



SARASOTA MEMORIAL HEALTH CARE SYSTEM :

ACHIEVING OPERATIONAL INITIATIVES

THROUGH BUSINESS INTELLIGENCE

EXECUTIVE SUMMARY: *Sarasota Memorial Health Care System (SMHCS) had always been IT-forward, allocating funds to implement applications and systems that contributed toward a better patient experience and enhanced quality of care. However, the organization's best-of-breed approach had left them with nearly 100 different IT applications – each system with its own unique way of handling reporting and analysis. While each department was happy with their existing system, SMHCS' Decision Support Team was left with the arduous task of creating a common view of the organization for hospital leadership.*

In 2004, hospital leaders realized they needed better insight into their day-to-day business operations. Despite the system's many accolades – one of America's 50 Best Hospitals and a Solucient 100 Top Cardiac Hospital for several years running – managers needed better information for strategic planning, benchmarking, and operational decision making in order to continue to provide a high level of care to the community. To do this, senior leaders at SMHCS identified the need for a facility-wide solution capable of providing management and department heads with a dashboard view of their operational initiatives.

- Gain transparency into their clinical and financial data allowing for improved operational decision-making in a real-time basis.
- Automate the productivity reporting process for SMHCS leadership and provide management with a portal-based view into key performance indicators.
- Empower department supervisors with the ability to reduce their staffing costs by developing an Approaching Overtime report.
- Effectively forecast staffing needs through the development of a web-based patient census application.
- Integrate disparate data into one reporting and analytical interface that enables the entire organization to have a consistent view of performance against goals.

By implementing Dimensional Insight's fully integrated business intelligence platform, The Diver Solution™, SMHCS has been able to:



DATA → INFORMATION → ACTION

ABOUT SARASOTA MEMORIAL HEALTH CARE SYSTEM:

Founded in 1925, Sarasota Memorial, an 806-bed regional medical center, is the second-largest acute care public hospital in Florida. With about 3,000 staff members and more than 1,000 volunteers, it is Sarasota County's second-largest employer. The only not-for-profit, community-owned hospital in southwest Florida, Sarasota Memorial is governed by a nine-member elected Sarasota County Public Hospital Board. Among its many achievements and quality awards, Sarasota Memorial remains the only hospital in the region recognized as one of the America's 50 "Best Hospitals", the only one awarded Magnet designation – the nation's highest honor for nursing excellence, and the only one that repeatedly earns a spot among Solucient's 100 top cardiovascular hospitals.

WHY SARASOTA MEMORIAL HEALTH CARE SYSTEM

IMPLEMENTED THE DIVER SOLUTION™: SMHCS was in need of a solution that not only had the ability to integrate data from all of their best-of-breed systems, but also shared the ability to do this in a real-time basis. With millions of data records – both current and historical, the solution needed to be robust enough to handle copious amounts of data, but flexible enough to do this in a way that would allow the organization to create customized reports and views that displayed the information in a way that was meaningful to each of the different types of users within the facility. While many of the existing systems had a reporting package in place, it did not allow users to see information the way they wanted to see it. Users were held hostage by canned reporting views and an inability to quickly and easily access underlying detail data without IS/IT intervention.

SMHCS began researching several third party analytical and reporting solutions and selected Dimensional Insight over competing tools due to its proven ability to merge multiple disparate sources – from any application or platform – into information that enables the decision making process.

Many of the existing applications that Dimensional Insight is integrating into The Diver Solution™ are amongst the most recognized in the healthcare industry:

- Eclipsys/TSI (Cost Accounting)
- EPSi (Cost Accounting, Financial Decision Support)
- Eclipsys AMPFM (Admitting and Patient Financial Management)
- Eclipsys Sunrise Clinical Manager (Clinical/ Workflow for ED)
- API (Time and Attendance)
- Per-Se Technologies ANSOS One-Staff (Staffing)
- SIS (OR System)
- PeopleSoft (Materials Management)

APPLICATION AREAS AT SMHCS FOR THE DIVER SOLUTION™:

Sarasota Memorial began the process of building business intelligence applications with Dimensional Insight in September of 2004. What started as a project to support the Decision Support team as they gleaned data to produce productivity reports for SMHCS leadership has significantly grown to a system-wide portal-based reporting and analytics solution that is accessed by nearly every department in the organization. Numerous applications have been deployed at SMHCS; some of the most significant application advancements are described below.

REDUCTION OF STAFFING COSTS: Staffing costs are the single largest cost in most hospitals systems nationwide. SMHCS leaders began working on an initiative that would allow them to reduce staffing costs across the organization in both clinical and non-clinical departments, therefore improving their bottom line. SMHCS has two systems that are used for staffing/ time and attendance, however they did not have the ability to integrate the data from these two systems or to report off this information in a real-time basis.

Data is sourced from ANSOS One-Staff and API's time and attendance system so that true payroll and overtime hours could be easily viewed for each department within the organization and measured against predefined goals. Staffing data is also compared to patient census data that is pulled into Diver. This allows SMHCS staff schedulers to see actual volume levels and adjust staffing needs accordingly before overtime is needlessly accrued. Employees are then flexed on and

“THE SUPERVISORS CAN USE DIVER TO CHECK OUR DAILY CENSUS AND ARE ABLE TO SEE HOW MANY INPATIENTS WE HAVE ON EACH INDIVIDUAL FLOOR. THIS DIRECTLY AFFECTS HOW WE SHIFT OUR EMPLOYEES. IF DIVER IS SHOWING US THAT THE CENSUS IS LIGHT, THEN WE CAN SHIFT OUR LABOR RESOURCES TO COMBINE UNITS AND THEREFORE SAVE LABOR. WE ALSO HAVE THE ABILITY TO SHIFT RESOURCES TO OTHER AREAS OF THE FACILITY WHERE THERE IS A NEED. HAVING REAL-TIME ACCESS TO THIS INFORMATION IN DIVER ALLOWS US TO BE PROACTIVE.”

CHRIS MARTIN, OPERATIONS COORDINATOR
- HOSPITALITY SERVICES

off in order to meet existing demand. All of this can now happen in an on-demand fashion because the information needed to make these decisions is refreshed and available to supervisors on a shift-by-shift basis.

In addition, SMHCS develop an “Approaching Overtime” report with Diver in order to further curb excess staffing costs. This report shows supervisors the rolling labor hours accrued for a given pay period. Like many hospitals, SMHCS utilizes both full-time and per diem employees. The “Approaching Overtime” report allows supervisors to see which of their employees is trending towards overtime accrual. This report is available for both clinical and non-clinical departments and analyzes the metrics submitted on the time cards of both full-time and per diem employees. Department supervisors for each business unit – from Human Resources (a fixed department) to Hospitality Services (a unit that has a hybrid of employees) - can see even the slightest of trends that could lead to an overage. This report empowers departmental supervisors with the information needed to effectively and consistently meet their unit of service. Since installation, Diver has helped SMHCS recover more than 600 staff hours and saved the organization more than \$192,000 in overtime costs over the course of a five-month period.

Prior to the implementation of The Diver Solution™, SMHCS could not see if there was an issue with payroll or overtime hours for an employee until a week or so after payroll was completed. By integrating the staffing and time and attendance data into Diver and presenting it back to the staff in a portal-based environment – the information is now readily available on SMHCS’ intranet.

Diver also provides SMHCS with the ability to forecast their staffing needs. Historical census data is analyzed and brought into Diver to provide a rolling forecast of staffing requirements for the following week. Forecasts are viewable by Patient Type (inpatient, observation, and same-day surgery) as well as Service Area and take into account trend-based volume fluctuations.

PRODUCTIVITY REPORTING INITIATIVE: In the past, productivity improvements have been difficult to achieve because the information needed by management wasn’t available in a timely way – forcing them to take a reactive role in decision-making. In healthcare, productivity reports are often manually compiled into a spreadsheet from dozens or more intermediate reports. Additional reports are also typically sent in separately by various departments that need to be integrated into the spreadsheet to complete the reporting process. Dimensional Insight’s highly flexible ETL technology allows healthcare organizations to aggregate and automate productivity reporting initiatives – removing layers of activity and eliminating many data integrity issues that exist with the manual process.

In order to create a culture of accountability that would help support SMHCS’ productivity and strategic initiatives, SMHCS reorganized the entire organization from departments into business units that run as separate entities. Each business unit is responsible for meeting budgetary and quality (unit of service) goals set by management. Prior to using Diver, SMHCS’ Decision Support team spent weeks manually gathering data on volumes, labor hours, and quality measures in order to compile the data needed for a given productivity report. However, because of the manual and labor intensive process, the information presented back to management often lagged behind the present state of affairs within the organization.

SMHCS uses Diver to aggregate this information and present it back to directors, managers, and SMHCS leadership in a timely manner. Data is sourced from the Eclipsys AMPFM (Admissions/Financial Management) system, API (time and attendance), and multiple Excel spreadsheets. The productivity report is available to staff via Dimensional Insight’s portal interface where managers can pull off a simplified report containing volume, hours and quality measures. Managers can even elect to see historical reports and compare them to present reports in order to identify trends in the data. Diver pulls

“IT’S AN ONGOING MEANS ON A REAL-TIME BASIS TO RECONCILE DATA. DIVER ENABLES YOUR WORK. I WANT OUR STAFF FOCUSING ON HOW TO DESIGN WORK FLOW, IMPROVE MARKET SHARE, ENGAGE THEIR PEOPLE AND PROVIDE BETTER SERVICE — NOT FINDING NUMBERS AND ARGUING WHY THEIR REPORT SAYS ‘THIS’ AND OURS SAYS ‘THAT’. DIVER HAS HELPED US CHANGE THE DIALOGUE HERE.”

MICHAEL HARRINGTON, CHIEF OPERATING OFFICER

“WE ACCESS DIVER NUMEROUS TIMES THROUGHOUT THE DAY TO LOOK AT VOLUME FLUCTUATIONS IN THE PATIENT CENSUS — PARTICULARLY FOR THOSE DEPARTMENTS THAT ARE EXTREMELY SENSITIVE TO THE CENSUS AMOUNTS, LIKE FOOD SERVICE. HAVING THIS INFORMATION AT OUR FINGERTIPS IN DIVER REALLY HELPS EMPOWER US TO MAKE DECISIONS. WE CAN NOT ONLY SEE WHERE WE ARE TRENDING, BUT WE CAN ALSO SEE THE FORECAST OF WHAT IS EXPECTED TO HAPPEN BASED ON PAST HISTORY.”

GERARD VIOLETTE, EXECUTIVE DIRECTOR - HOSPITALITY SERVICES

“DIVER CAN ATTACH DISPARATE DATA SYSTEMS AND SOURCES TOGETHER. WE CAN EFFECTIVELY MARRY OUR OR DATA WITH FINANCIALS OR WITH INFORMATION FROM INFECTION CONTROL - WHATEVER WE CHOOSE, DIVER CAN DO IT. HAVING WORKED IN HEALTHCARE FOR DECADES, I’VE EXPERIENCED WHAT OTHER VENDORS SAY IS A ‘FLEXIBLE’ SOLUTION. DIVER IS THE ONLY SOLUTION I’VE SEEN THAT GIVES US TRUE FLEXIBILITY - NOT A CANNED, RESTRICTED VIEW IN A FORMAT THAT ISN’T CUSTOMIZED FOR OUR SPECIFIC NEEDS. WITH DIVER, IF YOU CAN THINK IT, YOU CAN DO IT.”

GARY NILSEN, DECISION SUPPORT SERVICES

data feeds directly from Eclipsys and API automatically, then refreshes the productivity reports made available to SMHCS users.

This initiative paired with Diver’s information integration and delivery abilities has helped foster a cultural shift within the organization. Instead of trying to identify where reporting discrepancies originated from — discrepancies in numbers are quickly reconciled. Data is pulled directly from each unit’s source system and all reporting is visible from a single source within the entire organization. Managers now are able to refocus their energies on more strategic projects that enable better workflow, enhance levels of services, or grow market share.

CENSUS DATA: Sarasota Memorial Healthcare System is located in Sarasota, nestled on Florida’s gulf coast between Tampa and Fort Myers. The area is home to one of the largest retiree populations in the United States and experiences a population surge during the months of December through March as many northern residents flee the cold in search of warmer weather. Providing healthcare services in an area that experiences high population fluctuations due to seasonality is not without its own set of unique challenges.

SMHCS needed a better way to allocate resources from a labor perspective while accounting for rapid volume fluctuations, so the Decision Support team enlisted the help of Dimensional Insight. Diver integrates data from SMHCS’ Eclipsys AMPFM (Admitting/ Financial Management) system along with data from the facility’s electronic medical record. This is then used to develop a Daily Census that refreshes hourly and is viewable to SMHCS staff by service area within a portal environment. Supervisors in clinical departments can easily forecast staff by nursing unit within each service area while non-clinical areas, such as Food Service, are able to keep better track of the numbers needed for tray lines at any given point during the day.

It’s not uncommon for SMHCS to experience a 100-patient swing in the census from one day to the next. Having Diver provide SMHCS

staff with not only an hourly refreshed view of volumes, but also a forecast that takes into account historical trends (holiday weekends, popular events held in the community, seasonality, etc.), allows for informed decisions to be made with a higher level of confidence. By taking the guess work out of the equation, supervisors can focus on allocating existing resources more effectively; shifting resources across departments in a way that optimizes the use of full-time and per diem employees without incurring additional costs.

OR UTILIZATION AND MATERIALS MANAGEMENT: In 2006, SMHCS migrated over to SIS, a fully integrated surgical suite system for the OR. This application uses an Oracle database with Crystal Reports to handle end-user reporting needs. Due to the success of Diver in other application areas throughout the hospital, SMHCS decided to use Diver in order to create the reporting packages needed to effectively view OR utilization and other key metrics. Diver integrates utilization and materials data from SIS with patient data housed in the Eclipsys AMPFM system. This data is then merged with a third source, financial data from PeopleSoft, in order to give the Director of the OR and SMHCS’ Chief Operating Officer a complete picture of what each surgical case is costing the facility.

From a materials management perspective, Diver is allowing SMHCS to move towards becoming a just-in-time (JIT) materials management department, which has the ability to save SMHCS a significant amount of money on a quarterly basis. For example, certain surgical cases have specific instrumentation and materials associated with it. Using Diver as a forecasting tool, SMHCS can see what cases are coming down the pipeline and what materials are needed for each particular case. This minimizes excess inventory and streamlines the entire materials management process for the OR.

In addition, Diver can be used to tie infection control information to the surgical information system for improved disease management. If a certain procedure is showing a higher than normal infection

“WE ARE GOING TO SEE 86,000 PATIENTS THIS YEAR — THAT’S 10-15 PATIENTS WALKING IN THE DOOR EVERY HOUR. THAT’S AN EXTREMELY BUSY ER. DIVER IS HELPING US SEE OUR PERFORMANCE AGAINST GOAL OVER TIME SO THAT WE CAN SEE WHERE WE ARE TRENDING. IT IS ALSO ALLOWING ME TO SPEND LESS TIME COMPILING DATA AND MORE TIME RESPONDING TO PATIENT CONCERNS. DIVER IS ENABLING US TO BE MORE SERVICE-ORIENTED AND RESPONSIVE.”

GWEN O’NEILL, SERVICE COORDINATOR - EMERGENCY CARE CENTER

rate, Diver allows SMHCS staff to see what instrumentation was used, what personnel was present in the OR, or if there were any other common factors involved.

ED SERVICE REPORTING: Healthcare is a service-oriented business. When patients come into the ER with a health concern they expect to be seen by a physician promptly. SMHCS’ President and Chief Executive Officer Gwen MacKenzie spearheaded an initiative at SMHCS that challenged the organization to create a process that allowed patients in the ER to be seen by a physician or physician’s assistance within 30 minutes of registration. This 30-Minute Service Guarantee was put into action in November of 2005 after six-months of planning and process orientation.

Part of the 30-Minute Service Guarantee program is a follow-up campaign that is run by the organization’s Communications department. This campaign generates a letter from the CEO to each patient that was seen by a physician outside the service guarantee time window. Prior to using Diver, the service coordinator for the ED and a staff member from the Information Services group needed to work together to manually pull data out of the ED’s Eclipsys Sunrise Clinical Manager system. The list was then manually cleansed to insure the correct patients received the follow-up letter. Once this process was complete, the list was finally forwarded to the Communications department for processing. This multi-step process was labor intensive and prevented the ED Service Coordinator from handling other important tasks, such as responding to patient concerns. In addition, if either of these staff members were pulled away to work on other tasks — the reporting process didn’t happen at all — thus grinding the follow-up program to a halt.

SMHCS uses Diver to automate the reporting process for the 30-Minute Service Guarantee program. Data is pulled directly from two different Eclipsys modules — Sunrise Clinical Manager and AMPFM — and brought into the Diver interface. Management is able to see trending on how the ED is performing against goal with respect to the guarantee each day and the Communications group is automatically provided with a list of patients

that should be included in the follow-up campaign — without the need for IS/IT intervention.

ABOUT DIMENSIONAL INSIGHT: Dimensional Insight’s Diver Solution for healthcare delivers powerful analytic and reporting capabilities to hospital systems and provider organizations. Founded upon 18 years of business intelligence technology leadership, Dimensional Insight specializes in the development of patient, claims, cost accounting, clinical, HR, and financial analysis solutions that help healthcare organizations improve patient satisfaction, quality of care, and understand what services are driving profitability.

Dimensional Insight developed the first fully integrated business intelligence suite, The Diver Solution™, to fulfill a need of healthcare organizations that have been unanswered by existing technology: the ability to integrate a variety of disparate systems and data sources across the organization and provide a next-generation reporting and analysis capability for clinicians and executives alike. Now, all the critical information needed to make decisions is accessible to the user without the need for IS/IT intervention. The connection between clinical and business information can be made and, for the first time, healthcare organizations can access and understand the relationships between these two types of data.

USER TESTIMONIALS FROM SMHCS: “The key to winning over users is having a short turnaround time in which they can see their own data and the flexibility to dive in and see more detail whenever they need to.”
Nora Lissy, Director - Decision Support Services

“Everyone says they have a reporting system, but to our users it feels like you need to have a Master’s degree in computer science just to muddle through. With Diver we not only have automated many of our manual, labor intensive processes, but we’ve also provided our users with a way to access information in a simple and easy to use way.”
Nora Lissy, Director - Decision Support Services

SARASOTA MEMORIAL

“Work flow is a critical part of what needs to happen at any hospital – especially one our size. Now, in order to be effective at work flow you have to have the ability to anticipate. So we are using Diver to look at projections and trends – whether its regarding time of year, time of day or for a particular service. I don’t know that we could have effectively done this without Diver.”

Michael Harrington,
Chief Operating Officer

“I have worked with this product for the past three years and I can’t say enough about how well Diver is suited for enabling the business of healthcare. We started out using the product in one application area and the results just blew us away. Three years later we are using Diver in nearly every area of this organization. It is our one source for all of our business-critical information.”

Nora Lissy, Director - Decision
Support Services

“I can’t say enough about what the benefits are to using Diver. For me, there aren’t many systems – and I’ve seen my share of them over the years – where you can take existing information, mine what you want and then apply that in a real-time basis.”

Michael Harrington, Chief Operating Officer

“Diver helps all our disparate systems ‘get along’ better. We can pull information together and tie in our financials for a truly unified view of our operations.”

Nelson Lane, Controller

“We used to have to put different data together manually. It was sort of like putting together a puzzle in Excel because there was no flexible way to integrate data from different sources and automate the process. In Diver, it’s just a matter of learning how to do it – there haven’t been any dead-ends.”

Kathy McGarry, Information Services

“With all the different data and the different kinds of data – the different systems – you just can’t buy one product that does it all. As a result, we have hundreds of different systems here between our batch systems and our real-time systems. We needed a product like Diver that was flexible enough to allow us to bring everything together – no matter where it was housed.”

Kathy McGarry, Information Services

“In healthcare, you’ve got to have an application like Diver in the middle – to tie everything together. It provides the complete picture.”

Gary Nilsen, Decision Support Services