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EDITORIAL OPEN ACCESS

# Out-of-pocket payment and cost-related medication non-adherence

James X. Zhang, David O. Meltzer

Improving access to medication has been an important area for policy actions in the U.S. in recent years. The Medicare Part D outpatient prescription drug program, a federal insurance program aimed at increasing access to medications for millions of American seniors and people with disabilities, went into effect in 2006 and was considered as the first comprehensive prescription drug benefit ever offered under the Medicare program, the most significant improvement to senior health care in the U.S. in nearly 40 years [1]. Research has shown that the provision of Part D has increased medication utilization of the general population in Medicare [2–4].

However, for those sicker patients, their access to medications has not been shown to improve after the implementation of the Medicare Part D. For example, using a metric of cost-related medication non-adherence (CRN), which measured the self-reported behaviors of not filling/refilling prescriptions, delaying filling/refilling prescriptions, splitting doses, and skipping doses to avoid costs, researchers reported that no net decrease in CRN after Part D was observed among the sickest beneficiaries; the prevalence of CRN among the sickest elderly of forgoing basic needs to purchase medicines even rose [5, 6]. Researchers also found that among subgroups of Medicare beneficiaries with specific conditions such as depression and stroke, there was no evidence that Medicare Part D decreased CRN [7, 8]. Hence CRN has been a persistent challenge in improving access to medication in the high-need, high-cost patient population.

There are a number of likely factors that explain why the increased insurance coverage of medication has not reduced CRN in the sicker patients in the Medicare program. Increasing amount of out-of-pocket payments as a result of high utilization of medications is certainly a strong factor for medication non-adherence. Some research has shown that the patients were sensitive to the out-of-pocket payments for medications in a wide range of therapeutic classes, even in medications used to treat cancer [9, 10]. Other research showed that indirectly, functional limitations and frequent hospitalizations were additional risk factors of CRN due to inadequate insurance coverage beyond medications for the sicker patients [11].

To address the persistent CRN in high-need, high-cost patients require a multi-pronged approach. Reducing out-of-pocket payments is the most direct strategy. For example, a sliding-scale system of out-of-pocket payments based upon income is likely a viable option. However, this has not been implemented broadly in drug insurance plans. Non-adherence is known to impose significant costs on insurers and society [12] which may be reduced by limiting out-of-pocket payments. In the absence of such a sliding-scale payment system in the insurance plans, many hospitals are now waiving out-of-pocket payments entirely or partially for low-income patients. While a plausible approach to reducing the cost barrier for patients, this transfers the burden to the hospitals and may decrease the operating efficiency if the hospital is largely serving a low-income population. Improvement in insurance benefit design is much needed to maximize the benefits of medication use.

To reduce CRN will also require the physicians and other practitioners to increase their awareness of CRN to address this persistent issue in sicker patients. Research showed that it was uncommon for out-of-pocket cost for medication to be discussed between physician and patient [13]. Given the increasing use of formularies with higher out-of-pocket payments for medications outside the preferred drug list, physicians who are not aware of the CRN miss the opportunities to prescribe less

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expensive brand-name medications and possible generic substitution when less expensive but effective generic drug is available. Research has also shown that increased patients' trust in physician is associated with a reduction in CRN [14]. Thus, developing patient-focused approach to reduce CRN may also be yielding.

Research is also much needed to understand patients' CRN behaviors. For example, what's the most prevalent patient behavior in CRN among filling/refilling prescriptions, delaying filling/refilling prescriptions, splitting doses, and skipping doses to avoid costs? How can a more efficient and low-cost screening tool be developed to identify patients at risk of CRN? Only a paucity of information is available in this area and more work is needed to enlighten and inform the policy decision-making in identifying and targeting patients at risk of CRN.

Recently, the Patient-centered Outcome Research Institute (PCORI) in the U.S. has included out-of-pocket cost to patients and changes in healthcare utilization as a part of aims in patient-centered outcome research and in studies of the impact of out-of-pocket payments such as high-deductible drug insurance plan on medication use [15]. This is an encouraging step in finding the answers in how to improve insurance benefit design in order to reduce CRN.

Internationally, the research in CRN outside the US is relatively scarce. Regardless, CRN is likely a factor affecting effective medical treatment and health equality even in an environment with universal health insurance coverage. For example, research showed that a significant proportion of patients reported CRN in Canada, and the disparity in access to new, recommended medication was in part due to the variation in insurance coverage in Germany [16, 17]. More research is needed to understand the prevalence of CRN and patients' behavior in response to the insurance coverage to increase the access and reduce disparities.

In summary, CRN is a persistent issue after the implementation of Medicare Part D in the U.S.. A multi-pronged approach is necessary to identify effective intervention strategies to target high-need, high-cost patients with CRN; improve patient health outcome; and reduce costs.

**Keywords:** Out-of-pocket payment, Cost-related medication non-adherence

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James X. Zhang – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

David O. Meltzer – Acquisition of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

## Guarantor

The corresponding author is the guarantor of submission.

## Conflict of Interest

Authors declare no conflict of interest.

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## REFERENCES

1. Centers for Medicare and Medicaid Services. Prescription Drug Coverage - General Information. [Available in: https://www.cms.gov/Medicare/Prescription-Drug-Coverage/PrescriptionDrugCovGenIn/. (accessed on June 12, 2015)]
2. Lichtenberg FR, Sun SX. The impact of Medicare Part D on prescription drug use by the elderly. Health Aff (Millwood) 2007 Nov-Dec;26(6):1735-44.
3. Yin W, Basu A, Zhang JX, Rabbani A, Meltzer DO, Alexander GC. The effect of the Medicare Part D prescription benefit on drug utilization and expenditures. Ann Intern Med 2008 Feb 5;148(3):169–77.
4. Schneeweiss S, Patrick AR, Pedan A, et al. The effect of Medicare Part D coverage on drug use and cost sharing among seniors without prior drug benefits. Health Aff (Millwood) 2009 Mar-Apr;28(2):w305–16.

5. Madden JM, Graves AJ, Zhang F, et al. Cost-related medication nonadherence and spending on basic needs following implementation of Medicare Part D. JAMA 2008 Apr 23;299(16):1922–8.
6. Naci H, Soumerai SB, Ross-Degnan D, et al. Medication affordability gains following Medicare Part D are eroding among elderly with multiple chronic conditions. Health Aff (Millwood) 2014 Aug;33(8):1435–43.
7. Zivin K, Madden JM, Graves AJ, et al. Cost-related medication nonadherence among beneficiaries with depression following Medicare Part D. Am J Geriatr Psychiatry 2009 Dec;17(12):1068–76.
8. Levine DA, Morgenstern LB, Langa KM, Piette JD, Rogers MA, Karve SJ. Recent trends in cost-related medication nonadherence among stroke survivors in the United States. Ann Neurol 2013 Feb;73(2):180–8.
9. Dusetzina SB, Winn AN, Abel GA, Huskamp HA, Keating NL. Cost sharing and adherence to tyrosine kinase inhibitors for patients with chronic myeloid leukemia. J Clin Oncol 2014 Feb 1;32(4):306–11.
10. Goldman DP, Joyce GF, Escarce JJ, et al. Pharmacy benefits and the use of drugs by the chronically ill. JAMA 2004 May 19;291(19):2344–50.
11. Zhang JX, Lee JU, Meltzer DO. Risk factors for cost-related medication non-adherence among older patients with diabetes. World J Diabetes 2014 Dec 15;5(6):945–50.
12. Iuga AO, McGuire MJ. Adherence and health care costs. Risk Manag Healthc Policy 2014 Feb 20;7:35–44.
13. Alexander GC, Casalino LP, Meltzer DO. Patient-physician communication about out-of-pocket costs. JAMA 2003 Aug 20;290(7):953–8.
14. Briesacher BA, Gurwitz JH, Soumerai SB. Patients at-risk for cost-related medication nonadherence: a review of the literature. J Gen Intern Med 2007 Jun;22(6):864–71.
15. Patient-Centered Outcomes Research Institute. FAQs for Applicants. [Available in: http://www.pcori.org/funding-opportunities/how-apply/faqs-applicants. (accessed on August 4, 2015)]
16. Law MR, Cheng L, Dhalla IA, Heard D, Morgan SG. The effect of cost on adherence to prescription medications in Canada. CMAJ 2012 Feb 21;184(3):297–302.
17. Krobot KJ, Miller WC, Kaufman JS, Christensen DB, Preisser JS, Ibrahim MA. The disparity in access to new medication by type of health insurance: lessons from Germany. Med Care 2004 May;42(5):487–91.