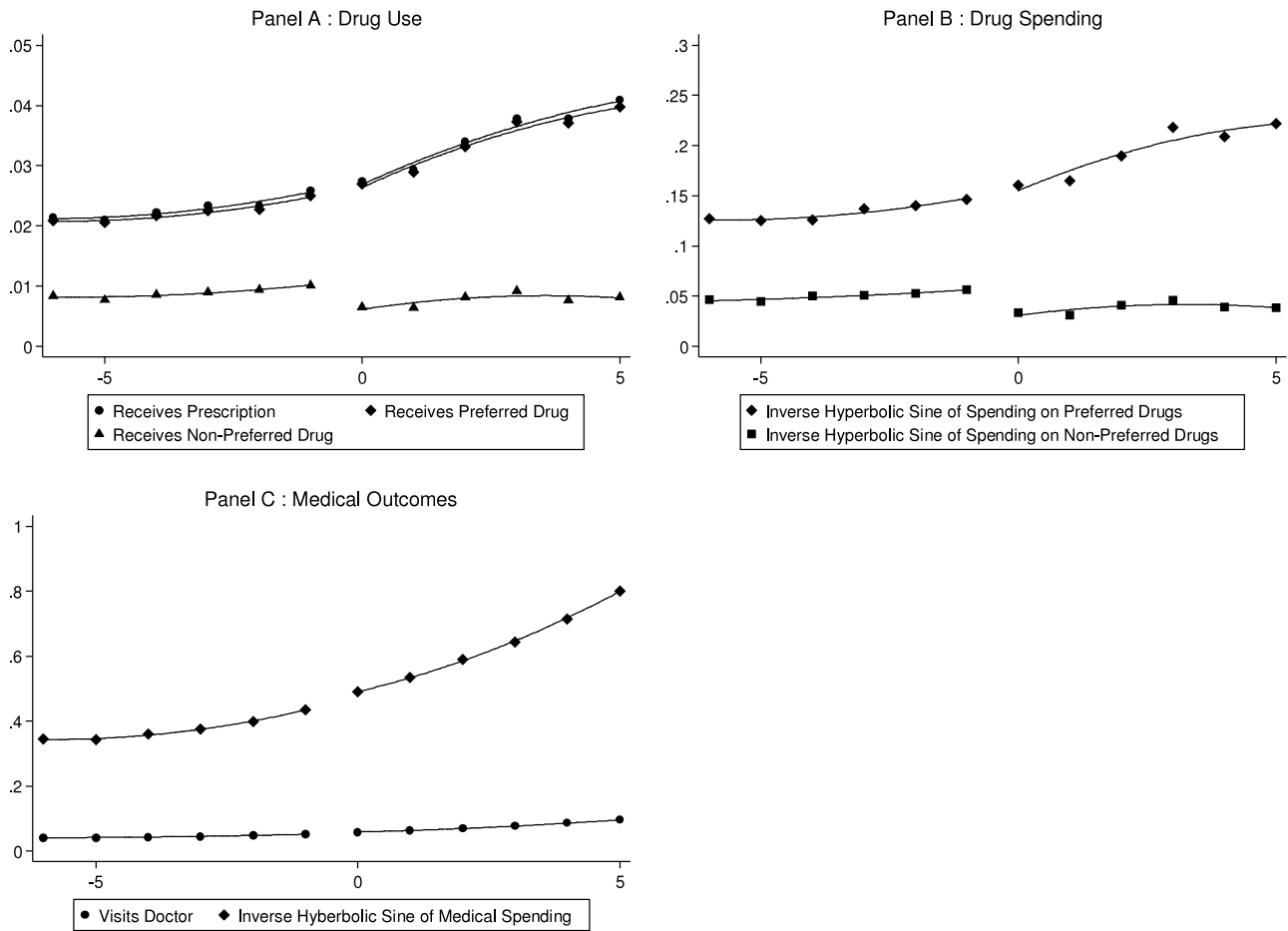


Fig. 1. Panel A displays means of drug receipt by the number of months between the claim start month and September 2011. Panel B displays means of the inverse hyperbolic sine of spending on preferred drugs and on non-preferred drugs by the number of months between the claim start month and September 2011. Panel C displays means of visiting the doctor and of the inverse hyperbolic sine of spending on non-medical bills by the number of months between the claim start month and September 2011. The data come from all Texas WC medical and pharmacy bills from January 2013 to August 2013. The sample is all claims that began in March 2011 to February 2012.

changes – are not responsible for differences between people on and off the formulary.

2. The Texas closed formulary

WC insurance pays 100% of all medical and prescription bills for covered workers injured while on the job. Insurers must report all WC medical spending to the Texas Department of Insurance (TDI), which compiles the information into the data set used in this paper. Prior to the closed formulary, WC insurers in Texas paid for all medications approved by the Food and Drug Administration, but after the implementation of the formulary, physicians must obtain preauthorization from insurance carriers before prescribing non-preferred drugs or any compounded drugs that contain non-preferred drugs. Under the formulary rules, the approximately 150 non-preferred drugs can only be prescribed after physicians obtain preauthorization from WC insurers. Physicians can prescribe all other drugs, referred to as preferred drugs throughout this paper, without preauthorization.¹

The list of non-preferred drugs includes more than 25 brands of opioid pain relievers and several muscle relaxants and antidepressants. Despite restricting certain classes of drugs disproportionately, all drug classes contain preferred drugs. Drugs are classified as non-preferred for the following reasons: (1) People are more likely to become addicted to and abuse the drugs. Examples include OxyContin and Opana. (2) The drugs are expensive brand name drugs and cheaper alternatives are available. Examples include Lidoderm and Flector. (3) The drugs are not recommended as first-line therapy. Examples include Voltaren and Xanax.

The effect of a formulary on treatment for occupational injuries and diseases may differ from the effects of formularies in more general settings since many WC claims involve managing pain. The protocol for treating pain is not always clear, and physicians typically employ a variety of approaches (Thienhaus and Eliot, 2002). If one drug does not work for a patient or causes an adverse reaction, physicians may be inclined to try other drugs, some of which may have increased risks or costs. Previous research has

¹ The Texas formulary assigns drugs non-preferred status if they are investigational or experimental or if they are not recommended as first-line treatment in the Official Disability Guidelines (ODG), which is a book published by the Work

Loss Data Institute that provides evidence-based medical treatment and return-to-work guidelines. A total of 26 states and Canadian provinces have adopted the ODG in some form. More information on the ODG and a list of states and provinces that use the ODG can be found at <http://www.worklossdata.com/>. More information on the formulary, including the list of non-preferred drugs and the history of the formulary's implementation, can be found on the TDI website at <http://www.tdi.texas.gov/WC/pharmacy/>. Thumula and Liu (2014) also provide a summary of the formulary.

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