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Session 86PD
Disease Management: Solution or Fiction?

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Summary: What is disease management? Who is leading the disease management effort and what are the objectives?

Mr. Bruce S. Pyenson: We have a special group of speakers. I feel very fortunate to have Bob Paglia and Ellen Cole here, both of whom are clinicians. I think it's unusual to have clinicians talk at SOA meetings, but I am sure that it will be more common in the future. Bob is a clinical pharmacist, and Ellen is perhaps the only person in the country who is both a registered nurse and an actuary.

Today's managed care issues involve clinical practice. The kinds of insights that Ellen and Bob bring us are very interesting and very relevant, and I am sure we will hear many more of their type of talks in the future.

First, Bob Paglia is vice president and director of account services for Managed Care Initiatives, a subsidiary of Satchi & Satchi in New York City. For those of you who follow the publishing industry, Satchi & Satchi is best known as a huge advertising agency; an international giant in the field. It's interesting that it has a pharmacist as a vice president. Bob has worked for a number of pharmaceutical companies. He has worked for Johnson & Johnson and also disease management companies such as Stuart Disease Management Services, which is a subsidiary of Zeneca, the British

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firm that's very prominent in oncolytics. He has also worked for Integrated Therapeutic Group, which is a subsidiary of Sharing Craue.

Our second speaker is Ellen Cole. Ellen is an individual health actuary at Anthem, which, as many of you may know, is a large, and growing larger, organization that recently purchased Blue Cross/Blue Shield of New Jersey. Anthem is based in Texas. Ellen, with Anthem for six years, has been active in Medigap and Medicare risk products. Prior to that she spent eight years as a registered nurse, working in preventative health, surgery, and in end-stage renal disease.

I'm the moderator and also a speaker. I've been with Milliman & Robertson as a consulting actuary for about nine years. Prior to that I was with Blue Cross/Blue Shield of Michigan. I'm active in the New York market where, at this point, my clients are primarily medical providers, such as hospitals and medical groups, and secondarily HMOs.

Mr. Robert Paglia: I've been devoting some time and attention to these matters for a while. But what you probably don't know about me is why I've been doing that. You probably don't know that I'm a member of an immigrant family from New Jersey. My dad was the eleventh child of eleven children, and my mom was the fifth of twelve children. So you can imagine when all those people got married, had kids and had grandkids, it was an enormous family. You can also imagine the chronic diseases in the family. There's chronic obstructive pulmonary disease (COPD), asthma, emphysema, cardiac disease, and all kinds of chronic diseases. That's one of the motivations for my interest in disease management.

Any time we talk about disease management, we have to realize that we're managing not just a disease, but the disease of a person. Anytime that we start moving away from the person, the patient, the member and into big numbers of people, markets, populations, we lose that personal touch. As a clinician I feel obligated to focus the discussion on the individual patient. My family that I've described, and probably your families, have chronic diseases.

In this session, "Disease Management: Solution or Fiction?," we will start defining disease management, its objectives and how to be successful in disease management. We will talk about the disease management process, and we'll give you an overview of that. Then we will discuss the role of the actuary in disease management.

Let's start with a definition of disease management. This is sometimes very hard to define because disease management means different things to different people. If you're a home care provider, you may have a disease management program that

focuses on health care. If you're a pharmaceutical company, you may talk about formulary theories and things like that. In my business, however, we describe disease management as a system approach to health care. A comprehensive, coordinated medical and behavioral management process that optimizes health care outcomes and has a quantifiable impact on reducing health care costs.

For decades we've been dolling out health care pill by pill and component by component. Disease management is a prospective system and very comprehensive. It doesn't just focus on one area of health care; hopefully, it looks out from all areas and coordinates the care so all pieces or components of health care for disease are managed together. Certainly, disease management has a medical and treatment component, but it has a significant behavioral component for both members or patients and providers.

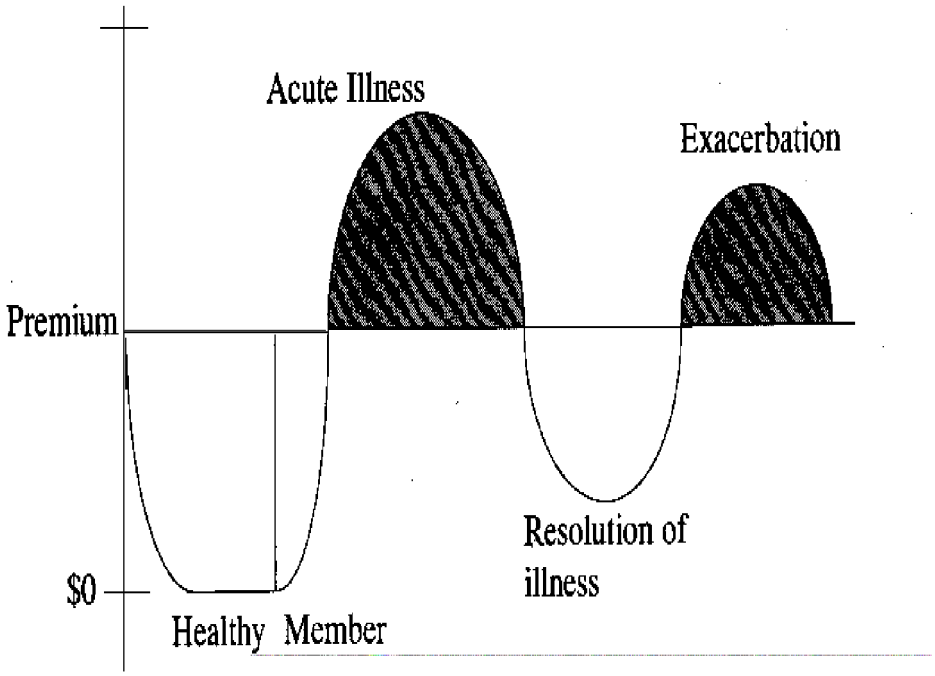
The primary goals are to improve clinical outcomes while reducing cost. A health plan could translate successful disease management into things like increased member satisfaction and, hopefully, retain some members. A successful disease management program may help a plan differentiate itself from its local competitors and gain more members. You also can translate some of the quality improvement parameters in disease management to the National Committee for Quality Assurance (NCQA) support.

I want to talk about some of the strategies to obtain those goals. I think this is where, perhaps, disease management and the actuarial profession intersect. As Bruce said, I'm a pharmacist and I have to apologize for being so very simple with this.

When we describe disease management, our business, we describe the strategies in this way. We look at health care costs versus premium over time as shown in Chart 1. So if these are health care dollars, this is the premium that a patient or a member pays, and this is a member's life over a lifetime of disease.

Chart 1 illustrates a simple example of the potential for disease management. If you take a healthy member, his or her health care costs for a particular disease over a period of time are virtually nothing, as shown on the chart. And the managed care organization (MCO) gains money in this white area. If somebody becomes sick and has to go to the hospital, it starts costing a great deal of money. The plan loses money as a result of that illness.

CHART 1
HEALTH CARE COST VERSUS PREMIUM OVER TIME



The patient then returns to some sort of resting state or healthier state. Maybe not as healthy as the patient was when he or she joined, but perhaps with some maintenance therapy, the patient can become healthy. Of course, if the patient gets sick again, if the illness reoccurs, the health plan spends a great deal of money once again. At the end of the day when you net out all those shaded and white areas, you come out with a net gain or loss.

This chart helps us to formulate our strategies. The first strategy that we derive from this graph is, why don't we keep these patients healthy and extend the area below the premium line as much as we possibly can? It's in the best interest of the health plan, and even of the member, to have a healthy member. When a patient has an acute illness, we try to squeeze costs and keep the area under the curve as limited as possible by using the most appropriate care that's available. Perhaps we can also extend the time between recurrences. For example, maybe someone who usually has an emergency room (ER) admission for an asthma attack every three months can be managed in such a way that he or she needs an ER visit only once every three years instead of every three months. In that case, we have extended the area below the premium line.

In these ways, the health plan will gain from disease management. To be successful with disease management, our major strategies are to keep members healthy, to limit the cost of acute illnesses, and to reduce the frequency of acute episodes.

On which diseases do we want to focus? Chronic diseases, expensive diseases, diseases that are prevalent in society, and diseases that are relevant to a population. These sorts of diseases also are very important for NCQA. For example, if an MCO has a large pediatric population, a chronic disease that's expensive and prevalent is asthma. A health plan that has a large pediatric population may want to focus on asthma disease management.

A health plan also may want to choose a disease where it can leverage an inexpensive or relatively inexpensive health care component, like a pharmaceutical product, into overall savings. For instance, an asthmatic can reduce his or her ER admissions and hospital admits just by taking a regular medication instead of an as-needed medication.

Some of the diseases for which disease management might pay off or might improve care are diabetes, asthma, HIV, depression, high-risk pregnancy, congestive heart failure, and peptic ulcer disease.

Let's take another look at why those diseases might be important to a payer or employer. Table 1 shows information we derived from *Business and Health* magazine.

TABLE 1
DISEASE COST AS A PERCENTAGE
OF EMPLOYERS' HEALTH CARE COSTS

Disease	Percentage of Employers' Health Care Costs
Mental Health	16.8%
Asthma/COPD	8.4
Ulcer/GERD	8.4
Hypertension	7.4
Diabetes	6.4
Arthritis	6.3
Heart Failure	6.3
Osteoporosis	5.5
Infections	5.3
Other	27.2

Source: Data from 1995 *Business and Health* Special Report on PBM

It came from a 1995 special report. It's the cost of disease as a percentage of employer health care costs. You can see some of those diseases that we just discussed appear high on the radar screen for an employer—ulcer, heart failure, asthma, COPD, diabetes, etc.

If we start managing disease through the disease management process, who might benefit from that? An employer may benefit because of potentially lower absenteeism. Also, healthy or healthier employees may be more productive during the day. There's a potential for a lower health care premium, and employees might be more satisfied with their coverage. Certainly, if members have improved health as a result of a disease management program, that's a substantial benefit. They have enhanced quality of life because they're not sick all the time, and they might have very high satisfaction with their health care coverage or their health benefits.

What about the provider; for example, a physician? For a provider, disease management might mean a reduced demand on services. A capitated provider would gain financially. A fee-for-service or managed fee-for-service provider would lose. The provider does receive continuing education through a disease management program, and perhaps the provider also may obtain some other resources that he or she would not necessarily have in his or her office.

Lastly, the health plan would benefit from improved patients' health on a clinical basis by improved quality of life or by improved satisfaction. The health plan might leverage disease management into NCQA approval or accreditation. MCOs might reduce health care costs and increase, or maintain, their membership.

This approach begins to show the business aspects of disease management. If MCOs keep patients healthy, they can keep more of the premiums. The diseases that we would manage in disease management are financially relevant to the health plans, to their populations, and to the employers. And the benefits affect all the major stakeholders in health care: the payer, the provider and the health plan. The employer, member, provider, and health plan can gain through disease management.

What goes on in a disease management program? Most of these comprehensive disease management programs follow something similar to the following steps:

1. Assemble and analyze data.
2. Identify members and providers to target for behavioral management and other changes.
3. Develop interventions to propose to these providers and members.
4. Implement these interventions.

5. Track the results on an on-going basis.
6. Obtain feedback and refine the process on an on-going basis.

I'd like to discuss each step in more detail. The first step is data analysis. Today, the best available data come from medical claims and include new and refill medical pharmacy data, ICD9 (International Classification of Diseases–9th Revision), and CPTs (Current Procedural Terminology from the American Medical Association). Revision Clinical Modification current procedural terminology from the American Medical Association. Unfortunately, claims data pose some significant problems. One problem is the lag time between the medical encounter and the claim, and the lag between the claim processing time and when the disease management company receives the tape. During that lag time, the providers might change or the coverage or the eligibility of a member might change. Despite this and other problems, claims data are the best readily available source.

The second step is targeting providers. When we target providers, we look for those that are utilizers or high utilizers of high-cost treatments. They may have low adherence to current treatment standards of that plan. Also, we might target a provider with a lot of high-cost or severely ill patients.

The second step also includes targeting members. In targeting members, we want members who are high utilizers of acute care services. For example, members with repeated acute phases of chronic diseases—will use ER services repeatedly. Another marker of a target patient might be high utilization of rescue medication. You can look at pharmaceutical therapy to identify these patients. An asthmatic who uses many inhalers to keep breathing is probably not stable, and that asthmatic is on his or her way to the hospital, which means high utilization of expensive resources. Once these members are identified, we want to develop interventions.

There are both provider-focused interventions and member-focused interventions. On the provider side, we want to educate providers on the management of the disease. We want to provide disease treatment guidelines or best practice guidelines so providers treat patients uniformly and optimize care. We want to use outlier management programs for outlier providers who over time and after repeated interventions still do not follow the program.

You can do a great deal through member-focused interventions. You can educate members on their disease so they know what to expect and how to manage it. You can help them change their lifestyle, for example, diet, exercise, etc. You can change the way they behave. You can help them manage their medicine and comply with their doctors' instructions. You can keep after them, and you can also

manage their expectations as to the side effects of drugs that they are taking, or as to the best possible outcome they can get with the drug.

Going even further on the member-focused interventions, you might develop a disease co-management plan. This is a plan that gets patients more closely involved with their disease management. You might educate them to monitor their disease, to decide whether they are really sick and what to do, and how to self-refer to the appropriate level of care. You might develop and implement demand management programs that intervene before the patient actually gets into an extensive health service. Disease management interventions include home care, case management, and pharmacy compliance programs, so there are many possibilities for member-focused programs.

When you go to implement them, provider-focused programs can be an ungodly nightmare, and I can attest to that. Provider-focused programs might include offering a seminar or providing a continuing medical education program on the disease. You might send providers a clinical monograph or a printed version of the guidelines. You might have a seminar like this one and have the medical director of a health plan go through how the providers should practice medicine. Academic detailing is another possibility.

The health plan implementing a provider-focused disease management program can send a pharmacist, a physician, or a nurse to the physicians' offices to discuss how the physician should implement the practice standards. As another example, a health plan may hold a benchmarking dinner. This is actually a dinner meeting targeting outlier doctors—those who have had intervention after intervention—on how they should be practicing. If they still don't get it right, you can bring them to a dinner meeting, talk to them, and put a little pressure on them to conform to the standards. That actually doesn't happen very often because so many of these other interventions work so well.

We might want to teach members about their diseases, so we might bring them into a classroom or go to their homes and educate them about their diseases. We might continually send newsletters and other communications to teach them about their diseases. We might have them participate in a demand management program. The instructions would inform them to call a particular health line and talk to a nurse about their symptoms, prior to actually going to the emergency room or to a doctor's office. We might give those members a book on how to take care of either their diseases or just their general health. C. Everett Koop and Time Life Books, I believe, have a good health management series. You might want to give that to a patient and say, "Before you go into the health care system, read this and find out how to treat yourself."

A health plan might provide health monitoring devices, like peak flow meters for asthmatics to check their lung function, or blood glucose monitoring devices for diabetics to check their blood sugar. Then, along with the device, we develop a plan for treating the patient. If the patient blows into the peak flow meter tube and the device essentially indicates that the patient's lungs are in bad shape, the patient will need to read the plan. The plan could instruct the patient to take two puffs of the inhaler, a tablet of that and then repeat the procedure in five minutes. If the patient's condition has not improved then he or she should call the doctor. That way that patient is more involved in his or her own health care. The patient has a plan to reference before he or she jumps into the health care system.

The fifth step is tracking results. We're going to analyze claims data on an on-going basis, but it's important in disease management to realize the period of time in which you can measure the data. In asthma, you can see a change with disease management after six months or a year. With hypertension, the disease at the end stage causes many problems, but for years and years you can be hypertensive with no symptoms and without exacerbation. You would need a really long lead time to compare before versus after results.

As far as results go, you can focus on clinical outcomes like patient health status, mortality, etc. You also can look at surrogate markers of success such as decreased utilization of resources, increased patient satisfaction, improved quality of life and, perhaps, provider adherence to plan guidelines. Those are the measures some disease management companies are using to convey that their disease management has been successful.

I mentioned there is a feedback process. Because disease management is such a relatively new area, we have to look at the interventions that are achieving success and continue to focus on these and hold back on some of the interventions that are not as successful.

If you are a disease management company or an MCO, how might you arrange the finances between the disease management company and MCO? The four main measures that we have seen are: disease capitation on a per member per month (PMPM) basis; patient-per-month management fee; fee-for-service interventions; and share of the savings.

In disease capitation on a PMPM basis, there is a PMPM for asthma care. We don't see too much of that now, but I think we may see more in the future. Under the per patient-per-month management fee, the MCO will pay *X* dollars for an asthmatic per month to manage the patient.

Under the fee-for-service interventions, you charge for services such as blood glucose monitoring, the health plan book, and all seminars. These things have a price, and you can actually have a menu. An MCO might choose from the menu and you might develop a customized plan, choosing each item piece by piece.

Under a share-of-the-savings approach, the disease management company might tell an MCO, "This year your asthma is costing you $*X*. We will split the savings by however much we reduce the asthma cost.

These are some of the financial arrangements we have. I'd like to describe some examples of how disease management in one health plan has made a difference.

Lovelace Health Plans has a pediatric disease management program in asthma. It has decreased inpatient admissions by nearly 25%, reduced the length of stay by 47%, and reduced the average hospital charges by 32%. It has demonstrated success in two other areas. In maternity health, it has reduced its low birth rate babies to under 5% in 1995, and decreased its cesarean section rates to 14.5%. For bypass surgery, it has reduced its length of stay from 11 days to 5 days and decreased its rate of mortality from coronary artery bypass grafts (CABG) surgery from 3.8% to 1.1%. These figures come from *The American Medical Association News* dated June 24, 1996.

It looks as though some people or programs are starting to have some success. I hope you have a reasonably good sense on where we're going with disease management.

There are a vast number of players from a variety of different areas. Most of the health plans, I would expect, are doing their own disease management programs because they can see the potential benefits. Pharmaceutical manufacturers such as Lilly, Schering, RPR, Glaxo, and Pfizer have established dedicated division-level disease management programs. Many other drug manufacturers also are doing disease management. There are independent disease management companies such as Stewart Disease Management, which spun off from Zeneca Pharmaceuticals, and Greenstone Limited, which spun off from Pharmacia and Upjohn. The case management and home care companies have disease management. Aprea, a home care company, also has a disease management program.

Going even further, risk or carved-out provider service networks, such as Sallick and the National Jewish Center in Colorado, have significant asthma disease management programs. Pharmacy benefit management companies such as Medco, DPS and PCS are also selling or providing disease management.

There are many people who are involved in disease management. What kind of opportunities are there for actuaries in disease management? I suggest that some actuaries can help with claims data. Actuaries probably do that better than anyone else in business, so you could help target the providers and members for the disease management company. You can develop best-practice algorithms for management guidelines along with the medical staff, based on the claims. And you can help analyze claims data and track the results as part of the process. In addition, you can help the disease management companies set rates and financial arrangements relative to capitation rates, if they're going to do that, management fees for the services, and share of savings.

These are some opportunities for actuaries. I'd be very happy to entertain questions beyond that. Whether disease management is a solution or fiction, I believe depends on how well all disease management companies work and how we perform against the promise that we've made to health plans. Furthermore, it depends on the ultimate value that disease management brings to our customer, the payer.

Ms. Ellen R. Cole: I want to talk about something much more specific than what Bob discussed. EDTA chelation therapy is an alternative to coronary bypass surgery and also is used to treat other chronic diseases.

Over 40 million people suffer symptoms of coronary artery disease. These symptoms include chest pains, leg cramps, shortness of breath, gangrene, and strokes. Often these people suffer heart attacks without having had any symptoms. Over 50% of the people who have heart attacks don't have any warning that they have a problem.

What happens is that the arteries are subject to continuous trauma from blood pressure, viral and bacterial assault, as well as biochemical and free radical attacks. Young arteries are flexible and supple. As time goes on, arteries harden, thicken and lose much of their resilience. To deal with this situation, the body provides enzymatic defenses that break down in the presence of nutritional deficiency. As we age, we become more and more deficient because of the assault of the chemicals in our environment. Consequently, arteries will harden and thicken. Lesions develop and deposits of fatty materials will occur in these damaged walls. These then harden into calcified plaques causing a compromised blood flow and reduced oxygen supply. As a result, the heart's electrical function is disturbed.

What is bypass surgery? It's a procedure that bypasses occluded portions in major coronary vessels. The bypasses are made from grafts from a patient's leg veins, and

it's one of the most popular surgical solutions to the nation's leading medical problems. But I believe it's not all it's cracked up to be.

One out of seven operations could be postponed or avoided altogether. It doesn't cure the underlying disease, and may induce its rapid progression. Many people need a second bypass: different blood vessels can become clogged, the original transplant can become reclogged, or the transplant can fail. In fact, the chance of another bypass increases 5% every year after the operation. It's also a surgery that's full of complications. Not only is it extremely painful, but surgery is fatal 1–4% of the time. Five percent of the time surgery precipitates a heart attack, and in 20% of the cases there are personality changes after surgery, such as forgetfulness, irritability, insomnia, and mental confusion, which are caused by tiny air bubbles entering the brain from the external blood pump during surgery.

How can such a piecemeal surgical cure be worthwhile? What lasting benefit can result from a procedure that detours a few impaired arteries while many other arteries throughout the body continue to deteriorate? I think there's an inherent fallacy in bypassing these vessels, which are one of only several restricted portions of the body, when the same degenerating condition might be infecting the entire cardiovascular system. The bypass approach treats the tip of the iceberg. It treats the sites where plaque has developed most rapidly, while ignoring the rest of the circulatory network. It is at best an expensive, stopgap measure, a risky high-priced surgical aspirin that provides pain relief and not much more.

The most worthwhile alternative, in my opinion, is chelation therapy, which almost never is mentioned in the treatment of coronary artery disease. What is chelation therapy? Well, it's a medical treatment that improves metabolic and circulatory functions by removing toxic metals such as lead and cadmium and abnormally located nutritional metallic ions, such as copper and iron, from the body. It uses a synthetic amino acid called EDTA that is delivered into the body via an intravenous solution. This therapy, administered through an intravenous line (IV), lasts 2–4 hours. Proponents suggest that patients undergo treatments once or twice a week for a total of 30–40 treatments. It usually takes about 4–6 months to get through the whole therapy.

Along with the IV treatment, the physician prescribes vitamin supplements to correct any mineral and vitamin deficiencies that were either already present or created as a result of the chelation therapy.

Chelation therapy actually was developed in about 1893 as a method of combining metals with organic molecules. It was introduced as an industrial tool in the 1920s in the manufacture of paint, rubber, and petroleum products. In the 1930s, the

Germans developed a synthetic calcium-binding additive—EDTA. It was used to keep stains from forming when calcium and hard water reacted with certain dyes.

During World War II, the government realized the potential therapeutic benefits of chelation. Concern over the possibility of poison gas warfare triggered a mammoth search for suitable anecdotes. At the end of the war, chelation therapy became routine treatment for arsenic, lead, and other heavy metal poisonings. In fact, the U.S. Navy used it to treat sailors for lead toxicity caused by the paint being used on ships.

Chelation therapy's therapeutic potential for conditions other than lead poisoning surfaced when chelated patients reported surprising post-chelation health improvements, such as better memory, vision, and clear thinking. Patients with atherosclerosis could walk farther with much less chest or leg pain and they suffered less angina.

A little bit later I will discuss some of the uses of chelation and show you studies that demonstrate improvement in many conditions.

Chelation therapy addresses free radical pathology, which is a disease mechanism. This is a common denominator in a lot of chronic, degenerative diseases. Free radicals are deadly ions that damage cells by breaking down delicate cell walls, as well as damaging important protein enzymes that are necessary for energy production. That's why people get tired as they get older. Enzymes keep free radicals from running wild. You probably have heard of Vitamins C and E, which are free-radical scavengers.

Chelation therapy counteracts the underlying disease process. Over time, IV injections of EDTA block excess free radical production, protecting the tissues and organs from further disease. It helps block the development of atherosclerosis and gives the body time to heal by stopping free radical production.

What are the side effects of chelation? The death rate for chelation therapy is only 1/100 of 1%. By contrast, bypass surgery is about 1–4%. I think the biggest side effect of the therapy is that it's so time-consuming. Two to four hours twice a week are spent in a doctor's office receiving the therapy. Travel time plus scheduling the therapy during the physician's business hours make the therapy a significant commitment of time.

Another side effect of the therapy is kidney overload. This can lead to impaired kidney function if EDTA is administered too rapidly or in too large a dose for the patient's tolerance. There are guidelines pertaining to how much EDTA should be

given in a particular injection, and a component of the therapy is to use blood tests to monitor kidney function during treatment. Some other symptoms, which I think are pretty innocuous, include burning or stinging due to the IV, mild stomach upset, and transitory leg cramps. Chelation therapy can lead to hypoglycemia. Diabetics, who are often candidates for chelation therapy because of their circulatory problems, must be monitored very closely.

Several studies describe the benefits of chelation therapy. A condition for which EDTA has been shown effective is inhibition of platelet aggregation in humans. This is another term for platelet stickiness, and it is partially responsible for arterial spasms. Arterial spasms compromise the blood flow to the heart muscle and nerve cells, which can then lead to a heart attack. Actually, heart attacks are often caused by the electrical malfunction rather than blocked arteries and lack of blood supply.

EDTA also has been shown to improve pulmonary function and alleviate chronic lung disorders. EDTA has reduced cancer mortality, helped in peripheral vascular disease, relieved symptoms associated with intermittent claudication, and also improved ischemic heart disease.

There was a study that showed EDTA cleared a totally clogged right coronary artery for a patient who was rejected for bypass surgery. Angiograms proved that EDTA totally cleared the blocked artery.

In my opinion, another great application of chelation therapy is for diabetics who have eye problems and often conditions leading to gangrene in their legs. Chelation therapy can actually reverse gangrene. Patients will get a recommendation to have their leg amputated. As a more pleasant alternative, they elected EDTA. In some cases the gangrene has been totally reversed. A comparison of the cost of EDTA chelation therapy and coronary bypass surgery is shown in Table 2.

The duration of therapy includes an average hospital stay of 12 days, preadmission work-up, and cardiac rehabilitation. When we talk about managing disease, one of the things that we, as actuaries, want to do is manage cost. A bypass costs about $41,000 for the over-65 population (perhaps lower for the under-65 population). Contrast that to chelation therapy with a total cost of about $3,500. The actual therapy is $2,700 plus lab, electrocardiogram, and kidney function tests plus vitamin supplements. One reason for the vitamin supplements is that chelation therapy not only removes some toxic metals, but it also can remove minerals and vitamins.

TABLE 2
COMPARISON OF COST
EDTA CHELATION THERAPY VERSUS CORONARY BYPASS SURGERY

	Coronary Bypass	**EDTA Chelation Therapy**
Duration of Therapy	Average hospital stay of 12 days, preadmission workup, cardiac rehabilitation	2 hours 1–2 times per week for 4–6 months
Cost	Hospital and facility $31,000 Physician 10,000	Chelation therapy $2,700 (30–40 treatments) Lab work 400 Supplements 400
Total	$41,000	$3,500

The Medicare length of hospital stay for this diagnostic related group was 12 days. In addition, there is pre-admission workup and cardiac rehabilitation afterwards. By contrast, EDTA chelation therapy takes about 4–6 months.

I used coronary artery disease and bypass surgery as a particular diagnosis for which EDTA works, but it really applies to many other conditions because it works on the circulatory system. Diabetics have many circulatory problems. Arthritis and allergies are often caused by accumulated toxicities in the body as well as vitamin deficiencies, which can be improved with chelation.

Oftentimes, patients will not only get relief from their specific problems, but they will get other beneficial side effects. As you clean the circulatory system it just functions much better and the patient feels better. EDTA does this by altering enzyme activity, removing toxic metals, and restoring balance to the essential minerals and trace elements in the body.

I want to talk about some specific cases. There was an 80-year-old female diabetic with gangrene. She had severe blockage in the veins of her legs. She was told she would need her foot amputated. She could not walk, was nearly bed bound, and she could not even talk. She began therapy on July 14, and by August 4 she was able to walk short distances. That is a fairly dramatic change in a short period of time. By six months she was talking, walking, and only had one small area of gangrene. She didn't need the amputation.

The next case is an 87-year-old female, hospitalized, and told that she would die without bypass surgery that was scheduled for the next day. Her family was really concerned because 87-year-olds are usually so frail they can't handle surgery. This particular person already had had an angioplasty. Her symptoms included chest

pains after every meal, she was taking 2–3 nitroglycerin tablets with every meal for a total of 6–9 per day, and was also taking other cardiac medications. She started chelation therapy on December 5, and by January 10 was feeling so much better that she was able to reduce her use of nitroglycerin. By March 27, she rarely had episodes of angina.

Another case involved a 70-year-old female who was unable to walk, with extreme forgetfulness, a history of two heart attacks, osteoarthritis, chronic pulmonary disease, heart failure, chest and leg pains, cataracts, mental confusion. She really was not functioning too well. Her only option was for the family to put her in a nursing home. After ten weeks of EDTA treatment she was able to care for herself, resume housekeeping, and cooked Thanksgiving dinner for 20 people. I think that's a dramatic turnaround.

If EDTA is such a great therapy at such a low cost, why isn't it used more often? Why isn't everybody doing it? Well, for one thing, Medicare doesn't pay for it and insurance doesn't either, except in cases of toxic metal poisoning. They do not recognize the fact that it has other therapeutic benefits. For example, Medicare believes that chelation therapy isn't medically indicated and necessary for the treatment of atherosclerosis and, therefore, doesn't meet accepted standards of medical practice. Medicare says it's experimental because there's a lack of well-designed controlled clinical trials demonstrating its effectiveness. But physicians in private practice who are providing the service are unable to fund large-scale, well-designed, and scientifically indisputable double-blind studies.

Drug companies are unwilling to run studies because EDTA costs only a few dollars per IV treatment. There is not big money in EDTA, and that doesn't attract drug company research money. It doesn't require the vast resources of modern medical centers and it does not use space age technology, which is so prominent at research-oriented hospitals.

I think the issue of EDTA as an accepted therapy also involves medical politics because the specialists who deal with bypasses, as well as the hospitals who do all these surgeries, will lose a great deal of money if bypasses aren't done.

Another issue is lack of familiarity. People just don't know about EDTA. Most people who get into chelation therapy end up doing so by word of mouth. They hear about it and they don't want to have the surgery. People are willing to pay for chelation because it works.

Another reason chelation therapy is not used more is because the traditional medical focus in therapy tends to treat organs rather than the whole body.

Chelation therapy cleans out the system, allows the body to heal itself, and corrects many vitamin and mineral deficiencies that contribute to chronic diseases. That just is not the approach of American medicine.

In summary, I hope you come away from this a little more curious and knowledgeable about a safe, low-cost alternative to bypass surgery.

We, as actuaries, are supposed to be on the leading edge of trying to manage care and reduce costs, and I think this therapy definitely does that. EDTA is not the total answer to curing chronic diseases. A holistic approach would also include lifestyle changes such as diet, exercise, stress management, and vitamin supplements. EDTA will help with those serious health problems that cannot be traced to a single cause. So, bypass surgery, and try chelation.

Mr. Pyenson: It was interesting to hear Ellen and Bob talk about some of the financial incentives and financial interests behind both disease management programs and current medical practice. I will talk about the various interests in the health care industry and how they relate to disease management. It seems to me that much what you read about disease management doesn't make sense. The previous two speakers were rather upbeat, but I'm not sure I view disease management as a solution.

We will look at the spectrum of disease management advocates—at what they hope to gain and some of the potential for actuaries to work in disease management programs. I hope that those of you who work for consulting firms and health plans will find this useful.

Bob had about the best definition of disease management that I've seen yet. I agree with Bob that there are many different definitions. A year or two ago I tried to fight the words "disease management." I've given up. Sometimes the wrong words become general usage and I think that has happened with "disease management."

I'd like to share with you an amusing anecdote about the term "disease management." One of my clients is a major drug manufacturer, and they do not like the process of therapeutic substitution. Therapeutic substitution means that the health plan directs the patient to take a less expensive, perhaps generic drug instead of an expensive brand name drug. Therapeutic substitution is a dirty word in many pharmaceutical houses, and my client had to create a different word to describe that process. For internal drug company political reasons, they decided to use the term "disease management." So I think the term means different things to many different people.

Supporters of disease management include the patients. I think Ellen described some of the genuine and strong support that patients have for different or holistic approaches to medicine. Doctors have their reasons to advocate disease management, HMOs, nurses, academics, the patient advocates. Finally, the ones you hear the most about because they seem to have the money are the drug companies. I'd like to describe each one and what each hopes to gain from disease management. Let's start with the pharmaceutical industry.

In my view, the pharmaceutical industry needs new ways to sell its products. The industry is under enormous pressure from managed care, but it's not entirely bad pressure from its standpoint. Drug companies have been spectacularly successful financially partly because they had what insurers would call very successful agency forces—"detail men" in industry jargon. Detail men and women go out with briefcases and in suits and visit doctors. They bear the usual gifts from drug companies—pads of paper, samples of drugs, and continuing education material. They promote their manufacturer's products. This worked very well. It was also a major avenue of continuing education for the medical profession.

Detailing was and is very successful but very expensive. The move to pharmacy benefit managers (PBMs) and bulk purchases is actually relieving the drug companies of the need to have so many expensive salespeople. It's as though life insurance companies suddenly found a way to wholesale their products and not need so many individual life insurance salespeople.

But back to the idea that drug manufacturers need a new way to sell their product. If you look at the pharmaceuticals that many drug companies sell, you'd see that many of the products are rather nondescript. Many antibiotics come fairly close to doing the same thing, the various H2 antagonists work similarly, and so forth. Bob may disagree with me vehemently, and I'd be interested to hear his view.

The knowledge that actuaries and others have accumulated documents pharmaceutical over consumption. Approaches such as therapeutic substitutability and rational use of agents reduces pharmaceutical cost.

I've seen several different approaches where a drug company will try to use disease management programs to be seen as the good guys by pharmaceutical purchasers. The purchaser may be an HMO, that usually does not want to open its doors to drug company salespeople or a hospital or others. Extra value services include treatment protocols and education, and the pharmaceutical industry hopes these will produce good relations.

Most drug companies really have very little expertise in managed care, so they have trouble adding value. In my opinion, they are further behind in understanding what managed care is than just about anyone else in the medical industry. So the drug industry has substantial credibility problems with the new managed care players, and I think the disease management programs are one way that they are trying to get into the game.

Here are a few examples of pharmaceutical industry moves into managed care. These aren't particularly recent. Merck sells Proscar whose advertisements say, "Use the drug first. If you still need prostate surgery, we'll refund the cost of the drug." Eli Lilly is the nation's leading maker of insulin. The company says, "If you use our product we'll teach you how to treat diabetes."

Ultimately, I believe the pharmaceutical industry's involvement will be good for everyone, but it will take some time for the industry to hone disease management into a credible marketing tool.

I find that the HMOs that talk the most about disease management are the ones that tend to be less aggressively managed. Some HMOs regard disease management as the next frontier. As always, there are financial and marketing considerations. U.S. Health care made its billion dollars not by managing diseases but by keeping people out of the hospital and negotiating low reimbursement. It focused on acute care and succeeded financially.

But some populations have serious chronic problems, and the financial results of capitated programs for chronic diseases can depend on disease management. For example, let's look at the capitated programs for end-stage renal disease. The care of patients with end-stage renal disease is funded largely by Medicare. The federal government pays $30,000 or $40,000 per year for these people. The patients are heavy consumers of health care, so devoting the resources to treating the whole patient can help the patient and the bottom line significantly. This would involve the range of techniques that Bob addressed such as changing patient behavior, better compliance, better treatment regimes, etc.

Some of the HMOs regard disease management as a new frontier. In many parts of the country, easy profits from shadow pricing indemnity plans, reducing hospital days, or selective underwriting has disappeared.

I want to pick one of Ellen's themes: some patients want sensible care. I certainly have had the experience, and perhaps many of you have as well, of just seeing loved ones getting terrible care that just didn't make sense. Care that was perhaps clinically or emotionally wrong. The patient or the patient's family hoped for a

more holistic approach, with consideration for things like lifestyle and changing patient behavior.

Patients and patient advocates support the move towards disease management. We see this with self-help groups, the hospice movement, and other organizations. These programs do not necessarily represent what the drug companies or others may want to promote as disease management.

I find that many doctors want to use disease management. Physicians often feel that HMOs beat them up, take away control, and dictate terms. I believe that physicians sometimes see the words "disease management" and think that means managing the patient. In other words, they get to manage and control the patient. Some doctors probably are hoping for more compliant patients, for tools to help him or her educate the patient so the patient will comply with treatments. Doctors who establish support groups for their patients might be an example of this kind of disease management.

I'd be interested in Ellen's comments about nurses. I suspect that nurses often feel that they're the ones who actually deliver the care, educate, and take care of the patient, but they don't get any respect from the doctors. (Meanwhile, the doctors complain they don't get any respect from the HMOs.) Using nurses as the patient educators in wellness programs appeals to nurses.

As an example of the nurse/patient link, the pediatric group that my family uses hired a nurse just to educate mothers. The program, however, backfired. My wife definitely resented the program, because we already had a four-year-old and my wife didn't need any expensive lessons in changing diapers. Using nurses will likely backfire if the approach has more glitz than substance.

I think another corner of the medical industrial complex is the academic community. I believe many academics hope that under the guise of disease management or holistic medicine, they will be able to get grants, perhaps in the same way that AIDS funding was a tremendous boon to academic research. Disease management may mean money for outcome studies and other types of research.

Some academics would argue that large, intricate studies might demonstrate that a particular disease management protocol actually works. The skeptics would say that those sorts of approaches may be impractical. The skeptics would add that the HMOs that deliver very aggressive, low-cost, high-quality health treatments are not academic medical centers and did not attain their results through disease management programs.

In managed care, it seems as though many academic medical centers are far behind on the learning curve. Nevertheless, I find that the disease management approach does get a great deal of support in academic centers.

Patient advocates focus on the patient, and not the doctors, not the health care system. Terrible medical experiences can happen even when the care is nominally OK, or respectable. Sometimes the system fails because it does not focus on quality of life.

One of the physician consultants at my company, Milliman & Robertson, was an ambulatory surgeon who needed back surgery. As an ambulatory surgeon he had no idea what to expect when he woke up, and nobody told him what to expect. He woke up and was immobilized and other very uncomfortable things happened. That experience helped him to understand the importance of patient education: what to expect before and after a medical intervention.

Patient expectations can have a dramatic effect both on patient satisfaction and on cost. How does that work on cost? The physician should tell a patient the expected length of stay for his or her surgery. For example, the length of stay, if everything goes really well, is two or three days, whatever is appropriate. Getting everything oriented to that goal, including the patient, tends to help the organization achieve the goal.

Let's summarize the players and their interests. The drug companies are looking for influence so they can sell their products. Eventually, some of the drug companies will figure out how to do it. HMOs are looking for good public relations; they want enrollment and a lower cost. Patients want better care. The doctors want better care and influence and they also want freedom. To the extent disease management will give them freedom, they'd love it. Nurses want respect and quality, and they want to be able to deliver what they're trained to do best. The academic community wants the research grants and the influence and wants to prove that it can do this. Patient advocates want better care and more attention to the patient.

I would like to echo some issues the previous speakers mentioned about disease management. Disease management emphasizes the episodes and not the incidents and the patient even more than episodes. It emphasizes wellness, changing behavior, and chronic versus acute care.

The programs involve educating the various players that we've mentioned on managed care, its structures, and its financial aspects. Nobody knows that better than health care actuaries. Certainly, many of the players are far behind in understanding the industry. People in this room can certainly help HMOs evaluate

disease management offers that may come from drug companies or PBMs or other organizations. We certainly can help organizations prove whether or not disease management works.

As a cautionary note, look at the variability of results of HMOs. Contrast the aggressive HMOs in California with millions of members—120 or 140-bed days per thousand, versus the HMOs in New York that might have 300- or 350-bed days per thousand. The West Coast HMOs didn't get their results by using disease management programs. But there is no reason you can't promote the West Coast techniques as disease management. I think that many disease management programs try to do just that. They bring to their customers tried and true managed care techniques, protocols, and financial incentives. To the extent the disease management vendors do this, it will probably work.

An area that probably qualifies as having the best potential for disease management issues is workers' compensation. For better or worse, workers' compensation is usually the domain of casualty actuaries. But if you look at concepts such as getting people back to work, work hardening, work place evaluation, and other modern workers' compensation techniques, these really sound like disease management programs. Many workers' compensation diseases are very expensive. They can include back pain and carpal tunnel syndrome and other chronic conditions. Understanding how, on a day-to-day basis, the work place environment causes those diseases, and changing that process through modifying work practices really sounds like disease management.

I think the results of disease management in the workers' compensation area could be demonstrated clearly. One reason is that, historically, workers' compensation considers episodes of care. Another natural fit with workers' compensation insurance exists because of the lifetime obligation for care of an injured worker. Contrast that with the usual HMO objection that disease management for some conditions (such as hypertension) does not pay back for decades. Workers' compensation is certainly patient focused, partly because of the high value the employer places on the patient's return to work. So I think workers' compensation is one of the most promising areas for disease management.

In closing, we discussed the definition of disease management, some of the advocates of disease management, what different players hope to gain, and the opportunities that exist for all of us.

Mr. Richard E. Ullman: I believe that this is one of the better sessions that I've attended. I've really enjoyed it. I have a question for Ellen Cole. Anthem is a

leading player in the health care field. Does Anthem pay for chelation therapy? And, if so, tell me about it. If not, why are you still there?

Ms. Cole: Anthem does not pay for chelation therapy. Hopefully, that will change in the future. Our company's mission is to manage care at a lower cost with a better quality of life. I think chelation therapy does fits this mission. Instead of patients having that horrible bypass surgery where their chest is cut open, they could use chelation therapy. It's time-consuming, but there are very minimal side effects to it.

From the Floor: I'm an easterner. If it wasn't because of disease management, just how did the West Coast HMOs get hospital days down to 120 days?

Mr. Pyenson: It took them a while. West coast HMOs have worked at it for years. Although there are a number of different techniques, my personal belief is that progress doesn't begin by starting on the clinical side. That is, I do not recommend that providers or HMOs begin by developing protocol-efficient medicine. Medical groups who assume risk through global capitation have a very strong financial incentive to do things efficiently, and that financial incentive will help the physicians take the protocols seriously. I think emphasizing the financial incentives so that physicians can make more money through efficiency is probably the biggest lesson.

The process that took 20 years on the West Coast will not take as long on the East Coast. It's a short answer. Other sessions here, or at future meetings, could probably address that question for an hour-and-a-half or for one-and-a-half days.

From the Floor: Would Mr. Paglia comment on chelation therapy?

Mr. Paglia: As a pharmacist, I learned about chelation therapy. I do not have any experience in it. I was a drug detail representative and carried a black bag and gave out my share of pens. I did call on a physician who performed chelation therapy, and he seemed to make a nice go of it, although, clinically, I can't discuss it one way or the other.

As I listened to Bruce's presentation, and as a person who has been in the pharmaceutical industry for 15 years, it rattled me a little bit, but everything he said was true. As far as disease management goes, I was steeped in it for quite a while, and I'm still waiting for my own disease management programs to pay off—to reduce the length of stay and all of that. I think Bruce is speaking the truth.

I would like to add that disease management programs are quite variable just like any other new area of health care. It's experimental and promising, just as developing a new drug or a new type of surgery. Twenty or 30 years ago, it was just hoped that we could transplant a heart or do open heart surgery. Sixty years ago, medicine really didn't even have penicillin. Somewhere down the line you may see disease management enter the mainstream. In the meantime, many people will spend a great deal of time and money trying to create the reality.

From the Floor: A previous session focused on case management. Patients want more control. We're all future patients and we all want control. If you explain the therapies to them, patients will pick the cheapest therapy nine times out of ten. I'm interested in what the experiences have been with disease management and how the patients have accepted it. What about the liability aspect? In some ways disease management does what doctors do.

Mr. Paglia: We definitely feel it is important to involve the patient. From an outcome and clinical standpoint, patients know their bodies and their condition better than anyone. They can monitor themselves better than anyone. They know how they feel everyday. If we can just teach them the markers to be aware of or of disease, and then the action to take once they see that marker, then it's very efficient. They do like to take care of themselves.

Liability issues, from my experience, are usually left to the MCO. We have about 20 disease management programs across the country, and we don't cross over to the provider care. We try to begin our services where the doctors' services stop.

Bruce made reference to a doctor's office hiring a nurse educator. That's very common these days because doctors need to make more diagnoses, see more patients, and spend much less time doing all those patient management type of things. Nurses are taking an extremely strong role in managing the care and education of patients as well as the patients follow-up care. That includes making sure they come back for regular visits, teaching them how to care for themselves, noticing the disease markers, and all of those things. We don't touch the treatment itself, but we'll help the nurse to educate patients and show them how to manage their care better.

Mr. Pyenson: I did not attend the other session, but from your summary of it I enthusiastically agree that part of what HMO physicians try to do is educate patients about alternatives. Compare a good HMO primary care physician and a traditional doctor. If you have been able to have the experience of going to both of them, you might find that the HMO physician is much more direct and patient friendly.

From the Floor: I'd just like to add that I think patient education is key. I think we need to educate people in alternatives. As an actuary, one of the things that I want to do is demonstrate the efficiencies of some of these therapies. Medical practice guidelines simply reflect the majority rule on the current mindset about a particular condition. The public needs to be educated and informed about the alternative. Then, as you say, the public will choose its therapy. I don't think there are any liability issues as long as you just provide education.

One of the things insurance companies can do to help is to better define the benefits they will provide. Even though insurers do not tell providers how they should practice medicine, if insurers don't pay for something that creates a big incentive not to do it.

Mr. Geoffrey C. Sandler: I wonder if any of you could comment more specifically about the relationship between disease management and early disease detection, the role that they play, and the strategies for using it.

Mr. Paglia: Part of the disease management process requires analyzing data and targeting patients. Depending on the disease, each one of these processes will assume more importance. In insulin-dependent diabetes, you don't really have to screen for the disease. Your patient arrives at the emergency room and in a coma, which lets you know that there's a problem, with blood sugar.

By contrast, depression is an example of a disease where screening might work, because depression shows itself in nonobvious symptoms. Depression symptoms include major bowel problems (from constipation to diarrhea), fatigue, malaise, forgetfulness, and a variety of other physical symptoms. So if you can teach a primary care provider how to screen for depression, you actually can treat the depression with an anti-depressant and not have to care for these GI problems, chest pains, etc. The savings involve not just the care for those problems; it includes avoiding the lab costs for another GI series, another heart series and EKGs, and other expensive tests. The right diagnosis is clinical depression in a patient who needs a relatively inexpensive antidepressant.

Mr. Sandler: You said you don't need to screen for diabetes because people will arrive at the emergency room. Under early disease detection, you should be screening for diabetes so that people never get to the ER.

Mr. Paglia: Type Two diabetics, usually adult-onset diabetes, are usually overweight and they many not know that they have diabetes. I've heard of a statistic that approximately 50% of the adult-onset diabetes is undiagnosed. You might screen for that, but you probably don't need to screen for Type One diabetes

where there's a defect in the production of insulin. I would expect that you could effectively screen for diseases that are not extremely outright in their symptoms.

Mr. Pyenson: You can look at different diseases from the standpoint of whether they present acutely. Diseases such as congestive heart failure go on for a long time before they get diagnosed. Most people diagnosed with congestive heart failure either have moderate or severe congestive heart failure. Many physicians do not pick up mild congestive heart failure, which, perhaps, is an issue of physician training. Earlier detection could help get the patient treated more effectively with ACE inhibitors, for example. Another case of the value of detection might be pregnant women with AIDS, especially in the Medicaid population. An early intervention with azidothymidine probably will result in an AIDS-free child. In this case, we're not talking about a long span of time for payback. Avoiding having an AIDS child saves tens of thousands of dollars.

Some other detections could be a waste of my time and money, such as prostrate-specific antigen for prostate cancer, and a mammogram for women under 40. I think we will see a great deal of controversy over the cost effectiveness of some techniques.

Mr. Sandler: Bruce, you're talking about diagnostic testing. But there's growing practice in the area of analyzing claims data. Combinations of the medical conditions and prescription drugs that show up in claims data can predict more serious conditions long term. Targeting intervention at these people can prove effective.

Mr. Pyenson: I think that's great. Many companies are very cautious of claims analysis because of confidentiality issues. I think that the early cases of serious conditions would be picked up if the physicians were educated appropriately. In my mind, physicians should not give a prescription without seeing the patient or without making an appropriate diagnosis. But I think you're absolutely right about the potential for mining the data.

Mr. Paglia: I see that Mr. Sandler's comment involved data targeting individuals through data analysis. That's a great quest and I didn't expect it. I believe that in disease management you want to be able to analyze claims and realize that there will be many patients in the ER next year or next month, as predicted by the data. I can't tell you about my experience in data analysis because it's confidential. However, data analysis has a growing place in disease management, and an actuary could make a significant contribution.

From the Floor: I have a question about disease management. Disease management depends on how you define it and it's not inexpensive. You can package it as part of demand management, and if you add ASO fees, it might be roughly half the ASO fee. My question is how much of that can you put at risk with having organizations like the Utilization Review Accreditation Commission (URAC) and NCQA, that is, disease management in proportion to the demand management portion.

Mr. Pyenson: I didn't understand the question. The issue at risk with respect to what?

From the Floor: If you had disease management or demand management, you might say that you can guarantee so many days per thousand or savings with some measure. If that was at max, you'd put half of the fee at risk. I think that URAC or NCQA may have problems with this approach. I'm just trying to think of the structure of the incentives.

Mr. Pyenson: None of the panelists is familiar with the concerns NCQA may have with risk sharing. I am reminded, however, of an exercise with respect to guarantees or portions of savings that I went through in my insurance company days. The marketing department asked us to prove how much money the insurer saved employers through some network or managed care technique. They wanted to use our answer in their marketing material. I see some smiles in the audience. Others here probably were asked similar questions. Our reply was, "What number do you want us to show?"

It's very hard to document savings. In terms of total cost, some of the disease management programs need not be all that expensive. The vast majority of patients are not subjects for disease management. One key is to target the right few patients. That cuts down the cost enormously. For example, the federal government may soon begin several demonstration programs for capitated end-stage renal disease. The insurer or HMO should know every single patient. The payback should be very dramatic for those sorts of people. An HMO trying a program for something that's inexpensive and very frequent—such as the common cold—would need very inexpensive techniques.

From the Floor: I'd like to direct this question to Bob Paglia. It seems that doctors really have to buy into disease management programs for the programs to be effective. What types of responses have you had from doctors? Doctors seem a little wary of insurance companies and others telling them how to practice.

Mr. Paglia: I would agree. Doctors are very wary. You saw my slides on who benefits. The slide for doctors was somewhat shallow. The doctors think that you're showing them how to practice medicine. For capitated doctors, however, once you begin to demonstrate the outcome for their practice, most doctors usually become very interested in their patients' well being and they usually come on board. The tactics we use to get them on board with a particular treatment guideline is to have the detail representative (who used to come in and give pens and things like that) sell the disease treatment plan or algorithm which was developed maybe by the MCO, the National Institutes of Health (NIH), or the American Association of Cardiovascular and Pulmonary Rehabilitation (AACPR). The partnership that is struck between an MCO and a pharmaceutical company that has disease management uses the drug representative to leverage his or her influence on the practicing physician. What you get is Bob Paglia, who is a drug representative for Bristol Meyer Squibb, who does not talk about the antihypertensive but rather how to treat hypertension or cardiovascular disease by Health Net or Community Blue Health Plan. The representatives don't take on the identity of the pharmaceutical company.

Ms. Cole: I can add something. Our company does provider profiling. Stacking the providers up against their peers in a locality is quite effective. If somebody else is doing much better (meaning lowering cost), and it's due to certain therapies, the providers are very responsive to that and don't want to be an outlier.

Mr. Ullman: What you said about early detection triggered in my mind the question of genetic engineering and early detection of disease management. Does anybody have any opinions about that?

Mr. Pyenson: We're in an ironic phase of medical history. On the one hand, we seem to be on the verge of developing precise tools, but on the other hand, we have an industry that is very inefficient. There are inefficiencies throughout the medical system. Some of today's diagnostic tools and treatments are actually very precise, and genetic testing and genetic engineering come to mind. I'm actually less concerned about genetic testing than others, because of the great amount of "noise" in the system. Some of the very refined approaches just are going to be very difficult to implement. I tend to think the value of genetic testing and other advanced technologies really will not emerge until we eliminate some of the inefficiencies in the system.

Mr. Paglia: As far as genetic testing is concerned, from what I've heard on the news anyway, if you can find a genetic marker for a disease, and for some diseases we have genetic markers, you may not want to share any of your information with an insurance company because it is fairly predictive of your long-term health

condition. From an insurance company's standpoint, it probably wants to know. But from a patient's standpoint, well, I wouldn't want anybody to know if I was going to contract a particular disease later in life and, therefore, impact my premiums or have somebody drop me from coverage.

I would like to make some further comments. Disease management doesn't have to be very expensive. Fresno Asthma Project in Fresno, California is doing a significant job with the migrant worker population, which is highly prone to asthma, and the company is not spending much money. I think the company presented something like $186,000 a year to treat thousands of asthmatics who were working in the fields and who constitute a relatively transient population. As far as the return or how much money or resources you're going to put at risk, my experience with drug company-based disease management is as long as there is a reputable return on the investment, whether that return is access to providers or access to the formulary for a drug, or a share of the savings, it all depends on how much. My experience is across 20 disease management programs. They vary from a minimalist type of program, because it's not a big health plan, to a major type of program.