

## Breathing Easier: New device will help EMTs get patients' lungs pumping again

By [Laura Hawkins](#) | Managing editor

The brain starts to die immediately when it doesn't have oxygen. So the faster Emergency Medical Technicians can establish a proper airway into a nonbreathing patient, the better the result.

To do this, the tools EMTs have at their disposal during a crisis are critical; every second saved could be another mother, father, daughter or son kept alive.

That's why Donnie Woodyard, director of Emergency Medical Service education at Riverview Hospital, is so excited about a new product developed by a local business.

The King LT-D, or Laryngeal Tube n Disposable, was created by Noblesville-based King Systems and, according to Woodyard, is about to revolutionize the industry.

"This is amazing," he said of the device. "I truly believe this airway is going to change the way EMTs across the U.S. handle nonbreathing patients."

There are two channels in the throat; one leads to the stomach and the other to the lungs. The problem is that the pathway to the stomach is near the back of the throat and is where most airway tubes want to go first. To get the tube in the lung pathway is a bit trickier.

One device used by paramedics, which are EMTs with more training, is the endotracheal tube. It requires the paramedic to use a metal device to open up the throat, look for the correct pathway to the lungs and insert the tube into the trachea.

This device also allows paramedics to administer needed medications to the patient and is the preferred method of establishing an airway, Woodyard said. The problem is that only paramedics are trained to use the endotracheal tube.

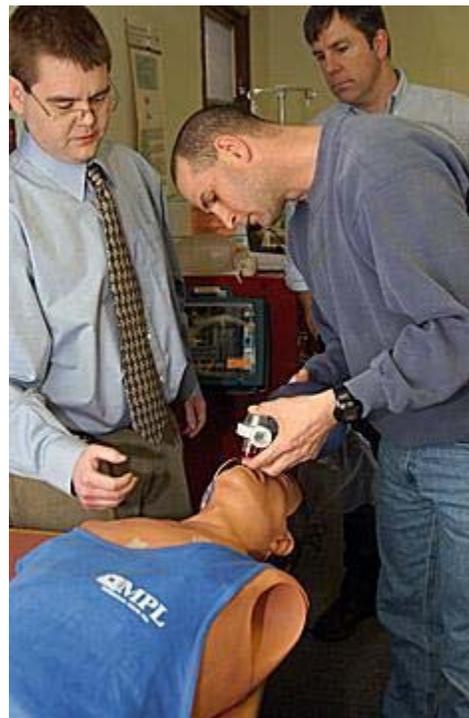


Photo by [Robert Herrington](#) | Riverview's Donnie Woodyard, left, instructs Noblesville paramedic Henry Layne how to insert the King LT-D into a dummy as Riverview paramedic Brad Nichols looks on. The new device was created by King Systems in Noblesville and currently is being used by the U.S. military. All Hamilton County EMTs soon will be trained on the device, which will then be marketed throughout the state and the nation.

This is an issue because, in many there may not even be a paramedic on emergency medical staff. If there are there always are more EMTs. Hamilton total of 450 EMTs and paramedics

Riverview paramedic Brad Nichols said breakdown of EMTs to paramedics is or four to one, easy."

Nichols and Noblesville paramedic Henry Woodyard demonstrate the devices can use — the combitube and now the

The combitube has two ports coming is done by blind insertion.

"You just put it in the patient," said.



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Layne helped Indiana EMTs King LT-D.

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The problem, however, is that the EMT then must figure out which pathway the tube entered by listening and watching the patient. Nichols placed the combitube into the throat of Jake the Dummy. When he pumped air into one port, Jake's stomach rose. To move the air into the lungs, he inflated the balloons along the shaft of the tube and started administering air to the other port. This time, the lungs rose.

Woodyard explained that in a loud and chaotic environment, such as a car accident, it can be difficult for the EMT to determine if the air is going into the lungs or the stomach. Much of the decision is determined by sight and by sound, he said. The result of a wrong choice could be death.

The new King LT-D only has one port, so it simplifies the process. "And it goes to the same place every time," Woodyard said.

Having not seen the King LT-D before that moment, Layne examined the device. It is shorter than the combitube and also has two balloons along its shaft.

Layne took the King LT-D and inserted it into a different dummy's mouth.

"All the way in," Woodyard instructed. "Now pull it back out a bit."

Layne inflated the balloons along the tube, fit an air pump over the head of the tube and started to squeeze. The air went into the lungs. Stepping back, Layne nodded.

"It's a whole lot easier," he said. "I think it's going to improve the amount of air they're going to get and the quality of air."

In addition, the King LT-D is made of a softer material, unlike the hard shell of the combitube, and it decreases the likelihood of throat trauma, Woodyard said.

The device was approved for use by the Indiana Emergency Management Agency in the past month, and a training program at Riverview has been approved by hospital administrators. Soon, all EMTs in Hamilton County will begin using the new device.

"The amount of training really is the big key," Nichols said.

EMTs can be trained using the King LT-D in one day, much less time needed than for the combitube. At about \$40 to \$50, King's item also is about half the price.

"The EMTs at Riverview are the first in the country being trained on the new airway," Woodyard said. "This will be the first large-scale training on this device prehospital. We're helping King (Systems) tweak training supplies for the U.S. market."

"Donnie's helped a tremendous amount," said Dennis Irlbeck, market analyst for King Systems. "He saw the concept quickly. He was able to help us kind of get the grassroots thing going."

"I think the beauty is that the innovation stuff is coming from right here in Noblesville," he added, "instead of somewhere else in the world. Indiana can serve as a stepping stone in other states."

According to Tom McGrail, director of research and development for King Systems, the company already is marketing the product to other communities in and outside of Indiana.

The U.S. military, however, has been using the device in emergency situations across the world since July.

The product first was developed two years ago, and a reusable version has been used in operating rooms in a more stable environment ever since. When the military heard King was working on the disposable device, they asked for it as soon as it was ready.

"It's probably most widely used as a potential in the OR," McGrail said. "However, the options that are available to the EMS folks are far less, that's why it's so appealing."

King Systems is one of the leading manufactures and suppliers of anesthesia face masks and breathing circuit products worldwide. Irlbeck explained that about one in every three anesthesia procedures in the U.S. use a King Systems product.

"The application of using these products outside of the OR crosses something new," Irlbeck said.

"We don't make consumer medical products, but this is something that would actually touch the lives of many more people at a critical moment in their lives. Eventually we'd like to see them sitting next to those defibrillators," he said.

Deputy Director Michael Garvey of the Indiana Emergency Management Agency, which regulates EMS systems in the state of Indiana, agrees that there could be widespread applications for the King LT-D.

"I even see it being taken down to lower levels of certification," Garvey said, noting first responders, who still log about 45 hours of training in basic lifesaving techniques but are less trained than EMTs, could benefit from the device as well.

"It's kind of nice to see something new come out that can help save lives," he said, noting he hasn't seen a new product like it come out in the past three to five years.

"I think it has great potential to impact emergency medical services, and I can see it having an impact across the nation."