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# Evaluation of the Medicaid Value Program: Health Supports for Consumers with Chronic Conditions

## *CareOregon Case Study*

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# CAREOREGON'S CARE SUPPORT INTERVENTION

CareOregon is a non-profit Medicaid HMO in Oregon with approximately 100,000 members (including about 6,000 dual eligibles). Founded in 1993 by Oregon Health Sciences University and a consortium of safety-net providers in the area, its mission is to serve low-income and vulnerable populations in Oregon.[1] For the Medicaid Value Program (MVP), CareOregon employed a patient-focused intervention in which CareSupport teams, led by nurses and behavioral health specialists, provided case management to the plan's highest risk members (regardless of medical conditions), including dual eligibles. Typically, these patients have chronic medical conditions that are complicated by mental health issues, such as depression, bipolar disorder, or schizophrenia, or social issues such as homelessness, addictions, or lack of adequate supports.

The intervention's case management services varied in intensity, depending on the needs of each member. For example, some members may have needed fairly minimal services, such as connections to community resources or transportation to office visits, whereas others may have required far more intensive services, such as substance abuse classes, help with housing assistance, patient education, and self-management coaching. The goals of the intervention were to respond to members' immediate needs, reduce emergency room visits (particularly inappropriate or avoidable visits) and hospitalizations, and ultimately, reduce "modifiable risks" to improve health status and lower utilization costs.

CareOregon's case management intervention was not based on any single existing model of case management, but instead it drew from many programs which CareOregon staff have become familiar with over the past several years. Plan staff reported that the use of "health care guides" (typically certified medical assistants) to coach patients and help them follow their plans of care was a key aspect of the intervention, given the large proportion of vulnerable and special-needs patients served by CareOregon.

## ORGANIZATIONAL CONTEXT

CareOregon is fully capitated by the Oregon Division of Medical Assistance Programs (within the state's Department of Human Services) for all services, except specialty mental health services and behavioral drugs. Any cost savings in treating plan members, therefore, accrue to the plan itself. The state of Oregon reduced Medicaid capitation rates recently (3.5 percent decrease in 2006, compared to the previous two years) and is expected to do so again in the next few years, providing added financial incentive for CareOregon to better manage its costs. Moreover, CareOregon experienced serious financial stress during the last recession and, as a result of that experience, is now paying careful attention to its highest utilizing

[1] Approximately 60 percent of CareOregon members live in the Portland metropolitan area; the remaining 40 percent are dispersed throughout 11 predominantly rural counties. According to one CareOregon senior executive, 60 to 70 percent of members' care is delivered through federally-qualified health centers.

members as "a key business imperative." By targeting those members with the greatest costs through this intervention, CareOregon staff expected to improve health outcomes while saving the plan money.

CareOregon's MVP intervention was housed within the plan's CareSupport Program. Given the plan's complex patient population, CareOregon had focused on case management for several years. However, case management has received even more attention in the past year, as recent evidence (collected as part of CareOregon's Business Case for Quality grant from CHCS) suggests that the plan's case management costs per member per month for those in active case management have decreased by 20 percent.[2] This evidence spurred CareOregon's chief executive officer to emphasize case management as a primary business strategy.

CareOregon's CareSupport Program serves its entire membership, from the large number of CareOregon members receiving care in safety net clinics to the relatively small number who receive care in community private practices. Some of the larger network providers include:

- Multnomah County Health Department, the local public health department whose clinics treat about 25 percent of CareOregon's membership
- Legacy Health System, a hospital-based clinic system
- Oregon Health and Science University, a large academic center that is both a research and delivery setting

While these organizations were not directly involved in administering intervention activities, they all treat CareOregon members through their delivery settings and were aware of the CareSupport intervention.

State Medicaid involvement in the intervention was quite limited over the course of MVP.[3] CareOregon contracts with the Oregon Division of Medical Assistance Programs to provide care to publicly insured persons in the state. CareOregon reports that the state is interested in learning the potential benefits of case management, but was not directly involved, in part due to recent staff turnover in the state Medicaid office. CareOregon staff noted that this level of participation was not a problem for its intervention.

[2] This analysis compared health care costs of those patients in active case management to those who were not, and therefore did not account for pre-intervention differences in these two groups other than their case management status. Because the intervention group in this study is simply those patients who received case management services, any cost savings may simply be attributable to regression to the mean. Nonetheless, staff described these results as "compelling enough."

[3] While Oregon Medicaid agreed to be involved in the intervention at its start, the medical director retired in March 2006, and the turnover has made it more difficult for CareOregon to involve Medicaid consistently.

## PROGRAM INTERVENTION

The original design of the intervention targeted CareOregon's highest cost members as identified through a risk stratification system known as the Adjusted Clinical Group (ACG) Case-Mix Software, a tool that utilizes claims and demographic data to predict future medical expenditures. The intervention selection criteria initially set were not specific to particular medical conditions or diagnoses but defined by overall high risk as measured by an ACG risk score of 0.5 or greater. Members meeting this criterion represent the costliest 3 to 5 percent of plan membership. Before the intervention began, CareOregon estimated that the expected number of members in the target population was 3,000 to 5,000.

CareOregon initially agreed to random assignment of patients in treatment and control groups, despite the fact that many staff members were concerned about denying case management services to patients who might need them. The intent was to address staff concerns by enrolling many more patients into the intervention group than a control group. However, staff believed that continuous process improvement of its intervention was much more important than using a "rigid analytic approach," and the randomized design was never implemented.

In addition to identifying clients based on ACG scores, CareOregon also enrolled patients into case management based upon referral by physicians, nurses, hospital discharge managers, utilization management staff, and social workers.[4] The number of members receiving complex case management services was about 350 in April 2007; about 20 percent were enrolled in case management due to high ACG scores. In lieu of a control group, CareOregon drew a comparison group of patients from health plan members not enrolled in case management. From the beginning of MVP, CareOregon staff have acknowledged that its comparison group "does not provide a robust way to evaluate" its intervention.

All CareOregon network clinics have a CareSupport team assigned to help as needed with member issues and offer case management activities. The goal of these teams is to support the care provided by clinicians via a close working relationship between the clinics and the health plan. Each CareSupport team includes a registered nurse and a health care guide. All teams also have access to several behavioral health consultants, who are assigned to patients by aligning particular patient issues with consultants' area of expertise (for example, homelessness or substance abuse problems). The first CareSupport intervention team was formed in September 2005, and four additional teams existed by the end of the MVP. In addition, there was an intake team, composed of a registered nurse and five health care guides, that screened and enrolled patients into the CareSupport intervention. These teams were physically located in the health plan's main office rather than in clinics. However, by the end of the MVP, CareOregon began a pilot project that involved locating case management teams directly in five network clinics to better identify patients with needs, and plans on including this as a part of its case management activities in the future.

The health care guides were typically the first members of the intake team to contact those members identified as high risk. Over the telephone, the guides assessed each patient's needs

[4] CareOregon staff have noted that not all clients referred by outside sources had chronic medical conditions.

and barriers to care using a standardized assessment tool, which typically took about 30–45 minutes.[5] This assessment tool included questions on medical diagnoses, mental health diagnoses, and whether the patient had a functional medical home and social support structures. (For the flow of intervention activities, see Figure 1.) CareOregon staff noted that establishing a stable medical home for clients is one of its most important priorities. After the intake team identified a member for enrollment in case management, the member would then receive services via one of the CareSupport intervention teams.

Each CareSupport intervention team held meetings daily to determine how to proceed with each patient after the initial assessment and to make decisions on a patient care plan. (Team members used a formal "decision tree" to determine whether there were modifiable risk factors present, who should take the lead on the case, and what should be done first; for example, nurses sometimes had to call the primary care physician or medical director before finalizing the member's care plan if some aspect of the member's medical history or treatment was unclear.) Depending on the member's needs, a care plan may have recommended a number of activities, such as helping connect the member to needed mental health services, helping the member learn how to get the most out of physician office visits, and assessing the member's personal goals and providing coaching on disease management issues. Alternatively, the care plan may have simply linked the patient to community resources related to housing or food assistance. All case management was done by telephone, except for dual eligible patients for whom home health registered nurses may have provided home visits to complete the initial assessment, since such visits were a reimbursable benefit.

In addition to the initial assessment, health care guides from the intervention teams tended to handle many of the administrative aspects of the intervention, such as requesting records or other information from primary care physicians or determining whether the patient had been keeping scheduled appointments. This division of labor freed up the nurse's time to focus on clinical issues. In addition to dealing with clinical issues of all members, the registered nurse case managers focused primarily on the most unstable members. Finally, the behavioral health specialist on each team helped members with non-medical issues, like housing or chemical dependency (such as arranging for substance abuse treatment), which are typically immediate needs that must be addressed before the rest of the CareSupport team can address medical issues.

Staff reported that the average length of active case management was about 30 days, though clients could cycle in and out of case management for a period of time. However, the length and intensity of case management services varied depending on a patient's needs. The team followed up periodically on members that were no longer on "active status" (through telephone calls), but these procedures were not standardized. CareOregon staff also noted that connecting patients to a functional medical home may only have taken one or two brief "touches," though data on this was not reported for the intervention (see next section). The CareSupport teams prioritized patients in their caseloads based on the immediacy of need (as determined through the clinical

[5] CareSupport was an extension of CareOregon's Business Care for Quality intervention (also funded by the CHCS). This intervention, however, relied more on a team approach for these case management activities and used health care guides for non-clinical issues to allow nurses to focus on clinical issues.

assessment questionnaires and other screening procedures). Teams always prioritized provider referrals because of CareOregon's commitment to their health plan-provider relationship.

The CareSupport intervention occurred at the same time as other case management activities in some of the clinics with which CareOregon contracts. For example, the Multnomah County Health Department clinics added dedicated registered nurse case managers to their clinical teams in the past year. CareOregon staff initially indicated that activities of its CareSupport teams, which are plan-based and telephonic, were complementary to and had little overlap with in-person case management activities provided in the clinic setting. (CareSupport teams share information with clinics on the patients they are serving.) However, while plan-based case management can offer additional support and resources for both the patient and provider, CareOregon staff recognized over time the limits of offering such case management "at a distance." To bring the case management "to scale," CareOregon staff now believe they will have to directly support case management in the clinics and other delivery settings, where providers can best assess and identify patients' need of case management services firsthand.

## PROCESS AND OUTCOME MEASURES

CareOregon reported several process and outcome measures related to the CareSupport intervention. Outcome measures were self-reported health status (as measured by the Health Utilities Index survey), and claims-based measures of emergency room visit rates, unplanned hospital admission rates, and average per member per month costs. (See the output and outcome boxes in Figure 1.) Process measures included the rate of completion of clinical assessment questionnaires (or home health assessments for dual eligibles) and CareSupport team rates of patient contact.

CareOregon process measure results indicate that the intensity of the intervention, though not consistent from month to month, was moderate to high (Table 1). The number of case managers contacting patients fluctuated from 7 to 21; the average number of case managers per month was about 15. The large drop in the number of case managers from August to September 2006 was due to CareOregon moving staff from CareSupport teams to the intake team (which does not provide ongoing case management). The CareSupport team structure originally included six intervention teams. As intervention activities were refined over time, CareOregon staff recognized the need for a separate intake team—whose focus was solely on patient identification and enrollment into case management—and therefore changed the team structure to five intervention teams and one intake team in August 2006.

On average, case managers had contacts with 26 members per week (or a little more than 5 per day); contacts included talking to a member about his/her health, talking with the member's primary care provider, or reviewing a member's medical records. Assuming an average caseload of 300 patients in any given month among 15 case managers, this contact rate equates to an average of 5 contacts per member per month (more than one per week). The average number of clinical assessment questionnaires completed per month was about 70 or about 14 per case management team. While these figures suggest an intensive intervention, staff also reported that early enrollees had only about one month of enrollment on average, though later ones may have

had longer exposure to the intervention. Additional data on enrollment length would provide a better gauge of intervention intensity.

To compare intervention group outcome measures to existing care, CareOregon compared plan members who did not enroll in CareSupport to the intervention group, measuring outcomes at baseline and over the first intervention year, and separating each group by ACG score at the threshold of 0.5 (Table 2).[6] However, it is likely that these two groups of patients were different

TABLE 1

MONTHLY CASE MANAGEMENT PROCESS MEASURES FOR CALENDAR YEAR 2006

| | Number of Case Managers Working with Complex Cases | Average Number of Members with Contacts per Week (per Case Manager) | Clinical Assessment Questionnaires Completed |
|---|---|---|---|
| January | 14 | 16.5 | 34 |
| February | 14 | 16.7 | 20 |
| March | 17 | 16.4 | 32 |
| April | 19 | — | 107 |
| May | 19 | — | 136 |
| June | 20 | 23.9 | 87 |
| July | 21 | 24.6 | 83 |
| August | 19 | 35.2 | 90 |
| September | 7 | 37.6 | 84 |
| October | 11 | 38.1 | 87 |
| November | 10 | 26.9 | 60 |
| December | 10 | 24.2 | 54 |
| **Average** | **15.1** | **26.0** | **72.8** |

Source: CareOregon MVP reporting template.

Note: Data on the average number of members contacted per week were unavailable for April and May 2006 at the time of this report. Case managers include registered nurses, behavioral health specialists, and health care guides.

[6] CareOregon staff have also discussed teaming with statistical research staff at another MVP grantee (Johns Hopkins Healthcare) to match its intervention group to a comparison group using observable patient characteristics, but this analysis was not available for this report. The baseline period was October 2004 through September 2005 and the intervention period was the preceding 12 months.

at baseline, not only in observable characteristics (such as health care use) but also unobservable ones (such as motivation to participate in a case management program). In fact, for most measures, the two groups were very different at baseline, even when controlling for ACG score. For example, among patients with ACG scores of 0.5 or more, average monthly health care costs were more than twice as large during the baseline period for the intervention group than the comparison group ($2,486 versus $1,150). There were also large baseline differences in costs among patients with ACG scores less than 0.5 ($810 for the intervention group and $117 for the comparison group, on average). In addition, as noted by CareOregon staff, the comparison group included patients with an ACG scores of 0 and many children, who are not a primary focus of CareSupport. These factors make inferences about the program's impact difficult to ascertain.

TABLE 2

CLAIMS-BASED OUTCOME MEASURES OF INTERVENTION AND COMPARISON GROUP PATIENTS, BY ACG SCORE

| | Intervention | | | Comparison | | |
|---|---|---|---|---|---|---|
| | Baseline | Year One | Percent Difference | Baseline | Year One | Percent Difference |
| **ACG Score ≥ 0.5** | | | | | | |
| Health care costs per member per month | $2,486 | $2,518 | 1.3% | $1,150 | $1,123 | -2.4% |
| Unplanned hospital admissions per 1,000 members | 1,412 | 1,284 | -9.1% | 696 | 600 | -13.8% |
| ER visits per 1,000 members | 796 | 715 | -10.2% | 694 | 648 | -6.6% |
| **Total Member Months** | **2,131** | **2,073** | | **7,077** | **6,964** | |
| **ACG Score < 0.5** | | | | | | |
| Health care costs per member per month | $810 | $469 | -42.1% | $117 | $126 | 7.7% |
| Unplanned hospital admissions per 1,000 members | 432 | 273 | -36.8% | 44 | 46 | 4.6% |
| ER visits per 1,000 members | 682 | 632 | -7.3% | 359 | 351 | -2.2% |
| **Total Member Months** | **4,509** | **4,750** | | **814,149** | **811,740** | |

Source: CareOregon MVP reporting template.

Note: The intervention group is made up of members with at least one month of CareSupport case management experience, while the comparison group is those CareOregon members with no CareSupport case management experience.

Comparison group dissimilarities notwithstanding, there is little evidence to suggest that enrollment in CareSupport influenced patient outcomes. Among patients with ACG scores of 0.5 or more, the measure which groups were most similar at baseline was the rate of emergency

room visits (per 1,000 members). Emergency room visits per 1,000 members fell about 10 percent in the intervention group but only 6.6 percent for the comparison group, compared with baseline.[7] However, given the problems with this comparison group (stated above), the difference in these trends is not likely attributable to the intervention; and regression to the mean cannot be ruled out as a reason for lower hospital admissions or emergency room visits.

At first glance, results appear more favorable for the CareSupport program among patients with ACG scores lower than 0.5. The intervention group's average monthly costs, hospital admission rate, and emergency room visit rate were 42, 37, and 7 percent lower in the first year of the program, respectively, compared with baseline. At the same time, costs and hospital admissions rose for the comparison group and emergency room visits fell by only 2 percent. However, these results are tempered considerably by the fact that these two groups were very different at baseline and are likely comprised of different types of patients—older, clinically complex patients in the intervention group and younger, much healthier patients in the comparison group. Therefore, the comparison group is not valid; and we cannot rule out regression to the mean as an explanation for lower costs, hospital admissions, or emergency room visits for those in the intervention group with lower ACG scores.

Evaluating the CareSupport program on these outcome measures is challenging for a number of reasons. As noted, the comparison group is not comparable to the intervention group; this lack of comparability is reflected in the differences between the two groups at baseline. Among observable characteristics at baseline, comparison group patients' monthly health care costs and inpatient admissions were more than 50 percent lower compared with the intervention group. Also, the average baseline health utilities index score for intervention group patients was nearly one-third smaller than the average score for comparison group patients (0.19 versus 0.28, not shown). Moreover, the two groups likely differed in unobservable characteristics, which might have a considerable influence on their behavior and subsequent outcomes. Implementation challenges, particularly in a steep learning curve (see discussion below), also made it unlikely (and unrealistic with even a randomized control group) for CareOregon to affect patient outcomes within one year of enrollment in case management. Lastly, with an average case management length of 30 days per patient and patients cycling in and out of case management, the intervention's intensity might not have been enough to influence patient outcomes (particularly in the short MVP timeframe). While it is possible that establishing a stable medical home for clients might result in favorable outcomes, CareOregon did not report data on establishing medical homes, so we do not know the extent to which this happened over the intervention period.

## INTERVENTION CHALLENGES

CareOregon faced many challenges in implementing and studying the CareSupport intervention, resulting in a steep learning curve for CareOregon staff in general. First, staff reported that patient engagement was a challenge throughout the intervention, but that it

[7] CareOregon was unable to obtain individual-level data for each patient in the sample, so statistical tests of significance were not conducted to determine for these intervention-comparison differences.

improved somewhat when the intake team began enrolling patients into case management. Second, limited data, and questions about the reliability of those data, made it difficult to assess CareOregon's progress. Several factors compromised CareOregon's ability to report measures on its intervention to CHCS until April 2007. In particular, CareOregon went through a data system conversion process in 2006, which limited its ability to obtain data for many months. Staff found it especially challenging to convert its new case management software to manage protocols for patients with multiple chronic medical conditions, a system that it developed.

One challenge related to the intervention's team structure involved the use of health care guides. According to CareOregon staff, nurses did not use health care guides as much as they could have early in the intervention period. This occurred in part because of the additional training that nurses might have had to provide, but also because CareOregon was attempting to improve the definitions of roles of the different staff members (in managing the care of clients with multiple comorbid conditions) during the intervention, resulting in confusion (at first) as to the role of each staff member. Over the course of the intervention, CareOregon staff encouraged greater use of health care guides for a wider variety of tasks and delegation by nurses improved significantly by the end of the MVP.

A related challenge was the lack of a pre-existing, standardized set of intervention activities, and the time necessary to develop those activities and to train staff. When the first CareSupport team was formed in fall 2005, the intervention depended too much on the clinical experience of individual case managers and was not adequately standardized. Team members were unsure how to proceed with intervention activities and became frustrated. As a result, the team and CareOregon staff worked in fall 2005 and winter 2006 to develop standardized protocols and tools for the intervention. Continually refining these protocols and tools took time. Forming the CareSupport teams and training the staff also took time. In the words of one CareOregon staff member, "You can't just buy four health care guides off the shelf… [it's] hard to find people with the right fit."

## CONCLUSIONS

During the MVP grant period, CareOregon made progress in standardizing what was a largely unformed set of activities at the start of its intervention. While this lack of structure initially meant a steep learning curve, staff reported many improvements and refinements since the fall of 2005. To the extent that activities are standardized, they may have a greater likelihood of being institutionalized (and being replicated by others). In addition, CareOregon has created and trained six CareSupport teams—a substantial work force that has the potential to reach many members in need (though the length of enrollment in the program and use of care guides to assist in care must be improved to influence patient outcomes). Moreover, the organization—from senior leadership down—appears committed to case management as a means of improving health status and controlling costs and it seems somewhat likely that the intervention will be sustained after the end of the MVP grant.

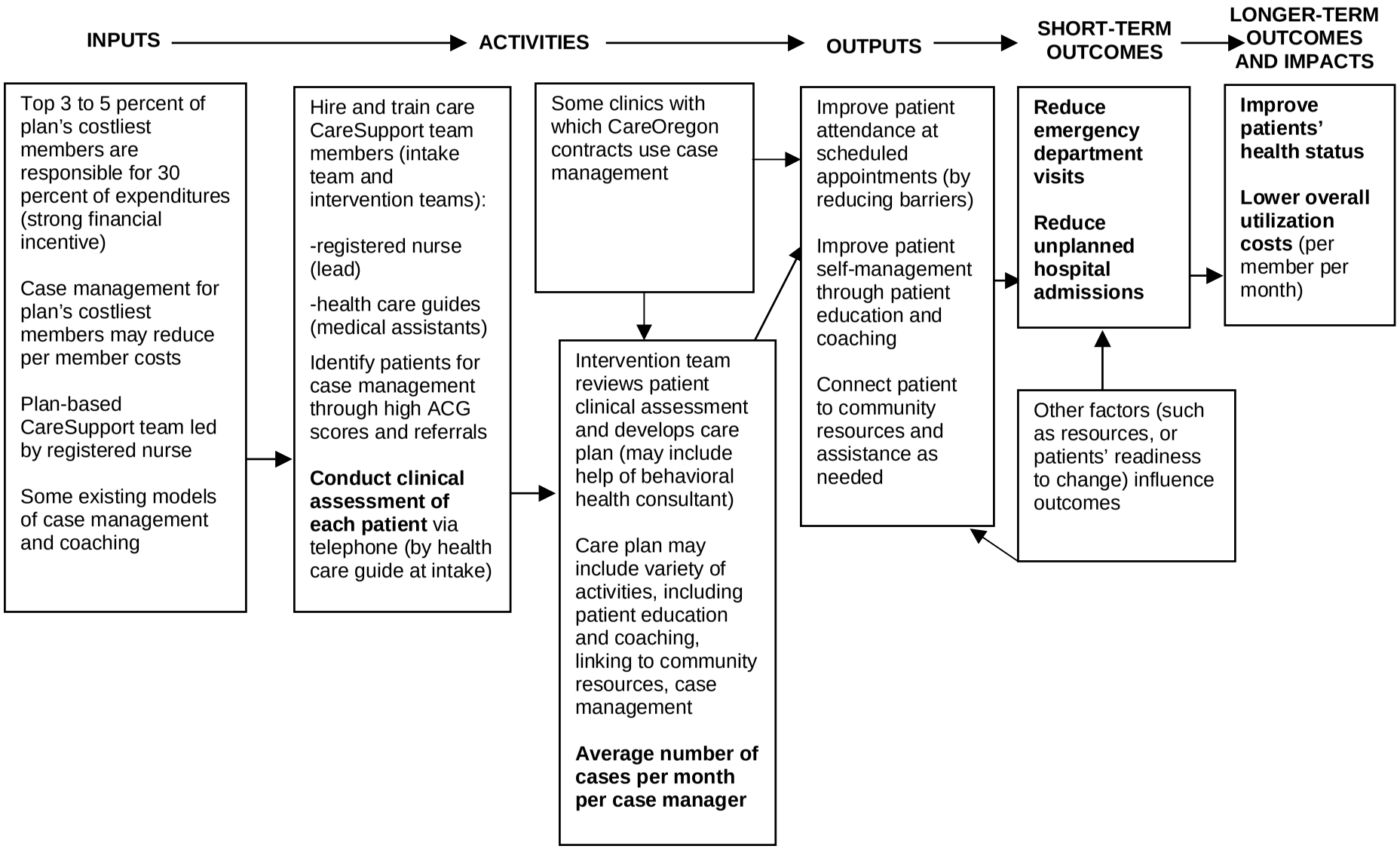
Despite these successes, CareOregon faced many challenges with its intervention, including initial reluctance of nurses to fully use and delegate tasks to health care guides, changing the structure of its case management to better manage patients with multiple chronic conditions, and

adopting its case management software to manage protocols for these patients. The plan also diverged substantially from its initial design, making the study of process and outcome measures against a comparison group challenging. Moreover, issues with data and information technology staffing resources made it difficult to track measures and understand whether those measures were accurate. Finally, the treatment period for some participating patients was as small as 30 days, though CareOregon staff noted that the goal late in the intervention period was to increase the length of engagement with clients. While CareOregon suggested (early in its intervention period) that the treatment period would be fairly short, intervening for only a relatively short period likely made it difficult to affect the outcomes of patients with chronic conditions, the target population for this intervention.

The CareSupport intervention, at least in its basic form, appears replicable in other health plan settings, provided that patient and/or provider buy-in and resources exist. CareOregon, however, has modified the team structure and intervention activities substantially over time using a rapid-cycle improvement approach, including more-defined processes and clearly-defined case management roles. Therefore, replication of the intervention would likely require documentation of intervention activities in their finalized form. Nonetheless, CareOregon staff report that other health plans find the CareSupport intervention appealing and have contacted them about the details of the intervention.

**FIGURE 1**

**LOGIC MODEL FOR CAREOREGON'S CARE SUPPORT TEAMS**




Note: **Bold** indicates reported process and outcome measures.