



Case Study:  
**MUNSON HEALTHCARE**

**Decreasing Newborn Readmits**  
by 24% with Help of Analytics

## Quick Facts

**Organization:** Munson Healthcare

**Industry:** Healthcare

**Location:** Headquartered in Traverse City, Mich.; 9 locations in Northern Michigan

**Revenue:** \$941 million

**Employees:** 7,500

**Beds:** 709

**EHR:** Cerner

**Customer since:** 2013

**Website:**  
[www.munsonhealthcare.org](http://www.munsonhealthcare.org)

**Solution:** Diver Platform

### KEY TAKEAWAYS

- ❑ *With Diver®, Munson Healthcare was able to reduce the number of newborn readmissions in the health system by 24% over a two-year period.*
- ❑ *Diver helped uncover opportunities for improving clinical documentation in one Women & Children’s department, resulting in increased staff training and engagement, and improved financial performance.*
- ❑ *As a result of several initiatives supported by Diver, Munson Healthcare’s Women & Children’s department was able to improve its Press Ganey patient satisfaction scores by 14% over three years.*
- ❑ *Munson Healthcare’s pharmacy department built an alert system that allowed for interventions if certain patients were prescribed antibiotics too aggressive for their kidney functions, potentially avoiding dangerous situations for patients.*

14%  PATIENT SATISFACTION

24%  NEWBORN READMISSIONS

10%–41%  C-SECTION RATES

83%  PATIENT FALLS

### BACKGROUND

Munson Healthcare is a nine-hospital healthcare system located in Northern Michigan. Munson Healthcare services 540,000 residents in 30 counties and its facilities cover 11,177 square miles—about the size of Vermont and Delaware combined. Munson Medical Center, the organization’s flagship hospital based in Traverse City, is a Level II Trauma Center and the only trauma center in Northern Michigan.

Munson Healthcare is guided by what it calls its “True North” framework. In this framework, the patient is at the center of everything the hospital does. Other important areas of focus support the patient, including the healthcare team, safety, quality, and operational performance.



*Rob Wilcox, Regional Vice President of Finance*

### THE CHALLENGE

Munson Healthcare is a growing institution, having added five hospitals to its system since 2014. While the hospital acquisitions have brought many benefits to both patients and the organization itself, there have also been some challenges. The organization is continually learning how to act more as a health system rather than as individual hospitals. This can be difficult given that Munson Healthcare’s hospitals each have their own traditional practices and standards, as well as sources of information. For

example, the hospitals have EHRs from three different vendors. In addition, as Munson Healthcare employs more physicians, it needs to make sure their technologies align.

Furthermore, like most hospitals, Munson Healthcare faces the financial pressures inherent in balancing patient care with hospital operations and reimbursement. The organization is also preparing for more risk-based contracts and value-based care in the near future.



*“Dimensional Insight gives us a means to automate as much work as possible. We are able to get instantaneous answers to questions about financial cost, or benefit of procedures, or payers, or doctors, or anything else.”*

*—Rob Wilcox, Regional Vice President of Finance*



### **THE GOAL**

*In order to gain insight into its data and have more actionable information for its executives and clinical leaders, Munson Healthcare sought a healthcare analytics solution that would:*

- Integrate data from its various EHRs with other source systems to create a unified view of data.*
- Allow the organization to build applications to support the various areas of its True North framework.*
- Push data out to its front lines, to enable clinicians and staff to make more data-informed decisions.*

### THE SOLUTION

Munson Healthcare implemented Diver Platform™, a data management and analytics platform that enabled the health system to integrate data from its various source systems. When Munson Healthcare first deployed Diver in 2013, its clinical and business intelligence team would take requests from users to create dashboards and scorecards. While these proved valuable to users, the organization soon found that this process became untenable, as the clinical and business intelligence team had a growing queue of requests.

The organization began to think more holistically about its Diver implementation and mapped its analytics applications to its organizational strategy. The hospital considered each area of its True North framework and sought to develop applications

that would map to each quadrant of the strategy. This would ensure that the health system would gain insights in all areas of the organization, not just a select few.

“I’m very proud of what the team built,” says Rob Wilcox, regional vice president of finance for Munson Healthcare. “Dimensional Insight gives us a means to automate as much work as possible. We are able to get instantaneous answers to questions about financial cost, or benefit of procedures, or payers, or doctors, or anything else.”

Ann Vermeer, director of clinical and business intelligence, leads the team that gets data into the hands of decision-makers. She says, “We want to include all the data we can in our warehouse. Then we can automate reporting and put key metrics into formats people can use.”



*“For us, compared to the grand scheme of things for system-wide readmits, we are a very small part, but for a family to take a newborn baby home and then have to come back, it’s a huge deal. Yes, this is one of our True North metrics, but also from the patient experience perspective, nobody wants to have to come back to the hospital after their baby is born. It’s scary. And it’s potentially life-altering. So having this information at our fingertips has been a huge help.”*

—Mary Schubert, Executive Director of Women’s and Children’s Services

## THE RESULTS

With Diver, Munson Healthcare has created more than 50 analytics applications to support clinical, financial, and operational areas. Some of these projects include:

### **Drug prescription interventions:**

Nick Torney, an infectious disease pharmacist at Munson Healthcare, worked with a multi-disciplinary team in the hospital to develop an application to increase patient safety. The tool identifies patients at risk for having antibiotics that are diagnosed too aggressively for their kidney function. The tool looks at patients’ serum creatinine levels and alerts Torney if the serum creatinine level is out of the clearance range for a particular drug. Over several months, Munson Healthcare was able to intervene for patients, potentially avoiding serious medical problems.

### **Women & Children’s services:**

This department is currently using a Diver dashboard that presents various metrics including quality, safety, and financial data. Once the director of the department, Mary Schubert, sees the data points, she uses that as a point of conversation with the appropriate staff members.

### **Newborn readmissions**

For example, Schubert noticed that some newborns were being readmitted for hyperbilirubinemia (jaundice). As a result,

the hospital made a concerted effort to work with pediatricians and nursing staff around hyperbilirubinemia. This decrease in the hyperbilirubinemia readmits was part of the overall reduction of readmits in the department by 24% in two years.

“For us, compared to the grand scheme of things for system-wide readmits, we are a very small part, but for a family to take a newborn baby home and then have to come back, it’s a huge deal,” says Schubert. “Yes, this is one of our True North metrics, but also from the patient experience perspective, nobody wants to have to come back to the hospital after their baby is born. It’s scary. And it’s potentially life-altering. So having this information at our fingertips has been a huge help.”

### **C-section reduction**

The department has also used data to make improvements in its nulliparous, term, singleton, vertex (NTSV) C-section rate. This type of C-section is considered low-risk and is more variable. National quality measures target NTSV rates of less than 20%. By viewing the data at different hospitals and having the appropriate discussions and interventions with staff, the Women & Children’s department was able to reduce its overall NTSV rates across the system, with improvement percentages ranging from 10% to 41% among its hospitals.



*Mary Schubert, Executive Director of Women's and Children's Services*

**Patient satisfaction**

Like most hospitals, Munson Healthcare tracks its patient satisfaction through Press Ganey scores. As a result of many of these initiatives and having increased insight into the issues in the department and being able to address them, the Women & Children's department was able to see a 14% increase in its overall Press Ganey scores over a three-year period.

**Clinical documentation improvements**

Finally, Diver brought to light opportunities to improve clinical documentation. Schubert was able to see that Munson Healthcare's NICU had an increase in acuity levels among newborns, meaning they needed a higher level of care, but that the hospital was not being reimbursed at levels commensurate with that

care. After diving into the information, she found the need for improvements in clinical documentation. After uncovering the issue, the department focused on staff training with an emphasis on clinical documentation for their smallest patients. The department quickly saw financial improvement.

Believing "if you don't measure it, you can't improve it," The hospital was able to gain insight into safety incidents with the help of Diver. Schubert was able to intervene and talk with managers at the different facilities about their safety incidents, providing them with direct guidance. As a result, the department saw improvement in safety statistics with one type of incident falling by 83% in one year.



*Ann Vermeer, Director of Clinical and Business Intelligence*

### WHAT'S NEXT

Munson Healthcare will next be upgrading to Dimensional Insight's Measure Factory®. This component of Diver Platform will provide the health system with a set of pre-defined measures to ensure data truth so that users across the hospital are all looking at the same data in the same way.

In addition, the organization is looking into leveraging Diver for population health initiatives, including patient identification and risk stratification.

Overall, Munson has found great value in its Dimensional Insight implementation and is continually looking for new ways to use the technology to empower its employees. Vermeer says, "For us, it's all about the patient and supporting our communities. One of our goals is to keep care close to home. Dimensional Insight allows us to deploy the same tools across the system, helping leaders make decisions that are in the best interests of the people we serve."



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*—Ann Vermeer, Director of Clinical and Business Intelligence*



### About Dimensional Insight

Dimensional Insight is the leading provider of integrated business intelligence and data management solutions. Our mission is to make organizational data accessible and usable so everyone from analysts to line of business users can get the information they need to make an informed, data-driven decision.



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