

# Increasing the Ventilator Supply

By Deanna Boyd Spangler [✉](#) · Posted April 10, 2020

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**Matt Nolan shows off one of the recently repurposed anesthesia machines.**



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As Texas Health prepares for the likely surge of COVID-19 patients, the organization is exploring innovative ideas to make the most of our equipment and supplies. To increase the number of ventilators available, Texas Health hospitals have begun repurposing anesthesia machines into ventilators.

Recently approved by the U.S. Food and Drug Administration (FDA), the reallocation of the equipment could provide Texas Health hospitals with 127 additional ventilators if needed for COVID-19 patients, bringing the total number of ventilators to about 440.

"Nationally, there is a shortage of normal ventilators. Rental companies are totally out. Manufacturers are being overrun with orders. Supplies are becoming shorthanded as well," said Pete Larose, senior director of Healthcare Technology Management. "We have to look at alternatives on how we could provide ventilators for our patients and using the anesthesia machines is a great way to help supplement the shortage."

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The idea to address a potential shortage of ventilators came up as a result of extensive planning at the system level. System leaders worked with hospital officials to look at bed, staffing and equipment capacities and opportunities to maximize our opportunities to prepare in advance.

"We appreciate the innovation and willingness of individuals across the system to think creatively to find solutions to meet our anticipated needs," said Winjie Miao, senior executive vice president and chief experience officer. "We have worked diligently for many weeks to prepare as much as we can to maximize our resources to keep our care team members and patients safe."

### **How it works**

Pete said his team worked with physicians on the medical staffs and used information provided by the two manufacturers of anesthesia machines used at Texas Health – Dräger and GE – to create standard operating procedures for repurposing the machines. Having the information directly from the companies is an important step because as a system we must be careful not to tinker with equipment and potentially invalidate warranties.

Because anesthesia machines already have a ventilator component, he said the main alteration involves removing the anesthesia gasses.

"That's really helpful because once this is all over, we can roll them back and not have to worry about trying to reconfigure them or changing parts," Pete said.

Because of the anesthesia machines' larger size and greater power needs, the machines will be used in areas such as the post-anesthesia care and intensive care units, Pete said. They will be set up by anesthesiologists and techs although respiratory therapists and nurses may be trained in their use, he said.

Pete said all of the hospitals now have the repurposed machines in place and ready for use as backup if needed.

### **Filling the gap**

At Texas Health Harris Methodist Hospital Southwest Fort Worth, one of the four anesthesia machines recently repurposed is already in use by a patient, according to Matt Nolan, director of the hospital's cardio-pulmonary services.

Analytics have predicted that Texas Health Southwest could need up to 25 ventilators in its intensive care unit depending on how the surge progresses and the impact of social distancing, according to Gretchen Hunt, chief nursing officer. The hospital typically has an inventory of 17 ventilators, including two that are used at Texas Health Hospital Clearfork.

But by using anesthesia machines, the hospital could increase their ventilator inventory to 40, Gretchen said.

"We hope to avoid putting our healthcare providers in a situation where they have to make the hard, ethical decision about who gets an equipment resource," Gretchen said. "The more of those ventilators and anesthesia machines we have to align with the needs of our patients, the less we have to make a very difficult decision."

Matt said it took about an hour for the hospital's anesthesia units and Bio-Med to repurpose each anesthesia machine.

"We're just taking a machine out of the anesthesia world and putting it in our respiratory world and making it fit," Matt said.

Because elective surgeries have been canceled, smaller, outlying hospitals that may not have enough anesthesia machines to dedicate as ventilators can partner with SCA, Texas Health's ambulatory surgery center joint venture, to use their anesthesia machines, Pete said.

Gretchen said she feels fortunate that Texas Health has been able to gain insights from other parts of the country and world to better prepare for the surge.

"We're blessed in Texas that we've learned some lessons from others, and this is one of them," Gretchen said.

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