Value-Based Pharmaceutical Purchasing: What Do We Know About What Works?

How can pharmacy benefits be designed to increase quality and control costs for employers and consumers? What are the primary strategies for doing so?

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How can pharmacy benefits be designed to increase value and lower costs for employers and consumers? What are the primary strategies for doing so?

Prescription drug costs represent a significant portion of the billions spent by employers each year on health care for their employees: $259 billion, which is 10% of total U.S. health spending in 2010. Employers concerned with addressing rising health benefits costs face difficult decisions about how to balance pharmacy benefits in the context of the overall health benefit package. Some strategies attempt to restrict consumers’ use of specific products to reduce pharmacy and overall health benefits costs. Others use options that may increase pharmacy costs but improve value because increased adherence to drug regimens can reduce expensive inpatient hospitalizations, readmissions, or emergency department visits. Still other strategies provide guidance or restrictions on product selection in the search for value.

Altarum Institute researchers conducted an environmental scan and found three major areas of value-based pharmaceutical purchasing innovation: generic substitution, incentive-based formularies, and value-based insurance design (VBID). Increasing or decreasing co-payments and co-insurance is an important consumer lever used either alone or in concert with these three strategies.

Pharmacy Benefits: Carve In or Carve Out?

Employers can use several approaches to providing and administering pharmaceutical benefits. These can be carved out of the health insurance plan administered separately by third party pharmacy benefit managers (PBMs), or they can be integrated within the larger health benefit structure. Health benefit managers, or their PBMs, can also use...
Summary of Pharmacy Benefit Management Options That Work

<table>
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<th>Approach</th>
<th>Summary</th>
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<td><strong>Generic substitution</strong></td>
<td>Most studies show generic substitution to be effective in reducing pharmacy benefit costs for consumers as well as purchasers. One study found that if a generic had been substituted for all corresponding brand-name outpatient drugs in 2000, the median annual savings in drug expenditures per person would have been $45.89 for adults younger than 65 years of age and $78.05 for adults at least 65 years of age. In these age groups, the national savings would have been approximately $5.9 billion and $2.9 billion, respectively, representing approximately 11% of drug expenditures.</td>
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<tr>
<td><strong>Incentive-based formularies (multi-tier formularies)</strong></td>
<td>Several studies have found that the adoption of an incentive-based formulary and the accompanying changes in copayments resulted in lower aggregate utilization of and spending on drugs. However, most of the savings go to health insurance plans, not to consumers. There is greater spending by patients. Evidence regarding effects on utilization and consumer health spending are mixed.</td>
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<tr>
<td><strong>Value Based Insurance Design (VBID), also known as Value Based Benefit Design</strong></td>
<td>Evidence regarding VBID is limited but increasing as purchasers gain experience with this approach. The Pitney Bowes examples highlighted here provide additional evidence.</td>
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What We Know About What Works

Many studies have been conducted on the effect on consumer behavior of the use of generic substitution, copayments and coinsurance, and incentive-based formularies. There are few published studies of value-based insurance design beyond those on the benefits designs of Pitney Bowes. The table on this page reviews the existing evidence.
**Coinsurance and copayments** can be used in concert with generic substitution and are important levers in both incentive-based formularies and value-based insurance design. These are cost-sharing arrangements that require consumers to bear at least some cost, encouraging them to select cost-effective medications. Coinsurance rates keep pace with rising drug costs and ensure that the consumer has some financial stake in choice of medication. If coinsurance is so high that the consumer will not adhere to prescribed drug regimens, overall medical costs may increase. Lower cost sharing results in greater prescription drug use. Higher levels of cost sharing result in reductions in prescription drug use.\(^{19, 20, 21, 22}\) Several studies have found that increased cost sharing has detrimental effects on patient’s health.\(^{23, 24, 25, 26, 27, 28}\) However, these studies were not necessarily testing value-based insurance design. Modest increases in prescription copayments have been shown to have a negative impact on consumers’ medication purchasing decisions. These increases may lead to pill splitting or other reduced-dosing methods, increased time between refills, and increased medication discontinuation, particularly for symptomatic medications, but also for classes of prescription medications used for long-term disease prevention.\(^{29}\)

In addition to these benefit design options, a number of innovative tools are available to support drug adherence. For example, *computerized, real-time alerts* offer consumers, physicians, and pharmacists an array of prompts and reminders of refills and alerts about medicines with potential contraindications and therapeutic alternatives. This approach is useful if consumers and providers are attuned to personal digital assistants (PDAs), email, and other new technologies.

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**The Pitney Bowes Case**

To implement its value based insurance design, Pitney Bowes shifted all diabetes drugs and devices from tier 2 or 3 formulary status to tier 1. Over the next year, overall direct healthcare costs per plan participant with diabetes decreased by 6%. In addition, the rate of increase in overall per-plan participant health costs at Pitney Bowes has slowed markedly, with net per-plan participant costs in 2003 at about $4,000 per year versus $6,500 for the industry benchmark. In all of Pitney Bowes’ self-funded plans and a few of the others, drug benefits are provided by a separate pharmacy benefit manager. This coverage of approximately 90% of all employees under one common pharmaceutical plan provides a potentially powerful single point of entry for studying—and improving—long-term disease outcomes in the Pitney Bowes population.

Another Pitney Bowes effort eliminated copayments for cholesterol-lowering statins and reduced them for a blood clot inhibitor called clopidogrel. The change resulted in an immediate 2.8 percent increase in adherence to statins relative to controls and, for clopidogrel, a 4 percentage point difference in the adherence rate between intervention and control patients a year later.

Sources: (Mahoney, 2005)\(^{30}\); (Choudry, et al., 2010)\(^{31}\)

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**The Carespeak Communications and Mount Sinai Hospital Case**

Carespeak Communications and Mount Sinai Hospital teamed up on a program to send regular reminders to pediatric liver transplant patients (ranging in age from 1 to 27) or their caregivers via two-way text message. Follow-up alerts are sent to caregivers of those who do not respond within a predetermined time range. Physicians also proactively monitor performance and then send motivational messages to encourage continued adherence, or else they identify and intervene with non-adherent patients before the risk of rejection increases.\(^{32}\) The program increased adherence to medication regimens and significantly reduced the risk of organ rejection.\(^{33, 34}\)
Mission
Altarum serves the public good by solving complex systems problems to improve human health, integrating research, technology, analysis, and consulting skills.

Vision
Altarum Institute demonstrates and is sought for leadership in identifying, understanding, and solving critical systems issues that impact the health of diverse and changing populations. Altarum is acknowledged as a valued, collaborative, and collegial institute of the utmost competence and integrity.

EVIDENCE FOR ACTION

- Pharmacy benefit management is not a “one size fits all” proposition. Integrated benefits models or carve outs, and any combination of approaches, incentives, and tools can be used to create value for purchasers. Importantly, pharmacy benefit value should be assessed in the context of the health benefit package overall. Integrated benefits data and reporting systems facilitate this assessment.

- Return on investment (ROI) is difficult to calculate given that it is difficult to quantify and attribute directly to value based pharmaceutical policy. However, some employers may see cost savings from value-based pharmaceutical purchasing reflected in reduced absenteeism and “presenteeism” (when employees are at work but not productive).

- Purchasers can use PBMs to administer their prescription drug benefits—but the evidence on whether PBMs result in savings is mixed. Some studies report significant savings generated through the PBM, while others do not.

- Multi-tiered formularies can be tricky to implement. Selection criteria should be based on clinical outcomes to ensure that the costs of pharmaceuticals does not decrease at the expense of rising medical costs.

- Outside of a VBID framework, there is evidence that increasing cost sharing may lead to pill splitting or other reduced-dosing methods, increased time between refills, and increased medication discontinuation. Several studies have found that increased cost sharing has detrimental effects on patient’s health. In addition, this may lead to increases in overall health care costs for an employer.

- Changing pharmaceutical benefits may change not only pharmaceutical, but also overall health benefit costs. Considering one set of claims data, either pharmaceutical or health plan claims, in isolation from the other set will lead to misleading findings.

- Carve-outs for pharmaceutical benefits, as in the Pitney Bowes case example, can leverage value in pharmaceutical benefit design for larger groups of the covered population.

- Given high turnover, some employers are reluctant to use value-based insurance design concepts because the investment may not pay dividends in the medium to long term if employees exit a firm.

- Computerized, real-time alerts only work with patients and caregivers who are computer or technology savvy and willing to receive information in this format.

This issue brief is part of a series on value-based purchasing prepared by researchers in the Systems Research and Initiatives Group at Altarum Institute. It highlights summary findings of environmental scans and evidence reviews completed in December 2010 to identify and assess “what works” to improve value in health care purchasing and health system performance.

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