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Do new prescription drugs pay for themselves? The case of second-generation antipsychotics

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Abstract

During the last several years, spending on prescription drugs in the U.S. increased at a 15% annual rate, with the US$ 178 billion spent in 2002 accounting for more than 11% of health care expenditures in the U.S. This growth has been largely driven by a shift to new drugs, which are typically more expensive than earlier drugs within the same therapeutic category. Recent research has suggested that the shift to new drugs may lower health care spending by reducing the demand for hospitalizations and other health care services. Using a 20% sample of Medicaid recipients from the state of California for the 1993–2001 period, I investigate this hypothesis for antipsychotic drugs—the therapeutic category that has accounted for more government spending than any other during the past decade. Using three different identification strategies, my findings demonstrate that the 610% increase in Medicaid spending on antipsychotic drugs during the study period caused by the shift to three new treatments has not reduced spending on other types of medical care, thus undermining the hypothesis that the drugs have "paid for themselves." Because of data limitations, the findings for health outcomes are necessarily more speculative but suggest that the new medications have increased the prevalence of diabetes while reducing the prevalence of extrapyramidal symptoms among the mentally ill.

JEL classification: H51; I12; I18

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1. Introduction

From 1996 to 2002, spending on prescription drugs in the U.S. grew at a 15% annual rate, with the US$ 178 billion spent in 2002 accounting for more than 11% of all health care expenditures. This growth was mainly driven by an increase in the average price of a prescription, which rose by more than 10% per year from 1996 to 2001. Price increases were caused both by an increase in the price of existing drugs and by a shift to newly approved drugs, which tend to be more expensive than the drugs that preceded them in the same therapeutic category (NIHCM, 2002). The growth in pharmaceutical spending has been similarly rapid within the federal-state Medicaid program, with expenditures there increasing from US$ 12.3 billion in 1996 to US$ 29.6 billion in 2002.[1] State governments have differed in their response to the increase, with some requiring co-pays by Medicaid recipients, others introducing dispensing limits, and still others requiring physicians to obtain prior authorization before prescribing drugs not on the state's formulary.

Determining how optimally to respond, if at all, to the growth in Medicaid prescription drug spending is clearly a complicated problem. The program provides valuable insurance to millions of society's most disadvantaged individuals, covering the cost of more than 520 million prescriptions for nearly 47 million Medicaid recipients in 2002. But because Medicaid recipients typically do not share in the cost of their prescription drugs, the program distorts medical care purchase decisions, potentially leading a Medicaid recipient to select an expensive drug over a much cheaper alternative even if he/she is almost indifferent between the two. It is therefore plausible that, in some cases, a Medicaid recipient would derive a benefit from a drug treatment that is substantially lower than the cost to taxpayers.[2]

But as recent researchers have noted, the difference between two drug prices may not accurately reflect the difference in health care spending that would result if a patient were to choose one treatment over another (Lichtenberg, 1996, 2001). For example, a more expensive drug may deliver health benefits that reduce the patient's demand for other health care services, to some extent offsetting its higher price. A similar offset effect could occur for individuals who otherwise would take no treatment. Even with no offset effect, a more expensive treatment may deliver health or quality of life benefits that are sufficiently large to pass a cost–benefit test. In measuring the value of any drug treatment, one would like to know its effect on both spending and health, with these effects potentially varying across individuals.

In this paper, I investigate the effect of new prescription drugs on both Medicaid spending and health outcomes. This question is inherently difficult given that drug treatment is not randomly assigned and because there are thousands of drugs covered by Medicaid at a point-in-time. Rather than simultaneously considering all of them, I focus on the one therapeutic category that accounts for more Medicaid spending than any other. Antipsychotic drugs are used to treat schizophrenia, bipolar disorder, and dementia and the Medicaid program spent US$ 3.73 billion on them in 2002. Risperdal, Zyprexa, and Seroquel, three drugs that were approved by the FDA and entered the market during the mid-1990s, accounted

[1] Dollar figures cited here and elsewhere in the paper are adjusted to 2001 dollars using the CPI-U index.

[2] This moral hazard effect is of course not unique to Medicaid. Individuals with other forms of health insurance also typically pay a small share (if any) of the costs of additional medical care.