Five Principles for Healthcare Analytics Success

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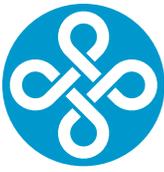# CITO RESEARCH

The Challenge

In the world of healthcare, data can be stored in many different places, which can easily become overwhelming. Companies also have to keep up with a wide expanse of regulatory requirements, which is incredibly time- and resource-intensive

The need to modernize, along with the cultural and political shifts in the United States, have put the healthcare industry in flux.

Today, healthcare providers must be able to track and analyze their data to efficiently operate and manage transactions, and ensure they are paid from federal and private insurers. Getting the right information to the right parties was onerous to start with, and today's increased demands for insights offered by data and analytics are making the strain even greater. The time and resources necessary to comply with insurance and governmental reporting requirements can have an impact on care delivery and business operations. Reporting requirements can be immense: healthcare organizations must juggle reporting, comply with insurers, and maintain compliance with regulations like HIPAA that require strict and specific protections of patient privacy.

To comply with the demands of insurers, most providers must devote considerable resources to running one-off reports. Consequently, they don't have enough time to answer important questions like: "What drugs are most effective in treating our diabetes patients?" or "How many patients with heart disease am I seeing on a weekly basis?" Running one-off reports takes a toll on the ability of providers to perform analytics that could allow them to better serve patients and improve operational efficiency. Most providers do not consistently have the time or resources to devote to investigative analytics that could improve patient care and the bottom line.

Additionally, federal regulations and the passage of the Affordable Health Care for America Act, have incentivized the migration of medical records from paper to digital storage. As a result, since 2011, there's been huge growth in the adoption of electronic medical records: in 2011, 10% of hospitals were using electronic records; by 2015, the number had risen to 96%. This adoption occurred so quickly that providers were not able think about how they would use the data once it was digitized. The goal was to get it done, not to make them useful. Now, the problem is making sense of the data chaos at each organization.

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Providers need a system that analyzes medical record data, massages it in a way that addresses compliance, and then provides answers for better care delivery. Healthcare analytics hold huge potential for helping to reshape and improve the industry. Therefore, companies should look at solutions that help them get to the data they need to tap into the potential of analytics and maximize results in this resource-constrained environment.

Solutions that can handle both pieces of this process — reporting and analytics — are ideal. This white paper outlines the challenges facing providers, while also offering up solutions so that healthcare companies can start to capitalize on the benefits of analytics.

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Healthcare Is Unique

We conducted interviews with healthcare practitioners about the complexities of setting up a stack to meet the analytic needs of healthcare providers. These practitioners offered ideas on how to bridge the challenges of collecting data that can be useful to an analyst, while also being compliant with complex regulations designed to protect patient privacy. Because of the regulatory and insurance demands, as well as the resource constraints, best practices for healthcare data warehousing and analytics have yet to crystallize. The optimal ways to do analytics in healthcare are still emerging.

Yet, around the country, there are companies investing in ways to use data to improve patient treatment and operational efficiency. And by using the right analytic technologies, these organizations have found it possible to improve delivery of care data, while also meeting regulatory obligations.

Overcoming the Challenges

To maximize healthcare analytics, it's imperative for providers to optimize the efficiency of their compliance reporting as much as possible. Only then can providers attack the kind of analytics that address key issues in patient care and business operations. Here are five principles for how companies can achieve this.
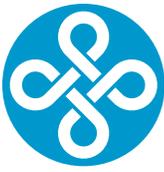
Five Principles for Healthcare Analytics Success

Principle 1

Collect and Connect All Your Data In One Place

In the era of big data, healthcare companies have more data at their fingertips than ever before. Yet, simply having more data is not useful in and of itself – companies must be able to put it to use easily to ensure better care and business operations. To do this, providers must centralize their data to be able to have a single view for analysis.

Providers should adopt a platform that ensures all their data is unified. Platforms can analyze all patient data, regardless of its source or format: this includes not just electronic medical records, but also lab and imaging records, medical claims, and billing information. Having all this information in a single place can lead to powerful analytics opportunities because users do not have to spend time pulling together data from different sources. Instead, they can spend it on actual analysis.

Principle 2

Self-Service Should Mean Self-Service

For a tool to fulfill the promise of self-service, users must be able to use it without extensive training. Many business intelligence (BI) platforms claim to be "point and click solutions" and position themselves as self-service, but once adopted, providers find users need extensive training before they can get up to speed. Additionally, self-service should mean that the often complicated and highly specific needs of healthcare reporting can be pre-built or built by analysts and then leveraged in a platform that anyone can use. This kind of platform offers a single source of truth that allows users to do the analysis of the data themselves, rather than relying on other people. Such a platform can be codified to protect patient privacy, but also be collaborative, so that users can query and share their findings without extensive training.

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Principle 3

**One-off Reports Don't Work - You Need Reusable Objects**

Adopting a tool that allows the analyst to create centralized models with reusable objects and templates offers more freedom and flexibility than traditional healthcare approaches to data.

This leads to two major improvements:

1 All users have a shared understanding of the foundational metrics. For instance, what's the period the provider is using to gauge patient readmission rates: 30 or 60 days? Or, what blood pressure rates are concerning for patients with heart disease compared to patients without the condition? With a platform, all the user sees is the information they need, without technical details about original data sources or formats. Technical complexity is hidden from the user.

2 Once these foundational metrics are established, users can then continue to build these data baselines to create more advanced analytics which help to deliver better patient care.

Once created, these templates and objects draw from the same live data sources time and again, meaning queries are always running on the freshest data. For instance, if you know you will have many questions about repeat admissions for patients with diabetes, rather than figuring out what table in the database stores intake data, you can simply pull from pre-defined metrics that join the sources together. Having a reusable, canonical data model means you can efficiently access that data, and then ask more questions to go deeper into causal relationships.

With the ability to create reusable objects, you have the power to use data in more applications and in more ways than ever before. You can embed it or use APIs to connect the power of your data platform to other systems. And this leads to easier compliance reporting, and better analytic-driven patient care. This reusability also avoids data siloing. When data is not centralized, to answer any question about a certain type of patient or illness, users must know the correct place to pull the right data from, which is time-consuming, costly, and resource intensive. More importantly, it's not scalable and prevents user-driven analytics.

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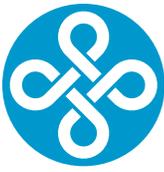
Principle 4

Built-in Access Controls Improve Compliance and Care Delivery

Performing analytics and reporting in a regulated environment like healthcare means there are a huge amount constraints, from privacy and obfuscation to access and shareability. But, a user attributes with permissioning allows you to meet these requirements without sacrificing analytics performance. You can ensure all privacy regulations are met in the foundational framework of the platform, which then means users no longer have to worry about complying with regulations each time they do a search -- the regulations will automatically be met.

In addition, the ability for a data platform to host data on premise, behind your firewall, ensures compliance and security.

A data platform enables companies to leverage data for insurance reporting. As an example, most providers depend at least in part on Medicare. Since Medicare payments are bundled, companies need a system to track patient history and treatments in order to meet reporting requirements.

With a platform, the information and visualizations generated to meet those requirements can serve multiple purposes, ensuring that standards for reporting on readmission rates and quality measures are met, while also offering up this data to be analyzed to improve patient treatments. From here, providers can make significant changes to their delivery of care. For instance, if they find that many patients who have received hip replacements are having problems that require extensive readmissions, they can use a data platform to pinpoint and drill down into the cause of this. This saves money, as providers treat patients more effectively with less care.

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Principle 5
Adopt a Platform that Gives You Leverage

The best way to build for today is to create points of leverage and flexibility. Adopt a tool that allows for easy collaboration across the organization.

A platform like Looker allows multiple data-driven users to create dashboard visualizations that can be shared across the organization. All users can safely interact with all available data, in a unified way, without having to rely on a technical team. Yet, importantly, each user retains the ability to refine that dashboard for their own needs without impacting the perspective of others. Users can then put this to work finding trends in patient data and operational practices, ensuring providers get as much out of their data as possible without adding more staff.

With a tool like this, you can adjust your model as your company and data grow. You can't plan for everything today, so you need a tool that can be easily updated for shifts in the healthcare regulatory environment or new market opportunities.

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The Way Ahead

While healthcare data is more complicated than data in most industries, and also has to comply with extra regulatory and insurance reporting measures, following these five principles make implementing a data platform possible. The key is to adopt a platform that performs all the heavy lifting for the users, so that analysts have time to answer larger questions. In such a platform, all data is centralized into a single system from which unified data models can be created and reused. These models help to make sense of that data — everything from complex joins to company-specific metrics — without requiring users to have extensive expertise to access and analyze it. Users are then able to access as much data as possible and can explore, ask, and answer their own questions.

The map for how analytics will work in healthcare is still being drawn, but with a platform like Looker, providers can begin to understand their own data and make actionable insights.

This paper was created by CITO Research and sponsored by Looker

Looker

Looker is a complete data platform that offers data analytics and business insights to every department and easily integrates into applications to get data directly into the decision-making process. The company is powering data-driven cultures at more than 800 industry-leading and innovative companies such as Sony, Amazon, The Economist, Kohler, Etsy, Lyft and Kickstarter.

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