

Equipment Inspectors Focus on Preventive Maintenance

Jill Schlabig Williams

Many biomedical equipment technicians (BMETs) view preventive maintenance (PM) inspections on equipment as their least favorite chore. The checks are tedious, time-consuming, and difficult to complete when emergencies constantly distract highly-skilled technicians from routine tasks. The technicians at Christiana Care Health System have no such complaints, however. Most preventive maintenance duties are handled by a highly-trained team of equipment inspectors, improving department efficiency and freeing the technicians to focus on repairs and sharpen their skills in specialty areas.

Background

When Alan Lipschultz, director of clinical engineering at the health system, came on board 14 years ago, he had an opportunity to design a department from scratch. The equipment inspector team was one of many initiatives that he implemented. “It wasn’t my idea, I stole it from another clinical engineer way back when. I’m amazed more departments haven’t implemented this program,” he says.

“In previous jobs, I always found that the BMETs hate to do PMs. They avoid it. The idea here is to get somebody who loves to do it. We take someone at a lower skill level and offer them the opportunity for promotion within the hospital. We give them predefined procedures to follow and hands-on training.”

In return, Lipschultz says, his department gets dedicated employees who focus on the preventive maintenance chores, happier BMETs, lower costs, higher efficiency, and the chance to “grow” his own staff of technical experts.

Solution

Today, four equipment inspectors are tasked with conducting 90% of the electrical safety inspections and PMs on general hospital equipment, averaging 800 inspections a month. BMETs continue to do PM work on high-end equipment such as dialysis machines.

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The current Equipment Inspector Team in the Clinical Engineering Department consists of (left to right) Wendall Dale, Gwen Butler, and Robert Redden-Huff.

Subject: Christiana Care Health System

Location: Based in Wilmington, DE, the system serves all of Delaware and portions of Pennsylvania, Maryland, and New Jersey

Beds: 1,100

Staff: The 22-person clinical engineering department includes four equipment inspectors



Each morning, the equipment inspectors download a list of equipment to be checked on a palmtop computer. They find, inspect, and record data on each piece of equipment. The inspectors are also trained to perform minor repairs. When they find a piece of equipment that needs major repairs, they add it to a list for the BMET staff.

John Learish, supervisor of the clinical engineering department, runs the program on a day-to-day basis. “While electronics training is not required for the job, we look for people with mechanical aptitude, good people skills, and a desire to learn,” he says. “Our job is to teach them, give them set procedures, and offer a career path.”

A year-long training process is key to the success of the equipment inspectors. During their first day on the job, new equipment inspectors are given a departmental orientation. They are shown how to work safety analyzers and other test equipment, and trained on the computerized tracking system. Then, for the first year on the job, they are partnered with a senior equipment inspector. They work with this senior inspector to learn each new type of equipment. Each senior inspector gives

a class once a month to review procedures on a particular type of equipment.

“It takes three years for an equipment inspector to really get proficient, to fine-tune their skills. A career path is set up for them: after three years as an inspector, they transition to another level,” says Learish. “We encourage them to also work through the local community college to sharpen their math skills and get electronics training.”

The equipment inspectors follow detailed procedures for testing equipment. Creating these procedures is another key to running a successful equipment inspector program. “We have to make sure all procedures are in place and easy to read and understand,” says Learish. “While it was a huge effort to write the procedures initially, it had to be done anyway. In the long run, it is well worth the time.”

Outcome

For Lipschultz, the benefits of the program are clear. “We have cut costs, improved efficiency, improved employee satisfaction, and provided our people with a career path.”

The PM completion rate system-wide is near 98% annually. The department saves money in part because entry-level equipment inspectors are paid less than entry-level BMETs, but also because efficiency is improved. “Unlike BMETs, the equipment inspectors are not constantly interrupted by emergency repairs. This is their only responsibility, so they’re more efficient. They are on the floor every day, and learn the hiding places for equipment,” he says.

“The inspectors allow us to run more economically,” Learish agrees. “BMETs are free to concentrate on repairs. The program enables us to support a larger volume of equipment with fewer people.”

The program also allows the department to grow its own technical experts. So far, three of the department’s equipment inspectors have completed their training and been promoted to BMETs.

“This job is a step up for them in the hospital, and they are highly motivated,” says Lipschultz. Mike Robinson, now a senior BMET in the department, joined the group in 1990 as its first equipment inspector. He became interested in equipment while working as an operating room technician, and applied for the equipment inspector position when it was posted. Fourteen years later, he has completed extensive training and now holds a senior BMET position.

Gwen Butler, the newest equipment inspector and the

department’s only woman, moved into the job from a supervisory position in housekeeping. “I always liked electronics, and now I’m back in school furthering my education, working toward becoming a BMET,” she says.

Career options are also expanded for BMETs already on staff. They are more free to pursue specialized training and advance their own careers. “This program has been a good way to minimize expenses and free up more qualified staff to do other things,” says Learish. “We have been able to take on more high-tech staff, and to give the techs we have more training on high-end equipment.”

When John Learish came on board at the health system eight years ago, he wasn’t sold on the idea of equipment inspectors. He now clearly sees the benefits of the equipment inspector team, particularly for larger facilities and teaching institutions. “The equipment inspectors can focus on PMs, and don’t get interrupted unless I interrupt them,” says Learish. “It is more cost efficient than to have a larger BMET staff with half of them out looking for equipment. Finding time to do PMs is difficult.” ■