

Mercy

Core Metric: Pneumonia Pathway

Executive Brief

About

Mercy, serving millions annually, includes 45 acute care and specialty (heart, children's, orthopedic and rehab) hospitals, more than 700 physician practices and outpatient facilities, 40,000 co-workers and more than 2,000 Mercy Clinic physicians in Arkansas, Kansas, Missouri and Oklahoma. Mercy also has outreach ministries in Louisiana, Mississippi and Texas.

Results

- Used pneumonia pathway on 67-76% of pneumonia patients
- Reduced door-to-antibiotic time by 3 hours
- Reduced pneumonia mortality rates to 1-2%, a 60-80% reduction
- Saved \$28.5 mil in total direct variable costs
- Reduced direct variable costs for pneumonia patients by \$800 per case

Overview

Mercy recognized the importance of standardizing evidence-based protocols, or pathways, across facilities to improve quality of care and patient outcomes, reduce costs and increase reimbursement. Through pathway development and continual monitoring of utilization within target inpatient populations, Mercy's overall pathway utilization rates improved from 48-53 percent in FY2015 to 53-70 percent in FY2016. They used the pneumonia pathway on 67-76 percent of pneumonia patients. These improvements aligned with Mercy's goal to cover 60-80 percent of the inpatient population with evidence-based, standardized pathways. In addition, Mercy reduced pneumonia mortality rates to one to two percent, a 60-80 percent reduction and well below national rates.

Mercy also reduced total pathway direct variable costs by more than \$28 million and reduced direct variable costs for pneumonia patients by \$800 per case.

Situation

Mercy's decision to develop a pathway was based upon the analysis of the top 15 loss diagnosis related groups (DRGs) with bundled payment providers, based upon contribution margin. Mercy selected pneumonia for pathway development, with Mercy's mortality rate for pneumonia patients at 4-5 percent, at or above the national rate.

Mercy's goal was to improve quality of care through standardization and reduce direct variable cost per case. Mercy's pneumonia goals included reducing mortality rate for pneumonia below the national rate, reducing average time to antibiotics in pneumonia patients, and reducing direct variable costs per case for pneumonia in all payer groups

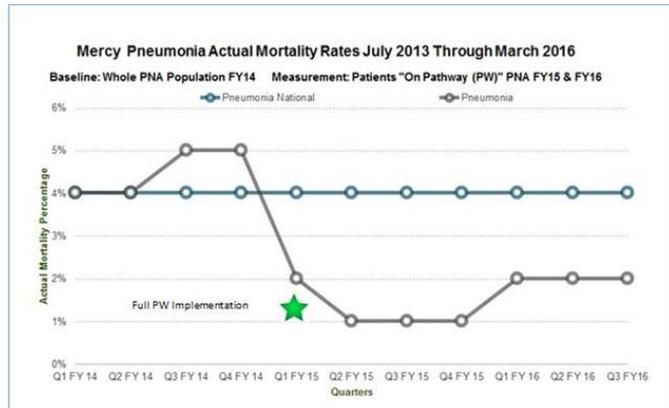
Pathway development began using adhoc teams comprised of physicians and interdisciplinary team members. It then evolved into a more formal process that included Mercy's Physician Specialty Councils, with physicians helping lead and guide pathway development, review and revision processes. Interdisciplinary experts from across Mercy also participated in pathway development. The pathway design phase included literature review, pathway draft, review and revision, and approval by the Physician Specialty Councils. Pathway development groups established the framework for the pathway workflow.

Mercy developed dashboards to monitor utilization of pathways within the target patient populations, including pneumonia, and to track key clinical metrics for each pathway condition. Mercy tied administrative leader and physician compensation to utilization of pathways at the target rate of 60-80 percent. Pathway availability, utilization and outcomes were also considered in negotiation of payer contracts.

Outcomes

Mercy met its pneumonia pathway utilization goals, using the pathway on 67-76 percent of pneumonia patients during FY2016. They improved mortality, reduced costs and decreased door to antibiotic time.

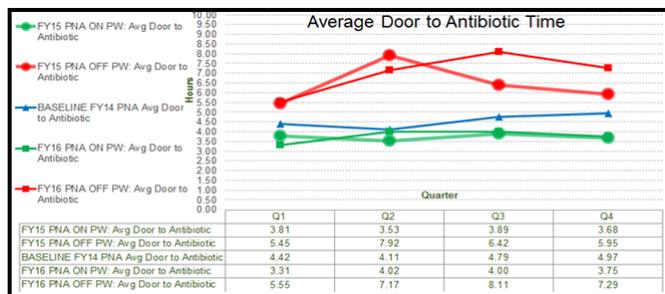
Mercy improved the actual mortality rate of all patients treated for pneumonia by 60-80 percent, reducing it to one to two percent, well below the national average of four percent (per Healthgrades). The baseline period was FY2014 (July 2013 - June 2014) with full pathway implementation in the beginning of FY2015 (July 2014).



Mortality rate reflects inpatients discharged from Mercy acute care hospitals that meet DRG/ICD9/ICD10 criteria for pneumonia (excluding SNF, Rehab, Residential Care, Swing, BH, Comfort Care and Organ Donor patients).

The door-to-antibiotic time for patients on the pathway was about three hours less than patients that weren't on the pathway. The door-to-antibiotic time for patients on the pathway was approximately one hour less than the baseline patient population.

Average door to antibiotic time for patients on and off pneumonia pathway



Financial Considerations

Cost-benefit analysis for 2015-2016 for the entire Mercy pathways program, consisting of approximately 40 pathways, showed \$3,152,745 in total costs, including \$1.1 million for software, \$64,306 for ongoing IT and \$1,988,439 for human resources. Total direct variable cost savings were \$28,495,359. Direct variable costs for patients treated on the pneumonia pathway were on average \$800 less per case than patients not treated on the pathway.

Lessons Learned

Mercy shared these lessons learned.

- ❖ A primary focus on quality improvement in development and build of evidence-based pathways, combined with awareness of associated costs, helps improve quality of care and cost effectiveness.
- ❖ Objectives and patient population criteria must be clearly defined, as well as assessing baseline data and culture to proactively determine pain points.
- ❖ Analysis of quality and cost data reporting using the dashboard helps direct attention to conditions and workflows that need optimization. Use of big data analytic tools enables learning from everyday care by identifying current practices that produce desired patient outcomes for incorporation into pathway development and optimization.
- ❖ A governance structure that includes representation of physicians across specialties and the organization provides the needed foundation to support pathway design, development, maintenance and optimization. The creditability of pathways developed and governed by formal physician specialty councils was much stronger than guidelines initially developed by adhoc pathway development teams. Also, pathways utilization improved when physician compensation was tied to utilization compliance and outcomes.
- ❖ The pathway development cycle must include maintenance and optimization. After pathway implementation, the change control process provides a two-week window to address immediate maintenance issues. Then, we address issues as received. Requests are vetted, approved or rejected by a physician specialty council. Pathways are reviewed every two years and when pathways don't meet quality or financial targets.
- ❖ Developing a standardized implementation/support plan that can account for facility-specific needs, including change agents and champions, is key.
- ❖ Developing formal communication and education plans/tools is a very important step.

Since 1994, the HIMSS Nicholas E. Davies Award of Excellence has recognized outstanding achievement of organizations who have utilized health information technology to substantially improve patient outcomes while achieving return on investment. The Davies Awards program promotes EHR-enabled improvement in patient outcomes through sharing case studies and lessons learned on implementation strategies, workflow design, best practice adherence, and patient engagement.

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