



CONSUMER-DIRECTED HEALTH PLANS

THE CHALLENGE TO MANAGING WORKFORCE HEALTH, PERFORMANCE AND PRODUCTIVITY

EXECUTIVE SUMMARY

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Employers have tried a variety of ways over the years to hold down the costs of their healthcare benefits. Cost-control strategies have included moving from indemnity plans to preferred provider organizations (PPOs) and then to health maintenance organizations (HMOs); increasing employee cost sharing, co-pays and deductibles; and building narrow networks of physicians. Increasingly, employers are switching their employee health benefits from established PPO and HMO plans to plans with high deductibles and a personal health spending or savings account – known as consumer-directed health plans (CDHPs).

The Issue

Often lost in discussions of the costs of employee healthcare benefits is the value they provide to employers through healthier, more productive employees. The risk to employers and employees alike is that in order to manage their own healthcare costs once they have “skin in the game”, CDHP enrollees will reduce their utilization indiscriminately, foregoing not only costlier treatment options but deferring necessary and preventive care. This could not only increase employers’ health care costs in the longer-term but also could increase lost productivity costs if unmanaged illnesses result in more sick day and disability absences.

Evidence

We review two strands of the peer-reviewed research literature – on the link between CDHPs and medical care utilization, and on treatment adherence and workforce productivity. The general insight from the literature is that CDHPs’ medical and pharmaceutical cost savings may come at the expense of workforce productivity. Specifically:

- CDHPs will likely contribute to lower medical care utilization and lower health care costs borne by the employer.
- Some of these savings will come from employees foregoing or delaying beneficial care rather than from avoiding unnecessary tests and procedures or from price-shopping. This is particularly true of chronic health conditions.
- Avoidance of beneficial care will likely result in lost productivity for some workers – the value of which may exceed the costs of medical treatments.

Implications for employers

Whether they self-insure for health care benefits or partner with an insurance provider, employers must understand that while they may shift the costs of healthcare to external organizations or to employees, they can never fully shift the costs of lost work time and reduced performance to others. The findings of this review suggest that employers considering a CDHP stand a better chance of realizing reduced costs without incurring unnecessary productivity losses if they approach their plan with the following questions in mind:

- What is the strategy for informing enrollees of which services are covered for free or at low cost? Has this strategy been shown to improve the utilization of beneficial services in other workplaces?
- How does the plan facilitate employees' abilities to shop around for services when it is feasible to do so? Does the plan include lists of local providers as well as their costs for common services? How often are price lists updated? How can employees reasonably be assured that all of the costs associated with a test or procedure are disclosed fully?
- Are there resources employees can consult to help them understand which care options are both indicated and of relatively good value?
- Is there evidence that covered disease and lifestyle management programs improve health and reduce lost productivity for participants? What is the strategy for identifying employees who can benefit from such programs and for encouraging them to participate? How will the employer best support employees in making good healthcare decisions – for example, with incentives, disincentives, information access, or other means?



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Employers have tried a variety of ways over the years to hold down the costs of their healthcare benefits. Cost-control strategies have included moving from indemnity plans to preferred provider organizations (PPOs) and then to health maintenance organizations (HMOs); increasing employee cost sharing, co-pays and deductibles; and building narrow networks of physicians. Increasingly, employers are switching their employee health benefits from established PPO and HMO plans to plans with high deductibles and a personal health spending or savings account – known as consumer-directed health plans (CDHPs)(1).

The thinking is that if employees bear more of the expense of their own care – if they have more “skin in the game” to use a common phrase – they will become better, more price-sensitive consumers when making decisions about their treatment options. For example, employees who are considering a medical test or procedure may shop around for different providers. Others may opt to fill prescriptions with lower cost generics rather than brand name pharmaceuticals. Some employees may choose to make lifestyle changes – such as maintaining a healthy weight, quitting smoking or getting regular check-ups – that result in better health and fewer high-cost interactions with the health care system.

Often lost in discussions of the costs of employee healthcare benefits is the value they provide to employers through healthier, more productive employees. The risk to employers and employees alike is that CDHP enrollees will reduce their utilization of medical care and prescription drugs indiscriminately, foregoing not only costlier treatment options but deferring necessary and preventive care. This not only could increase employers’ health care costs in the longer-term but also could increase lost productivity costs if unmanaged illnesses result in more sick day and disability absences.

This report reviews two strands of the peer-reviewed research literature – on CDHPs and medical care utilization, and on treatment adherence and workforce productivity – to describe how CDHPs’ medical and pharmaceutical cost savings potentially could come at the expense of workforce productivity. It also reflects on the research evidence regarding how employers might mitigate these losses through the design of their CDHP plan and through efforts to assist employees to better understand their benefits and become better consumers in the health care market.

CDHPs and Health Care Costs and Utilization

Generally, the scientific evidence suggests that cost-sharing between employers and employees is an effective approach to managing medical and pharmacy spending (2, 3). It is no surprise that research finds specific cost

advantages for CDHPs – particularly given that early scientific studies show that employees who voluntarily enrolled in CDHPs tended to be healthier than peers who remained in more traditional employer-sponsored health plans (4-6). More recent studies have compared outcomes before and after employees switched to CDHPs and in settings where employers mandated a switch to a CDHP by eliminating alternative plans (which should minimize selection bias). The evidence still suggests that compared to traditional plans, both health care spending and utilization decline after enrollment in a CDHP (7-12). However, the research literature also shows that CDHP enrollees forego or postpone many types of beneficial care as well as unnecessary or overpriced care – particularly in the case of high-value care such as prevention, screening and management of chronic illnesses (13-15).

OUTPATIENT AND INPATIENT CARE

Generally, studies link enrollment in a CDHP plan to a decreased rate of office visits (11, 16, 17). Outpatient visits for specific chronic conditions also tend to decline after CDHP enrollment (18). CDHP enrollment also has been linked to lower emergency care use and hospitalizations (11, 17, 19-22). However, some studies show that foregoing emergency room visits for high-severity incidents resulted in more hospitalizations and emergency room use later on (16, 20, 21).

PREVENTIVE CARE AND SCREENING

Research demonstrates that CDHP enrollees use preventive care less often than enrollees in other types of health plans (10, 12) – or at least less often than what would be expected when comparing free preventive care within a CDHP to the same services with fees within a traditional plan (23). Enrollment in a CDHP also has been linked to reductions in some cancer screenings (11, 16, 24, 25). An important exception is that enrollees in CDHPs with first dollar coverage for cancer screenings (in this case, mammograms and pap smears) have screening use that is similar to enrollees in traditional plans (26).

PHARMACY UTILIZATION

Studies have linked CDHP enrollment to reduced pharmacy expenses (27). This result could reflect a shift to generic and mail-order prescriptions (11, 28). However, CDHP enrollees are more likely than enrollees in other plans to forego or delay filling prescriptions (16, 29), and are less adherent to medication if they have a chronic disease (17). This is particularly the case for asthma, cardiovascular, cholesterol and diabetes drugs (30). For example, one study found that individuals with cardiovascular disease who did not adhere to their prescribed medications because of high out-of-pocket costs experienced declines in health over two years, including increased risks of angina and nonfatal heart attacks and strokes (31). An important exception is that CDHPs that exempt prescription pharmaceuticals from cost sharing do not have lower medication utilization than traditional health plans (32).

What Explains Differences in Costs and Utilization Among CDHP Enrollees?

How a CDHP is designed and managed, and who makes up the population of enrollees, influences health care costs and utilization. While the cohort of employers that adopted CDHPs early may have favorably selected healthier employees, as more employers move towards full replacement of their health benefits with CDHPs, the health risks of the plan pools will become less favorable than in the past. There also is evidence that employers that opt for full CDHP replacement rather than giving employees a traditional plan option tend to have unhealthier employees to begin with (11, 27). Such employers may be most at risk for underutilization of necessary care, particularly if their workers are relatively low paid. Generally, the tendency to forego care may be stronger among lower socioeconomic status (SES) enrollees than higher SES enrollees (13, 15, 21, 33, 34).

THE LIMITS OF EMPLOYEES' KNOWLEDGE

The success of CDHPs depends partly on enrollees becoming informed consumers of health care services. This requires understanding the costs and effectiveness of different treatment options. Gaps in health literacy make understanding costs and benefits difficult, and is associated with lower health care spending and utilization among CDHP enrollees (35). Although some enrollees in CDHPs may show a greater likelihood to seek out

information on health care and costs (14), by itself, cost-sharing has not been shown to improve enrollees' knowledge of their care options or their sophistication as health care consumers (36). When interviewed by researchers about their health plans, some CDHP enrollees said they attempted to control costs by delaying or avoiding care, but felt that they could not control costs once treatments had begun (37). Another study indicated that among outpatient services, price shopping may be limited to office visits – which have relatively transparent prices – rather than preventive care and screenings (38).

THE CHALLENGES OF EMPLOYERS' EDUCATIONAL EFFORTS

As studies of cancer screenings and pharmaceutical use imply, full coverage of beneficial services increases the likelihood that CDHP enrollees will use them (39). Nonetheless, explaining the features of CDHP plans remains a challenge to employers and insurers. One study showed that 80% of CDHP enrollees were unaware of what types of preventive care were covered and what (or how much) counted against their deductible (40). This confusion led to delayed or avoided lab tests, screenings and office visits. Research also shows that targeted education about medication alternatives has been shown to impact CDHP enrollees' choice of generic antihypertension drugs, but did not improve medication persistence among users of antihypertension, antihyperlipidemic or antidepressant drugs (41). One experimental study found that participants with lower numeracy understood less about CDHP plans than other participants and that different presentation formats offered no clear advantages in communicating CDHP information (42). It also is unclear if CDHP enrollment encourages the adoption of healthier behaviors. One study discovered that, over time, CDHP enrollees were no more likely than enrollees in traditional plans to begin eating healthy or to exercise (43).

How Does Utilization and Medication Adherence Impact Worker Productivity?

Employers considering adopting a CDHP should be mindful that some enrollees may manage their personal health costs by delaying or forgoing necessary and preventive care. If this occurs, short-run cost savings from medical and pharmaceutical treatments may be offset by longer-term healthcare expenses and by reductions in productivity. This requires a focus on specific conditions with clear treatment guidelines.

In general, the research literature is consistent that for many health conditions, adherence with treatment and medication guidelines – for example, having recommended medication on hand for at least 80% of the days during the study period – is key to maintaining high levels of work attendance and job performance (44, 45). This is particularly true for common chronic conditions and those that are highly detrimental to productivity. The remainder of this section focuses on some of the chronic conditions for which studies exist on treatment adherence and workforce productivity (46).¹ The workforce prevalence and productivity implications – in lost work days and underperformance on the job – for employees with these conditions are summarized in Table 1.²

¹ The summary sections reflect the findings for conditions for which studies of adherence and productivity outcomes exist. It should not be construed that treatment adherence is inconsequential for conditions not listed below.

² We cite Loeppke et al. (2009) as our source for condition prevalence and lost productivity impact because it includes a range of self-reported chronic conditions and uses a validated survey instrument, the World Health Organization's Health and Work Performance Questionnaire (HPQ).

Table 1: Workforce prevalence and lost productivity impact of selected chronic health conditions.

Condition	% of employees with condition	Avg. monthly hours lost for employees with the condition			Annual impact (FTE days) in a 1,000 person workforce
		Due to absence	Due to presenteeism	Total	
Allergies	34.0%	1.1	1.3	2.4	1,326.0
Arthritis	16.2%	4.1	3.1	7.2	1,895.4
Asthma	7.9%	2.6	1.6	4.2	539.2
Congestive heart failure	0.3%	25.7	12.9	38.6	188.2
Chronic obstructive Pulmonary disorder (COPD)	0.2%	18.7	6.0	24.7	80.3
Coronary heart disease	2.0%	12.2	1.3	13.5	438.8
Depression	11.2%	5.6	10.8	16.4	2,984.8
Diabetes	4.7%	4.4	0.7	5.1	389.5
Gastroesophageal reflux disease (GERD)	12.6%	3.8	3.6	7.4	1,515.2
Irritable bowel	5.5%	3.9	4.9	8.8	786.5
Migraine	7.2%	4.9	3.0	7.9	924.3

Table 1 notes: Adapted from Loeppke et al, 2009, Tables 3 and 4 (Phase 2) (46). The sample reflects outcomes for 34,622 employees drawn from 10 employers. Lost hours reflect the marginal lost productive hours - both absence and presenteeism - in a 28-day period for a person with the condition compared to a person without the condition. All health conditions are self-reported.

Annual impact is the product of prevalence and total lost monthly hours, assuming 1,000 employees who work eight hours per day for thirteen 28-day periods per year. As some employees will have more than one of the conditions listed, the annual impacts for each condition should not be summed to obtain total workforce lost productivity for these conditions.

CARDIOVASCULAR CONDITIONS

Table 1 shows that an estimated 0.3% of an employee population has congestive heart failure (CHF) and about 2% has coronary heart disease (also known as coronary artery disease - CAD). Nonetheless, employees with these conditions experience high levels of lost productivity. Compared to other employees, employees with CHF lose 39 more productive hours per month in absence and presenteeism; the figure for employees with CAD is 14 more lost productive hours. In a population of 1,000 employees, about 189 workdays per year will be lost for employees with CHF; the figure for CAD is about 439 days (see Table 1 notes).

Extrapolating one study's results, every day that an employee with CAD had an adequate supply of statin medications reduced their sick day absences by about 1.25 days per year (47). Employees with CAD who kept an adequate supply of statin medication 80% of the time had about 17 fewer sick days per year than peers who had an adequate medication supply less often (47). Employees with CHF who kept an adequate supply of medications (such as arterial and venous dilators, beta-blockers, diuretics, ACE inhibitors) also were less likely to incur a short-term disability (STD) claim (48). Adequate supplies of some medications for treating CHF also are linked to fewer incidental illness and disability absences (48) and less work impairment (49) among employees with hypertension. In a study with implications for management of cardiovascular health and productivity, non-adherence with antidiyslipidemia drugs (such as statins, cholesterol absorption inhibitors, bile acid sequestrers) was found to be associated with more incidental illness and disability absences (48).

DIABETES

Table 1 shows that an estimated 5% of an employee population has diabetes. Compared to other employees, diabetics lose about eight more productive hours per month in absence and presenteeism. In a population of 1,000 employees, about 390 workdays per year will be lost for employees with diabetes (see Table 1 notes).

Research links compliance with antidiabetic medications (such as insulin or oral hypoglycemic agents) with fewer days of sick day absences, a lower risk of STD incidents and lower durations for STD absences. Maintaining an adequate supply of oral hypoglycemic agents 80% of the time is associated with about 16% fewer sick day absences (48) and a lower chance of an STD claim (48, 50). In another study, employees with type-2 diabetes who kept an adequate supply of insulin, oral hypoglycemic or metformin medication 80% of the time had better job performance than peers who had an adequate medication supply less often (47).

ALLERGIES

Table 1 shows that an estimated 34% of an employee population has allergies. Compared to other employees, employees with allergies lose about 2.4 more productive hours per month in absence and presenteeism. In a population of 1,000 employees, about 1,326 workdays per year will be lost for employees with allergies (see Table 1 notes).

In one study, insurance claims processors who were prescribed non-sedating antihistamines (H₁ antagonists) experienced a 5% increase in their work productivity in the three days following the receipt of their prescription (51). Another study found that treating allergies with H₁ antagonists results in less work impairment as measured by a common work productivity survey instrument (the Work Productivity and Activity Impairment instrument or WPAI) (52).

ASTHMA AND COPD

Table 1 shows that asthma and chronic obstructive pulmonary disease (COPD) are polar opposites in terms of prevalence and lost productivity impact. An estimated 8% of an employee population has asthma. Compared to employees without asthma, asthmatic employees lose about four more productive hours per month in absence and presenteeism. By contrast, an estimated 0.2% of an employee population is estimated to have COPD, but each month these employees lose 25 more productive hours in absence and presenteeism than employees without COPD. In a population of 1,000 employees, about 539 workdays per year will be lost for employees with asthma; the figure for COPD is about 80 days (see Table 1 notes)

In one study, employees who were adherent with asthma/COPD medications (such as corticosteroids, leukotriene modifiers, mast cell stabilizers, methylxanthines, anticholinergic agents, long-acting β 2-agonists, immunomodulators) had fewer incidental illness and disability absences than non-adherent peers (48). Another study showed that asthma patients who adhered to guidelines on salmeterol/fluticasone propionate combination therapy had fewer activity limitations (including work impairments) than patients whose asthma was not well controlled (53). A third study shows that participants in a worksite asthma education program showed improvements in their ability to communicate with and understand care providers and experienced a reduction in work absences in the twelve months following the program (54). The productivity improvements that result from appropriate asthma control are in addition to the well-documented reductions in the utilization of more costly health care resources, hospitalizations in particular (45).

DEPRESSION

Depression is both relatively common and costly to productivity. Table 1 shows that an estimated 11% of an employee population has depression. Compared to other employees, employees with depression lose about 16 more productive hours per month in absence and presenteeism. In a population of 1,000 employees, about 2,985 workdays per year will be lost for employees with depression (see Table 1 notes).

A review of several studies indicates that effective treatments for depression result in productivity gains that exceed the direct treatment costs (55, 56). One study found that having a supply of antidepressant medication at least 95% of the time was associated with lower absence costs among employees with depression (57); the results for presenteeism were mixed. Another study found that non-adherence with serotonin reuptake inhibitor guidelines during acute and continuation phases of depression was associated with a 39% to 46% increase in the odds of an STD claim (58). Identifying the needs for depression management also appears to improve productivity outcomes. Over a two-year period, depression patients whose primary care physicians had received

enhanced depression care management training reported 23% less absenteeism and 6% better productivity than patients who received usual depression care (59).

MIGRAINE

Table 1 shows that an estimated 7% of an employee population has migraines. Compared to other employees, migraineurs lose about eight more productive hours per month in absence and presenteeism. In a population of 1,000 employees, about 924 workdays per year will be lost for employees with migraines (see Table 1 notes).

Several studies find that migraineurs experience a reduction in lost work time after commencing triptan therapy (45, 60). One study documented a steady decrease in migraine-related lost work days at both three months and six months after employees started sumatriptan (61). While some studies indicate that triptan therapy for migraines increases costs of medical care, these medical costs are offset by productivity gains (62-64).

GASTROINTESTINAL DISORDERS

Table 1 shows that an estimated 13% of an employee population has gastroesophageal reflux disease (GERD) and about 6% has irritable bowel syndrome (IBS). Compared to other employees, employees with GERD lose seven more productive hours per month in absence and presenteeism; the figure for employees with IBS is nine more lost productive hours. In a population of 1,000 employees, about 1,515 workdays per year will be lost for employees with GERD; the figure for IBS is about 787 days (see Table 1 notes).

Studies have found that treatment for gastrointestinal disorders generally can result in better productivity outcomes. One trial found that among patients with IBS and constipation, linaclotide treatment reduced absenteeism by about 6% over 26 weeks and overall productivity loss by about 8% (65). Compared to a placebo, treatment with esomeprazole for GERD was associated with about a 14% reduction in lost work productivity – primarily from reduced sleep disturbances (66). In another study, esomeprazole was associated with a reduction in lost productivity due to dyspepsia (67).

ARTHRITIS

Table 1 shows that an estimated 16% of an employee population has arthritis. Compared to other employees, employees with arthritis lose about seven more productive hours per month in absence and presenteeism. In a population of 1,000 employees, about 1,895 workdays per year will be lost for employees with arthritis (see Table 1 notes).

One study found an association between the use of tumor necrosis factor inhibitors and improved sick day and work productivity outcomes among employees with inflammatory arthritis (68). In another study, having an adequate supply of disease-modifying antirheumatic medication at least 75% of the time was associated with a 22% to 57% decrease in the odds of an STD claim (69).

How Can Employers Mitigate Lost Productivity from Low Utilization of Beneficial Care?

Taken together, a cautionary tale for employers emerges from the research literature on CDHPs and medical care utilization, and the research literature on treatment adherence and workforce productivity. The general insights are:

- CDHPs will likely contribute to lower medical care utilization and lower health care costs borne by the employer
- Some of these savings will come from employees foregoing or delaying beneficial care rather than from avoiding unnecessary tests and procedures or from price-shopping
- Avoidance of beneficial care will likely result in lost productivity for some workers – the value of which may exceed the costs of medical treatments.

The literature also suggests that productivity losses associated with avoidance of beneficial care is not a given for a wide variety of chronic conditions. Instead it appears to be related to factors that are within the control of employers and CDHP plan designers. These include:

- The exemption of more demonstrably high value treatments from employees' deductibles
- CDHP enrollees' awareness of what types of services are included for free or at minimal cost
- CDHP enrollees' abilities to find and compare prices for a broad array of services and quality of those services
- Employees' basic health literacy and engagement with their own health
- Employees' knowledge of how to manage chronic health conditions

Whether they self-insure for health care benefits or partner with an insurance provider, employers must understand that while they may shift the costs of healthcare to external organizations or to employees, they can never fully shift the costs of lost work time and reduced performance to others. The findings of this review suggest that employers stand a better chance of realizing reduced costs without incurring unnecessary productivity losses if they implement a CDHP with the following questions in mind.

- What is the strategy for informing enrollees of which services are covered for free or at low cost? Has this strategy been shown to improve the utilization of beneficial services in other workplaces?
- How does the plan facilitate employees' abilities to shop around for services when it is feasible to do so? Does the plan include lists of local providers as well as their costs for common services? How often are price lists updated? How can employees reasonably be assured that all of the costs associated with a test or procedure are disclosed fully?
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As practical examples of how employers have successfully sustained health and productivity during and after CDHP adoption, IBI will publish case studies from two large companies later this winter. One of the employers is just getting started down the CDHP path and has focused on lifestyle management as key to moving forward; the other employer has several years of CDHP experience with demonstrable health and productivity results. The lessons from these cases can help other organizations start off on the right foot and avoid unnecessary productivity losses.

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