Expanding Opportunities through Analytics: How Successful Implementation of Predictive Analytics Improved Operational and Clinical Effectiveness across a Large Organization.

Two full years into a three-year contract for the implementation of an analytics solution, executives of BlueCross BlueShield of Nebraska (BCBSNE) 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.

In fact, after some trying times with the previous attempted implementation, there developed a general consensus among departments that a vendor that could meet the organization's highly specialized needs probably did not even exist.

"Predictive analytics is very important to our area," said Lisa Fisher, RN, Director of Medical Programs, for the BlueCross BlueShield operation in the Cornhusker state. 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.

Recalling the state of affairs that left BCBSNE without a reliable predictive analytics solution, Fisher says, "Business units were not aligned at the enterprise level and we needed to move forward quickly with another analytics solution. The biggest issue was the departmental silos and business users who couldn't articulate enterprise-wide business needs. A strong feeling developed that there was no vendor that could meet our needs because vendors and their solutions are not able to manage the level of detail and nuances inherent to our data."

The technological letdown engendered a real-time problem that began to infect the workplace. At the staff level, members had grown weary of lengthy delays and developed an aversion to the project, thanks to the previous failed attempt. Overall mistrust and a lack of user adoption of the data warehouse came next.

The only solution was to leave the old problems behind, so 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," says Fisher.

Another aspect to bringing in a consultant was to sidestep internal politics. "We were a very 'siloed' organization," said 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. Using Option A, a medical analytics solution would be implemented 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. In that scenario, the ability to use analytics to advance the organization as a whole was the primary focus. In Option B, technological tools are merely the enablers.

To gain buy-in from multiple cross-functional areas, a Medical Analytics Steering Committee was organized ahead of a decision about which of the two options to choose. Represented on the committee was an array of departments including actuarial and underwriting, information services, medical management, pharmacy, provider contracting, group reporting and marketing. Each departmental representative, of course, had their own idea of what was needed from the new analytic solution.

Once the committee began to meet and momentum began to build, Fisher says that the committee, which met on a monthly basis, began 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," she said. "This gave everyone a better understanding of the tool and its impact on their efforts. We were convinced that this feedback and buy-in was 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."

For example, a solution was needed that could create medical analytical support, user reports and administrative documents, and 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 would use it to fill gaps by contacting members. Underwriting and actuarial would use it to predict future costs, and quality control would use it to identify performance and examine efficiency issues by comparing the performance of physician offices to other physician offices.

As part of the vendor selection process, Requests for Proposal were sent to suppliers judged to be major players in the predictive analysis sector. Representatives from vendor finalists were brought in to meet the committee and answer specific sets of business questions.

LexisNexis® Chosen the Winner

The decision was ultimately made by the committee to utilize predictive analytics from LexisNexis and a multi-year contract was signed for the full Risk Navigator product suite. LexisNexis processes medical claims and pharmacy data through MITCH, its predictive modeling engine, and then integrates that information to optimize the forecast.

The LexisNexis system is a true predictive model incorporating artificial intelligence that forecasts individual clinical conditions and medical costs for the impending 12 months. While it is extremely difficult to perfectly predict high risk and avoid false positives and missed cases, LexisNexis' system goes a long way toward overcoming those shortcomings inherent in any predictive modeling arrangement.

In a 2007 predictive modeling study by the Society of Actuaries, our model outperformed seven other risk assessment methodologies and predictive modeling and care management analytics solutions, and also produced the study's lowest MAPE, Mean Absolute Percentage Error, a trending measure of accuracy in a fitted time series.

Most plans accumulate enormous stockpiles of data and want to use that information to systematically improve effectiveness and efficiency. LexisNexis believes that it is advantageous to intervene before the fact, rather than move into an eventual denial mode. Case management and disease management programs are ubiquitous and predictive modeling strategies are aimed at increasing the value of these programs. Predictive modeling is part of a larger risk assessment and adjustment continuum.

LexisNexis 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. As a result, LexisNexis offers not only a Forecasted Risk Index but an Acute Impact Score, a Chronic Impact Score and forecasted pharmacy costs, all of which are geared to identify impactable and actionable members for the care management process.

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. LexisNexis has evaluated the comparative effectiveness of intervention efforts and developed impact scores that help target patients and focus intervention efforts. When a patient suffers from multiple chronic illnesses, it is critical that the clinical staff information helps them to prioritize their next steps and interventions.

The system examines mileposts such as medical and pharmacy claims, Health Reimbursement Accounts, member eligibility data, and other information like lab test results and other user modeling, which enable robust reporting capabilities that produce a wealth of critical data such as predicted costs by member versus actual costs experienced that year. Physicians and other stakeholders are able to leverage this critical information across systems and care settings.

As is the case with BCBSNE and other LexisNexis users, when data is received, it is put through an intense data scrubbing process which runs edits looking for missing data as well as other data integrity issues.

Once the data cleanup process is complete, the data is integrated into one database to optimize the models and forecasts. LexisNexis' award-winning predictive modeling engine incorporates blended artificial intelligence, along with other statistical methodologies that provide the most accurate forecasts commercially available.

The Backdrop

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.

 LexisNexis has the ability to interface with data warehouses, care management systems, rating systems (whether homegrown or provided via a third party) and more. Before a successful implementation of all modules, the Risk Navigator Clinical database was scrutinized and validated in a risk mitigation exercise by a multi-disciplinary team.

The database building programs of the Risk Navigator product suite are additive. At its core, the system requires membership information, including eligibility and group association along with medical claims data.

From these two sources, the Risk Navigator product suite can build a valuable data repository. As other data sources, behavioral health claims, pharmacy, lab results, care management program and health risk assessment data are added, the data repository becomes increasingly robust, organizing all the relevant data in a single source for information for a retrospective medical history combined with the predictive component.

The system is a living entity

Even in the wake of formal implementation, the steering committee continues its work, and Fisher says those monthly meetings are an important factor in the success of the entire strategy and tactics.

A user group also meets monthly with a LexisNexis 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."

Next up for BCBSNE is integration with Clinical Documentation System (CCMS) and a move to use Risk Navigator data in support of consultative employer/broker reporting. The LexisNexis system, which is Web-based and not hosted, will be placed on nurses' desktops for quick accessibility. "The system gives us quite a bit of flexibility," says Fisher.

For example, 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, the LexisNexis system does provide supporting data.

For More Information

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Our health care solutions assist payers, providers and integrators with ensuring appropriate access to health care data and programs, enhancing disease management contact ratios, improving operational processes, and proactively combating fraud, waste and abuse across the continuum.

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