

The Future Is Now

Robots at Washington Hospital Center run errands so nurses and technicians don't have to

By Valerie Neff Newitt

Healthcare meets the *Jetsons* at Washington Hospital Center, Washington, DC. That's where a crew of seven robots, called TUGs, have been integrated into the workforce. They regularly scoot along hallways in the 2D med/surg unit while fetching and delivering medication carts, medical supplies and just about anything that needs to be taken from one place to another.

"Your delivery has arrived." Oh, did we mention they also talk?

Not Quite 'Star Wars'

That's not to say these robotic devices have the nearly human swagger of "Star Wars" personality R2D2. No, these are practical work horses that do one thing: Save humans from running.

Kimberly Krakowski, BSN, RN, pharmacy nurse liaison, explained how the TUGs have become part of the hospital team.

"There are shortages of manpower, but we want our people doing what they were trained to do. Nurses want to get back to the bedside and do what *they* are trained to do - deliver care - not hunt and gather."

Krakowski credits Jay Barbaccia, PharmD, director of pharmacy, for having found the robotic delivery system at a national conference and realized adding this innovative, cutting-edge technology would reduce non-value added time to nurses and technicians.

"Dr. Barbaccia recognizes the ever-important correlation between nurse satisfaction and retention. He thought these TUGs could perform deliveries traditionally done by pharmacy technicians, freeing technicians to provide a higher level of service to nurses."

Sensitive to the encroaching reach of technology into human employment, Krakowski noted, "We wanted to be very clear with employees that we were getting this technology as a way to help them, *not* to replace people. There are workforce shortages, and this is a way to relieve our people of grunt work... so they could work smarter, not harder."

Time After Time

Pre-TUGs era, it took a technician approximately 30 minutes to make one round trip to fill a medical request. "That's a huge expense of time," Krakowski noted. "Technicians would go from a satellite pharmacy down to the basement, then back up. 30 minutes. The TUG can do that in less time and will go to multiple satellites. It's like having an extra pair of hands."

Working off the facility's wireless infrastructure, TUGs travel the same corridors as the human staff, each making about 11 trips per day. "They travel at a nice clip, but still relatively slow. Each one has a laser that is constantly sweeping the area in front of it so as to detect objects; it will not run anything over. It moves with human beings walking around, but it is very safe."

Nurses Weigh In

Nurses at the hospital are giving a collective thumbs-up to this pilot program which will soon be expanded into other areas of the hospital.

"Everyone was really curious at first. There was some excitement, and some skepticism in terms of the possibility of increasing medication errors or threatening individual autonomy. But that has not been the case at all," said Megan Honor Caine, BSN, RN, clinical nurse I. Because the TUGs have been doing

"legwork" for pharmacy techs, "techs have been freed up to spend more time on the unit to interact with the TUGs and pull most of our meds; that frees a lot of our time as well."

Krakowski further explained, "In our pilot program, a pharmacy technician on one nursing unit manages everything delivered to that unit by a TUG, including linen inventory. They maintain all of the supplies like IV fluids and gauze, and put it away. They proactively see if something's running low, rather than wait for a daily inventory. They are *constantly* making sure the nurses have what they need. As something is ordered, they're on the case. The hunting and gathering for nurses is decreased."

Kamila Bhagwandeem, RN, agrees the TUGs have improved life on the job. "Patient satisfaction scores have gone up because we get more one-on-one time with patients."

On the practical side, Bhagwandeem noted, "We send dirty linens away on a TUG, and pumps go back and forth on a TUG."

In fact each TUG, named by staff members, has an assigned duty: Luke, Lucy and Bond work in the pharmacy; Ebony is in clinical support, delivering IV pumps, compression pumps, etc.; Pigpen retrieves dirty linens; Phyllis delivers clean linen; and Arnold carries medical materials, like gauze and IV fluids, different supplies.

Cost Effective & Fun

Krakowski said the hospital pays a monthly fee to lease a TUG. "When you do the math, consider that it works 24 hours a day, doesn't take vacations or call in sick. It's a really good buy, so to speak," said Krakowski.

And then there's that hard-to-quantify fun factor the TUGs have brought to the environment.

"People stop and stare; they want to know more," said Krakowski. "My favorite moment was when a TUG passed a woman [visitor] who quickly got on her cell phone and said, 'You're not going to believe what they have at this hospital! A robot! And it delivers things, the nurses said.'"