

MANAGEMENT

Overcoming the Biomed Tech Shortage

Published on June 25, 2018



By Al Gresch

Hospitals and clinics all over the country are facing the same problem: there soon won't be enough technicians to maintain and service their growing pool of critical biomedical equipment. The workforce is aging, and there are not enough young people entering the field. According to [24x7's 2017 salary survey](#), in the past year, the mean age of radiology technicians rose from 50 to 52.4; the age of level-three biomed technicians rose from 49 to 52; and overall, the age of healthcare technicians rose from 49 to 51.

Making this problem much worse is the shrinking labor pool. As of this writing, unemployment across the United States is now just 4.2%, and it's at a shocking 2.2% in the healthcare and social assistance sector, both dropping in half over the past six years. And with the economy humming and tighter immigration policies, it's not likely to ease up any time soon.

While the industry is looking for ways to add more people to the field, such as recruiting from high schools and community colleges, professionals within the healthcare space need to become more efficient, i.e, doing more with fewer people. A great way to do that is to focus on the integrity of data across equipment and facilities.

A few years ago, I saw firsthand with my own healthcare tech team how data can make a difference. We established data integrity benchmarks across our hospital, and within a year we proved that each time we invested 135 hours into planned maintenance, we gained a 1,500-hour reduction in corrective maintenance. Through analysis of our processes, applying lean methodologies and reducing the administrative work (which technicians hate anyway) we created a 41% increase in the hours each technician actually worked with devices, to 1,550 hours per year each.

Four Steps to Data Integrity

Data integrity means turning off the flow of garbage going into the database, otherwise, you'll never have clean data. With data integrity, you can ensure that everything means the same across your inventory. Our data integrity approach involved these key steps:

- Creating policies to ensure consistent and accurate documentation of all work performed.
- Cleaning the existing data.
- Implementing data standardization procedures.
- Establishing clear and consistent reporting to understand results.
- Identifying "non-wrench" time tasks, determining which brought value and creating alternatives for those without clear value.

Standardize Nomenclature

One problem we discovered in our process was databases that were open to modification by too many different types of employees. And data was being entered inconsistently because we hadn't established data input rules.

For instance, we found that listings of equipment inventory could have as many as ten different variations on the same brand. One employee might enter a LIFEPAK 7-Defibrillator as LIFEPAK. Another employee, LIFEPACK.

The same confusing problem exists for manufacturers, device categories and model numbers. When you're generating reports to see what you have (unless you know what all those different iterations mean), you'll have an incomplete and inaccurate report.

Create and Track Task Types

Your system should be built so that technician activities are coded and associated so that you can track and plan more effectively.

For example, clearly delineate tasks between the categories of equipment maintenance, servicing customers, administration and participating in training. That enables you to clearly determine the true number of device hours per technician. Getting consistency in this data also requires creating and enforcing policies around documentation of all activities.

When you overcome the skills shortage and are able to hire a technician, you want that resource to maximize his or her time fixing equipment and helping customers. So, every minute your technicians spend not doing one of those two things is not a good use of time or money. Of course, technicians need to attend a certain level of meetings and training sessions. But, when you measure and track all their activities by category, you can better decide and control how their time should be spent.

Equip Technicians with an Engaging Mobile Experience

The technician of today (and of the future) has grown in their expectations and standards for how to interact with technology. They swipe through their smartphones every day to stay in touch with the world, update their social feed, read the news and play games. In the face of recruiting and retention challenges, you need to give them a mobile device they can have on hand that makes their automation seamless. The benefit for managers is that technicians are more engaged and more efficient in keeping up their administrative duties. Their mobile work manager can:

- Assign work order requests wherever they are.
- Provide interactive checklists to ensure work is completed thoroughly.
- Document their tasks and completions in real time, further increasing the level of data integrity.

Technicians in the field—whether they're age 20 or 60—are in the job because they like the core mission: fixing equipment. If your organization provides modern, easy-to-use mobile automated tools and processes, then you'll have a recruiting and retention edge as the kind of organization where they want to work.

In addition, when technicians are able to schedule and document tasks on an intuitive mobile interface, their data gets into the system in the most timely manner possible, so your organization can always be up to date.

Benchmark Your Progress

The next step in boosting efficiency to the next level comes from establishing key performance indicators (KPIs). Record, report and publish your performance against established benchmarks in areas such as response time, turnaround time and uptime. This will help your staff and your customers know what's important, and also keeps them aligned with you in terms of your HTM goals.

I'm a big fan of healthcare industry benchmark for cost-to-service ratio, which is the cost of maintaining an inventory for a specific device divided by the value of that inventory or device. It's generally accepted that if your cost-to-service ratio is at or below 5%, then you're doing a good job.

A frequent problem for healthcare technology managers is that their inventory isn't 100% populated with critical information such as the acquisition or replacement costs of the equipment. If you're missing information on these components of the performance formula, you can't complete the calculation. So, make sure you measure your inventory data completeness.

Better Data = More Efficiency = Lower Staffing Need

Think about how quickly you can accommodate the increasing demand for healthcare technology management just by making your staff more efficient, more effective, and more engaged. You can increase your efficiency, productivity, and equipment uptime by:

- developing policies, procedures, and checklists across your organization;
- enabling process standardization, benchmarking and automation; and
- ensuring corrective and planned maintenance is completed in the most efficient manner.

Yes, the HTM labor shortages is a big challenge. But better processes and automation focused on data integrity, and the subsequent ability to analyze that data, can minimize the skills shortage impact and yield strong benefits.

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