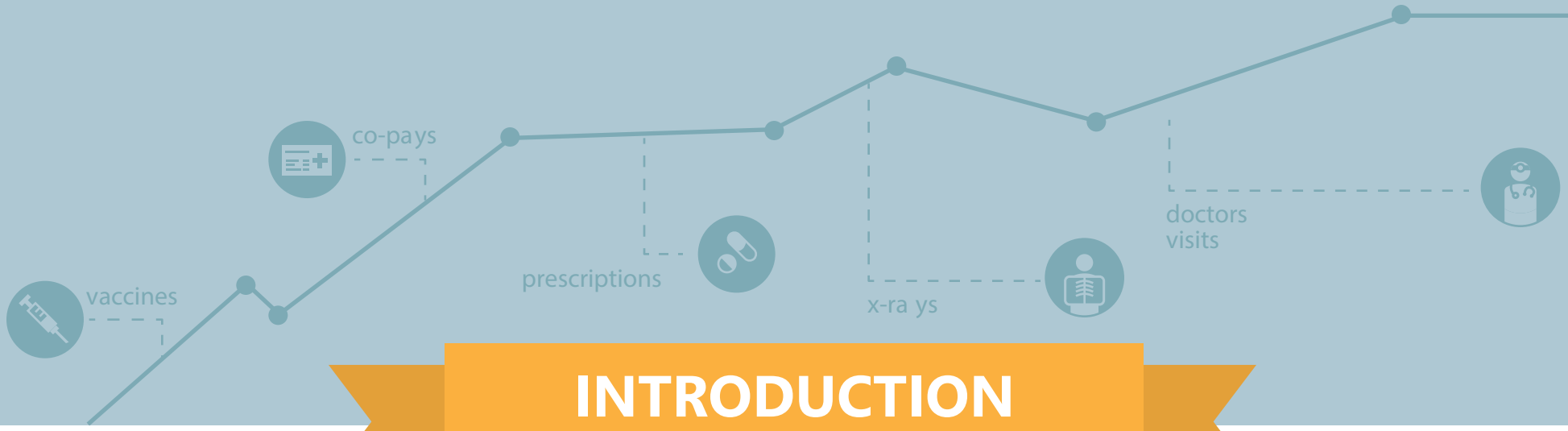
Dimensional INSIGHT

Navigating the World of

Value-Based Care with Analytics



INTRODUCTION

The cost of healthcare is growing rapidly.

In fact, National Health Expenditure data from the Centers for Medicare & Medicaid Services (CMS) shows that Americans spent $3.2 trillion on healthcare in 2015, a 5.8% increase from the previous year. That is nearly $10,000 per person and accounts for 17.8% of the Gross Domestic Product (GDP). Unfortunately, there is no end in sight. Over the next decade, healthcare spending is expected to continue to grow at 5.8% each year.

In an effort to break this tumultuous cycle, the Institute of Healthcare Improvements released the Triple Aim framework to enhance care quality, improve population health, and reduce the per capita cost of care. Under this model, it is now up to providers and payers to not only rein in costs, but also dramatically alter the way that care is delivered.

In response to these changes, value-based care programs have emerged as a new form of reimbursement that ties care delivery payments to the quality of care provided, while also rewarding providers for efficiency and effectiveness. These programs have quickly grown in popularity. A recent survey from the Health Care Transformation Task Force found that 41% of its members were in value-based payment arrangements at the end of 2015, up from 30% at the end of 2014. Task force members are also aiming for a goal of 75% in value-based arrangements by 2020.

According to a recent survey from the Health Care Transformation Task Force, 41% of its members were in value-based payment arrangements at the end of 2015, with a goal of reaching 75% by 2020.

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THE VALUE-BASED CARE LANDSCAPE

There are many different types of value-based programs in healthcare right now. While the Medicare Access and CHIP Reauthorization Act (MACRA) is currently receiving the most attention, there are also Accountable Care Organizations (ACOs), state-specific programs and bundled payments. Let's take a quick look at the value-based landscape.

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MACRA

MACRA will change the way physicians are reimbursed for Medicare payments. It replaces the sustainable growth rate (SGR) formula under which physicians were previously paid. Under MACRA, which is now starting to be implemented in 2017, physicians will be reimbursed via the Merit-Based Incentive Payment System (MIPS) or through alternative payment models (APMs).

MIPS consolidates three existing programs – the Physician Quality Reporting System (PQRS), the Value-based Payment Modifier (VBPM), and Meaningful Use (MU).

Physicians will now be scored in four areas – quality, resource use, Advancing Care Information (ACI), and clinical practice improvement activities (CPIA) – and will be reimbursed according to how they compare to a threshold score.

STATE-SPECIFIC PROGRAMS

In addition, there are several state-specific value-based care programs. For example, the state of Maryland was the first state to be granted a Medicare-waiver. Under the Maryland model, the Maryland Health Services Cost Review Commission (HSCRC) sets hospital rates that apply to all payers, including Medicare and Medicaid, as well as self-insured patients. Starting in 2009, the HSCRC initiated payment adjustments to the hospitals' rates according to their performance on a set of quality indicators that reflect care quality and patient outcomes.

Other states are also innovating in terms of value-based payments. For example, several states are moving some of their Medicaid programs to population-based payments. **Massachusetts, in particular, hopes to have 80% of its Medicaid payments be value-based by 2018.**

BUNDLED PAYMENTS

Finally, there are bundled payments, which are being implemented to improve the quality of care for specific types of procedures. For example, under the Comprehensive Care for Joint Replacement (CJR) model, the **hospital that performs a knee or hip replacement is responsible for cost and quality of care through the 90 days after hospital discharge.** The payment model means that the hospital needs to coordinate care with physicians, nursing facilities, etc., so patients receive the best care and avoid unnecessary hospitalizations. Similar bundled payments have been proposed for coronary artery bypass grafting (CABG) and acute myocardial infarction (AMI).

ACOS

ACOs are comprised of healthcare providers who come together to provide care for patients. **The goal is to ensure that patients are always receiving the correct care, without duplication of services.** Research by Leavitt Partners shows that the number of ACOs has increased rapidly from 157 in 2012 (covering 7 million people) to 782 at the end of 2015 (covering 23 million people).

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HOW TO SURVIVE IN A VALUE-BASED WORLD

As you navigate this new landscape, your organization will need to consider the realities of survival. No longer will the old ways of providing healthcare – in a pay-for-service world – cut it. In order to survive, your organization will need to focus on several key areas that will enable you to reduce spending and improve margins.

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ACCURATELY UNDERSTAND COSTS

First and foremost, it's critical that you have a detailed understanding of what different procedures cost. This means having access to financial data to understand the cost of services and margins, as well as Electronic Health Records (EHR) data, which provides information on performance, variation among providers, and common complications. It also means tying these data sources together to gain insights from linking the information.

As James J. Pizzo and Debra L. Ryan wrote in their article, "Four Strategies for Succeeding with Bundled Payments" in the September/October 2016 Journal of Healthcare Management, "Hospitals that do not have accurate information about costs across a defined episode are at risk of overpricing the bundle, thus making it less attractive to purchasers, or underpricing the bundle, which exposes the organization to increased financial risk."

BETTER TRACKING AND REPORTING OF QUALITY MEASURES

In addition, your organization will need to perform well on various quality measures if you want to excel in the value-based world. For example, in Maryland, hospital reimbursement depends on how a facility performs on measures, such as hospital readmissions, deaths, and more. You will need to know exactly how you are performing on these measures so you can make informed decisions as to how to improve upon them.

In addition, you will need to have "one version of the truth" for these various measures. Not only does there need to be a single way of looking at measures within your organization, but those measurements also have to be in the same format as the reporting agency to ensure both parties are looking at the measure in the same way.

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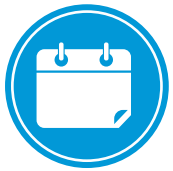
– JAMES J. PIZZO AND DEBRA L. RYAN,
"Four Strategies for Succeeding with Bundled Payments" in the Journal of Healthcare Management

MAXIMIZE USE OF STAFF RESOURCES

In the value-based world, understanding how to maximize staff resources is incredibly important. However, it's hard for your organization to rein in costs when your team is not optimizing the use of the resources available. For example, there are often times when too many nurses are on staff for the number of patients in their units. This results in extraneous staff costs. Conversely, units are also often understaffed, leading to costly overtime charges and gaps in patient care.

Another example of this is utilization of surgery units. There are some days that units are overbooked, whereas other days they are not being used at maximum capacity. In both of these instances, your organization would benefit from better understanding peak and off-times so you can maximize the use of your staff resources without incurring extra costs.



PROVIDE LONG-TERM VALUE TO PATIENTS

Similar to improving the patient experience, your organization also needs to make sure that you are proving long-term value to your patients. By doing so, you will become a trusted partner in your patients' healthcare journeys and will be involved in more than just emergency care, which usually requires massive amounts of resources and is very costly.

By working more closely with patients, your providers will be able to deliver the right care at the right time, resulting in better overall outcomes.

MONITOR AND IMPROVE PATIENT EXPERIENCE

A key part to succeeding in the value-based world directly depends on the patient experience. Since many patients feel frustrated with the healthcare system, this often results in disengagement. A few reasons for this disengagement include patients not complying with medication protocols, not receiving appropriate follow-up care, or not taking ownership of their own health.

Because of this, your healthcare organization needs to find ways to better monitor and improve the patient experience so patients feel welcomed by your institution and your providers, and they feel empowered to take control of their own care decisions.

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HOW ANALYTICS CAN HELP

So how can your healthcare organization ensure success in this new care model landscape? Any strategy for prevailing in the value-based world will require a multi-pronged approach, but analytics can help provide the insight you need to make more informed decisions that will ultimately reduce care costs and improve patient outcomes.

Healthcare analytics works by bringing together disparate sources of data, such as patient data in EHRs, financial information, and time-tracking records, among others. As a result, healthcare organizations have greater visibility into hospital operations, finances, and clinical care, and they can see how these different elements impact each other. For example, bringing together patient census data with a hospital's time-tracking software can yield powerful insights into appropriate staffing needs.

Healthcare analytics can also help your organization track specific measures (or key performance indicators) that you need to report on to various agencies. Here, it is critical that healthcare organizations find the right analytics tool to help them do this effectively. Various point solutions can help in specific areas of a hospital or health system; however, problems arise when these solutions are tracking measures in different ways. For example, a "patient day" could be defined differently in different areas of a hospital. Because of this, problems often arise around which version of the data is "correct."

> According to a recent study from Deloitte, more than 4 in 5 healthcare IT stakeholders identified value-based care as a key analytics driver.

What your organization needs is an analytics solution that will provide you with a "single version of the truth" and help reconcile differences in definitions across different departments or practices. Once this is in place, you will have a strong information foundation from which you can make practical evidence-based, data-driven care decisions.

> "We need 21st century information technology, enabling ready and secure data access, to support a modern, value-based health care system."
>
> – DR. VINDELL WASHINGTON Former National Coordinator for Health Information Technology (ONC)
> AND ANDY SLAVITT Former Acting Administrator for the Centers for Medicare & Medicaid Services (CMS)

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HOW HOSPITALS ARE USING ANALYTICS TO DRIVE IMPROVEMENTS

It's one thing to talk hypothetically about how you can use analytics to improve care, but it's another thing to actually see it in action. Here, we will examine some use cases of several hospitals that are using analytics in innovative ways to make better healthcare decisions, and to improve clinical and operational outcomes.

WESTERN MARYLAND HEALTH SYSTEM – IMPROVING QUALITY IN NEW VALUE-BASED WORLD

Western Maryland Health System (WMHS) is a 205-bed hospital in Cumberland, Md. As previously mentioned, Maryland was the first state in the nation to be granted a waiver from Medicare rules, providing flexibility to implement its own quality-based program. Currently, the HSCRC sets hospital rates that apply to all payers, including Medicare and Medicaid, as well as self-insured patients. The HSCRC adjusts pay to hospital rates according to the institutions' performance on a set of quality indicators that reflect care quality and patient outcomes.

In the first year under the quality-based Maryland reimbursement model, WMHS was ranked 46th out of 46 hospitals in the state. To improve its standing, the health system had to be more prudent with its resource utilization and be able to gain insights into the changes that would help improve its performance on the quality indicators that determined reimbursement.

To do this, WMHS adopted a business intelligence and analytics solution to better leverage its data.

Using Dimensional Insight's Diver Platform, WMHS integrated data from its MEDITECH EHR system, eClinical Works ambulatory patient information, 3M coding and care management system, and Kronos time and attendance system. It then created dashboards and data views so that users could dive into the data to make more informed clinical and operational decisions.

The results were astounding, with WMHS jumping from last place on quality-based reimbursements to first place in the state. This was accomplished by deriving the insights needed to make improvements on quality-based indicators and enabling better patient care delivery across the organization.

For example, lowering 30-day readmissions is critical to both improving hospital reimbursements as well as patient outcomes. Prior to implementing Diver, WMHS relied on daily emails of MEDITECH census information to produce its readmission report. However, these readmission measures, which were based on CMS' definition, were calculated differently than the HSCRC version, resulting in slight discrepancies that could translate into financial penalties.

> "Diver allows our health system to make critical care adjustments based on care delivery trends and enhance both our quality-based reimbursement as well as our overall quality of patient care."
>
> – COLBY LUTZ Business Intelligence Analyst for WMHS

A team consisting of WMHS staff and Dimensional Insight consultants translated the HSCRC readmissions specifications into business rules and measures. The result was an accurate and timely daily readmission report as well as a frequent utilization report that provided detailed information on patients who were frequently readmitted. Together, these reports helped medical teams and case managers optimize patient care delivery and ultimately reduce readmission numbers.

Other results WMHS realized as a result of implementing a data analytics capability included:

- **Improved patient follow-up care:** WMHS created a discharge discrepancy report to follow-up on high utilization patients. As a result, the organization found there were approximately 150 patient mismatches each month – meaning there was information that was missing or not properly matched up. Through the report and resulting system and process changes, there are now zero mismatches with gaps in care being significantly reduced.
- **Fewer discrepancies:** The number of discrepancies that HSCRC reported back to Western Maryland decreased.
- **Fewer financial penalties:** WMHS began tracking potentially preventable conditions, which is a quality indicator that affects patient outcomes, and was able to reduce the number of patients who acquired these avoidable conditions in the hospital. In addition, WMHS created an order set monitoring tool that now tracks compliance with patient order sets and looks at the outcomes of patients who are not in compliance. Due to the improved outcomes that resulted from better tracking, WMHS was able to avoid HSCRC penalties.
- **Positive revenue swing:** Western Maryland went from losing $1.2 million in quality-based reimbursement in FY 2012 to gaining $1.3 million in FY 2014.

> Diver enables us to get information into the right hands at the right time and do so more quickly and cost-effectively than could other business intelligence solutions we considered.
>
> – WILLIAM BYERS Chief Technology Officer for WMHS

BAPTIST HEALTH SOUTH FLORIDA – FINDING COST SAVINGS IN ORTHOPEDIC SURGERY

Orthopedic spending is a major area that is being targeted for improvement with value-based care initiatives. As previously mentioned, under the CJR model, a hospital that performs a knee or hip replacement is responsible for the cost and quality of care delivered throughout the 90 days post-hospital discharge.

Prior to this initiative, Baptist Health South Florida, a 1,761-bed hospital system in the Miami area, wanted to gain control of its orthopedic costs. With 1,200 knee and hip implant cases annually, Baptist Health's system-wide implant spending had reached $8.5M. To make matters worse, the hospital system also wasn't as profitable as it should have been based on this volume.

With Diver Platform, Baptist Health was able to accurately track and monitor orthopedic supply expenses by integrating data from several discrete information sources: materials management, Baptist Health's charge entry system, its surgery documentation system, and its Trendstar decision support system.

By leveraging this analytics capability, Baptist Health was able to dive down through detailed levels of data to individual cases and examine supply costs at a much more granular level. This flexibility quickly allowed the hospital system to isolate potential profitability issues. For example, Baptist Health could look at an individual case to see the supply costs that were associated. If it lacked an implant charge, those cases would be flagged and handed over to the Patient Financial Services group for further research. Finding these types of exceptions was critical to supporting profitability across the entire system.

Baptist Health also focused on reducing operational expenses in joint replacement surgery. A key strategy employed by Baptist Health was renegotiating orthopedic implant rates, or the rates paid per device to the implant vendors. Baptist Health focused on reducing the number of vendors it dealt with in the orthopedics setting, with the establishment of a preferred vendor list being considered a best practice when negotiating optimal prices.

Through the analysis performed in Diver and external benchmarking practices, Baptist Health realized that the prices it had set were not competitive and higher than the industry average. This led Baptist Health to work directly with each of its vendors to see what price reductions could be negotiated.

An additional benefit to limiting the vendor selection was the increased familiarity of the tools being used by Baptist Health's surgical staff, which ultimately reduced the likelihood of a surgeon making a mistake with a device. In addition, Diver played a key role in convincing surgeons to help rein in costs. Profitability reports generated in Diver were shared with top administrators and high-volume surgeons in each hospital. The reports incorporated external benchmarking data from Trendstar and Premier, painting a compelling picture of Baptist Health's costs relative to its peers. Once surgeons saw cost breakdowns by vendor, as a share of total surgery cost and cost relative to peer averages, support for the profitability initiative began to increase.

HENRY MAYO NEWHALL MEMORIAL HOSPITAL – IMPROVING FLOW IN THE EMERGENCY DEPARTMENT

Another key to excelling in the value-based world is being able to optimize service line performance. Henry Mayo Newhall Memorial Hospital, a 238-bed hospital in Valencia, Calif., sought to better manage overall patient flow, starting with optimizing movement in the Emergency Department (ED).

Dimensional Insight and the Henry Mayo decision support team created data models in Diver Platform that allowed hospital management to determine how long patients spend in the ED. They first broke down the time taken for each step in the ED flow, then aggregated the data and incorporated it into dashboard measures that were visible to administrators and clinicians.

With these dashboards, Henry Mayo was able to refine workflow processes and better understand compliance. For example, initial Diver reports identified prolonged delays from the time the patient entered the ED to the time the patient was seen by a physician. This resulted in a high percentage of patients leaving the ED without receiving care. Working in concert, MEDITECH (Henry Mayo's EHR vendor), Dimensional Insight, and Henry Mayo quickly refined procedures to rapidly identify bottlenecks in the flow of patients through the department, ultimately allowing for patients to be seen in a timelier manner.

> Henry Mayo attained an additional $2 million per year in revenue, as a result of an 83% reduction in the number of patients leaving the ED prior to being seen.

Henry Mayo now has a system capable of generating patient flow data at each step in the ED process. This data is leveraged in Diver Platform to provide a comprehensive and timely view of ED performance with dashboards and reports that aid management in improving ED throughput, utilization, and efficiency. Measures are available to track end-to-end patient workflow: from patients' entering the door, to triage, to being seen by a physician, to decision to admit, to clean room available, to transport to an inpatient room. Moreover, this information is available to clinicians and administrators at each step of the process. Managers are also able to easily identify trends and exceptions, where the availability of timely data allows them to quickly spot a measure that requires attention, immediately dive into the underlying details, determine the root cause of the problem, and initiate improvement actions.

The results are impressive. ED wait times at the hospital have been reduced in multiple areas:

- From the time a patient enters through the ED doors to triage – 80% decrease
- From triage to room admittance – 60% decrease
- From room to physician exam – 63% decrease

Wait time improvements have also occurred, with an 83% reduction in the number of patients leaving the ED prior to being seen, which translates to an additional $2 million per year in ED revenues.

GWINNETT MEDICAL CENTER– MEASURING PHYSICIAN PERFORMANCE WITH ANALYTICS

In a value-based world, it's critical for healthcare organizations to ensure that their physicians are providing appropriate and meaningful care in a cost-effective way. Gwinnett Medical Center (GMC), a 553-bed two-hospital system in metro Atlanta, was mindful of this when it started a new intensivist program in its ICU. The facility decided to implement healthcare analytics to accurately measure physician performance.

As part of Diver Platform, GMC received a set of defined measures along with definitions for each of those benchmarks. This measure set was critical, as any user can now easily look up the definition for a particular measure to know exactly what it entails. This has resulted in physicians being able to trust the data that was disclosing their performance.

At the start of the intensivist program, GMC decided to obtain a baseline on certain measures. From that baseline and insights into the data, GMC would then begin to measure best practice changes for the program.

The organization used Diver to create unique time period measures (i.e. the first six months of the new intensivist program to the last six months) to compare the progress it has been able to make.

Once the intensivist program as a whole makes progress towards achieving the defined best practices, GMC will then start to use the data to identify physician-led opportunities for performance improvement. This approach to physician performance management creates a positive change environment, allows for more open discussions, and decreases team conflict.

> We want to use the data to improve performance across the board. As we align our best practices with our data, down the road we can start to identify the smaller opportunities where those best practices continue to need to be tweaked.
>
> – BETH GRIMES Director of Enterprise Data Analytics at GMC

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WHY THE TIME FOR ANALYTICS ADOPTION IS NOW

With the number of value-based care initiatives steadily rising, it is clear that healthcare organizations must adapt to new ways of care delivery and reimbursement, especially if they are to remain viable over the next several years.

Analytics is a critical element to helping your organization attain the insights you need to implement this fee-for-value change. However, when you examine current analytics solutions, you should be mindful of several things.

Here are a few things to consider during the evaluation process.

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ENSURE YOU ARE VIEWING DATA IN A CONSISTENT MANNER ACROSS SYSTEMS AND DEPARTMENTS

Healthcare organizations have so much data that resides in disparate systems, and analytics can help in bringing this data together. However, if important metrics are being measured in different ways, you could run into problems (i.e. as discussed, a "patient day" could be measured in a number of ways across different departments). Make sure your analytics system can reconcile these metrics before your analysis so you are looking at all of the data in a consistent manner.

MAKE SURE YOU CAN DIVE DOWN INTO DATA TO ANSWER YOUR QUESTIONS

An analytics dashboard is a great tool and can provide an overall view of your data. However, you'll often have questions around certain pieces of data and will want to dive down into the information in order to answer those questions. Since many healthcare analytics solutions only have pre-defined drill paths that take you only a couple of levels down and don't allow you to move around as you wish, your view of the data can be limited. Instead, look for analytics systems that allow you to dive down as deep as you want to go, so you're able to get the detailed answers that you need.

CONFIRM THAT YOUR ANALYTICS SOLUTION IS ALL-INCLUSIVE

Many healthcare analytics solutions providers say they solely do it all, but look under the covers and you'll find that they often end up relying on a number of third-party solutions. For example, some analytics providers require a separate data visualization solution in order to view the data. Organizations should look for solution providers that are all-inclusive, and provide you with more simplicity and a single point-of-contact should any questions arise.

FIND A PARTNER, NOT A VENDOR

Any company can sell you its technology, but is that company really invested in your success? The best healthcare analytics providers will work with you to understand your organization's individual challenges and goals, and implement a customized analytics program that is geared to meet those goals.

At Dimensional Insight, we work with you to provide all of the components needed to implement and deploy actionable, role-based business intelligence across your organization during the value-based care transition. Diver Platform's simplicity and versatility make data integration a snap and give your stakeholders a comprehensive understanding of your organization's data in real time. Diver delivers the information you need in the simplest manner possible. Our dashboards use a visually intuitive, point-and-click interface to provide updates on key performance indicators (KPIs) and benchmarks directly to the users who need them. Finally, Diver's predictive analysis feature analyzes existing data to predict future outcomes and estimated costs, helping you to succeed in your value-based care initiatives.

Dimensional Insight® is a leading provider of analytics, data management, and performance management solutions, offering a complete portfolio of capabilities ranging from data integration and modeling to sophisticated reporting, analytics, and dashboards. The company is a seven-time Best in KLAS winner in healthcare business intelligence and analytics, most recently ranking #1 in 2020. Founded in 1989, Dimensional Insight has thousands of customer organizations worldwide. Dimensional Insight consistently ranks as a top performing analytics organization by customers and industry analysts in its core market segments including healthcare, manufacturing, and beverage alcohol. For more information, please visit www.dimins.com.

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The time to invest in healthcare analytics is now.
Are you ready to get started?

Contact us today to learn more about Diver® Platform, 6-time Best in KLAS winner in business intelligence/analytics:

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