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Briefing Notes:

Demonstrating Return-on-Investment (ROI) for Future Disease-Management/Health-Improvement Interventions

Introduction

For-profit companies use financial ratios (such as return-on-assets and return-on-equity) to evaluate their productivity. Health plans have found similar measures helpful in assessing companywide performance. However, applying them to specific disease-management programs has been tricky. In general, disease management has yet to yield the tangible returns that advocates have promised.

Medical directors struggle daily with the managerial dilemma of cost versus quality. How will they prove the financial benefit of their new asthma-management program? Is it really all about dollar savings? What other variables should be added into the equation? How can they be measured? What short- and long-term implications exist?

Medical directors from across the country met at the Empower Summit in Dallas to discuss challenging, pertinent questions about their roles as physicians within managed health care organizations. They focused on what they, as medical directors, could do to develop strategies and explore possible solutions to the problems—or at least begin discussions that could someday lead to a solution. This briefing note summarizes the results of conversations that occurred at the Summit and continuing on-line dialogues on this important topic.

The first section provides an overview of why this issue is important—serving as a synthesis of recent literature on the topic. It does not offer concrete answers, but sets the context for the Summit discussions. The briefing note then details the medical directors' ideas on what helps and what hinders their ability to produce a reliable ROI. It concludes with a description of a press conference that would be held in the not-so-distant future. The press conference premise is that the directors solved the problem of ROI for disease management, and it describes what was needed for this to happen. Embedded in the press-conference description are proactive strategies that the medical directors might use today to make their ideal disease-management program a reality in the future.

Overview of the Issue

Disease management is a relatively new concept for health care. Rather than waiting to reactively treat the end stages of a poorly managed chronic disease (e.g., diabetes, CHF, asthma), disease management takes a proactive approach to help individuals and their physicians learn how to manage disease better and to encourage improved health outcomes by altering the natural course of disease. Disease-management programs benefit individuals by improving their health and, in theory, create efficiencies in health care delivery to generate cost savings. Over half of the mid- to large-size U.S. employers offer their employees wellness programs that are similar, yet often less comprehensive, than those sponsored by managed-care plans. Only a few of these programs have been evaluated from an ROI perspective. This is also true for programs undertaken by MCOs. Although these programs promised substantial cost savings, the promise remains largely unfulfilled or at least undocumented. To date, both employers and health plans have found it difficult to prove that significant or measurable cost savings have resulted from disease-management programs. The “inability to gauge monetary results” was found to be the chief obstacle to increased adoption of these programs, according to a William M. Mercer, Inc., survey in *Business Insurance* (1999).

Offering disease-management programs provides largely intangible benefits for employers, particularly in the form of a healthier workforce. Significant obstacles face both employers and managed-care organizations in proving that these initiatives will save money in the long run. A primary obstacle is the lack of clear data, particularly the baseline data needed to monitor the changes (and cost savings) that result from the investment over time. Health plans are awash in data, but the challenge lies in determining which pieces of data to use and in assessing their accuracy. Analysts must ask:

1. Which variables should be included to measure the true impact of a program (e.g., financial, lifestyle)?
2. Which data are the most appropriate to use as proxies for the variables?

Without answers to these questions, it is difficult to consider how to measure ROI and whether plans will see any value in developing and implementing disease-management programming in the future. Bernice Caldwell (1998) notes this divergence when she cites the difficulty of proving clear costs/benefit outcomes as the main reason why MCOs are less likely to offer wellness programs. She states, “prevention activities under managed care have been long on rhetoric and short on reality,” due to confounding factors such as retention rates and clear links of causality (Caldwell, 1998). Plans recognize that changing unhealthy behaviors takes time, but high rates of plan switching, particularly in less developed markets, may result in another plan realizing the cost savings of the original plan’s investment. This scenario illustrates the difficulties in attributing long-term cost savings directly to specific short-term interventions. However, proving the short- and long-term effectiveness of these interventions will be critical to their survival.

More recently, some disease-specific management programs started to demonstrate clear returns. Asthma-management programs serve as an example (e.g., one ROI variable often measures cost savings from decreased emergency-room visits). However, other programs, such as those for hypertension, are complicated by multiple layers of causal or mitigating factors (*Hospitals and Health Networks*, 1998). “About a half-dozen to a dozen diseases have been shown to demonstrate short-term savings ... but long-term savings? That’s a good question” (*Hospitals and Health Networks*, 1998).

Although the promise of cost savings from clinical preventive programs provides one of the main motivations for MCOs to include them in their benefits packages, it is important to remember that disease-management programs contribute more value to health plans than just cost savings. For example, consumer demand for these programs is generally high. This translates into added value for marketing and new opportunities for brand differentiation. More importantly, these programs have the potential to improve the quality of care for members. Yet “a tremendous gap persists between what managed-care executives think about the value of prevention and what the best studies show” (Caldwell, 1998). The bottom line is: How do you create a valuation model that predicts the true cost savings for preventive care? This question is likely to remain unanswered for some time to come.

The highest rewards from disease-management investments may come from programs that target individuals with the highest risk. However, the negative ramifications of adverse selection could potentially outweigh the cost benefits of highly targeted programs. There is a “tendency of healthy employees to join wellness programs while high-risk workers avoid them” (Kazel, 1999). This suggests that there is much work to be done to identify members with the greatest need and to develop strategies to monitor and support their ongoing involvement in disease-management programs.

In the future, plans might consider offering comprehensive health-promotion programs or, as Caldwell suggests, “conduct risk assessments, and initiate programs that are linked to the medical record, providing direction for physicians and other health care providers.” Using these efforts, health plans can identify those members who may generate the highest health costs and “target programs toward them” (Caldwell, 1998). Some examples might be programs for women at high risk for premature delivery or members with HIV. One California-based plan recently used an outside vendor to develop a disease-management program for congestive heart failure. The program uses intensive case management and algorithms to identify patients at risk. According to a medical director in the group, ROI based on emergency-room use and decreased hospitalizations have been impressive. Proactive programs, tailored to specific individuals and replete with data on their individual health care needs, may make cost/benefit analyses easier and more efficient in the long run.

Given this context, medical directors at the Summit were asked to grapple with these complicated, challenging issues. What specifically can they do to address the complex problems described here?

What Do Medical Directors Think About This Issue?

Medical directors at the Empower Summit described some basic distinctions to stage the context for their discussion of ROI and disease management. They represented plans with ongoing or pilot programs for coronary-artery disease, congestive heart failure, diabetes, anti-coagulation and asthma. No claims were made about the returns (or lack of returns) from these programs.

Timeframes

To achieve perspective on the ROI issue, the group then considered a basic distinction between timeframes—short term and long term. Certain conditions would lend themselves to short-term financial results, while others would require a longer timeframe for adequate evaluation. Consider the following comparison of initiatives:

More Likely to Yield Short-term Results	vs.	More Likely to Yield Long-term Results
Congestive heart failure		Depression
Pediatric asthma		Osteoporosis
End-stage renal disease		Diabetes

Hard Versus Soft Measures

Another distinction emerged as the group discussed timeframes; specifically, ROI analysis tends to focus on “hard” measures or dollars that can be counted. Consider the following example:

Within the last week we ran our own figures on what our savings were on a congestive heart failure disease-management program. All of our noncapitated members are eligible, though as would be expected, the Medicare product benefits more than the commercial product from this particular DM effort. Our internal numbers show a projected savings, based on decreased in-patient costs, of \$250,000 over the past 6 months. We elected to determine and use our own numbers rather than the projected savings from the vendor, whose number was significantly above ours. Our “cost” on this was fairly minimal as we elected to use a gain-sharing approach in contracting; therefore, little direct cost was involved. The savings do indicate, however, that should an MCO choose to contract and pay for services, a significant “investment” could be made with the anticipation of a good “ROI.”

Beyond cost savings, other returns, which often escape traditional financial analysis, may be equally important. Concurrently, “hard” measures may appear less so when you examine them closely. For example, data-mining companies may focus on pharmaceutical costs, but this perspective overlooks the large population of diabetics whose treatments are not pharmacy-based. Also, lifestyle and other

quality-of-life values are difficult to quantify in terms of dollars and cents. Key differences in hard and soft measures include:

"Hard" Measures	vs.	"Soft" Measures
Direct costs		Employee retention & absenteeism
Pharmacy		Quality of life
ER		Member retention
Claims data		Quality measures (accreditation, report cards, regulators, HEDIS)

HEDIS numbers are clearly process measures as opposed to financial measures, but presumably these process measures lead to positive clinical outcomes, which in turn increase customer satisfaction.

Expanding the Definition of "Return"

In general, the whole notion of "return" in "return on investment" may need to be expanded. Much emphasis is placed on financial returns, but a more "balanced" view would include, among other things, customer satisfaction and lifestyle perspectives. One participant supported this view noting, "Sometimes we may have to pursue a goal because it is 'the right thing to do.' Return on investment, both the hard and the soft, may not be readily measured. This connects to the mission of our organization." As a more nuanced alternative, plans might consider applying a version of Robert Kaplan's "balanced-scorecard" approach to evaluating the performance of disease-management programs. The name suggests the balance between financial and non-financial management measures. The balanced scorecard translates an organization's mission and strategy into a comprehensive set of performance measures that move beyond strictly financial targets. It expands the model to include four perspectives: financial, customer, internal business processes, and learning and growth. (For more information, see Kaplan, Robert S., and David P. Norton. *The Balanced Scorecard*. Boston: Harvard Business School Press, 1996.)

Demonstrating a Reasonable and Appropriate Return

The medical directors at the Summit considered what makes it difficult to demonstrate a reasonable and appropriate return on disease management and, alternatively, what might help. Identifying these issues provides some promise for ultimately improving disease-management ROI. Why? By working to minimize the challenges confronting a successful demonstration of ROI and enhancing what can help, medical directors felt they could begin to solve this complex issue.

What Gets In the Way?

Medical directors identified the following as specific challenges to a successful demonstration of ROI for disease-management programs:

- *Data intensive*—Determining the ROI of a disease-management program is a data-intensive undertaking. Providers and payers first need IT systems that are standardized enough so information flows freely among them. However, standardization is probably a long way off. It might eventually come from Centers for Medicare and Medicaid Services (CMS), but it certainly will not come anytime soon.
- *Dollar intensive*—Many disease-management programs are dollar intensive. While plans may claim to be committed to these programs, they are frequently under budgeted.
- *“Global episode” tracking*—Plans need to have the ability to track “global episodes” of care. Currently, costs are accounted for in “silos”—pharmacy costs, hospital stays, workplace productivity, etc. Until all of the pieces are connected, the true cost of a clinical condition and the ROI of a disease-management program remains elusive.

What Can Help?

In contrast to the identified challenges, there are also some driving factors that can help medical directors establish clear ROI for these programs.

- *Think “out of the box”*—For example, a subscription model in which consumers pay an additional premium to participate in a disease-management program is a nontraditional approach to enrollment and cost recovery. In part, the ROI “problem” can be traced to marketing or a lack thereof. Employers think the cost of disease-management programs is already a part of their premiums. In fact, the true cost has not been factored in.
- *Build the right incentives*—Spread risk among the providers *and* the plans so that every plan has an interest in increasing clinical effectiveness and holding down costs.
- *Align incentives*—Incentives should be aligned among all of the players—employers, patients, payers, providers, pharmaceutical companies, news media, etc. For example, providers often tell their patients to push an MCO harder to pay for a certain procedure, when the patient’s employer has purchased a plan that simply does not provide for the procedure. Alternatively, a pharmaceutical company may use direct-to-consumer (DTC) advertising to stimulate demand for a branded drug, when a less expensive generic would do the job. The news media, in turn, conveys an image of MCOs as focused exclusively on cost. How can we create a situation in which all of the stakeholders are working toward the same goal?

- *Collect and share the right data*—The whole idea of ROI is based on the notion of evidence-based medicine. If physicians have the information they need to make informed clinical decisions, then “return” should naturally increase over time. The problem, however, lies in gathering that information and creating a less taxing practice environment in which physicians have an opportunity to pay attention to the information. Physicians and other providers should also be *incentivized* to pay attention.

Strategies for Change and Managing Dilemmas

To clearly illustrate the best implementation strategies to demonstrate ROI on disease-management programs, medical directors created a “success scenario”—a description of a future situation in which challenges were overcome and driving factors used to achieve the desired ends.

Success Scenario

Imagine that a health plan had established an undeniably successful disease-management program—one that demonstrated its effectiveness with positive clinical outcomes and measurable financial returns. What would that program look like?

This future scenario took the form of a news conference in 2004. Three officers (the “Dream Team”) from Company X assembled to answer questions from the media. The CEO began with opening remarks and questions from the floor followed. Some of the key strategies for this success scenario include using well-integrated information systems that provide high-quality data, enhancing communication among all key stakeholders (providers, payers, members), identifying measurable outcomes (clinical and financial), creating new and powerful partnerships (with business and community partners), and generally working to create a “pioneer-like” approach to disease management.

Opening Remarks from the CEO

We have had unprecedented success in developing a coronary-artery disease-management program. Mortality is down. Morbidity is down. We have a subscription system. We prepay our provider groups and then take subscriptions from employers.

The linchpin in our model is an advanced data warehouse. It provides real-time information. Reminders and alerts go directly to patients via e-mail and voicemail. Charts are available on the Web to providers across the system. If a physician ignores pertinent information, queries are automatically made. In every such case we want to know: Why is a physician not responding? It is the same with the patient. We can track

compliance at every point in the “treatment chain”—from the examining room, to the bedside, to the pharmacy, to the patient’s home and workplace.

We have taken all of the knowledge needed to manage a patient’s care and put it in one place. Our tool helps physicians process information efficiently and effectively.

We are trying to help the physician in the treatment room, but our efforts do not stop there. We want to inspire an organizational commitment to disease management.

Q&A

- *How did you select a therapeutic area to focus on?*

Coronary-artery disease is a common and expensive medical problem. We were looking for a long-term ROI. This was a condition about which we had lots of information, so we could be evidence-based. And we had an opportunity to grab a huge market share. There was an obvious need for this disease-management program, noticing how prevalent CAD is in our population. It is one of the most common diagnoses. Additionally, we foresaw some ancillary benefit—stroke prevention.

- *What persuaded you and the senior officers to back this program?*

We were having discussions about people purchasing care. We were looking for a way to stimulate demand and expand our market. We are committed to managing money, yes, but we are also committed to care. Our medical directors developed a pricing model. However, a critical piece of the puzzle was that we absolutely needed to go electronic. We needed to get all of the information and make it accessible. Now that we have demonstrated that our quality far outstrips our competitors, we can charge significantly more than they do. And we can convince providers to sign up.

- *What was the experience of the customers—i.e., purchasers? How were they helped? What were the major successes or failures?*

There has been a significant decrease in MRI utilization and strokes. Patients like this model—their satisfaction scores have improved. There has been a decrease in disability, but we do not know about absenteeism.

- *Were there any failures?*

Well, disappointments. When we first began this program, there were a number of hurdles. Physicians were uncertain about it, but we needed to move forward and pulled them along. Also, HIPAA—we needed to work within their regulations. We needed to prove this could work.

- *What barriers did you have to overcome to get the “go” decision and the successful implementation? And how did you do it?*

Money, money, money—we needed the dollars to make this work. Decisions about information were critical, too—what to keep, what to make available. Managing the interfaces was absolutely important. We even convinced pharmaceutical companies to partner with us. And we were able to work with firms like Cisco and Oracle.

- *Any ethical issues in partnering?*

Not at all. We are delivering better care with better financial results. Again, partnerships were critical. The high-tech companies—they just needed to see that this works. We partnered with Bally’s and other health clubs in putting together comprehensive wellness programs.

- *Did you share the upside with physicians?*

No, we had to start them out at market reimbursement rates. We had to be careful in steering around the corporate practice of medicine laws.

- *What was promised and what was delivered in terms of ROI?*

We promised 3:1. We delivered 4:1. We convinced Wall Street that our patient satisfaction was “goodwill,” and we were able to amortize it.

- *Any surprises?*

Everyday. We were like Lewis and Clark—involved in a totally new venture. In particular, recruitment and orientation costs are higher than we anticipated. We were able to raise salaries to maintain satisfaction.

- *How did you penetrate the provider groups?*

Basically, the message was, “Join us or D.I.E.” Here, the acronym means disease-intensive education. We have a model that works. We have pioneered outcomes-based reimbursement.

Conclusion

Returning to the present from 2004, the medical directors observed the following success factors for disease-management ROI:

- Outcomes-based reimbursement makes sense. It would certainly change the public perception of managed care.
- Patient empowerment is key. Physician empowerment is also crucial.
- Over time, easy, efficient access to information will decrease costs and enhance clinical outcomes.
- Medical directors can get involved in creative efforts to explore new models for disease-management ROI. Expanding the definition of “return” will be critical.

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