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Parkview Health leads COVID fight innovations

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In the ongoing battle against COVID-19, a Fort Wayne-based hospital group is leading the innovation drive to prevent the virus' spread — and ultimately — to save lives.

The Parkview Hospital Innovation Team is doing its best to create new Personal Protective Equipment (PPE) and other technology needed to combat the novel coronavirus locally and nationally.

A mannequin displays the Powered Air Purifying Respirator hood, one of the innovations that Parkview Health is working on with companies around the region as it deals with COVID-19. (Contributed)

“Innovations can often emerge rapidly from crisis as it provides conditions for thinking differently,” Jolynn Suko, Parkview senior vice president and chief innovation officer, said in a news release. “With COVID-19, we saw the opportunity to support all patients and caregivers, not just those in our region. While some designs have the potential to be used today, the ideas being created by our Innovation Team are part of a global effort to address critical needs and save lives.”

Perhaps one of the team's most significant contributions is the PAPR hood, which stands for Powered Air Purifying Respirator. Rather than just a simple mask, the PAPR

covers a person's entire head and uses a blower motor attached to the suit's belt to provide clean, filtered air for the wearer.

Health workers still wear traditional PPE — such as masks and gloves — under the hood, but the PAPR provides better defense against air-borne contagions like COVID-19.

And the PAPR hood already has been produced and shared with other health facilities around the nation, according to Tami Brigle, public relations manager for Parkview Health.

"This is one of those things that can be shared with other hospitals across the county," Brigle said. "And then, hopefully, around the world, as well."

"It's already being used at hospitals," noted Charlotte Gabet, manager of Parkview's Innovation and Simulation Lab. "And we've heard from working respiratory therapists that have used it that it's more comfortable than the manufacturer's one they've used before."

"And this is definitely something that is used by the Parkview staff."

The team also is helping craft new prototypes to address the national shortage of ventilators, which are desperately needed to treat COVID patients.

The group has fashioned three new designs, according to Brigle. The first is a development that adapts a traditional ventilator so it can treat four patients at a time, instead of the traditional one.

The second prototype modifies a normal CPAP machine to work as a ventilator. CPAP (Continuous Positive Airway Pressure) machines typically are used as a treatment for patients that suffer from sleep apnea. The machines produce a mild level of air pressure to keep the patient's airway open during sleep.

The other prototype created by the Innovation Team uses existing oxygen systems that flow into hospital rooms, and converts them into ventilator machines.

Parkview's Innovation Team is a group that was formed to tackle tricky health care quandaries and create solutions for those problems.

"We train everyone at Parkview, and work with our groups to make sure we can solve these problems," said Adam Fischer, Parkview simulation lab supervisor, about the team. "We try to take problems, work with internal programs, and come up with solutions to those problems.

"We're trying to be ready for what might be on the way, and make our teams ready to deal with those problems," he said.

For instance, the team has been working on a way to lower infant mortality rates, as well as using high-tech mannequins to practice patient treatment for such disasters as vehicle crashes and active-shooter situations.

The mannequins used are so life-like, Fischer said, their chests heave up and down — as if breathing — their eyes react to light, and they even cry and sweat.

The team also is ingeniously using 3D printers to craft face shields, face masks, and hoses and connectors needed for treatment equipment like the PAPR, according to John Lozo, a health care simulation specialist who's been at Parkview nine years.

"We're using two different 3D printers; we can do that in-house," Lozo said. "We've just been taking existing designs and modifying them.

"There are a lot of manufacturers working on stuff like this right now," he said. "But what we're trying to do is take all these designs, and make sure they do what they say they will do."

Even local schools and businesses are getting in on the act, helping the Parkview team. The innovators had help from students at Trine University, Purdue University Fort Wayne, as well as workers at area companies such as MasterCraft, L3Harris Technologies, and QSC Fort Wayne.

Indiana Gov. Eric Holcomb recently applauded LaGrange-based Mastercraft, the world's largest maker of RV furniture, has been making non-medical isolation gowns, producing thousands each week

Purdue University Fort Wayne students teamed with L3Harris to produce 3D-printed parts for respiratory apparatuses. Trine is developing devices that provide alternatives to equipment in limited supply, such as ventilators and N95 respirator masks.

Already, the Parkview Innovation Team concepts are making their way around the country. The new ideas and prototypes have been shared with Massachusetts General Hospital in Boston, among others.

And while the designs and prototypes have not yet been evaluated or cleared by the Food and Drug Administration, Parkview officials hope they soon will.

Suko, the Parkview vice president and chief innovation officer, said she hopes her team's work will prove fruitful in the continuing fight against the disease.

"We're proud of what our team has built in collaboration with local and global innovators," Suko said, "and we hope some of these ideas can be implemented in pandemic response efforts.

"We will continue to refine our ideas and come up with more potential solutions to meet critical needs for the health care industry."

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