

Diagnosing Strategic Database Disorder: Understanding the Business Symptoms

A White Paper for Home Health Business Managers
by Dataalytics LLC □ <http://www.dataalyticsLLC.com/>

Abstract

Home health care executives often misdiagnose operational problems as IT or business-process related, overlooking the underlying root cause: ineffective use of the data collected in the course of doing business. This paper identifies symptoms that can signify what we call *strategic data problems*, and explores data-driven strategies for improving patient care, clinician productivity, and other key performance indicators.

By analyzing your organization as if it were a patient, this paper may help you diagnose and cure your own strategic data problems.

Introduction – Assessing the Patient History

Most strategic data problems, and their associated business symptoms, are the result of prior strategic decisions. For example, acquisitions of other agencies with different technology platforms can create data problems for managers trying to compare performance among business units. Acquisitions of specialized technologies can create isolated data silos within your organization. Efforts to keep up with the latest clinical advances can create gaps in your ability to aggregate data and make the best decisions based on all available information.

As your organization grows larger, it becomes more mature and more complex – and strategic data problems typically worsen. You may find that office and clinician productivity stagnates or decreases; you may find that your organization’s quality of care is lower than you expect; you may even find that your financial results fall short of goals.

And lastly, it may seem that the reports you rely on to inform your executive decisions simply don’t give you adequate information to formulate a strategy to resolve these issues.

Observation and Diagnosis – Taking a Closer Look at the Patient’s Complaints and Symptoms

As your strategic data problems grow larger, you may find that operational reports don’t provide a solid framework for making good decisions. For example, you may receive reports on the same topic from different business units that cannot be compared to one another because of underlying technology differences.

This situation occurs even when well-intentioned staff members invest a considerable amount of time and energy into extracting and analyzing data. Case in point: a large home health agency in Texas had three IT staffers work three days every week to

prepare the data needed for its weekly management meeting! Yet the reports still didn't deliver the information management needed. It happens all the time.

Sometimes IT gets blamed for being unresponsive. Sometimes decision makers get blamed for being too demanding. In either case, staff and management grow frustrated while enormous value remains locked away in the corporate databases because it seems too difficult, too time-consuming, too expensive, or just plain impossible to get the data that the company needs.

Think about your environment for collecting, evaluating, and acting on data from your operations. Consider your responses to the questions in the box below.

If you answered yes to one or more of the questions, then your organization may be suffering from Strategic Data Disorder (SDD).

Consultation – Evaluating Possible Solutions (Treatments)

A number of remedies are available for alleviating various symptoms of SDD. For example, you can decide to proceed with that "technology standardization" project you planned. At great expense you'll get everyone on the same platform, but what happens the next time you acquire another organization with different technology? Once again you'll end up wasting that organization's investment in its current technology and spending more money to standardize it.

You can hire a consultant or invest staff time and money to build all the summary and detail reports

Classic Business Symptoms of the Disorder:

Do senior members of your staff spend many hours each week or month on basic tasks of data collection and assembly for management meetings?

Is data from different business units available only in different, incomparable reports?

Do you have difficulty comparing, integrating, or aggregating information from different data systems?

Is your process for creating and running reports a source of frustration to both your IT staff and their customers (the decision makers)?

Does your IT staff express concerns about running huge report jobs against your production database?

Do you wish you could "open up" or "peek into" line items in your reports to get more information?

Do you have difficulty comparing and integrating actionable information across payors and lines of business, such as private pay, Medicare, Medicaid, hospice, long term care, and physical therapy?

After acquiring new agencies, have you felt it necessary to embark on a costly and time-consuming "technology standardization" project?

Do you wish that your financial accounting system and your patient care application could "talk to each other" so that you could see the true costs of patient episodes?

Have you encountered difficulty determining the difference between two branches with similar patient count and visits per episode, but one is losing money and one is profitable?

that you need. But what happens when the database schema changes or a new data source is added? All the reports must be re-built.

You can hire your accounting system vendor or your patient-care application vendor to do an integration of one to the other so they can share data. But, that's hugely expensive and time-consuming.

Unfortunately, there are issues with each of these approaches. They are all expensive, they are all partial solutions, and none of them actually cures the root problem.

Looking to the Ideal

The ideal solution wouldn't require technology standardization and would still provide consistent, comparable, and integrated views of data across different business units and disparate underlying technology platforms.

The ideal solution would allow end-users to modify and customize reports with ease, so that the inter-departmental tension with IT is eliminated.

The ideal solution would:

- Present information in a dynamic way, so that a manager can in fact "open up" or "peek into" line items or graphical elements in a report – in real time – to get more information.
- Facilitate easy ad-hoc reporting, "slicing and dicing" many different dimensions quickly -- in pursuit of key information you didn't previously have access to.
- Make your data actionable; easier to identify trends and change preferences on-the-fly.
- Facilitate "discovery" – the process of finding out new information that you didn't even know you were looking for.

- Bring together all key data sources, eliminating the manual task of data collection and assembly. It would allow a single report to integrate and analyze data from every data source necessary.
- Run reports very quickly, using little or no resources from the production database. It would allow you to tease information out of multiple report runs much more quickly than typical report writers.

Perhaps most importantly, the ideal solution would be flexible and adaptable. Whether you acquired additional business units, bought a new software application, or modified your technology platform in another way, the ideal solution would adapt easily, quickly, and inexpensively to the changes.

Finding a Cure

One solution that provides all of these benefits is a **data warehouse**. A data warehouse is a separate database that collects data from all your important production data sources and links it together into an integrated data model. Using an easy-to-modify ETL (Extract, Transform, and Load) layer, the data warehouse gets new data from any contributing source on a regular basis, keeping the data warehouse as up-to-date as you need.

If you acquire additional business units, or a component of your technology platform changes, the ETL layer is designed to be easily and quickly adapted to the new environment.

A data warehouse by itself, however, doesn't treat the business symptoms caused by outdated and overly complex reporting tools. To realize maximum value, the data warehouse should be combined with a **Business Intelligence (BI)** service that facilitates accessing and analyzing the data in the ways that you think about the data – ways that most standard report writing tools cannot provide.

Users gain access to the results of the business intelligence analysis through a web-based dynamic data viewing application. While printing to paper is of course supported, the value of the dynamic data view lies in its ability to allow users to click on data elements on-screen and “drill-down” for more information. The data viewing application allows end-users to modify and customize the appearance and components of the data display without any technical knowledge. It also allows easy creation of charts, graphs, and visual key performance indicators (KPIs) on-the-fly in a matter of seconds.

Regardless of the different technology platforms among your business units, the data warehouse and business intelligence solution is designed to standardize your view of every business unit, allowing you to compare apples to apples.

Understanding the Rx

Because the data warehouse is a separate database and server from your production databases, running a large report doesn't impact your production databases at all. Extractions from your production databases to the data warehouse can be done during low-volume hours, if the extractions are particularly large. In most cases, an hourly or periodic extraction of new/changed database records during regular hours has little impact on the production server.

After the data warehouse extracts the latest data from the production sources, the business intelligence service processes the data warehouse and pre-compiles dynamic data views called **cubes**. Because they are pre-compiled, cubes can generate even the most complex reports for the user in a matter of a minute or two. Most reports display results instantly.

(For the technically-inclined, this processing technology is called Online Analytical Processing or OLAP for short. It analyzes data in terms of

dimensions [all the different categories of measurement] and measures, [the quantity of that particular dimension for each thing that is being measured]. For example, if you have multiple branch offices, for each one you might evaluate 3 dimensions: *Patients*, *Revenue*, and *Profit*. The measures would be the relevant branch numbers for each of those dimensions, which can in turn be analyzed via mathematical aggregations, such as sum, average, count, and so on.)

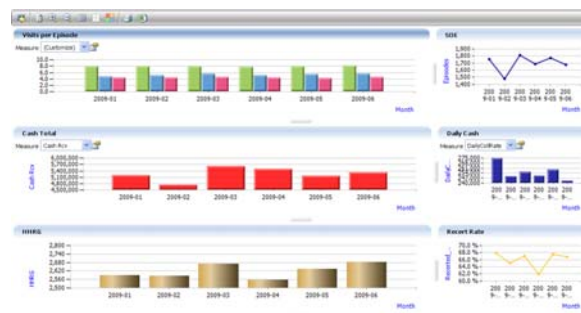
IT groups value the data warehouse because end-users aren't constantly asking for new and changed report templates, and because it removes the reporting burden from the production databases.

Managers value the data warehouse because it finally gives them the consistent, integrated, and dynamic view of their operating data that they've always sought.

Choosing a Provider

When choosing a data warehouse provider, it is important to select a vendor with deep domain knowledge in home health care. While many database consulting vendors likely have the skills needed to implement a data warehouse, those without a specific understanding of home health and the compliance environment (CMS, OASIS-C,

Medicare/Medicaid payment requirements, and so on) will quickly get bogged down in the industry's massive quantity of details. In addition, a vendor with existing ETLs for a range of home health care tools and applications is likely to implement your project faster, with fewer problems. Lastly, a vendor using a field-tested home health data warehouse model has necessarily solved many major technical hurdles that a less-experienced vendor doesn't even know they'll run into along the way. The expert vendor may cost a little more, but you'll save in the



Operations Dashboard

long run with a better quality outcome: on-schedule and on-budget.

Next, make sure your vendor uses proven underlying technologies. Your data warehouse is only as strong as its weakest component. The server hardware, the database software, the analysis services, and the dynamic data viewer (the “front-end”) should all come from trusted, best-of-breed vendors and comply with applicable regulations such as HIPAA.

Finally, choose a provider who supports the best hosting and maintenance model for you. If your patient care application is hosted remotely, then you may want to consider a hosted solution for your data warehouse, too. On the other hand, if your organization prefers to maintain full physical control of your databases and handle all the maintenance that entails, you may prefer an on-site data warehouse implementation.

Leverage Your Data

Most data warehouse customers realize during the implementation process that the data warehouse can not only eliminate the headaches from their current situation, but also raise the level of their game. When old “impossible” roadblocks are suddenly removed, a whole new playing field comes into view. Improved productivity, better quality and coordination of care, and loftier financial goals all become valid targets.

Here are some specific ideas on what you can achieve with a data warehouse:

- Run your consistent, cross-unit reports on an acquisition candidate. Evaluate its performance in a data view directly comparable to your own business units.

- Create different dashboard views for your functional managers, allowing them to see the current status of operations any time, in near-real-time (limited only by how frequently the data warehouse extracts new data from the production data sources).
- Replace your average costing method with true episodic costs. Your true costs change all the time, but average cost methods only allow for changes periodically and are inaccurate almost all the time. True costing leads to better strategic decisions and accurate real-time analysis of contribution margin.
- Analyze your referral sources for marketing effectiveness. Determine which physicians are sending you the most profitable patients (or unprofitable) so you can develop (or terminate) the relationships.
- Audit other reports or data stores. Data warehousing is an exacting use of your data and will often reveal inconsistencies or inaccuracies among your existing data.



Episodes Heatmap

The cost and time frame for a data warehouse implementation is proportional to your number of branches, number of lines of business, your desired level of customization, and your desired feature set. Because the data warehouse is an add-on to your production

environment, it is easy to start small – with your most pressing needs -- and expand later, as necessary.

Conclusion – Prognosis and Follow Up

At Datalytics LLC, the primary focus is data warehousing, reporting solutions, and custom application development for home health care. The company’s lead consultants and developers have an average of 15 years’ experience developing IT

solutions specifically for home health. Their in-depth expertise includes Medicare, Medicaid, private duty, therapy, hospice, long-term care, and many more specialties.

Datalytics relies on Microsoft SQL Server, SQL Server Reporting Services, and SQL Server Analysis Services for the critical data warehouse database and raw OLAP and Business Intelligence capabilities.

For the front-end, Datalytics prefers Strategy Companion from Strategy Companion Corporation. Strategy Companion provides the most advanced and easy-to-use Business Intelligence front-end available for the Microsoft SQL Server platform.

As an established technology provider, Datalytics has existing ETLs for Lewis Patron, McKesson Horizon, Honeywell/Hommed Telemonitors, and many other financial and clinical data sources.

With a reputation for innovation and superior customer service, Datalytics can help you optimize your business operations by unlocking the full value of your operating data.

Visit **www.datalyticsLLC.com** today to learn more. Then, call or email Datalytics to schedule a free consultation about your organization's strategic data environment. Don't worry – even if your organization has a severe case of Strategic Data Disorder, Datalytics offers a proven cure.

Datalytics, the Datalytics logo, and the words "Strategic Data Disorder" are trademarks of Datalytics LLC. All other trademarks in this document are the property of their respective owners.

© 2010 Datalytics LLC. All Rights Reserved. Rev A 1/10



Datalytics LLC
3112 Windsor Rd #A-133
Austin, TX 78703

800.763.1957
www.datalyticsLLC.com
sales@datalyticsLLC.com