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Progress Together

Helping Health Systems Stay Competitive with the Hospital Value Dashboard

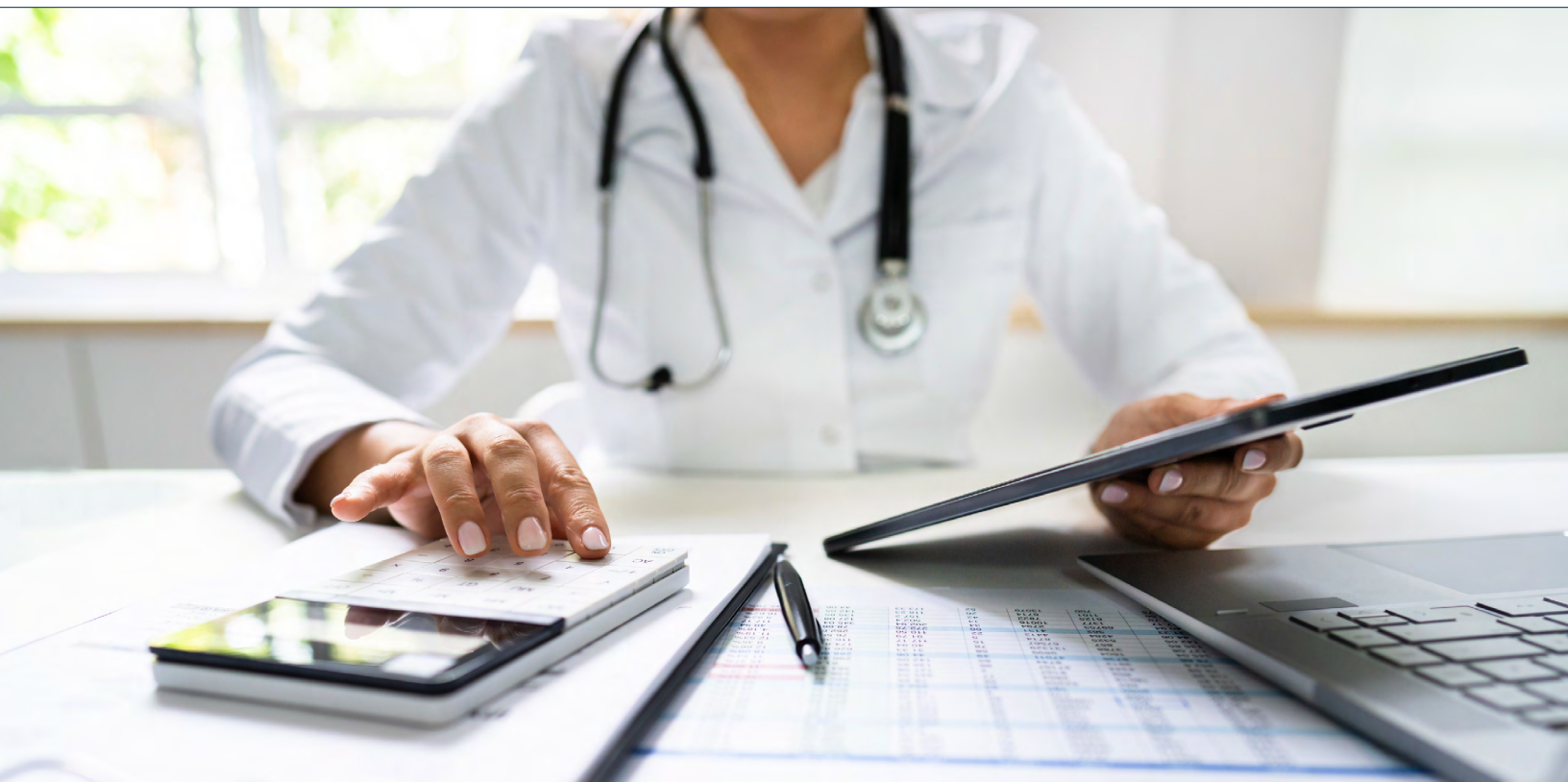
A Case Study with MaineHealth

American hospitals and health systems need to find efficiencies to remain competitive as their operating costs continue to rise. Understanding how their costs and quality measures compare with peer hospitals and health systems of similar size, region, and type is an essential part of this process. Insights and analysis of these metrics can help health systems better allocate process improvement dollars while also identifying areas to reduce investment resulting in cost savings.

The Healthcare Cost Reporting Information System (HCRIS) data used to make these comparisons is collected from healthcare

providers who seek reimbursement from CMS for expenses incurred in providing services to Medicare clients. While the data are publicly available, most hospitals lack the internal resources to analyze and benchmark these massive, complex data sets properly. MaineHealth, a not-for-profit integrated health system serving more than 1.1 million Maine and New Hampshire residents, sought a solution using this data that would help them identify cost-saving and quality improvement strategies. They partnered with Mathematica to **build and customize a Hospital Value Dashboard** to achieve these ends.





Challenge

MaineHealth needed a tool that would help them gauge how their revenue, expenses, and quality compared to similar hospitals and health systems across the country. Developing such a solution required achieving two primary objectives:

1. Building reliable, up-to-date data on hospital costs, revenue, and discharges for a nationally representative sample of community hospitals using cost reports that hospitals submit to the Centers for Medicare & Medicaid Services (CMS).
2. Creating a self-serve tool that allows internal MaineHealth staff to analyze hospital costs, revenue, and quality of care by selecting peer hospitals across the region or nation that are like MaineHealth hospitals.

MaineHealth was not able to independently transform the HCRIS data into an easily accessible database for its internal teams. It also did not have the in-house expertise to integrate quality-of-care data from other sources to benchmark cost and quality metrics.

As they considered a variety of vendors for this project, MaineHealth struggled to find one that could build a solution that was both cost-effective and comprehensive. Some solutions relied on proprietary data sources or lacked national, longitudinal coverage of hospital data. Others used benchmarking methods that were not customizable to MaineHealth's needs.

Solution

Mathematica's deep bench of industry experts, methodologists, and data visualization specialists have decades of experience working directly with federal agencies including CMS. Using that experience, Mathematica had **developed the foundation** for a solution that could help MaineHealth achieve its project goals.

Through story sessions with MaineHealth staff, the Mathematica team learned about their motivations for building a dashboard, pain points, and the performance metrics that were of strategic priority to them. Then, the Mathematica team hosted sessions to sketch out various prototypes of the dashboard to address different use cases.

From these discussions, the mission was clear: MaineHealth needed a more efficient way for its analytics team to deliver metrics that could help senior leaders make key decisions. The dashboard also had to be able to deliver this data on demand, without a series of tedious steps.

The customized Hospital Value Dashboard draws on a searchable database of most American community hospitals' data from the past eight years. The database includes a wide range of hospital characteristics, such as location, teaching status, system affiliation, bed sizes, patient discharges, expenses, and revenue. The Mathematica team also constructed key performance indicators relevant to MaineHealth's hospitals, such as cost per discharge and cost per patient day, adjusted for case-mix and wage index.

In the resulting Hospital Value Dashboard, users can dynamically define the peer group for any of MaineHealth's facilities and see how their performance compared to their peers. The solution gives users the ability to write their own queries and make both point-in time and trending comparisons. It also includes custom data visualization capabilities. Finally, the Hospital Value Dashboard was created to be usable by anyone, regardless of their technical expertise—from the director of strategy to the analytics team.

STREAMLINING DECISIONS WITH REAL-TIME DATA

Imagine the MaineHealth analytics team discover that the organization's overall cost per adjusted discharge rose 2% over the past six years. They want to know how that rate compares to similar hospital systems across the country. With the Hospital Value Dashboard, a member of the team could identify hospital systems of similar size, geographic region, or teaching hospital designation to find how their cost per adjusted discharge trended over the past years. Using the Hospital Value Dashboard, this request could be fulfilled in minutes instead of days, giving the analytics team immediate access to information that could guide important operational and financial decisions.



Results

MaineHealth's Hospital Value Dashboard launched in early 2023. With the two primary objectives achieved, the organization has been able to quickly and easily benchmark its hospitals' cost, revenue, and quality against any peer groups chosen by the analytics team.

In follow-up meetings with Mathematica, MaineHealth says the Hospital Value Dashboard has been particularly useful in tweaking peer groups for comparison on demand, whether for an individual hospital or the full system. MaineHealth's strategy team reported that the dashboard has become one

of the building blocks for reporting to their financial leadership.

"Mathematica's expertise and access to complex data sets has given us a tool for our health system that supports our business operations and cost controls in a targeted way, enabling us to maintain our high quality of care," said Al Swallow, MaineHealth's chief financial officer.

Mathematica is continuing to partner with MaineHealth to support their analytical needs, ensuring that they have the most up-to-date and reliable information guiding their decision making.

Learn more about how the Hospital Value Dashboard can help your organization.

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