Dimensional INSIGHT®

10 CHALLENGES
FOR CHILDREN'S HOSPITALS

And How Analytics Built on Data Trust
Can Help Solve Them

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Introduction

Children's hospitals deal with an extraordinary amount of complexity in their day-to-day operations. Patients who visit children's hospitals often have conditions that are more chronic and difficult to treat, and it can be challenging to keep top of mind not only the needs of each patient, but also the needs of their caregivers and families.

The risks that children's hospitals take each day in patient care are great. But the rewards are even greater. Moving the needle on improved patient outcomes is what drives pediatric providers to succeed.

Thankfully, providers now have a wealth of data at their fingertips that can help them make better decisions to improve patient care. But it can be confusing to know where to begin, and which data will make the most impact.

This is where analytics comes in. Deploying healthcare analytics can help your organization gain insight into your data and hone in on those areas in which you can make the most improvement. The result is better care and improved patient outcomes.

The goal for this e-book is to provide you with ideas about where you can get started with healthcare analytics. We hope it helps you as you seek to fulfill your mission in caring for our littlest and most precious patients.

Challenge #1: Mental health

The statistics are alarming: both adolescent depression and suicides are increasing at a staggering rate. The latest numbers show an estimated 3.1 million adolescents in the U.S.—or 12.8% of the U.S. adolescent population—had at least one major depressive episode (MDE) in the last year. An MDE is classified as a period of two or more weeks during which there is a depressed mood or loss of interest, plus four other symptoms, including loss of sleep, eating, energy, concentration, self-image, or recurrent thoughts of death or suicide. That number is up 87% from 2005.

In addition, the rate of adolescent suicide is rising. Every year, more than 5,700 young people ages 15 to 24 kill themselves. The suicide rate for that age group is currently 30% more than it was in 2000. The number of children and adolescents admitted to the hospital for suicidal thoughts has doubled over the last decade.

> *An estimated 3.1 million adolescents in the U.S.—or 12.8% of the U.S. adolescent population—had at least one major depressive episode (MDE) in 2017.*

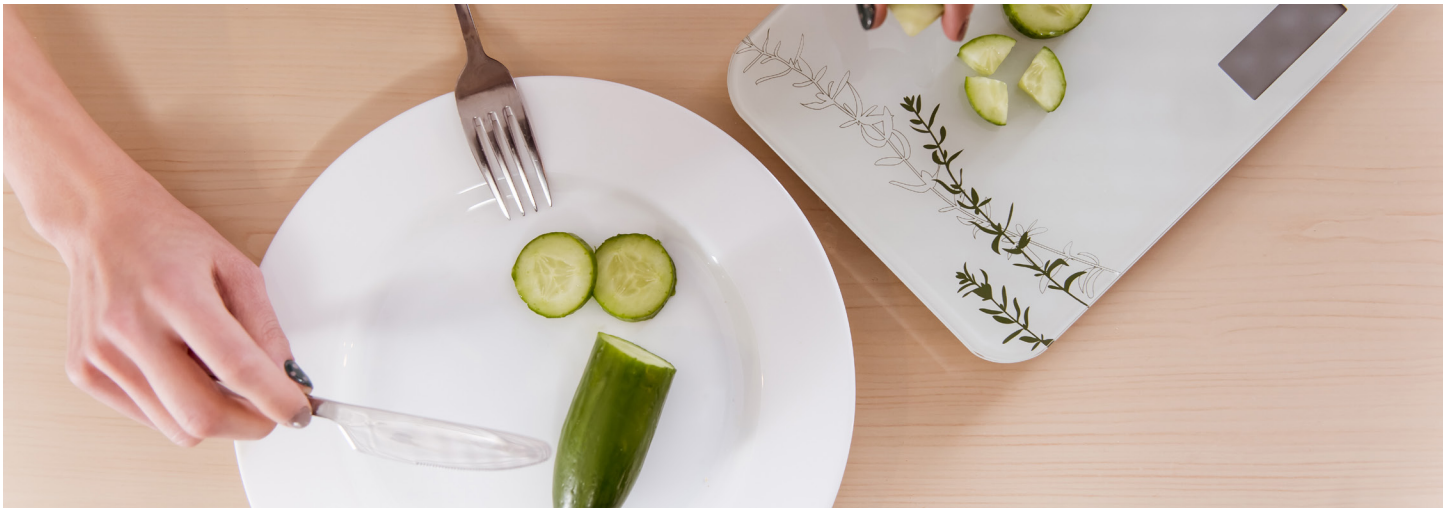
How analytics can help

Track measures: Your hospital needs to ensure these patients are getting the best care possible and are being seen regularly. Using a robust analytics solution, you can pull in EHR data and track various measures related to mental health and patients' progress.

- ❒ Are patients being monitored on a regular basis?
- ❒ Are they making their office visits?
- ❒ Are they taking their medications?

Monitoring medications: One of the big risks of putting adolescents on medication is the risk of major side effects. That's why monitoring drug utilization is especially critical with this population.

Depression screening: In addition, analytics can be used to collect data gathered during your institution's depression screening process. This way, you can analyze if there are certain departments that tend to have a higher rate of depressed patients. You can also dive into data to see if there are certain characteristics that are common to certain groups of depressed patients. Additionally, analytics can be used to identify trends and outcomes to determine if the screenings are effective or not.



Challenge #2: Eating disorders

Eating disorders are closely tied to mental health. Nationally, 2.7% of the population will develop an eating disorder over their lifetime. These disorders are more than twice as prevalent among females than males (3.8% vs. 1.5%).

Treatment is often multi-pronged, including psychotherapy, nutrition counseling, and medications. This involves the coordination of different providers and departments, which can often prove challenging.

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How analytics can help

Monitoring medications: : Are patients taking their medications? And if so, how are they responding to them? As previously mentioned, providers need to be more careful when medicating children and young adults, because they may respond to medications in more adverse ways. Analytics can allow you to track treatment plans and their success, as well as compliance metrics.

Tracking related measures: In addition, there are certain measures in place for patients that are on medications for mental health reasons. Analytics enables your organization to view how it is performing on these measures, and ensure that patients are making all of their scheduled appointments and are being monitored regularly.

Challenge #3: Flu outbreaks

Every year, thousands of children are hospitalized because of the flu; several dozen to more than 100 children die each year from complications.

It's important for health providers not only to know which children need to be vaccinated, but also to understand where there are flu outbreaks and how they might need to readjust their staffing to deal with surges in flu patients.

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How analytics can help

Vaccines: Analytics can tie into your EHR and notify staff when children are due for vaccines. This is especially important for children with certain conditions such as asthma or other conditions that weaken their immune systems.

Monitoring outbreaks: Analytics can also monitor flu diagnoses from the EHR and map them on a heatmap. This can provide a visual look at which areas are seeing the most flu patients, and can allow your organization to staff physicians' offices accordingly. For example, if you notice more flu patients in one coverage area, offices in that location can adjust their hours to stay open later or on the weekends, or you can send additional staff to that area to better service patients.

Coordination between hospital and clinics: SSimilarly, you can use analytics to track symptoms of patients who are coming in, and communicate those symptoms out to your clinics. That way your staff will be better prepared to treat patients and understand the characteristics of an outbreak.

Challenge #4: Childhood obesity/diabetes

Obesity currently affects 13.7 million—or 18.5%—of U.S. children and adolescents ages two to 19. That number is quickly rising, and is up 33% from the year 2000.

In addition, 193,000 Americans under the age of 20 have been diagnosed with diabetes. That is a 732% increase from the annual incidence in just 2012.

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How analytics can help

Population health: Analytics can help track several measures related to patient health. For example, hospitals and healthcare providers can better understand a global view of the health of their population. They can take a deeper look at the total patient population and understand the community makeup and characteristics to better understand potential courses of treatment for those patients who have a certain body mass index (BMI). They can use this data to assist them in developing community relationships and shared care plans.

Diabetes treatment plans: In addition, providers can dive down to the patient level to get a view of patients' treatment plans and view their lab results. They see what types of treatments and protocols are working and which ones aren't, and adjust plans accordingly.

Challenge #5: Allergies/asthma

Allergies are the 6th leading cause of chronic illness in the U.S. Nationwide, approximately 8% of children ages 0 to 18 have a food allergy, and that number has increased 50% over the last 20 years. About 10% of children currently suffer from asthma, and that number is also increasing.

For these patients, it's important to have consistent, ongoing care to manage their allergies or asthma. Many also require emergency care and treatments for severe reactions.

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How analytics can help

Treatment plans: Analytics can help your team track treatment plans for patients and investigate whether they are effective or not. They can also compare treatment plans for groups of patients to see if one is generally more effective.

Readmissions: As treatments have improved, readmissions for asthma patients have generally fallen. However, analytics can help you track readmissions trends and dig down to find reasons for any changes, including treatment plans or severity of symptoms.

Population health: Providers can track populations of patients to see overall trends related to these conditions. They can also track specific measures related to children's allergy and asthma care to see how they are tracking against those measures.

Challenge #6: Childhood cancer

More than 10,000 children are diagnosed with cancer every year in the U.S. Fortunately, thanks to advances in cancer treatments, more than 80% of children diagnosed survive for five years or more.

Cancer patients spend a lot of time in the hospital for treatments, and unfortunately the therapies used to treat them often weaken immune systems, making these patients susceptible to other diseases.

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How analytics can help

Utilization overview: Analytics can help your organization understand which departments are most utilized by your cancer patients. This can help you better allocate resources or improve care coordination between departments.

Measure outcomes: Analytics allows you to track and measure outcomes for cancer patients. This way, you can see which treatments and protocols are most successful and improve the care your patients receive.

Challenge #7: Substance abuse

While the numbers of teens who use drugs is generally declining, it's critical to help those adolescents who are abusing illicit substances. About half of all new drug users are under the age of 18, and most drug addicts started experimenting with drugs before they turned 21. Add to that new substances that teens are migrating towards, including vaping and opioids.

Treatment for adolescent substance abuse is often multi-pronged and requires coordination with various hospital departments and outpatient services.

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How analytics can help

Care coordination: Because substance abuse treatment often requires the services of outside providers, including behavioral services and addiction-recovery programs, it's important to bring in as much data as possible from these providers for a comprehensive view of the patient. Some analytics solutions can integrate data from a multitude of sources for a more detailed look.

Track key metrics: Analytics can help you view trends over time for your patient population. For example, if there is a new substance taking hold among the population, you can view the increase over a certain time period. That way you can take steps to notify and educate your providers on the increase and better address it among your patients.

Challenge #8: Medically complex children

Up to 3 million children in the U.S. are "medically complex," and these numbers are rising. These children have highly specialized medical needs, which makes it hard for hospitals to derive much meaning from population-wide statistics.

For this population, it's incredibly important to coordinate care across different departments in the hospital and understand how treatment in one area affects treatment in another area. It's also important to understand how to best service these patients to keep them out of the hospital as much as possible and improve their quality of life.

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How analytics can help

Treatment plans: Similar to some of the other areas that we have previously discussed, analytics can help your team track treatment plans for medically complex patients. If there are issues with the treatment plan, providers can explore the data to see what may have triggered a change in the response.

Tracking patient days: Analytics enables you to track overall patient days over time, so you can see if you are moving the needle on lowering average length of stay. Some analytics solutions also allow you to dig deeper into the data to view exceptions and patient-level detail.

Challenge #9: Emergency room throughput

More than 1 out of 6 children (16.9%) have visited an emergency room in the last 12 months. For families bringing their child into the ED, this is a time of great stress and anxiety. It's important to get patients seen and treated quickly.

This can be difficult, however, given that emergency departments in children's hospitals are often overcrowded. How can your organization make improvements in the wait process that will reduce the time to triage and time to a doctor's visit?

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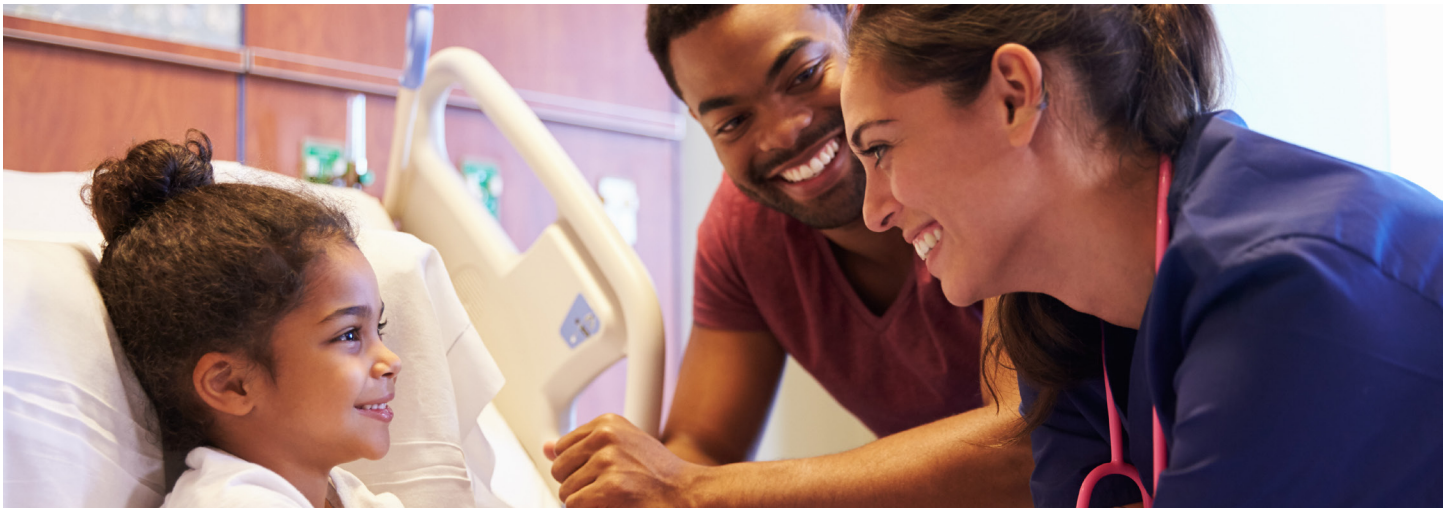
How analytics can help

Tracking flow of patients: Analytics allows your hospital to track the flow of patients through different areas of the facility. For example, you can track the time from arrival to triage, triage to a room, room to physician exam, and total time in the ED. You can view choke points in the process, and from there, identify improvement areas.

Census data: With analytics, you can view census data not just for the hospital as a whole, but also for different departments and units. This can allow you to view trends for daily staffing. You can also surge staff as necessary during periods of atypical activity.



Challenge #10: Patient satisfaction

Patient satisfaction is arguably more important at children's hospitals than it is at other institutions. At children's hospitals, organizations need to take care of the whole family, and do so at a time that is incredibly stressful as children and adolescents undergo medical care.

It's important for children's hospitals to understand their performance on patient satisfaction surveys such as the CAHPS Child Hospital Survey, as many parents use this information when they are selecting a healthcare provider.

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How analytics can help

Understanding patient satisfaction scores: Analytics enables your organization to easily view patient satisfaction scores and to see trends over time so you can better understand what initiatives are impacting scores.

Improving care: By focusing in on many of the clinical areas we have previously discussed, you can impact patient outcomes, which ultimately leads to patient and family happiness.

What to look for in an analytics solution

Analytics is critical to helping your organization attain the insights you need to serve the pediatric population. However, when you examine current analytics solutions, there are a few things to consider during the evaluation process.

Ensure you are viewing data consistently across systems and departments

Analytics can bring data together from different systems across your organization. However, you need to make sure each department is looking at key metrics in the same way. Otherwise, you'll spend too much time arguing over the veracity of the numbers rather than the problems these numbers could help solve.

Make sure you can dive down into data to answer your questions

An analytics dashboard can provide a great overall view of your data. However, you'll often have questions and will want to dive down into certain pieces of data to get the answers. Many healthcare analytics solutions only have pre-defined drill paths, giving you a limited perspective. Systems that allow you to dive down as deep as you want to go will provide you with the detailed answers you need.

Confirm your analytics solution is all-inclusive

Many healthcare analytics solutions providers say they do it all, but look under the covers and you'll find they often end up relying on a number of third-party solutions for elements such as data visualization. Solutions that are all-inclusive 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 deploy actionable, role-based healthcare analytics across your organization. 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 enable you to quickly and accurately make decisions to improve patient outcomes. Learn why hundreds of healthcare organizations, including one of the nation's largest children's research hospitals, are using Diver for trusted data and analytics.

Sources

1. https://ftp.cdc.gov/pub/Health_Statistics/NCHS/NHIS/SHS/2017_SHS_Table_C-10.pdf
2. https://www.nimh.nih.gov/health/statistics/major-depression.shtml
3. https://www.nimh.nih.gov/health/statistics/suicide.shtml
4. https://afsp.org/about-suicide/suicide-statistics/
5. https://www.cdc.gov/obesity/data/childhood.html
6. https://www.cdc.gov/flu/protect/children.htm
7. https://www.aaaai.org/about-aaaai/newsroom/allergy-statistics
8. https://www.cdc.gov/vitalsigns/asthma/index.html
9. https://www.cancer.org/cancer/cancer-in-children/key-statistics.html
10. https://www.stjude.org/treatment/pediatric-oncology/childhood-cancer-facts.html
11. https://www.addictioncenter.com/teenage-drug-abuse/
12. https://www.childrenshospitals.org/newsroom/childrens-hospitals-today/articles/2017/05/suicide-admissions-to-childrens-hospitals-double-over-the-last-decade

About Dimensional Insight

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 six-time Best in KLAS winner in healthcare business intelligence and analytics, most recently ranking #1 in 2019. 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.

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