Comparative Assessment Report:
Diabetes Care for Enrollees in
Oregon Health Plan Managed Care Plans, 2003–2004

May 23, 2005

Presented to the Oregon Department of Human Services, Health Services,
Office of Medical Assistance Programs

Presented by

OMPRO
A Healthcare Quality Resource

2020 SW Fourth Avenue, Suite 520
Portland, Oregon 97201-4960
Phone 503-279-0100
Fax 503-279-0190

Comparative Assessment Report:
Diabetes Care for Enrollees in
Oregon Health Plan Managed Care Plans, 2003–2004

May 23, 2005

Presented to the Oregon Department of Human Services, Health Services,
Office of Medical Assistance Programs

OMAP-EQRO-105570

Executive Summary

The Oregon Department of Human Services, Health Services, Office of Medical Assistance Programs (OMAP) has contracted with OMPRO to evaluate the performance of the fully capitated health plans (FCHPs) participating in the Oregon Health Plan (OHP). OMPRO will evaluate FCHP performance through a series of comparative assessments on five clinical and nonclinical topics. The focus of this comparative assessment is diabetes care.

Effective treatment of diabetes supported by evidence-based medicine has been documented in national guidelines. Research has demonstrated improved outcomes when diabetes treatment guidelines are followed. People with diabetes who receive evidence-based treatment are better able to manage their condition and live longer than those who do not.

Using claims and encounter data submitted by 13 FCHPs participating in OHP, OMPRO assessed five measures of diabetes care for adult OHP enrollees with diabetes. The measures examine the percentage of enrollees during the measurement year with

- an HbA1c test
- an LDL screening
- a diabetes-related ambulatory encounter
- a composite of all three preventive measures (HbA1c test, LDL screening, diabetes-related ambulatory encounter)
- a diabetes-related Emergency Department (ED) or inpatient encounter

OMPRO analyzed FCHP performance using descriptive and inferential statistical tests to compare encounter data for each FCHP to a baseline of FCHP aggregated data. Statistically significant results for demographic groups, OHP programs, and Medicaid reimbursement categories were also noted.

Results

The highlights of the results are grouped by measure and listed below.

HbA1c test

Within the measurement year, 70.6 percent of MC enrollees received an HbA1c test.

- two FCHPs had percentages of HbA1c tests significantly above the aggregate
- two FCHPs had percentages of HbA1c tests significantly below the aggregate

LDL screening

Within the measurement year, 56.0 percent of MC enrollees received an LDL screening.

- one FCHP had a percentage of LDL screenings significantly above the aggregate
- three FCHPs had percentages of LDL screenings significantly below the aggregate

Diabetes-related ambulatory encounter

All FCHPs had a high percentage of enrollees with at least one diabetes-related ambulatory encounter during the measurement year. The aggregate was 93.1 percent with at least one diabetes-related ambulatory encounter.

Composite measure
Within the measurement year, 52.1 percent of MC enrollees had received all three diabetes-related services (HbA1c test, LDL screening, one diabetes-related ambulatory encounter).

ED/inpatient encounters
Among FCHPs, there was greater variation in percentages for diabetes-related ED/inpatient encounters than there was for diabetes-related ambulatory visits. During the measurement year, 25.4 percent of MC enrollees had a diabetes-related ED or inpatient encounter, with a range of 18.4 percent to 36.2 percent.

Medicaid enrollment category and OHP program comparisons

- MC enrollees had significantly higher percentages of HbA1c tests and LDL screenings within the measurement year than did FFS members.
- OHP Standard enrollees had higher percentages of HbA1c tests, LDL screenings, and ambulatory encounters and a higher percentage in the composite measure than OHP Plus enrollees
- OHP Plus enrollees had a higher percentage of ED/inpatient encounters than did OHP Standard enrollees

Outliers in diabetes care measures

An FCHP was considered an outlier for quality care in diabetes if it had a statistically significantly lower percentage of either the HbA1c tests or LDL screenings for its enrollees. Using this definition, five FCHPs were considered outliers: Douglas County IPA (DCIPA), Doctors of the Coast South (DOCS), Lane Individual Practice Association (LIPA), Marion Polk Community Health Plan (MPCHP), and Mid-Rogue IPA (MRIPA).

Cascade Comprehensive Care (CCC) provided a relatively higher level of diabetes care

- HbA1c tests and LDL screenings were statistically significantly above the aggregate
- ED/inpatient encounters were significantly below the aggregate

Conclusions and recommendations

OMAP and OMPRO agreed that there would be no formal follow-up with the outlier plans for this study. Given that all people with diabetes should be receiving these tests and screenings annually, the state aggregate percentages signal that there is room for improvement throughout Oregon. This is especially true for LDL screenings, in which less than half of all enrollees (44.0 percent) did not have this test.

The high percentage of ambulatory encounters implies that there is opportunity for improving the lab tests and screenings each enrollee receives. Once the enrollee has an encounter with a provider, the provider should order the test and screening as recommended by guidelines. Therefore, all FCHPs with a percentage of HbA1c tests or LDL screenings lower than the aggregate should internally assess the processes used to monitor and ensure proper diabetes care and take steps to improve the testing for and screening of enrollees with diabetes.

Table of Contents

Executive Summary....3

Introduction....9

Objectives and scope....13

Methodology....14

Study design....14

Data analysis....15

Limitations....17

Results....19

Plan and demographic comparisons....19

Secondary analysis of OHP Plus enrollees....28

Discussion....30

Outliers in diabetes care measures....30

Demographic differences....32

Conclusions and Recommendations....33

Appendix A. Demographic Analyses....A-1

Appendix B. Data Elements Requested for Analysis....B-1

Appendix C. Codes for Inclusion, Exclusion, and Identification of Measure Numerators....C-1

Appendix D. OMPRO Changes to selected HEDIS® Measures....D-1

Appendix E. Accuracy and Completeness and Time-to-Submission for Claims and Encounter Data....E-1

List of Tables and Figures

Table 1. Measures of quality care for people with diabetes. 11

Table 2. OHP enrollees identified as having diabetes, by FCHP and FFS. 17

Table 3. Percentage of enrollees with an HbA1c test in the measurement year, by FCHP....18

Table 4. Percentage of enrollees with an LDL screening in the measurement year, by FCHP. 19

Table 5. Percentage of enrollees with at least one diabetes-related ambulatory encounter in the measurement year, by FCHP. 20

Table 6. Percentage of enrollees with all three diabetes-related services in the measurement year, by FCHP. 21

Table 7. Percentage of enrollees with an ED/inpatient encounter in the measurement year, by FCHP. 22

Table 8. Comparison of diabetes measures for MC and FFS enrollees. 23

Table 9. Comparison of diabetes measures for OHP Plus and OHP Standard enrollees. 24

Table 10. Percentage of OHP Plus enrollees with an HbA1c test in the measurement year, by FCHP. 26

Table 11. Percentage of OHP Plus enrollees with an LDL screening in the measurement year, by FCHP. 27

Table 12. Summary of statistically significant differences among FCHPs for HbA1c tests, and LDL screenings for all enrollees. 29

Table 13. Summary of statistically significant differences among FCHPs for ED/inpatient encounters for all enrollees. 30

Table 14. Summary of statistically significant outliers with percentages lower than the aggregate, by analysis level....31

Table A-1. Number and percentage of eligible enrollees with HbA1c tests during study time frame. A-2

Table A-2. Number and percentage of eligible enrollees with LDL screenings during study time frame....A-3

Table A-3. Number and percentage of eligible enrollees with at least one diabetes-related ambulatory encounter during study time frame.. ....A-4

Table A-4. Number and percentage of eligible enrollees with three diabetes-related services (HbA1c test, LDL screening, diabetes-related ambulatory encounter) during study time frame..A-5

Table A-5. Number and percentage of eligible enrollees with at least one diabetes-related ED/inpatient encounter during study time frame.. ....A-6

Table B-1. Data elements requested for analysis. B-1

Table C-1. Diagnosis codes for exclusion from the study. C-3

Table D-1. OMPRO changes to selected HEDIS measures for diabetes care. D-1

Table E-1. Expectations, CMS recommendations, and results for completeness of data elements. E-1

Figure 1. Comparison of diabetes measures for MC and FFS enrollees. 23

Figure 2. Comparison of diabetes measures for OHP Plus and OHP Standard enrollees. 24

Figure 3. Change in OHP benefit structure after March 2003. 25

Figure C-1. Diagnosis, procedure, and revenue code combinations for inclusion in the study. .. C-2

Figure C-2. Diagnosis, procedure, and revenue code combinations defining a diabetes-related ambulatory encounter. C-4

Figure C-3. Diagnosis, procedure, and revenue code combinations defining a diabetes-related ED/inpatient encounter. C-4

Figure E-1. Average time to submission for diabetes claims, each FCHP, and the average of all FCHPS. E-2

Introduction

Federal regulations require state Medicaid agencies to contract with an external quality review organization (EQRO) to provide an independent, annual review of the quality outcomes, timeliness of service, and access to care provided by Medicaid managed care organizations (MCOs). In May 2003, the Oregon Department of Human Services, Health Services, Office of Medical Assistance Programs (OMAP) contracted with Oregon Medical Professional Review Organization (OMPRO) to be its EQRO and to provide an annual review of care and services provided by the fully capitated health plans (FCHPs) that participate in the Oregon Health Plan (OHP).

As part of its review activity, OMPRO will complete five comparative assessments during the two years of the contract. The assessments will examine five clinical and nonclinical topics selected by OMAP and FCHP medical directors at the beginning of the contract period. The comparative assessments are part of a rapid cycle process in which

- OMPRO analyzes the data for evidence of variation
- OMAP validates the results
- OMAP and OMPRO share the findings with the FCHPs
- OMPRO follows up with FCHPs to discuss opportunities for improvement and produces a comparative assessment report

OMPRO evaluates FCHP performance through a series of rapid cycle studies that analyze measures derived from administrative data and encounter data. The purpose of rapid cycle studies is to provide high-level results that can be applied more quickly than results obtained through a formal research analysis. The findings of the five comparative assessments will be used in conjunction with data and information gathered in other external quality review (EQR) activities, such as evaluation of statewide quality improvement program activities and CAHPS®, to provide a comprehensive evaluation of each FCHP's performance. The focus of this comparative assessment is the quality of diabetes care that OHP enrollees received in 2003–2004.

Diabetes is one of the more prevalent and costly chronic conditions in the United States, and its prevalence is on the rise.[1] The American Diabetes Association (ADA) reported that 18.2 million people—6.3 percent of the population—had diabetes in 2002. For adults 20 years or older, diabetes prevalence jumps to 8.7 percent. Both Hispanics and African Americans are at least 1.5 times more likely to have diabetes than non-Hispanic whites.[2]

In 2002, diabetes was the sixth most common cause of death. People with diabetes had twice the risk of death compared with people of the same age without diabetes. Diabetes is also

[1]Centers for Disease Control and Prevention. National diabetes fact sheet: general information and national estimates on diabetes in the United States, 2003. Rev ed. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2004.
[2]The American Diabetes Association (ADA) disease prevalence figures include people diagnosed and those not yet diagnosed with diabetes. Available at: www.diabetes.org/diabetes-statistics/national-diabetes-fact-sheet.jsp. Accessed April 18, 2005.

likely to be underreported as a cause of death. Studies have found that only about 35 to 40 percent of death certificates for people with diabetes actually list diabetes on the death certificate, and only about 10 to 15 percent of death certificates show diabetes as the underlying cause of death.[3]

Given the prevalence and severity of this chronic condition, the cost of diabetes is high. All told, the financial burden of diabetes on the United States in 2002 was $132 billion, or one out of every 10 healthcare dollars spent in the United States. This figure represents $92 billion in direct medical costs and $40 billion in indirect costs (e.g., costs associated with disability, work loss, or premature mortality).[4]

The effect of diabetes on Oregon is similarly acute. From 1994 to 2001, the prevalence of diabetes in Oregonians rose from 3.7 percent to 6.0 percent—an increase of 62 percent.[5] More than 10 percent of Oregonians ages 55–64 have diabetes.[6] Direct medical costs for diabetes cost the state $30 million in 2000.[7] Due to the high prevalence of diabetes in Oregon, as well as the costs of health care and mortality due to diabetes, OMAP determined that measuring the quality of diabetes care for Oregon Medicaid enrollees was a priority for the 2003–2005 external quality review.

There have been many attempts to measure the quality of health care for people with diabetes. These measures have used data from several sources: self-reports from patients, claims, charts, or a combination of all three sources. The quality of care has been measured through the occurrence of a particular procedure, patients' attainment of a certain level of health, or the rate of diabetes-related complications. Despite the variation in measures, there has been some consistency among different assessments. Table 1, on the next page, shows major agencies or programs concerned with diabetes care and how each has measured quality care for people with diabetes.

[3]Centers for Disease Control and Prevention. National diabetes fact sheet.
[4]American Diabetes Association, Inc. Economic costs of diabetes in the U.S. in 2002. *Diabetes Care.* 2003;26:917–32.
[5]National Diabetes Surveillance System. State-specific estimates of diagnosed diabetes among adults. Prevalence of diagnosed diabetes per 100 adult population, by age and state, United States, 1994–2003. Available at: www.cdc.gov/diabetes/statistics/prev/state/tPrevalenceTotal.htm. Accessed May 11, 2005.
[6]Oregon Department of Human Services. *Keeping Oregonians Healthy: Preventing Chronic Diseases by Reducing Tobacco Use, Improving Diet, and Promoting Physical Activity and Preventive Screenings.* Salem, OR: Oregon Department of Human Services; 2003.
[7]Ibid.

Table 1. Measures of quality care for people with diabetes.

Agency	Measure set	Specific measures	Data source
Agency for Healthcare Research and Quality (AHRQ)[8]	AHRQ Quality Indicators for Ambulatory Care Sensitive Conditions, adapted measures for diabetes admissions	Admissions per 1,000 members 18–64 years who had • uncontrolled diabetes admissions • diabetes short-term ketoacidosis	Encounter and claims data
Oregon Diabetes Collaborative II[9]	Identify patient groups and monitor specific measures.	• HbA1c test result of less than 8.0% • LDL cholesterol (LDL-C) test result of less than 130 mg/dl • Documented self-management goal	Medical charts (diabetes registries)
National Committee for Quality Assurance (NCQA)[10]	HEDIS 3.0: Comprehensive Diabetes Care[11]	Percentage of members 18–75 years with diabetes who had each of the following: • HbA1c test • HbA1c poorly controlled (>9.5%) • LDL-C screening • LDL-C controlled (LDL<130 mg/dL) • Retinal exam • Neuropathy monitored	Claims/encounter data, pharmacy data, and medical charts
Diabetes EQR studies (1995–1996) (1997–1998)[12]	Measures of quality indicators for comparison over the study periods	Percentage of patients 18–75 years • assessed for neuropathy (microalbuminuria and/or macroalbuminuria) • with most recent BP less than 140/90 • receiving a dilated retinal exam or rationale for not testing • receiving a neuropathy assessment • receiving an HbA1c test or rationale for not testing • assessed for hyperlipidemia or rationale for not testing • foot exam	Chart abstraction
Diabetes EQR study (January 2000–December 2000)[12]	Healthcare screenings	Identify patients using insulin versus oral agents for control. Determine whether the following conditions are screened in people with diabetes: • depression • substance use/abuse • tobacco use • referrals and treatments for any of these conditions	Chart abstraction

[8]Agency for Healthcare Research and Quality. *AHRQ Quality Indicators—Guide to Prevention Quality Indicators: Hospital Admission for Ambulatory Care Sensitive Conditions. Revision 4.* Publication Number 02-R0203. Rockville, MD: Department of Health and Human Services. 2004.
[9]OMPRO. Oregon Diabetes Collaborative II: Results. Available at: www.ompro.org/diabcollab/results-2.html. Accessed May 11, 2005.
[10]National Committee for Quality Assurance (NCQA). The State of Managed Care Quality, 2001: Comprehensive Diabetes Care. Available at: www.ncqa.org/somc2001/DIABETES/SOMC_2001_CDIAB.html. Accessed May 11, 2005.
[11]HEDIS is a registered trademark of the National Committee for Quality Assurance.
[12]Permedion, Inc. Findings of Oregon External Quality Review: Diabetes Care of the Adult Study. Study period: January 1, 2000–December 31, 2000. Prepared for Oregon Department of Human Services, Office of Medical Assistance Programs. Hillsboro, OR. Report date: May 31, 2002.

Effective treatment of diabetes supported by evidence-based medicine has been studied and documented in a set of national guidelines.[13] The national guidelines suggest the following laboratory tests and time frames:

- **glycosylated hemoglobin (HbA1c) test**— one or two times a year if levels are stable; quarterly if treatment changes or if the patient is not meeting goals
- **blood lipid (low-density lipoprotein, or LDL) screening**—on initial visit, then yearly for adults 18–64 years old[14]

In addition, the national guidelines suggest that a person with diabetes have at least one, ideally two, healthcare visits within a 12-month span (more visits may be warranted depending on an individual's level of control of, and the complications related to, his or her diabetes).

Several studies have demonstrated the success of delivering diabetes treatments according to the guidelines. People with diabetes who receive evidence-based treatment are better able to manage their condition and live longer than those who do not.[15] In addition, delivering quality diabetes care can save money for healthcare organizations and society by reducing the rate, and by slowing the progress, of diabetes-related complications such as kidney failure, blindness, and amputations.[16]

Nevertheless, evidence suggests that not all persons with diabetes receive treatment according to the national guidelines.[17] In Oregon, more than 80 percent of people with diabetes received a cholesterol test in 2001, and less than 40 percent received an HbA1c test.[18] It is paramount that healthcare organizations assess the quality of diabetes care to ensure that proper care is given.

[13]Institute for Clinical Systems Improvement (ICSI). Management of Type 2 Diabetes Mellitus. Bloomington, MN: Institute for Clinical Systems Improvement (ICSI); 2004. Available at the National Guideline Clearing House website: www.guidelines.gov/summary/summary.aspx?doc_id=4403&nbr=3317&string=Diabetes. Accessed May 11, 2005.
[14]The LDL screening is also referred to as the "LDL-C," or "cholesterol," test.
[15]Institute for Clinical Systems Improvement (ICSI). Management of Type 2 Diabetes Mellitus.
[16]Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. *Diabetes: Disabling, Deadly, and on the Rise.* Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention: 2004.
[17]National Diabetes Surveillance System. State-specific estimates of diagnosed diabetes among adults.
[18]Oregon Department of Human Services. *Keeping Oregonians Healthy.*

Objectives and scope

Using claims and encounter data submitted by 13 FCHPs participating in OHP, OMPRO assessed a total of five measures of diabetes monitoring and treatment. The first four measures involve preventive care, examining the percentage of enrollees during the measurement year with

- an HbA1c test
- an LDL screening
- a diabetes-related ambulatory encounter
- a composite of all three preventive measures (HbA1c test, LDL screening, diabetes-related ambulatory encounter)

The fifth measure is an index of reactive care, examining the percentage of enrollees during the measurement year

- with a diabetes-related Emergency Department (ED) or inpatient encounter

The first two measures were derived from the HEDIS 2005 measures and the Diabetes Coalition of California guidelines.[19] [20] For a description of HEDIS specifications elements and OMPRO modifications to the specifications, see Appendix D, Table D-1.

The measures regarding ambulatory and ED/inpatient encounters were selected by OMPRO physician advisors to serve as a proxy for general access to preventive care. The codes for these encounter types have been defined by HEDIS to ensure external validity.

The 13 FCHPs examined in this study were as follows:

- CareOregon, Inc.
- Cascade Comprehensive Care, Inc.
- Central Oregon Independent Health Services
- Doctors of the Oregon Coast South
- Douglas County Independent Physicians Association
- FamilyCare, Inc.
- InterCommunity Health Network
- Lane Individual Practice Association
- Marion Polk Community Health Plan
- Mid-Rogue Independent Physician Association (IPA)
- Oregon Health Management Services
- Providence Health Plan
- Tuality Health Alliance

[19]National Committee for Quality Assurance (NCQA). *HEDIS 2005 Technical Specifications, Volume 2.* Washington DC: NCQA; 2004.

[20]Diabetes Coalition of California, California Diabetes Prevention and Control Program. Basic guidelines for diabetes care. Sacramento (CA): California Diabetes Prevention and Control Program, Department of Health Services; 2003. Available at: www.caldiabetes.org/content_display.cfm?contentID=203. Accessed May 12, 2005.

Methodology

Study design

Claims and encounter data were submitted to OMAP by medical facilities, FCHPs, and individual providers using UB-92 or HCFA-1500 insurance claim forms. These forms included information on the type of encounter, services provided, diagnoses, and demographic characteristics of the enrollee. In March 2005, OMAP extracted data from its encounter and claims database for all eligible enrollees for the July 1, 2003 to June 30, 2004 study time frame. Descriptions of the data elements used for this study are listed in Appendix B, Table B-1.

Denominator
OHP enrollees were considered eligible for inclusion in the study if they

- were 18–64 years old as of June 20, 2004
- had been enrolled continuously for six months in one FCHP during the measurement year
- had one of the two following encounter types:
  - two face-to-face encounters in an ambulatory or non-acute inpatient setting during the measurement year

  or
  - one face-to-face encounter in an acute inpatient or emergency room setting during the measurement year
- had a diagnosis of diabetes in any position of the diagnosis

Diagnosis and procedure codes used to identify eligible enrollees are shown in Appendix C, Figure C-1, by setting of care. A list of the diagnosis codes used to exclude enrollees is shown in Table C-1.

Numerator
The numerators varied by quality-of-care measure. The numerator is the number of enrollees that fit the criteria for each measure. The criteria for each measure are defined below.

HbA1c test
To qualify for inclusion in the numerator for HbA1c testing, an enrollee must have one of the following:

- a claim or encounter with a service date during the measurement year and with current procedural terminology (CPT) code 83036 (hemoglobin, glycosylated)

LDL screening
To qualify for inclusion in the numerator for LDL screening, an enrollee must have had a claim or encounter during the measurement year or automated laboratory data with a CPT code identifying an LDL screening. Codes used to identify LDL screening procedures are listed in Appendix C.

Diabetes-related ambulatory encounter
To qualify for inclusion in the numerator for a diabetes-related ambulatory encounter, an enrollee must have had a claim or encounter during the measurement year with a diagnosis, procedure, or billing code identifying the encounter as diabetes-related. Codes that identify diabetes-related encounters are shown in Appendix C, Figure C-2.

Composite measure
The percentage of enrollees who received preventive services for diabetes was measured through a composite score. An enrollee was counted in the composite measure if she or he had claims data for all of the following in the measurement year:

- one HbA1c test
- one LDL screening
- one diabetes-related ambulatory healthcare encounter

Diabetes-related ED or inpatient encounter
To qualify for inclusion in the numerator for a diabetes-related ED or inpatient (ED/inpatient) encounter, an enrollee must have had a claim or encounter during the measurement year with a diagnosis, procedure, or billing code identifying the encounter as diabetes-related. Codes that identify diabetes-related ED/inpatient encounters are shown in Appendix C, Figure C-3.

Data analysis

Comparative assessments are evaluations of FCHP performance that

- compare the encounter data from each FCHP's population to a baseline of FCHP aggregated data
- examine the distribution of data for all FCHPs

OMPRO used descriptive and inferential statistics to assess the amount of variation in the five diabetes treatment measures outlined above (i.e., HbA1c testing, LDL screening, ambulatory encounters, all three services, and ED/inpatient encounters) and identified FCHPs that were statistically significantly different from the aggregate. In some instances, benchmark data from HEDIS® were available to compare state and FCHP performance to national performance rates. These benchmark comparisons, however, were not used in the analysis of statistical difference nor were they used to determine outliers.

Performance data that are statistically significantly different from the aggregate may be subject to review by OMAP and the FCHP. If, in OMAP's judgment, the data review does not result in an adequate explanation of the variation (i.e., the variation between the FCHP-submitted data and the aggregate data cannot be explained, identified, or shown to be the result of data entry, coding, transmission, or reporting error), OMPRO will review a representative sample of health records (charts) from the appropriate FCHP.

OMPRO used conservative measures to determine variation among FCHPs. A patient was considered to have received proper diabetes treatment for each measure if he or she received at least one of each of the following in the past 12 months:

- HbA1c test
- LDL screening
- diabetes-related ambulatory healthcare encounter

In addition, the HbA1c test and LDL screening were combined with the percentage of ambulatory encounters for a composite measure of quality care. Enrollee visits to the ED or for inpatient care were examined for FCHP percentages that were significantly above the aggregate. The responses for each measure were binary: simply whether a given procedure was conducted or encounter recorded, according to claim codes.

Although five separate measures were analyzed in this report, FCHPs with percentages of HbA1c tests or LDL screenings significantly below the state aggregate were considered outliers.

In addition to assessing diabetes care measures for FCHPs and the aggregate, OMPRO assessed performance in each measure for the following categories:

- gender
- race/ethnicity
- age group
- geography (rural or urban, by enrollee ZIP code)[21]
- OHP benefit package (OHP Standard or Plus)
- Medicaid reimbursement category (managed care or fee-for-service)

Limitations

This analysis assessed the quality of care for OHP enrollees with diabetes. Although the outcomes of HbA1c tests and LDL screenings have also been used as measures of quality care in other studies, these variables were excluded from the analysis because administrative data do not include patient test and screening outcomes

In addition, test result values have been examined in the chronic disease management chart review, a separate evaluation in the 2003–2005 external quality review.[22] The results discussed in this paper combined with the findings from the chart review of disease management for OHP enrollees with diabetes will serve as a global assessment of quality care for Oregon Medicaid enrollees with diabetes.

[21]"Urban" and "rural" definitions are from the Office of Rural Health at Oregon Health & Science University. For a list of Oregon municipalities and their designations based on this definition, see www.ohsu.edu/oregonruralhealth/urbanruralcheck.pdf. Accessed February 3, 2005.

[22]An Evaluation of the Management of Chronic Disease in the OHP Managed Care Organizations: Diabetes and Asthma, 2003–2004. Draft report. Presented by OMPRO to the Oregon Department of Human Services, Health Services, Office of Medical Assistance Programs. June 30, 2005.

Results

Within the measurement time frame, 5,615 managed care (MC) enrollees were identified as having diabetes. An additional 3,480 fee-for-service enrollees were also identified as having diabetes (Table 2).

Table 2. OHP enrollees identified as having diabetes, by FCHP and FFS.

FCHP	Enrollees with diabetes
CareOregon, Inc.	1687
Cascade Comprehensive Care, Inc.	201
Central Oregon Independent Health Services	330
Doctors of the Oregon Coast South	235
Douglas County IPA	253
FamilyCare, Inc.	225
InterCommunity Health Network	477
Lane Individual Practice Association	608
Marion Polk Community Health Plan	889
Mid-Rogue IPA	166
Oregon Health Management Services	137
Providence Health Plan	314
Tuality Health Alliance	93
Total FCHP	5615
FFS	3480
Total FCHP and FFS	**9095**

Plan and demographic comparisons

In addition to FCHP-to-aggregate comparisons, each measure was examined by the demographic categories of age, gender, race/ethnicity, geographic location, Medicaid reimbursement category, and OHP benefit package. All results for managed care FCHPs and demographic analyses reported in this section are statistically significant. All demographic data tables are shown in Appendix A, Tables A-1–A-5.

HbA1c test

Overall, 70.6 percent of all MC enrollees received an HbA1c test within the measurement year; the range of FCHP percentages was from 55.3–89.1 percent (Table 3). The NCQA reported that 74 percent of all Medicaid enrollees in the U.S. received this test in 2002; AHRQ reported that 79.4 percent of all non-institutionalized adults with diabetes had an HbA1c test in 2001.[23, 24]

Within the OHP, some FCHP percentages varied significantly from the aggregate: two FCHPs had percentages of HbA1c tests significantly above the aggregate, and two FCHPs fell significantly below the aggregate for this lab test.

Table 3. Percentage of enrollees with an HbA1c test in the measurement year, by FCHP.

FCHP	Enrollees with diabetes	Number	Percentage	Significant difference
CareOregon, Inc.	1687	1180	69.9	
Cascade Comprehensive Care, Inc.	201	179	89.1	↑
Central Oregon Independent Health Services	330	259	78.5	↑
Doctors of the Oregon Coast South	235	174	74.0	
Douglas County IPA	253	140	55.3	↓
FamilyCare, Inc.	225	155	68.9	
InterCommunity Health Network	477	351	73.6	
Lane Individual Practice Association	608	418	68.8	
Marion Polk Community Health Plan	889	625	70.3	
Mid-Rogue IPA	166	95	57.2	↓
Oregon Health Management Services	137	92	67.2	
Providence Health Plan	314	234	74.5	
Tuality Health Alliance	93	64	68.8	
Aggregate	**5615**	**3966**	**70.6**	

Arrows ↑↓ indicate the FCHP percentage is statistically significantly higher or lower, respectively, than the aggregate at $p<0.05$.

Females had a statistically significantly higher percentage of HbA1c tests than males (72.1 percent compared with 68.1 percent). Asian enrollees had a significantly higher percentage of HbA1c tests compared with the aggregate (82.9 percent and 70.6 percent, respectively).

[23]National Committee for Quality Assurance (NCQA). The State of Health Care Quality Report, 2003. Available at: www.ncqa.org/sohc2003/comprehensive_diabetes_care.htm#Results and Trends. Accessed May 11, 2005.

[24]Coffey RM, Matthews TL, McDermott K. *Diabetes Care Quality Improvement: A Resource Guide for State Action.* 2004. Rockville, MD: Agency for Health Care Policy and Research (AHRQ): 2004. AHRQ Publication No. 04-0072. Available on: www.ahrq.gov/qual/diabqguide.pdf. Accessed May 11, 2005.

LDL screening

Overall, 56.0 percent of MC enrollees received an LDL screening during the measurement year; the FCHP percentages ranged from 44.6–71.6 percent. The National Committee for Quality Assurance (NCQA) reported that 72 percent of all Medicaid enrollees in the U.S. had an LDL screening in 2001.[25]

FCHP percentages varied significantly for this measure: one FCHP had a percentage significantly above the aggregate, and three fell significantly below the aggregate in percentages of LDL screenings (Table 4).

Table 4. Percentage of enrollees with an LDL screening in the measurement year, by FCHP.

FCHP	Enrollees with diabetes	Number	Percentage	Significant difference
CareOregon, Inc.	1687	938	55.6	
Cascade Comprehensive Care, Inc.	201	144	71.6	↑
Central Oregon Independent Health Services	330	192	58.2	
Doctors of the Oregon Coast South	235	111	47.2	↓
Douglas County IPA	253	123	48.6	↓
FamilyCare, Inc.	225	120	53.3	
InterCommunity Health Network	477	259	54.3	
Lane Individual Practice Association	608	357	58.7	
Marion Polk Community Health Plan	889	517	58.2	
Mid-Rogue IPA	166	74	44.6	↓
Oregon Health Management Services	137	72	52.6	
Providence Health Plan	314	181	57.6	
Tuality Health Alliance	93	54	58.1	
Aggregate	**5615**	**3142**	**56.0**	

Arrows ↑↓ indicate the FCHP percentage is statistically significantly higher or lower, respectively, than the aggregate at $p<0.05$.

Females had a statistically significant higher percentage of LDL screenings than males (57.0 percent compared with 54.1 percent), enrollees older than 40 had a significantly higher percentage than those 40 and younger (57.2 percent compared with 51.4 percent). Asian enrollees had a significantly higher percentage of LDL screenings than the aggregate (69.4 percent compared with 56.0 percent).

[25]National Committee for Quality Assurance (NCQA). National Medicaid Results for Selected 2000 HEDIS® and HEDIS/CAHPS® Measures. Available at: www.ncqa.org/Programs/HEDIS/medicaidcholesterol00.htm. Accessed May 10, 2005.

Diabetes-related ambulatory encounter

Overall, 93.1 percent of MC enrollees had at least one diabetes-related ambulatory encounter during the measurement year. The range of FCHP percentages was from 90.2–97.1 percent (Table 5). Although some FCHP percentages were found to vary significantly from the aggregate, the variation was small; therefore interpretation of the results is not recommended.

Table 5. Percentage of enrollees with at least one diabetes-related ambulatory encounter in the measurement year, by FCHP.

FCHP	Enrollees with diabetes	Number	Percentage	Significant difference
CareOregon, Inc.	1687	1540	91.3	↓
Cascade Comprehensive Care, Inc.	201	195	97.0	↑
Central Oregon Independent Health Services	330	302	91.5	
Doctors of the Oregon Coast South	235	212	90.2	
Douglas County IPA	253	236	93.3	
FamilyCare, Inc.	225	212	94.2	
InterCommunity Health Network	477	452	94.8	
Lane Individual Practice Association	608	562	92.4	
Marion Polk Community Health Plan	889	840	94.5	
Mid-Rogue IPA	166	152	91.6	
Oregon Health Management Services	137	133	97.1	
Providence Health Plan	314	305	97.1	↑
Tuality Health Alliance	93	87	93.5	
Aggregate	**5615**	**5228**	**93.1**	

Arrows ↑↓ indicate the FCHP percentage is statistically significantly higher or lower, respectively, than the aggregate at $p<0.05$.

Enrollees older than 40 had a statistically significant higher percentage of diabetes-related ambulatory encounters than those younger than 40 (94.1 percent compared with 89.3 percent).

Composite measure

The diabetes quality-of-care composite measure was defined as the percentage of enrollees who received HbA1c testing, LDL screening, and at least one diabetes-related ambulatory encounter during the measurement year. Overall, 52.1 percent of MC enrollees received the three diabetes-related services that make up the composite measure; FCHP percentages ranged from 39.8–68.7 percent

Some FCHP percentages varied significantly from the aggregate. One FCHP had significantly above-aggregate percentages of enrollees who had received all three preventive services; three FCHPs had significantly below-aggregate percentages of enrollees that qualified for the composite measure (Table 6).

Table 6. Percentage of enrollees with all three diabetes-related services (composite measure) in the measurement year, by FCHP.

FCHP	Enrollees with diabetes	Number	Percentage	Significant difference
CareOregon, Inc.	1687	866	51.3	
Cascade Comprehensive Care, Inc.	201	138	68.7	↑
Central Oregon Independent Health Services	330	170	51.5	
Doctors of the Oregon Coast South	235	103	43.8	↓
Douglas County IPA	253	109	43.1	↓
FamilyCare, Inc.	225	113	50.2	
InterCommunity Health Network	477	249	52.2	
Lane Individual Practice Association	608	337	55.4	
Marion Polk Community Health Plan	889	483	54.3	
Mid-Rogue IPA	166	66	39.8	↓
Oregon Health Management Services	137	69	50.4	
Providence Health Plan	314	172	54.8	
Tuality Health Alliance	93	49	52.7	
Aggregate	**5615**	**2924**	**52.1**	

Arrows ↑↓ indicate the FCHP percentage is statistically significantly higher or lower, respectively, than the aggregate at $p<0.05$.

Asian enrollees had a statistically significantly higher percentage for the composite measure than the aggregate (68.4 percent compared with 52.1 percent). Rural enrollees had a lower percentage for the composite measure than urban dwellers (50.3 percent compared with 53.3 percent). Enrollees older than 40 had a higher percentage for the composite measure than enrollees 40 and younger (53.4 percent compared with 47.1 percent).

ED/inpatient encounters

During the measurement year, one-quarter (25.4 percent) of MC enrollees had a diabetes-related ED or inpatient encounter. FCHP percentages ranged from 18.4–36.2 percent.

There was significant variation in FCHP percentages for this measure: four FCHPs had percentages of enrollees with ED/inpatient encounters significantly below the aggregate; three had percentages of enrollees with ED/inpatient encounters significantly above the aggregate (Table 7).

Table 7. Percentage of enrollees with an ED/inpatient encounter in the measurement year, by FCHP.

FCHP	Enrollees with diabetes	Number	Percentage	Significant difference
CareOregon, Inc.	1687	484	28.7	↑
Cascade Comprehensive Care, Inc.	201	37	18.4	↓
Central Oregon Independent Health Services	330	93	28.2	
Doctors of the Oregon Coast South	235	85	36.2	↑
Douglas County IPA	253	50	19.8	↓
FamilyCare, Inc.	225	55	24.4	
InterCommunity Health Network	477	93	19.5	↓
Lane Individual Practice Association	608	159	26.2	
Marion Polk Community Health Plan	889	212	23.8	
Mid-Rogue IPA	166	31	18.7	↓
Oregon Health Management Services	137	28	20.4	
Providence Health Plan	314	69	22.0	
Tuality Health Alliance	93	32	34.4	↑
Aggregate	**5615**	**1428**	**25.4**	

Arrows ↑↓ indicate the FCHP percentage is statistically significantly higher or lower, respectively, than the aggregate at $p<0.05$.

Asian enrollees had a statistically significantly lower percentage of diabetes-related ED/inpatient encounters (16.6 percent) and African American enrollees had a significantly higher percentage (37.9 percent) compared with the aggregate. Enrollees older than 40 had a significantly lower percentage of ED/inpatient encounters (23.1 percent) than those 40 and younger (33.9 percent).

Medicaid enrollment category comparisons

There were significant differences between MC and FFS enrollees in the measures for diabetes quality care. MC enrollees had significantly higher percentages of HbA1c tests and LDL screenings within the measurement year than FFS enrollees (Table 8, Figure 1).

Table 8. Comparison of diabetes measures for MC and FFS enrollees.

	MC		FFS		Significant difference
Diabetes measure	#	%	#	%	
HbA1c test	3966	70.6	2063	59.3	*
LDL screening	3142	56.0	1662	47.8	*
Ambulatory encounter	5228	93.1	3217	92.4	
Composite measure	2924	52.1	1454	41.8	*
ED/inpatient encounter	1428	25.4	849	24.4	

* indicates p <0.05

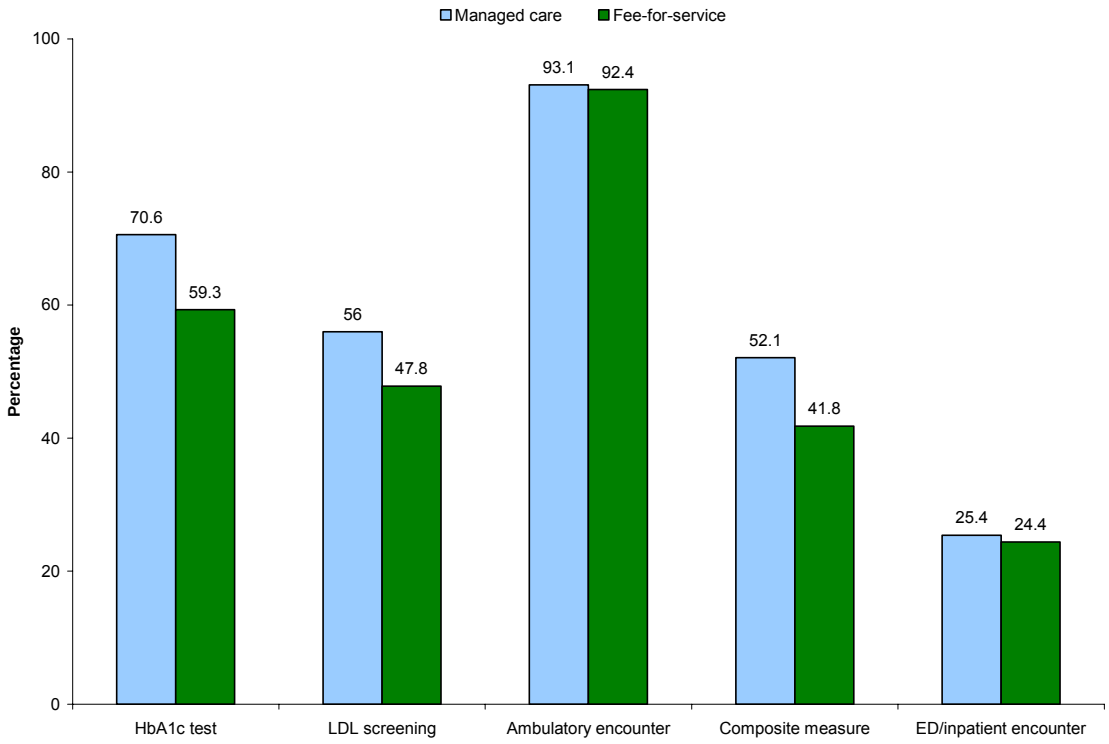

Figure 1. Comparison of diabetes measures for MC and FFS enrollees.

Among managed care enrollees, there were significant differences in the percentages of OHP Plus and Standard enrollees who received HbA1c tests and LDL screenings. OHP Standard enrollees had higher percentages of HbA1c tests, LDL screenings, and ambulatory encounters than OHP Plus enrollees. OHP Standard enrollees, therefore, had a higher percentage in the composite measure. In contrast, OHP Plus enrollees had a higher percentage of ED/inpatient encounters than OHP Standard enrollees (Table 9, Figure 2).

Table 9. Comparison of diabetes measures for OHP Plus and OHP Standard enrollees.

	OHP Plus		OHP Standard		Significant
Diabetes measure	#	%	#	%	**difference**
HbA1c test	3237	67.8	729	86.9	*
LDL screening	2568	53.8	574	68.4	*
Ambulatory encounter	4423	92.6	805	95.9	
Composite measure	2382	49.9	542	64.6	*
ED/inpatient encounter	1271	26.6	157	18.7	

* indicates p <0.05

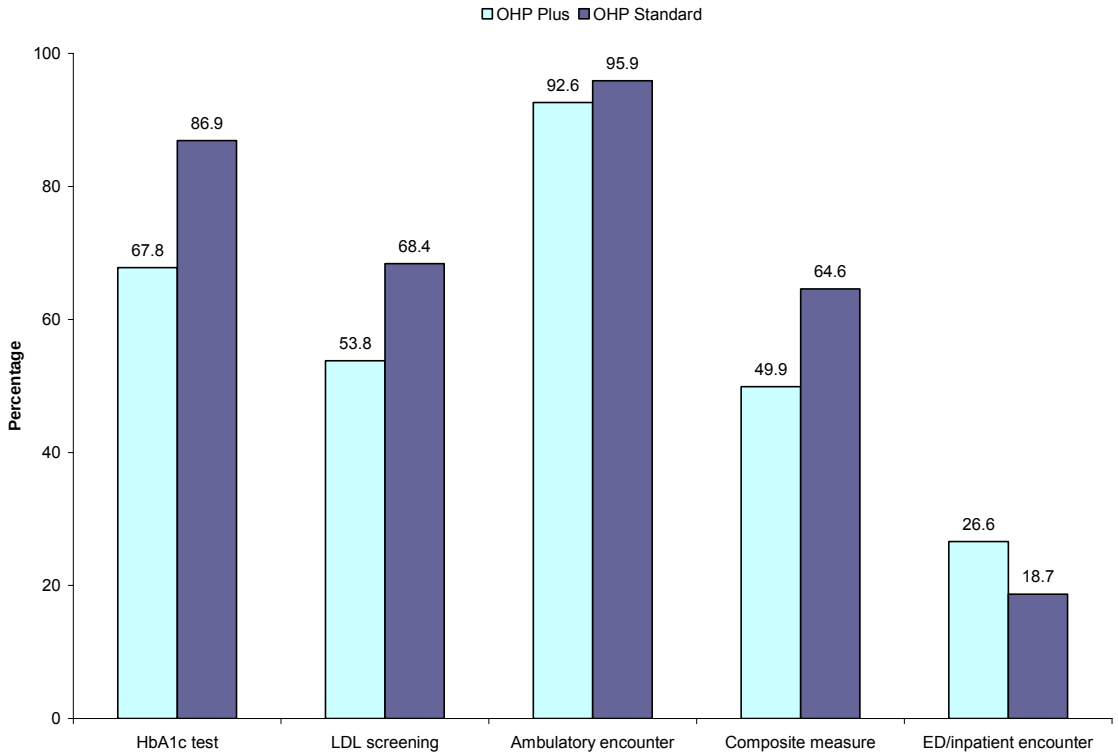

Figure 2. Comparison of diabetes measures for OHP Plus and OHP Standard enrollees.

The results of this analysis may have been influenced by the changes to the OHP benefits package that were implemented shortly before the measurement time frame. In March 2003, the Basic Benefits Package, which had been the sole option for OHP enrollees, was renamed OHP Plus (see Figure 3). The OHP Standard program did not exist as such before March 2003; it came about as an "extension" for the population that included people who would not normally qualify for the OHP Plus program, because of their better health or higher income.

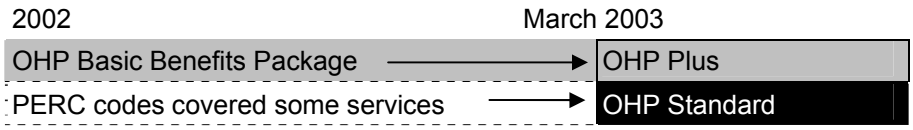

Figure 3. Change in OHP benefit structure after March 2003.

Secondary analysis of OHP Plus enrollees

Given the significant differences between Plus and Standard enrollees in both HbA1c tests and LDL screenings, OMPRO conducted a secondary analysis to determine whether individual FCHP differences could be due in part to the presence of Standard enrollees. After the March 2003 changes to the Oregon Health Plan, some FCHPs opted not to serve OHP Standard enrollees. Because of these differences in the proportion of Standard enrollees among FCHPs, and to make the sample populations more consistent across all plans, the secondary analysis focused on OHP Plus enrollees. OMPRO compared FCHP percentages to the aggregate to assess FCHP differences.

The analysis of OHP Plus enrollees identified statistically significant differences among FCHPs. For HbA1c tests, two FCHPs had percentages significantly above the aggregate, and four FCHPs had percentages significantly below the aggregate (Table 10).

Table 10. Percentage of OHP Plus enrollees with an HbA1c test in the measurement year, by FCHP.[a]

Plan	Enrollees with diabetes	Number	Percentage	Significant difference
CareOregon, Inc.	1622	1125	69.4	
Cascade Comprehensive Care, Inc.	146	131	89.7	↑
Central Oregon Independent Health Services	321	251	78.2	↑
Doctors of the Oregon Coast South	173	126	72.8	
Douglas County IPA	249	137	55.0	↓
FamilyCare, Inc.	213	144	67.6	
InterCommunity Health Network	371	253	68.2	
Lane Individual Practice Association	444	277	62.4	↓
Marion Polk Community Health Plan	652	414	63.5	↓
Mid-Rogue IPA	130	70	53.8	↓
Oregon Health Management Services	103	61	59.2	
Providence Health Plan	262	187	71.4	
Tuality Health Alliance	90	61	67.8	
Aggregate	**4776**	**3237**	**67.8**	

Arrows ↑↓ indicate the FCHP percentage is statistically significantly higher or lower, respectively, than the aggregate at $p<0.05$.

[a]Excludes OHP Standard enrollees.

Regarding LDL screenings, one FCHP had a percentage significantly above the aggregate and one FCHP had a percentage that was significantly below the aggregate (Table 11).

Table 11. Percentage of OHP Plus enrollees with an LDL screening in the measurement year, by FCHP.[a]

FCHP	Enrollees with diabetes	Number	Percentage	Significant difference
CareOregon, Inc.	1622	899	55.4	
Cascade Comprehensive Care, Inc.	146	103	70.5	↑
Central Oregon Independent Health Services	321	186	57.9	
Doctors of the Oregon Coast South	173	83	48.0	
Douglas County IPA	249	121	48.6	
FamilyCare, Inc.	213	112	52.6	
InterCommunity Health Network	371	191	51.5	
Lane Individual Practice Association	444	236	53.2	
Marion Polk Community Health Plan	652	342	52.5	
Mid-Rogue IPA	130	54	41.5	↓
Oregon Health Management Services	103	48	46.6	
Providence Health Plan	262	142	54.2	
Tuality Health Alliance	90	51	56.7	
Aggregate	**4776**	**2568**	**53.8**	

Arrows ↑↓ indicate the FCHP percentage is statistically significantly higher or lower, respectively, than the aggregate at $p<0.05$.

[a]Excludes OHP Standard enrollees.

Discussion

Although diabetes is a prevalent chronic condition in the United States, much is known about how to manage this condition. There is ample research on diabetes care that has contributed to the development of an evidence-based treatment guidelines for diabetes management.[26] Proper treatment and management of diabetes benefits patients and FCHPs alike. People with diabetes who received evidence-based care are more productive at work, have less absenteeism, and report a more positive outlook on life.[27] In addition, proper diabetes care can reduce preventable medical expenditures for diabetes patients.[28]

This report assessed four individual measures of diabetes care—percentages of HbAc1 tests, LDL screenings, diabetes-related ambulatory encounters, and diabetes-related ED/inpatient encounters. In addition, a composite measure of the HbA1c, LDL, and ambulatory encounter measures was analyzed.

The results of this study show that there was variation among FCHPs in the percentage of enrollees who received

- HbA1c tests and LDL screenings for diabetes
- diabetes-related emergency or inpatient care

Table 12 shows the FCHPs that were statistically significantly different from the aggregate percentage for patients with HbA1c tests and LDL screenings for the measurement year. FCHPs with percentages above the aggregate are considered to be performing better than the aggregate.

[26]Institute for Clinical Systems Improvement (ICSI). Management of Type 2 Diabetes Mellitus.
[27]Testa M, Simpson D. Quality of life in patients with type 2 diabetes mellitus. *JAMA* 1998;250(17):1490–96.
[28]Ramsey S, Summers KH, Leong SA, et al. Productivity and medical costs of diabetes in a large employer population. *Diabetes Care.* 2002;25:23-9.

Table 12. Summary of statistically significant differences among FCHPs for HbA1c tests, and LDL screenings for all MC enrollees.

FCHP	HbA1c tests	LDL screenings
CareOregon, Inc.		
Cascade Comprehensive Care, Inc.	↑	↑
Central Oregon Independent Health Services	↑	
Doctors of the Oregon Coast South		↓
Douglas County IPA	↓	↓
FamilyCare, Inc.		
InterCommunity Health Network		
Lane Individual Practice Association		
Marion Polk Community Health Plan		
Mid-Rogue IPA	↓	↓
Oregon Health Management Services		
Providence Health Plan		
Tuality Health Alliance		

Arrows ↑↓ indicate the FCHP percentage is statistically significantly higher or lower, respectively, than the aggregate at $p<0.05$.

Table 13 shows the FCHPs that were statistically significantly different from the aggregate percentage for patients with ED/inpatient encounters for the measurement year. FCHPs with percentages above the aggregate are considered to be performing worse than the aggregate.

Table 13. Summary of statistically significant differences among FCHPs for ED/inpatient encounters for all enrollees.

FCHP	ED or inpatient encounters
CareOregon, Inc.	↑
Cascade Comprehensive Care, Inc.	↓
Central Oregon Independent Health Services	
Doctors of the Oregon Coast South	↑
Douglas County IPA	↓
FamilyCare, Inc.	
InterCommunity Health Network	↓
Lane Individual Practice Association	
Marion Polk Community Health Plan	
Mid-Rogue IPA	↓
Oregon Health Management Services	
Providence Health Plan	
Tuality Health Alliance	↑

Arrows ↑↓ indicate the FCHP percentage is statistically significantly higher or lower, respectively, than the aggregate at $p<0.05$.

Program comparisons

A statistically significantly higher percentage of managed care enrollees received both HbA1c tests and LDL screenings than FFS enrollees. OHP Standard enrollees had percentages of HbA1c tests and LDL screenings that were significantly higher than the percentage for OHP Plus enrollees.

The secondary analysis for OHP Plus enrollees determined that there was statistically significant variation among FCHPs in HbA1c tests and LDL screenings (Table 14). More FCHPs had lower-than-aggregate HbA1c test percentages for OHP Plus enrollees than in the analysis for all enrollees. Fewer FCHPs had lower-than-aggregate percentages for LDL screenings for OHP Plus enrollees than in the analysis for all MC enrollees.

Table 14. Summary of statistically significant outliers with percentages lower than the aggregate, for all enrollees and OHP Plus enrollees.

	All MC enrollees		OHP Plus enrollees	
FCHP	HbA1c tests	LDL screenings	HbA1c tests	LDL screenings
CareOregon, Inc.				
Cascade Comprehensive Care, Inc.				
Central Oregon Independent Health Services				
Doctors of the Oregon Coast South		↓		
Douglas County IPA	↓	↓	↓	
FamilyCare, Inc.				
InterCommunity Health Network				
Lane Individual Practice Association			↓	
Marion Polk Community Health Plan			↓	
Mid-Rogue IPA	↓	↓	↓	↓
Oregon Health Management Services				
Providence Health Plan				
Tuality Health Alliance				

Arrows ↑↓ indicate the FCHP percentage is statistically significantly higher or lower, respectively, than the aggregate at $p<0.05$.

Outliers in diabetes care measures

An FCHP was considered an outlier for quality care in diabetes if it had a statistically significantly lower percentage of either the HbA1c test or LDL screening for its enrollees. Outlier status was determined using either the total MC sample or the OHP Plus only sample. Mid-Rogue IPA was identified an outlier with percentages lower than the aggregate for HbA1c tests and LDL screenings for all enrollees and for its OHP Plus enrollees. Douglas County IPA was an outlier with lower-than-aggregate percentages for HbA1c tests and LDL screenings in the all-MC enrollee analysis only. FCHPs that had a lower percentage of either the HbA1c test or screening in either the total MC sample or the OHP Plus only sample were Doctors of the Oregon Coast South, Lane Individual Practice Association, and Marion Polk Community Health Plan. All five FCHPs are considered outliers in this report.

Cascade Comprehensive Care

Cascade Comprehensive Care (CCC) had percentages that were statistically significantly different from the aggregate in the following measures:

- HbA1c tests and LDL screenings were statistically significantly above the aggregate
- ED/inpatient encounters significantly below the aggregate

This FCHP should be acknowledged as having provided a relatively higher quality of care for its enrollees with diabetes than other FCHPs in the same time frame.

CCC practiced case management with its enrollees with diabetes throughout the measurement year and has continued its case-management approach as of the writing of this report. Research has shown that case management is effective in improving the quality of life for people with diabetes and has been associated with better quality of care.[29, 30, 31]

The CCC staff includes four healthcare professionals with education specifically in diabetes management. The FCHP's enrollees with diabetes often visit the CCC office to pick up test strips and glucometers. Case managers take this opportunity to meet with enrollees to educate and remind them about the importance of their HbA1c tests, LDL screenings, and other preventive measures.

Demographic differences

Although there were differences in the care received by enrollees with diabetes in different demographic groups, the differences were small with two exceptions: Asians with diabetes had higher percentages of the recommended diabetes services and lower percentages of ED/inpatient encounters than the aggregate. Similarly, those 40 years and older with diabetes had higher percentages of the recommended diabetes services and lower percentages of ED/inpatient encounters compared with those younger than 40.

[29]Norris SL, Nichols PJ, Caspersen CJ, et al. The effectiveness of disease and case management for people with diabetes. A systematic review. *Am J Prev Med.* 2002;22:15–38.

[30] Task Force on Community Preventive Services. Strategies for reducing morbidity and mortality from diabetes through health-care system interventions and diabetes self-management education in community settings: a report on recommendations of the Task Force on Community Preventive Services. *MMWR Recomm Rep.* 2001;50:1–15.

[31]Jovanovic L, Wollitzer AO, Yorke K, et al. Closing the gap: effect of diabetes case management on glycemic control among low-income ethnic minority populations. *Diabetes Care.* 2004;27:95–103.

Conclusions and Recommendations

This study found that there were FCHPs with percentages of HbA1c tests and LDL screenings significantly below the state aggregate. Given that all persons with diabetes should be receiving these tests and screenings annually, the state aggregate percentages signal that there is room for improvement throughout Oregon. This is especially true for LDL screenings, in which nearly half of all enrollees (44.0 percent) were identified as not having had this test. In addition, enrollees younger than 40 had lower percentages of LDL screenings than enrollees older than 40. It is recommended that FCHPs take steps to ensure that their enrollees younger than 40 receive this screening.

The vast majority of enrollees with diabetes (93.1 percent) had a diabetes-related ambulatory encounter. Although there is statistical variation among FCHPs, the actual percentage difference is small and interpretation of this variation is not advised.

In contrast, there was greater variation among FCHPs when measuring ED/inpatient care; percentages of ranged from 18.4–36.2 percent. Regarding ED/inpatient visits, it is assumed that reducing the proportions of acute care and increasing preventive services may represent improved quality of care. Research has shown that increased access to preventive care can reduce acute-care visits, especially for people with chronic conditions such as diabetes.[32, 33, 34]

The high percentage of ambulatory encounters indicates that there is opportunity for improving the lab tests and screenings each enrollee receives. Once the enrollee has an encounter with a provider, he or she should be able to receive the test and screening as recommended by guidelines. Therefore, all FCHPs with a percentage of HbA1c tests or LDL screenings lower than the aggregate should internally assess the processes used to monitor and ensure proper diabetes care and take steps to improve the testing for and screening of enrollees with diabetes. OMPRO and OMAP agreed that no specific follow-up will be conducted with FCHPs identified as outliers.

If measurement of these factors proves useful for evaluation, continued assessment is recommended so that comparisons across time can be made.

[32]Solberg LI, Maciosek MV, Sperl-Hillen JM, et al. Does improved access to care affect utilization and costs for patients with chronic conditions? *Am J Managed Care.* 2004;10:717–22.
[33]Falik M, Needleman J, Wells BL, Korb J. Ambulatory care sensitive hospitalizations and emergency visits: experiences of Medicaid patients using federally qualified health centers. *Med Care* 39:551–61.
[34]Families USA website: A Guide to Monitoring Medicaid Managed Care. Available at: www.familiesusa.org/site/PageServer?pagename=html_managedcare_mngguide_mdmon5

Appendix A. Demographic Analyses

Table A-1. Number and percentage of eligible enrollees with HbA1c tests during study time frame.

Table A-2. Number and percentage of eligible enrollees with LDL screenings during study time frame.

Table A-3. Number and percentage of eligible enrollees with at least one diabetes-related ambulatory encounter during study time frame.

Table A-4. Number and percentage of eligible enrollees with three diabetes-related services (HbA1c test, LDL screening, diabetes-related ambulatory encounter) during study time frame.

Table A-5. Number and percentage of eligible enrollees with at least one diabetes-related ED/inpatient encounter during study time frame.

Table A-1. Number and percentage of eligible enrollees with HbA1c tests during study time frame.

Demographic category	Eligible population	Number	Percentage	Significant difference
Gender				
Female	3583	2582	72.1	*
Male	2032	1384	68.1	
Total	**5615**	**3966**	**70.6**	
Race				
Asian	193	160	82.9	*
Black	317	232	73.2	
Hispanic	331	248	74.9	
American Indian or Alaskan Native	92	66	71.7	
Other (other or multiple races)	26	19	73.1	
Native Hawaiian or Pacific Islander	5	4	80.0	
Undeclared	4	3	75.0	
White	4647	3234	69.6	
Total	**5615**	**3966**	**70.6**	
Age				
18–40	1196	832	69.6	
41–64	4419	3134	70.9	
Total	**5615**	**3966**	**70.6**	
Geographic location				
Rural	2314	1632	70.5	
Urban	3301	2334	70.7	
Total	**5615**	**3966**	**70.6**	
OHP benefit package				
OHP Standard	839	729	86.9	*
OHP Plus	4776	3237	67.8	
Total	**5615**	**3966**	**70.6**	

* indicates significant difference at $p < 0.05$

Table A-2. Number and percentage of eligible enrollees with LDL screenings during study time frame.

Demographic category	Eligible population	Number	Percentage	Significant difference
Gender				
Female	3583	2042	57.0	*
Male	2032	1100	54.1	
Total	**5615**	**3142**	**56.0**	
Race				
Asian	193	134	69.4	
Black	317	170	53.6	
Hispanic	331	201	60.7	
American Indian or Alaskan Native	92	51	55.4	
Other (other or multiple races)	26	14	53.8	
Native Hawaiian or Pacific Islander	5	4	80.0	
Undeclared	4	2	50.0	
White	4647	2566	55.2	
Total	**5615**	**3142**	**56.0**	
Age				
18–40	1196	615	51.4	*
41–64	4419	2527	57.2	
Total	**5615**	**3142**	**56.0**	
Geographic location				
Rural	2314	1266	54.7	
Urban	3301	1876	56.8	
Total	**5615**	**3142**	**56.0**	
OHP benefit package				
OHP Standard	839	574	68.4	*
OHP Plus	4776	2568	53.8	
Total	**5615**	**3142**	**56.0**	

* indicates significant difference at $p < 0.05$

Table A-3. Number and percentage of eligible enrollees with at least one diabetes-related ambulatory encounter during study time frame.

Demographic category	Eligible population	Number	Percentage	Significant difference
Gender				
Female	3583	3313	92.5	*
Male	2032	1915	94.2	
Total	**5615**	**5228**	**93.1**	
Race				
Asian	193	186	96.4	
Black	317	298	94.0	
Hispanic	331	316	95.5	
American Indian or Alaskan Native	92	83	90.2	
Other (other or multiple races)	26	24	92.3	
Native Hawaiian or Pacific Islander	5	5	100.0	
Undeclared	4	4	100.0	
White	4647	4312	92.8	
Total	**5615**	**5228**	**93.1**	
Age				
18–40	1196	1068	89.3	*
41–64	4419	4160	94.1	
Total	**5615**	**5228**	**93.1**	
Geographic location				
Rural	2314	2156	93.2	
Urban	3301	3072	93.1	
Total	**5615**	**5228**	**93.1**	
OHP benefit package				
OHP Standard	839	805	95.9	*
OHP Plus	4776	4423	92.6	
Total	**5615**	**5228**	**93.1**	

* indicates significant difference at p <0.05

Table A-4. Number and percentage of eligible enrollees with three diabetes-related services (HbA1c test, LDL screening, diabetes-related ambulatory encounter) during study time frame.

Demographic category	Eligible population	Number	Percentage	Significant difference
Gender				
Female	3583	1891	52.8	
Male	2032	1033	50.8	
Total	**5615**	**2924**	**52.1**	
Race				
Asian	193	132	68.4	
Black	317	162	51.1	
Hispanic	331	188	56.8	
American Indian or Alaskan Native	92	46	50.0	
Other (other or multiple races)	26	14	53.8	
Native Hawaiian or Pacific Islander	5	3	60.0	
Undeclared	4	1	25.0	
White	4647	2378	51.2	
Total	**5615**	**2924**	**52.1**	
Age				
18–40	1196	563	47.1	*
41–64	4419	2361	53.4	
Total	**5615**	**2924**	**52.1**	
Geographic location				
Rural	2314	1164	50.3	*
Urban	3301	1760	53.3	
Total	**5615**	**2924**	**52.1**	
OHP benefit package				
OHP Standard	839	542	64.6	*
OHP Plus	4776	2382	49.9	
Total	**5615**	**2924**	**52.1**	

* indicates significant difference at p <0.05

Table A-5. Number and percentage of eligible enrollees with at least one diabetes-related ED/inpatient encounter during study time frame.

Demographic category	Eligible population	Number	Percentage	Significant difference
Gender				
Female	3583	910	25.4	
Male	2032	518	25.5	
Total	**5615**	**1428**	**25.4**	
Race				
Asian	193	32	16.6	*
Black	317	120	37.9	*
Hispanic	331	77	23.3	
American Indian or Alaskan Native	92	26	28.3	
Other (other or multiple races)	26	6	23.1	
Native Hawaiian or Pacific Islander	5	1	20.0	
Undeclared	4	1	25.0	
White	4647	1165	25.1	
Total	**5615**	**1428**	**25.4**	
Age				
18–40	1196	406	33.9	*
41–64	4419	1022	23.1	
Total	**5615**	**1428**	**25.4**	
Geographic location				
Rural	2314	583	25.2	
Urban	3301	845	25.6	
Total	**5615**	**1428**	**25.4**	
OHP benefit package				
OHP Standard	839	157	18.7	*
OHP Plus	4776	1271	26.6	
Total	**5615**	**1428**	**25.4**	

* indicates significant difference at p <0.05

Appendix B. Data Elements Requested for Analysis

Table B-1 lists the data elements requested for the analysis of OHP enrollees with diabetes.

Table B-1. Data elements requested for analysis.

Element	Data fields	Comments
Enrollee identifier	• Prime ID • First name • Middle initial • Last name	
Unique ID for demographic data		
Enrollee length of enrollment in FCHP or FFS plan		
Program code for each member	• Program Eligibility Recording Code (PERC): 2 characters	OHP Plus or Standard
Enrollee age as of June 30, 2004		
Enrollee demographics	• Gender • Race/ethnicity • ZIP code	
Individual encounter or claim identifier for each visit	• Encounter or claims ID number	
Diagnostic and procedure codes for each visit	• ICD-9 code—Include all procedures • Current Procedural Terminology (CPT)® code	
Plan identifier for each enrollee	• Plan name	

Appendix C. Codes for Inclusion, Exclusion, and Identification of Measure Numerators

Determination of eligibility

The code combinations from the four possible settings of care determined whether enrollees were eligible for inclusion in the diabetes comparative assessment. The diabetes diagnosis codes (ICD-9-CM) or DRGs combined with CPT or UB-92 codes for outpatient, non-acute inpatient, or acute inpatient providers are shown in Figure C-1 on the next page.

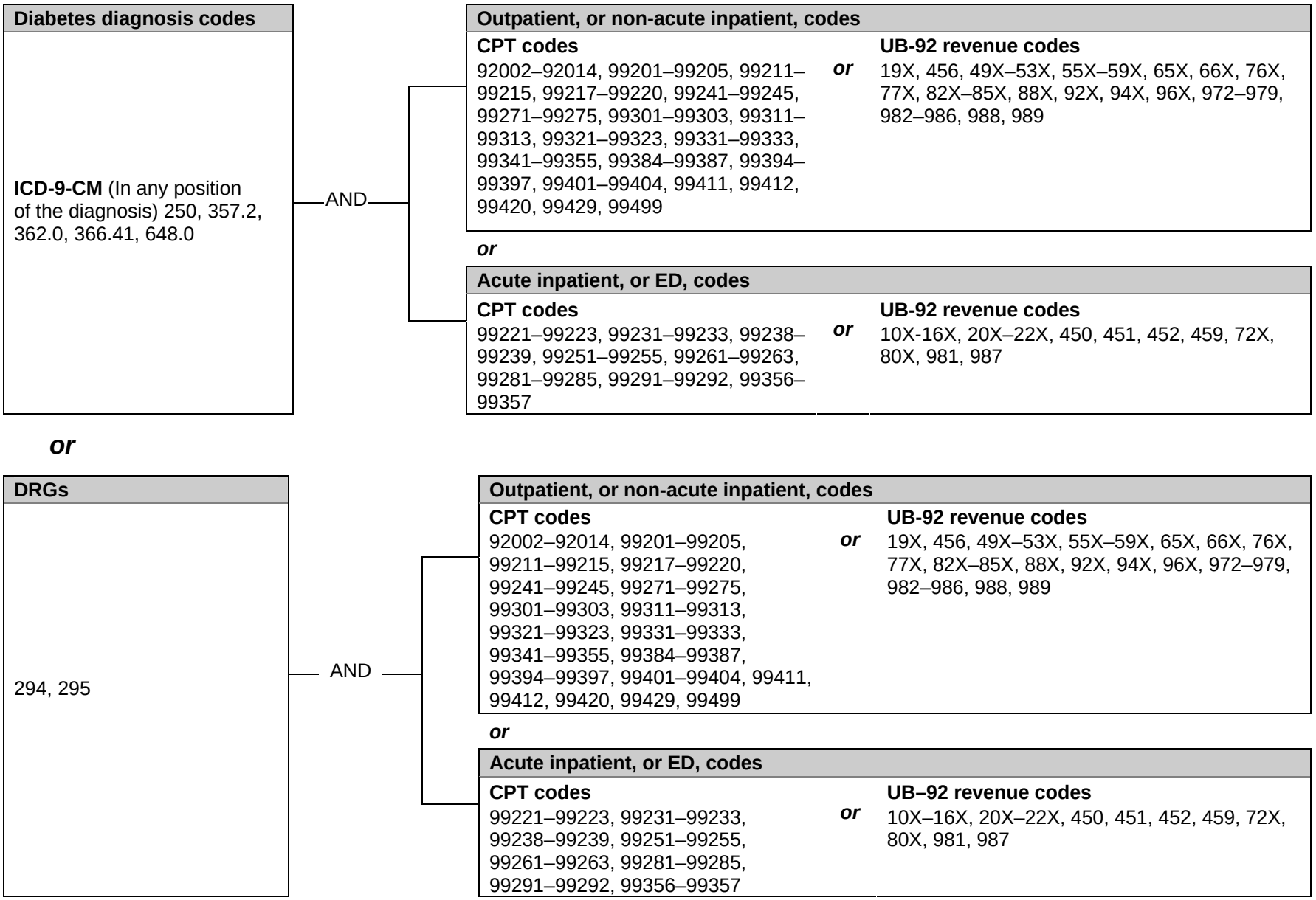

Figure C-1. Diagnosis, procedure, and revenue code combinations for inclusion in the study.

Exclusion from eligibility

Enrollees diagnosed with gestational or steroid-induced diabetes, as well as enrollees with polycystic ovaries—defined by the codes listed in Table C-1—were excluded from the study.

Table C-1. Diagnosis codes for exclusion from the study.

Diagnosis, in any position	ICD-9-CM codes
Gestational diabetes	648.8
Steroid-induced diabetes	251.8, 962.0
Polycystic ovaries	256.4

Codes used to define measures

Codes that define the criteria for each measure are shown below the measure name.

HbA1c
CPT code 83036 in any CPT code position were used to identify HbA1c tests.

LDL screening
CPT code 80061, 83715, 83716, 83721 in any CPT code position were used to identify LDL screenings.

Diabetes-related ambulatory encounter

Code combinations used to identify diabetes-related ambulatory encounters are shown in Figure C-2, below.

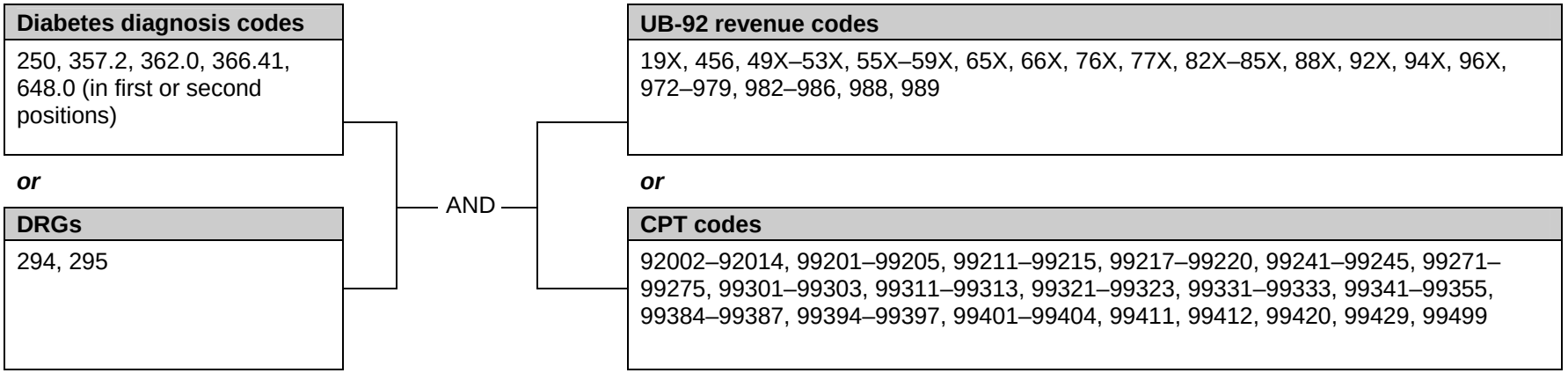

Figure C-2. Diagnosis, procedure, and revenue code combinations defining a diabetes-related ambulatory encounter.

Diabetes-related ED or inpatient encounter

Code combinations used to identify diabetes-related ED/inpatient encounters are shown in Figure C-3, below.

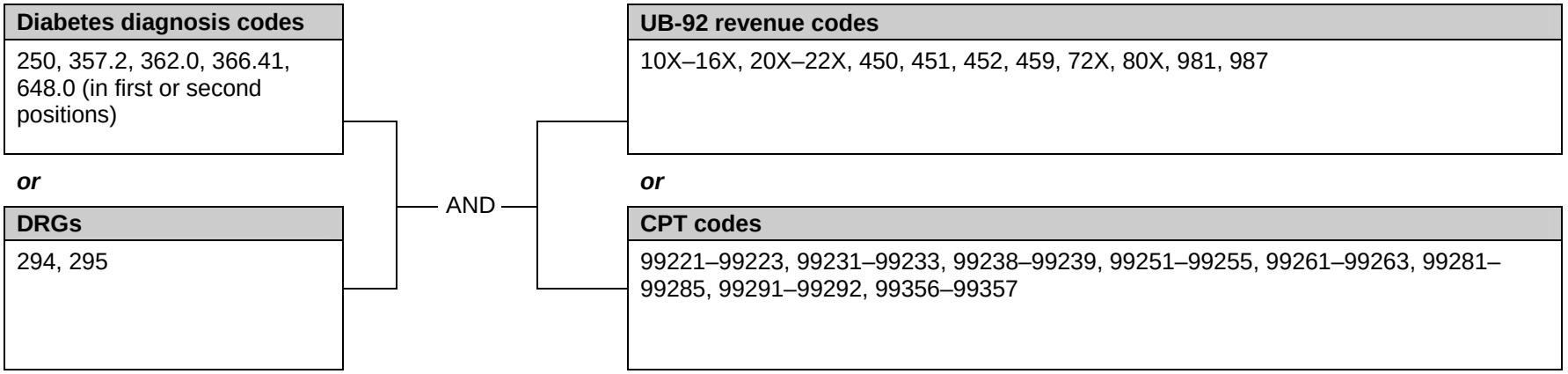

Figure C-3. Diagnosis, procedure, and revenue code combinations defining a diabetes-related ED/inpatient encounter.

Appendix D. OMPRO Changes to selected HEDIS® Measures[1]

Table D-1 lists the HEDIS measure elements that OMPRO changed and the modification for the current comparative assessment of diabetes care. The "Comments" field captures the reason for, or data limitations that resulted in, the change.

Table D-1. OMPRO changes to selected HEDIS measures for diabetes care.

HEDIS® measure	OMPRO change	Comments
Pharmacy data and claims and encounter data are provided to identify members with diabetes. The MCO must use both methods to identify the eligible population.	OMPRO used claims and encounter data only to identify enrollees with diabetes.	Pharmacy data were not available from the OMAP database for the measurement timeframe.
Members may be identified as having diabetes during the measurement year or the year prior to the measurement year.	OMPRO identified enrollees with diabetes who had encounters during the measurement year only.	Too few enrollees had been continuously enrolled for six months during each measurement years; the sample size would have been too small to make statistically significant comparisons.
Codes used to identify HbA1c tests and LDL screenings include LOINC (Logical Observations Identifiers, Names, Codes).	OMPRO identified HbA1c tests and LDL screenings using CPT codes only.	LOINC codes were not available from the OMAP database.
Outpatient services provided on different dates are considered unique visits.	All encounters were identified using OMAP's internal control number (ICN) and the field RecipID.	OMAP identifies enrollee visits using the ICN.
Eligible population includes members 18–75 years as of the end of the measurement year.	OMPRO identified the age range of the eligible population as 18–64 years as of the end of the measurement year.	OMPRO excluded enrollees 65 years and older who may be eligible for both Medicaid and Medicare.

[1]HEDIS is a registered trademark of the National Committee for Quality Assurance.

Appendix E. Accuracy and Completeness and Time-to-Submission for Claims and Encounter Data

Table E-1. Expectations, CMS recommendations, and results for completeness of data elements.

Data element	Expectation	CMS recommended standard	OMAP results
Enrollee ID	Should be valid ID as found in the State eligibility file. Can use State's ID unless State also accepts SSN.	100% valid	100.0% valid
Enrollee name	Should be captured in such a way that makes separating pieces of the name easy. There may be some confidentiality issues that make this difficult to obtain. If collectable, expect data to be present and of good quality.	85% present	100.0% valid
Enrollee date of birth	Should not be missing and should be a valid date.	<2% missing or invalid	100.0% valid
MCO/PIHP ID	Critical data element.	100% valid	100.0% valid
Principal diagnosis	Well coded except by ancillary type providers.	>90% non-missing and valid codes (using ICD-9-CM lookup tables) for practitioner providers (not including transportation, lab, and other ancillary providers)	100.0% valid
Other diagnoses	This is not expected to be coded on all claims even with applicable provider types, but should be coded with a fairly high frequency.	90% valid when present	100.0% valid
Date of service	Dates should be evenly distributed across time.	If looking at a full year of data, 5-7% of the records should be distributed across each month	100.0% valid
Procedure code	This is a critical data element and should always be coded.	99% present (not zero, blank, 8- or 9- filled). 100% should be valid, State-approved codes.	86.2% complete 15,765 fields were blank 15,768 fields did not have any description

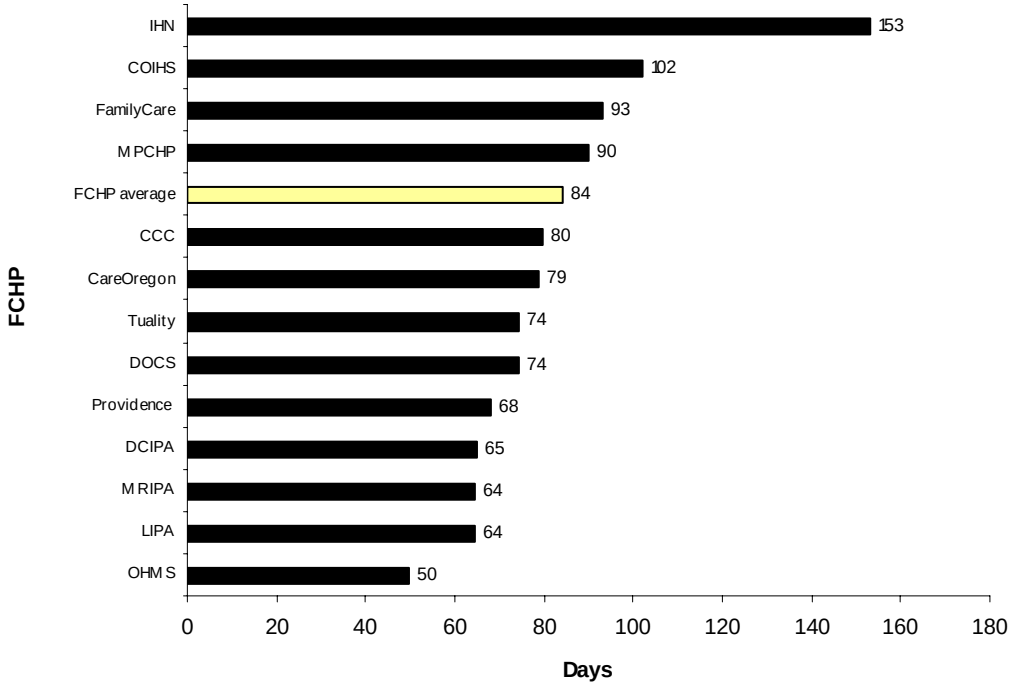

Figure E-1. Average time to submission for diabetes claims, each FCHP, and the average of all FCHPs.

Prepared by OMPRO under contract no. 105570
OMAP-EQRO-OR-05-04