

# The influence of prescription drug insurance on psychotropic and non-psychotropic drug utilization in Canada

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## Abstract

Using 2002 Canadian Community Health Survey data, this paper examines the effect of public and private prescription drug insurance on the utilization of psychotropic and non-psychotropic drugs. It is found that prescription drug utilization is characterized by two stochastic regimes requiring use of latent class modelling framework. In many instances, results differ for the classes of high and low users of prescription drugs. After accounting for the unobserved individual heterogeneity and a number of socio-demographic factors, health status, and province fixed effects, we find that having prescription drug insurance (public or private) increases the expected number of non-psychotropic medications for both low and high users. Public insurance affects psychotropic drug utilization positively for the low-user group only. The statistical insignificance of insurance for the high-user psychotropic drugs or lower magnitude of insurance coefficients on high-user non-psychotropic drugs seems to stem from high inelastic demand for prescription drugs in the concerned groups. In addition, we find that age, self-reported health status, and long-term mental and physical health problem diagnosed by a health professional are important determinants of prescription drug utilization for both classes of users. © 2007 Elsevier Ltd. All rights reserved.

*Keywords:* Insurance; Canada; Drug utilization; Psychotropic drug; Non-psychotropic drug; Latent class model

## Introduction

In most OECD countries, health care is financed and delivered through a significant component of public financing. Expenditures on prescription drugs generally constitute a significant portion of total health expenditures in most OECD health care systems and their share in total health expenditures

has been growing in recent years (Canadian Institute for Health Information, 2006; Jacobzone, 2000). In Canada, drugs constitute the fastest growing segment of health care costs (about 11% per annum) and they are the second largest component of total health care expenditures (17.5%), after hospitalization (Canadian Institute for Health Information, 2006). The estimated expenditure on drugs (both prescription and over the counter) is about 25 billion dollars in 2005. Expenditure on prescribed drugs, however, account for 83.2% of total drug expenditures (about \$21 billion dollars) representing a growth rate of 11.5% per annum. In contrast to other health care services

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in Canada, the costs of drugs are financed by a mixture of public and private sectors: public and private insurers account for 46% and 34.4% of all prescription drug expenditures in 2005, respectively (Canadian Institute for Health Information, 2006). The remaining 19.6% of total prescription drug expenditure was financed through out-of-pocket spending. Cardiovascular, psychotherapeutic and cholesterol are the three largest therapeutic drugs accounting for 54% of total spending on prescription drugs in 2004 (Morgan, McMahon, Mooney, & Raymond, 2005). Perhaps even more significantly, per capita expenditure on psychotherapeutic drugs increased by 106% (from \$29 to \$60), representing about 13% annual average growth rate during 1998–2004 (Morgan et al., 2005). Although the average price paid for drugs remained stable over time due to availability and use of generic drugs, dramatic increases in expenditures on prescription drugs are primarily driven by increased utilization of drugs and entry of expensive drugs into the market (Canadian Institute for Health Information, 2006; Morgan et al., 2005).

In order to contain rising prescription drug costs, various forms of patient cost-sharing policies have been advocated. This financing mechanism has been attractive for governments since it not only shifts a portion of financial burden from the governments (i.e., insurer) to users but also has the potential to reduce unnecessary consumption of medications by cost-conscious patients. From an economic perspective, full subsidy for prescription drugs would allow consumers to consume relatively larger quantities of drugs than without such subsidy, thereby resulting in a loss of welfare to the society. This is known as *ex post* moral hazard effect in the literature (Zweifel & Manning, 2000). In order to counteract moral hazard effects, optimal deductibles and co-insurance are recommended (Pauly, 1968; Zweifel & Manning, 2000).

On the other hand, not taking essential medications in required doses due to cost sharing can have serious consequences for health, especially for low-income individuals and families. Thus, potential reduction in the utilization of essential drugs due to cost sharing is a cause for concern. It is well documented in the literature that patients in general may reduce or abruptly terminate their use of prescription drugs in the absence of insurance or, if insured, in the presence of high deductibles or co-payments (Adams, Soumerai, & Ross-Degnan, 2001; Leibowitz, Manning, & Newhouse, 1985;

Lexchin & Grootendorst, 2004; Martin & McMillan, 1996; O'Brien, 1989; Soumerai, Avorn, Ross-Degnan, & Gortmaker, 1987). This is supported by the RAND health insurance experiment study in the United States which showed that the total health care costs was 38% higher for those who received free care than those who paid for a part of the cost (Keeler & Rolph, 1983). Furthermore, the RAND study suggests that patients were less likely to seek treatment if they had to pay a part of the cost (Keeler & Rolph, 1983). Based on Quebec's administrative claims data, Tamblyn et al. (2001) find that imposition of cost sharing for drugs decreased utilization of essential drugs among the elderly and social assistance recipients by 15–22%, which resulted in 88% increase in adverse event rates (defined as acute care hospitalization, nursing home admission, or death) and 78% increase in emergency room admission rates. A study on before and after the introduction of a cap of three reimbursable prescriptions per month among Medicaid beneficiaries resulted in reductions in the use of antipsychotic drugs, antidepressants and lithium, and anxiolytic and hypnotic drugs and increased use of various mental health services (Soumerai, McLaughlin, Ross-Degnan, Casteris, & Bollini, 1994). Furthermore, some evidence suggests that compliance with drug regimens improves with lower cost sharing. Hsu et al. (2006) find that caps on drug benefits for seniors reduce compliance with recommended prescription drug use and lower spending on drugs, but worsen health status and increase spending for other medical services (such as increased emergency department visits and increased hospitalizations). Indeed, the simulation study of Rosen et al. (2005) suggests that it would save costs and improve QALYs if ACE inhibitors were available to Medicare patients at no charge. It is shown that most effective medications for treatment and management of chronic diseases, such as Statins, ACE inhibitors, anti-hypertensives, and anti-diabetics, are highly sensitive to the amount of cost sharing (Goldman et al., 2004; Huskamp et al., 2003). Thus, there is a need to consider the benefits of prescription drug insurance coverage and the economic costs associated with offering it.

Possible adverse effects of a lack of coverage for prescription drugs, as opposed to universal drug coverage, on the health status of Canadians are recognized in two recent high profile commissions (Kirby, 2002; Romanow, 2002). The reports recommend the expanding role of prescription drugs

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