Journal of Health Economics xxx (2017) xxx–xxx

Contents lists available at ScienceDirect

Journal of Health Economics

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

Health insurance subsidies and deductible choice: Evidence from regional variation in subsidy schemes

Cornel Kaufmann[a], Christian Schmid[b], Stefan Boes[a,*]

[a] University of Lucerne, Department of Health Sciences and Health Policy and Center for Health, Policy and Economics, Frohburgstrasse 3, PO Box 4466, CH-6002 Lucerne, Switzerland
[b] University of Bern, Department of Economics and CSS Institute for Empirical Health Economics, Tribschenstrasse 21, CH-6002 Lucerne, Switzerland

ARTICLE INFO

Article history:
Received 9 September 2016
Received in revised form 3 August 2017
Accepted 4 August 2017
Available online xxx

JEL classification:
I13
I18
H24

Keywords:
Health plan choice
Deductibles
Premium subsidies
In-kind transfers
Number of doctor consultations
Difference-in-differences

ABSTRACT

The extent to which premium subsidies can influence health insurance choices is an open question. In this paper, we explore the regional variation in subsidy schemes in Switzerland, designed as either in-kind or cash transfers, to study their impact on the choice of health insurance deductibles. Using health survey data and a difference-in-differences methodology, we find that in-kind transfers increase the likelihood of choosing a low deductible plan by approximately 4 percentage points (or 7%). Our results indicate that the response to in-kind transfers is strongest among women, middle-aged and unmarried individuals, which we explain by differences in risk-taking behavior, health status, financial constraints, health insurance and financial literacy. We discuss our results in the light of potential extra-marginal effects on the demand for health care services, which are however not supported by our data.

1. Introduction

One of the main features of mandatory health insurance systems is to guarantee equal access to a pre-defined set of health services for the population. Such systems are in place for example in the Netherlands, Switzerland, Germany, Australia and the United States.[1] If health insurance premiums are risk-rated, i.e., premiums are calculated based on factors such as gender, age, health status or other predictors of health expenditures, then healthy people tend to overinsure and sick people tend to underinsure (e.g., Pauly, 1974). Community rating, as alternative premium setting mechanism, bears the risk of placing a high financial burden on low-income households (e.g., Goldman et al., 1997). Government interventions such as transfer programs are designed to support the disadvantaged individuals by establishing a more just distribution of resources. The two most common types of transfer programs are cash or in-kind transfers (see Currie and Gahvari, 2008 for a review). Given that cash transfers offer more budget choices compared to equally valued in-kind transfers, individuals typically prefer the former. Nevertheless, in-kind transfers are much more prominent in many countries (Currie and Gahvari, 2008). Probably the most important rationale for in-kind transfers is the aim of policy-makers to change individual behavior, with a paternalistic argument in mind (e.g., Cunha, 2014).

To induce behavioral changes, individuals should not have the opportunity to trade the in-kind transfer or reduce market purchases of the transferred goods one-by-one. Stated differently, an in-kind transfer has to be both binding and extra-marginal to distort the allocation compared to an equivalent cash transfer. Empirical evidence on the distorting effects of in-kind transfers is scarce and mostly limited to food programs (e.g., Alderman, 2002; Currie, 2003; Cunha, 2014). In the context of health insurance, there are a number of studies that examine the impact of Medicaid expansion in the United States on take-up rates, crowding-out effects between public and private health insurance, and the effects on

* Corresponding author.
E-mail addresses: cornel.kaufmann@unilu.ch (C. Kaufmann), christian.schmid@css-institut.ch (C. Schmid), stefan.boes@unilu.ch (S. Boes).
[1] See Mossialos et al. (2016) for a recent comparison of health systems.

http://dx.doi.org/10.1016/j.jhealeco.2017.08.002
0167-6296/

health care utilization and pricing (e.g., Currie and Gruber, 1996a,b; Cutler and Gruber, 1996, 1997; Duggan and Scott Morton, 2006; Gruber and Simon, 2008; Kuziemko et al., 2013). In addition, there is a recent study that examines the impact of premium subsidies provided by the American Recovery and Reconstruction Act on take-up rates (Moriya and Simon, 2016). However, there is no evidence to date on the differential impacts of in-kind versus cash transfers on health insurance choices and the potentially related distortions in the utilization of health care services.

If there is some discretionary power with respect to the design of the health insurance system, and premium subsidies in particular, then policy-makers should be concerned about the effectiveness and efficiency of different types of transfer schemes, especially because in-kind transfers can have both welfare-increasing and welfare-decreasing effects (Currie and Gahvari, 2008). The objective of this paper is to empirically investigate the impact of premium subsidies, paid as in-kind as opposed to cash transfers, on health insurance deductible choice. We exploit a feature of the Swiss health system, which until 2014 allowed cantons to decide upon their own subsidy scheme within the federal regulations. In particular, cantons could pay the subsidy either to individuals (as cash transfer) or, similar to the ACA exchanges, to the health insurer (equivalent to an in-kind transfer). The main rationale for in-kind transfers in Switzerland is to reduce the likelihood of premium defaults due to community rating, instead of the otherwise prevailing paternalism argument, even though there is no evidence to date that would support the former argument. We further exploit that a substantial share of the population is eligible for premium subsidies (approximately 29% in 2012, FOPH, 2015). The combination of eligibility and mode of payment divides the population into four groups, which allows us to apply a difference-in-differences (DID) methodology to examine the effect of in-kind subsidies on deductible choice.

Our analysis is based on different waves of the Swiss Health Survey. The focus is on the most recent 2012 wave. Here we estimate that receiving in-kind subsidies increases the probability of choosing a low deductible plan by approximately 4 percentage points on average compared to the baseline probability of approximately 55% in the cash subsidy scheme. Thus, our results suggest that an in-kind transfer provides a significant incentive for individuals to reduce their potential co-payments and to increase their insurance coverage. The results are confirmed by the 2002 data, which provide more detailed information about premium subsidies, and they are robust to various checks of the DID identifying assumption, including placebo tests and a triple difference approach exploring cantonal changes in the subsidy scheme over time. The response to in-kind transfers is found to be strongest among female, middle-aged and unmarried individuals. We conjecture that these results are driven by (i) higher risk aversion of this group, (ii) stricter financial constraints, particularly for unmarried eligibles, (iii) deteriorating health over the life span, and (iv) lower health insurance literacy.

We also investigate whether the better insurance coverage invoked by the provision of in-kind transfers increases the demand for health care services (as measured by the number of doctor visits). However, we do not find evidence in any of the two waves that receiving in-kind transfers would distort health care utilization. Stated differently, the in-kind transfer is not extra-marginal with respect to the demand for physician visits, for both general practitioners and specialists. We discuss several potential explanations for this finding.

The remainder of the paper is organized as follows. Section 2 provides a summary of the institutional background and the incentives incorporated in the two subsidy schemes. Section 3 describes the data sources and the empirical strategy. Section 4 presents the results. Section 5 discusses the implications for health policy and concludes the paper.

2. Institutional background

2.1. Compulsory health insurance plans

The following description draws on Schmid et al. (2017) to whom we refer for further details. In general, the Swiss health insurance system is organized according to principles of regulated competition. Swiss residents have to purchase compulsory health insurance that provides them with a comprehensive benefit package. Coverage is determined by federal law and standardized in terms of health care services, types of providers, and products. Health plan premiums have to be community-rated on a cantonal basis. However, premiums may differ among up to three premium regions per canton and between young adults (aged 19–26) and adults (aged 26 and older). In addition, premiums for children (aged 18 or younger) have to be below the adults' premiums. Consequently, all individuals who live in the same canton (or premium region), are in the same age group (adults, young adults, or children) and purchase the same health plan from the same health insurer have an identical premium.

Compulsory health plans are offered by approximately 60 private health insurers. Some health insurers do not operate in the entire country and consumers can choose among 45 insurers on average.[2] In all regions they operate in, health insurers are obliged to offer the *standard* health plan that grants free choice among all licensed general practitioners and specialists providing outpatient care. This plan has a *standard deductible* of CHF 300 and, for medical costs exceeding the deductible, consumers face a co-insurance rate of 10% up to a stop-loss amount of CHF 700.[3] Finally, health insurers have to accept all residents in their area of activity who wish to enroll regardless of gender, age or other risk factors (open enrollment) and consumers can alter their health plan, switch their health insurer, or both on an annual basis.

Besides the standard health plan, health insurers are allowed to offer health plans with managed care features and voluntary deductibles. These health plans are, however, only partial deviations from the standard health plan and strongly regulated. Managed care plans primarily apply gatekeeping tactics with respect to *outpatient* physician services in exchange for a premium rebate. Consumers can freely choose their gatekeeper (e.g., family doctor, provider network) from a list compiled by the health insurer. However, this choice is *de facto* independent of the insurance choice as most health care providers cooperate with all health insurers. The maximum premium rebate is 20% of the premium of the standard health plan, but the actual rebate depends on risk-adjusted cost differences between the managed care plan and the standard health plan. Regarding voluntary deductibles, the selectable levels are CHF 500, 1000, 1500, 2000, and 2500, and insurers offering voluntary deductible plans have to offer all levels.[4] Consumers who choose a voluntary deductible get a premium rebate, which is limited to 70% of the difference between the chosen deductible and the standard deductible. For instance, the difference between the highest deductible and the standard deductible is CHF 2200 implying a maximum annual premium discount of CHF

[2] The insurers that do not operate in the entire country are, however, small in terms of insurees. This is highlighted by the fact that 97.3% of consumers choose an insurer that operates in all cantons (figure for 2012, own calculations, based on official data from the Federal Office of Public Health (2015), Table 5.05).

[3] For children, the standard deductible is zero and the stop-loss amount is CHF 350.

[4] For children, the voluntary deductible levels are CHF 100, 200, 300, 400, 500, and 600.

Please cite this article in press as: Kaufmann, C., et al., Health insurance subsidies and deductible choice: Evidence from regional variation in subsidy schemes. J. Health Econ. (2017), http://dx.doi.org/10.1016/j.jhealeco.2017.08.002