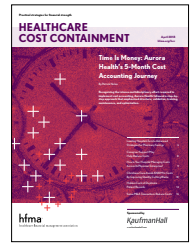


HEALTHCARE COST CONTAINMENT

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Time Is Money: Aurora Health's 5-Month Cost Accounting Journey

By Patrick Nolan

Subteams began with the RVU values identified by 15 Aurora hospitals. In some cases, RVU averages were used as discussion starters.

Two years ago, Milwaukee-based Aurora Health Care faced a problem common to 90 percent of health systems (*CFOs' Fatal Flaw: Survey Finds 9 Out of 10 Hospitals Don't Know Their Cost*, Strata Decision Technology and Becker's Healthcare, 2016). We were operating in the dark—or to be generous, under a dim lightbulb—about our costs. In some ways, we were ahead of many health systems. We had formal processes in place to review costs, as well as a legacy system. But we faced significant challenges providing timely, trustworthy, and actionable cost data to inform performance improvement efforts and strategic planning.

An integrated delivery network with 15 hospitals and more than 150 clinics, Aurora needed to be able to capture the total cost of care across the continuum. But we only had hospital cost data. In addition, we needed to standardize our costing approach for like services across the health system. Because each of our hospitals determined their own relative-value-unit (RVU) allocation methods, our cross-hospital analyses included suspect variation. For example, it was difficult to tell whether one operating room (OR) was more costly than another because of varying costing methods or because one OR provided more efficient care.

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We also wanted to be able to leverage data from our electronic health record (EHR) so we would not have to manually estimate utilization, supply, and drug information. Also, key operational leaders needed direct access to cost information. Yet access was generally restricted to our cost accounting staff, who had to allow up to 32 hours to process reports. In addition to being slow, our legacy system had limited the ability to allocate overhead costs and reclassify expenses. For example, it was difficult to split agency nursing costs into categories (e.g., registered nurses, licensed practical nurses).

Recognizing the intense multidisciplinary effort required to implement cost accounting, we followed a step-by-step approach that helped us launch a standardized

costing approach and a new decision support solution in five months—between April and September 2016. While fast-paced, the quick time frame is already paying off.

Our 4-Step Implementation Process

The core work involved defining and building the new cost accounting process, which took approximately three months. But the preparatory, training, and optimization steps are proving just as critical to our success.

Preparation and structure. During the first month, we pulled together project teams to handle specific tasks:

- > The cost accounting lead team oversaw the initiative and handled key decisions.
- > The service line teams defined consistent RVU allocation methods across similar service areas, including ORs and outpatient clinics.
- > Supply and drug teams identified and integrated supply and drug acquisition costs as well as utilization data into the cost model.
- > The overhead team determined how to allocate utilities, equipment, and other capital expenses across departments/units.
- > Other teams focused on depreciation, reclassifying accounts, and other issues.

We partnered with our IT department and mapped our data integration needs. IT was charged with connecting the EHR and general ledger and ensuring that both systems fed data into a new decision support system. We also defined our account structure, identifying which accounts were fixed versus variable.

Build and validation phase. The various teams pursued their assignments simultaneously with oversight from the lead team. For example, to standardize RVUs, the cost allocation team was faced with apportioning department costs down to individual charge codes. This involved assigning a relative weight to charge codes based on the

amount and intensity of resources used to provide a particular service or procedure.

To accomplish this, the cost accounting lead team assigned service line subgroups to service or specialty areas (i.e., physical therapy and cath labs).

A validation team regularly meets to proactively identify and investigate high-cost or low-cost outliers in the data.

For example, for the OR subgroup, OR managers from various Aurora hospitals were teamed with finance and cost accounting staff to standardize surgical procedure RVUs. Because OR managers understand the type and intensity of resources needed for various procedures, they could help pinpoint the best RVU weight to assign to procedure-related charge codes. The subteams also consulted historical data pulled from the EHR, such as the average length of time that various surgeries took.

For hospital-based services and specialties, the subteams began with the RVU values identified by our 15 Aurora hospitals. In some cases, they averaged the RVU values and used that average as a starting point in discussions. Because our clinics did not have a costing system in place, the clinic subteam used Medicare-based RVUs as a starting point.

Once the various teams completed their work, we ran the data through our general ledger and checked to see that we had reasonably allocated costs. We then identified and fixed obvious outliers, such as services costing 20 times more or less than they actually do.

Training. Before go-live, the cost accounting team was trained to use the new system. Select end users, including strategic and operational leaders, were shown how to create and view reports.

Level of Costing Detail in Aurora's System

Salaries and wages

- > Registered nurse/licensed practical nurse
- > Advanced practice providers
- > Professional and technical
- > Management
- > Support
- > Clerical
- > Physician

Supplies

- > Implants
- > Chargeable medical supplies
- > Non-chargeable medical supplies
- > Drugs
- > Other (non-medical)

Other cost components

- > Minor equipment
- > Benefits
- > Other (maintenance, utilities, interest)
- > Tax assessment
- > Purchased services
- > Professional fees
- > Depreciation for buildings
- > Depreciation for equipment

Tool Helps Leaders Review Average Supply Costs

At monthly supply tracking meetings, Aurora Health department and supply chain leaders review average supply costs per procedure using a cost-per-case tool. Expense trends and variations in this area are reviewed in balance with average OR time, length of stay, and other key data.

| Hospital | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---------------------------|----------|----------|----------|----------|----------|----------|----------|
| Imaging | \$146 | \$125 | \$102 | \$290 | \$40 | \$232 | \$200 |
| Laboratory | \$597 | \$241 | \$76 | \$887 | \$103 | \$97 | \$133 |
| LOS | \$3,557 | \$2,003 | \$1,385 | \$3,424 | \$1,081 | \$930 | \$493 |
| OR Time | \$2,573 | \$1231 | \$1,890 | \$1,576 | \$669 | \$1,559 | \$994 |
| Other Diagnostic Services | \$132 | \$132 | \$99 | \$235 | \$161 | \$36 | \$173 |
| Pharmacy | \$1,181 | \$750 | \$889 | \$1,621 | \$451 | \$1,415 | \$330 |
| Supplies | \$19,500 | \$18,001 | \$15,339 | \$19,549 | \$13,693 | \$25,496 | \$15,548 |
| Therapeutic Service | \$745 | \$554 | \$301 | \$1,214 | \$217 | \$83 | \$83 |
| Implant | \$16,710 | \$14,265 | \$13,495 | \$15,135 | \$12,158 | \$22,845 | \$13,898 |
| Supply | \$2,790 | \$3,736 | \$1,903 | \$4,413 | \$1,535 | \$2,651 | \$1,650 |

Source: Aurora Health. Used with permission.

Maintenance and optimization. Our new cost accounting system successfully launched in September 2016 and encompassed all our hospitals and clinics. But our work continues. Many of the implementation teams, as well as some additional ones, continue to meet to ensure our cost accounting system is up to date and producing trustworthy data. For example, when Aurora launches a new service or another clinic joins our health system, the teams gather to configure costing for that service or clinic. We are also working on adding our home care business to the system.

In addition, a validation team regularly meets to proactively identify and investigate high-cost or low-cost outliers in the data. As with our initial validation of the new system, this team performs reasonability checks to determine whether the variation is due to a true cost issue (e.g., differences in efficiency or supply usage among providers) or a faulty costing formula. As part of this check, the team compares the charge code with the ratio of cost to charge and compares like services across our different hospitals.

The Costing Approach in Action

Now that we have trustworthy cost data, we are focusing on analyzing that data to identify opportunities for performance improvement and growth. Our reporting team, which consists of data analytics experts, partners with operational leaders to help them obtain needed data. With our new system, we can now run reports much more rapidly, and processing time for full costing has decreased to two hours.

We also have various dashboards and tools in place that pull together cost, volume, and other data, allowing leaders to monitor metrics and identify improvement opportunities. One example is our cost-per-case tool that compares like services or procedures across Aurora hospitals. For example, spinal fusion surgeries can be split into average costs for imaging, lab, inpatient unit stay, drugs, supplies, and OR time. Leaders can drill into this data, comparing costs across hospitals or physicians to identify when costs vary from average.

At monthly supply meetings, department and supply chain leaders review average costs per procedure using a cost-per-case

tool (see above exhibit). Expense trends and variations in this area, which are driven by product selection, pricing, or utilization, are reviewed in balance with average OR time, length of stay, and other key data. Balanced action plans are then developed to include the appropriate parties (e.g., service lines, site operations, and sourcing).

Key Success Factors

Various factors contributed to Aurora's successful implementation of a new cost accounting system in five months:

- > Obtaining senior leadership buy in on the importance of cost accounting
- > Holding educational and kick-off sessions to ensure everyone understood the importance of cost accounting
- > Bringing IT to the table early to ensure on-time deliverables
- > Using the same vendor for different decision support modules (e.g., operating budget, capital budget, management reporting, continuous improvement), which made data integration easier

In addition, we decided we wanted to spend more time analyzing cost data for improvement opportunities than building a perfect cost model. With that in mind, we developed three criteria to guide our work:

- > **Materiality:** Recognizing how difficult it would be to review tens of thousands of charge codes, our teams were told to begin with the most frequently used charge codes and address lesser-used codes at a later date, as needed.
- > **Maintenance:** We wanted to avoid creating a system that would need frequent review and updates.
- > **Non-perfection:** Rather than seek perfection, we aimed to continually make

our cost data better to help us improve as an organization.

Ultimately, it came down to determining how detailed we needed our cost allocations to be. It's a trade-off. With less detail, we would risk not being able to drill deeply into the data. But more detail meant we would have to devote more time to allocating costs as well as to maintaining the system. We had to think to the future and estimate how health system leaders would want to use this data (see the sidebar on page 2).

Next Steps

Aurora is approaching cost accounting from a performance improvement perspective. Our new system is providing insightful data to our leaders so they can continue to identify ways to provide high-quality care that is efficient and affordable. +

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