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Report to Congressional Requesters

July 2010

CONSUMER-DIRECTED HEALTH PLANS

Health Status, Spending, and Utilization of Enrollees in Plans Based on Health Reimbursement Arrangements

GAO-10-616

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GAO Accountability • Integrity • Reliability

Highlights

Highlights of GAO-10-616, a report to congressional requesters

Why GAO Did This Study

Consumer-directed health plans (CDHP) combine a high-deductible health plan with a tax-advantaged account, such as a health reimbursement arrangement (HRA), that enrollees can use to pay for health care expenses. In an effort to restrain cost growth, several employers, including the federal government through its Office of Personnel Management (OPM), have offered HRAs for several years.

For enrollees in HRAs compared with those in traditional plans such as preferred provider organization (PPO) plans, GAO assessed (1) differences in health status, and (2) changes in spending and utilization of health care services. GAO analyzed data from two large employers—one public and one private—that introduced an HRA option in 2003. GAO compared changes in health spending and utilization before and after 2003 for enrollees who switched from a PPO into an HRA (the HRA group) with those who stayed in a PPO (the PPO group). At the time GAO made its data requests to each employer, 2007 data from the public employer and 2005 data from the private employer were the most current and complete data available. GAO also reviewed published studies that included an assessment of the health status, spending, or utilization of HRA and other CDHP enrollees compared with traditional plan enrollees. Results are not generalizable beyond the enrollees, health plans, and employers GAO reviewed and also cannot be compared between the public and private employers.

View GAO-10-616 or key components.
For more information, contact John Dicken at (202) 512-7114 or dickenj@gao.gov.

What GAO Found

On average, enrollees in the HRA groups of both employers GAO reviewed spent less and generally used fewer health care services before they switched into the HRA in 2003 than those who remained in the PPO, suggesting that the HRA groups were healthier. Average annual spending per enrollee for the public employer's HRA group was $1,505 lower than the PPO group for the 2-year period prior to switching. (Spending for the public employer was based on analysis of both medical and pharmacy claims.) Likewise, the private employer's HRA group spent $566 less per enrollee for the 2-year period prior to switching than the PPO group (we were not able to examine pharmacy claims for the private employer). Similarly, of the 21 studies GAO reviewed that assessed the health status of HRA and other CDHP enrollees, 18 found they were healthier than traditional plan enrollees based on utilization of health care services, self-reported health status, or the prevalence of certain diseases or disease indicators. Other demographic differences may also explain spending and utilization differences including that policyholders in the HRA group were younger than those in the PPO group.

Spending and utilization for enrollees in HRAs generally increased by a smaller amount or decreased compared with those in traditional plans that GAO reviewed.

- *Public employer.* From the 2-year period before switching—2001 to 2002—to the 5-year period after switching—2003 to 2007—average annual spending for the HRA group increased by $478 per enrollee compared with $879 for the PPO group. This smaller increase for the HRA group was partially driven by decreases in spending for prescription drugs. Additionally, average annual utilization of services per enrollee increased by a smaller amount or decreased for the HRA group compared with the PPO group for six out of eight services GAO reviewed.
- *Private employer.* From the 2-year period before switching—2001 to 2002—to the 3-year period after switching—2003 to 2005—average annual spending for the HRA group increased by $152 per enrollee compared with $206 for the PPO group. This smaller increase for the HRA group was partially driven by smaller increases in spending for physician office visits and decreases in spending for emergency room services. Additionally, average annual utilization of services per enrollee increased by a smaller amount or decreased for the HRA group compared with the PPO group for four out of seven services GAO reviewed.

Similarly, GAO's review of published studies found that seven out of eight students that examined spending and controlled for differences in health status or other characteristics reported lower spending among HRAs and other CDHP enrollees relative to traditional plans.

OPM did not provide comments on the draft report. Representatives of the two employers whose health plans GAO reviewed did not comment on the draft report.

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Abbreviations

CDHP	consumer-directed health plan
FEHBP	Federal Employees Health Benefits Program
HRA	health reimbursement arrangement
HSA	health savings account
IRS	Internal Revenue Service
OPM	Office of Personnel Management
PPO	preferred provider organization

GAO
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United States Government Accountability Office
Washington, DC 20548

July 16, 2010

The Honorable Henry A. Waxman
Chairman
Committee on Energy and Commerce
House of Representatives

The Honorable Pete Stark
Chairman
Subcommittee on Health
Committee on Ways and Means
House of Representatives

More employers—including the federal government—are offering consumer-directed health plans (CDHP) in an effort to restrain health care cost growth. CDHPs combine a high-deductible health plan with a tax-advantaged account that enrollees can use to pay for health care expenses.[1] One type of CDHP is based on a health reimbursement arrangement (HRA), a tax-advantaged account that reimburses enrollees for health care expenses.[2,3] HRA-based plans typically have higher deductibles and lower premiums than do traditional health insurance plans—such as preferred provider organization (PPO) plans—and unused

[1]Many health care plans require enrollees to pay a portion of their health care costs up to a certain threshold, known as the deductible. Once the deductible has been met, the plan pays most of the costs. Among employer-sponsored health plans, the average annual deductible in 2009 for HRA-based plans was $1,690 for single coverage and $3,422 for family coverage, and for HSA-eligible plans, the average annual deductibles were $1,922 (single) and $3,734 (family), respectively. See Henry J. Kaiser Family Foundation and Health Research & Educational Trust, *Employer Health Benefits: 2009 Annual Survey* (Menlo Park, Calif. and Chicago, Ill.: 2009).

[2]The Internal Revenue Service (IRS) held in 2002 that employer contributions to HRAs were excludable from gross income for tax purposes and therefore not to be treated as taxable income to employees. IRS Rev. Rul. 02-41, 2002-2 C.B. 75; IRS Notice 02-45, 2002-2 C.B. 93.

[3]In addition to HRAs, another type of account associated with CDHPs is a health savings account (HSA). HSA-related tax advantages were authorized by the Medicare Prescription Drug, Improvement and Modernization Act of 2003. Pub. L. No. 108-173, §1201, 117 Stat. 2066, 2469 (codified in pertinent part at 26 U.S.C. §§ 106(d) and 223). Employer contributions to HSAs are excludable from gross income and employee contributions are deductible from federal income taxes.

account balances may carry over from year to year.[4,5] HRAs are owned by the employer, and only the employer may make contributions to them. HRAs are typically not portable and may not be taken by the enrollees if they leave their employer. Employers began offering CDHPs based on HRAs in 2001.

Debate surrounding CDHPs has grown as more employers offer them to their employees. Proponents contend that the plans can help restrain health care spending, arguing that the high deductibles and ability to carry over balances give enrollees an incentive to seek lower-cost health care services and to obtain services only when necessary. Critics are concerned that these plans may attract healthier enrollees who use fewer health care services or may discourage enrollees from obtaining necessary care.

Many employers, including the federal government, now have several years' experience offering CDHPs, particularly the HRAs that were introduced first.[6] Given this experience and the potential role of CDHPs as health care reforms are implemented,[7] there is interest in the health status of those selecting HRAs and how these plans affect enrollees' health care spending and utilization compared with traditional plans. For enrollees who switched into an HRA compared with enrollees who stayed in a traditional plan, we assessed (1) differences in health status and (2) changes in spending and utilization of health care services. To do this, we conducted an analysis of an HRA and a traditional health plan for two large employers and supplemented our work with the results of several published studies.

[4]For the purposes of this report, traditional plans include PPO plans, health maintenance organization plans, and other types of comprehensive medical insurance.

[5]PPO plans generally allow enrollees to select their own health care providers and reimburse either the provider or the enrollee for the cost of covered services. Enrollees' costs are generally lower if they obtain care from the plan's network of preferred providers.

[6]For the purposes of this report, we will refer to HRA-based plans and their accounts as HRAs.

[7]Under the Patient Protection and Affordable Care Act, by 2014 states are to establish exchanges to facilitate the purchase of qualified health plans, which could potentially include CDHPs. *See* Pub. L. No. 111-148, Title I, 124 Stat. 119, 162, 173.

- **Two large employers**. We obtained HRA and PPO plan enrollment and claims data for plan years 2001 through 2007 for a large public employer and for plan years 2001 through 2005 for a large private employer.[8] Both employers introduced an HRA as a health insurance option for employees at the beginning of the 2003 plan year.[9] For each employer, we defined a group of HRA enrollees and a group of PPO enrollees by analyzing enrollment data.[10] The HRA group included policyholders who were continuously enrolled in the PPO in the 2001 and 2002 plan years, switched into the HRA in the 2003 plan year, and stayed in the HRA for the remainder of our study periods. The PPO group included policyholders who were continuously enrolled in the PPO from the 2001 plan year through the remainder of our study periods.[11] Additionally, all groups included the covered dependents of policyholders. (See fig. 1.)

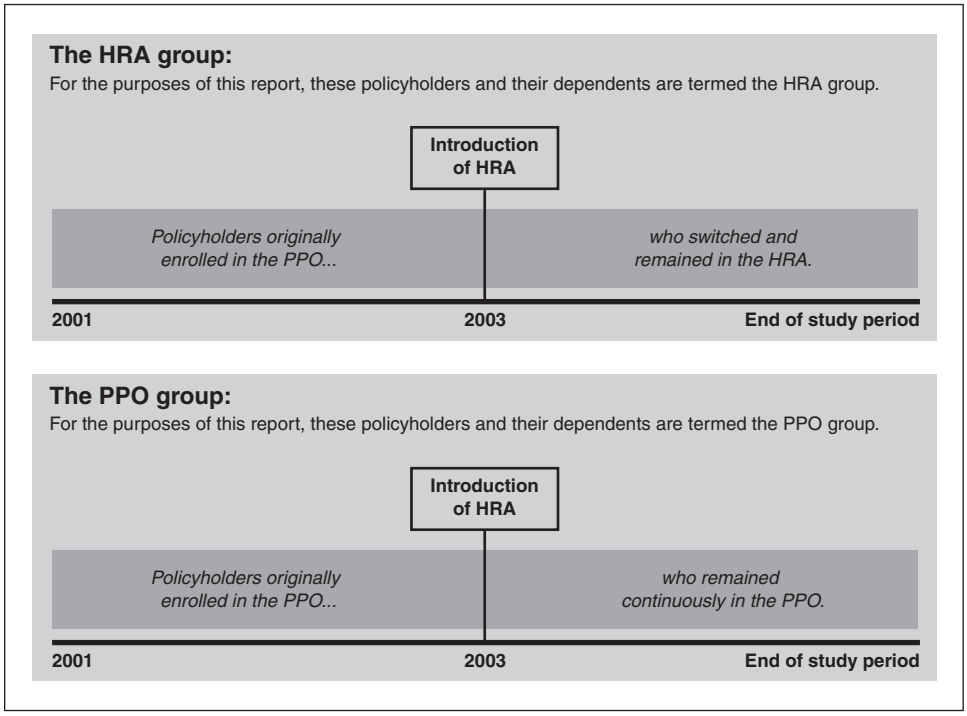
[8]Plan years were from January 1 through December 31 for the public employer and from July 1 through June 30 for the private employer.

[9]We initially requested from both employers claims data for plan years 2001 through 2005, covering the period 2 years before to 3 years after the introduction of the HRA. At the time we made our request, 2005 was the most current and complete plan-year of claims data available. Because some data from the public employer were originally omitted, we subsequently requested them along with additional years of data to enhance the timeliness of our study up to the most current and complete plan-year of data then available, which was through 2007.

[10]Unless otherwise stated, enrollees refer to policyholders and their dependents.

[11]For the public employer, the total number of enrollees ranged from 967 to 1,013 in the HRA group and from 1.25 million to 1.62 million in the PPO group over the study period. For the private employer, the number of enrollees ranged from 570 to 584 in the HRA group and from 1,079 to 1,098 in the PPO group over the study period. Group sizes fluctuated from year to year as enrollees who turned 65 years of age were removed from the analysis and the number of dependents changed.

Figure 1: Graphic Model of the Employer HRA and PPO Groups



Source: GAO.

- **Published studies**. We conducted a comprehensive review of studies published from January 2003 through March 2009 that included an assessment of the health status, spending, utilization, or other demographic characteristics of HRA and other CDHP enrollees compared with those in traditional plans. We identified 31 such studies, of which 18 focused exclusively on HRA enrollees, and 13 focused on both HRA and other CDHP enrollees.[12] Our review comprised peer-reviewed journal articles, studies by insurance carriers or independent consultants, national surveys, and government publications. For our review of health status, we included studies that used self-reported health status, assessed the health status or illness burden of plan enrollees based on diagnoses or disease indicators, or examined utilization prior to enrolling in an HRA or other CDHP. For our review of spending and utilization, we included only those studies that addressed selection bias as part of the methodology to

[12]For the purposes of this report, we will refer to the enrollees included in these 31 studies as "HRA and other CDHP enrollees."

account for differences between HRA and other CDHP enrollees and traditional plan enrollees that may affect the use of health care services.

To assess differences in the health status of enrollees who switched into an HRA compared with those who stayed in a traditional plan, we analyzed HRA and PPO plan claims data for the two large employers we examined.[13] We compared spending and utilization for health care services between the HRA and PPO groups for each employer before introduction of the HRA in 2003. This design enabled us to observe the potential effect of selection bias due to differences in health status or other characteristics which we did not separately control for between the two groups. We also summarized the findings of studies that compared health status and other demographic characteristics of HRA and other CDHP enrollees with those in traditional plans.

To assess changes in spending and utilization of health care services for enrollees who switched into an HRA compared with those who stayed in a traditional plan, we analyzed the changes in spending and utilization for the HRA and PPO groups from the period before to the period after introduction of the HRA in plan year 2003. We also summarized the findings of studies that compared spending and utilization of HRA and other CDHP enrollees with those in traditional plans.

The results of our analyses are not generalizable beyond the enrollees, health plans, and employers included in our review. The results of our employer analyses cannot be compared between the public and private employers. In particular, the results of our spending and utilization analyses from the two employers may be influenced by the benefit design—such as the financial features—of the health plans we reviewed and the sizes of the HRA and PPO groups in our study. Additionally, because our analyses of the two employers reflected instances where employees had a choice between an HRA and a PPO plan option, they do not represent the experiences of employees who have HRAs as their only plan option. We reviewed all data for soundness and consistency and determined that they were sufficiently reliable for our purposes. We conducted this performance audit predominantly in two phases from July 2007 through October 2008 and from September 2009 through July 2010 in

[13]Data from the public employer included both medical and pharmacy claims, whereas data from the private employer included only medical claims. We were not able to analyze pharmacy claims for the private employer.

accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. Appendix I provides more detail on our methodology and the limitations of the data we report, and appendix II describes the published studies that we reviewed. Appendix III provides more information on the financial features of each of the two employers' HRA and PPO plans that we reviewed.

Background

In the past several years, employers and insurance carriers have begun to offer HRAs and other CDHPs, which are intended to reduce health care spending.[14] To achieve this goal, CDHPs combine a high-deductible health plan with a tax-advantaged account to pay for health care expenses.[15] CDHP insurance carriers may also offer online tools to help enrollees evaluate the cost and quality of health care services and providers. The two most common types of CDHPs offered are those based on an HRA beginning in 2001 and those that are eligible to be coupled with a health savings account (HSA), which were offered beginning in 2004.

Several studies and surveys have attempted to quantify the individuals enrolled in CDHPs and the employers that offer them. For example, one study using national survey data estimates that about 5.5 million employees were enrolled in CDHPs of which 2.2 million were enrolled in HRAs and 3.2 million were enrolled in HSA-eligible plans as of 2008.[16] Furthermore, based on data from the Office of Personnel Management (OPM)—the agency that administers the Federal Employees Health Benefits Program (FEHBP)—about 57,000 of the nearly 8 million enrollees

[14]The majority of Americans receive their health care coverage through the private health insurance market. About 160.6 million of the nearly 263 million individuals under age 65 in 2008 received health care coverage through private, employer-sponsored health care plans. See Paul Fronstin, "Sources of Health Insurance and Characteristics of the Uninsured: Analysis of the March 2009 Current Population Survey," *EBRI Issue Brief*, no. 334 (September 2009). Employers can purchase coverage for their employees from an insurance carrier or fund their own health care plans.

[15]Qualified medical expenses are identified under the Internal Revenue Code. *See* 26 U.S.C. §§ 213(d), 223(d)(2)(A).

[16]Henry J. Kaiser Family Foundation and Health Research & Educational Trust, *Employer Health Benefits: 2008 Annual Survey* (Menlo Park, Calif. and Chicago, Ill.: 2008).

in the FEHBP were enrolled in CDHPs in 2009. About 42,000 of these FEHBP enrollees were in HRAs and about 15,000 were in HSA-eligible plans. Another study using national survey data found that HRAs were offered by 8 percent and HSA-eligible plans were offered by 14 percent of employers with 500 or more employees in 2008.[17] CDHPs are offered by employers as one of a number of plan options, such as PPOs, health maintenance organizations, or other traditional plans.[18]

Enrollees in HRAs pay premiums to access covered services. Coverage of most services is subject to the deductible while other services, such as preventive care services, may be exempted from the deductible.[19] Enrollees use their HRA account to pay for qualified medical expenses. While account balances may accrue from year to year, the accounts are typically not portable—that is, employees do not own the accounts and cannot keep unspent funds if they change jobs.[20] HRA accounts are administered by the employer or an insurance carrier and only employers may contribute to the accounts. Table 1 describes the key features of HRAs.

[17]Mercer, *National Survey of Employer-Sponsored Health Plans: 2008 Survey Report* (2009).

[18]HSA-eligible plans are also sold by health insurance carriers in the individual health insurance market. According to a survey of health insurance carriers, approximately 2.1 million individuals were enrolled in an HSA-eligible plan in the individual market in January 2010, a 17 percent increase since January 2009. The same survey reports that approximately 10 million people overall—both individual and group markets—were covered by such a plan in January 2010. The survey estimates enrollment in HSA-eligible plans, but does not indicate the extent to which these enrollees have or contribute to an HSA. See America's Health Insurance Plans Center for Policy and Research, *January 2010 Census Shows 10 Million People Covered by HSA/High-Deductible Health Plans* (Washington, D.C.: May 2010).

[19]The IRS definition of preventive care includes periodic health evaluations, including tests and diagnostic procedures ordered in connection with routine examinations, routine prenatal and well-child care, immunizations, tobacco cessation programs, obesity weight-loss programs, and various screening services.

[20]HRAs are generally set up as notional arrangements—employers do not actually deposit funds into the accounts for their employees. Instead, the employers reimburse employees for their medical expenses as they occur.

Table 1: Key Features of HRAs

Health plan features	
Deductible	Most employers pair HRA accounts with high-deductible plans
Out-of-pocket spending limit[a]	IRS does not specify a maximum out-of-pocket spending limit
HRA account features	
Use	Reimbursement of qualified medical expenses intended to prevent or alleviate a mental or physical condition (including vision and dental services), and may include certain costs for insurance premiums, long-term care insurance, and transportation to obtain medical care[b]
Ownership	Employers
Portability	Typically, employees cannot retain the HRA account when they leave their employer
Who may contribute	Employers
Annual contribution amount	Employers typically determine contribution amounts
Unspent funds	May roll over from year to year; some employers limit the maximum balance
Tax treatment	Withdrawals for qualified medical expenses are exempt from federal income taxes; employer contributions are excluded from gross income by employers and are not treated as taxable income to employees
Nonmedical withdrawals	All withdrawals must be for documented medical expenses

Source: GAO analysis of IRS guidance.

[a]Premiums and services not covered by the insurance plan do not count toward the out-of-pocket spending limit.

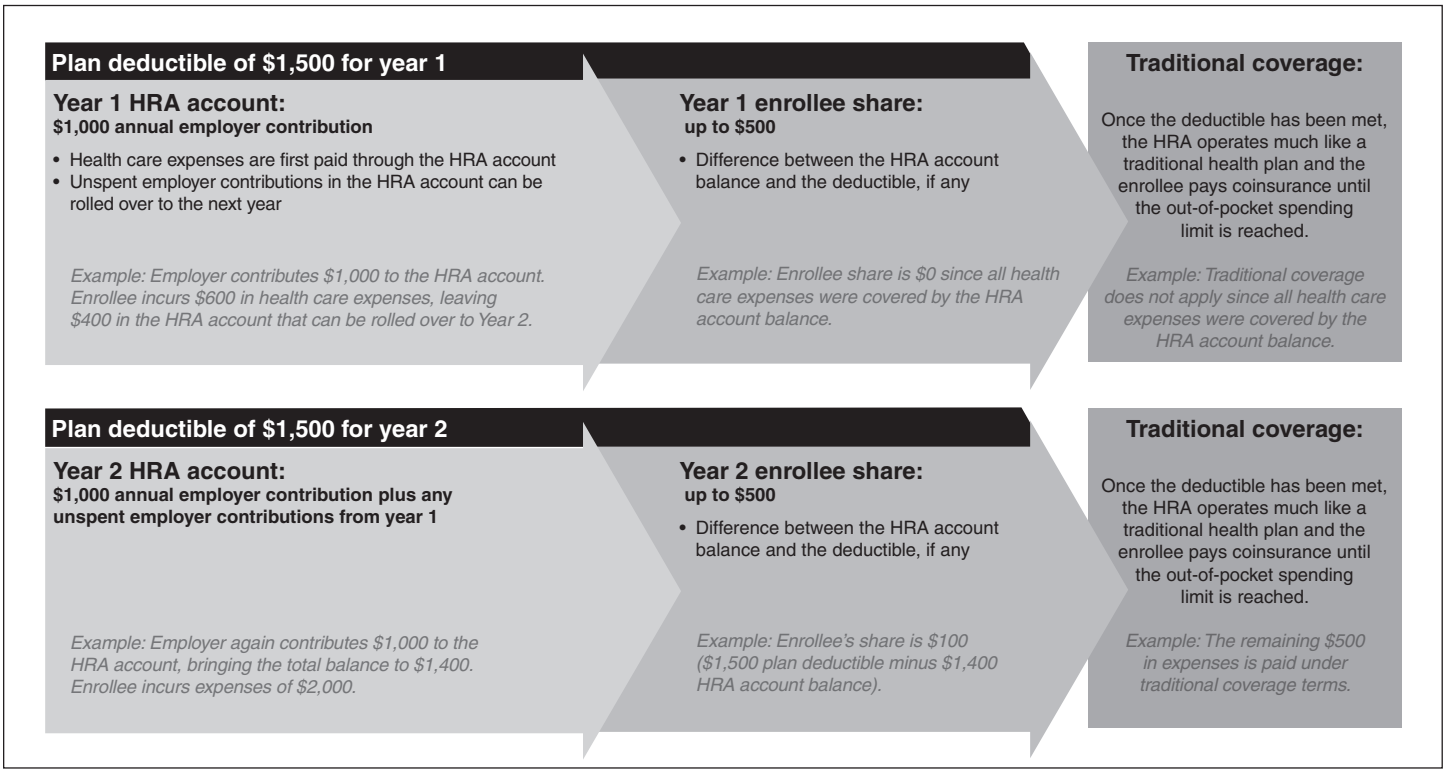
[b]Qualified medical expenses are identified under the Internal Revenue Code (See 26 U.S.C. §§ 213(d), 223(d)(2)(A)).

HRA enrollees must keep track of funds in their accounts. If the funds are exhausted before the deductible is met in a given year, enrollees are responsible for paying for the difference out of pocket. After an enrollee meets the deductible, the plan operates much like a traditional PPO plan. That is, the plan generally pays for most of the cost of covered services and the enrollee contributes a cost-sharing amount—which varies by plan—until meeting the maximum out-of-pocket spending limit, at which point the plan pays 100 percent of the cost of covered services.[21] Any unspent funds in an HRA account may be rolled over to the next year,

[21]An out-of-pocket spending limit represents the maximum amount an enrollee is required to pay toward the cost of covered services. The out-of-pocket spending limit includes cost sharing, but does not include premiums. Because IRS does not specify requirements for out-of-pocket spending limits, some plans may cover all costs once traditional coverage begins.

thereby reducing or eliminating the enrollee's share of the deductible in subsequent years.[22] See figure 2 for a hypothetical HRA benefit design.

Figure 2: Hypothetical Benefit Design of an HRA



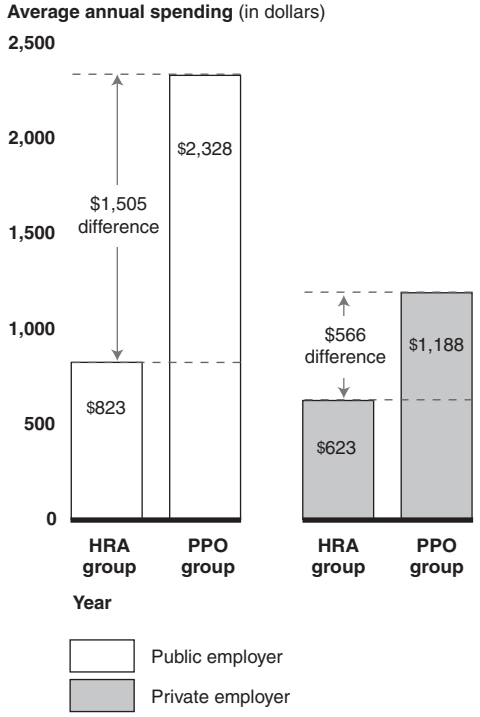
Source: GAO.

[22]HSA-eligible health plans operate similarly to HRAs with certain exceptions. Unlike HRAs, HSA-eligible health plans must meet certain statutorily defined criteria including a minimum deductible amount and a maximum limit on out-of-pocket spending. Additionally, the enrollee, rather than the employer, owns the account. Unlike most HRAs, HSAs are portable, meaning that enrollees may take the account with them if they leave their employer. Both enrollees and employers may contribute to HSAs, when they are coupled with an HSA-eligible health plan, up to IRS-specified contribution limits.

Data Suggest HRA Enrollees Were Healthier Than Traditional Plan Enrollees

On average, enrollees in the HRA groups of both employers we reviewed spent less and generally used fewer health care services before they switched into the HRA in 2003 than those who remained in the PPO, suggesting that they were healthier. Average annual spending per enrollee for the public employer's HRA group was $1,505 lower than the PPO group for the 2-year period prior to switching in 2003. Similarly, the private employer's HRA group spent $566 less per enrollee for the 2-year period prior to switching than the PPO group. (See fig. 3.)

Figure 3: Average Annual Spending per Enrollee for the Period before Introduction of an HRA, 2001–2002



Source: GAO analysis of health insurance claims data.
Notes: Analysis was based on medical and pharmacy claims for the public employer, but only medical claims for the private employer. Annual spending was adjusted to 2007 dollars. Plan years were from January 1 through December 31 for the public employer and from July 1 through June 30 for the private employer. Enrollees 65 years and older were not included in our analysis. All calculations may not reflect reported values due to rounding.

We also found that for each service type we reviewed, the HRA groups for both employers spent less per enrollee than the PPO groups over the 2-year period prior to the switch. Most notably, we found that the public employer's HRA group spent $399 less than the PPO group on prescription drugs and inpatient hospital services, and $289 less on physician office

services. The private employer's HRA group spent $346 less for inpatient hospital services and $110 less for outpatient services than the PPO group.[23] (See table 2.)

Table 2: Average Annual Spending per Enrollee by Service Type for the Period before Introduction of an HRA, 2001-2002

	Public employer		Private employer	
Service type	**HRA group** (n=968-989)	**PPO group** (n=1.54-1.62 million)	**HRA group** (n= 572-573)	**PPO group** (n=1,079-1,086)
Inpatient hospital	$71	$470	$73	$419
Outpatient	$147	$402	$188	$298
Physician office	$319	$608	$303	$380
Emergency room	$8	$12	$55	$81
Prescription drugs[a]	$211	$610	-	-
Other	$66	$225	$3	$10
All services (total)	**$823**	**$2,328**	**$623**	**$1,188**

Source: GAO analysis of health insurance claims data.

Notes: Analysis was based on medical and pharmacy claims for the public employer, but only medical claims for the private employer. Annual spending was adjusted to 2007 dollars. Plan years were from January 1 through December 31 for the public employer and from July 1 through June 30 for the private employer. Enrollees 65 years and older were not included in our analysis. All columns may not sum to the reported total due to rounding.

[a]We were not able to examine pharmacy claims data for the private employer.

In addition, we found that utilization of services was also generally lower for the HRA groups over the 2-year period before switching into the HRA compared with the PPO groups. For example, at the public employer, the average annual number of physician office visits for the HRA group was about four visits per enrollee compared with about seven visits for the PPO group. Additionally, the HRA group filled an average of about 4 prescriptions per enrollee per year compared with an average of about 10 prescriptions for the PPO group. Similarly, at the private employer, the average annual number of physician office visits for the HRA group was about three visits per enrollee for the HRA group compared with about four visits for the PPO group. In addition, the average length of a hospital stay for the private employer's HRA group was about 2 days compared with about 4 days for the PPO group. Overall, the average percentage of enrollees who did not receive any medical services was higher for both

[23]We were not able to examine pharmacy claims data for the private employer.

employers' HRA groups relative to the PPO groups—about 21 percent versus about 17 percent, respectively, for the public employer, and about 31 percent versus about 26 percent, respectively, for the private employer. (See app. IV for more information on utilization by service type.)

Our review of published studies generally found that HRA and other CDHP enrollees tend to be healthier than those enrolled in traditional plans. Specifically, of the 21 studies that assessed health status of HRA and other CDHP enrollees, 18 found that they were healthier than traditional plan enrollees based on utilization of health care services, self-reported health status, or the prevalence of certain diseases or disease indicators. For example, one study found that HRA and other CDHP enrollees appeared to be nearly 14 percent healthier than those enrolled in a traditional plan based on certain clinical categories.[24] In another study conducted by the Kaiser Family Foundation, 64 percent of HRA and other CDHP enrollees reported being in very good or excellent health, compared with 52 percent of those enrolled in traditional plans, and were less likely to have certain chronic conditions—23 percent versus 35 percent, respectively.[25] We reported in 2005 that a larger share of non-elderly enrollees in an HRA offered by the FEHBP reported being in "excellent" or "very good" health compared with enrollees in other traditional plans—73 percent versus 64 and 58 percent, respectively.[26]

In addition to health status, other demographic differences between the HRA and PPO groups may also explain differences in spending and utilization prior to introduction of the HRA. For example, our analyses of data from the two employers showed that policyholders who switched into the HRA were about 3 years younger, and slightly more likely to be male and elect single coverage in 2003 than those who remained in the PPO plan. (See app. V for additional information on the demographics of HRA and traditional plan enrollees.)

[24]A. Wilson and others, "More Preventative Care, and Fewer Emergency Room Visits and Prescription Drugs: Health Care Utilization in a Consumer-Driven Health Plan," *Benefits Quarterly*, vol. 24, no. 1 (2008): 46-54.

[25]The Henry J. Kaiser Family Foundation, *National Survey of Enrollees in Consumer Directed Health Plans* (Menlo Park, Ca.: November 2006).

[26]See GAO, *Federal Employees Health Benefits Program: Early Experience with a Consumer-Directed Health Plan*, GAO-06-143 (Washington, D.C.: Nov. 21, 2005).

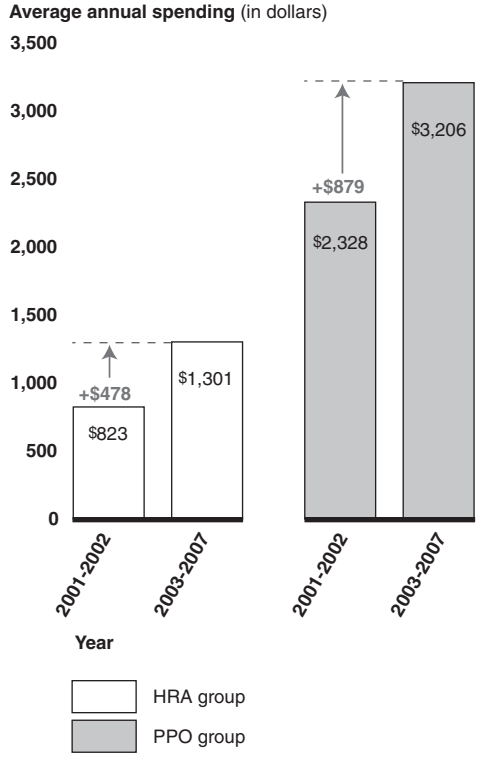
Spending and Utilization for Enrollees in HRAs Generally Increased by a Smaller Amount or Decreased Compared with Those in Traditional Plans

For the public and private employers we reviewed, health care spending and utilization of health care services for the HRA groups generally increased by a smaller amount or decreased compared with the PPO groups, from the period before to the period after switching. Additionally, the majority of the studies we reviewed that examined total or medical spending and controlled for differences in health status or other characteristics of enrollees reported lower spending among enrollees in HRAs and other CDHPs relative to traditional plans.

Public Employer

At the public employer, average annual spending for the HRA group increased by a smaller amount from the 2-year period before switching to the 5-year period after switching compared with the PPO group. Specifically, average annual spending for the HRA group increased by $478 per enrollee compared with $879 for the PPO group. (See fig. 4.)

Figure 4: Average Annual Spending per Enrollee at the Public Employer before and after Introduction of an HRA



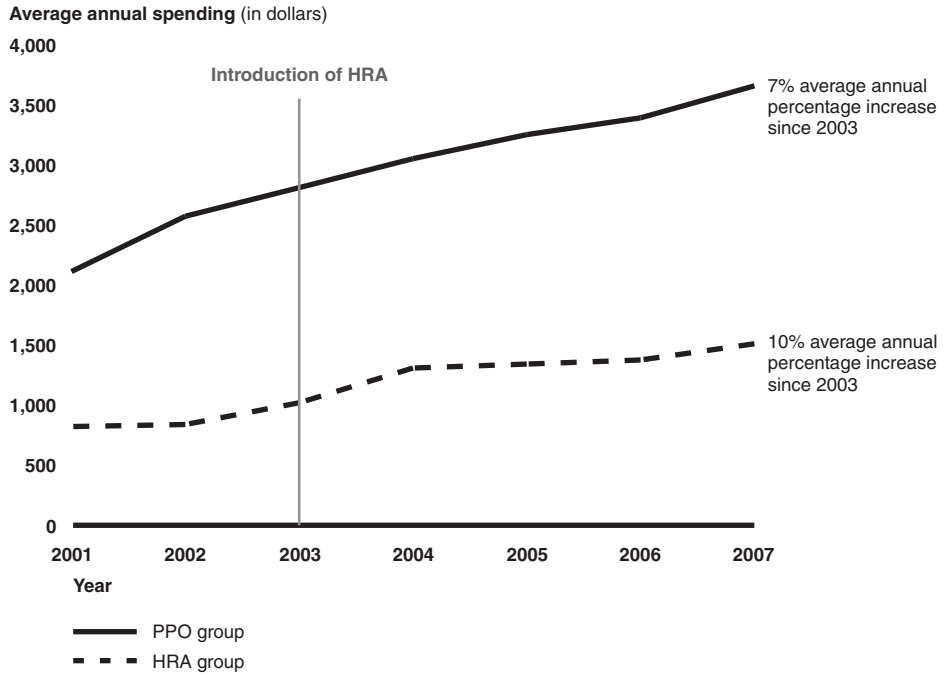
Source: GAO analysis of health insurance claims data.

Notes: Analysis was based on medical and pharmacy claims for the public employer. The plan year was from January 1 through December 31. Annual spending was adjusted to 2007 dollars. Enrollees 65 years and older were not included in our analysis. All calculations may not reflect reported values due to rounding.

Although the average annual spending for the HRA group remained consistently lower than the PPO group after introduction of the HRA, the average annual percentage increase in spending from 2003 through 2007 was higher for the HRA group—10 percent versus 7 percent, respectively.[27] This higher average annual percentage increase for the HRA group was likely influenced by the lower base of spending compared with the PPO group. (See fig 5.)

[27]The average annual rate of change assumes that spending increases or decreases at the same rate during each year between 2003 and 2007.

Figure 5: Average Annual Spending per Enrollee for the HRA and PPO Groups at the Public Employer, 2001–2007



Source: GAO analysis of health insurance claims data.

Notes: Analysis was based on medical and pharmacy claims for the public employer. The plan year was from January 1 through December 31. Annual spending was adjusted to 2007 dollars. Enrollees 65 years and older were not included in our analysis.

At the specific service level, the public employers' HRA group experienced greater increases in spending for inpatient hospital, outpatient, physician office, and emergency room services than the PPO group, but these increases were offset by decreases in spending for prescription drugs and other services from the 2-year period before switching to the 5-year period after switching.[28] For example, average annual spending for physician office services for the HRA group increased by $159 per enrollee compared with an increase of $120 per enrollee for the PPO group. However, average annual spending for prescription drugs for the HRA

[28]Other services for the HRA and PPO groups included those provided at a patient's home or by military treatment facilities; skilled nursing facilities; ambulances; psychiatric facilities or mental health centers; rehabilitation facilities; substance abuse facilities; independent laboratories; or state, local, or rural health clinics.

group decreased by $47 per enrollee compared with an increase of $263 per enrollee for the PPO group. (See table 3.)

Table 3: Average Annual Spending per Enrollee by Service Type at the Public Employer before and after Introduction of an HRA

	HRA group (n=967-1,013)			**PPO group** (n=1.25-1.62 million)		
Service type	**2001-2002**	**2003-2007**	**Change**	**2001-2002**	**2003-2007**	**Change**
Inpatient hospital	$71	$248	$176	$470	$630	$160
Outpatient	$147	$377	$230	$402	$610	$207
Physician office	$319	$478	$159	$608	$728	$120
Emergency room	$8	$20	$12	$12	$21	$8
Prescription drugs	$211	$164	-$47	$610	$873	$263
Other	$66	$15	-$51	$225	$346	$120
All services (total)	**$823**	**$1,301**	**$478**	**$2,328**	**$3,206**	**$879**

Source: GAO analysis of health insurance claims data.

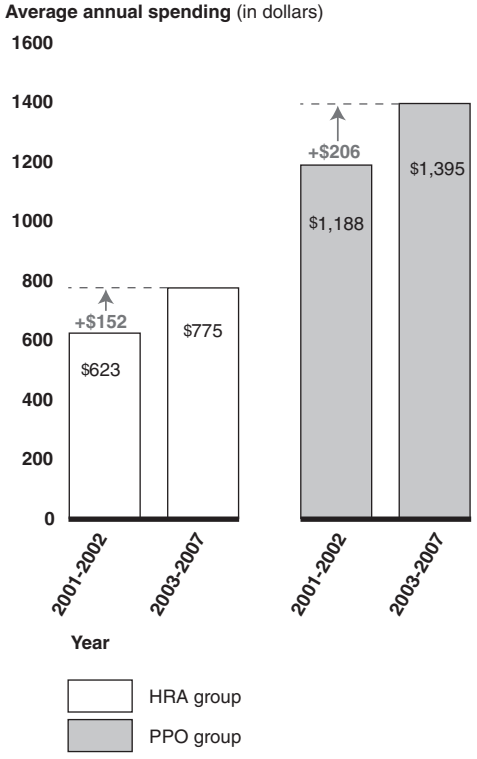
Notes: Analysis was based on medical and pharmacy claims for the public employer. The plan year was from January 1 through December 31. Annual spending was adjusted to 2007 dollars. Enrollees 65 years and older were not included in our analysis. All calculations may not reflect reported values due to rounding.

In addition, we found that when compared with the PPO group, the average annual utilization of services per enrollee for the HRA group either increased by a smaller amount or decreased from the 2-year period before switching to the 5-year period after switching for six out of eight service types we reviewed. For example, the average annual number of prescriptions filled decreased by less than one prescription per enrollee for the HRA group compared with an increase of about four prescriptions per enrollee for the PPO group. However, the average annual number of preventive services increased by about one per enrollee for the HRA group compared with less than one for the PPO group. (See app. IV for more information on utilization by service type.)

Private Employer

For the HRA group, similar to the public employer, average annual spending at the private employer increased by a smaller amount than for the PPO group from the 2-year period before to the 3-year period after switching. Specifically, average annual spending for the private employer's HRA group increased by $152 per enrollee compared with $206 for the PPO group (we were not able to analyze pharmacy claims for this employer). (See fig. 6.)

Figure 6: Average Annual Spending per Enrollee at the Private Employer before and after Introduction of an HRA

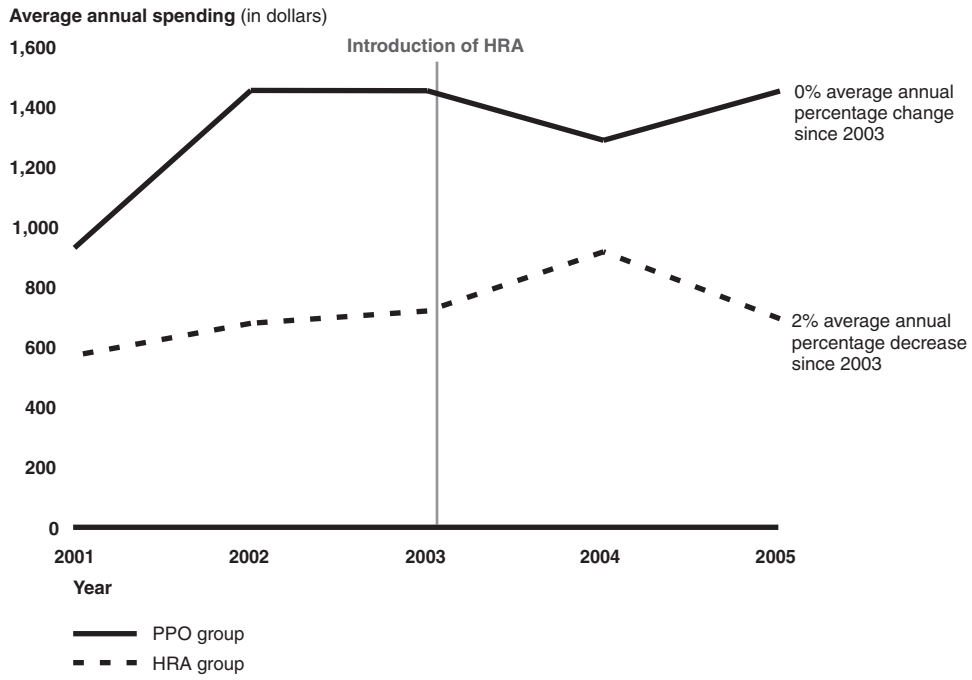


Source: GAO analysis of health insurance claims data.
Notes: Analysis was based on medical claims; we were not able to analyze pharmacy claims for the private employer. Annual spending was adjusted to 2007 dollars. The plan year was from July 1 through June 30. Enrollees 65 years and older were not included in our analysis. All calculations may not reflect reported values due to rounding.

Moreover, average annual spending for the HRA group remained consistently lower than for the PPO group after introduction of the HRA, although spending fluctuated for both groups. The average annual rate of spending for the HRA group decreased by 2 percent from 2003 through 2005, while the average annual rate of spending for the PPO group remained about the same.[29] (See fig 7.)

[29]The average annual rate of change assumes that spending increases or decreases at the same rate during each year between 2003 and 2005.

Figure 7: Average Annual Spending per Enrollee for the HRA and PPO Groups at the Private Employer, 2001–2005



Source: GAO analysis of health insurance claim data.

Notes: Analysis was based on medical claims; we were not able to analyze pharmacy claims for the private employer. Annual spending was adjusted to 2007 dollars. The plan year was from July 1 through June 30. Enrollees 65 years and older were not included in our analysis.

At the specific service level, the private employer's HRA group experienced greater increases in spending for inpatient hospital services compared with the PPO group, but this increase was offset by a decrease in spending for emergency room services as well as lower increases in spending for outpatient, physician office, and other services from the 2-year period before switching to the 3-year period after switching.[30] For example, average annual spending for inpatient hospital services for the HRA group increased by $82 per enrollee compared with an increase of $23 per enrollee for the PPO group. However, the average annual spending for emergency room services for the HRA group decreased by $28 per

[30]For the HRA group, other services included those provided at a patient's home or provided by ambulances or independent laboratories. For the PPO group, other services included those provided at a patient's home or provided by urgent care facilities or skilled nursing facilities.

enrollee compared with an increase of $20 per enrollee for the PPO group. Additionally, the average annual spending for physician office services for the HRA group increased by only $22 per enrollee compared with an increase of $73 per enrollee for the PPO group. (See table 4.)

Table 4: Average Annual Spending per Enrollee by Service Type at the Private Employer before and after Introduction of an HRA

	HRA group (n=570-584)			**PPO group (n=1,079-1,098)**		
Service type	**2001-2002**	**2003-2005**	**Change**	**2001-2002**	**2003-2005**	**Change**
Inpatient hospital	$73	$155	$82	$419	$442	$23
Outpatient	$188	$264	$76	$298	$380	$82
Physician office	$303	$326	$22	$380	$453	$73
Emergency room	$55	$27	-$28	$81	$101	$20
Prescription drugs[a]	-	-	-	-	-	-
Other	$3	$4	$0	$10	$19	$9
All services (total)	**$623**	**$775**	**$152**	**$1,188**	**$1,395**	**$206**

Source: GAO analysis of health insurance claims data.

Notes: Analysis was based on medical claims for the private employer. Annual spending was adjusted to 2007 dollars. The plan year was from July 1 through June 30. Enrollees 65 years and older were not included in our analysis. All calculations may not reflect reported values due to rounding.

[a]We were not able to analyze pharmacy claims for the private employer.

In addition, we found that when compared with the PPO group, the average annual utilization of services per enrollee for the HRA group either increased by a smaller amount or decreased from the 2-year period before switching to the 3-year period after switching for four out of seven service types we reviewed. For example, the average annual number of preventive services increased slightly less for the HRA group compared with the PPO group. For emergency room visits, the average annual number of visits per enrollee slightly decreased for the HRA group while it slightly increased for the PPO group. (See app. IV for more information on utilization by service type.)

Published Studies

Consistent with our analysis of employer data, most published studies that examined health care spending reported lower spending among enrollees in HRAs and other CDHPs relative to traditional plans. Of the eight studies in our review that examined total or medical spending and controlled for differences in health status or other characteristics of enrollees, seven

found that HRAs and other CDHPs reduced spending relative to traditional plans.[31] For example, the cost of medical and pharmacy care for HRA and other CDHP enrollees was more than 4 percent lower than that of those in traditional plans after accounting for differences in illness burden.[32] In addition, of the six studies that reviewed spending for prescription drugs, four reported that HRA and other CDHP enrollees spent less than did traditional plan enrollees.[33] For example, one study found that costs were 10 percent lower for HRA and other CDHPs than for traditional plans, suggesting a higher use of generic drugs and mail order purchasing.[34] The one study that did not find savings in total spending through an HRA found that it was 23 percent more expensive than the traditional plan by its third year of existence.[35] However, the study authors acknowledged that this may be due to the plan design of the HRA, which provided 100 percent coverage after enrollees paid a small share of the deductible.

When considering the results of the published studies that reviewed spending, it is important to note that these studies assessed differences over a short time period. Of the seven studies that found reduced spending, five studies found lower rates over a 1- or 2-year period. For example, three of the studies were published by Cigna HealthCare and were each a 1-year update on the claims costs of their HRAs and other CDHPs relative to their traditional plans.[36] The study that did not find lower spending reported that spending was higher among HRA enrollees than among traditional plan enrollees over a 3-year period, by as much as 26 percent in a single year.[37]

[31]Four of the nine studies reported on total spending, while five studies reported separately on medical spending only.

[32]HealthPartners, *Consumer Directed Health Plans Analysis* (October 2007).

[33]The other two studies reported differences that were not statistically significant.

[34]*Cigna Choice Fund Experience Study* (January 2009).

[35]R. Feldman and others, "Consumer-Directed Health Plans: New Evidence on Spending and Utilization," *Inquiry*, vol. 44, no. 1 (2007): 26-40. This study found higher spending among HRA enrollees compared to those in a traditional plan for 3 years. The results were statistically significant for the second and third year only.

[36]*Cigna Choice Fund Results Analysis (*November 2006); *Cigna Choice Fund Experience Study (*October 2007); and *Cigna Choice Fund Experience Study* (January 2009).

[37]R. Feldman and others, "Consumer-Directed Health Plans: New Evidence on Spending and Utilization."

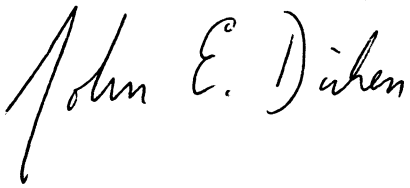
We also reviewed published studies that reported on differences in utilization of health care services and generally found lower utilization among HRA and other CDHP enrollees compared with traditional plan enrollees for two of the five service types we reviewed. In particular, we reviewed studies that reported on utilization of inpatient hospital admissions, outpatient visits, emergency room visits, physician office visits, and preventive services and whether they reported a lower, higher, or no conclusive difference in utilization among HRA and other CDHP enrollees compared with traditional plan enrollees. For example, three out of four studies that assessed visits to the emergency room found a decrease in emergency room utilization among HRA and other CDHP enrollees relative to traditional plan enrollees. Eight studies assessed the utilization of preventive services, and six found an increase among HRA and other CDHP enrollees relative to traditional plan enrollees. This may be due to the fact that most HRAs and other CDHPs exempt preventive services from the deductible. (See app. IV for more information on the results of our review of published studies on utilization by service type for HRA and other CDHP enrollees compared with those in traditional plans.)

Agency and External Comments

We provided a draft of the report for review and comment to OPM because of its role administering the health insurance program for federal employees. We provided a draft of this report to representatives of the public and private employers whose health plans we reviewed and to two independent health policy researchers with experience studying CDHPs. OPM did not comment on the draft report. One of the independent researchers commented that the study made good use of employer data sets and existing research, the methods were appropriate to the study objectives, and the findings were consistent with the larger body of research in this area. The researcher also raised several questions about the implications of our findings that were beyond the scope of this study. The remaining parties did not comment on the draft report.

As we agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution of it until 30 days from the date of this report. At that time, we will send copies of this report to the Director of OPM, appropriate congressional committees, and other interested parties. The report will be available at no charge on the GAO Web site at http://www.gao.gov.

If you or your staffs have questions about this report, please contact me at (202) 512-7114 or at dickenj@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix VI.



John E. Dicken
Director, Health Care

Appendix I: Scope and Methodology

For enrollees who switched into plans based on health reimbursement arrangements (HRA) compared with enrollees who stayed in a traditional plan, we assessed (1) differences in health status and (2) changes in spending and utilization of health care services.[1] We conducted this performance audit predominantly in two phases from July 2007 through October 2008 and from September 2009 through July 2010 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Data and Information Sources

To address our research objectives, we conducted an analysis of an HRA and a traditional health plan for two large employers and supplemented our work with the results of several published studies.

- **Two large employers**. We obtained HRA and preferred provider organization (PPO) plan enrollment and claims data for plan years 2001 through 2007 for a large public employer and for plan years 2001 through 2005 for a large private employer.[2] We judgmentally selected these employers because each:
  - offered an HRA as one of multiple plan options for at least 3 years;
  - offered traditional plans, including a PPO, for 2 years before and at least 3 years after the HRA was implemented; and
  - did not switch insurance carriers or significantly change their HRA or PPO plan features during the study period.[3] (See app. III for financial features of each employer's HRA and PPO plans.)

[1]We refer to HRA-based plans and their accounts as HRAs. We refer to traditional plans as those which include PPO plans, health maintenance organization plans, and other types of comprehensive medical insurance.

[2]Plan years were from January 1 through December 31 for the public employer and from July 1 through June 30 for the private employer.

[3]The HRAs offered by the two employers were administered by the same insurance carrier. The PPOs were administered by different insurance carriers.

Both employers introduced an HRA as a health insurance option for employees at the beginning of the 2003 plan year.[4] For each employer, we defined a group of HRA enrollees and a group of PPO enrollees by analyzing enrollment data.[5] The HRA group included policyholders who were continuously enrolled in the PPO in the 2001 and 2002 plan years, switched into the HRA in the 2003 plan year, and stayed in the HRA for the remainder of our study periods. The PPO group included policyholders who were continuously enrolled in the PPO from the 2001 plan year through the remainder of our study periods.[6] Additionally, all groups included the covered dependents of policyholders.

For the public employer, the total number of enrollees ranged from 967 to 1,013 in the HRA group and from 1.25 million to 1.62 million in the PPO group over the study period. For the private employer, the number of enrollees ranged from 570 to 584 in the HRA group and from 1,079 to 1,098 in the PPO group over the study period. Group sizes fluctuated from year to year as enrollees who turned 65 years of age were removed from the analysis and the number of dependents changed.[7]

- **Published studies**. We conducted a comprehensive review of studies published from January 2003 through March 2009 that included an assessment of the health status, spending, utilization, or other demographic characteristics of HRA and other CDHP enrollees compared with those in traditional plans. We identified 31 such studies, of which

[4]We initially requested from both employers claims data for plan years 2001 through 2005, covering the period 2 years before to 3 years after the introduction of the HRA. At the time we made our request, 2005 was the most current and complete plan-year of claims data available. Because some data from the public employer were originally omitted, we subsequently requested them along with additional years of data to enhance the timeliness of our study up to the most current and complete plan-year of data then available, which was through 2007.

[5]Unless otherwise stated, enrollees refer to policyholders and dependents.

[6]We included policyholders who joined their HRA or PPO plan within the first 3 months of the 2001 plan year and those who withdrew within the last 3 months of the public employer's 2007 plan year and the private employer's 2005 plan year. For the public employer, we only included policyholders who lived in the continental United States. Data from the private employer did not contain address information and some policyholders may have lived outside the continental United States.

[7]At the beginning of each plan year, we removed from each of the study groups from that point forward any enrollees who had reached age 65 in order to exclude Medicare beneficiaries. The number of dependents also fluctuated from year to year due to life events such as births and marriages.

18 focused exclusively on HRA enrollees, and 13 focused on both HRA and other consumer-directed health plan (CDHP) enrollees in plans eligible to be coupled with a health savings account (HSA).[8] Our review comprised peer-reviewed journal articles, studies by insurance carriers or independent consultants, national surveys, and government publications. For our review of health status, we included studies that used self-reported health status, assessed the health status or illness burden of plan enrollees based on diagnoses or disease indicators, or examined utilization prior to enrolling in an HRA. For our review of spending and utilization, we included only those studies that addressed selection bias as part of the methodology to account for differences between HRA and other CDHP enrollees and traditional plan enrollees that may affect the use of health care services. (See app. II for our methodology and a list of studies we included in our review of published studies.)

Health Status of HRA and Traditional Plan Enrollees

To assess differences in the health status of enrollees who switched into an HRA compared with those who stayed in a traditional plan, we analyzed HRA and PPO plan claims data for the two large employers we examined.[9,10] We compared spending and utilization of health care services between the HRA and PPO groups for each employer before introduction of the HRA in plan year 2003.[11] This design enabled us to observe the potential effect of selection bias due to differences in health status or other characteristics which we did not separately control for between the two groups. We also summarized the findings of studies that compared

[8]We refer to the enrollees included in these 31 studies as "HRA and other CDHP enrollees."

[9]Data from the public employer included both medical and pharmacy claims, whereas data from the private employer included only medical claims. We were not able to analyze pharmacy claims for the private employer.

[10]All claims data used in our analyses were final-action claims. The public employer provided claims based on date of service during our study period. The private employer provided claims based on date of payment, but our analyses were based on dates of service covering our study period. Some claims that were rendered but not paid during our study period for the private employer may be missing.

[11]All spending and utilization analyses were conducted on a per enrollee basis for each plan year.

health status and other demographic characteristics of HRA and other CDHP enrollees with those in traditional plans.[12]

Spending and Utilization of HRA and Traditional Plan Enrollees

To assess changes in spending and utilization of health care services for enrollees who switched into an HRA compared with those who stayed in a traditional plan, we analyzed the change in spending and utilization of health care services for the HRA and PPO groups from the period before to the period after introduction of the HRA in plan year 2003. We also summarized the findings of studies that compared spending and utilization of HRA and other CDHP enrollees with those in traditional plans.

For all of our spending analyses, we included the portion paid by the health plan and the portion paid by the enrollee in our calculations.[13] We examined total spending across all medical services and by the following service types:[14]

- inpatient hospital,
- outpatient,
- physician office,
- emergency room, and
- prescription drugs.[15]

[12]To understand other demographic differences between HRA enrollees and traditional plan enrollees, we relied on an analysis of enrollment data from the two large employers we reviewed and compared our results to other national data sources and published studies. See appendix V.

[13]The portion of each claim paid by the enrollee includes deductibles, copayments, or coinsurance. We did not capture any contributions made by employers or employees towards the monthly premiums as part of our spending calculations.

[14]The data systems used by the different health plans in our review may not code their claims consistently for a service type.

[15]We examined prescription drug claims only for the public employer; we were not able to analyze pharmacy claims for the private employer.

All spending results were expressed in 2007 dollars using the medical care consumer price index to control for inflation.[16]

Similar to our spending analyses, we examined utilization of the service types listed above.[17] In addition, we examined utilization by the following service types and other measures:

- nonpreventive diagnostic radiology procedures,
- nonpreventive diagnostic pathology or laboratory procedures,
- preventive care services,
- length of stay for an inpatient hospital admission, and
- percentage of enrollees with no medical claims.[18]

Data Reliability and Limitations

We reviewed all data for soundness and consistency and determined that they were sufficiently reliable for our purposes. We discussed our data sources with knowledgeable officials from the health plans and employers we reviewed. For the employer data, we also performed data reliability checks to test the internal consistency and reliability of the data, including removing outlier claims for each year,[19] interviewing health plan officials to understand their coding systems, and reviewing steps the plans took to ensure their enrollment and claims data were complete and accurate. We excluded claims that indicated a coordination of benefits between the

[16]We used the nonseasonally adjusted medical care consumer price index to express all spending in 2007 dollars. The medical care consumer price index consists of two categories: medical care services and medical care commodities. Medical care services include expenditures for professional services, hospital and related services, and health insurance. Medical care commodities include expenditures for prescription and nonprescription drugs as well as medical supplies.

[17]Specifically, we examined inpatient hospital admissions, outpatient visits, physician office visits, emergency room visits, and prescription drugs filled.

[18]We identified radiology and pathology or laboratory procedures using diagnostic and procedure information in the claims data. If a procedure was preventive in nature, we did not identify it as a diagnostic radiology or pathology or laboratory procedure. For example, a mammogram was considered a preventive care service and not a diagnostic radiology procedure. To identify preventive care services, we developed a list of procedure, service, and diagnostic codes commonly classified as preventive using Current Procedural Terminology codes, Healthcare Common Procedure Coding System codes, and International Classification of Diseases codes.

[19]We removed outlier claims that were plus or minus 3 standard deviations from the mean for each year for each spending and utilization variable we reviewed.

HRA or PPO plans and other insurers.[20] Because we analyzed health insurance claims from an HRA and a PPO plan for each of the two employers we reviewed, variations may exist across the data systems used by each plan in how they designate claims by service type. Further, differences may exist in the negotiated rates that each plan pays providers for services.

The results of our analyses are not generalizable beyond the enrollees, health plans, and employers included in our review. The results of our employer analyses cannot be compared between the public and private employers. In particular, the results of our spending and utilization analyses from the two employers may be influenced by the benefit design of the health plans we reviewed and the sizes of the HRA and PPO groups in our study. Additionally, because our analyses of the two employers reflected instances where employees had a choice between an HRA and a PPO plan option, they do not represent the experiences of employees who have HRAs as their only plan option.

[20]We excluded claims that indicated a coordination of benefits because we could not determine how much other insurance carriers paid for the claim. As a result, our spending results do not reflect any payments made by the HRA or PPO plans for these claims.

Appendix II: Review of Published Studies

We conducted a comprehensive review of published studies from January 2003 through March 2009 that included an assessment of the health status, spending, utilization, or other demographic characteristics of HRA and other CDHP enrollees compared with traditional plan enrollees. We identified 31 such studies, of which 18 focused exclusively on HRA enrollees, and 13 focused on both HRA and other CDHP enrollees in an HSA-eligible plan. Our review comprised peer-reviewed journal articles, studies by insurance carriers or independent consultants, national surveys, and government publications.[1]

For our review of health status, we included studies that used self-reported health status, assessed the health status or illness burden of plan enrollees based on diagnoses or disease indicators, or examined utilization prior to enrolling in an HRA or other CDHP. For our review of spending and utilization, we included only those studies that addressed selection bias as part of the methodology to account for differences between HRA and other CDHP enrollees and traditional plan enrollees that may affect the use of health care services. For example, these methodologies included:

- using a regression analysis to control for differences in demographic characteristics between study and control groups;
- weighting the data to adjust for differences in demographic characteristics between groups; or
- examining the change from a traditional plan to a full replacement HRA, whereby all of the traditional plan enrollees migrated to the HRA.

Our review of spending by HRA and other CDHP enrollees compared with traditional plan enrollees also included only those studies that included both the employer and the employee portion of spending for a health care service.

For our review of other demographic characteristics, we assessed the age, gender, type of coverage (single or family), and salary of HRA and other CDHP enrollees compared with traditional plan enrollees.

[1]We did not consider press releases, slide presentations, abstracts, or testimonies in our review because we could not assess the methodology used.

Table 5 identifies the 31 studies included in our review, and whether we used each study to address health status, spending, utilization, or otherwise describe demographic characteristics of enrollees.

Table 5: Published Studies of HRA and other CDHP Enrollees and Traditional Plan Enrollees, January 2003–March 2009

Study	Health status	Spending	Utilization	Demographic characteristics
Barry, C., and others. "Who Chooses a Consumer-Directed Health Plan?" *Health Affairs*, vol. 27, no. 6 (2008): 1671-1679.	✓			✓
Blue Cross Blue Shield Association. *Consumer-Directed Health Plans: Consumer Perspectives, 2008 CDHP Member Experience Report*. November 2008.	✓		✓	✓
Briggs Fowles, J., and others. "Early Experience with Employee Choice of Consumer-Directed Health Plans and Satisfaction with Enrollment." *Health Services Research*, vol. 39, no. 4, Part II (2004): 1141-1158.	✓			✓
Christianson, J. B., and others. "Consumer Experiences in a Consumer-Driven Health Plan." *Health Services Research*, vol. 39, no. 4, Part II (2004): 1123-1139.	✓			✓
Cigna Choice Fund Results Analysis, November 2006.		✓	✓	
Cigna Choice Fund Experience Study, October 2007.		✓	✓	
Cigna Choice Fund Experience Study, January 2009.		✓	✓	
Dixon, A., and others. "Do Consumer-Directed Health Plans Drive Change in Enrollees' Health Care Behavior?" *Health Affairs*, vol. 27, no. 4 (2008): 1120-1131.	✓		✓	✓
Express Scripts. *What Happens to Prescription Drug Use After Consumer-Directed Health Plan Enrollment?* April 2007.	✓		✓	✓
Feldman, R., and others. "Consumer- Directed Health Plans: New Evidence on Spending and Utilization." *Inquiry*, vol. 44, no. 1 (2007): 26-40.	✓	✓	✓	✓
Fronstin, P., and S. Collins. "Early Experience with High-Deductible and Consumer-Driven Health Plans: Findings From the EBRI/Commonwealth Fund Consumerism in Health Survey." *EBRI Issue Brief*, no. 288 (December 2005).	✓			✓
Fronstin, P., and S. Collins. "The 2nd Annual EBRI/Commonwealth Fund Consumerism in Health Care Survey, 2006: Early Experience with High Deductible and Consumer-Driven Health Plans." *EBRI Issue Brief*, no. 300 (December 2006).	✓			✓
Fronstin, P., and S. Collins. "Findings From the 2007 EBRI/Commonwealth Fund Consumerism in Health Survey." *EBRI Issue Brief*, no. 315 (March 2008).	✓			✓
Fronstin, Paul. "Findings From the 2008 EBRI Consumer Engagement in Health Care Survey." *EBRI Issue Brief*, no. 323 (November 2008).	✓			✓
GAO. *Federal Employees Health Benefits Program: Early Experience with a Consumer-Directed Health Plan*. GAO-06-143. Washington, D.C.: November 21, 2005.	✓			✓

Study	Health status	Spending	Utilization	Demographic characteristics
Greene, J., and others. "The Impact of Consumer-Directed Health Plans on Prescription Drug Use." *Health Affairs*, vol. 27, no. 4 (2008): 1111-1119.	✓		✓	✓
Greene, J., and others. "Which Consumers Are Ready for Consumer-Directed Health Plans?" *Journal of Consumer Policy*, vol. 29, no. 3 (2006): 247-262.	✓			✓
HealthPartners. *Consumer Directed Health Plans Analysis*. October 2007.	✓	✓	✓	✓
Hibbard, J., and others. "Does Enrollment in a CDHP Stimulate Cost-Effective Utilization?" *Medical Care Research and Review*, vol. 65, no. 4 (2008): 437-449.			✓	✓
The Henry J. Kaiser Family Foundation. *National Survey of Enrollees in Consumer Directed Health Plans*. Menlo Park, Calif., November 2006.	✓			✓
Lo Sasso, A., and others. "Tales from the New Frontier: Pioneers' Experiences with Consumer-Driven Health Care." *Health Services Research*, vol. 39, no. 4, Part II (2004): 1071-1089.				✓
McKinsey and Company. *Consumer-Directed Health Plan Report – Early Evidence Is Promising*. Pittsburgh, Pa., June 2005.		✓	✓	
Milliman, Inc. *Consumer-Driven Impact Study*, Seattle, Wash., April 2008.		✓		✓
Nair, K., and others. "Consumer-Driven Health Plans: Their Impact on Medical Utilization, Pharmacy Utilization, and Expenditures." *Journal of Health Care Finance*, vol. 35, no. 1 (2008): 1-12.	✓		✓	✓
Parente, S., and others. "Effects of a Consumer Driven Health Plan on Pharmaceutical Spending and Utilization." *Health Services Research*, vol. 43, no. 5, Part I (2008): 1542-1556.	✓	✓	✓	✓
Parente, S., and others. "Employee Choice of Consumer-Driven Health Insurance in a Multi-Plan Multi-Product Setting." *Health Services Research*, vol. 39, no. 4, Part II (2004): 1091-1111.				✓
Parente, S., and others. "Evaluation of the Effect of a Consumer-Driven Health Plan on Medical Care Expenditures and Utilization." *Health Services Research*, vol. 39, no. 4, Part II (2004): 1189-1209.	✓	✓	✓	✓
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Source: GAO analysis of published studies.

Appendix III: Financial Features of the HRA and PPO Plans Offered at the Public and Private Employers

Table 6 below summarizes the financial features of the HRA and PPO plans offered by the public and private employers we reviewed. The financial features presented are for in-network services in plan year 2003—the first year HRAs were introduced by the employers.

Table 6: Financial Features of the HRA and PPO Plans Offered at the Public and Private Employers for In-Network Services, 2003

		Public employer		Private employer	
Feature	**Coverage type**	**HRA**	**PPO**	**HRA**	**PPO**
Annual enrollee share of premium	Single	$946	$1,187	$312[a]	$624[a]
	Family[b]	$2,244	$2,736	$1,248[a]	$2,172[a]
Annual enrollee deductible[c]	Single	$1,600	$250	$2,500	$300
	Family[b]	$3,200	$500	$5,000	$600
Annual employer HRA contribution[d]	Single	$1,000	N/A	$750[e]	N/A
	Family[b]	$2,000	N/A	$1,500[e]	N/A
Enrollee coinsurance after deductible is met	Single	15%[f]	10%[g]	0%	15%
	Family[b]	15%[f]	10%[g]	0%	15%
Annual enrollee out-of-pocket maximum	Single	$4,500[h]	$4,000[i]	N/A[j]	$2,000[k]
	Family[b]	$4,500[h]	$4,000[i]	N/A[j]	$4,000[k]

Source: GAO analysis of HRA and PPO plan brochures.

Notes: Financial features presented in this table represent the features of the four health plans used in our analysis from plan year 2003—the first year HRAs were introduced by those employers. Except for an increase in premiums, there were no major changes in any of the plans' financial features for the period of our analysis between 2001 and 2007. The plan year for the public employer runs from January 1 through December 31, while the plan year for the private employer runs from July 1 through June 30.

[a]Premiums listed for the private employer's plans are for employees who are nonsmokers and earn less than $85,000 annually. Premiums are higher for employees who are smokers or earn $85,000 or more annually.

[b]Family coverage includes the policyholder, spouse, and children.

[c]Under the PPOs, copayments do not count toward the deductible, and there are no copayments under the HRAs. Under the HRAs, charges for preventive care are not subject to the deductible.

[d]Unused funds from the employer's contribution toward the HRA account can be rolled over from year to year. The public employer plan limits the funds that can accrue in the HRA account to a maximum account balance of $4,000 for single coverage or $6,000 for family coverage while the private employer plan imposes no such limitation. The enrollee is responsible for the portion of the annual deductible that is not covered by the employer's contribution.

[e]Employer contributions listed in the table are for employees earning more than $35,000 annually. The employer contributes more if employees earn less than $35,000 annually.

[f]Twenty-five percent coinsurance is charged for covered prescription drugs obtained through a retail pharmacy with a minimum of $8 per prescription.

[g]Twenty-five percent coinsurance is charged for covered prescription drugs obtained through a retail pharmacy.

[h]Out-of-pocket expenses that count towards the maximum include coinsurance, but do not include coinsurance for outpatient prescription drugs.

[i]Out-of-pocket expenses that count towards the maximum include deductibles, coinsurance, and copayments.

[j]One hundred percent of all in-network services are covered after the enrollee has met the deductible.

[k]Out-of-pocket expenses that count towards the maximum include deductibles and coinsurance.

Appendix IV: Utilization of Services for Enrollees in HRAs and Traditional Plans

Tables 7 and 8 compare utilization by service type for the HRA groups with the PPO groups before and after introduction of the HRA for the public and private employers we reviewed. Table 9 summarizes the findings of studies we reviewed that included an assessment of the utilization of HRA and other CDHP enrollees compared with those in traditional plans.

Table 7: Average Annual Utilization of Services per Enrollee at the Public Employer before and after Introduction of an HRA

	HRA group (n=967-1,013)			**PPO group** (n=1.25-1.62 million)		
Service type	**2001-2002**	**2003-2007**	**Change**	**2001-2002**	**2003-2007**	**Change**
Inpatient hospital admissions	0.02	0.03	0.01	0.09	0.09	0.00
Outpatient visits	0.51	0.54	0.03	1.23	1.64	0.41
Physician office visits	3.72	3.82	0.10	6.62	7.77	1.14
Emergency room visits	0.05	0.09	0.04	0.08	0.15	0.06
Radiology procedures	0.39	0.30	-0.09	0.92	0.97	0.05
Pathology/laboratory procedures	0.84	0.49	-0.36	1.68	1.71	0.03
Preventive services	1.26	2.30	1.04	0.70	0.93	0.22
Prescriptions filled	3.80	3.57	-0.23	10.42	14.90	4.48
Other measures						
Length of hospital stay (days)	1.36	2.66	1.30	2.01	2.43	0.42
Percentage with no medical claims	21.36	19.37	-1.99	16.71	19.74	3.03

Source: GAO analysis of health insurance claims data.

Notes: Utilization is based on analysis of medical and pharmacy claims for the public employer. Radiology and pathology/laboratory procedures are for nonpreventive diagnostic procedures. The plan year was from January 1 through December 31. Enrollees 65 years and older were not included in our analysis. All calculations may not reflect reported values due to rounding.

Table 8: Average Annual Utilization of Services per Enrollee at the Private Employer before and after Introduction of an HRA

	HRA group (n=570-584)			**PPO group** (n=1,079-1,098)		
Service type	**2001-2002**	**2003-2005**	**Change**	**2001-2002**	**2003-2005**	**Change**
Inpatient hospital admissions	0.01	0.01	0.00	0.03	0.03	0.00
Outpatient visits	0.55	0.71	0.16	0.84	1.07	0.23
Physician office visits	3.35	3.36	0.01	4.12	4.91	0.79
Emergency room visits	0.19	0.12	-0.08	0.27	0.30	0.03
Radiology procedures	0.33	0.42	0.09	0.48	0.54	0.06
Pathology/laboratory procedures	0.43	0.63	0.20	0.70	0.85	0.15
Preventive services	0.87	1.11	0.24	1.05	1.34	0.29
Prescriptions filled[a]	—	—	—	—	—	—
Other measures						
Length of hospital stay (days)	2.30	2.32	0.02	3.64	3.67	0.03
Percentage with no medical claims	31.35	29.20	-2.16	25.73	22.20	-3.53

Source: GAO analysis of health insurance claims data.

Note: Utilization is based on an analysis of medical claims for the private employer. Radiology and pathology/laboratory procedures are for nonpreventive diagnostic procedures. The plan year was from July 1 through June 30. Enrollees 65 years and older were not included in our analysis. All calculations may not reflect reported values due to rounding.

[a]We were not able to analyze pharmacy claims for the private employer.

Table 9: Number of Published Studies That Reported on Utilization by Service Type, 2003–2009

	Compared with traditional plan enrollees, the number of studies that reported:			
Service type	**Lower utilization among HRA and other CDHP enrollees**	**Higher utilization among HRA and other CDHP enrollees**	**No difference or mixed results**	**Total number of studies**
Inpatient hospital admissions	2	2	2	6
Outpatient visits	1	0	1	2
Emergency room visits	3	0	1	4
Physician office visits	3	1	1	5
Preventive services	0	6	2	8

Source: GAO review of published studies that included an assessment of the utilization of HRA and other CDHP enrollees compared with those in traditional plans, and controlled for selection bias.

Appendix V: Demographics of Enrollees in HRAs and Traditional Plans

To understand demographic differences between HRA enrollees and traditional plan enrollees, we relied on an analysis of enrollment data from the two large employers we reviewed and compared our results to other national data sources and published studies. Specifically, we examined the age, gender, type of coverage (single or family), and salary of policyholders in the HRA and PPO groups at the beginning of plan year 2003 when the HRAs were first offered by each employer.[1] We also analyzed these demographic characteristics using 2004 data from large insurance carriers active in the HRA and PPO markets[2] and summarized the findings of studies included in our review that included a comparison of the demographic characteristics of HRA and other CDHP enrollees with those in traditional plans.

Demographic Characteristics of Policyholders in the Employer HRA and PPO Groups

Our analyses of enrollment data from the two large employers showed that policyholders who switched into the HRA in 2003 were younger, more likely to be male, and elect single coverage than those who remained in the PPO plan. Specifically, we found that policyholders from both employers' HRA groups were on average 3 years younger than the PPO group in 2003. The HRA groups from both employers also had a slightly higher percentage—2 to 5 percentage points—of male enrollees than the PPO group in 2003. (See tables 10 and 11.)

[1]We report demographic characteristics for policyholders less than 65 years of age using health plan enrollment data for the public and private employers we reviewed. For the public employer, 446 policyholders were in the HRA group and 708,841 policyholders were in the PPO group at the beginning of the 2003 plan year. For the private employer, 288 policyholders were in the HRA group and 455 policyholders were in the PPO group at the beginning of the 2003 plan year.

[2]We obtained demographic data from two large, national insurance carriers active in the HRA market. These data represented about 209,000 policyholders and dependents under 65 years of age who were continuously enrolled in an HRA in 2004. For comparison purposes, we also obtained demographic data for about 650,000 policyholders and dependents under 65 years of age who were continuously enrolled in a PPO plan in 2004. These data were obtained from Medstat's MarketScan, Commercial Claims and Encounters Database—a database which compiles data from insurance carriers nationally.

Table 10: Average Age of Policyholders in the HRA and PPO Groups, 2003

Employer	HRA	PPO
Public	47	50
Private	39	42

Source: GAO analysis of health plan enrollment data from a public and a private employer. Policyholders 65 years and older were not included in our analysis.

Table 11: Percentage of Male Policyholders in the HRA and PPO Groups, 2003

Employer	HRA	PPO
Public	68	63
Private	62	60

Source: GAO analysis of health plan enrollment data from a public and a private employer. Policyholders 65 years and older were not included in our analysis.

We also found that policyholders in the HRA group were more likely to elect single coverage compared with policyholders in the PPO. While family coverage represented the majority of enrollment in both plans offered by the public employer, the percentage of policyholders with single coverage was higher for the HRA group than for the PPO group—40 percent versus 31 percent, respectively, in 2003. This difference was more pronounced at the private employer, where 57 percent of policyholders in the HRA group elected single coverage versus only 38 percent of policyholders in the PPO group in 2003. (See table 12.)

Table 12: Percentage of Policyholders with Single Coverage in the HRA and PPO Groups, 2003

Employer	HRA	PPO
Public	40	31
Private	57	38

Source: GAO analysis of health plan enrollment data from a public and a private employer. Policyholders 65 years and older were not included in our analysis.

We also found that policyholders in the HRA group for the private employer had higher average salaries compared with those in the PPO group—$55,884 versus $51,762, respectively, in 2003. Data limitations precluded us from assessing salary differences for the public employer.

Demographic Characteristics of HRA and Traditional Plan Enrollees

Unlike our findings that policyholders in the HRA groups were younger and more likely to be male than those in the PPO groups for the two employers we reviewed, our analysis of national insurance carrier data and findings from published studies found mixed evidence on the age and gender of HRA enrollees compared with traditional plan enrollees. However, similar to the HRA and PPO groups we reviewed, our analysis of national insurance carrier data and published studies found that HRA enrollees were more likely to elect single coverage than traditional plan enrollees. Additionally, our analysis of published studies found that HRA and other CDHP enrollees have higher salaries than traditional plan enrollees.

Our analysis of data from the national insurance carriers found that enrollees in the HRAs were younger than those in PPO plans, but our review of published studies produced mixed evidence on the ages of HRA and other CDHP enrollees relative to traditional plan enrollees. Our analysis of national carrier data found that HRA enrollees were on average 5 years younger than PPO enrollees in 2004. However, of the 23 studies that reported on age, 7 found that HRA and other CDHP enrollees were younger than those enrolled in traditional plans, 8 found them to be about the same age, 5 found them to be older, and 3 found mixed results within their study populations. For example, 1 study found that HRA and other CDHP enrollees at one employer were about 5 years younger, on average, than those in traditional plans, whereas at another employer such enrollees were about the same age as those in traditional plans.[3]

Our analysis of national insurance carrier data and findings from published studies also found mixed evidence on the gender of HRA enrollees compared with those in traditional plans. Our analysis of insurance carrier data found a roughly equal distribution of males and females in the HRA and PPO plans—49 versus 48 percent, respectively, in 2004. Similarly, of the 16 studies that assessed gender, 10 found that HRAs and other CDHPs had a higher proportion of males than did traditional plans, 1 found a higher proportion of women, and 5 found either no difference or mixed results. For example, 1 study determined through a survey of nearly 4,700 employees at a particular employer that 41 percent

[3]Express Scripts, *What Happens to Prescription Drug Use After Consumer Directed Health Plan Enrollment?* (April 2007).

of those who chose an HRA were male compared with 29 percent of those who chose a traditional plan.[4]

We also found that HRA enrollees were more likely to elect single coverage than traditional plan enrollees. Data from the national insurance carriers showed that 44 percent of HRA enrollees compared with 42 percent of PPO enrollees opted for single coverage in 2004. Similarly, three of the five studies that reviewed coverage type among HRA and other CDHP enrollees also found that they more often elected single coverage than did those who enrolled in traditional plan types. For example, one study of an employer's benefits data found that 51 percent of HRA enrollees had single coverage, compared with 37 percent of traditional plan enrollees.[5]

Finally, the published studies we reviewed consistently found that HRA and other CDHP enrollees had higher salaries than did traditional plan enrollees.[6] Specifically, 14 of the 16 studies that reported on salary came to that conclusion. For example, a case study of a large employer found the average salary of HRA enrollees was $93,409, compared with $69,555 for PPO enrollees.[7]

[4]J. Briggs Fowles and others, "Early Experience with Employee Choice of Consumer-Directed Health Plans and Satisfaction with Enrollment," *Health Services Research*, vol. 39, no. 4 (2004): 1141-1158.

[5]J. Briggs Fowles and others, "Early Experience with Employee Choice of Consumer-Directed Health Plans and Satisfaction with Enrollment."

[6]Data from the national insurance carriers did not contain any salary information.

[7]R. Feldman and others, "Consumer-Directed Health Plans: New Evidence on Spending and Utilization," *Inquiry*, vol. 44, no. 1 (2007): 26-40.

Appendix VI: GAO Contact and Staff Acknowledgments

Contact

John E. Dicken, (202) 512-7114, dickenj@gao.gov

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Related GAO Products

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