

Case study: Kettering Health Network

Dayton, Ohio



“Our leaders **couldn’t believe the results** at first. ‘Look at this data. Is it just a fluke?’ they asked me. But we had evidence-based outcomes data to support our results. ‘It’s no fluke,’ I told them. **‘It’s real.** We’ve fundamentally changed how we work.’”

— **Debbie Schrubb**, director, coordinator,
Corporate Health Information Management,
Kettering Health Network



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— Kathleen Murchland,
manager, Documentation
Excellence, Kettering
Health Network

3M products used by Kettering Health Network

- 3M™ 360 Encompass™ System
- 3M™ Coding and Reimbursement System

Snapshot of Kettering Health Network

Founded in 1964 by innovator Charles F. Kettering, this not-for-profit organization includes eight hospitals and 120 outpatient facilities and employs more than 12,000 personnel and 2,100 physicians. With 1,500 beds, Kettering reports 70,700 discharges, 1.1 million outpatient visits and more than 300,000 emergency visits a year. The network is widely recognized for its revolutionary advances in heart, brain and spine surgery. Kettering fosters a rich tradition of innovation and cutting-edge technology to provide health services for every stage in life.

Kettering Health Network partnered with 3M to implement CDI worklist prioritization using the **3M 360 Encompass System**. Though Kettering initiated worklist prioritization across all service lines, they did a close study of six high-volume neurosurgery DRG groups.

The challenge

“We were struggling along multiple service lines with lower-than-expected CMI—not just an up-and-down trend, but a consistently low CMI compared to peer hospitals,” says Kathleen Murchland, manager of Documentation Excellence at Kettering Health Network. “This didn’t accurately represent our work. We had a complex patient population—with patients driving long distances to receive the critical services we provide. Our data just wasn’t reflecting that.”

Partnering with 3M and their own internal decision-support team, Kettering’s CDI leaders studied service-line benchmarks for working DRGs and compared them with peer organizations in Ohio and other 3M clients with a similar technology footprint. They reviewed their data by hospital to separate out discharge cases with pending queries and studied reports provided in 3M 360 Encompass to analyze missed cases.

One component of their data reflected that physicians were not accurately capturing complications and comorbidities (CCs) and major complications and comorbidities (MCCs). For example, clinicians did not consistently capture nutrition status or wound issues such as pressure ulcers. These missing CCs and MCCs resulted in lower-weight DRG assignments that did not capture how sick patients were, bringing down the CMI in multiple service lines.

Real results

By implementing CDI prioritization worklists in the 3M™ 360 Encompass System, Kettering Health Network now expects:



\$2.6M

annual benefit
for neurosurgery
DRGs alone*



11.6%

increase in case
mix index (CMI)*



**Changed
physician
behavior**

when documenting
CCs and MCCs

*Based on a 3M/Kettering study (2018-2019) spanning 18 months, performed at three network sites. The study measured CMI impact for 17 neurosurgery DRGs before and after installing 3M worklist prioritization software.

Additional joint 3M/Kettering research at three network sites identified 17 high-volume neurosurgery DRGs with the potential for improvement. For example, one costly error showed up repeatedly: Physicians would document a midline shift in a brain MRI, but fail to use such codable terms as “brain compression” (raised intracranial pressure) and “cerebral edema” (brain swelling caused by excessive fluid).

“Neurosurgery was the place to start. Even just addressing brain compression and cerebral edema alone would make a big difference,” Murchland says. “Targeted documentation training for physicians and PAs could change behavior and improve our CMI accuracy.”

“To take action, we needed to elevate cases that demanded our attention first and review 100 percent of those cases, every day. The 3M 360 Encompass System provided CDI worklist prioritization tools we could use to drive this targeted focus,” says Debbie Schrubbs, director of Corporate Health Information Management at Kettering.

The solution

Kettering implemented worklist prioritization across all service lines, but the CDI team did a deeper dive on six high-volume neurosurgery DRG groups, rolling those DRGs

to the top whenever no CC or MCC was documented. The 3M system allowed the team to adjust priorities through scoring built into the software or by the title or category attached to a working DRG.

“Being able to build a standard workflow to prioritize a targeted service line to the top of the worklist was the big win for us,” Murchland says. “Once we address issues in one service line, the 3M software gives us flexibility to expand to other targets. We can build worklists as complex or simple as we need. We can even filter how many items appear on the worklist. The key is to create a manageable daily workflow for our CDI teams.”

When the Kettering CDI teams identify cases that are missing CCs or MCCs or have other documentation gaps, they can identify the physicians and contact them directly to provide the necessary diagnosis documentation training. In many cases, the CDI specialists go on-site and face-to-face to train the physicians.

Reports from 3M 360 Encompass also help CDI teams identify cases where queries are still unanswered. Murchland says, “We can sort by length-of-stay and whittle down the indicators that cause us to miss a case. A lot of them are just one-day stays—when patients are in and out faster than we blink.”

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Boots on the ground

“Transitioning our staff to prioritization took a lot of boots on the ground,” Murchland says. Kettering took a comprehensive approach that included transparency about the data supporting the program, targeted diagnosis training, peer-to-peer coaching and support command centers during the program launch.

Before starting this project, Kettering did not prioritize CDI cases, but rather defaulted to a standard “next patient/next bed” approach, sometimes called the “ready” work queue. This approach was a deeply embedded workflow CDI specialists were used to. However, the next ready case might just be a simple one with no improvement opportunity, while the more complex patient cases might not get reviewed soon enough to make a difference. The CDI teams needed to shift focus and place top priorities first.

“We expected resistance,” Murchland says. “After all, we were changing our end users’ daily workflow. To gain the buy-in, we showed them the data.”

The results

As a result of applying targeted CDI priority worklists in the **3M™ 360 Encompass System**, Kettering Health Network expects a \$2.6 million annual benefit for neurosurgery DRGs alone, along with an 11.6 percent increase in CMI.

“At first our leaders couldn’t believe the results. ‘Look at this data. Is it just a fluke?’ they asked me. But we had evidence-based outcomes data to support our results. I told them: ‘It’s no fluke. It’s real. We’ve fundamentally changed how we work,’” Schrubbs says.

Key to Kettering’s success was changing physicians’ behavior when documenting CCs and MCCs. Of the six high-volume neurosurgery DRG clusters Kettering identified, the CDI teams decreased the percentage of DRGs with no MCC/CC in five clusters. Using the 3M worklist prioritization software, both clinicians and CDI teams learned to shift their workflow to focus first on the top cases. “Once physicians and CDI teams see the data, they get onboard,” Murchland says. “It’s hard to argue with the value.”

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