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Predictive Modeling NEWS

Predictive Modeling Central to aids2031 Initiative

Global initiative launched to address AIDS using existing and new predictive modeling approaches

A group of some of the world's leading economists, epidemiologists, social and political scientists and communication experts has launched aids2031, a global initiative dedicated to "taking a critical look at what we need to do now to change the face of AIDS by 2031" — 50 years since it was first reported — and predictive modeling will play a central role. Indeed, plans call for tapping both experienced HIV modelers and a fresh crop of thinkers as well.

"We intend to look at models of the future spread of HIV, the impact of the infection and the needs for treatment and care," says Geoff Garnett, professor of micropar-asite epidemiology at London's Imperial College and modeling lead with aids2031. "I am an infectious disease modeler using a range of modeling tools. We have someone interested in risk management on the group and are linking up with statistical epidemiologists. I think part of what we will be working on in terms of prediction is what is tractable and what is too uncertain." He adds: "The plan is to draw together a working group of those involved in modeling HIV to agree on an agenda for work and to generate some new interdisciplinary collaborations. Also, I am trying to put together a group of 'young' modelers from whom we could commission papers."

He explains: "I would always be interested in new approaches, but the reason to include young modelers is partly their incentives to invest in the future, their enthusiasm and also the potential for new methods and insights. To my mind, when HIV first emerged, there were many HIV models developed, but over time the number of groups developing models of HIV and collaborating on the prob-lem has decreased. That may well be a false impression, but I hope aids2031 can be a vehicle to encourage a new generation of modelers to work together."

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PM's Role in Underwriting Seen as Different for Each Insurer

Highlights from World Research Group's 4th Annual Predictive Modeling Implementation for Underwriting conference

It was surprisingly cold in the desert in January. The overnight temperature in Las Vegas dipped almost to the freezing point during World Research Group's 4th Annual Predictive Modeling Implementation for Underwriting conference, and the wind made it feel like Michigan Avenue instead of Sin City. But the hardy travelers who convened at the Platinum Hotel, just off The Strip, used their time inside to trade best practices and firm up business ties. Predictive Modeling News was a media sponsor of the event.

Conference chair — and *PMN* Editorial Advisory Board member — Swati Abbott, president at Orlando's MEDai Inc., reports that the conference buzz centered on a couple of key areas. First, it seems clear that predictive modeling has firmly established itself in underwriting, she says — a big change from as recently as two or three years ago. "It seems like adoption has occurred — but many underwriters are still in the throes of deciding how to use it." Some remain skepti-cal about using PM for rate-setting, she adds, while others report "huge ROIs." A fine point in that discussion seems to be this: "Predictive modeling is an important complement to your rate-setting process, but it can't be your rate-setting process," Abbott says.

Another emerging area of consensus at the meeting: "Predictive modeling really helps the whole underwriting process in enhancing transparency — and showing that transparency to employers," Abbott says. "The take-away message was that many companies are still struggling with how PM fits into their rate-setting, but in spite of that, there's a lot of value in the clarification and transparency predictive modeling can provide."

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A fresh start is one of the driving motivations behind formation of aids2031. "It is now time for those in positions of influence to take a longer-term, more comprehensive view of what AIDS is doing, not only to global health, but also to international politics, economics and our hopes for the future," says Stefano Bertozzi, chair of the aids2031 steering committee and director of health economics and evaluation for the National Institute of Public Health in Cuernavaca, Mexico. Peter Piot, executive director of UNAIDS, adds that "it's time to shift today's global AIDS response from primarily a short-term crisis management approach to include planning for a long-term sustained response." As a result, he adds, "we are looking at everything with new lenses and fresh perspectives. We must look at what we can do differently now in order to influence the future face of AIDS."

aids2031 was launched in late January as government, business, civic and public health leaders met in Davos, Switzerland, for the World Economic Forum. "For me, the critical question relates to leadership and what type of leadership we want over the next 20, 30 or 50 years," comments Zackie Achmat, leader of the South Africa Treatment Action Campaign and member of the aids2031 steering committee. "A program of leadership doesn't just look at the easy parts of the epidemic, but also at the hard parts." Adds Rajat Gupta, chair of the Global Fund to Fight AIDS, Tuberculosis and Malaria: "Any business knows that not investing for the future can lead to ultimate failure. aids2031 will start to shift our response from largely short-term spending, based on current needs, to longer-term investing, with potential for great future dividends."

In 2009, the aids2031 steering committee will release its Agenda for the Future, a report of its final recommendations. To get there, initiative participants will conduct a series of think tanks, public conversations, broadcast dialogues and programming, youth summits, original research and web-based discussions designed to get people throughout the world thinking about how to best prepare for and live with AIDS in the future. The initiative has nine working groups:

- leadership,
- financing,
- social drivers,
- programmatic response,
- science and technology,
- communication,
- the special needs of hyper-endemic countries,
- the special needs of countries in rapid economic transition
- and modeling the epidemic.

The modeling component, Garnett says, will rely primarily on existing PM tools. "Within the time scale of the initiative, we are planning to mainly exploit existing research programs," he tells *Predictive Modeling News.* "That means we will be building on existing models -- but also hope to influence the further development of those models and the specific analyses that will be done. There could be some new tools developed." He adds: "Personally, I believe in models that address specific questions, so, rather than an ideal model, I see a range of models representing different locations and dealing with specific questions; for example, the emergence of new tools or the demographic impact of HIV."

Specifically, he says, aids2031 "will be using ordinary differential equations of the transmission of HIV in populations stratified according to different risk behaviors. We are also likely to use individual-based simulations describing the dynamic network of contacts. And some work on modeling geographic heterogeneity is likely. Currently, we know we will model the demographic and healthcare impact of different future patterns of HIV spread."

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PM's Role in Underwriting Seen as Different for Each Insurer *... continued*

Dominating hallway chatter between educational sessions as well was "how underwriting and care management really do end up tying together," Abbott reports. "Who should pay for care management was an open question that we came to no conclusions on. But everyone seems to agree that it doesn't matter who pays for it, it needs to be paid for." Also, she says, conferees agreed that "care managers need to see the same data that underwriters are looking at. There can be no confusion in the hand-off. People are starting to realize there can be no silos."

Here are highlights from the meeting's seminars.

Tele-Applications, Follow-Up Interviews Can Enhance Data-Gathering for PM-Based Rate-Setting

Tele-underwriting can be an important source of the data needed for meaningful health insurer predictive modeling. But, like any approach to data-gathering, each of the various types of interviews used in tele-underwriting offers its own pros and cons. Carriers should look carefully at all the options and select the one that best meets their specific predictive modeling needs. Kathy Lee FLMI, underwriting director at American Enterprise Group, which maintains headquarters in Des Moines and Omaha, offered details of her company's 20 years of experience in the area – an especially valuable insight, given that about half of the executives in her audience were already involved in tele-interview programs themselves.

Lee's firm and its subsidiaries and affiliates, she noted, offer individual coverage, Medicare Supplemental policies, cancer care coverage and Health Savings Accounts, meaning the umbrella company maintains several parallel tele-underwriting operations simultaneously. Indeed, she pointed out, AEG is often "in a merger situation," which can, clearly, "complicate things" when it comes to a consistent approach to tele-underwriting. But that's a good thing. "We've been successful at digging up details in a number of ways," she said. "Each acquisition brings new products with a different distribution for each brand. Some are private label, some are off-the-shelf. Using multiple types of interviews allows us to tailor interviews to individual customers."

A company's technology limitations will determine how close a scripted call comes to meeting the often-elusive goal of sounding like a "real" conversation.

Which is best? That depends on each company's goals for tele-underwriting, of course, as well as its technological and financial resources limitations.

One of the types of interviews AEG uses is the tele-application process, in which an agent makes the sale, gathers some demographic information – including contact information -- and then submits the details in paper form to the AEG head office for a return call or "warm transfers" the call to the AEG interview team for immediate further questioning. When such a call comes in, Lee noted, the 800 number the caller used shows on the telephone set, so the agent knows which brand the applicant is calling about.

Another type of interview AEG uses is the verification follow-up call from those completed applications. As the name implies, the goal is generally to verify that the details on the app are correct. In "intelligent interviews," by contrast, Lee continued, agents use scripts tailored to each customer, including, when possible, the original application itself, patient charts, pharmacy data and any additional information that might be available. The interview includes a mix of open-ended "yes" and "no" questions. "If the customer answers 'yes', you drill down," Lee explained. "But you don't follow up on 'no' responses." Callers ask detailed follow-ups, she pointed out, using specific scripts for patients who answer "yes" to, say, questions about diabetes or hypertension. In blind interviews, by comparison, callers use generic, scripted questions for all customers, although there may be some dropdowns asking for more details. A company's technology limitations will determine how close a scripted call comes to meeting the often-elusive goal of sounding like a "real" conversation.

Of course, no type of interview is perfect for every company and for every occasion, Lee reminded her audience. The tele-app process, for example, offers pretty complete information, because many interviewers are nurses, "so they know how to dig into the details of the disease," she said – although some agents don't like doing the follow-up questions. In that process, she added, customers only have to answer questions a single time. "That's an advantage because it frees up your agents to go on to the next sale," she said. "That can speed up your process." On the other hand, she added, "one pitfall with that approach is the agent doesn't always know the customer's health history," so opportunities to essentially upsell, given a patient's conditions, might be lost. "An agent who doesn't have the right information may have trouble holding on to the sale," she said, "and some agents feel a loss of control. Field underwriting can be lost, resulting in surprises for the agent and the customer."

There are similar pros and cons to verification interviews, Lee said. One obvious pro is a company can be pretty sure it has correct information on the application, she noted. And some calls even turn up "new information, or details the agent didn't get." But you need to keep in mind there's a difference between "details" and "new information," she pointed out, a potential "con" for that type of interview if the caller gets the former but not the latter. And customer confidence can be lost. A verification call may seem routine, even good business, to an insurer; a customer, on the other hand, may view the call as evidence that you don't trust him or her -- or even the agent who originally made the sale.

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One of intelligent interviews' key advantages is callers start with "specific scripts for specific diseases and they already have chart and pharmacy info," Lee explained. Some of the questions are open-ended: "Tell me about your exercise habits." "How would you describe your alcohol use?" "Your drug use?" Some seek specific details, but not a "yes" or "no" response, and then follow up with something open-ended: "What was your last blood pressure reading? Have you made any changes to your diet or exercise habits as a result?" Often, intelligent interviews give skilled interviewers the opportunity to really draw customers out, Lee added: "Is there anything else about your health that you'd like to talk about that you and your agent didn't discuss?" She continued: "You develop the information you need to make a decision, what their doctors are telling them to do and what follow-up is planned. You can also find out things you didn't know, such as the fact that a given customer needs an MRI. Intelligent interviews are my favorite type. You can go directly from the interview to the approval process."

But there are cons as well, she noted. Obviously, script development takes times, and "training staff can be difficult. Interviewers need to know how to ask questions without sounding like they're accusing the customer of not telling the truth." Those interviews can also be very time-consuming for the customer, she added. Also, the answers to some of the questions may require follow-up by an underwriter, if it wasn't the underwriter making the call. That can be a drawback of blind interviews, too, Lee noted. "They may not really develop information well," she said, "resulting in the need for an underwriter to call back." They can also be redundant for the customer. "Frankly, we haven't found blind interviews to be real successful," she added. But that's not because they're difficult to conduct. Because the scripts are generic, "it's easy to train interviewers. One of our companies even employed high school kids in part-time, after-school jobs for a short time."

Setting aside the plusses or minuses of having teenagers roaming your halls, how do you design a successful interviewing strategy for your company? First, define success, Lee advised. "What are you trying to accomplish?" she recommended asking. "Are you looking for a reduction in APS costs? A loss ratio improvement? Are you after a faster turn-around time? Do you want something your agents like?" In many cases, she added, the answer is "All of the above."

The results can be substantial. AEG, Lee explained, didn't used to conduct follow-up interviews for one of its Supplemental products – but decided to take action against a loss ratio that "wasn't good." The agents weren't crazy about the change, she noted, but emphasized that "the population is available and they like to talk." An aggressive call-back program was implemented, starting at two hours after the initial agent contact, then three times a day for the first week and once a day after that, until the case is turned back to the agent. A year later, the loss ratio for that product had dropped 8%, Lee reported. The average turn-around time is 1.5 days – and decreased turn-around time almost always improves customer retention. Agents have come to appreciate the value of the calls, too, she added. "They take them off the hook for the 'But, I told my agent' excuse in the event of a mis-rep." Another benefit of the calls: "Underwriters can tell if customers are telling the truth," she said. "You're able to get a very good feel for them, giving you a really good indication of how they're going to act as customers."

"There's nothing worse than an interviewer who can't pronounce the customer's conditions."

But you also need to be realistic about designing an interview program, Lee stressed. "Define your constraints," she said, noting that one of the most common is technological. "Can you record calls and match them to cases?" she asked. "We do a lot auditing for mis-reps, and we have a very low rate of business we take mis-rep action on. That's a very important component of our program." But detailed auditing takes sophisticated information technology. She urged her audience members to make sure their systems could handle the interviewing programs they were contemplating.

A short development window can hobble interviewing programs as well, she added. Another constraint many companies face is a lack of personnel skilled at interview development. "There's nothing worse than an interviewer who can't pronounce the customer's conditions," she noted. On the flip side, especially well-crafted questions can elicit more information that might reveal a mis-rep. "It's all in the way you ask," she said. "Train your interviewers how to ask questions. There are very creative ways to do it, but it's very important that you not set a negative tone."

Lee recalled an interview program development misstep her department once took. "We did the tele-app, but we allowed [a vendor] to do the follow-up. It was a huge failure. We ended up with a loss ratio 108% over what we expected. We shut the program down in three months."

Combine your strengths and weaknesses and determine the best type of interview for your situation, Lee recommended. "If you want to reduce APS costs and have the time and the technology to develop an intelligent interview, you'll have the added bonus of shortened turn-around time," she said. "If you want to get your agents out of the business of doing the medical portion of the application, maybe a tele-app process would work for you. No technology resources for it? Use a vendor."

Once the initial decision is made regarding the type of interview you'll use, test your conclusion in a pilot program, Lee urged. That's a lesson she put to the test in the three-month tele-app mess.

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"When we rolled it out, we did it with the best IMO and the most open-minded underwriters," she recounted, "and we documented all the decisions we made." The results were disappointing, but the tele-app program did show the impact interviewing programs can have on a product's loss ratio. "You can't always show direct loss ratio improvement as a result of interview programs," she noted. "But the change we saw in the Supplemental product when we added follow-up interviews and, of course, the IMO disaster showed the effect they can have."

New York Medicaid Plans Use PM-Based Risk Adjustment for Rate-Setting Under New Regs

The role predictive modeling should play in rate-setting was on a lot of attendees' minds in Las Vegas, and Howard Brill PhD, director of health informatics at The Monroe Plan for Medical Care, Rochester, NY, offered exactly the kind of real-world example they were looking to hear about. The Monroe Plan is a Medicaid managed care provider that has transitioned, under federal and state regulations, from traditional rate-setting methodologies to setting severity-adjusted rates using predictive modeling to avoid plan cherry picking and set the stage for more robust disease management. Plans weren't crazy about the switch – but that was part of the state's plan, Brill pointed out. "Albany wouldn't mind fewer plans in the Medicaid mix," he speculated, "and likes the idea of plans reconfiguring their reimbursement arrangements with providers and developing more effective care management programs."

Commercial tools for demand management are not allowed under Medicaid. That means "targeted high-touch disease management, supported by predictive modeling, can have a positive return on investment."

Medicaid plans, of course, are not the same animal as commercial plans, but their differences actually highlight the lessons commercial companies – which, for the most part, haven't been subjected to mandatory use of predictive modeling in rate-setting – can learn from their experience in that arena. Medicaid managed care is "a highly regulated environment, with prescribed benefit packages," Brill said, "so accurately estimating risk is extremely important. Errors cannot be repaired by raising rates or reducing benefits." Also, "the population is complex," he noted, "combining a young, relatively healthy population with a chronically ill, behavioral health-compromised adult population." As a result, "effective contracting and reimbursement strategies are essential to survivability and success."

In addition, Brill told his audience, commercial tools for demand management – things like co-payments, deductibles and limited BH benefits – are not allowed under Medicaid. That means "targeted high-touch disease management, supported by predictive modeling, can have a positive return on investment." In that market, market share isn't driven by premium rates, he added, but by service and provider reimbursement. Consequently, "severe budgetary pressures on state governments are encouraging regulatory and plan innovation."

And innovation is something commercial plans know a lot about. They're familiar with the traditional rate-setting methodologies New York Medicaid plans used to use, before the switch to severity-adjusted rate-setting, and many are looking at exactly the kind of PM-based methodology the Empire State plans now use. The two traditional types, negotiated cost-plus rates and trended rates, were intended to alternate, Brill pointed out – something that was affected by "state budgetary cycles and political events." Under the former, plans proposed rates by type of service based on historical experience plus their "expected trend" plus 3%, he explained. Under the latter, "the state trended rates regionally based on utilization and unit cost trends." There were also rate freezes and reductions, he added, that could sometimes be made up in later years. The Centers for Medicare and Medicaid Services required that the traditionally derived rates be certified as "actuarially sound," he continued, noting that "assumptions around the 'managed care adjustment' and 'utilization and cost trend factors' allowed for considerable variation in potential rates." Now, he added, CMS says the risk adjustment used in rate-setting must be "cost-neutral" – and states have to "document how they monitor and re-base the risk adjustment methodology."

Something, he concedes, probably had to change. The traditional rate-setting methodologies plans were using "disincentivized aggressive cost containment by plans," he said. "Maximizing rates during negotiated years was essential for having an adequate 'base' for the trend years, and there was no benefit to saving costs in those negotiated years." Further, he told his audience, the state offered "relatively generous reimbursement to providers to gain market share for plans. And that was not accidental or unintentional. The original intent of the program design was to provide improved access to providers while taking advantage of managed care buying power and sophistication." However, he added, "in recent years that design limited plans' ability to expand the state program to the uninsured." The switch to risk-adjusted rate-setting was designed to change the incentives in the system, he said, "to reward plans with costs below the regional average. The state felt that managed care plans for special populations – the severely mentally ill, the developmentally disabled, dual eligibles and people who are HIV-positive – would be more viable with effective risk-adjustment methodologies."

The plan calls for blending in risk-adjusted rates over a four-year period. During the first year, the ratio is 75% traditional rate-setting, 25% risk-adjusted rate-setting. The risk-adjusted rate starts with the "regional trended" premium rate, then modifies it according to the carefully crafted risk-adjustment methodology. Not surprisingly, Brill pointed out, "for most plans, the greatest impact comes from using regional averages rather than the CRG relative risk adjustment.

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"The definition of 'regions' is the least-examined component of the methodology." Another component of the methodology he described is the relative risk score each plan receives. "A plan's risk score is calculated by averaging the CRG weights for all of the members enrolled in it during the year," he said, "weighted by each member's months of enrollment. Relative risk scores are then calculated by dividing the plan's risk score by the regional risk scores within a benefit-age-sex group."

He continued: "Why use predictive modeling to modify regional averages? In the absence of a predictive modeling modification, the methodology encourages selection of healthier patients. PM levels the difference in patient severity among plans. And greater disease management gains are arguably possible with sicker patients, so adjusting for severity incentivizes plans to develop effective DM programs." But, he said, "the most critical issue to the state and to plans was the quality of a plan's encounter data. A plan with poor data negatively impacts its own risk score and lowers the regional average cost. And missing data in the paid field is a flaw in some systems with capitated reimbursement." The state put considerable effort into supporting data quality improvement, Brill added, including a major overhaul of its data repository, creation of statewide measures of data quality and "extensive edits and reporting of data quality problems back to plans." The process was "painful," he added, but "beneficial for plans because it helped identify broader information technology system problems."

The changeover began about 18 months ago, Brill reported, as the state Department of Health began to roll out the proposed new methodology to plans, including, after evaluating several tools, selection of 3M's Clinical Risk Groups – a pharmacy data-enhanced categorical population model that assigns each member of the population to a single, mutually exclusive category, with expected costs calculated for that category -- for the predictive modeling component. Mercer was brought in to consult and to customize the "off-the-shelf CRG model." The "catastrophic" status level was most affected by the customization, Brill said, "elevating plans' concerns about the model's weakness in the highest-risk area." A coalition of plans hired Milliman Consulting to evaluate the "DoH-Mercer methodology" and to try to figure out how it would work.

One of the issues that perspective made apparent was a problem with recognizing a change in acuity over time.

The results of the analysis: Plans questioned the selection of CRGs, "especially regarding high-risk patients and regarding the state's promised quarterly updating of the CRG weights," Brill told his audience. Impeding Milliman's analysis, he added, was the fact that "modifications to the CRG model made it difficult to accurately replicate the state's results" plus "data quality problems and confusion about the definition of 'encounter data'." Still, the analysis "highlighted the impact of pharmacy data on risk scores," he said, and offered plans "a realistic perspective on the methodology." One of the issues that perspective made apparent, he continued, was a problem with recognizing a change in acuity over time. "The methodology assumes stability in overall regional acuity," he said. "There is no factor for change in acuity" – even though an analysis of 2005 and 2006 data showed that acuity did, in fact, increase.

The analysis also showed the plans, in effect, the writing on the wall, Brill continued. "Marketing heterogeneity in regions is problematic," he said. "An adaptive response is to regionally consolidate, to reduce gains and losses between low- and high-cost urban areas. In part, that was intentional by the state, which is seeking to reduce the number of plans" in the Medicaid program. Additional writing on the wall told plans it was time to update their IT systems. "Deficiencies in legacy IT have a direct economic impact on the plans," he noted. "The change in the rate-setting methodology is accelerating IT investments." The long-term impact for plans that stay in the Medicaid game will show up perhaps most vividly in their provider reimbursement strategies, he concluded. "The historical accommodations between providers and plans" – some types of global budget risk-sharing arrangements, for example – "will be more difficult to sustain," he said. "That's going to be particularly problematic in the Upstate area, where single hospital systems dominate most urban areas."

PM Central to aids2031 Initiative *..... continued*

The group will meet next month to discuss "more specifics for modeling questions." Then, Garnett says, "we will be producing initial work in time for the International AIDS Conference in August. However, the more important goal will be towards the end of 2008, when I hope we will have a conference for which we will commission papers. That will then lead into the second phase of the initiative, where we will work with other groups."

Visit: http://www.aids2031.org for a list of steering committee members, supporters and donors to date and other background information. Contact Garnett at +44 (0)207 594 3215 or g.garnett@imperial.ac.uk.

*T*hought Leader's *C*orner

Each month, *Predictive Modeling News* asks a panel of industry experts to discuss a topic suggested by a subscriber. To suggest a topic, send it to us at info@predictivemodeling.com. Here's this month's question:

Q: "Based on the facts from a project you're aware of, or just in theory, what type of factors involved in a predictive modeling initiative might lead to production of erroneous or misleading results?"

"Three things come to mind. One is rapid growth in covered lives or a significant change in lives, particularly with a different risk score for the change. Another is an abrupt change in average "medical management effectiveness," a metric we use to quantify how "efficient" a system is. Such a change can happen when HMO data are combined with PPO data or regional data are combined with national data. A third is a large volume of recent enrollees combined with more mature enrollees."

David Axene
President, Axene Health Partners
Winchester, CA

"The biggest problem in using claims-based models is identification. When we use commercial models, we are essentially using the model builder's definition of a condition-member, so if the model builder uses a "loose" definition – say, one claim for condition X -- you are by default using that algorithm to identify members with the condition. For some applications, that may be appropriate; for others, it may not. A related issue is the bucketing process of a model; for example, the definition of a "diabetic" may cover many different levels of patient severity, from those with a recent hospitalization to those with a single claim for an office visit. The trade-off between specificity and sensitivity in modeling is an art, not a science. More work needs to be done to understand its implications. "

Ian Duncan FSA FIA FCIA MAAA
President, Solucia Inc.
Farmington CT

"When using predictive modeling for call list generation, my experience has taught me that it's important to look at encounters and costs as dependent variables in formulae generation. Costs in many cases generate "noise" that creates error. Using encounters much more closely aligns to the objective of health management programs, which is to find more of the high-utilizing 10% group and help them before they reach acute crisis to avert their membership in the current year's high-cost 10% group. I also think key attention to the development of optimal survey questions has led to higher sensitivity and specificity levels. That has been a 15-year effort for us."

Julie A. Meek DNS
Executive Vice President and COO, CareGuide
Indianapolis, IN

"Based on our experience, a couple of things come to my mind related to data accuracy during implementation, which can have an impact on predictive modeling results. For a vendor-supported PM solution, it is very important that data mapping be consistent with vendor needs and that vendors receive requested data elements. Also, checks/validation must be in place from data extract to data going into PM processes and the performance of the model. And PM should be done holistically -- at the individual level -- by creating unique member IDs."

Soyal Momin MS MBA
Manager, R&D and Consulting, BlueCross BlueShield of Tennessee
Chattanooga, TN

*T*hought Leader's *C*orner … *continued*

"One thing that can lead to erroneous results is a change in the population from one year to the next. If there is a large influx or egress of members, the models may not be as accurate. Also, if a new disease or intervention comes up during the course of the study period, the models will not take that into account and the results could be skewed."

Russell D. Robbins MD MBA
Principal & Senior Clinical Consultant, Mercer
Norwalk, CT

"There is always some degree of circularity between "risk" markers and outcomes of interest – such as cost of care or service use. That is, when patients use services, they are considered high-risk; when they don't use services, they are considered low-risk. That linkage is especially strong when prior use -- such as a previous hospitalization -- is considered a measure of risk. It should also be of concern when pharmacy codes are used as risk factors. That circularity is sometimes also present when diagnoses are used to identify risk, particularly when very precise disease codes are used -- which are more likely to be assigned by specialists or only after certain procedures are performed. I have seen numerous PM projects calculate risk scores without being sensitive to that critical issue. What frequently happens is populations with inadequate access to services, such as rural populations, appear to be lower-risk and those that are being "over-treated," by, say, inefficient or aberrant providers, appear to be higher-risk. For some applications, that scenario could be very problematic; for example, when PM scores underpin provider pay-for-performance or disparities outreach programs."

Jonathan Weiner DrPH
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*S*ubscribers' *C*orner

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INDUSTRY NEWS

BioSeek Elects Whitfield Executive Chair of Board

BioSeek Inc., Burlingame, CA, reports that Roy A. Whitfield has been elected executive chair of its board of directors. He joined the board in 2005 and has served as a business advisor to the firm since then. Most recently, he served as CEO and chair at Incyte Corp., a genomics company he co-founded in 1991 that "pioneered the commercialization of high-throughput and information technology in pharmaceutical and medical research," a statement says. BioSeek "improves the success rate of pharmaceutical research and development by integrating human biology from the early stages of drug discovery onward," it adds. The company's BioMAP Systems incorporate predictive human cell-based disease models that generate "uniquely informative activity signatures for each potential drug, driving the selection and development of new drug candidates." Visit www.bioseekinc.com.

Cognizant Reports European Growth Accelerates

Teaneck, NJ-based Cognizant Technology Solutions Corp. (NASDAQ:CTSH), a major provider of IT and business process outsourcing services, reports that IVQ07 revenue increased to $600 million, up 41% from the year-ago quarter and up 7% from the $558.8 million reported in the third quarter of 2007, and that quarterly diluted EPS on a GAAP basis totaled 32 cents, up from 23 cents a year ago. For all of 2007, revenue increased to $2.136 billion, up 50% from the year-ago period, and diluted EPS on a GAAP basis was $1.15, compared to 77 cents a year ago. Looking forward, the company says, based on current visibility, that IQ08 revenue should be at least $640 million and first quarter 2008 diluted EPS should be 32 cents on a GAAP basis. Fiscal 2008 revenue should be at least $2.95 billion, up at least 38% compared to 2007, the company says in a statement. Fiscal 2008 diluted EPS is expected to be at least $1.50 on a GAAP basis. "Our fourth quarter and full year 2007 financial performance was driven by strong growth across our business segments, service offerings and geographic regions," comments Francisco D'Souza, CEO and president. "Our leadership positions in key industry verticals resulted in strong revenue performance in our healthcare and financial services business segments. We closed the acquisition of marketRx during the quarter, which we anticipate will enable Cognizant to further enhance its strong market position in data analytics and the life sciences industry." He adds: "In Europe, revenue grew 89% compared to the fourth quarter of 2006." Notes Gordon Coburn, CFO and COO: "After the acquisition of marketRx and buying back 3.39 million shares of Cognizant stock for $105.4 million, we ended the year with more than $670-million in cash and short-term investments on our balance sheet." Visit www.cognizant.com.

D2Hawkeye Adds Gunn as SVP, Client Solutions

Waltham, MA-based D2Hawkeye Inc. has named Nathan Gunn MD senior vice president of client solutions. He'll be responsible for developing clinical service and consulting solutions to complement D2Hawkeye's software, product development and relationship management for clinical client stakeholders. Gunn joins the company from McKinsey and Company's healthcare practice, where he led teams in providing counsel to top healthcare executives and government leaders, the new employer reports. His experience includes redesign and reform of healthcare delivery systems in the Middle East and Western Europe; development and implementation of growth and operational improvement strategies for top US-based healthcare delivery systems; performance of due diligence for private equity firms on deal valuations ranging from $1 billion to $6 billion; and post-merger management in the healthcare IT space. He's also an attending physician at the San Francisco Veterans Administration Medical Center. Visit www.d2hawkeye.com

Decision Tree Media Adds LexisNexis PeopleWise Founder Cornick as CEO

New York's Decision Tree Media, a provider of online marketing and lead generation solutions for the insurance industry, reports it has named Gary Cornick, the founder and CEO of PeopleWise, a global pre-employment screening and information services company acquired by LexisNexis, CEO and a member of its board of directors. Cornick's "leadership skills and industry relationships will be instrumental in helping us achieve our growth goals over the next three years," comments Decision Tree founder and president Bill McNulty. Adds Cornick: "I look forward to guiding the company through the next phase of growth." Visit www.dectreemedia.com.

AL Practice, Transport Provider Choose DST

DST Health Solutions, Birmingham, reports it has completed an agreement with Huntsville (AL) Pediatric Associates to provide MDr PracticeManager, a physician practice management solution that helps improve appointment scheduling, medical billing, electronic claims submission, payment and accounts receivable processing.

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INDUSTRY NEWS

DST Health Solutions *… continued*

DST will host the software and hardware from its data center in Kansas City, MO. Huntsville Pediatric Associates averages 57,000 annual encounters with patients from birth to age 21. MDr PracticeManager will help it improve the efficiency of administrative functions including appointment scheduling and claims processing. Also, DST's Physician Practice Services unit has completed an agreement to provide business process outsourcing services for Regional Paramedical Services, Hamilton, AL, one of the largest medical transport companies in the state. The agreement includes technology and software for billing and accounts receivable management. DST completes 35 million business transactions each year on behalf of its physician practice customers, including many large emergency medicine groups. The RPS agreement marks the company's expansion into the related field of medical transport. Visit www.dsthealthsolutions.com.

DxCG Co-Founders Separately Honored

Boston-based DxCG, a division of Urix Inc. and a worldwide provider of predictive modeling software for healthcare, has announced that co-founder Randall P. Ellis PhD has been named president of the American Society of Health Economists, a professional organization dedicated to promoting excellence in health economics research in the United States. As president, he'll "use his considerable experience as a scholar, researcher and healthcare industry leader to implement new initiatives and programs for the organization," a statement says. Ellis' two-year term as president-elect begins in June, to be followed by his elevation to the post of president in June 2010. He's been a founding director of ASHE since its creation three years ago. Ellis co-founded DxCG in 1996 with Arlene Ash PhD and Gregory Pope and remains involved in its research and development activities as a senior scientist. He's also a professor in the Department of Economics at Boston University.

For her part, Ash was just named the recipient of AcademyHealth's Health Services Research 2008 Impact Award, which recognizes research that has made a positive impact on health policy or practice. Ash was recognized for "her role in the original Medicare–funded research that lead to the development of the DxCG Diagnostic Cost Group models and, more broadly, for facilitating the adoption of risk-adjustment tools in health-care financing and administration," a statement says. More than 350 healthcare organizations around the world now use DxCG's Diagnostic Cost Group models to negotiate health-based payments, identify opportunities for disease management, profile physicians and evaluate managed care programs.

(continued)

DxCG *… continued*

Ash's work with the Medicare program "has helped it to calculate payments to plans that protect sick people by providing extra resources when they enroll complex patients with expensive health-care needs," the statement adds. Visit http://healtheconomics.us/ or www.dxcg.com

Johns Hopkins University's 2008 International Risk Adjustment Conference Scheduled for May 4-7

The Johns Hopkins University's 2008 International Risk Adjustment Conference is scheduled for May 4-7, 2008, at the Mirage Hotel and Casino in Las Vegas. The ACG conference "remains the best source of information on predictive modeling, risk adjustment and population case mix methods in the world," a statement says. "The conference has much to offer for all types of end users."

- Medical and care management providers will better understand the relationship between morbidity, case mix and predictive modeling, for example, and will learn how ACGs can be used to manage and improve care in medically high-risk populations.
- Government officials and Medicare and Medicaid plans will learn how Medicaid programs are using ACGs, how to review risk-adjustment applications being created for Medicare Advantage Plans and new care management tools for using pharmacy claims information.
- International users will meet other international ACG users and learn how ACGs are being applied in other countries.

To learn more about the conference visit www.acg.jhsph.edu/2008conference.htm; to learn more about the ACG System, visit www.acg.jhsph.edu.

MED3000 Clients Use MEDai's Risk Navigator*Clinical* for Public Program Populations

An effort to find as many members needing care management as possible led MED3000, a national healthcare management and information technology company, to seek a richer predictive modeling tool than the basic record of diseases and care events for members it had been relying on. The Pittsburgh-based company turned to MEDai's Risk Navigator *Clinical* and soon one of its client plans saw a 250% jump – from about 400 to about 1,000 -- in the number of members receiving disease management services.

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INDUSTRY NEWS

MEDai *... continued*

The result: MED3000 now views the PM tools as "one it can promote, one it can use to produce financial benefits that are both prompt and long-lasting and one with which clients can directly interface to understand their populations' needs," says Carla Davis RN, director of medical services there. "We needed a core application to stratify the management needs of members early out – and one that would allow us to continue to use informatics to analyze results of interventions with those members."

In helping its clients manage their plan populations, MED3000 had been focused on acute care events and identifying a small number of members who were – or who had recently been – generating the highest costs. But focusing on individual readmission rates in the last 30 days or depending on primary care doctors or members to refer was not proving adequately proactive or dependable, the firm says. And, Davis adds, "across tens of thousands of members, our efforts to identify just the few hundred with the highest current claims were not allowing us to take control of costs and care." After consulting with Orlando-based MEDai, MED3000 brought the Risk Navigator *Clinical* product online in June 2006 and "immediately began to use the impact profile and risk profile features to identify individual members for possible management," she reports. MED3000's clients include plans with large numbers of members participating in Medicare, Temporary Assistance to Needy Families and other types of age-, disability- or income-based programs.

Focusing especially on members with risk drivers such as asthma, diabetes, CHF, COPD and complex, multiple conditions, MED3000's case managers use "sophisticated and dependable" health risk assessments developed by "major medical centers" to capture raw data for risk stratification, the company reports. Based in part on scores for acuteness and chronicity, Risk Navigator *Clinical* provides a risk category – from 1 to 5 – for each plan member. "With the solution in place, we can show reports at any time, sorted by health plan, disease state and risk category," Davis says. "The system's predictive weighting is based on diagnosis and demographics as well as service usage and lab results. Ultimately, cost savings are built one member at a time. So the point is to show that ramping up that process with a precision informatics solution produces a solid return on investment for our client plans."

Here's how: MED3000 incorporates Risk Navigator *Clinical* in its supervisory workflow by providing the outputted lists to its support coordinator, who triages the cases to the appropriate case manager. After studying the member's status – including cost impact and risk profile – the case manager develops a care plan, combining and delivering the functions of care coordination with a single staff member. Applied to its various public program populations, the product "confirms that individuals over age 51 who suffer from coronary artery disease and asthma are the most expensive sub-population of Social Security Income members," says Dana Barnes, a MED3000 case manager.

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Also, she says, "case managers can more easily select members in one high-risk disease category who are having problems because they're also in a second risk category – such as members suffering from congestive heart failure whose costs are up because, in reality, they're failing to manage their diabetes. Staff can make such determinations and respond to the appropriate member needs often without as much direct, time-intensive follow-up, thanks to the system's flagging non-compliant members who fail to maintain care criteria, in terms of visits, medications and other factors."

Davis says MED3000 has "exceeded the goal that our primary client plan has given us for members in disease management, which is a positive position to be in when it comes to member costs at end of year." After the firm began using Risk Navigator *Clinical*, the portion of its total members in case management jumped significantly and then stabilized at the new levels, as the cost per member either held steady or, in some plans, dropped significantly.

The MEDai solution posts case data on a web interface, from which MED3000 clients can run their own new or saved reports. "They often use the capability to compare their enrollees to the population as a whole and to look at disease prevalence in their groups compared to benchmarks," Davis notes. Clients also use the tool to "point out physicians who use a high level of medical services per member," she adds. "Medical directors use that profiling for physician comparisons and for consulting with practices." Case managers at client plans say they can ask better questions with the data the tool provides. "That way, they don't go out on tangents, and can get straight to productive counseling," Davis continues. Visit www.medai.com.

Urix Acquires Predicted Solutions, Introduces Pharmacy Audit Service

Boston's Urix Inc., a provider of healthcare predictive modeling and business intelligence software, has acquired Predicted Solutions, a Woolwich, ME-based company that offers software and consulting services to detect and recover losses due to healthcare fraud, waste and abuse. Predicted Solutions will function as a business unit of Urix and will be led by Crystal Stultz, who is now Urix's director, program integrity. The pair report the availability of their first jointly developed solution, Pharmacy Audit Service. It "combines Urix technology, DxCG science and Predictive Solutions expertise to help health plans validate or detect fraudulent or abusive spending practices that could result in lost expenditures," the firms say. The transaction will not result in any disruption for Predicted Solutions' current customers, the companies stress. Visit www.predictedsolutions.com or www.urix.com.

Survey: Prioritizing Predictive Modeling Activities

Each month, *Predictive Modeling News* provides exclusive results from a survey of health plan and healthcare professionals conducted by MCOL on various predictive modeling issues. Survey participants typically have a more active interest in predictive modeling issues.

This month, we asked participants to respond to two items:

1. Please categorize your organization.
2. Suppose you had to prioritize how an organization could spend its funds on predictive modeling initiatives involving health benefits, and you were given a list of 10 items to prioritize. How would you rank them? (1= highest priority / 10 = lowest priority; rank them 1 through 10)

The items to rank were as follows, with their abbreviated version, referred to subsequently, indicated in parentheses:

- Identification of High-Risk Patients for Care Management (Identify)
- Plan Design Development (Design)
- Treatment Guideline Development (Guideline)
- Provider Profiling for Network Development (Profiling)
- Provider Reimbursement Rate and Formula Development (Reimburse)
- Premium Rate Development (Premium)
- Medicare / Medicaid Population Financial Modeling (Medicare)
- Target Marketing Based on Customer / Prospect Risk Scores (Marketing)
- Formulary Development (Formulary)
- Other (Other)

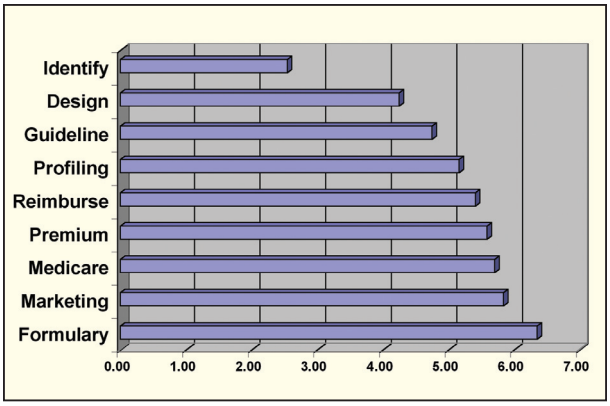
Here's what we found:

- While there was variation by respondent category for all other items, Identification of High Risk Patients had the top average priority ranking, and was the mode for the number one priority with all three categories (payer, provider and vendor).
- The next-highest priority mode by organization category was Target Marketing for Payers, Premium Rates for Providers and Provider Profiling for Vendors.
- General category of respondents (N = 68):

Payer	39.8%
Provider	35.3%
Vendor/Other	25.0%

Average Priority Ranking of Items by Category:

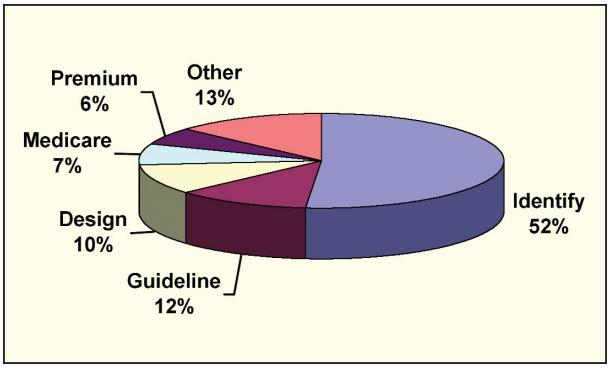
Item	Payer	Provider	Vendor	Total
Identify	2.22	2.79	2.71	2.54
Design	3.78	4.25	5.00	4.25
Guideline	4.26	4.42	6.00	4.75
Profiling	5.41	5.33	4.53	5.16
Reimburse	5.81	5.21	5.06	5.41
Premium	6.04	5.63	4.82	5.59
Medicare	6.26	5.42	5.24	5.71
Marketing	5.85	6.04	5.53	5.84
Formulary	6.04	6.33	6.88	6.35
Other	9.37	9.71	9.24	9.46



Average Rank

Percent Listing Item as their #1 Priority:

Item	% #1	Item	% #1
Identify	51.5%	Medicare	7.4%
Guideline	11.8%	Premium	5.9%
Design	10.3%	All Other	13.2%



- See subscriber web site for additional details -