3M Science.
Applied to Life.™

3M Health Information Systems

Case study:

Uncovering performance improvement opportunities at a not-for-profit, teaching hospital*

Location:
Southeastern United States

Type:
Not-for-profit, teaching hospital with five affiliated hospitals in the region, offering multidisciplinary care to a 12-county area

Beds:
499

Annual revenue:
$3.5 billion

insights by **verily**

*Because of client confidentiality, this case study does not identify the organization by name. The snapshot description is accurate, and the facts and figures reported as results are true to 3M findings; only the institution's name has been altered for privacy reasons.

The challenge

Hospital leadership at the organization knew it needed to improve operational performance by specifically shortening length-of-stay (LOS) in a clinically appropriate manner. Located in the urban center of a mid-sized city, the organization cares for a disproportionate share of publicly funded or uninsured patients compared to its competition in the market.

Between financial pressures, accreditation concerns and quality objectives, the organization needed to find a solution. Leadership identified the following challenges and objectives:

- Improve quality outcome metrics and reduce performance penalties and litigation
- Grow and maintain market and financial position
- Reduce unnecessary care and cost variation
- Increase operational efficiency and align clinicians with evidence-based practices
- Prepare for at-risk, value-based care contracts

The solution: Data insights with actionable intelligence

The organization's leaders recognized they needed a deep and highly specific understanding of their organizational performance to tackle these challenges and meet their objectives. The organization expanded upon its 14-year relationship with 3M Health Information Systems (3M) and added the 3M performance improvement platform.

The 3M performance improvement platform combines decades of coding and risk-adjustment methodology and experience from 3M with the data-processing power of Verily, a subsidiary of Alphabet Inc. (formerly Google Life Sciences).

The opportunity: $2.9 million in preventable LOS

The 3M team looked at the organization across multiple performance measures and uncovered three specific **3M™ All Patient Refined Diagnosis Related Group (APR-DRG)** codes that encompassed the largest opportunity for performance improvement: hip fractures, lower limb traumas and amputations. The orthopedic surgery service line presented an opportunity to improve average length of stay (ALOS) with a potential financial impact of $2.9 million in savings and enhanced internal revenue.

The 3M approach: End-to-end analysis

3M's analytics and professional consulting services team was led by a physician, a seasoned engagement leader, four clinical transformation consultants (one physician, three nurses) and a project manager. The 3M team attacked the organization's operational problems by considering coding, clinical documentation integrity (CDI), throughput/workflow opportunities, alignment with best practices and utilization of supplies and drugs.

The 3M team soon eliminated factors such as coding and CDI, quickly identified the true root causes and implemented sustainable performance improvement for long-term, impactful results. By aligning with the hospital's existing 3M data monitoring software, the 3M team addressed these areas:

- **Targeted chart reviews:** Two critical issues emerged in the clinical workflow for limb amputation that resulted in a rigorous care process improvement for the targeted 3M APR-DRG code.

- **Coding reviews:** Another 3M APR-DRG code's severity of illness (SOI) level revealed an opportunity to improve and optimize the care process.

- **3M data monitoring:** From its series of dashboards and drill-down reports, the analysis displayed benchmarked opportunities in the capture rates of complications and comorbidities (CCs) and major complications and comorbidities (MCCs), as well as in potential revenue and case mix index opportunities.

- **Appropriate post-acute care placement:** The 3M team worked with post-acute care facilities to reduce readmissions and drive appropriate patient placement, resulting in more revenue and better patient outcomes.

Once root causes and solutions had been identified and back-end issues resolved, the 3M team worked with the organization to improve patient handoff communications between service lines and care team members; begin discharge planning and insurance authorization early; and introduce social workers into the care process sooner.

3M products used by the organization:

- 3M™ Performance Matrix Platform (PMX)
- 3M™ Performance Advantage Consulting
- 3M™ Performance Data Monitoring (PDM)
- 3M™ 360 Encompass™ System

"As a strategic partner, what the 3M team has accomplished in the last few weeks would have taken our organization more than a year to accomplish, if ever."

—executive vice president, not-for-profit, teaching hospital

The opportunity list: Overcoming excessive LOS

Together, the 3M team and the organization selected the performance improvement projects from the opportunity list that would best combat the excessive LOS rates and improve throughput. These priorities emerged:

- Anesthesiologists and orthopedic surgeons needed to improve their coordination of perioperative patient pain management
- Physical therapy and nursing teams needed to achieve earlier post-operative patient mobility
- Sixty percent of the chart reviews should target specific 3M APR-DRGs and SOI levels and problematic records should be quickly escalated to the coding team
- Orthopedic surgeons needed to adopt a single, streamlined post-operative order set to facilitate earlier patient mobilization
- Social workers needed to drive an accelerated discharge process and reduce barriers to expedited post-acute placement

The results: Reduced LOS

Just three months after the implementation and on-site 3M advisory services, the organization reduced ALOS overall by 0.77 days and on the orthopedic surgery service line alone by 0.75 days—a 15 percent reduction—during a period when the organization's case mix index also increased by 0.27.

Three months post-implementation, the organization saw impressive results

Reductions ⬇

5%
in volume of patients transferred to acute rehabilitation

1.7 days
in LOS for patients discharged to rehabilitation units

1 day
in LOS for patients discharged to skilled nursing facilities

0.9 days
in LOS for patients discharged to long-term acute care

$1.5 million
in variable costs

0.77 days
ALOS

364 excess
LOS days

Clinical care variation
across orthopedic surgery and cardiology service lines

Increases ⬆

0.27
in case mix index

Alignment
with evidence-based practices

Improved relationships
between physicians, accrediting agencies and community partners

Improvements realized faster with the 3M™ Performance Matrix Platform

To take on a project of this size and scope can be overwhelming, but the not-for-profit, teaching hospital and the 3M team were committed to deploying the data and using performance analytics methodologies to quickly identify the root causes. 3M performance improvement helps organizations achieve long-lasting, sustainable performance improvement across clinical, financial and quality measures.

Call today

For more information on how 3M software and services can assist your organization, contact your 3M sales representative, call us toll-free at **800-367-2447**, or visit us online at **www.3m.com/his**.

> "3M said they would do all the heavy lifting and have lived up to that promise. Our executive team continues to be impressed with the talent the 3M team commits to our organization and how efficient and comprehensive they are at getting to the cause of our problems."
>
> —executive vice president, not-for-profit, teaching hospital

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