

Disease Management Effectiveness Project

A FINAL REPORT FROM
THE PACIFIC BUSINESS GROUP ON HEALTH

This document is adapted from a confidential analysis conducted for the use of members of the Pacific Business Group on Health.

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I. EXECUTIVE SUMMARY

In its role representing both large and small purchasers of health care in California, the Pacific Business Group on Health (PBGH) wishes to help its members understand the types of health management programs provided to the employees/enrollees of its members. One important type of health management program is the care provided for common chronic conditions through integrated strategies, commonly known as disease management.

Therefore, PBGH retained NAS Consulting to perform an analysis of the effectiveness of commonly practiced disease management programs among the seven largest health plan contractors to PBGH's membership. In consultation with participating health plans, instruments were designed to collect both outcomes and process information, and an objective scoring system was developed to rate three disease management programs administered by each plan.

There is currently a lack of credible and comparable population-based outcomes data on which to evaluate plans' disease management programs. The best proxy available for evaluation is process measures, but these are less valuable and can imply micromanagement of plans. One of the conclusions of this study is that a new set of outcome measures (beyond existing HEDIS indicators) is needed that would allow ongoing assessment of the effectiveness of disease management programs.

All of the assessed health plans have made real investments in disease management, with staff assigned to develop and manage the programs, strategies to identify and track members with the conditions of interest, interventions intended to educate and empower patients, and in some cases methods to provide feedback to physicians about the status of their patients. There is wide variation across health plans in purpose or business case for programs, size of investments,

level of program sophistication, depth of interventions, and strategies to provide services with hired staff or contracted companies.

All health plans identify members with chronic conditions using administrative data files, and mail educational materials to them. There was wide variability in the plans' ability to identify their eligible populations due to data quality issues. Mailed materials usually provide general information about the disease of interest and strategies for effective self-management. Sometimes these materials have tools to assist the patient (such as peak flow monitors or graphs to chart weight).

In most, but not all, programs there is a small number of patients considered to be at high risk who are offered more intensive interventions—usually telephonic contact with a care manager (often a nurse) who counsels and assesses for problems. There was very little internal evaluation of the effects of various forms of patient education and support. (Reviewed independently of the plans' efforts, medical literature shows some effect for patient support programs, but its generalizability is uncertain.)

Sometimes the care management nurses are empowered to make recommendations, and sometimes they are instructed to contact the patient's primary care physician if problems are detected—especially faxes to physicians for heart failure patients that are having problems. Information obtained from a separate California Cooperative Healthcare Reporting Initiative (CCHRI) project shows little evidence that these contacts with primary care physicians influence the doctors' decisions. In addition, plans have not evaluated the impact of these fax interventions and have no certainty about their effectiveness.

Most health plans are also attempting to influence physician practice styles by expanding the use of feedback reports (at the

level of the physician panel or medical group) to include comparative aggregate information versus a standard or versus other physicians' results, and patient-specific reports detailing clinical information about individual patients who appear to be failing or missing aspects of appropriate care. However, the majority of health plans had not measured the effects of provider feedback, and their anecdotal reports indicated poor uptake by the providers. Separate interviews with large provider groups corroborated this finding that these reports are ignored and do not contribute to patient care decision-making. This represents a large missed opportunity to improve care.

II. BACKGROUND AND HISTORY

A recent report from the Robert Wood Johnson Foundation, [A Portrait of the Chronically Ill in America, 2001](#), states: "Almost one-half of all Americans report having a chronic illness – they account for 75% of our national spending on health care."¹ Additionally:

- Among an average insured population, 5 percent of the members (most with chronic conditions) account for approximately 60 percent of the health care costs.
- For many conditions, the 80-20 rule applies where 20% of those with a specific illness account for 80% of total health care costs for that condition.
- Health care costs for people with a chronic illness or condition are, in general, approximately 3.5 times higher than those without a chronic condition.²

Disease management represents the planned and systematic approach to caring for a population of patients with anticipatable needs and problems, typically defined by a chronic illness. The approach may take on a variety of forms, but usually focuses on two main components: methods to help patients become better self-managers of their condition and strategies to enable clinicians to improve their care through population-based medicine principles and access to timely information. Sometimes disease management programs also

utilize non-physician clinicians to deliver some aspects of care—such as routine screening, or medication titration according to a physician-supervised protocol. Disease management approaches may also integrate other aspects of the health care delivery system such as the pharmacy, laboratory, and communication channels through the Internet.

While physicians have always provided care for patients with chronic illness, traditionally they see patients in response to a specific need, such as an asthma exacerbation. As a result of time constraints, culture and habit, and inadequate information systems, most physicians today continue to practice in an environment that responds to illness one patient at a time, as opposed to planning for the chronic needs of a defined patient population and ensuring effective longitudinal care for chronically ill individuals.

Several studies have demonstrated that disease management can improve clinical outcomes, or reduce hospital and emergency department utilization, with varying levels of success across different conditions. The majority of research on efficacy of disease management programs has taken place in diabetes and congestive heart failure (CHF). A recent systematic review of the diabetes disease management literature by Norris, et.al., found strong evidence for improved clinical parameters (such as hemoglobin A1c results), patient self-knowledge and self-care, satisfaction, and utilization outcomes. Three controlled trials of disease management in CHF were also positive, showing improved medication compliance in elderly patients post-hospital discharge, dramatic increases in functional status and exercise capacity, and reductions in overall hospital admission rates of 35 to 74%. Similarly, coronary artery disease (CAD) patients randomized to a disease management program after acute myocardial infarction showed lower LDL cholesterol levels and better functional capacity, as compared to control patients who received more traditional cardiac rehabilitation.

It is important to recognize that all the studies cited above were conducted in well-controlled environments—usually at an academic medical center or through the research arm of a large single group model managed care organization (Group Health Cooperative or Kaiser Permanente). However, the majority of disease management services are provided in less organized and less integrated settings. The more typical scenario of disease management in California is a program developed or purchased by a health plan that is usually remote from the actual care experience. Often the network physicians are unaware, and at times actively discouraging, of patients' participation in the programs. There is no published literature on the effectiveness of these types of programs. As a result we lack credible insights on the actual effects and cost-effectiveness of most of the current programs.

Health plans are uniquely positioned to practice some aspects of disease management because they can aggregate data to identify and stratify a population, communicate with both members and contracted providers, connect disparate components of the health care delivery system such as pharmacy and hospital, track outcomes and utilization, and apply business management techniques to organize and coordinate care from a macroscopic perspective. Health plans also have access to the capital required to make initial disease management program investments. This is usually not possible for individual physicians or for medical groups. All major health plans in California today have instituted some disease management programs. A few large medical groups and independent practice associations (IPAs) have developed or purchased disease management programs, but there are barriers that are likely to prevent most medical groups from fully assuming this responsibility.

The Disease Management Effectiveness Project (DMEP) was initiated by the Pacific Business Group on Health to assess the current state of disease management efforts among California's largest health plan partners. While

PBGH already collects information about disease management programs through the Request for Information (RFI) process it conducts for members that negotiate jointly through the Negotiating Alliance, that information has not been especially helpful in comparing the programs from the various plans. PBGH retained the services of NAS Consulting to develop the DMEP instruments, collect the relevant data, perform analyses, and draft the report. The project was overseen by PBGH's David Hopkins, PhD, Arnie Milstein, MD, and Mary Chasin, and led by Neil A. Solomon, MD, of NAS Consulting with Margie Powers contributing significantly to all aspects of the report.

III. METHODS

It is commonly understood it is not possible to fully manage an intervention for a population or to effectively reach the individuals targeted if there is no attempt to track or measure results for that intervention over time. Ideally, PBGH and its members would rely only on population-based outcomes to measure health plan program effectiveness for the conditions of interest. However, there are currently few population-based measures that are evidence-based, widely used, or comparable across plans. As the only valid and comparable measures, recent HEDIS data were requested for the conditions of interest. Unfortunately, this information provided limited ability to compare outcomes: there are no measures for one of the DMEP conditions (congestive heart failure) and in the best case (diabetes) HEDIS provides a handful of intermediate outcomes and clinical process measures regarding test ordering. Because of the HEDIS measures' limited scope, all other outcomes data being collected and analyzed by each health plan for their disease management populations were also requested in order to examine potential common measures for possible future evaluative work.

Because the available population-based outcome measures are limited, NAS Consulting focused much of their analysis on the processes that comprise disease management. After

reviewing existing evidence, data collection instruments, and emerging disease management accreditation programs, NAS Consulting and PBGH, in consultation with the participating health plan representatives, determined that no available assessment tools could provide a sufficiently robust picture of the current effectiveness of disease management programs.

Consequently, an instrument was created which asks questions in eleven key areas:

- Use of a registry;
- Risk stratification;
- Enrollment methods;
- Scope of interventions;
- Clinical practice guidelines;
- Care management services;
- Meeting special needs;
- Coordination of clinical information;
- Provider-specific feedback;
- Outcomes evaluation; and
- Program duration.¹

Lacking compelling evidence of the relative importance of these eleven aspects of disease management, all areas were weighted equally in the scoring process. Unfortunately, scoring in this way tends to reward performing many interventions as opposed to doing fewer things especially well. However, because there is no consensus or clear benchmark for what constitutes excellence for many of the interventions, it is not yet possible to qualify the interventions objectively or differentially weight them according to any established guideline or standard.

The evaluation tool included a small set of questions to address each of the key areas and

¹ The questions were essentially the same for all conditions. Only minor differences existed regarding the types of data used to identify the population and the kinds of interventions used to educate and empower patients. The diabetes instrument also asked about accommodating disabilities (vision, hearing, and mobility) because these situations are common among this population.

required documentation for most of the questions. Wherever possible, questions were drawn from other instruments that health plans are already expected to complete, mainly from the V8 Purchasers Group (RFI) form familiar to almost all of the participating plans. The questions were similar for each condition surveyed. NAS Consulting created a scoring system for each question that awarded ascending point values based on increasing depth, breadth, duration and/or scope for each program element. NAS Consulting also sought the advice of the medical directors of each of the participating health plans as well as national experts in the field of disease management. Components of the evaluation tool and scoring systems were reviewed and the instruments were refined based on their input. The DMEP Diabetes Program Assessment Instrument is attached as Appendix A. The scoring template appears as Appendix B. Appendix C shows which survey questions address each of the 11 key areas.

Each health plan was asked to submit information about their diabetes program and two other programs from among four conditions: asthma, coronary artery disease (CAD), congestive heart failure (CHF), and depression. In addition to receiving the data collection tools (program assessment instruments and condition-specific outcomes instruments), plans were provided with explicit instructions in how to report and document, and were provided with a copy of the scoring template.

- In order to be considered part of a health plan's program, an intervention or program element needed to be available to at least 75% of the eligible population (i.e. could not be in partial roll-out or pilot phase) and had to be functional as of December 31, 2001.
- In cases where a health plan offered different services to its commercial and Medicare population, the plan was instructed to report on the program for the commercial program.

- When services differed for HMO and PPO populations the health plan was instructed to report on its programs for HMO members.

The data collection phase of the evaluation project ran from January 14 to February 15, 2002, and was followed by half-day site visits to each participating plan. Prior to the visit, each plan received a list of questions generated from a review of their original submission. The site visits allowed for clarification of ambiguous submissions, deeper explanation of program elements, validation of patient interventions through records review, and assessment of care manager credentials. Two health plans declined to participate in the validation step. As a result, their interventions could not be validated and this may have led to underscoring of these plans.

NAS Consulting analyzed all submitted information according to the predetermined scoring system, and normalized results to a 100-point scale.

Health plans' scores in diabetes were compared with their relative ranks in 1999-2000 HEDIS scores and a strong correlation (Spearman's rank order correlation coefficient of .714; $p = .10$) was found. The program results also correlate well with the subjective judgments of the evaluation team. There was no such correlation between HEDIS and DMEP scores for asthma. Correlation between the two evaluations could not be evaluated for CAD because only two plans were evaluated using the DMEP instrument, nor for CHF because there are no HEDIS measures.

NAS Consulting summarized findings from the Disease Management Effectiveness Project and reviewed plan-specific information and results with medical directors from each participating health plan. Blinded scoring results were also shared with health plans under the non-disclosure guidelines developed at the inception of the Project. A thorough, confidential assessment of specific programs offered by the participating plans was prepared

and distributed for the internal use only of PBGH members. This public report, containing general findings and recommendations, not attributed to any particular plan but rather addressing the Project overall, has been made available electronically via the Pacific Business Group on Health's website at www.pbgh.org.

IV. FINDINGS

1. All health plans are actively investing in Disease Management. All seven health plans submitted programs in diabetes, six plans submitted in asthma, five in CHF, and two in CAD. No plan presented a program in depression, although several plans reported that they have a depression program or one was under development, and some plans have integrated depression screening into their other disease management programs. Many of the plans cited one or more other disease management programs that they have developed or implemented but were not presented for this evaluation.

All health plans have staff dedicated to disease management programs or to specific disease management functions. Even health plans that contract out for much of their services have internal staff that manage the external vendors, monitor outcomes of their populations, and usually perform some of the functions of disease management (such as mailings to members). Most plans were unwilling to share their budgets for the disease management programs, so it is difficult to quantify the level of investment beyond the apparent staff commitments.

2. There is a wide mix in models for delivering disease management services. Of the twenty programs evaluated, 11 programs were essentially entirely internal in development and execution, 6 were largely contracted out to disease management specialty companies and 3 programs were evenly mixed between the two sources.

Both internal and external programs had strengths; one should not immediately reach conclusions that either approach is always

superior. The greatest advantage of internal programs was the potential to integrate with other aspects of the delivery system—such as with physician groups, other health promotion efforts, and with other disease management programs.² The use of external vendors allows a health plan to access expertise including computerized patient tracking systems, care managers who are highly trained to provide telephone consultation to patients with the condition of interest, and outcomes measurement.

3. Many programs are in a state of rapid change. Two health plans intend to institute new vendor-based programs during 2002 while several other plans are offering new programs or expanding the scope of their current disease management offerings. Due to the rapid evolution of many programs, the plan-specific findings in this report may quickly become out-of-date. Nonetheless, they accurately reflect the status of disease management at the end of 2001.

4. Most of the programs evaluated adhere to a formula for delivering disease management services. The typical model for a health plan's disease management program is:

- Use administrative data to identify the cohort of patients affected by the disease;
- Stratify the cohort based on either a marker of utilization (e.g. hospital admission) or a clinical profile (e.g. diabetic members with different HbA1c levels);
- Set thresholds to consider a small group of patients to be high risk and classify most patients as low risk;
- Perform a series of mailings to all those who are considered low risk;

² Conditions such as CAD and CHF are highly correlated. As a result, integrating self-management recommendations, as well as feedback to providers can be highly beneficial. Few health plans that deliver disease management services through external vendors had addressed this issue.

- In addition to mailings, provide telephone-based interval education and follow-up to patients who are deemed high risk;
- Message the physician (or ask the patient to contact his/her physician) if the patient appears to be getting sick or generally failing; and,
- Send feedback reports to physicians or physician groups about how they are doing on commonly accepted care measures—either through comparison to peers, identifying specific patients falling outside of accepted clinical parameters, or both.

Within this model there are both significant methodological modifications, and varying levels of success in achieving the desired result. For example, the reported prevalence of diabetes in the plans, based on each plan's internal methods to identify patients, ranged three-fold from 2.2% to over 6.5%.³

5. There has been little attention paid to evaluating the effects of program interventions.

As a result, it is not possible to determine whether they are having the intended effects. In order to be valuable, in addition to finding the patients, disease management programs must intervene in ways that make a difference. Currently, there are little (in some conditions no) data indicating that mailings alone—the most common intervention in almost all programs—affect behavior change. Although all plans either used well-regarded education materials (such as Krames publications or American Diabetes Association materials) or developed their own mailings based on similar information, none of the plans had performed an internal evaluation of whether their mailings led to meaningful changes in behavior or improved clinical outcomes. Most plans cited anecdotal evidence that their mailed materials were well received by patients. Importantly, the medical literature does not show impressive results

³ We do not believe that underlying differences in demographics can explain differences of this magnitude.

among the studies of remote, intermittent education.^{3,4,5}

Similarly, there appeared to be very little assessment by health plans of the effects of physician feedback programs. Substantial resources are expended to comb databases for evidence of inappropriate or inadequate care, and to provide this information to physicians in actionable formats. Plans provided only anecdotal information regarding the impact of this reporting. Evidence from the medical literature indicates that for most forms of screening reminders, feedback reports have modest effects.⁶ For patient-specific feedback, especially for acute exacerbations of CHF, there is no evidence that faxes and phone calls to the physician's office by a care manager led to rapid changes in care. In some instances there was evidence that the information was ignored. Interviews with medical groups' leaders and of practicing physicians (not performed for DMEP) indicate that physicians ignore clinical information from health plans and, by extension, from their disease management vendors.

This disconnection between health plans and physicians represents a large missed opportunity in the current disease management paradigm in California. Reasons cited by physicians for lack of attention to the feedback include:

- Erroneous and out-of-date clinical information;
- Different thresholds and parameters used by each plan;
- Small numbers of patients coming from each health plan;
- No coordination of reporting across the health plans;
- Lack of trust in the source; and,
- Lack of time to follow up on reported information.

There appeared to be less resistance to feedback reports among staff-model physicians.

6. There are generally no comparable disease management outcome measures across health plans, and HEDIS is currently inadequate. In order to move beyond the current process-oriented measures, a new set of relevant, valid and comparable outcome measures would need to be developed.

7. It is not possible to estimate the extent to which most plans are reaching the appropriate members with their disease management programs. Efforts to measure the "reach" of the various plan-sponsored disease management programs were largely unsuccessful. First, one must measure the success with which a plan can identify its affected populations. Considerable variation was reported in the estimates by the plans of their disease prevalence. For example, the implicit prevalence rate for diabetes in the various plans, as determined by the size of their identified diabetes populations relative to their total membership, ranged three-fold from 2.2% to over 6.5%. (Note: According to the Centers for Disease Control, the expected prevalence of diabetes in a general population is approximately 6% but varies considerably by age. The prevalence of diabetes among people under 20 years of age is 0.19%, between 20 and 65 years of age is 5.6%, while 13% of adults over the age of 65 have diabetes. The CDC also reports undiagnosed cases of diabetes are an additional 35% of the adult diagnosed population.) The project could not determine how much of these differences were attributable to the plans' inability to identify their potential target populations as opposed to large/small company product mix or underlying selection due to benefit design.

Second, one must measure the extent to which the affected members are successfully enrolled in the disease management programs. There was dramatic variation among the plans in how they determine which members are eligible for intensive interventions and care management. Most plans target a "high-risk" subset of their populations for more active care management, but they were often unable to quantify the

number of patients that were enrolled in these care management programs.

8. Programs with greater integration (between health plan and clinicians) appear to be more successful at recruiting patients into programs, reinforcing messages to patients, and influencing physician behaviors. Staff-model plans have a substantial advantage in this regard because of the organizational relationship between the health plan and the medical group that delivers the care. Some of the other health plans have initiated early efforts to coordinate with medical groups, but are not in a similar position to integrate delivery system components. Active participation in the CCHRI Diabetes CQI Project is one example of efforts to coordinate activities between health plans and medical groups.

9. Current disease management programs almost always address a single medical condition even though many of the patients have comorbidities that complicate their care. Although acknowledged by almost all plans as an important issue, few programs have yet been designed to address the reality of comorbidity among the disease management population. For some health plans, the very common constellation of diabetes, CAD, and CHF could lead to enrollment of a member with those conditions in three separate disease management programs. In order to help address this issue, the internally developed programs are beginning to cross-train care managers. Some of the health plans that outsource their disease management services are consolidating services to a single vendor that can care for patients with multiple conditions. There is still substantial work to be done in this area for all health plans.

10. Employers were rarely involved in disease management programs. The engagement of employers/purchasers is essential for the optimal selection and structuring of disease management programs due to the potentially high impact of disease management on employee productivity (i.e., the selection of programs should be tailored to a particular employer's

work force, and the savings due to increased productivity should be recognized as a key component of return on investment, which, in this case accrues to the benefit of the employer).

V. CONCLUSION

Disease management is a relatively new field of medicine, with multiple, complex interventions directed at diverse populations. It is clear that all of the assessed health plans have made real investments in disease management, with dedicated staff to develop and manage programs, interventions that intend to educate and empower patients, and strategies to identify and track members with the conditions of interest. What is not known is the effect of these programs, as there is currently a lack of credible and comparable population-based outcomes data on which to evaluate plans' disease management programs.

To truly assess value and effectiveness, outcomes measurement must be performed for disease management programs. Currently, process measures are available for evaluation, but these are less valuable. One possible area for future development is a new set of outcome measures (beyond existing HEDIS indicators) that would allow ongoing assessment of the effectiveness of disease management programs.

A lack of coordination within and across programs can impede program reach and effectiveness. Integrated and staff delivery models are at an advantage in this regard due to the organizational relationship of entities delivering care. At the other end of the spectrum however, are independent physician associations (IPAs), composed of physicians that are only loosely affiliated with medical group administration, and are frequently widely dispersed across geographic areas. The IPA model is the most prevalent in California, and disease management programs sponsored by health plans must create mechanisms to reach these dispersed providers.

With most people over the age of 50 having at least one chronic disease and two-thirds of Medicare beneficiaries between the ages of 65 and 74 having at least two chronic conditions,⁷ disease management programs must address the issue of an increasing number of patients with co-morbidities. Most plans recognize co-morbidity as an important issue, yet few have implemented programs that address multiple conditions among their membership. One solution is the consolidation of disease management services with a single vendor that can care for patients with multiple conditions. Another is cross-training nurse care managers across the most common diseases.

Finally, employers/purchasers are increasingly bearing the impact of the cost of chronic diseases, and must be engaged in ensuring their enrollees receive effective disease management programs. Health plans must begin to leverage the employer venue to reach potential disease management program participants. In order to meet employer/purchaser needs, disease management programs must create methods of calculating program return on investment, so as to convey program benefit to employers. Just as caring for a chronic condition does not exist only in a doctor's office, disease management programs must expand their reach to encompass all domains of a patient's life – including their workplace.

The Pacific Business Group on Health believes that disease management represents one of the critical ways that health plans affect members' health and well-being; this Project is part of PBGH's effort to understand the true effects of these programs. The information summarized in this report will be valuable to member companies and the health plans and providers delivering care to their members. PBGH also hopes this Project will add to the ongoing national dialogue on how best to provide care to the growing number of chronically ill in the United States.

VI. STUDY LIMITATIONS

Measuring effectiveness of disease management programs is not an exact science. Lacking existing validated instruments, NAS Consulting, in conjunction with PBGH staff, created new tools to achieve the goal of evaluating programs. Although the process relied on a strong advisory panel of health plan medical directors to review and help revise the instruments, these tools are imperfect. They are likely to reward plans for performing many tasks as opposed to doing a few things exceptionally well. In addition, there are no guidelines on how to score the questions or weight their relative value. Consequently, each component of the program assessment was valued equally, but others might argue for a different weighting scheme. With regard to outcome measures, the review team relied exclusively on HEDIS because there are no standardized alternatives. This approach resulted in no outcome measures for CHF, one for asthma, and two for CAD. Because outcomes are what matter most (as opposed to process), the project was severely hindered by this absence. The reviewers attempted to measure the "reach" of each program – i.e. the proportion of members with the condition who receive intensive intervention – but were unable to compute this metric because half of the plans could not provide the relevant numbers for the calculation.

While the project made every attempt to score all plans according to the same standard, two plans did not allow validation of patient interventions and this may have led to undercounting (without validation, points were not allowed). One plan also pointed out the potential for unconscious bias among the NAS Consulting reviewers based on their prior employment at one of the participating plans. However, the consulting team did require the same kinds of validation from every plan in order for them to receive points during the assessment process.

ENDNOTES

¹ Bethell C, Lansky D, Fiorillo, J, (Principle Investigators), A Portrait of the Chronically Ill in America, 2001, A Report from The Robert Wood Johnson Foundation National Strategic Indicator Surveys and the Foundation for Accountability (FACCT).

² Ibid.

³ Gibson PG, Powell H, Coughlan J, Wilson AJ, Hensley MJ, Abramson M, Bauman A, Walters EH, Limited (information only) patient education programs for adults with asthma. *The Cochrane Library, Issue 2, 2002*. Oxford. Web site www.cochrane.org last accessed May 26, 2002.

⁴ Cote J, Bowie DM, Robichaud P, Parent JG, Battisti L, Boulet LP., Evaluation of two different educational interventions for adult patients consulting with an acute asthma exacerbation. *Am J Respir Crit Care Med*. May 2001;163(6):1415-9.

⁵ Liu C, Feekery C., Can asthma education improve clinical outcomes? An evaluation of a pediatric asthma education program. *J Asthma*. May 2001; 38(3):269-78.

⁶ Stone EG, Morton SC, Hulscher ME, et.al. Interventions that increase the use of adult immunization and cancer screening services: a meta-analysis. *Ann Intern Med* 2002; 136: 641-651.

⁷ AARP. Beyond 50: A report to the nation on trends in health security. Washington, DC, AARP, May 2002.

Appendix A DMEP Instrument: Diabetes

Program Area	Question	Answer										
Program developer	1. Who developed your disease management program ¹ ? Internal staff, external vendor or combination of both (hybrid)? 2. If your program is a hybrid, what are the sources (e.g. vendor name, internal department name) for each major program component?	Select one: <input type="checkbox"/> Internal staff only (go to question 3) <input type="checkbox"/> External vendor only (go to question 3) <input type="checkbox"/> Hybrid (go to question 2) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;">Major program component:</td> <td style="width: 50%; vertical-align: top;">Source:</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> </table>	Major program component:	Source:	_____	_____	_____	_____	_____	_____	_____	_____
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Date implemented	3. When was the first patient enrolled (or the first patient-specific feedback report sent to providers) for this disease management program?	Month/year: _____										

¹ If different programs are offered to different health plan populations, please record information as follows:
 a) If different programs are offered to Commercial vs. Medicare populations, use program information for Commercial population.
 b) If different programs are offered to HMO vs. PPO plans, use program information for HMO plan.

Program Area	Question	Answer
Patient interventions	4. Indicate which patient interventions are used in your program. A patient intervention is a defined action taken to increase the probability that a desired outcome will occur by aiding patients in managing their health condition.	<p>Check if the intervention is either implemented or planned:</p> <p>IMPL PLANNED</p> <p><input type="checkbox"/> <input type="checkbox"/> Diabetes-specific new member welcome packet</p> <p><input type="checkbox"/> <input type="checkbox"/> Diabetes-specific newsletter or magazine</p> <p><input type="checkbox"/> <input type="checkbox"/> Educational mailings (i.e. community resources, disease-specific issues)</p> <p><input type="checkbox"/> <input type="checkbox"/> Personal reminders, such as birthday cards for HBA1c testing</p> <p><input type="checkbox"/> <input type="checkbox"/> Face-to-face educational sessions (e.g. training by CDEs. Please describe the format type of such sessions)</p> <p><input type="checkbox"/> <input type="checkbox"/> Home visits for education and/or support</p> <p><input type="checkbox"/> <input type="checkbox"/> Diabetes-specific telephone line for inbound calls</p> <p><input type="checkbox"/> <input type="checkbox"/> Diabetes-specific outbound telephone call program</p> <p><input type="checkbox"/> <input type="checkbox"/> Diabetes-specific email/web support</p> <p><input type="checkbox"/> <input type="checkbox"/> Complex case management (traditional case management)</p> <p><input type="checkbox"/> <input type="checkbox"/> Other (such as group or drop-in visits; specify intervention details) _____</p> <p>Provide a written description of each intervention, and if available, related documentation such as program brochures as Attachment 1.</p>
Provider interventions	5. Indicate which interventions you make available to your practitioners to enhance the care they provide to patients with this condition. A provider intervention is a defined action taken to increase the probability that a desired outcome will occur by aiding practitioners in managing patients with the condition of interest.	<p>Check if the intervention is either implemented or planned:</p> <p>IMPL PLANNED</p> <p><input type="checkbox"/> <input type="checkbox"/> Clinical practice guidelines for providers</p> <p><input type="checkbox"/> <input type="checkbox"/> Sponsor or deliver CME programs about the relevant condition</p> <p><input type="checkbox"/> <input type="checkbox"/> Printed reminders for practitioners (e.g. pocket cards, stamps)</p> <p><input type="checkbox"/> <input type="checkbox"/> Electronic clinical decision support tools in IT systems</p> <p><input type="checkbox"/> <input type="checkbox"/> Feedback reports on patients with condition</p> <p><input type="checkbox"/> <input type="checkbox"/> Accessible consultation (e.g. phone-based) for cases</p> <p><input type="checkbox"/> <input type="checkbox"/> Other _____</p> <p><input type="checkbox"/> <input type="checkbox"/> Other _____</p> <p>Provide a written description of each intervention, and if available, related documentation such as program brochures as Attachment 2.</p>
Scope of guideline	6. Have you adopted CPG for acute management, chronic management and behavioral health aspects of conditions?	<p>Check all that apply:</p> <p><input type="checkbox"/> Acute management</p> <p><input type="checkbox"/> Chronic management</p> <p><input type="checkbox"/> Behavioral aspects</p>

Program Area	Question	Answer			
Development Methodology	7. What steps are parts of your CPG development?	Check all that apply: <input type="checkbox"/> Formal evidence review process (or acquisition of CPG from source that does) in order to ensure that CPG rely on best available medical evidence <input type="checkbox"/> Formal involvement of relevant practitioners, including specialists, in the development and review process <input type="checkbox"/> Review/revise guidelines at least every 2 years. When is next scheduled review? _____ Provide a copy of the Plan's clinical guidelines/protocols for this condition as Attachment 3 .			
Presence of registry	8. Do you currently have a patient registry? A patient registry is a dynamic (i.e. regularly updated) list of patients, identified from various data sources, who have the condition of interest.	<input type="checkbox"/> Yes (answer questions 9-11) <input type="checkbox"/> No (go to question 12)			
Sources of data	9. Which sources are used to identify the patients entered into the disease management registry?	<input type="checkbox"/> Claims data	If yes, list ICD-9 codes used:		
		<input type="checkbox"/> Pharmacy	If yes, list drugs or drug codes used:		
		<input type="checkbox"/> Lab test data	If yes, list lab tests used (i.e. HBA1c):		
		<input type="checkbox"/> MD-referral			
		<input type="checkbox"/> RN or case manager referral			
		<input type="checkbox"/> Self-referral			
		<input type="checkbox"/> Other (describe): _____			
Frequency of updates	10. How frequently is the registry updated?	Select one: <input type="checkbox"/> Real-time <input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Semi-annually <input type="checkbox"/> Annually <input type="checkbox"/> Other (describe): _____			
Registry Sensitivity	11. What is the total patient population with the condition (number and % of all	Number of members in the Plan's total population who are in the registry (as of December 31, 2001.			

Program Area	Question	Answer	
	(number and % of all members), enrolled in the registry?	Percent of total Plan members with the condition (e.g. # of members in the registry/total number of members)	
Patient medical records	12. Do you maintain a comprehensive clinical record of the contacts and interventions with each patient who is actively care managed?	<input type="checkbox"/> Yes (answer question 13) <input type="checkbox"/> No (go to question 14)	
Coordination of information	13. How is this information made available to other members of the care team or other practitioners who interact with the patient? Specify if this is a stand-alone record, or embedded into a larger medical record documentation system.	Select one: <input type="checkbox"/> Stand-alone record—paper based <input type="checkbox"/> Stand-alone record—electronic medical record <input type="checkbox"/> Embedded into paper based documentation system <input type="checkbox"/> Embedded into electronic medical record documentation system <input type="checkbox"/> Other (describe): _____	
Enrollment method	14. Is the patient enrolled in the program through "opt-in" or "opt-out" methods? Opt-in, or active, program participation occurs when eligible patients choose to enroll in the program. Opt-out, or passive, program participation occurs when patients are considered enrolled in the program until they choose to leave.	<input type="checkbox"/> Opt-in <input type="checkbox"/> Opt-out	
Patient participation in DM program	15. What is the level of program participation for eligible patients?	If opt-in: Number of patients enrolled in program: _____	

Program Area	Question	Answer				
		If opt-out: Number of patients enrolled in program: _____				
Stratification Method	16. Describe method of stratifying patients by severity or risk for complications. List from lowest to highest risk group. For each, specify clinical or other inclusion criteria, and the number of members in each level. Members should only be counted in one stratification group.	Stratification Group (add more levels if applicable)	Clinical or other inclusion criteria	Number of members in stratification group as of 12/31/01 (if not available for 12/31/01 give for 6*30/01)		
		1.				
		2.				
		3.				
		4.				
Resource allocation	17. What types of interventions are specified in your process for each stratification level?	Member intervention (add rows as needed)	Stratification group			
			1	2	3	4
		Provide a written description of the stratification process as Attachment 4 .				
			18. Does one group of patients receive ongoing and intensive interventions from personnel other than their physician(s), i.e. from care managers?	<input type="checkbox"/> Yes (answer questions 19-20)		
		<input type="checkbox"/> No (go to question 21)				

Program Area	Question	Answer
Care management service delivery	19. Check the aspects of quality control utilized for the delivery of services through care managers.	Check all that apply: <input type="checkbox"/> Care Management staff hold appropriate clinical credentials such as RN, OT <input type="checkbox"/> Care Management staff receive adequate training to prepare for care manager role <input type="checkbox"/> Care Management staff treats patients according to standard care protocols <input type="checkbox"/> Care Management staff have access to physician manager with oversight of program; physician provides supervision and consultation for cases outside of the standard care protocol
Interventions	20. What are the specific care management interventions? Care management interventions address relevant aspects of patient care not typically handled thoroughly by the physician, including: <ul style="list-style-type: none"> • Smoking cessation • Diet • Exercise • Protocol-driven and physician-supervised medication management • Self-management skills • Coping and stress management 	List interventions: _____ _____ _____ _____ _____ _____ _____ _____ _____ _____
Services for patients with disabilities (Diabetes)	21. Do you have special arrangements to help diabetic members:	Check all that apply: <input type="checkbox"/> Special arrangements for members with vision impairment <input type="checkbox"/> Special arrangements for members with hearing impairment <input type="checkbox"/> Special arrangements for members with limited physical mobility

Program Area	Question	Answer	
programs only)	<ul style="list-style-type: none"> • With vision impairment • With hearing impairment • With limited physical mobility 		
Service provision in multiple languages	22. Do you have special arrangements to help members who speak languages other than English?	List the languages used in providing services to non-English speaking members: <hr/> <hr/> <hr/> <hr/>	
Exit criteria	23. a) In order to make scarce resources available to needy patients, some programs transition patients out of their care management programs when they meet certain clinical goals or other criteria. Do you have explicit exit criteria for transitioning patients out of care management programs? b) When patients exit from your care management program, do you have a formal method for communicating to the PCP?	<input type="checkbox"/> Yes (answer questions 23b) <input type="checkbox"/> No (go to question 24) Check all that apply: <input type="checkbox"/> Date of exit <input type="checkbox"/> Clinical data and health status <input type="checkbox"/> Follow-up recommendations and next steps <input type="checkbox"/> Other: _____	
Patient-specific feedback	24. Which statements describe the information you provide about specific patients in practitioners' own panels?	Check all that apply: <input type="checkbox"/> Available at point-of-care (as in on-line clinical decision support tools) <input type="checkbox"/> Provide routine reports at least every 6 months <input type="checkbox"/> Reports contain at least 2 clinical measures <input type="checkbox"/> Reports communicated using behavior change principles	

Program Area	Question	Answer																																																													
Types of practitioner benchmarking	25. Do you make information available to practitioners about their performance compared to established benchmarks, guidelines, or other practitioners' performance?	Check all that apply: <input type="checkbox"/> Provide routine reports at least every 6 months <input type="checkbox"/> Reports contain at least 2 clinical measures <input type="checkbox"/> Reports communicated using behavior change principles																																																													
Program goals	26. Describe program goals for 2002. Include a description of any planned program enhancements, desired clinical achievements and projected cost-savings.	Program goals: Provide a written description of program goals as Attachment 5 .																																																													
Method of Measuring Effectiveness	27. What program-wide aspects of effectiveness are measured for each condition, and how frequently do you conduct measurement?	Check all that apply: <input type="checkbox"/> Clinical outcomes <input type="checkbox"/> Utilization measure <input type="checkbox"/> Member satisfaction <input type="checkbox"/> Functional status <input type="checkbox"/> Productivity and absenteeism <input type="checkbox"/> Other supplied by health plan Provide written documentation of how you define outcome measures as Attachment 6 .	Years that information is available: <table border="0"> <tr> <td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>2001</td><td>2000</td><td>1999</td><td>1998</td><td>1997</td></tr> <tr> <td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>2001</td><td>2000</td><td>1999</td><td>1998</td><td>1997</td></tr> <tr> <td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>2001</td><td>2000</td><td>1999</td><td>1998</td><td>1997</td></tr> <tr> <td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>2001</td><td></td><td></td><td></td><td></td></tr> <tr> <td><input type="checkbox"/></td><td></td><td></td><td></td><td></td></tr> <tr> <td>2001</td><td></td><td></td><td></td><td></td></tr> <tr> <td><input type="checkbox"/></td><td></td><td></td><td></td><td></td></tr> <tr> <td>2001</td><td></td><td></td><td></td><td></td></tr> </table>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2001	2000	1999	1998	1997	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2001	2000	1999	1998	1997	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2001	2000	1999	1998	1997	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2001					<input type="checkbox"/>					2001					<input type="checkbox"/>					2001				
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Method of	28. What aspects of program	Check all that apply:	Years that information if available:																																																												

Program Area	Question	Answer					
Measuring Program costs and ROI	cost are measured for each program, and how frequently is the measurement conducted?	<input type="checkbox"/> Cost of implementing program by year since inception <input type="checkbox"/> Change in cost of care by year since inception <input type="checkbox"/> Short-term and long-term ROI analysis for program <input type="checkbox"/> Other Provide a copy of any formal short or long-term return on investment analysis performed for this program as Attachment 7.	<input type="checkbox"/> 2001 <input type="checkbox"/> 2001 <input type="checkbox"/> 2001 <input type="checkbox"/> 2001	<input type="checkbox"/> 2000 <input type="checkbox"/> 2000 <input type="checkbox"/> 2000 <input type="checkbox"/> 2000	<input type="checkbox"/> 1999 <input type="checkbox"/> 1999 <input type="checkbox"/> 1999 <input type="checkbox"/> 1999	<input type="checkbox"/> 1998 <input type="checkbox"/> 1998 <input type="checkbox"/> 1998 <input type="checkbox"/> 1998	<input type="checkbox"/> 1997 <input type="checkbox"/> 1997 <input type="checkbox"/> 1997 <input type="checkbox"/> 1997

Appendix B DMEP Scoring Methodology

Program Area	DMEP Assessment Question	Scoring System			
Program developer	1. Who developed your disease management program? Internal staff, external vendor or combination of both (hybrid)? 2. If your program is external or a hybrid, what are the sources for each major program component?	Question not scored			
Date implemented	3. When was the first patient enrolled (or the first patient-specific feedback report sent to providers) for this disease management program?	100% <input type="checkbox"/> More than 3 years ago	75% <input type="checkbox"/> Between 1-3 years ago	50% <input type="checkbox"/> Less than 12 months ago	25% <input type="checkbox"/> Planned but not yet implemented
Patient interventions	4. Indicate which patient interventions are used in your program. A patient intervention is a defined action taken to increase the probability that a desired outcome will occur by aiding patients in managing their health condition. Interventions may only be directed at the entire DM population or at specific strata of members in your program. In either case, an intervention must be available to at least 75% of members who qualify in order to be counted (see instruction sheet for further clarification).	For diabetes and asthma: 100% <input type="checkbox"/> Program has at least 5 interventions			
		100% <input type="checkbox"/> Program has at least 4 interventions	75% <input type="checkbox"/> Program has 2-3 interventions	50% <input type="checkbox"/> Program has 1 intervention	25% <input type="checkbox"/> Program is planning first intervention

Program Area	DMEP Assessment Question	Scoring System			
	<p>Examples of interventions include:</p> <ul style="list-style-type: none"> • Informational mailings • Telephone calls • Email communication • Written and electronic tools to record progress • Transmission of biometric results • Individual or group visits to promote patient self-management and/or to monitor clinical progress (do not include ad hoc referrals by practitioners to specialist, e.g. to endocrinologist or dieticians) <p>Be sure each intervention is documented, and that each really does represent a unique intervention.</p>	<p>For depression: 100% <input type="checkbox"/> Program has at least 3 interventions</p>	<p>75% <input type="checkbox"/> Program has 2 interventions</p>	<p>50% <input type="checkbox"/> Program has 1 intervention</p>	<p>25% <input type="checkbox"/> Program is planning first intervention</p>

Program Area	DMEP Assessment Question	Scoring System			
Provider interventions	<p>5. Indicate which interventions you make available to your practitioners to enhance the care they provide to patients with this condition. A provider intervention is a defined action taken to increase the probability that a desired outcome will occur by aiding practitioners in managing patients with the condition of interest. An intervention must be available to providers who care for at least 75% of DM members in order to be counted (see instruction sheet for further clarification).</p> <p>Examples of interventions include:</p> <ul style="list-style-type: none"> • Clinical practice guidelines • CME programs about the condition • Printed reminders for practitioners (e.g. pocket cards, reminders, stamps, stickers) • Clinical decision support tools in information systems • Feedback reports on patients, including those in panel with condition of interest, out of control (e.g. missing meds, recently hospitalized) • Accessible (e.g. phone-based) consultation for cases • Care managers who work with practitioners to manage patients 	<p>100% <input type="checkbox"/> Program has at least 4 interventions</p>	<p>75% <input type="checkbox"/> Program has 2-3 interventions</p>	<p>50% <input type="checkbox"/> Program has 1 intervention</p>	<p>25% <input type="checkbox"/> Program is planning first interventions</p>
Scope of guideline	<p>6. Have you adopted CPG for acute management, chronic management and behavioral health aspects of conditions?</p>	<p>100% <input type="checkbox"/> CPG covers all 3 components</p>	<p>75% <input type="checkbox"/> CPG covers 2 components</p>	<p>50% <input type="checkbox"/> CPG covers 1 component</p>	<p>25% <input type="checkbox"/> NA</p>
Development methodology	<p>7. What steps are parts of your CPG development?</p>	<p>100% <input type="checkbox"/> Use all 3 steps in development</p>	<p>75% <input type="checkbox"/> Use 2 of the steps in development</p>	<p>50% <input type="checkbox"/> Use 1 of the steps in development</p>	<p>25% <input type="checkbox"/> NA</p>

Program Area	DMEP Assessment Question	Scoring System																			
Presence of registry	8. Do you currently have a patient registry? A patient registry is a dynamic (i.e. regularly updated) list of patients, identified from various data sources, who have the condition of interest.	Question not scored; points accrued by answering next two questions																			
Sources of data	9. Which sources are used to identify the patients entered into the disease management registry? Provide codes.	<p>There are five categories of data for patient identification: Inpatient ICD-9 (diagnosis or procedure acceptable); outpatient ICD-9 (diagnosis or procedure acceptable); pharmacy; lab test performed; and lab result (i.e. above a threshold value).</p> <p>For diabetes and CAD:</p> <table border="0" data-bbox="842 792 1938 946"> <tr> <td>100% <input type="checkbox"/></td> <td>75% <input type="checkbox"/></td> <td>50% <input type="checkbox"/></td> <td>25% <input type="checkbox"/></td> </tr> <tr> <td>Program uses 3 or more categories of data to identify patients for registry.</td> <td>Program uses 2 categories of data to identify patients for registry.</td> <td>Program uses 1 category of data to identify patients for registry.</td> <td>Program identifies patients through self-and/or MD-referral only.</td> </tr> </table> <p>For depression, asthma and CHF:</p> <table border="0" data-bbox="842 992 1938 1146"> <tr> <td>100% <input type="checkbox"/></td> <td>75% <input type="checkbox"/></td> <td>50% <input type="checkbox"/></td> <td>25% <input type="checkbox"/></td> </tr> <tr> <td>Program uses 2 or more categories of data to identify patients for registry.</td> <td>Program uses 1 category of data to identify patients for registry.</td> <td>NA</td> <td>Program identifies patients through self-and/or MD-referral only.</td> </tr> </table>				100% <input type="checkbox"/>	75% <input type="checkbox"/>	50% <input type="checkbox"/>	25% <input type="checkbox"/>	Program uses 3 or more categories of data to identify patients for registry.	Program uses 2 categories of data to identify patients for registry.	Program uses 1 category of data to identify patients for registry.	Program identifies patients through self-and/or MD-referral only.	100% <input type="checkbox"/>	75% <input type="checkbox"/>	50% <input type="checkbox"/>	25% <input type="checkbox"/>	Program uses 2 or more categories of data to identify patients for registry.	Program uses 1 category of data to identify patients for registry.	NA	Program identifies patients through self-and/or MD-referral only.
100% <input type="checkbox"/>	75% <input type="checkbox"/>	50% <input type="checkbox"/>	25% <input type="checkbox"/>																		
Program uses 3 or more categories of data to identify patients for registry.	Program uses 2 categories of data to identify patients for registry.	Program uses 1 category of data to identify patients for registry.	Program identifies patients through self-and/or MD-referral only.																		
100% <input type="checkbox"/>	75% <input type="checkbox"/>	50% <input type="checkbox"/>	25% <input type="checkbox"/>																		
Program uses 2 or more categories of data to identify patients for registry.	Program uses 1 category of data to identify patients for registry.	NA	Program identifies patients through self-and/or MD-referral only.																		
Frequency of updates	10. How frequently is the registry updated?	<table border="0" data-bbox="842 1151 1938 1252"> <tr> <td>100% <input type="checkbox"/></td> <td>75% <input type="checkbox"/></td> <td>50% <input type="checkbox"/></td> <td>25% <input type="checkbox"/></td> </tr> <tr> <td>Registry updated in real-time.</td> <td>Registry updated monthly or quarterly.</td> <td>Registry updated semi-annually.</td> <td>Registry updated annually.</td> </tr> </table>				100% <input type="checkbox"/>	75% <input type="checkbox"/>	50% <input type="checkbox"/>	25% <input type="checkbox"/>	Registry updated in real-time.	Registry updated monthly or quarterly.	Registry updated semi-annually.	Registry updated annually.								
100% <input type="checkbox"/>	75% <input type="checkbox"/>	50% <input type="checkbox"/>	25% <input type="checkbox"/>																		
Registry updated in real-time.	Registry updated monthly or quarterly.	Registry updated semi-annually.	Registry updated annually.																		
Registry Sensitivity	11. What is the total patient population with the condition (number and % of all members), enrolled in the registry?	<table border="0" data-bbox="842 1256 1938 1328"> <tr> <td>100% <input type="checkbox"/></td> <td colspan="2">Plan able to report number and percentage</td> <td>0% <input type="checkbox"/></td> <td>Plan does not report number and percentage</td> </tr> </table>				100% <input type="checkbox"/>	Plan able to report number and percentage		0% <input type="checkbox"/>	Plan does not report number and percentage											
100% <input type="checkbox"/>	Plan able to report number and percentage		0% <input type="checkbox"/>	Plan does not report number and percentage																	

Program Area	DMEP Assessment Question	Scoring System			
		Raw numbers reported. Prevalence values not scored because the true prevalence of condition may vary across plans due to differences in demographics.			
Patient medical records	12. Do you maintain a comprehensive clinical record of the contacts and interventions with each patient who is actively care managed?	Question not scored; points accrued by answering next question.			
Coordination of information	13. How is this information made available to other members of the care team or other practitioners who interact with the patient? Specify if this is a stand-alone record, or embedded into a larger medical record documentation system.	100% <input type="checkbox"/> Information embedded in an electronic medical record.	75% <input type="checkbox"/> Information embedded in an electronic stand-alone record.	50% <input type="checkbox"/> Information included in a paper record.	25% <input type="checkbox"/> NA
Enrollment method	14. Is the patient enrolled in the program through "opt-in" or "opt-out" methods? Opt-in, or active, program participation occurs when eligible patients choose to enroll in the program. Opt-out, or passive, program participation occurs when patients are considered enrolled in the program until they choose to leave.	Question not scored; points accrued by answering next question.			
Patient participation in DM program	15. Criteria for enrollment	100% <input type="checkbox"/> Plan describes eligibility criteria for invitation if opt-in program; plan describes criteria to be considered enrolled if opt-out program		0% <input type="checkbox"/> Plan does not describe criteria for program enrollment	
Patient participation in DM program	15a. What is the level of program participation for eligible patients? If opt-in, provide enrollment. If opt-out, provide enrollment. (Scoring differs based on enrollment for opt-in vs. opt-out)	If opt-in: 100% <input type="checkbox"/> Program has 40% of eligible members participating.	75% <input type="checkbox"/> Program has 30% of eligible members participating.	50% <input type="checkbox"/> Program has 20% of eligible members participating.	25% <input type="checkbox"/> Program has 10% of eligible members participating.

Program Area	DMEP Assessment Question	Scoring System			
		If opt-out: 100% <input type="checkbox"/> Program has 95% of eligible members participating. 75% <input type="checkbox"/> Program has 90% of eligible members participating. 50% <input type="checkbox"/> Program has 85% of eligible members participating. 25% <input type="checkbox"/> Program has 75% of eligible members participating.			
Stratification method	16. Describe method of stratifying patients by severity or risk for complications. List from lowest to highest risk group. For each, specify clinical or other inclusion criteria, and the number of members in each level. Members should only be counted in one stratification group.	100% <input type="checkbox"/> Present		0% <input type="checkbox"/> Absent	
Resource allocation	17. Describe how stratification groups are used to allocate resources to meet member needs. List all member interventions described in question 4, and indicate the appropriate stratification group(s) for each.	100% <input type="checkbox"/> Present		0% <input type="checkbox"/> Absent	
Care management practitioner role	18. Does one group of patients receive ongoing and intensive interventions from personnel other than their physician(s), i.e. from care managers? If no, skip to question 22. If yes, answer question 19-21.	Question not scored; points accrued by answering next two questions.			
Care management service delivery	19. Check the aspects of quality control utilized for the delivery of services through care managers.	100% <input type="checkbox"/> Program meets 4 criteria.	75% <input type="checkbox"/> Program meets 3 criteria.	50% <input type="checkbox"/> Program meets 2 criteria.	25% <input type="checkbox"/> Program meets 1 criteria.
Care management interventions	20. What are the specific care management interventions? Care management interventions address relevant aspects of patient care not typically handled thoroughly by the physician, including:	100% <input type="checkbox"/> At least 5 CM interventions.	75% <input type="checkbox"/> 3-4 CM interventions.	50% <input type="checkbox"/> 1-2 CM interventions.	25% <input type="checkbox"/> First intervention planned for implementation.

Program Area	DMEP Assessment Question	Scoring System			
	by the physician, including: <ul style="list-style-type: none"> • Smoking cessation • Diet • Exercise • Protocol-driven and physician-supervised medication management • Self-management skills • Coping and stress management 	For depression: 100% <input type="checkbox"/> At least 5 CM interventions.	75% <input type="checkbox"/> 3-4 CM interventions.	50% <input type="checkbox"/> 1-2 CM interventions.	25% <input type="checkbox"/> First intervention planned for implementation.
Care management exit criteria	21. a) In order to make scarce resources available to needy patients, some programs transition patients out of their care management programs when they meet certain clinical goals or other criteria. Do you have explicit exit criteria for transitioning patients out of care management programs? b) When patients exit from your care management program, do you have a formal method for communicating to the PCP? Types of information include: <ul style="list-style-type: none"> • Date of exit • Clinical data and health status • Follow-up recommendations and next steps 	100% <input type="checkbox"/> Exit criteria in place and clinical information relayed back to PCP at program discharge.	75% <input type="checkbox"/> Exit criteria in place only.	50% <input type="checkbox"/> Clinical information relayed back to PCP at program discharge.	25% <input type="checkbox"/> Only date of exit is relayed to PCP.
Services for patients with disabilities (for <u>Diabetes Program Assessment only; rest of questions are subsequently off by 1 number for the other four Program Assessment instruments</u>)	22. Do you have special arrangements to help diabetic members: <ul style="list-style-type: none"> • With vision impairment • With hearing impairment • With limited physical mobility 	100% <input type="checkbox"/> Program makes arrangements for all 3 disabilities.	75% <input type="checkbox"/> Program makes arrangements for 2 disabilities.	50% <input type="checkbox"/> Program makes arrangements for 1 disability.	25% <input type="checkbox"/> NA

Program Area	DMEP Assessment Question	Scoring System			
Service provision in multiple languages	23. Do you have special arrangements to help members who speak languages other than English?	100% <input type="checkbox"/> Program offers materials and services in 2 languages other than English.	75% <input type="checkbox"/> Program offers materials and services in 1 language other than English.	50% <input type="checkbox"/> NA	25% <input type="checkbox"/> NA
Patient-specific feedback	24. Which statements describe the information you provide about specific patients in practitioners' own panels?	100% <input type="checkbox"/> 3-4 criteria present	75% <input type="checkbox"/> 2 criteria present	50% <input type="checkbox"/> 1 criteria present	25% <input type="checkbox"/> Reports delivered but none of criteria present
Types of practitioner benchmarking	25. Do you make information available to practitioners about their performance compared to established benchmarks, guidelines, or other practitioners' performance?	100% <input type="checkbox"/> 3 criteria present	75% <input type="checkbox"/> 2 criteria present	50% <input type="checkbox"/> 1 criteria present	25% <input type="checkbox"/> Reports delivered but none of criteria present
Program goals	26. Describe program goals for 2002. Include a description of any planned program enhancements, desired clinical achievements and projected cost-savings.	Question not scored because responses not comparable across health plans.			
Method of measuring effectiveness	27. What program-wide aspects of effectiveness are measured for each condition, and how frequently do you conduct measurement? Possible domains of measurement include: <ul style="list-style-type: none"> • Clinical outcomes • Utilization measures • Member satisfaction • Functional status • Productivity and absenteeism • Other supplied by health plan 	100% <input type="checkbox"/> Measures in 3 domains over 1 year or 2 domains over 2 years	75% <input type="checkbox"/> Measures in 2 domains over 1 year or 1 domain over 2 years	50% <input type="checkbox"/> Measures in 1 domain over 1 year	25% <input type="checkbox"/> Measuring system in place; no outcomes data yet available

Program Area	DMEP Assessment Question	Scoring System			
Method of measuring program costs and ROI	28. What aspects of program cost are measures for each program, and how long has this been measured?	100% <input type="checkbox"/> Measures in at least 3 domains over 1 year or at least 2 domains over 2 years	75% <input type="checkbox"/> Measures in 2 domains over 1 year or 1 domain over 2 or more years	50% <input type="checkbox"/> Measures in 1 domain over 1 year	25% <input type="checkbox"/> Measuring system in place; no outcomes data yet available
Types of program costs measured	29. What types of a per member/per month program costs does your health plan measure/track?	100% <input type="checkbox"/> At least two types tracked.	75% <input type="checkbox"/> Any type tracked monthly.	50% <input type="checkbox"/> NA	25% <input type="checkbox"/> In planning stages

Appendix C Weighted Scoring Summary

Question	Program Components	Category Weight
3	Date Implemented	1
	Scope of Interventions	1
4	Patient interventions	
5	Provider interventions	
	Clinical Practice Guidelines	1
6	Scope of guideline	
7	Methodology	
	Use of Registry	1
8	Presence/absence	
9	Sources of data	
10	Frequency of updates	
11	Registry sensitivity	
	Coordination of Clinical Information	1
12	Patient medical records	
13	Coordination of information	
	Enrollment methods	1
14	Method	
15	Patient participation	
	Stratification	1
16	Method	
17	Resource allocation	
	Care Management Services	1
18	Practitioner role	
19	Service delivery	
20	Care management interventions	
21	Exit criteria	
	Special Needs	1
22	Services for patients with disabilities (diabetes only)	
23	Service provision in multiple languages	
	Provider-specific Feedback	1
24	Patient-specific feedback	
25	Practitioner benchmarking	
	Outcomes Measurement	1
27	Method of measuring effectiveness	
28	Method of measuring costs	
29	Types of costs measured	

Each Program Component (in bold) weighted equally. The questions that address each Program Component are listed below the bold heading and each was weighted equally in contributing to the score for the Program Component.

Appendix D Table of Outcome Measures, by disease

Condition	Measure type	Measure	Number of health plans performing measure	
Diabetes	Clinical	Patients with foot exam	2	
		Good HBA1c control (<8.0)	1	
		Proportion of ESRD	1	
		Proportions of Low to Very High risk patients	1	
		Use of lipid-lowering drugs in diabetics and other high risk patients with CAD	2	
		Prevalence of diabetics with CAD	1	
		Use of ACE inhibitors in diabetics with hypertension and/or proteinuria	1	
		MAU on RX ACE	1	
		Utilization	Inpatient days/1,000	3
			Diabetes related hospital days per 1000 diabetes patients	1
			Emergency visits/1,000	5
			Inpatient admissions/1000	2
			Diabetes related hospital discharge rates p/1000 diabetics patients	2
			Metabolic complications p/1000 diabetes patients	2
	Amputations p/1000 diabetes patients		2	
	Acute MI p/1000 diabetes patients		2	
	Stroke p/1000 diabetes patients		2	
	Member satisfaction		Member satisfaction with plan	4
	Functional status		SF12	2
			Quality of life	1
	Productivity/absenteeism		Missed days of work/school	2
	Program costs	Annual cost to operate diabetes DM program	1	
		Total annual costs per member with diabetes	1	

Condition	Measure type	Measure	Number of health plans performing measure
Asthma	Clinical	Member based ratio of inhaled anti-inflammatory use to inhaled and nebulized beta agonist use	2
		Provider-based ratio of inhaled anti-inflammatory use to inhaled and nebulized beta agonist use	2
		Percentage of asthmatic plan members with asthma action plan.	3
		Average days supply of long-term controllers per member per year	1
		Beta Agonist Overuse	2
		Proportion with Unassigned PCPs	1
		Proportions of Low to High Risk patients	1
	Utilization	Inpatient days with principal diagnosis of asthma/1,000	5
		Emergency visits with principal diagnosis of asthma/1000	5
		Inpatient discharges with principal diagnosis of asthma-related/1,000	2
		Inpatient admissions with principal diagnosis of asthma-related/1,000	1
		Percentage of hospital visits with principal diagnosis of asthma and one or more outpatient follow-up visits within 30 days (for any diagnosis)	2
	Member satisfaction	Member satisfaction with program	4
	Functional status	SF12	2
		Nocturnal symptoms: How often did asthma awaken you at night	1
		Daytime symptoms: At least twice a week	1
	Productivity/absenteeism	Missed days of work/school	2
	Program costs	Annual cost to operate asthma DM program	1
		Annual asthma-related costs per member with asthma	1

Condition	Measure type	Measure	Number of health plans performing measure	
CHF	Clinical	Members using ACE Inhibitors or other vasodilators	4	
		Members with diuretic w/o digoxin or ACE Inhibitors (or ARB)	1	
		Members with CHF using beta blocker	1	
		Members with CHF monitoring own weight at least weekly	1	
		Rate of Calcium Channel Blocker use		
		Average days supply of ACE inhibitors/member/year	1	
		Average days supply of Beta Blockers/member/year	1	
		Rate of CHF members assessed for LVF		
		Rate of CHF members assessed for LVEF with ACE-I		
		Proportions of Mild to High risk patients		
		Utilization	Hospital admissions for CHF per 1000 adult members	5
			Hospital readmission rates for CHF within 180 days of discharge for same diagnosis	2
			Readmission rates for any diagnosis within 180 days of discharge.	1
			Readmission rates within 90 days for any diagnosis	1
	Readmission rates within 90 days for CHF diagnosis only		1	
	Total diagnosis hospital days per 1000 adult members/year		1	
	Total diagnosis ER visits per 1000 adult members/year		1	
Follow-up outpatient visits within 30 days of hospitalization for CHF	1			
Member satisfaction	Member satisfaction with plan	1		
Functional status	Minnesota Living with Heart Failure	1		
	SF-12	1		
Program costs	Total annual costs/member with CHF	1		

Condition	Measure type	Measure	Number of health plans performing measure
CAD	Clinical	Members with known CAD who have had LDL tested within last year	2
		Members with poor LDL control who received at least 1 prescription for lipid lowering medication in last year	1
		Members with known CAD who have received at least 1 prescription for aspirin in last year	1
		Smoking members with CAD who have been counseled to quit in last year	1
		Members with known CAD with LDL<130 in last year	1
	Utilization	Repeat PTCA or CABG during year following coronary angioplasty	1
		CAD hospital discharge rates among members with recent acute cardiac event (per 1000 members)	1
	Member satisfaction	Member satisfaction with plan	1
	Functional status	SF12	1
	Productivity/absenteeism	Able to return to same work activities	1