Predictive Modeling
N E W S

Vendor Sector Matures, Offering New Ways to Solve Old Problems

Four Part Special Feature on PM Industry Vendors

Welcome to "Vendor-palooza"! In this four-part Special Report, we'll profile the predictive modeling industry's key vendors and we'll include comments from the vendors themselves and from consultants on the state of the vendor sector – and what that says about predictive modeling in the 21st Century.

Part I features self-provided data on each of 22 vendors, including contact information, listings of their key PM-related products and services and, interestingly, the year each of them was launched. Part II offers case studies of vendor success stories. Part III features comments about the predictive modeling industry from the vendor perspective. And Part IV concludes with comments about PM vendors from industry consultants.

Enjoy!

Part I: Predictive Modeling Industry Vendor Company Data

Summary Profiles of 22 Industry Vendors

AccuData

- *Company Contact Info and Website:* Phone 800-732-3440, www.accudata.com
- *PM Product Names*: Express Response, Acquisition, Retention, Value Optimization, Market Basket, Market Opportunity
- *Clients/industry Sectors Served:* health plans, energy, utilities, non-profit, higher learning, financial services, consumer services, business services, telecommunications, retail, travel and entertainment

BioSignia Inc.

- *CEO*: John Williams
- *Company Contact Info and Website:* Lisa Finger, Director of Marketing, lfinger@biosignia.com, www.biosignia.com
- *Year First PM Application Introduced*: 2005
- *PM Product Names*: Know Your Number, Mortality Assessment Technology
- *Clients/industry Sectors Served:* Life insurance, health plans, employers, health and wellness companies and hospitals

CareAdvantage Inc.

- *CEO*: Dennis J. Mouras
- *Company Contact Info and Website*: –Sheila Van Daly RN MBA, svandaly@careadvantage.com, careadvantage.com
- *Year First PM Application Introduced*: 2002
- *PM Product Names*: RPNavigator
- *Clients/industry Sectors Served:* Health plans, state and local government, organized labor, employer groups, national consulting firms, providers
- *Total PM Annual Revenue*: approximately $4M

Part I: PM Industry Vendor Company Data *...continued*

**DST Health Solutions/
The Johns Hopkins University
Bloomberg School of Public Health**

(DST is the exclusive distributor in the US
for the Johns Hopkins ACG System.)

- *CEO*: Jonathan Weiner DrPH, co-developer and executive director of the
  Johns Hopkins ACG System
- *Company Contact Info and Website*: In the US, the Johns Hopkins ACG
  System is distributed through our corporate partner, DST Health Solutions.
  Please contact Sam Schoenauer at 866-287-9243 or
  inforequests@dsthealthsolutions.com. For international licensing, please
  contact Karen Kinder, executive director, ACG International, Roemerstrasse
  63, 54455 Serrig, Germany, +49-6581-998456, kkinder@jhsph.edu. Website
  is www.acg.jhsph.edu.
- *Year First PM Application Introduced*: The ACG System has been
  commercially available since 1992.
- *PM Product Names*: The Johns Hopkins ACG System is available as a
  standalone product or integrated within DST Health Solutions' CareAnalyzer
  application, as well as other partner applications.
- *Clients/industry Sectors Served:* Health plans, employers, providers, state
  Medicaid, international ministries of health, quality improvement
  organizations, other governmental agencies, consultants, application
  developers and health services researchers.

FICO

- *CEO:* Mark Greene
- *Company Contact Info and Website:* PR manager Jason Sprenger, 612-758-
  5334, jasonsprenger@fico.com, www.fico.com
- *Year First PM Application Introduced:* 1958
- *PM Product Names:* FICO Multi-Attribute Prescription Score, FICO Score,
  FICO Model Builder, FICO Blaze Advisor, FICO Precision Marketing
  Manager, FICO TRIAD Customer Manager, FICO Falcon Fraud Manager,
  FICO Insurance Fraud Manager (Healthcare Edition), FICO Custom
  Response Models, FICO Custom Behavioral Segmentation, other customized
  tools and applications as well
- *Clients/industry Sectors Served:* Pharmaceutical manufacturers, hospitals
  and healthcare providers, insurers/health plans, government
- *Total PM Annual Revenue:* $200M

Health Dialog

- *CEO:* James Tugendhat
- *Company Contact Info and Website:*
  businessdevelopment@healthdialog.com, www.healthdialog.com
- *Year First PM application Introduced:* 2002
- *PM Product Names:* Health Dialog offers a suite of predictive models
  delivered across four separate product offerings. Predictive models can also
  be custom-bundled or -unbundled per client requests: POPULATIONInsight;
  WELLNESSSegmenter; COMMUNITYGrid; and MEMBERProfile
- *Clients/industry Sectors Served:* Health Dialog serves healthcare payer
  clients, including health plans, employers, physician groups, government
  entities and unions.

Part I: PM Industry Vendor Company Data*...continued*

Ingenix

INGENIX.

- *CEO:* Andy Slavitt
- *Company Contact Info and Website:* 800-765-6713, engage@ingenix.com, www.ingenix.com
- *Year First PM Application Introduced:* 2001
- *PM Product Names:* Ingenix Impact Pro, Symmetry Episode Risk Groups, Symmetry Pharmacy Risk Groups
- *Clients/industry Sectors Served:* health plans, government, provider organizations

Kyield

- *CEO:* Mark Montgomery
- *Company Contact Info and Website:* Mark Montgomery, founder & CEO, 505-629-5433, markm@kyield.com, blog - http://kyield.wordpress.com, Twitter: @kyield, Skype: markm.kyield.com, http://www.kyield.com
- *Year First PM Application Introduced:* May of this year for healthcare knowledge systems.
- *PM Product Names:* Kyield semantic health care platform
- *Clients/industry Sectors Served:* Proposal stage
- *Total PM Annual Revenue:* Start-Up

LexisNexis Risk Solutions LexisNexis·

- *CEO:* Jim Peck
- *Company Contact Info:* LexisNexis, 1000 Alderman Drive, Alpharetta GA 30005, 866-396-7703, healthcare@lexisnexis.com
- *Year First PM Application Introduced:* 2000
- *PM Product Name:* ClaimFocus
- *Clients/industry Sectors Served:* health plans; government; property & casualty

MEDai, an Elsevier Company MEDai
an Elsevier Company

- *President:* Swati Abbott
- *Company Contact Info and Website:* 800-446-3324, Sales@MEDai.com, www.MEDai.com
- *Year First PM Application Introduced:* 1992
- *PM Product Names:* The Risk Navigator Suite -- Risk Navigator Clinical, Risk Navigator Provider, Risk Navigator Performance, Risk Navigator Financial, Risk Navigator Guidelines; The Pinpoint Suite -- Pinpoint Compliance, Pinpoint Review, Pinpoint Quality
- *Clients/industry Sectors Served:* health plans, hospitals, government, employers
- *Other Information:* MEDai is a key part of Elsevier Clinical Decision Support, a suite of clinical decision support solutions: please visit: www.clinicaldecisionsupport.com

MEDecision Inc. MEDecision·

- *CEO and Founder:* David St.Clair
- *Company Contact Info and Website:* 601 Lee Road, Chesterbrook Corporate Center, Wayne PA 19087, 610-540-0202, www.MEDecision.com
- *Year First PM application Introduced:* 2003
- *PM Product Name:* Alineo Care Management Analytics (We are not a PM vendor per-se; we embed a PM solution within Alineo Care Management Analytics that we license from Verisk Health.)
- *Clients/industry Sectors Served:* health plans, providers, members

Milliman Inc. Milliman

- *CEO and President:* Patrick J. Grannan
- *Company Contact Info and Website:* Milliman Corporate Offices, 1301 Fifth Avenue, Suite 3800, Seattle WA 98101-2605, www.milliman.com. Lifestyle-based analytics: contact Ksenia.Draaghtel@Milliman.com.
- *PM Product Names/Years they were Introduced:* Lifestyle-Based Analytics, 2006; Milliman Advanced Risk Technologies, 2009
- *Clients/industry Sectors Served:* Lifestyle-Based Analytics — health plans, wellness/disease management vendors; Milliman Advanced Risk Technologies — health plans, providers (including ACOs), PCMH, government, employers, researchers, healthcare technology partners

Part I: PM Industry Vendor Company Data*...continued*

The Modeling Agency

- *CEO:* Eric A. King
- *Company Contact Info and Website:* One Oxford Centre, 301 Grant Street, Suite 4300, Pittsburgh PA 15219, 281-667-4200, www.the-modeling-agency.com
- *Year First PM Application Introduced:* 2000
- *PM Product Names:* "Predictive Analytics & Data Mining: Strategic Implementation," "Predictive Analytics & Data Mining: Model Development," "Data Mining Project Assessment," "Data Mining Escort," "Data Mining Wire Support," "Predictive CRM Analytical Model Development'
- *Clients/industry Sectors Served:* all vertical market and industry sectors served, as evidenced by TMA's client list and experience profile. A partial customer list follows representing those with whom TMA has been privileged to serve since January of 2000: Aetna, AIM Healthcare Services, Alternative Behavioral Sciences, American International Group, Argus Health Systems, Aventis, Blue Cross & Blue Shield of Alabama, Blue Cross & Blue Shield of Michigan, Blue Cross & Blue Shield of Rhode Island, Eli Lilly and Company, Excellus Health Plan, Florida Hospital, Glaxo Smith-Kline, HCA Healthcare, HealthSmart Preferred Care, Ingalls Healthcare Systems, Kaiser Permanente, Lehigh Valley Hospital, Memorial Sloan-Kettering Cancer Center, Merck & Company Inc., Meta Pharmaceutical Services, Misys Healthcare Systems, Neighborhood Health Plan of Rhode Island, Physicians Mutual Insurance Company, Prescription Solutions, Protivity, sanofi Pasteur, Solvay Pharmaceuticals, Vertex Pharmaceuticals, Wyeth Research, Wyle Laboratories.

PARO Decision Support LLC

- *CEO:* Neil Smithson, managing member
- *Company Contact Info:* Neil Smithson, 954-530-2442, sales@paroscore.com
- *Year First PM Application Introduced:* 2005
- *PM Product Name:* PARO Charity Score
- *Clients/industry Sectors Served:* healthcare revenue cycle and patient financial assistance
- *Other Information:* The PARO charity score is utilized by non-profit hospitals to identify patients for presumptive charity care.

Qforma Inc.

- *CEO:* Kelly Myers
- *Company Contact Info and Website:* Lisa Haley, 1613 Paseo de Peralta, Suite 200 Santa Fe NM 87501, 505-989-3558, http://www.qforma.com/
- *Year First PM Application Introduced:* 2001
- *PM Product Names*: iQMap, iQFieldForce, iQMCO, iQTrax
- *Clients/industry Sectors Served:* health sciences industry. Our clients are primarily pharmaceutical, biotech, device & labs.

Reed Group Ltd.

- *CEO:* Michael Sayre. Jon Seymour MD is president, guidelines.
- *Company Contact Info and Websites:* 866-889-4449, sales@rgl.net, www.reedgroup.com, www.mdguidelines.com
- Year First PM Application Introduced: 2009
- *PM Product Name:* MDGuidelines with Predictive Modeling
- *Clients/industry Sectors Served:* employers, insurers, third-party administrators, government entities (especially for workers' compensation), hospitals, health systems, physicians, medical care providers, medical case managers, attorneys, occupational physicians, nurses, case managers.

Salford Systems

- *CEO:* Daniel Steinberg
- *Company Contact Info and Website:* 619-543-8880, info@salford-systems.com, www.salford-systems.com
- *Year First PM Application Introduced:* 1983 (CART -- Classification And Regression Trees)
- *PM Product Names:* CART, MARS, TreeNet, RandomForests. Just released suite: SPM.
- *Clients/industry Sectors Served:* utilities, telecommunications, technology, pharmaceutical, media, marketing, manufacturing, insurance, healthcare, government, finance, environmental, engineering, energy, electronics, education, consulting, biotechnology, banking, automotive, architecture, agriculture

Part I: PM Industry Vendor Company Data*...continued*

SCIOInspire

- *CEO:* Siva Namasivayam
- *Company Contact Info and Website:* 220 Farmington Avenue, Suite 4, Farmington CT, www.scioinspire.com
- *Year First PM Application Introduced:* 2002
- *PM Product Names:* Our predictive models are embedded into our software products -- PROGuide, PROFormance, value-based -benefit design. Also, we build custom predictive models.
- *Clients/industry Sectors Served: healthcare industry* -- health plans, employer groups, government
- *Total PM Annual Revenue:* Approximately $1.1M between PM products and custom predictive models

Silverlink Communications

- *CEO:* Stan Nowak
- *Company Contact Info and Website:* One Burlington Business Center, 67 South Bedford Street, Suite 300E, Burlington MA 01803, 781-425-5700, www.silverlink.com
- *Year First PM Application Introduced:* 2008
- *PM Product Names:* Silverlink provides healthcare communications services to health plans to better reach and engage their members. Silverlink uses predictive modeling methodologies such as segmenting, decisions modeling and test and learn techniques (champion/challenger) to optimize health behavior change.
- *Clients/industry Sectors Served:* health plans, managed care organizations, pharmacy benefit managers, population health companies, other healthcare stakeholders

Treo Solutions - The Healthcare Payment Transformation Company

- *CEO:* William P. Kelly
- *Company Contact Info and Website:* 125 Defreest Drive, Troy NY 12180, 800-455-7338, sales@treosolution.som, www.treosolution.com
- *Year your first PM application was introduced:* 2006
- *Names of your PM products:* member and provider analysis
- *Clients/industry Sectors Served:* health plans, hospitals, government agencies, associations

Vantage Point Healthcare Information Systems Inc.

- *CEO:* Lawrence Borok
- *Company Contact Info and Website:* 34 Bridle Road, New Milford CT 06776, 860-210-9049, www.vantagepointinc.com
- *Year First PM Application Introduced:* 2000
- *PM Product Name:* SmartCare Business Intelligence System
- *Clients/industry Sectors Served:* health plans, hospitals, PHOs, IPAs, employers, government

Verisk Health

- *President:* Mike Coyne. (Chris Kryder is retiring this month.)
- *Company Contact Info and Website:* Verisk Health, 130 Turner Street, Waltham MA 02435, www.veriskhealth.com
- *Year First PM Application Introduced:* 2001
- *PM Product Names:* Sightlines DxCG Risk Solutions, Sightlines Medical Intelligence, Sightlines Performance Measurement, Sightlines Enterprise Analytics
- *Clients/industry Sectors Served:* payers, providers, employers

Subscribers' **C**orner

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Part II: Case Studies of PM Vendor Success Stories

Vantage Point Healthcare Information Systems:
A Hospital Group Uses Data Analysis for Clinical Integration

The Affordable Care Act tries to accomplish a very difficult balancing act: reduce healthcare costs while not drastically cutting provider reimbursement. The core component of the solution is to utilize IT for clinical integration. Clinical integration, the sharing of healthcare information about a patient across the entire system, from doctors' offices to hospitals, should help eliminate redundant tests and procedures, as well as coordinate the overall care -- the medical home concept. SmartCare is uniquely suited to carry much of that load, with its decision support-oriented data warehouse, integration of electronic medical records with claims data, network architecture and fast, interactive functionality.

Even before the legislation passed, a group of 10 independent hospitals came together and received FTC and state attorney general waivers to negotiate contracts collectively because of their clinical integration IT infrastructure. Data are collected from all of the hospitals and then analyzed and shared to develop best practices and improve quality. SmartCare was used to generate critical benchmark comparisons across a set of treatment protocols developed by the hospitals, as well as provide a wide range of resource utilization and risk pool comparisons. The 10 hospitals set up a central office and established committees to define quality standards, measures and treatment protocols. The central office is responsible for data collection and comparative profiling reports. The parties decided to use an outside vendor for data processing, reporting and benchmarking. Vantage Point was the IT member of the outside vendor group. Case mix-adjusted algorithms were developed to normalize each hospital's encounter data to be able to be benchmarked to the entire group. Data from the hospitals are updated and reprocessed quarterly with rolling one-year builds, as well as data from other hospitals in the region for additional benchmarking. The data for the other regional hospitals were obtained from the public hospital dataset collected by the state.

SmartCare fulfilled the need to provide an interactive software tool available over the Internet (a secure VPN network) to hospital "super-users" to review their own data and compare themselves to benchmark datasets. That was done for carefully defined treatment protocols for a large group of important diseases, which were judged by such standardized benchmarks as average length of stay, readmission rate, cost-to-charge ratios and other metrics. In addition, SmartCare provided physician profiling summary reporting, resource utilization analysis drilldowns, ad hoc query and report library building and contract performance monitoring, all of which were necessary to satisfy the clinical integration standards approved by the FTC and state attorney general.

This screen shot shows the important Comparative Benchmarking section of SmartCare. In the yellow table is all of the critical information, including actual and expected performance, the performance index, the Z-score (comparison of standard deviations) and the "opportunity," showing the cumulative financial (ex. encounter charges) or numerical (ex. Average Length of Stay) value compared to the selected benchmark.

The screen also offers a two-level drilldown, so that by double-clicking on any row in the yellow table, the white window appears with the cases represented for that parent row, and then if you want to see all of the treatments and services for any case, the bottom window appears.

The Comparative Benchmarking screen is very easy to use, with simple dropdown lists to define the report, which enables you to generate results for attending physicians, DRGs, facilities and any of the dozens of other important data fields in the dataset. In the years to come, analytics will be the backbone for clinical integration. High-speed performance accelerates the problem-solving process and creates a rapid-response feedback loop, in effect facilitating the transformation of separate hospitals and physicians into a cohesive accountable care organization.

MEDai's BlueCross BlueShield of Nebraska Case Study

The challenge: finding a mission-critical solution to identify gaps in clinical care, provider performance and future cost forecasting. The solution: the Risk Navigator Suite by MEDai. The results: implementation of MEDai's Risk Navigator Suite leads to increased operational efficiencies, clinical effectiveness and cost containment. Two full years into a three-year contract for the implementation of an analytics solution, executives of BlueCross BlueShield of Nebraska were forced to conclude that the implementation of the solution was a failure. The decision that the organization had to move on to another predictive analytics system was a difficult one. Moreover, a general consensus had developed that vendor solutions did not exist that could meet the organization's highly specialized needs.

Part II: Case Studies of PM Vendor Success Stories continued…

"Predictive analytics is very important to our area," says Lisa Fisher RN, director of medical programs for the BlueCross BlueShield operation. "Business units were not aligned at the enterprise level and we needed to move forward quickly with another analytics solution." BCBSNE, which has been in operation since 1939 and today serves nearly 717,000 members, is an independent, community-based, member-owned licensee of the Blue Cross and Blue Shield Association. The only solution was to change approaches, and a consultant was hired to help search for a replacement solution. "We wanted to get a straight business-end viewpoint from someone who would bring a thorough knowledge of the medical analytic solution industry along with the knowledge of best practice data utilization and management, enterprise-wide. We needed that resource on our team, working on our behalf," says Fisher. BlueCross BlueShield of Nebraska selected Eric Pierson of Grow Forward Consulting to bring BlueCross BlueShield insight and leadership to the table. As a firm, Grow Forward Consulting is dedicated to assisting health plans to maximize their investments in analytics and reporting.

Leveraging a third party consultant also enabled effective navigation of internal politics. "We were a very 'siloed' organization," says Fisher. "It's a place where everyone has their own ideas on how to use the solution and we felt that a consultant would help keep everyone at the table and engaged with the project." The consultant presented a pair of options aimed at changing the negative mindset within the organization. Option A called for implementing a medical analytics solution and departments would have ownership of it — a strategy that left the ability to use analytics up to each department. Option B called for managing the analytic competency as BCBSNE intellectual property, not simply as a solution - the ability to use analytics to advance the organization as a whole was the primary focus. To facilitate decision-making and gain buy-in from multiple cross-functional areas, a Medical Analytics Steering Committee was organized to choose between the two options. Represented on the committee was an array of departments including actuarial and underwriting, information services, medical management, pharmacy, provider contracting and group reporting and marketing. Once the committee began to meet monthly and momentum began to build, the committee started to shop for a solution which could be utilized across the entire BCBSNE operation. "When a tool was chosen, the idea was for each entity at the committee level to have input," Fisher says. "That gave everyone a better understanding of the tool and its impact on their efforts. We were convinced that that feedback and buy-in were critical to making the best business decision and ensuring the tool would be cross-functioning. We knew that the tool must help achieve a common approach for both analyzing medical information and making sound business decisions. So we locked ourselves in once a month to try and identify solutions."

Key requirements for a solution included the ability to create medical analytical support, user reports and administrative documents and to show all users who was actually using it. There was also a feeling that the added layer of transparency would help drive utilization and ensure continued use by team members. Pharmacy needed to be able to use it to fill gaps by contacting members. Underwriting and actuarial needed to predict future costs and quality control needed to identify performance and examine efficiency issues by comparing the performance of physician offices to other physician offices. Requests for Proposals were sent to suppliers judged to be major players in the predictive analysis sector and representatives from vendor finalists were brought in to meet the committee and answer specific sets of business questions.

MEDai selected as vendor of choice

The decision was ultimately made by the committee to utilize MEDai/Elsevier's Risk Navigator Suite. The Risk Navigator Suite, a unique and flexible predictive analytics solution leveraging sophisticated modeling techniques, enabled each BCBSNE department to meet the challenges it faced head-on. MEDai was also able to effectively meet one of BCBSNE's main challenges – managing the unique nuances and detail of BCBSNE's data. Risk Navigator also provided the necessary transparency needed to support widespread organizational adoption. Data from BCBSNE's data sources were put through an intense data quality process focused on identifying missing data and other integrity issues. Once complete, the data were fed into one integrated database organized for clinical analytics and to optimize the models and forecasts. As a result, Risk Navigator aids BCBSNE in identifying the cost drivers for the organization's high-risk population. It also helps forecast and manage future health plan costs by evaluating patterns of disease, care and utilization, identifying gaps in compliance to evidence-based medicine guidelines and identifying opportunities to further educate members on controlling and improving their current disease states.

Risk Navigator's extensive reporting suite is also used to provide results and outcomes to the groups, as well as for identifying plan design changes and other opportunities to better manage health and costs. MEDai is a pioneer in combining predictive analytics with evidence-based medicine guidelines. The company was also the first to expand its forecasting models to elements other than merely total cost for members. Risk Navigator provides not only a forecast of future costs, but also incorporates an Acute Impact Score, a Chronic Impact Score and forecasted pharmacy costs, all of which help BCBSNE to identify impactable and actionable members for the care management process, ultimately making member management and cost-control proactive and more effective. The Acute Impact Score identifies and ranks individuals who are likely to utilize inpatient or emergency room-based care. The early identification can help avoid or mitigate high-cost acute care. The Chronic Impact Score looks at patients with one or more chronic illnesses and accesses their patterns of compliance to evidence-based medicine guidelines. It reflects the potential to avoid costs based on improved management of those conditions. The most recent innovation features a Motivation Index that identifies patients most likely to be active participants in managing their health, an index which can be used to better match patients with intervention programs and services. The solution also examines data points such as lab test results and HRA data. All of those datasets enable robust reporting capabilities that produce a wealth of critical data -- such as predicted costs by member versus actual costs experienced that year. BCBSNE Physicians and other stakeholders are able to leverage that critical information across systems and care settings.

Part III: Vendor Takes on the Future of PM

We asked vendors about their thoughts on the direction of the PM industry moving forward. Here's what they had to say:

SCIOInspire

Predictive modeling and risk adjustment will become increasingly important under the Affordable Care Act with stricter MLR requirements, bundled payments and ACOs.

FICO

As reforms and other dynamics cause change in the healthcare industry, using data to make better decisions will better position organizations for success. As such, predictive analytics, decision management and optimization systems are becoming an increasingly integral part of business management in the healthcare industry. Accordingly, FICO is committed to advancing the field and delivering the best analytic tools and applications to help the healthcare industry make smarter decisions, better engage their patients, healthcare providers and intermediaries and gain a competitive edge within their markets.

Kyield

We agree with one of your Thought Leader quotes that predictive quality depends on the quality of data -- everything else is guesswork or hubris. So we focused on the platform first that can deliver the highest quality of data, which means a great many other issues must be aligned well -- tech-interoperability, economics, psychology-participation, trust, incentives, etc. So while individual devices can provide specialist PM value, it's the system and platform that will enable PM for health management, ecosystem economics, expedite research and ultimately achieve personalized medicine. Our view is that healthcare needs radical reform still in the US -- both regulatory and creative destruction through competition. But we are not confident we'll see it -- conflicted parties seem willing to take down the entire ship before accepting lower costs.

AccuData

Integrating social media data with traditional sources and technology-driven processing power improvements that will enable much more complex sampling and modeling techniques that will yield additional performance above traditional regression methods.

Milliman

Besides its primary application in renewal rating, risk adjustment has established a reputation as a valuable tool for medical management and is used extensively in that capacity. MARA can help medical management teams identify and differentiate members for care support because more actionable information is made available to users. The goal of care support programs is to provide a systematic approach for identifying and stratifying risks, based not only on a single risk score, but where risk is likely to present — inpatient, outpatient, physician or pharmacy.

MEDecision

Predictive modeling is becoming a more important tool in the application of proactive care needed to curtail the growth rate of chronic disease.

Vantage Point

Healthcare must shift to quality-based reimbursement and predictive modeling will be central to that effort.

Salford Systems

From the point of view of consumers of PM technology, it's much less important to think about what new methods or techniques might be coming up than to think in terms of how people are starting to leverage what's already been accomplished in the last 10 years. What has happened is so amazing it's certainly possible that people will look back on 1999 to 2010 as being as true golden age when it comes to methodology. In the last decade, one of things that has happened is new techniques that essentially leverage not just one model, but ensemble learning – involving possibly hundreds or thousands of models, no one of which is definitive. Each sheds a little bit of light on the results. That approach has been perfected. We're starting to see methods and data that should be brought together coming together. People are understanding that it's worth the effort to do it.

DST

Predictive modeling will continue to evolve to address the urgent needs of the healthcare industry. That includes addressing the technical challenges of accessing more timely data and clinical data currently held by providers to support increasing demands for information that is actionable by clinicians. Healthcare reform will introduce new risk-based contracts that will need to be actuarially sound, equitable and facilitate information sharing between payers and providers.

Ingenix

Predictive models will continue to get more accurate as we add additional clinical data sources, such as EMRs.

Reed Group

Predictive modeling for healthcare and absence management allows return-to-work guidelines to be much more closely tailored for individual cases and groups of employees, which in turn allows all stakeholders do a better job of getting injured or ill employees back to their healthy, productive endeavors. It also can help generate healthcare cost savings by giving physicians, case managers and other medical providers more useful, actionable information. And it enables more accurate benchmarking to help all stakeholders optimize healthcare and return-to-work outcomes.

Silverlink

Consumer product companies have long used predictive modeling techniques to drive individual behaviors. In healthcare, behaviors can be directly linked to poor health outcomes and higher healthcare costs. Health plans and PBMs can leverage their wealth of consumer information and adopt predictive modeling techniques to measurably move healthcare consumer behavior. In addition to knowing their members' demographics, they also know what services they use and what health conditions they have. To improve healthcare quality and lower costs, health plans have the opportunity to use the power of predictive modeling to drive healthier behaviors. In addition, healthcare reform and the growth of individual mandates are leading to a more consumer-oriented healthcare system. Health plans and other healthcare stakeholders are beginning to change from a B2B model to an increasingly B2C model. The speed at which large healthcare organizations make this change will shape who takes a leadership role over the next 10 years.

*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: "How has the application of predictive analytics in healthcare changed during the past several years? What have been the most significant developments?"

"Over the last decade, risk scores based on PM model have become common -- if not ubiquitous -- within most health plans and DM programs. Those scores have been used to array the population along the risk pyramid to better target interventions. Over the last several years the more advanced developers of predictive analytic systems have been working collaboratively with designers of integrated DM programs.

A focus has been not only on case identification, but also on providing useful, actionable information for the care manager. For example, our ACG R&D unit at The Johns Hopkins University is working closely with our care management colleagues at our academic medical center's health plan as well as with the Guided Care project team based at the Bloomberg School of Public Health. The goal is to integrate new types of PM information into DM activities in support of persons with multiple morbidities.

Examples of new types actionable predictive risk information we now include in the Johns Hopkins ACG PM model focus on problems with coordination of care, gaps in pharmacy adherence and risk for different types of future hospitalizations. The integration of advanced analytics with practical care management intervention tools will be essential if reform innovations such as medical homes and accountable care organizations are to succeed over the coming years."

Jonathan Weiner DrPH
Professor, Health Policy and Management; Director, PhD Program in Health Services Research and Policy; Deputy Director, Health Services Research & Development Center, Johns Hopkins University
Baltimore MD

"The use of predictive analytics has expanded to be a real 'crime fighter' and cost savings vehicle, especially in the application of identifying prescription drug fraud, waste and abuse -- a growing concern among commercial payers and government-funded programs such as Medicare Part D and Medicaid managed care.

Ingenix Pharmacy Optimization Practice employs prescription drug predictive analytics/modeling to help payers and Rx claims administrators (e.g. PBMs) identify areas where inappropriate claims payments have occurred. Typical savings can range from 1% to 3% of a client's annual drug spend -- a savings of $10 million to $200+ million depending on plan/PBM size! The best part of prescription drug overpayment detection is that it is both a prospective and retrospective application producing quick hit results.."

Cheryl Duva
Vice President and Pharmacy Optimization Practice Leader
Ingenix Consulting
Rocky Hill CT

"I have only been involved in this area for about 15 years; a shorter time period than some of the pioneers. From the beginning, there were three primary applications: (1) underwriting and rating; (2) case finding for care management, and (3) risk adjustment for funds transfer between risk-taking entities. Over the years, those have remained the primary focus of our techniques. While new models have been developed and older models enhanced, I cannot think of any new, major area that we have added to the list.

There have been some changes and model enhancements (I think of the use of consumer data to enhance models, or the incorporation of more clinical data) but these are enhancements rather than new areas of research. I continue to think that the biggest shortcoming of model application for care management is our inability to connect with patients. As traditional landline telephones become a thing of the past, and increased concerns are expressed about privacy and security of data, our inability to connect with the right patients offsets enhancements to the underlying models."

Ian Duncan FSA FIA FCIA MAAA
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INDUSTRY NEWS

Reed Group Provides NY Treatment Guidelines Navigation Software

Westminster, CO's Reed Group, publisher of the MDGuidelines return-to-work reference toolset, reports entering into an agreement to provide its MDGuidelines New York Medical Treatment Guidelines navigation software to the New York State Workers' Compensation Board. The software will be used by New York WCB personnel as they implement the recently announced New York State Workers' Compensation Treatment Guidelines. The software will include a digital "crosswalk" that will associate ICD and CPT codes to the language in the Guidelines and further link the CPT codes to the New York State Fee Schedule.

Although the Board is not mandating or formally endorsing the use of Reed Group's software by other stakeholders, the company is making it commercially available for use as a common platform to increase efficiencies and expedite communications between stakeholders -- while decreasing transactional processes and associated costs. "The key to rapid and successful adoption of state guidelines is to make it easy to incorporate them into everyone's daily workflow," says Reed Group president, guidelines, Jon Seymour MD.

"Our new software does exactly that, and we're pleased to provide the option of a common platform that all New York workers' compensation stakeholders can use." Stakeholders who may benefit from the software include insurance carriers, third-party administrators, employers, medical providers who treat New York workers' compensation patients, government agencies and attorneys. The New York Treatment Guidelines went into effect on December 1. Visit www.reedgroup.com and www.mdguidelines.com.

Argus Launches Automated Prior Authorization

Kansas City, MO's Argus Health Systems Inc., a leading transparent pharmacy benefits administrator, has released its Automated Prior Authorization services, an "innovative suite of solutions and software designed specifically to enable health plans to improve quality and operating efficiencies during the prior authorization process," according to a statement.

"Automation expedites accurate and consistent results for patients needing prior authorization for medical services," the statement adds. "Argus' web-based solution supports on-demand customization and management of clinical criteria. Its rules-based decision-making enables a systematic approach to coordinating prior authorizations, including requesting receipts and notifying members and physicians." The Automated Prior Authorization solution from Argus is designed to help plans improve quality and ensure consistent outcomes while reducing administrative expenses through more efficient, streamlined operations.

Argus Launches Prior Authorization …*continued*

"Many plans have realized consistently higher quality at a significant cost savings after implementing the solution," the statement goes on, "which reduces the amount of time health plans spend on managing the authorization process by an average of 40%." Adds Jonathan Boehm, president and CEO at Argus: "The solution's automated decision criteria engine enables plans to save time and reduce error rates, while providing a consistent and definitive clinical outcome." The Automated Prior Authorization suite enables health plans to configure workflows based on roles and privileges, which supports their efforts to reduce the risk of implementing unwanted or unauthorized changes. The statement adds: "Health plans can manage privileges for specific roles from a single, intuitive user interface. Automated Prior Authorization also manages integrated in- and out-bound faxing to help save time and expense. The solution automatically manages prior authorization receipt and distribution to the Argus claims processing system; it can also be integrated with enterprise customer service software and claim systems, thereby providing a centralized system for managing prior authorizations." Argus is a wholly-owned subsidiary of DST Systems Inc. Visit http://argushealth.com.

Arcadian Health's CIO Addresses PM Healthcare Role

Arcadian Health CIO Rick Click presented recently at the CIO Executive Leadership Roundtable in Santa Monica, CA. His topic, according to a statement: the evolution of predictive modeling in the healthcare industry. "The future of providing individualized, yet cost-effective, healthcare is in recognizing key indicators and processing that data through predictive algorithms," he said. "Arcadian Heath recognizes the value of those tools and is exploring ways in which they may assist the organization to better serve our members."

The CIO Executive Leadership Roundtable is an invitation-only event that brings together CIOs from major organizations in the Los Angeles area and features a variety of presentations and panel discussions focused on the important role CIOs play in the business world. Click says he used the opportunity to "discuss the impact CIOs have on enterprise transformation from a healthcare perspective." In the face of healthcare reform, he adds, "it is more critical than ever to stay apprised of the latest technological advancements from a business vantage point and to find ways to leverage those advancements to enhance value delivery tactics." The Roundtable is produced by HMG Strategy and the Southern California Chapter of the Society for Information Management. Arcadian Health and its sister organizations and corresponding affiliates make up a Medicare Advantage health plan operating in Arizona, Arkansas, California, Georgia, Louisiana, Maine, Missouri, New Hampshire, New York, North Carolina, Oklahoma, South Carolina, Texas, Virginia and Washington. Visit www.hmgstrategy.com and www.arcadianhealth.com.

Part II: Case Studies of PM Vendor continued…

Implementation and support

Upon implementation of the Risk Navigator Suite, a medical analytics user support site was created that contained a "public library" for data specs, rollup logic, P&Ps and user support documentation, plus a "private library" stocked with training documents in addition to reports, administrative documents and usage reports. During the implementation phase, the support site provided the necessary tool for communication, solution education and answers to quick questions when needed. The steering committee has continued in its work post-implementation, and Fisher says those monthly meetings are an important factor in the success of the entire MEDai strategy. Furthermore, a user group also meets monthly with a MEDai account manager and targeted groups meet monthly as well to coordinate additional tools. "We continue to meet to keep our focus while learning to use the tool collaboratively," says Fisher. "If we don't use all the tools, we end up getting a narrow view of the results." Given the success of the Risk Navigator implementation, BCBSNE has identified opportunities to extend the capabilities to other areas. For example, BCBSNE is planning integration with Clinical Documentation System (CCMS) and a move to use Risk Navigator data in support of consultative employer/broker reporting. Also, because Risk Navigator is a web-based solution, it is easily accessible through a quick launch desktop icon, which will be placed at nurses' stations. Finally, department managers from the fraud and abuse area are starting to look at patterns of individual and provider problems. And although BCBSNE uses a separate fraud analytics solution as its prime fraud and abuse checker, Risk Navigator demonstrates its flexibility by providing supporting data.

Part III: Vendor Takes on the Future continued…

CareAdvantage

CareAdvantage Inc. sees the predictive modeling industry expanding and refining the models. What is becoming more critical is the development of models that predict other issues and not just cost. PM will be a key element in the success of ACOs and PCMH -- not just for cost and budget issues, but to identify members at risk for events such as readmission, complications and emergency room visits and preventable complications, to name a few. Understanding who is likely to develop a chronic disease is critical to slowing the rise in healthcare costs, by creating programs to impact members' lives before they have a chronic condition.

Treo

Predictive modeling tools must be derived from clinically-categorical models that use empirical evidence to track past behaviors and performance. Our approach uses claims history to stratify member populations into clinically distinct groups, enabling meaningful analysis of cost, utilization, and risk factors for that specific population. 3M™ Health Information Systems' Clinical Risk Groups accommodate this approach more effectively than other tools because of their person-centric categorical approach (each person falls into one and only one category). With Clinical Risk Groups as a foundation for risk adjustment, our tools then apply claims history to project future costs and utilization for each group.

continued

Part III: Vendor Takes on the Future continued…

Ultimately, the goal of predictive modeling should be to identify high risk populations and provide health plans and providers with members that should be targeted for interventions. Because we focus on healthcare payment transformation as our core business, we also assess avoidable events (low value ER visits, low acuity admissions, clinically related readmissions, high cost/marginal value ancillary procedures) by population, and use predictive modeling as way to develop alternative payment models that realign incentives. Because our approach uses predictive modeling to impact payment, we emphasize methods that are transparent, clinically explainable, and not overly complex.

Qforma

In health sciences industry, in the days of blockbuster drugs and huge sales forces, predictive modeling was not important. Now, with diminishing pipelines and blockbuster products heading off patent, the industry has shifted its view of the importance of PM. The need to base sales and marketing decisions on deeper analytic insights – combined with a desire for more agile in-house software that can deliver actionable insights -- has pushed PM into the spotlight. Companies that approach targeting with PM in mind are gaining significant efficiencies and allocating resources with more precision. They are aligning new customer behavior insights identified via PM techniques with their product strategies and tactics. That enables them to make incremental adjustments to interventions as the competitive landscape evolves, optimizing results without a lot of disruption or expense.

Part IV: Consultant Commentary continued…

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Q Anecdotally, how big has the vendor sector gotten?
A With regards to the actuarial industry, looking at the advertising in actuarial publications, it appears that the vendor sector has become more competitive. You used to see different vendors having different offerings, but now it is not usual to see directly competing software products.

Q Any other comments?
A In my opinion, the most crucial element in an actuarial product is design. A good design means that the product is transparent, as simple as it can be but not simpler, efficient, adaptive, fail-safe, seamless integration with other tools and analytics, scalability, focus on well-defined metrics, easy maintenance, a great user experience -- and did I mention a great user experience? It's all about design.

I would invite readers and, more importantly, vendors to think about the design aspects in the development, deployment, use and maintenance of the products and solutions.

Part IV: Consultant PM Industry Commentary

Al Lewis
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Q Are there any numbers anywhere that detail the size of the vendor sector of the PM industry, as far as number of companies or annual revenues?
A No. The Health Industries Research Company puts out an annual report on the DM/Wellness/Patient-Centered Medical Home industries that necessarily includes some predictive modeling, but that's as far as it goes.

Q Anecdotally, how big has the vendor sector gotten?
A Predictive modeling (for medical management) is still well below a billion-dollar industry. I don't know that for a fact, but it shares a lot more in common with the wellness industry, which is less than half that threshold, vs. disease management, which is well over $2-billion plus home-grown programs. Like wellness and unlike disease management, there are no public companies, no trade association, not even a vendor directory that I am aware of. While I have vendor directories for wellness and DM, I don't find the field robust enough to create one here yet. If anyone wants to steal this idea and beat me to it, I say, "Be my guest."

Q Characterize the diversity of the vendor sector. Are buyers finding everything they need on the market? Are their product gaps that need to be filled in?
A As contrasted with predictive modeling for populations, which I think is an excellent and well-established tool for assessing actuarial risk and predicting overall claims spend, I would characterize the predictive-modeling-for-medical-management industry as quite primitive. I rarely recommend a standalone predictive modeling vendor to my clients. I tell my clients 80% of what they predict is self-evident from last year's claims, and the other 20% is usually wrong. This isn't the fault of the industry. It's that they get the data late from the health plans, and the data are remarkably unenlightening most of the time. For all the talk about being able to incorporate lab values into predictive modeling, the diversity of labs used by most health plans makes that the exception rather than the rule. Further, the screamingly obvious place to do predictive modeling is with Medicare revenue coding vendors. And yet the leading Medicare coding vendor, Matrix Medical, tells me that despite the wealth of real-time in-person patient assessment primary data it accumulates, no predictive modeling vendor has ever approached it to utilize those data on behalf of shared customers.

Q What does that say about the predictive modeling companies?
A That, in the immortal words of the great philosopher Yogi Berra, their future is definitely ahead of them. I would bet -- at least in the Medicare arena -- that the first vendor to work with Matrix will end up being the winner. Matrix is a winner company -- the highest-ranked managed healthcare services company in the Inc. listings -- and whoever works with them will be the winner in predicting Medicare revenue scores.

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Q Anecdotally, how big has the vendor sector gotten?
A The predictive modeling industry is projected to grow to $1.8B by 2014, more than tripling between 2008 and 2014 (according to Forrester). As in any new, emerging technology, there are a large number of niche players developing software for licensing or solutions focused on specific verticals (e.g., financial services or health care). However, as the market grows, big players like IBM, Oracle, Microsoft and other system and solution providers are likely to acquire those niche firms; a good example is the acquisition of SPSS by IBM.

Q Any other comments?
A. The vendors are approach the market from different angles. One set of vendors is specifically focused on bringing advanced analytical techniques to the market and working with companies to install and work on solutions (e.g., SAS and SPSS). The second group is approaching the market as one aspect of a broader business intelligence and business solution offering (e.g., IBM and Oracle). The third group of vendors is approaching it from specific needs in sectors such as financial services or healthcare (e.g. Jaspersoft/REvolution Computing alliance) The solutions work with structured and unstructured data and perform different analytics (segmentation, classification, clustering, simulation, scoring and multi-variate analysis) and offer different visualization and storage and retrieval mechanisms from enterprise data warehouses.

Like most licensed software solutions, they are nice "solutions" waiting for a "problem." Given the relative sophistication of some of those tools, there are not many in an organization who can use or manage those solutions effectively. The industry will go through a transition and learning curve as the business world slowly adjusts to using analytics and insights to drive decisions -- as opposed to current "experience-driven" or "gut feel" decision-making. The situation is analogous to the CRM revolution in the 1990s, when everyone implemented a CRM solution, hoping that would enhance their customer relationships. Unless organizations are able to truly understand, monitor and manage customer experience across the life-cycle, the CRM tool is of no use.

Effective use of those tools requires a fundamental change in business culture, organization and how decisions are made. The next three to five years will see a substantial growth in not only the licensing of those tools but also in the consulting that helps organizations harness those tools and bring about the change in business culture and operations to make those tools more effective.