# Transformation: From Break-fix Maintenance to Comprehensive Healthcare Technology Management Program

*A comprehensive, integrated healthcare technology management program helps Mercy Health support quality care, improve equipment utilization, and achieve sustainable cost savings and process improvements.*

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## Summary

### Mercy Health Challenges

- Pressure to reduce maintenance service spend
- System-wide maintenance strategy lacking scalability
- Sub-optimized mobile asset utilization
- Inefficient mobile asset cleaning & distribution processes
- Financial waste in approach to clinical asset rental management

### Solution

Holistic, integrated Healthcare Technology Management program that addresses entire equipment lifecycle and technology infrastructure.

- Optimized, scalable approach to servicing assets across health system
- Focus on asset utilization to reduce financial waste
- Consolidated responsibility of mobile asset rental and cleaning & distribution
- Robust asset tracking and management technology
- Rigorous program governance to track critical metrics and sustain gains

### Outcomes

**Results 12 months into program:**

- Operational savings of $12.9M
- Mobile asset utilization increased from 38% to 71%
- Improved quality & transparency of clinical asset inventory data
- Data-driven capital planning support
- Increase in clinical staff satisfaction

## Our Health System

Mercy Health is the largest health system in Ohio and among the top five employers in the state, with more than 33,500 employees serving communities throughout Ohio and in Kentucky. The system consists of nearly 500 care facilities, including 23 hospitals and 26 post-acute care facilities. In keeping with its mission to extend the healing ministry of Jesus by improving the health of its communities, Mercy Health provides more than $1 million per day in community benefit services.

As of Sept. 5, 2018, Mercy Health combined with the Bon Secours Health System to form Bon Secours Mercy Health. Together, Mercy Health and Bon Secours rank in the top performing quartile of Catholic health systems for low-cost, high-quality patient care, promoting healthier lives and creating more affordable health care for residents across an expanded footprint. The combination of the two ministries creates the fifth largest Catholic health system in the country, allowing the new entity to leverage economies of scale by integrating resources and teams across the ministries.

The combined ministry will create future opportunities for deepening its commitment to the communities it serves and expanding into complementary service areas across the United States. Further alignment of the ministries offers an opportunity within the United States and outside of its borders to bring healing and hope to those most in need.

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## Our Challenge:
## Limitations of a Break-Fix Service Model

The current health care climate, with heightened sensitivity to financial pressures and declining reimbursement rates, has challenged us to re-evaluate the performance of key support services across Mercy Health for opportunities to drive out inefficiencies and waste.

More than a year prior to Mercy Health combining with Bon Secours Health System, we turned our focus towards how we were managing clinical asset maintenance. Mercy Health has over a billion dollar asset base which is growing rapidly with mergers and acquisitions. Throughout the organization, we lacked the standardization and operating consistency in our service program to provide us with the level of scalability that was needed to efficiently achieve our strategic growth and financial goals in the current consolidation environment.

It was very important to us that a new program incorporated enhancements beyond simple break-fix elements. Core service program aspects we sought to address were non-standardized processes and sub-optimal asset utilization.

### Non-standardized processes impacting scalability

Decentralized service management resulted in differences in the local scope of our clinical asset maintenance program. Also, we believed certain processes that impacted the flow of clinical assets in each facility could be optimized if integrated into the service program across the Ministry.

- Service engineers were responsible for non-clinical assets (nurse call, intercoms, etc.) that Facilities typically addresses.

- Cleaning and distribution of mobile assets (infusion pumps, IV poles, etc.) was not addressed in a standard way across the Ministry. In some cases, the clinical staff had the responsibility of cleaning equipment, taking the nurses away from the bedside.

- The rental program was managed outside the scope of clinical engineering, and rental data wasn't consistently considered when making capital purchase decisions.

In addition, due to complicated billing and budgeting across the health system, we didn't have a reliable way to predict what our service costs would be as we grew. It was very difficult to get Mercy Health's 23 hospitals to behave in a similar fashion, and that becomes more complex at scale.

In an organization the size of Mercy Health, standardization is critical to support optimal use of resources. To create a program that would be a vehicle for efficient, cost-effective growth as the Ministry expanded, we needed to drive "systemness" into our clinical asset maintenance program, much like we had done in other areas managed by the supply chain.

### Sub-optimal asset utilization

Our traditional break-fix service model wasn't addressing waste resulting from inefficient asset utilization. We had a mobile equipment utilization rate of about 38 percent, which meant that on average these assets were idle 62 percent of the time and not being used to their full capacity. Because we had equipment stranded in queues and in processes that didn't make it readily available, our clinicians were spending a tremendous amount of time—40 minutes of their shift—looking for it. In some cases, clinicians were resorting to hoarding of equipment to ensure its accessibility. To put equipment in caregivers' hands when they needed it, we were incurring rental and capital expense.

We needed to optimize our mobile asset fleet and the processes that touched it, to get our equipment utilization rates up to where we believed they should be and to reduce related unnecessary costs.

## Lack of standardization and operational efficiency in break-fix maintenance program hampered scalability and financial goals.

1. Complicated billing and budgeting

2. Poor transparency into equipment inventory levels & utilization

3. Rental management outside maintenance program scope

4. Cleaning and distribution processes & owners that differed by site

5. Non-standard approach to non-clinical asset maintenance by site

## Our Solution: Comprehensive Healthcare Technology Management

What we set out to do with our core maintenance supplier relationship, was to not only solve the basics of clinical engineering, but really to pull in the whole continuum of lifecycle management. Our goal was to enhance the typical break-fix program to solve deeper organizational issues. Healthcare Technology Management (HTM) for us is a comprehensive lifecycle approach to managing our clinical assets.

### Collaboration with a partner invested in our goals

We needed a service provider that could not only help us optimize, standardize and rationalize how we use equipment today, but could also scale to grow with us. We were also looking for flexibility in a new service provider to really focus on program enhancements that we felt were important and to demonstrate upfront a willingness to do things that maybe the partner hadn't done previously.

GE Healthcare was the partner with whom we chose to develop our new HTM program. With demonstrated service support excellence and a comprehensive HTM client base of over 700 customers, GE Healthcare is one of the largest providers of medical equipment maintenance services in the world. A service relationship with GE Healthcare would serve as the foundation to a broader, more comprehensive solution driving the financial and quality outcomes we sought. With GE Healthcare as a collaborator, we had experience and expertise to address desired program enhancements and to put efficient, sustainable processes in place.

During our HTM partner selection process, we found it important to be very open-minded to an integrated supply chain model and not discount the fact that a leading medical equipment manufacturer could also be a sound service provider.

## Comprehensive Healthcare Technology Management

**Mercy Health's comprehensive HTM program addresses the system's entire equipment lifecycle and technology infrastructure, combining maintenance quality with cutting-edge asset-management solutions to create sustainable financial and quality outcomes.**

### Service Model Optimization

- Optimized asset coverage levels
- Standardized approach to servicing non-clinical assets system-wide
- Simplified pricing model, streamlined to support growth

### Integrated Asset Management

- Enterprise-level view of all inventory & service data in standard CMMS repository
- Dramatic increase in mobile asset utilization
- RTLS-enabled, scalable cleaning & distribution processes
- Integration of rental management for cost control

### Sustainability & Innovation

- Dedicated program & inventory management resources
- Steering Committee reviews of critical metrics and current issues
- Rounding visits focused on department needs
- Data-driven capital planning support

## Optimization and Simplification

The Healthcare Technology Management program tailored for Mercy Health has a solid foundation in optimized maintenance fundamentals.

• Predictable, sustainable cost savings through a comprehensive coverage model.

• Simplified pricing model for Mercy Health to enable site level visibility and to standardize a streamlined methodology for estimates to add locations as Mercy Health expands.

• Optimized equipment coverage levels to ensure consistent availability for quality patient care.

• Standardized approach to servicing non-clinical assets across the health system to drive organizational efficiencies.

• Mercy Health-focused program and inventory management team of 29 GE Healthcare leaders and over 80 engineers to support needs in each market.

Twelve months into the new HTM program, the economic gain has met expectations, delivering annual operational savings of almost $13M across the Ministry.

## Increased mobile asset utilization

We now focus more on the middle section of the clinical asset lifecycle, the actual utilization of the asset. We've spent a lot of effort engaging our healthcare technology partner to get our equipment utilization rates up to where we believe they should be.

GE Healthcare's real-time location system (RTLS) technology, Encompass, is deployed at Mercy Health's 13 largest acute-care facilities for the specific purpose of streamlining asset distribution and management. It tracks the locations of mobile devices including infusion pumps, specialty beds, patient monitors and respiratory equipment.
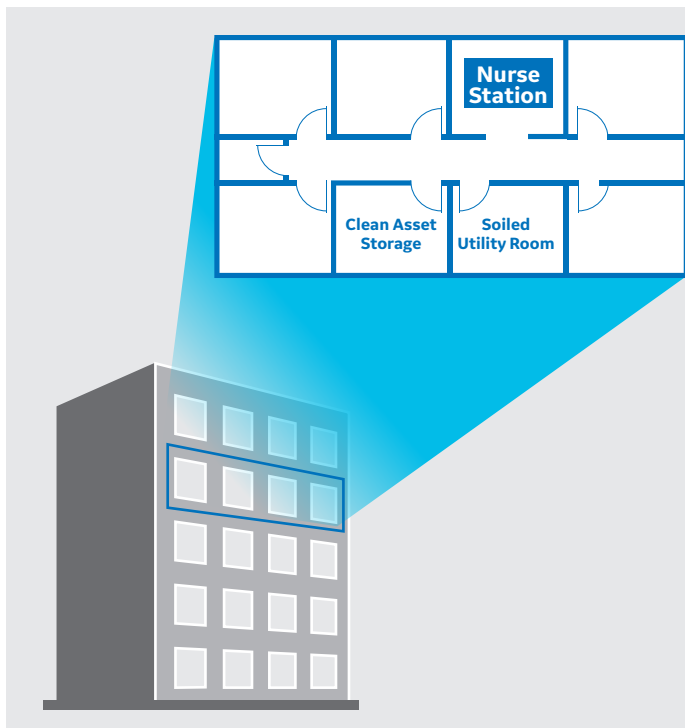
With RTLS, we're able to see in real time where this equipment is located and how frequently it's being utilized. We're able to make operational decisions in terms of where these items need to go to care for our patients. That sometimes means moving them within a region from hospital to hospital, but also to other sites of the Ministry to meet changes in demand. This results in better use of the ministries resources and is a tremendous cost savings.

With the technology and processes improvements we've put in place, we've elevated our mobile asset utilization rate to about 71 percent today.

## Standardization of clinical asset cleaning & distribution

With respect to program enhancements, cleaning and distribution (C&D) was very important. It's critical the equipment be cleaned after every patient encounter, and that equipment be readied for the next patient use. There must be a consistent way of indicating when a piece of equipment is cleaned or contaminated.

We gave GE Healthcare full responsibility for C&D to establish a simple, standardized process across our entire organization to ensure that mobile clinical devices are cleaned and available close to the point of care on every floor. The C&D infrastructure that GE Healthcare has implemented at 15 of our largest facilities to date includes over 50 dedicated program coordinators and cleaning technicians. Services are provided 12-14 hours each day, 7 days a week.



# Mobile Asset Cleaning & Distribution

**Standardized process to ensure assets are clean, available and close to the point of care on every floor:**

• Common equipment is stored in clean areas on the floors

• After a patient is discharged, nursing moves used equipment to the soiled utility room

• C&D rounds on the floors, cleans soiled equipment, and level loads it around the facility

## Outcomes & Benefits:

• Equipment is located on each unit, available when needed

• Significant reduction in time searching for equipment

• Clinician freed up to focus on patient experience

• Increased staff satisfaction

• Reduction in idle equipment and unnecessary rental expense

RTLS technology is central to the streamlined process. Commonly used equipment is stored in clean rooms on the floors at par levels set after consultation with clinicians. After a patient is discharged, the devices are moved to a separate soiled utility room. Cleaning and distribution personnel make rounds on the floors, clean soiled equipment and level-load it around the facility.

With these changes, GE Healthcare has helped our clinical staff to work more efficiently. Previously, retrieving needed equipment from central distribution took a nurse or nurse's aide off the floor. Now the equipment is located on the unit, it's cleaned by GE Healthcare and it's stocked by GE Healthcare. Our caregivers are freed up to spend time with that patient, and not have to spend it worrying about equipment or being engaged in things that don't provide immediate value to the patient experience.

### Integration of rental management

Another important aspect of our HTM program was to focus on rental equipment. Like many systems, we rent a wide variety of equipment: specialty beds and specialty support surfaces, ventilators. Our clinicians do a great job of getting that equipment to the patient to serve their needs. The challenge was discontinuing that rental after the patient encounter, when the revenue that supported it is no longer there.

Now, to align the cost with the revenue, we engage GE Healthcare in the discontinuation of the rental. They monitor the disposition and the end of that patient's encounter, to make sure that these costly products are discontinued. When our business partner focuses on the business details of a rental encounter, our clinicians are freed up to focus on the patient. That marriage is what we were looking for, and it's working very well.

### Rigorous governance

A vital element of our HTM program is the rigorous governance structure that helps ensure that the gains made to date can be sustained and that processes can be continuously improved. Key components of governance include:

- **Quarterly Steering Committee meeting reviews in each of Mercy Health's seven markets.** Here, participants share critical metrics such as planned maintenance compliance and uptime percentage and discuss the quality of service delivered.

- **Rounding.** While onsite for the quarterly meetings, GE Healthcare and Mercy Health program leaders visit the Biomed Shop, Cleaning and Distribution sites, Supply Chain office, Radiology and Laboratory. In addition, local GE Healthcare service delivery leaders round at least weekly in those areas.

- **Executive Steering Committee meetings with Mercy Health leadership.** Here information is shared about the critical metrics for the entire Ministry and about key themes we heard from the market meetings and rounding. In attendance from Mercy Health are top leaders from Supply Chain, Clinical Engineering and Life Cycle Management, Nursing, IT, Laboratory, Shared Services, Cardiovascular and Oncology.

The touchpoints across the team are numerous and frequent. We discuss what has been working well and where we may need to focus more. We don't shy away from tough conversations. We engage in candid dialog covering all phases of the program.

### Data quality and transparency for technology planning

During the implementation and into year one of our new HTM program, GE Healthcare performed extensive inventorying and tagging of our imaging and biomedical device asset base. Through this work and with the use of the Computerized Maintenance Management System in place, we've been able to make a real impact in cleaning up our asset base. We better understand the value of what we have at our facilities and how to effectively drive lifecycle management. We've standardized the way the data comes in and is recorded.

We have true data based upon utilization and availability. When we bring that insight to reviewing patient data and actual need within the facilities, we are able to make educated decisions about capital purchases. In an environment where reimbursements are ever declining, and technology in health care is ever increasing, we need to be sure that our dollars are being spent in the most conscientious manner possible. The level of data that we've been afforded through this partnership has helped us to make tough operational, strategic decisions. From a capital planning and strategic standpoint within individual facilities, it's been invaluable.

We're all speaking the same language, we're working off the same reports, and we trust the data. The standardization that GE Healthcare has allowed us to attain helps us make insightful, coordinated decisions about our asset base. From a Supply Chain perspective, we're stepping in with a solution as opposed to just reacting to perceived needs. We're more proactive and less reactive.

### The Outcomes

We've just completed year one of performance with our HTM program with a lot of success. Presenting clean equipment in a standardized way, nearly doubling our mobile asset utilization rates, offsetting operating expense in rental, and offsetting capital expense in purchasing new equipment that isn't needed are the biggest accomplishments of the new program.

GE Healthcare has assumed some responsibilities that used to be handled by clinical personnel, allowing them to focus on the patients. They are truly a part of the care team. They're very much invested in where the equipment flows. They know the facilities inside and out. They are here on a daily basis working alongside the frontline caregivers, making sure the caregivers have what they need to care for our patients. In the coming years, we will focus on other avenues to leverage our core partnership with GE Healthcare, to engage their team further in to that point of care.

We've spent a lot of time developing this HTM program and making it scalable. As Mercy Health engages in other mergers and acquisitions, the tool is applicable and durable to be applied going forward, across the whole continuum of care from acute, to ambulatory, to long-term care, and to physician practice office.

## About the Author

Steve Bodily's career in medical logistics and operational leadership spans 35 years. Prior to working at Bon Secours Mercy Health, Steve was an Air Force Medical Service Officer, leading global operations in logistics, EVS, biomedical engineering and plant operations.  He holds a BS in Industrial Engineering from Southern Illinois University and MHA from Chapman University.

Certifications include:
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Certified Materials & Resource Professional (CMRP) – AHA and
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*For more information, contact your GE Healthcare representative.*