



VISION CARE INVESTMENT PAYS BIG BENEFITS.

Study shows a 127% return on investment with
VSP® Vision Care.

EXECUTIVE SUMMARY

An investment in VSP vision coverage can lower overall healthcare and human capital costs by providing early detection for signs of common diseases like diabetes, high cholesterol, and hypertension. A recent Human Capital Management Services (HCMS) study showed that early detection of signs of chronic conditions by VSP Preferred Providers led to *improved patient health and decreased employers' medical and human capital costs.*

The study showed:

- 1. 127% ROI:** For every initial \$1 invested in VSP exam services, clients can expect an average two-year total return of \$1.27 through avoided medical costs and improved human capital performance.
- 2. Early detection:** VSP providers detected signs of certain chronic conditions before any other healthcare provider recorded the condition—65% of the time for high cholesterol, 20% of the time for diabetes, and 30% of the time for hypertension.
- 3. Many Americans affected:** More than 43% of the individuals in the extensive HCMS study have diabetes, high cholesterol, or hypertension—all diseases VSP providers are able to identify signs of before any other healthcare provider.
- 4. Additional benefits:** VSP early detection patients entered the healthcare system with fewer complications and co-morbidities, and experienced lower rates of inpatient admissions and emergency room visits. Benefits also included savings on human capital costs, such as lower turnover rates.

VSP is the only vision plan to facilitate this kind of nationwide, HIPAA-compliant data collection and exchange with its providers and the broader healthcare system.

INTRODUCTION

VSP VISION CARE

The VSP Eye Health Management Program® (EHM) focuses on *early detection and management* of both eye and related health conditions through the VSP network of private-practice doctors. These eyecare professionals use the VSP proprietary electronic claims system to track patients with diabetes, diabetic retinopathy, hypertension, and high cholesterol.

To enable timely follow-up, VSP shares this early detection data in a HIPAA-compliant process with our clients' health plans and disease management companies that reach out to at-risk patients with additional education and awareness, or offer enrollment in health management or wellness programs. VSP is the only vision plan to facilitate comprehensive medical data collection and exchange between eyecare professionals and the broader healthcare system on a nationwide basis.

2010 HCMS STUDY

VSP retained HCMS in 2008 to evaluate the EHM program's effectiveness and its potential to generate cost savings for VSP clients over time. Specifically, the study was designed to:

- Determine how frequently VSP providers were the first to detect early signs of diabetes, hypertension, or high cholesterol
- Quantify the health and cost impact to VSP clients and their employees

With a research reference database of more than 2.2 million employees and their families who are actively enrolled in a health plan, HCMS maintains a comprehensive data catalogue containing medical and prescription costs, absenteeism, disability, workers' compensation, and productivity costs. VSP supplied HCMS a list of more than 9,000 VSP members who were first identified with early signs of diabetes, hypertension, and high cholesterol by a VSP doctor. HCMS conducted this study with data for more than 212,000 members with VSP coverage.

OVERVIEW OF FINDINGS

For every initial \$1 invested in VSP exam services, clients can expect an average two-year total return of \$1.27 through avoided medical costs and improved employee productivity.

Results demonstrated that VSP providers are frequently the first to detect signs of common chronic conditions, and this early detection motivates patients to seek appropriate care for their conditions sooner than they might have otherwise. The study showed that these *patients remained healthier* than people who delayed a preventive vision or physical exam that could lead to disease detection.

For every initial \$1 invested in VSP exam services, clients can expect an average two-year total return of \$1.27 through avoided medical costs and improved employee productivity. Other benefits included less absenteeism, reduced employee turnover, and savings on insurance and workers' compensation costs.

STUDY FINDINGS

VSP PROVIDERS DETECT SIGNS SOONER

Recent analysis of VSP exam claims showed that people with a VSP vision plan are three times more likely to get an annual eye exam than a routine preventive physical. This means that VSP providers are more likely to detect signs of chronic conditions such as diabetes, high cholesterol, and hypertension through a WellVision Exam® than are general healthcare providers through traditional medical exams.

The HCMS study determined that *65% of the time, VSP providers detected signs of high cholesterol before any other healthcare provider recorded the condition. Additionally, early detection rates were 20% for diabetes and 30% for hypertension.* See Exhibit 1.

EXHIBIT 1: Rate of early detection by a VSP provider

Disease	Rate
High Cholesterol	65%
Diabetes	20%
Diabetic Retinopathy	72%
Hypertension	30%

MORE THAN 43% OF AMERICANS AFFECTED

More than 43% of the individuals in the 212,000-member study have diabetes, high cholesterol, or hypertension—all conditions VSP providers can identify signs of before any other healthcare provider. Assuming this research database is representative of the employed American population, more than 43% of Americans are affected by diseases for which VSP exams can provide early detection. See Exhibit 2.

EXHIBIT 2: Prevalence of diseases VSP providers are likely to detect before other healthcare providers

Total Disease Prevalence*	
Diabetes	8.8%
High Cholesterol	34.2%
Hypertension	24.5%

*See Appendix C for further details.

INCREASED SAVINGS AND ROI

The HCMS study found that *for every initial \$1 spent on VSP exam services, clients saved \$1.27 over a two-year span.* Employers in the study saved a total of \$12.6 million in the first year and more than \$1.5 million in the second year of the study, translating to an ROI of \$1.27 on the initial \$1.00 spent on VSP WellVision Exams. See Exhibit 3.

EXHIBIT 3: Calculation of ROI

Initial Investment	
VSP First-year Exam Fees	\$11,194,939
Total Savings (for early identified individuals)	
First-year	\$12,653,743
Second-year	\$1,547,042
Total Two-year Savings	\$14,200,785
Estimated ROI (in addition to base VSP services)	
First-year ROI	\$1.13 on initial \$1.00 spent
Second-year ROI	\$0.14 on initial \$1.00 spent*
Total Two-year ROI	\$1.27 on initial \$1.00 spent on VSP WellVision Exams

*The second-year ROI is based on the original \$1.00 investment from year 1. The savings are compounded year-over-year based on the original dollar spent. See Appendix D for further calculation details.

SAVINGS REALIZED FROM VSP EARLY DETECTION NOT LIMITED TO AVOIDED MEDICAL COSTS

The HCMS study found additional savings attributable to early disease detection. These include:

VSP clients can achieve higher performance in the workplace due to a healthier employee workforce.

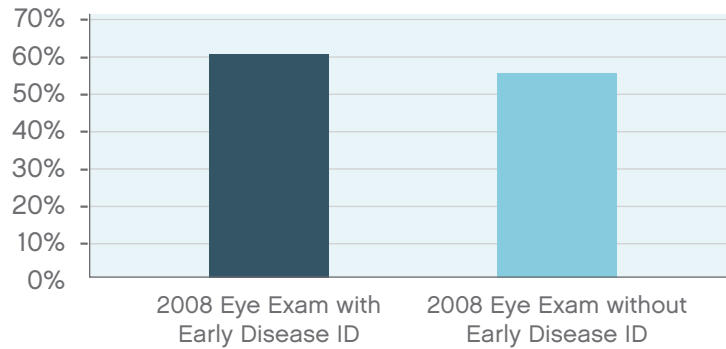
- Savings on healthcare costs, such as emergency room visits, pharmacy/ medication costs, and inpatient visits
- Savings on lost-time costs for short-term disability, long-term disability, and workers' compensation
- Savings related to increased productivity, such as lower termination rates, lower absenteeism, and lower turnover

ADDITIONAL HEALTH BENEFITS OF EARLY DETECTION

Because VSP providers are frequently the first disease detection point, patients with symptoms often seek appropriate care for their conditions sooner than they might have otherwise—*helping to reduce costs for healthcare and productivity loss in the future.*

The study showed that these patients enter the healthcare system with fewer complications and co-morbidities, and experience lower rates of inpatient admissions and emergency room visits than people who delayed a preventive vision or physical exam that could lead to disease detection. See Exhibit 4.

EXHIBIT 4: Patients who had an eye exam and an explicit record of early disease detection were more likely to return for an eye exam the following year.



SUMMARY OF KEY FINDINGS

- 1. 127% ROI:** For every initial \$1 spent on VSP exam services, clients realize a total two-year savings of \$1.27 in medical expenses, lost time, and improved employee productivity attributable to early disease detection through a VSP WellVision Exam.
- 2. \$1,100 saved per employee with early diabetes identification:** For every 100 employees with early identification of diabetes through an eye exam, VSP client companies saved an average of \$110,000 in healthcare costs in the first 24 months after identification.
- 3. Additional year-2 savings:** Results also show a positive ROI in the second year following early disease detection.
- 4. Savings on human capital costs:** VSP-covered companies realized savings on short-term disability, long-term disability, workers' compensation, lower termination rates, lower absenteeism, and lower employee turnover.
- 5. Early detection:** VSP providers frequently detected signs of disease before any other healthcare provider: 65% of the time for high cholesterol, 20% of the time for diabetes, and 30% of the time for hypertension.
- 6. Many Americans affected:** More than 43% of the individuals in the extensive HCMS Research Database have diabetes, high cholesterol, or hypertension—all diseases VSP providers are able to identify before any other healthcare provider.
- 7. Increased healthcare participation:** Early detection increased the likelihood that employees would take responsibility for their healthcare by remaining actively engaged in the healthcare system.
- 8. Improved health:** VSP early detection patients entered the healthcare system with fewer complications and co-morbidities, and experienced lower rates of inpatient admissions and emergency room visits.

VSP Vision Care is the only vision plan to facilitate nationwide, HIPAA-compliant data collection and exchange resulting in these cost savings and health benefits.

APPENDICES

A. INTRODUCTION OF METHOD

As an extension of results published in the article titled, *The Role of Comprehensive Eye Exams in the Early Detection of Diabetes and Other Chronic Diseases in an Employed Population* (August 2010), this analysis extends the study measurement period to quantify any additional cost savings realized in the second year following VSP Early Disease Detection.

Additionally, the analytic population was expanded to include as many VSP members as possible and the analysis then re-run to report updated year-1 and year-2 cost savings for this larger group.

B. SUMMARY OF ANALYTIC METHODS

Combined study group (212,000 employees/spouses)

- **Study group population:** Employees and spouses with a comprehensive VSP eye exam that identified the presence of diabetes, hypertension, or high-cholesterol for the first time. Individuals with a medical claim for any of these conditions within 180 days following the eye exam are also included.
- **The comparison group:** Non-VSP employees and spouses with new evidence of diabetes, high cholesterol, or hypertension (using medical and pharmacy claims).
- **Index date:** First indication of the disease in the vision, medical or pharmacy claims data.
- **Exclusions:** Those over 65 were excluded and an outlier analysis was performed to remove high-cost outliers.
- **Time period:** Those individuals with an index date between July 1, 2006, and March 31, 2008, were included.
- **Enrollment criteria:** Health plan enrollment for the six months prior and 24 months post index date was required for health plan and lost-time outcomes. Only six months post index date was required for the termination analysis.
- **Wash-out period:** Individuals with database disease evidence in the six months prior to index date are excluded from the analysis.
- Turnover is conservatively valued in the second year by quantifying only the incremental percent increase (or decrease) in the turnover rate savings from year 1.
 - For example, if turnover rates were 3.0% lower for the study group at the end of year 1, but 4.0% lower for the study group at the end of year 2, credit is taken for the additional 1.0% savings.
- The definition for the diabetes study group population includes both diabetes and diabetic retinopathy.

C. TOTAL DISEASE PREVALENCE

Disease Evidence (using 3 years' continuous enrollment)	Prevalence
Diabetes Only	1.0%
High Cholesterol Only	15.8%
Hypertension Only	7.1%
Diabetes and Hypertension	1.0%
Diabetes and High Cholesterol	2.0%
Hypertension and High Cholesterol	11.6%
All Three Conditions	4.8%
None	56.8%

D. TOTAL SAVINGS

Year-1 savings (212,000 employees and spouses)

Savings Category	Disease	Study Group	Comparison Group	Difference (per person)	Year 1 Savings
Health Plan Cost	Diabetes	\$6,382	\$7,266	\$884	\$990,964
	Hypertension	\$5,542	\$5,800	\$258	\$809,862
	High Cholesterol	\$4,331	\$4,299	-\$32	-\$159,136
Lost-time Cost	Diabetes	\$589	\$599	\$10	\$7,390
	Hypertension	\$483	\$441	-\$42	-\$87,990
	High Cholesterol	\$387	\$560	\$173	\$577,820
Turnover	Diabetes	7.8%	10.8%	3.0%	\$1,097,910
	Hypertension	7.8%	12.4%	4.6%	\$4,859,649
	High Cholesterol	6.7%	9.4%	2.7%	\$4,557,273
Total					\$ 12,653,743

Year-2 savings (212,000 employees and spouses)

Savings Category	Disease	Study Group	Comparison Group	Difference (per person)	Year 1 Savings
Health Plan Cost	Diabetes	\$6,125	\$6,356	\$231	\$258,951
	Hypertension	\$4,719	\$5,126	\$407	\$1,277,573
	High Cholesterol	\$4,169	\$4,037	-\$132	-\$656,436
Lost-time Cost	Diabetes	\$607	\$692	\$85	\$62,815
	Hypertension	\$489	\$475	-\$14	-\$29,330
	High Cholesterol	\$400	\$364	-\$36	-\$120,240
Incremental Change in Turnover from Year 1	Diabetes	15.8%	19.3%	0.5%	\$182,985
	Hypertension	16.0%	21.3%	0.7%	\$739,512
	High Cholesterol	14.8%	17.4%	-0.1%	-\$168,788
Total					\$ 1,547,042