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**MEDICAL CLAIMS MANAGEMENT – KEEPING  
UP WITH CHANGES IN TECHNOLOGY**

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- Use of artificial intelligence
  - Processing of claims
  - Training of claims processors
- "Intelligent" coverage cards
  - Detailed plan eligibility information
  - Electronic claim submissions
  - Financing options
  - Managed care
- Code gaming problems

MS. ALICE ROSENBLATT: Robert Hoyt will be talking about possibilities of using artificial intelligence and some of the things that are currently being done with artificial intelligence. Bob started with Allstate in 1973. He's been doing systems work ever since that time. His last position before he left Allstate in 1987 was director of group claims. He joined Policy Management Systems Corporation (PMSC) and he is now principally working on managed care solutions using technology.

Mary F. Miller will be talking about intelligent coverage cards. Mary is senior vice president of new business development for the Travel-Related Services Company of American Express. She heads the unit that is piloting the Quattro health care payment card. She has been with American Express for six years and has previously held positions with Time, Inc.'s Home Box Office and McKinsey and Company, the management consulting firm. She holds MBA and MA degrees from Columbia University in New York and a BA degree from Sweet Briar College in Virginia.

Linda Stelmach will be talking about the problems of unbundling of services. Linda has a degree as a registered record administrator (RRA) and she has been with GMIS, Inc. for the past four years. She is currently the claim check product manager. Prior to her position with GMIS, she was assistant director of medical records for a large teaching hospital in the Philadelphia area. She has also been a diagnostics related group (DRG) coordinator with a hospital in Baltimore, Maryland and the medical record coordinator for an HMO.

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MR. ROBERT J. HOYT: Often when you're having trouble defining what something is, it's easier to talk about what it's not. A lot of people are thinking of artificial intelligence as the ultimate answer to everything. That's not necessarily true. Some of the definitions that I've seen recently are, if you're not interested in having the right answer every time, then that's a perfect application for artificial intelligence. Basically, the fundamental difference with an artificial intelligence (AI) technique versus a standard programming technique is that a standard programming technique uses algorithms. It is a structured, step-by-step process that gets you to the right answer every time. AI uses something called a heuristic, which loosely defined, is "a sort of." If you don't have all of the fields of information filled in on your data base and you want to make assumptions based on what you do have, that's kind of what AI does. It allows you to fill in the blanks, make some assumptions, and move to an answer with some probability of being correct. What AI ultimately represents and is probably most commonly known for is a collection of expertise. Somebody in your organization has particular knowledge of how to look at something and come up with some conclusions. If that person puts that "stuff" into AI-type code, then you can propagate that expertise. The only problem is, when that person leaves and you need to change those rules, there isn't anyone left who knows how they were built.

There are basically eight disciplines within artificial intelligence and, depending upon how deep you want to get into the subject, most of the processing in artificial intelligence is driven by an inference engine. Very simply put, this is a series of very explicit statements that basically say that if A is true, then B is true; and if A is true, then C is never true. By structuring those statements in various sequences is essentially how AI ends up with its results. Probably one of the widest uses at this point in time within the AI is the natural language query. There are several products on the market. The one that comes to mind is from AI Corp. Natural language query allows you to sit down and build a request saying, "I'd like a list of all of the claims over \$500 that occurred last week." You type in the request in natural English, and it will drop the "I" and the "like" and pick up words like *claims* and *list* and *last week*, and it will build a query to retrieve that data.

Automated programming is more of the systems technician type of arena. It's CASE tools and code generators. It's basically productivity aids for programmers.

There are planning applications. Decision trees are the same kinds of concepts, but we're interested in artificial intelligence and its "explain" feature. When you question what the result is and how you got there, the inference engine will go back and lay out step by step what it did and what the assumptions were that it made to derive the answer that it gave you.

Speech recognition is an area that is going to grow more rapidly over the next few years. The ultimate goal here is to be able to digitize a transaction from a voice imprint. You see it today in telephone answering systems, where you are asked a question and told to hit one or hit two and it then leads you through some other options. The ultimate goal would be to have an AI colonel behind the scene that's listening to the speech patterns and asking questions like "What is your AI policy number?" You would tell the policy number and AI would digitize that response into a transaction. That would save the number of times that the caller has to hit the telephone key pad. Most of the telephone studies that I've seen indicate that after about

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20 seconds or so, people start to lose their concentration; but if they can say their responses, then their attention span can be extended. This has many applications in the health arena. Think in terms of customer service and trying to route that call using something like call path together with voice recognition.

Perception is a fancy way of saying, "Let's analyze an image for the same end result as voice recognition." As an example, let me take a claim form or an application for insurance. First, it is scanned. Then, using AI and a set of rules, policy number, claimant name, address, phone number, and territory, etc. are found. This will populate the data base with data that would then be used with an algorithm and traditional programming. "Understanding" basically lets me build enough of these if A, then B, and not C-type things, so that I can read text and start to draw inferences from that text. Obviously this demands a tremendously large vocabulary. It will take a while to build those.

The neuromodelings get into what you see in the manufacturing world, with the robotic arms, but there's also a lot of it going on in biological modeling. As the various interactions between cells are recorded, you start to simulate them. Then, you can use graphics on the computer to provide an interactive model of the brain. The latest one we've seen is what happens to the brain when taking drugs.

That represents the whole world of artificial intelligence. When you use that term, you're talking about something in one of these eight areas at this point in time.

The basic characteristics of AI are if A is true, then B is true. To solve any problem with AI techniques, decompose it into smaller and smaller steps, and as each step is refined, it then leads to the assumptions to resolve the next step. You eventually come up with a highly probable answer. It allows you to consolidate expert knowledge. Think in terms of claims examiners, for example. There are those who can look at a claim and instinctively seem to know if it's right or wrong. They pend that claim, send out letters, gather the necessary documentation. A lot of time and money is spent. The thought process that that examiner went through to recognize the problem is the kind of "stuff" that you put into an AI application.

Why does this technology add value? A lot of the difficulty in defining algorithms within the health area is that the combinations and permutations are virtually limitless. When you think in terms of property and casualty and individual insurance, most of the transactions and the data and the relationships are one to one. When you get into group, they become multidimensional. Because of that multidimensional nature, it's very difficult to get all the blanks filled in 100% of the time and filled in with enough accuracy for an algorithm to work on it. We're starting to see more and more slices being put over to the side and some sort of AI technique used to refine the data before human intervention.

It is a difficult process to gather expert knowledge. It is hard to find those few examiners who, when they look at a claim form and say it's wrong, are typically right 90% or more of the time. Those people are consolidating their knowledge and because of that, the decision makers and the enterprise are gaining a better understanding of what actually makes the process work. It does provide more timely information in that, because it is a mechanized approach, it does it at a consistent

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speed and with consistent accuracy. It is as consistent as the data that it has to work with. It will typically arrive at more correct answers more quickly than the typical human approach to that problem. It does start to prepare us more for the future.

It should be obvious to most of us that technology is playing a greater and greater role in our jobs today and is going to play a much greater role tomorrow, as we move more and more into the knowledge-worker-type of consent and total integration from an enterprise perspective. More and more available tools will be driven by algorithms and heuristic AI techniques that will be used to gather the information to make the business decision, the risk assessments.

Getting more into some specifics of AI, a relatively common use at this point in time is pending claims processing. In the course of automatically adjudicating medical, dental, or any provider-related claims, there is a variety of check points where information isn't available or the information is conflicting and that claim becomes pended. Subsequently, letters get written for additional information, or some research gets done, and when the information is available, another examiner pulls up that pending claim and then goes through the process of adjudication. This basically implies that that claim is going to be handled twice. There will be twice the unit cost. AI has been used to create the rules to automatically resolve these pending claims. Sometimes as many as 80% of them can be resolved by going through the rules and making reasonable business assumptions. They are then coming out with a 90% probable answer. Sometimes there's subsequent work to be done but that's fine.

To implement this approach, we need to take the standard algorithm, called a claim system, that produces that pending claim, to create a job stream that allows us to cycle that through some AI rules, and then automatically feed that back into our claim system. This is a combination of traditional programming, algorithms, and some AI techniques. That's where the focus will be in the future. As we slice off more and more of these functions, branch out, and eliminate the human intervention on 90% of the pending claim, the unit cost will be reduced. We will improve our accuracy and our quality of data and reduce head counts.

Management reporting is probably another relatively popular AI area with some of the bigger carriers. A tremendous amount of management information data are available. When managers get their summary reports and something looks odd, they will ask for some back-up on numbers. A report is then generated that further refines the problem, indicating that additional data are needed. Eventually they get down to what the problem is, and they effect a cure.

The same thought process that they go through can be described in terms of AI rules. As the initial data become available, artificial intelligence can tell them that they are going to need a certain piece of information. Basically, when everything is gathered, all the information is presented to the decision maker at once saying, "Here's where we saw the problem. Here's where we tracked it to. Now what's the cure that we should effect?"

Before I get into training-type issues, there are some other areas within medical claims where AI could be used. However, I'm not aware of anybody doing these kinds of

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things. When doing claim audits, one tries to find a random selection that will identify a problem. Then, if 5% of your 15% sample has that problem, assume that 3% of your overall population has that problem. Then determine on that basis whether or not it's worthwhile to try to investigate further. Use the AI techniques to understand the basic rules by which the policy was set up. It should end up, say, that certain characteristics, certain kinds of risks should produce claims in these kinds of volumes, with this offset in premium, adding this retention, etc. You can define those characteristics in terms of AI techniques and start to run perhaps all of your claims through that, looking for any aberrations or taking larger statistical samples.

This approach would require somebody to define, in terms of AI rules, the characteristics of a particular premium-claim expense arrangement on a policy and scan those types for anything that looked abnormal. There are several areas within a traditional claim system. For example, there is suspect duplicate claim processing. Some of the larger carriers are moving away from just a plain comparison of who the provider was, what the date of service was, and what the dollar amount was. They are going to more of a point system, which is getting ready for an AI type of technique that says, "Let me evaluate these differences and make a judgment as to which ones are significant in this case and try to improve the accuracy of eliminating duplicate claims."

I did ask several clients that we have in the claims arena if they are using artificial intelligence in terms of training claims examiners. I was unable to find anybody doing that. The ability to train, if the claim-paying rules were expressed, is great. The most significant of the basic building blocks of artificial intelligence is this "explain" feature. When you adjudicate a claim and find that you owe \$1.98 and you question it. AI/Explain will tell you step by step the sequence in which you did it, the places where it got definitive information, the places where it made assumptions and what those assumptions are based on. It will walk you through the whole process.

Obviously, from a training perspective, it would be very helpful if an examiner could pay the claim and the trainee could then find out why it was paid. In that event, the instructor could say, "Example number three should have been \$1.92, not \$2.78." However, on the practical side, we have built an entire claim system using artificial intelligence. There were several million dollars spent in the development of that system. The idea of building one as a training tool doesn't sound too cost effective. However, there are things that could be done. Artificial intelligence could be used in a training mode to start dissecting the process, getting into medical terminology so that some examples are presented to the trainee. You could ask, "If you see things like this, what do you think is wrong with this person?" This will, of course, lead you to ask, "What kind of reimbursement do you think is due?" Some of these tools can be created without requiring modification with every policy that is issued. There will be other ways to start slicing off some pieces to start building training tools.

From my perspective, more and more of the emphasis is being put towards the electronic interchange of information and the elimination of the human involvement. This, combined with the high cost of developing an AI claim system, will keep this alternative low on the priority list for training tools. I think you're going to find more of AI activities directed towards building tools to help actuaries, underwriters, and

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management decision-makers accurately and quickly assimilate the information that they need to make decisions.

Unfortunately, I don't have a lot of examples of people who are using AI to train. As a matter of fact, I would say, in its totality, it's probably not practical. But as you get into the coding of claims, it might be used to translate the alpha description on a claim form to an International Classification of Diseases-9th Revision (ICD-9) code. By doing that accurately, your analysis on the back end gains more credibility. There are things that you can slice off and build.

**MS. MARY FITZHUGH MILLER:** My topic suggests I'm going to tell you about some really scintillating, breakthrough, new technologies that are going to absolutely revolutionize the cost of claims administration and health care. But actually, what I'm really going to talk about is a fairly mature and fairly simple technology – one that's been around for a while and has been well proven in the credit and charge card industry. In fact, I believe that this technology really does have some very significant potential for changing the cost structure of the health care reimbursement system; perhaps even revolutionary potential.

The problem is, as is the case with the application of many technologies, there are a number of barriers to application of this technology in the health care industry, and the barriers are not technical at all. They really are institutional barriers, cultural barriers, organizational barriers. In short, human factors are at work that are preventing the use of this technology to the extent that it could be used in health care reimbursement.

I'm going to first describe the technology, talk a little bit about how it's applied to credit and charge cards, and then give you the vision of how it can be applied in the health care reimbursement system. I'll then talk about what I see as some of the key barriers to implementation or application of this technology.

First, let me talk about the technology. I told you it was going to be simple. All it takes is essentially a plastic card, like a credit card, with a magnetic strip on the back and a point-of-service (POS) device.

I'm sure that you have seen these devices when you've gone to restaurants or merchants and made purchases with a credit card. Here is what's going on. Essentially the merchants slide the cards through the POS terminals and they enter the amount of the transaction. Now programmed into a POS terminal is an identifier of who the merchant is. Programmed into the magnetic strip, because it exists in the form of the first two digits of the card number, is something that tells that device where to route that particular transaction in the network. It hooks up to a simple packet switch dial-up network and the transaction goes to a central processing unit (CPU). Actually it may go to more than one CPU, but let's simplify it a little bit. In that CPU there's a functionality that first verifies that this is a merchant who's authorized to accept this particular card and second, it verifies that this is an eligible cardholder. This is not somebody who's had his or her card cancelled, or it's not a stolen card, or whatever. The amount of the purchase is blocked against the cardholder's open-to-buy. One assumes this individual has a line of credit and an open-to-buy big enough to cover the cost of that particular transaction. The CPU also will rule

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out fraud, there are some algorithms to do that, and it will authorize the transaction and issue an approval code to the merchant. That goes back to the merchant to protect him or her in the event that any question comes up about that transaction in the future. These POS terminals also typically have a little printer; they will print a small receipt. I'm sure you've all seen those. You sign them, and you wonder why you sign them, because nobody really seems to keep them.

The more advanced POS terminals and networks do electronic data capture, which means they really round out the transaction. They transmit the data on the completed transaction back to the appropriate CPU, and in electronic form the data goes into the cardholder billing system and the merchant-payable system. That means that, in today's environment, you get billed sooner. You can't play the float as well as you used to be able to do, and the merchants get paid faster than they used to.

I will just say a word about how the American Express Card system differs from this, because I think it's a little bit closer to health care applications. It's maybe 1/50 as complex as applying this technology in the health care industry, rather than 1/100, as would be the case with the revolving credit card. With the revolving credit card, the authorization process is really very simple and a computer can do it all. The reason for that is that an individual has a fixed spending limit, so the outcome of an authorization transaction is really binary. It's either "yes" or "no," based on whether the transaction exceeds the spending limit.

It's different with the American Express Card, because there is no preset spending limit. What that means is that the computer has algorithms built into it, and it can say "yes," but it can't say "no." If it cannot say yes – and in about 85% of the cases it says yes – then it refers the transaction to a human being, an authorizer who has a 90-second standard in which to make a decision. That authorizer looks at 16 different screens of data on a whole range of variables, including how long the customer has been a Card member, how promptly the bill is paid, what kind of merchant it is, what the customer's past spending patterns have been, and how far out of pattern this transaction is. Is that particular merchant one who has had a high degree of fraud? Actually, this is a classic application for artificial intelligence, and we have been applying that technology to the authorization process.

Let me try to give you a vision of how this technology could be applied in health care. There is a whole range of potential applications. The first and simplest is eligibility verification. Today, by and large, that has to take the form of a telephone call. That's expensive to the provider, and that's expensive to your companies. Imagine, an insurance ID card with the magnetic strip on it, and some kind of simple POS device in the provider's office. Essentially, a simple swipe could verify eligibility. Not only would this result in a much quicker and less expensive transaction for all concerned, but it also might reduce losses to the provider, because, in many cases today, the provider just doesn't bother.

In the doctor's office, the office administrators will typically make a copy of the patient's insurance ID card, and stick it in the file, and never update the information. The claim is sent to the wrong carrier if the patient has changed carriers. This also tends to be true in most outpatient departments, particularly in emergency rooms. Things are too chaotic. Too much is happening. The administrators just don't bother

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to make that phone call. What more and more of them do is simply demand cash, but that's not a great service for the poor individual who didn't intend to be there in the first place and may not have the cash to pay the bill.

The second application is the copay in managed care applications -- PPOs and HMOs. It used to be simple. You could print right on the ID card: "Copay: \$3 or \$5." Plans are getting, as plans always tend to do, more complex, more customized, and copays vary depending upon the type of medical encounter. All of that can't be printed on the card, and once it is, the card has to be replaced if anything is change. It's much simpler to have all of that intelligence in the CPU. And simply by sliding the card with the magnetic strip through, the provider (based on the type of provider and who the subscriber is) can be told what copay to collect in that particular situation. It also prompts the provider to collect the copay. I'm told that even the staff model HMOs don't always collect the copay. There's far from 100% collection of the copay at the time of service.

A third key application is determining an "in-network" versus an "out-of-network" encounter at the time of service. That could be very helpful to the claims administrators, to have that information fed back electronically and accompany the claim at the time the claim is adjudicated, so that they don't have to do the legwork to find out whether this was, in fact, an "in-network" or "out-of-network" encounter.

Utilization review trigger, this could be an interesting application. To tell the truth, I'm not sure whether it's an algorithm or AI, but essentially the problem with extending utilization review today to the outpatient environment is that typically the cost of doing a review is more than the amount of money that can be saved by doing the review.

Utilization review is applied primarily to big-ticket, in-patient encounters. At any rate, if in fact some sort of screens or algorithms or expert systems intelligence could be created in the CPU, the provider could input diagnosis and procedure codes through the POS device. The system could essentially raise a red flag in particular types of encounters, maybe 5%, 10%, or 15%, at most, of all these encounters, and send a signal back to the provider saying that this calls for utilization review before proceeding."

Referral tracking is another key area, one that's of great interest in managed care, obviously. You can track, at the time of service, whether the primary care physician, the gatekeeper, has, in fact, referred the subscriber to a specialist. The specialist can check to be sure that this is an in-network referral, because if it isn't, he or she is at greater financial risk in terms of collecting from the patient or the subscriber. This information, again, can be transmitted electronically back to the examiner when the claim is being adjudicated.

Payment authorization is just as I described it in the credit and charge card world. This functionality could very easily be added onto these systems. It becomes particularly elegant if, in fact, real-time pricing of the claim can be done by going through all of these other authorization processes at the time of service so that the provider can be told how much he or she is going to be paid for this particular encounter. Today, doctors in managed care often have a number of contracts. They



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don't really know whether the individual in their office comes under one of these contracts. They have no way of knowing. They just submit their full rack rate and hope they get something.

The one area where I frankly have a little doubt is in claims edit and submission. These fairly simple POS devices are being used, to some extent, to actually try to submit a claim electronically. They're not terribly user-friendly. There is a new generation of POS devices coming down the pike. The one that I'm most familiar with is the new Emerald system of Verifone. I don't know if any of you have seen this, but it has a four-line display. It has an alpha keyboard, so there is no need to use a control key and then hit a numerical key one, two or three times to get a particular alpha entry. It has a fair amount of memory. It can actually store claims data during the day and then transmit it at night when the phone line charges are cheaper. But again, these are not terribly user-friendly.

What seems to work, or is likely to work much better in my judgment, is an interface between a POS device and a doctor's practice management system or a hospital information system. There's a modem in the POS device of course. The modem could be in the PC, or the POS device could read the print file from the PC and transmit via modem. Most practice management systems (PMS), for example, can print out a claim. When the office administrator hits the command to print out a claim, instead, this device could read the print file, dial the appropriate network, and transmit the claim.

This is a wonderful vision. It has a lot of benefits to all the participants. It's really a win-win situation for everybody in the health care equation. First off, for the providers, it reduces their administrative hassle. It streamlines their compliance with managed care rules. I think most providers recognize that managed care is here to stay. There are a few cantankerous ones down in Georgia who are still trying to hold off the inevitable, but most of them recognize that it's here to stay. But they're begging for solutions that will make it easier for them to deal with it. I saw an AMA survey (again, these are perceptions, they may be a little bit exaggerated) where physicians estimate that they spend up to 10 hours a week complying with managed care regulations as well as getting involved in the claim filing process. They're begging for some kind of one-size-fits-all solution to deal with the managed care rules.

Also, providers can enjoy much greater financial protection by being told what copay to collect at the time of service, by understanding how much they're going to get paid, and by understanding whether the payment vehicle used by the patient is good and is going to give them authorization. And, finally, they can provide enhanced service to patients by taking care of all these processes in a much more streamlined way, getting the patients out of the office.

For the patient, this system would certainly provide easier payment, less cash up front. This is important even in managed care applications, where one typically doesn't have much cash up front, when you're in-network. If the patient is out of his or her service area (and nobody has ever heard of the Harvard Community Health Plan in California), then the patient is still very likely to be asked for payment up front, and that can be an embarrassment.

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Another patient benefit is fewer penalties for noncompliance with managed care. You all know how the system works, so you probably don't go to your doctors and have them recommend procedures and do it all without calling your insurers. Many people still don't realize they're supposed to do that, and they then get zapped with a denial because they're told they should have gotten a second opinion. Within the system I've described you get real time authorization. Nobody gets penalized. Everybody knows the rules of the game at the time of service.

Finally, for the payer, clearly reduced administrative costs are a key benefit, but there is also more effective enforcement of managed care rules, which means that everybody in the equation saves, including, certainly, the carrier's self-insured client. Retention of quality providers in-network is another key element, to the extent that the carrier can reduce the hassle of complying with managed care rules. They cement the relationship with their providers in the managed care networks and reduce the turnover, which is a key element of administrative cost in managed care. And, finally, they've enhanced data capture capabilities so that the claims examiner can really have everything at hand that's needed to adjudicate the claim all at the same time and in a very timely fashion.

Why aren't we seeing all of this rapidly put into effect today? There are a number of strategic issues here. On the providers' side, the providers are really requiring a one-size-fits-all solution. (I'm exaggerating a little bit, because if something could be done that covered Medicare and Blue Cross, that alone might be enough to get the providers really interested in using one of these devices and get their staffs trained on how to use it and comply with the rules and regulations.) It's simply impractical to expect a provider to have multiple terminals or devices at their desks to deal with these applications.

On the other side are the payers, who are really a very highly fragmented industry. They have tremendously competing demands for capital. Simply making the transition from indemnity to managed care is an absolute capital hog – in building the administrative infrastructure to support the networks, for example. And, finally, there are simply competitive rivalries. Many don't want their data bases accessible to anyone else. Carriers obviously regard as proprietary information their subscriber lists and what their contractual arrangements are with providers. Information is, after all, power.

What all this suggests is that there is a need for a third-party intermediary. Note that I didn't say *intermediaries*. There probably is room for more than one in the industry, but there's probably not room for many intermediaries. The reason is, is that the nature of the business makes it financially unattractive for anybody to take the risks entailed in building this type of network, unless they can be assured of having a really high market share or being pretty much the dominant player in their own marketplace.

Let me just talk about some of the barriers that a would-be intermediary would face in trying to build a network like this. One of the biggest ones, of course, is lack of standardization. It is an absolute nightmare in the industry. The X.12 Committee of the American National Standards Institute has been developing standardized electronic formats for claims, explanations of benefits (EOBs), etc. Once they finally decide on what the standards are, it's then up to each carrier to determine when and how to

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implement those standards. That process could still take a number of years. Hopefully it won't, but it's possible that it could.

Enormous capital requirement is another real barrier to entry here. I'm not just talking about the hardware costs, (the hardware costs are actually probably a relatively small element of the equation), but the cost of maintaining the infrastructure to really train and support the providers. In a managed care situation, a carrier with a strong, nationwide managed care network could perhaps use its provider relations staff to do some of this. There may be some synergies there, but it is not an insignificant investment, in particular, for companies that are facing other major demands for capital.

Payer cautiousness is another barrier. Again, the system would work best if this CPU that I described were really a sort of common utility. We could save every payer from having to make a huge capital investment in building its own claims system. Payers don't want to contribute their proprietary data to a common utility, because of the reasons that I described earlier. An alternative would be to build literally hundreds of interfaces, each customized to the needs and systems of a different payer.

There's, furthermore, a real risk in this business. Suppose somebody gets all the way there and builds it, and then somebody else comes along and does the same thing. In essence, this is the type of business that would entail high fixed costs and very low marginal costs per transaction. The cost of entry may not be that significant on a local basis. It could be like AT&T getting picked off in its long-distance telephone business by the small niche players in each market, the piranhas of the world. When that happens, the industry inevitably ends up competing on cost. People start pricing on the basis of marginal cost rather than full cost, and it just becomes a viciously competitive industry with very low returns; not an attractive business for most people.

Finally, there's a lot of uncertainty about what's going to happen in the future. One could make a tremendous investment in building a network such as I've described, and find that it's all moot because somehow the government has voted in some sort of national health care system designating a different type of intermediary arrangement. The company or consortium that has made the investment in an electronic network suddenly finds itself out in the cold.

What is it going to take to overcome all these barriers? I can throw out all kinds of scenarios as to how such a network as I've described might come about. It could be done by entrepreneurial entrants. There are a number of smaller companies and some not-so-small companies that are trying to build these networks. One you may have heard of is Health Information Technologies in Princeton, New Jersey. It is building a managed care authorization network paid for by the carriers whom it has signed agreements with. The difficulty it faces is that it has several pilots going in different markets, each with one carrier. But to get other carriers to come into one of those markets, to get the critical mass of applications capability, is difficult. The other difficulty it faces is that *right now* its pricing supports pretty good cash flow, and it can pay back its investment. But as it gets a bit bigger, and as it starts to get powerful, and as it has information in its central data base, then I really believe that inevitably the carriers are going to start to encourage competitors. That's simply an economic fact of life.

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Other companies doing this kind of thing include several of the third-party card processing companies such as Envoy, National Data, and our sister division, the Information Services Company of American Express, which has the FDR division, interestingly one of the biggest Mastercard and Visa processors in the country.

Another scenario involves claims clearing houses, such as CIS and CyCare. Again, they face the kind of economic scenario that I've talked about. As soon as competition comes into the market, the competition starts to get vicious on price. While these companies are selling at high multiples and their stock prices look pretty good, they're not really producing a profit in this business now, as best we can tell.

Concerning payer associations, National Electronic Information Corporation (NEIC) is certainly one that comes to mind on the commercial carrier side. Could NEIC really build a "common utility," if you will, for its owner carriers? It seems to be moving in that direction. It will basically have to maintain a sort of monopoly with those carriers. If the carriers start to break ranks and go with other networks, then NEIC may not be able to reach the critical mass to become the commercial network. Even if it becomes the commercial network, it still has the Blues to contend with. The Blues actually are probably in a better position than anybody else, particularly those companies that have a pretty large market share in their market area. They tend to be farther ahead than the commercial carriers in terms of automating the provider and automating claims capture, certainly on the hospital side. And that's because they've had enough critical mass to really get the provider to adopt their device (their terminal) and file claims through it. A number of the Blues could potentially become all-payer networks, but they have many other competing needs for capital and there are many risks involved.

Technology joint ventures: Everybody always wonders what Electronic Data System's (EDS) role is going to be. Is it a big enough gorilla? Could it join forces, say, with IBM or AT&T and really just barge in there with a lot of capital and leverage the presence that it already has in a number of states with its relationship with the Blues and Medicare and Medicaid and actually build a nationwide network? It's possible. Whether it has the guts and the capital for it is another question. General Motors -- its parent -- just lost something like \$4 billion last year. One hopes it has very deep pockets.

Finally, what role could the government play? Could the government simply mandate some sort of solution here? The Health Care Finance Administration (HCFA) has been sending out signals that it's looking for major new technological breakthroughs, and it certainly needs them. The industry certainly needs them since the federal budget only permits the HCFA to pay about \$2 a claim to process. I won't ask you to reveal any secrets, but I've got to believe that for those carriers that are still Medicare intermediaries, it has to be a loss-leader business.

MS. LINDA H. STELMACH: I'm going to talk about the problem of code gaming and other inappropriate billing practices that are inherent in the way that claims are paid today in the industry. I'd like to focus my discussion on defining what the problem is and how it occurred; what the causes of the problem were; what it's costing the industry (estimations are that this problem is costing the health care industry billions of

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dollars each year); and then talk about some of the barriers to solving this problem and some of the ultimate solutions to the problem.

Just as a backdrop, over the last 10 years or so there's been a real shift in the whole health care industry. It has been going from more inpatient services to outpatient care, more managed care, and the focus has been on utilization and the appropriateness of the services that are being rendered. What is the medical necessity of these services? There have been a number of auditing areas that have been targeted to address some of these problems. Code gaming is one small area. There are many people in the industry today who think that code gaming is truly a form of fraud.

What has caused the code-game problem? In 1966, the American Medical Association (AMA) released the current procedural technology (CPT) as a nomenclature system a way of naming procedures that are being done and to statistically keep track of those procedures. As that process has evolved, that nomenclature system has now become a payer mechanism. Codes are assigned to each given procedure that reflect the reimbursement that a physician is going to receive for the services that he or she is rendering. The inherent problem underlying all of this is that we're using a system that wasn't developed for the purpose that it's now used, and as the system has evolved over the years, it's become more and more of a payer product, but it still does not carry that denomination to it.

All of the medical data that you get on a claim is interpreted into a CPT code, which reflects that service. These codes then determine the payment. In understanding that, some physicians have realized that, by manipulating these codes and how they're submitted, they can ascertain the reimbursement that they're going to get from submitting these codes. It has become a game, if you will, in the industry.

Another underlying premise to all of this is that there are many mixed signals given in the industry as to what proper coding is. Alice told you I was an RRA. Most people don't know what an RRA is, but most of what we do is coding. We have a whole semester in college on how to do ICD-9 coding, and most people in the industry can't believe that anybody does that. The validity and the importance of diagnostic related groups drives a lot of the reimbursement that goes on in the health care industry today. Most of the people who do the billing for providers in their group practices or individual practices learn CPT coding in a one-hour seminar, or don't actually get taught how to do it all. They pick up the book and try to look up the codes. There are a lot of mixed signals about how to properly code. There are organizations and billing services that teach people to put down everything on the claim that they think has been done. "That's the way to properly code, and the health insurance carrier will know which of those to appropriately pay for." There are two sides of the house. One is saying, "No, you shouldn't code for all of these things," and the other says, "Code it all and let someone else figure out what really should be paid for." There are a lot of mixed signals.

"Procedure unbundling" is the breaking out of a CPT-4 global code or global service into its component procedures and billing for each component individually. By billing for each component individually, the sum of the components usually equals a greater amount than the global code, as it exists in CPT-4.

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"Unpackaging of incidental procedures" are those procedures that are considered to be an integral part of another primary procedure that's carried out the same time, on the same area of the body. They usually require little additional time and effort on the physician's part to perform them and are, therefore, indeed, incidental. They don't warrant separate identification or separate reimbursement.

"Mutually exclusive procedures" are procedures that, by virtue of medical practice standards, could not have been done on the same person on the same day. They just couldn't have occurred and shouldn't be paid for. Those are probably the least common form of code gaming that we see when we look at the types of claims that we review, but they do occur. More commonly they will occur in areas like medical or laboratory services, because they are the types of claims that are less reviewed and looked at by any of the claim examiners or adjudicators.

CPT-4 does have some straightforward coding rules and guidelines, although many of them are subject to some level of interpretation, and most of them are listed at one place in the manual and never listed anywhere else in the book. They apply to numerous types of codes, but they're not repeated in each section in the book. Ignoring a coding rule in submitting a bill is another form of the code gaming problem.

Upcoding really is on the edge of being fraud, because it's a matter of upcoding a service performed to a higher level of service and billing for that higher level of service.

Here is an example of unbundling. Here is a billing for a gastrectomy, a splenectomy, an exploratory laparotomy and the lysis of adhesions. The splenectomy, the laparotomy and the lysis of adhesions are all considered to be incidental services performed while the physician is performing the total gastrectomy service.

Just to give you some background, the exploratory laparotomy is probably the most obvious incidental procedure that exists in the industry today. It's the mere opening of the abdominal cavity in order to get inside to do some other procedure. The laparotomy is usually a very straightforward, understandable service. Next in line would be the lysis of adhesions, which is the removal of scar tissue that may exist internally. To actually do the gastrectomy, which is the removal of the stomach, the physician typically will remove some of the scar tissue that's inside, in order to get the stomach out.

The splenectomy is more controversial, because many people feel the actual removal of the spleen is in itself a major procedure and warrants separate identification. If you abide by the CPT-4 coding rules, you would find that the splenectomy is actually defined as a separate procedure. It is usually done as an integral part of another primary service that's being carried out at the same time. Physicians often remove the spleen at the time that they remove the stomach, because they nicked the spleen in order to get to the stomach and had to remove it anyway. I'm sure most physicians would still feel they need to be reimbursed for that. That's what usually happens. There again the dollar impact in some of these situations can be dramatic.

I have a laboratory example to show you some of the low-end-of-the-scale mutually exclusive procedures. This is a billing for two different procedures, each having its

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own value of \$16. You might think \$16 is not much to lose. It's exactly these kinds of services that are completely ignored by most of the industry today. Nobody has the time or the staff to review these claims, because the volume of laboratory claims, medical services, office visits and things seen in your every adjudication process is too enormous to try to audit manually and identify these kinds of problems. It would cost more to audit them than it would to actually pay the extra \$16 in this case, but these are the services that occur very frequently and can certainly add up to a great dollar amount.

As I said before, upcoding really is on the edge of fraud. It's more difficult to identify on a claim-by-claim basis, because you really need to look at history in many cases and review some operative reports or some other documents. The simplest form is medical visit upcoding, where the physician bills for an extended visit instead of a limited or brief visit. The industry has identified these codes as a problem in CPT-4. Many of you may be familiar with the resource-based relative value schedule (RBRVS) system that is coming. It's going to start in January 1992 and probably the most major change that it will make is to redo the CPT medical codes. They're trying to make it more specific. Physicians need to look at the types of services they're performing during a medical visit to decide what code is appropriate, and then determine the appropriate reimbursement that goes with that service.

In a surgical sense, you can upcode many services in CPT-4. A doctor says that the performed something was complex, when in actuality really was a simple service.

How do these things occur? There are many different forms, and I like to believe that most of these problems occur unintentionally, that the biggest problem in the industry is the fact that people don't know how to code appropriately, that mistakes are made during the coding process. There's a misinterpretation of what the coding guidelines are saying, and they just don't understand the need to better code their claims. More and more physicians throughout the industry are finding that they need to become businesspersons in order to survive.

Billing services and different organizations in the industry today are teaching physicians how to unbundle and how to maximize their reimbursement. Many services say that they can increase the physician's reimbursement by 100% within a period of time. They're promoting that. I've attended some of these sessions as well, just to see what the message is that they are giving the physicians. Most of the time it is blanket billing, put everything down on the claim.

Unbundling is not fraud. It's just that the physician breaks procedures out in the billing process, instead of appropriately billing them under the one code that reflects all of those services in combination with one another.

There are some instances of fraud in just standardized office coding and that's usually the example of the medical visit. Physicians rarely do brief visits. They do extended or comprehensive, and they use the same code, no matter what patient they saw and no matter how long they spent with the patient.

Fragmented billing is another growing trend in the industry. Some physicians will now, instead of sending one claim with five codes on it, send five different claim

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documents. By fragmenting the number of forms that they are sending, they are maximizing their opportunity to disable the patient. As I said, I like to believe that the majority of these problems that occur are not the malicious and intentional type, but rather the unintentional mistakes, lack of education, and things like that.

How much is this costing the industry? The pressure is on some physicians today to try to find some way to maintain the revenue that they have achieved over the past couple of years, despite more and more cost-containment types of barriers put on their revenue recovery. They utilize these types of methods as a mechanism to keep their revenue coming at the same level.

Most of the auditing that's done today in the insurance industry is focused on high-dollar claims. Everybody has some threshold, e.g., claims that are over \$2,500 in value. Ignoring the low-dollar claims is a problem because that is where the high-volume procedures are done, and a lot of code gaming goes on in that area. Each year the AMA comes out with a new CPT manual, accommodating the new codes. Understanding what those new services are, as well as all the new medical technology that goes on in the industry to cause those new codes, makes this a major problem in order to get a handle on what's going on. This problem does affect all of the medical and surgical specialties. You can probably see that but there are certain specialty areas where code-gaming problems are more prevalent. But it is quite proportional in many cases; the more procedures that are performed in an area, the more problems there are in that area.

Some very high problem areas certainly include obstetric/gynecologic procedures and services. I think many of the codes in that section of CPT-4 lend themselves to those kinds of problems. General surgery is another area that's very large. Something very minor, like casting services, represent a very small dollar amount per application. There are guidelines in CPT-4 that dictate when you should pay for a cast and when you shouldn't, and that is a highly abused area.

On average, we find that one out of every four providers in the samples that we look at have some form of code gaming on their claim. Looking strictly at multisurgery claims, which are the highest dollar claims typically, we've seen up to 55% having some form of code-gaming problem. To quantify what the loss is to the industry, as well as to an individual carrier, we look at how much they pay out in benefit dollars a year. Then we project how much the code-gaming problem costs their company doing this through a sampling process and then projecting to an annual basis. We find that it's a wide range; 1-10%. Ten percent is at the very high end of the scale, but the average 3-5% of benefit dollars are paid for these professional services and are actually overpayments for unbundled claims.

Losses are estimated to be of dollars for the whole health care payer industry. Just to give you a barometer, taking one million professional service claims, we would expect about 31% of those to have multiple procedures on them. Out of those, we find about 15%, or 5% of the total population, to have some form of code gaming. It looks like a very small population. On average, if you're looking across medicine, radiology as well as surgery, the average dollar amount that can be recognized for each of those overpayment problems is about \$50. That \$50 multiplied by the number of problems equates to just over \$2 million a year. For someone who



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processes one million professional claims, we'd expect a two-to-one ratio, and that would reflect \$2 million in overpayment that you may be making.

Why hasn't this problem been solved? There are many reasons why the industry has had so much difficulty in trying to get a handle on this problem. Maybe first and foremost is that in order to address the problem, we need to have medical knowledge and understand of all of the 7,000 codes and how they relate to one another. The carriers absolutely do not want to slow down their claims productivity and increase staff or training. That immediately impacts their administrative cost. They produce a quick claim payment for their customers and they don't want to slow that process down at all. There is subjectivity in the way that you may manually approach some of these, and how one auditor might look at something versus another. You need to look at the claim as a whole. You can't look at the fragmented pieces of a claim, but look at the entire claim that's being submitted.

Many of the systems that are out there today are unable to provide the kind of structure that would allow this kind of auditing. There are a couple of solutions to choose. Ignoring pay is one. Prior to a couple of years ago this was probably more prevalent, where people really felt it took them longer to try to audit for these kinds of problems, and just allowed them and got the claim paid quickly. I think that has made a great transition over the past few years. Many companies do some targeted review and look at specific types of procedures that have been problems, certain providers that have always been problems, and certain dollar thresholds that would exceed a certain limit and would require individual auditing of that claim.

Automated code auditing is really a very big topic in the industry today. These are solutions that can be built into the claims processing system. Medically oriented clinical auditing rules allow you to identify these kinds of problems on a prepayment basis, correct the claim and never make that overpayment. When you look at automated code auditing, there are a couple of things that immediately come to mind. Some in the industry think this is a great idea, but are not sure because the immediate reaction is, "I'm going to save this money by not paying these claims, but my providers are just going to scream and I'm just going to end up paying them in the end." To date that has not been the reaction in the provider community. Why that is, I'm really not sure, but most of the providers either seem to understand why these decisions are being made on their claims, or they are just waiting for someone to catch them. We don't necessarily think that those who are doing it internationally are going to change their practices. Some carriers are better at catching these kinds of problems than others, since they usually bill two carriers and they'll continue to bill in the same manner and have a variability in the amount that they're going to get paid, relative to how carriers are auditing these types of claims.

What's the validity of the clinical data being used, because medical decisions are being made by these systems. Do you feel comfortable with those decisions, and do they adhere to the kinds of medical policies that you've had at your organization for years? What does this do to the patients, and are physicians just going to balance bill the patients for all the monies that are not being paid to them for these kinds of problems? It has not been our experience that that's been happening either. I think the most important thing is that the message that's being given back to the physicians in this case is not that this was a noncovered expense, but it's an inappropriate way to

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bill and it's an inappropriate payment and, therefore, it's not even something to be considered for balance billing.

We believe that this problem is going to get worse before it gets better. The RBRVS is probably the biggest thing that's happened to the provider community that's going to directly impact the amount that the providers are being paid for given services. They're struggling right now to find out what that system is going to do, how it's going to impact their revenue and what they can do to compensate for that system. We really feel that the code-gaming problem is just going to get worse, because one of the biggest opportunities that physicians have to maximize their reimbursement is to fragment their billing and be creative in the way that they submit claims.

FROM THE FLOOR: I have a question about the RBRVS changes to the office visit code. You indicated that it puts an increased emphasis on the procedures or the activities during the visit. It looks like they're getting very explicit about the amount of time spent. How does that balance?

MS. STELMACH: Time is a new factor that they're putting into play, whether you spend 10 minutes, 20 minutes, or a half hour with a given patient. Nobody has really seen the code yet. We tried to get some insight as to what the changes are going to be. We know there will be the inability to match up a new code with an old code. The AMA did that on purpose, because it didn't want the physicians to be able to fall into the same rut that everyone has fallen into with the existing system. There are some other qualifying factors besides time, but I think physicians will focus on time because it's the easiest thing for them to get a handle on and to derive which code they're going to use for the submission of the given claim.

FROM THE FLOOR: Does that mean that the definitions and the descriptions published in the proposed rule are not final?

MS. STELMACH: We've seen iterations of that. I think they're close to final. We heard that the AMA is going to produce the codes a lot earlier this year in the manual. Now we're getting the impression that they're not going to be released until December. We know they're holding some sessions in December to announce the codes, and it's our impression that they're not going to release them until those sessions occur in Chicago. I think that the ones that have been published are nearly complete. The AMA was still having meetings in November to make sure that everything was finalized, and it liked the way everything looked.

FROM THE FLOOR: It sounds as if you are saying that unless you change your claim system to collect the amount of time associated with the office visit, you can't make any practical use out of RBRVS.

MS. STELMACH: Most of the physicians will put the code down on their claim document. You can't audit without looking at more information than that to know whether or not they're using the right code, in the same way that you can't audit the ones that exist today.