DI-Diver – Just the Cure for Neighborhood Health Plan

All managed care organizations analyze revenue, capitation, and expense information for medical claims, pharmacy claims, and behavioral health claims. The old way of analyzing healthcare data was to have IT professionals write code every month and extract data from different tables – usually with inconsistent data definitions and divergent priorities - from a data warehouse. This process proved to be too time consuming and unreliable for Neighborhood Health Plan. To keep track of their 129,000 members receiving care in a network of primary care centers across Massachusetts, they implemented DI-Atlantis to run on their Windows NT server, and end-users access reports from DI-Diver on Windows 98 clients. About twenty end-users access a "DiveBook" which contain reports that are updated monthly as the data Models are updated. The main areas in the DiveBook are Inpatient Statistics, Line Item Reports, Membership Reports, and Lag Summaries.

"We started with inpatient events," explains Marilyn Daly, Director of e-commerce and Clinical Applications. "We could look at claims data, and we could look at referral data, but there was no way for us to integrate them together. It's important to be able to integrate the data because seeing utilization and dollars in one report is necessary. Some will say you can analyze utilization from claims, but it's often too old. If we use referrals as a predictor, or as an up front knowledge of what's happening with utilization, we can predict what our costs are going to be. DI-Diver allowed us to integrate these data sets and, for the first time, give us quick access to important information." The inpatient statistics report allows analysts to dive down from summary data to detailed levels of information. The report reveals individual patient stays, what kind of member the patient is, where they were in the hospital, what their diagnosis was, and their length of stay. Furthermore, analysts can see which stays have been authorized and which payments NHP has to make in the future.

A typical question for an analyst looking at the inpatient report is: How much is it costing me per member/per month for all of our different services (ER expense, inpatient surgery, outpatient surgery, etc.)? The analyst looks at claims expenses to see the trend in dollar amounts for all of NHP's services, and also per member/per month expenses. If the average expense for a service is much higher than it was last quarter, that provokes the question, why? Using DI-Diver, the analyst can dive on the element "provider sites" to see the reasons behind the increase in PM/PM. Is it coming from changes in referrals from the primary care sites? Are they sending people to more expensive sites? Are they sending them more often? Or is it one particular vendor/hospital that is accounting for the most significant increase in PM/PM? And yet another question arises: Are more people going to that particular hospital that accounts for the increase in PM/PM, or is the cost of that hospital higher? Are there any outliers? All these questions are answered with a few clicks of the mouse, using DI-Diver.

"Inpatient line item reports classify revenue codes and procedure codes into different funds to come up with 'inpatient medical' and 'outpatient other.' Elements such as rehabilitation, general medicine, pediatrics, average days, cost, and cost per day are included in the reports, which are produced from a managed care system. In the past, someone in the Finance department would pull data off the managed care system on a monthly basis. The rest of the organization was not using this database – it was purely claims driven – and the data didn't coincide with the rest of the reporting off the data warehouse. There were definition

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discrepancies and algorithm discrepancies, so we had another instance of multiple systems producing different data sets. Putting it all into DI-Diver gave us one standardized set, because it's all coming off the data warehouse and it gives the end users as well as the analysts the access to the same data in one tool set. That's key: we're all looking at the same data. It's reliable, consistent, and we can see trends over time. When you're dependant upon someone producing data like this every month…. it would be close to the end of the third week of the next month before we had any information. Our new data warehouse loads in a day at the end of the month, we then push that information out to DI-Diver, and within the first week of the month we have access to all this information," explains Daly. "People used to come up with different numbers all the time, and reports had to be scrutinized. Now the data is tested in the data warehouse, validated, and pushed out to the reporting environment. With DI-Diver, the validation and presentation vehicles are in place."

Bill Cay, Manager of Analytical Services, explains the content for other areas in the DiveBook. "The membership reports show accounts for members over time. Members in each of our subcategories are listed by month, and presented in a graph. We're also looking at disenrollment and enrollment trends. We try to keep track of sudden increases in disenrollment, and dive down into the details when there is a sudden increase. In our Medicaid population, it is often involuntary disenrollement, but in other cases, a member may choose to withdraw so we like to understand why."

Membership information is also integrated into Profit and Loss reports. Enrollment data is linked to claims premium, pharmacy, and behavioral health data. For each primary care site, NHP can see what their membership was by month, premium, and revenue, and each site's medical expenses by medical claims, pharmacy claims, mental health capitation, and primary care capitation. By looking at revenue and expense by service type, they can derive a profit. Craig Johnson, CIO, says, "Today, our end-users see everything. All this information is tied together, which is extremely hard to do without DI-Diver. We've standardized basic measures and data definitions, and we provide these in an end user reporting system that presents a consistent picture across all reports. Users are able to dive down into the information to insure utilization of the same definitions."

"The Claims Lag area in the DiveBook is a set of reports which helps us understand patterns in claims payment for a membership. Diver enables us to look at different subsets of our membership and see how claims for those subsets have been paid. It helps our actuary determine how the claims are likely to be paid in the future, which helps NHP to predict liability. If a patient sees a doctor on February 1st , we may not receive a bill until mid-march. Then it takes us a little while to get the claim entered and ultimately paid, so it might have been entered in our April data warehouse and also paid in April, so the Claims Lag reports help us look at patterns in claims payment versus dates of service. Our actuary can look at how long it's taking to pay claims perhaps for the last three months, versus the same three months in the prior year. It helps us to assess our outstanding liability to estimate our IBNR (Incurred But Not Received). DI-Diver reveals the level of claims that is likely to be outstanding even though we haven't received them yet," explains Cay.

Daly concludes, "With DI-Diver, all of our financial data is centralized, we are able to trust the numbers in the reports, and we are able to dive into detailed levels to answer our own questions. In the managed care business, understanding utilizations is key, and having our data centralized gives us the opportunity to see where we need to target. If clinical medical expense is up for a particular fund type, or a particular admission type, we can easily dive down to see if that's because of a particular member, or if it's ten members. If I had a paper report, and saw

that my inpatient medical expense was up by 30%, I would have to request another report from the IT department. With DI-Diver, I just dive to find out if it's costing me more because my patients are sicker, or if the price per unit is going up."

In the future, NHP plans to offer reports to a broader set of external users with DI-WebDiver, Dimensional Insight's web application. Primary care providers, physician groups, and community health centers are interested in seeing how their costs compare to other health centers' costs. They will have access to a report that tells them by category of member, what their per member/per month cost is for inpatient expenses, and how it compares to the network average. For additional cost categories (such as outpatient, ER, pharmacy, mental health, primary care), NHP will provide health centers with their expense total compared to the network. In addition to having financial information, external users will also have utilization data at their fingertips.

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