

Patient Costs and Physicians' Information

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Abstract

In response to rising health costs, insurers have increased the share of health spending that their enrollees must shoulder out of pocket. Among those consumers with private insurance, the share enrolled in high-deductible plans with greater direct patient costs rose from 25% in 2010 to over 46% in 2018 (National Health Interview Survey, 2018). We study how sensitive physicians' treatment choices are to these changing patient out-of-pocket costs. While an existing literature explores how treatment choices relate to financial incentives (Goldman et al., 2007; Shrank et al., 2007; Iizuka, 2012; Lu, 2014; Dickstein, 2016, Carrera et al. 2018), we aim to shed light on how much of physicians' reactions to price changes reflect the physicians' price sensitivity vs. their information about patient costs.

We explore physician treatment choices in the context of treatments for Type 2 diabetes patients. We collect patient claims records from the state of Oregon's All Payer All Claims (APAC) dataset, which covers patients enrolled in plans offered by all private insurers in the state of Oregon, including enrollees in the small group and individual insurance markets. Using this data, we first illustrate that precisely how the researcher specifies physicians' expectations about drug prices matters both for the measurement of price sensitivity as well as predictions of total diabetes drug expenditures. In particular, estimating conditional logit models via maximum likelihood, we show that the parameters of the model differ importantly when the researcher assumes physicians have perfect foresight—that is, they know the prices patients face for each drug treatment—vs. when the researcher specifies a specific, more limited set of variables that form the physician's information set. Motivated by this sensitivity, we develop a model of physicians' prescription choices that places relatively weak assumptions on the physician's information, following Dickstein and Morales (2018). Our approach requires specifying only a subset of variables that enter into the physician's true information set used to form expectations about out-of-pocket costs.

Our parameter of interest jointly captures both (a) the patient's disutility from paying an extra dollar of out-of-pocket cost and (b) the extent to which physicians internalize this disutility. We also control for a non-price-related component of the physician's utility that is patient-type- and drug-specific. To estimate bounds on these parameters, we derive revealed-preference and odd-based moment inequalities based on pairwise differences in physicians' utility between prescribing two alternative drugs. We generate these specific moment functions following procedures in Dickstein and Morales (2018)

and Fujiwara, Morales, and Porcher (2018). An innovation of our approach is the ability to handle large choice sets and consideration sets, in which consumers may be unaware of some available options.

We conduct two sets of counterfactuals based on our model estimates. We first change information available to physicians, measuring how much of the price sensitivity reflects physicians' lack of information about patient costs or the characteristics of insurance plans that dictate patient costs. In the second set of counterfactuals, we keep the variables in the physician's information set the same, but change either physicians' price sensitivity or the vector of relative prices.

Finally, we use specification tests derived for moment inequality models to test alternative hypotheses about which variables physicians use to form expectations of patient costs. In these analyses, we examine whether there exists significant heterogeneity in information across physicians based on their specialty training and patient volume.