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On-call angels: Air ambulances save lives

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When Capt. Jerry Tanner Jr. of the Hudson Fire Department is at the scene of a traffic crash or a medical emergency where a patient needs to be flown directly to a trauma center, he knows exactly what to tell the patient about what is going to happen.

How does he know? He was once a patient.

On June 11, 2002, Tanner was driving Hudson's Engine 6 when it overturned while rounding a curve on North Rollin Highway just north of Plank Road on his way to a structure fire. He was the lone occupant and was thrown from the engine's cab. The engine landed on him, but because most of the engine was over a ditch, he only suffered three broken vertebrae in his back and his left leg was pinned instead of far more serious injuries.

He was under the truck for 49 minutes. Some civilians jacked up the engine a little, which helped him breathe.

"All the guys from the Hudson and Addison fire departments were there," Tanner, 33, said recently.

The paramedics had called for Life Flight, and soon the teal and white helicopter was on the scene. One of the crew was flight paramedic Ryan Rank, who is also an assistant fire chief of the Madison Charter Township Fire Department.

"I knew we were coming to a fire truck that had rolled over, so emotions were running high," Rank said Thursday. When he got to the scene, he found out it was Tanner, who had once been a student in his emergency medical technician class.

"To look up and see his face was a great relief, to see someone I know," Tanner said.

He was soon pulled from under the fire engine and loaded into the helicopter.

"They bundle you up, and you're pushed into the helicopter," Tanner said. "It's pretty cramped spaces. As a patient, all you see is the equipment and this face right next to you, your angel."

That angel in Tanner's case was Rank.

"I knew it was more comforting to him," Rank said. "I'm sure it made everybody (the other

firefighters) more at ease."

Bumpy and noisy

"It's bumpy and noisy, and all you can see is the equipment and that one person's face," Tanner said. "I had a feeling that everything was going to be OK."

He didn't have long to think about the flight.

"It seemed like no time at all and -- boom! -- I was at St. Vincent's hospital," he said. "I didn't realize the time frame it takes to fly."

Flight time from Lenawee County to either the Toledo or Ann Arbor hospitals is 10 to 15 minutes, depending on the location of the emergency. To drive to any of the hospitals could take an hour.

"In the community we have somewhat of a luxury of being in the middle of everywhere and have the luxury of multiple helicopter services," Dr. Greg Fuller, medical director for the emergency departments at both Bixby Medical Center in Adrian and Herrick Memorial Hospital in Tecumseh, said.

The oldest of the four services is Life Flight, which is celebrating its 25th anniversary this year. Its helicopters that serve Lenawee County generally fly from St. Vincent's Mercy Medical Center in Toledo and the airport in Wauseon, Ohio. It is affiliated with St. Vincent's and the Medical College of Ohio hospital in Toledo.

The newest service is ProMedica Air, which started service on March 31, 1999. Its green and white helicopters fly to Lenawee County from Toledo Express Airport in Swanton, Ohio, and usually take patients to the Toledo Hospital. It is part of ProMedica Health System, which is the hospital network that includes Bixby Medical Center in Adrian and Herrick Memorial Hospital in Tecumseh.

Flying from Ann Arbor are the maize and blue Survival Flight helicopters from the University of Michigan Health System, and Midwest Medflight bases its red and white helicopter at St. Joseph Mercy Hospital. Medflight has been in operation since 1986. Survival Flight is the official air ambulance of Michigan International Speedway and stages a helicopter there during races. At 21 years old, Survival Flight is the oldest hospital-based air ambulance service in Michigan.

Life Flight program director B. J. Pasztor said air ambulance service was based upon the military's use of helicopters to transport seriously wounded soldiers to hospitals in the Korean and Vietnam wars. The first civilian, hospital-based air ambulance service was Flight for Life in Colorado, which was founded in 1972.

The 'golden hour'

The helicopters help bring patients to a trauma center within what medical professionals call the "golden hour."

"That is the hour from the time of injury to the time of getting to definitive medical care," Fuller said. Getting treatment within an hour of injury improves the likelihood a patient will survive a traumatic

injury.

Dr. David Lindstrom, medical director for the ProMedica Transportation Network, said speeding heart attack and stroke victims to treatment also greatly increases doctors' ability to prevent disability or death.

"There was a fresh heart attack at Bixby hospital, and the timing of things was fabulous," Lindstrom said. "This was a young adult, late 40s, who was transferred to the (heart catheterization) lab and a heart physician. We were able to reopen that artery.

"When patients get to a cath lab in 90 minutes or less, their outcomes are significantly better."

He said a key to success in that case was the patient didn't procrastinate when he felt ill, Lindstrom said. He said some people will feel ill and not want to go to the hospital.

The four helicopter services make about twice as many patient transfer flights as flights to emergency scenes and can assist in search-and-rescue missions, but it is the trauma missions that get the attention.

The Toledo Hospital, St. Vincent's, MCO and U-M are all certified as Level 1 trauma centers, meaning they meet certain criteria such as having doctors who are trained in treating traumatic injuries, such as internal injuries, gunshots and breaks of long bones; are on staff 24 hours a day, seven days a week; and meet certain levels for publishing research.

St. Joseph's hospital is a Level 2 trauma center. Judy Kettenstock, Midwest Medflight program director and a flight nurse, said St. Joseph's does not qualify as a Level 1 only because it does not publish enough research each year.

Bixby is a Level 3 trauma center, Katie Hammond, spokesperson for the Lenawee Health Alliance, said.

"There are very few Level 1 trauma centers in the state," Fuller said. "The reason being is the requirements are extremely stringent. You have to have open heart (surgery) capabilities, you have to have a trauma team with a trauma surgeon on site 24 hours a day. That means right here at the hospital. Those capabilities are not at every hospital."

Guidelines for use

As project medical director for Lenawee County, Fuller sets the guidelines that local firefighters and paramedics use in determining when to call for a helicopter.

"What I'm trying to establish is trying to get the nearest helicopter to the scene of where the people are injured," he said. "That has not been established. Ideally it would be best to, of course, have a helicopter in the community because it cuts down on flight time."

Lt. Randy Kelley, supervisor of the Lenawee County Sheriff's Department's 911 dispatch center, said the dispatchers call for the service the paramedics on the scene request. They will only call a different service if the requested service is unable to respond.

"I feel and my staff feels we should not be making a second call for the paramedic on the scene," he said.

Steve Jaskot, a Raisin Charter Township Department of Public Safety paramedic, said he tries to call for an Ann Arbor-based helicopter if an emergency scene is north of M-50 and a Toledo-based service if the scene is south of M-50.

"All the helicopters by law are all equipped pretty much the same," he said. "As long as it lands and takes my person and is properly equipped, that's what I'm looking for. They all have done a good job for me.

"We have to work on our best judgment. Is this something where somebody needs to be at a big center? We're trying to make the best call at the moment."

Pasztor said most Lenawee County fire departments ask for whichever air ambulance they feel will provide the best service.

Raisin Charter Township Public Safety Director Richard Renard said the first responders will decide whether to call for an ambulance based on information provided by dispatchers, such as what the incident is and any details on injuries. If police officers arrive at the scene first, they can provide additional information to the paramedics.

Burn patients usually are flown to a burn unit in Ann Arbor or Toledo, Renard said. If a traffic crash victim needs to be extricated from a vehicle, a helicopter will be called because of the time it takes to cut someone out of the vehicle. It is quicker to bring the helicopter to the scene than to take the patient to Bixby or Herrick before being transferred to a trauma center.

Paramedics will often ask that the helicopter crew be put on standby while they are en route to the emergency, which gives the crew time to get on board, the pilot time to check the weather and warm up the engines, and the service's dispatchers time to plot the location as provided to them from the 911 center. That way, if the patient needs to go to a trauma center, the helicopter can take off right away when that is determined. If it's not needed, the crew goes back to its quarters. Sometimes while in flight, the paramedics on the ground will decide the patient can be treated locally and will either tell the helicopter crew it is no longer needed or will use them to transport the patient to Bixby or Herrick.

Airborne in six minutes

Representatives for each service said they can be in the air within six minutes of receiving a call.

Each of the four services fly with a three-person crew: the pilot and two medical personnel. Krista Hopson, spokesperson for the U-M Health System, said Survival Flight takes either two flight nurses, or a flight nurse and a physician or resident physician in training. Kettenstock said Medflight takes a flight nurse and a paramedic.

Lindstrom said one of ProMedica Air's three helicopters flies with a flight physician and a flight nurse. The other two helicopters have a nurse and a paramedic.

Pasztor said Life Flight flies with either a nurse and a physician or a nurse and a paramedic. Specialty doctors are also available, such as for obstetrics or newborn care.

Lindstrom said the crew members all have several years of experience. The minimum requirements to work for ProMedica Air are a year of emergency medicine experience and a year of critical care experience in an intensive care unit setting.

"Most people come to us with several years of both," he said.

The flight nurses are also trained in conducting operations at an emergency scene and have their paramedic certification. The paramedics go through intensive reviews of on-scene procedures. Physicians go through orientation on working at a scene.

The crews are trained to do advanced pre-hospital treatment, such as opening airways or draining fluid from lungs. Hopson said Survival Flight's helicopters are equipped to handle critically ill newborns, patients on artificial hearts or lungs and patients needing spinal stabilization.

At the scene

While at the scene, the pilots will keep the rotors turning if the patient will be loaded quickly. The engine noise drowns out normal conversation, and the wind created by the rotors bends small trees. Inside the helicopter, the noise is much less, and there is no wind.

The helicopters can fly in most kinds of weather, except for foggy weather, low cloud cover or icing conditions. Kettenstock said Medflight also has a limit of not flying in wind gusts of 45 mph or more.

ProMedica Air's helicopters can handle high winds, Lindstrom said.

The pilots for each service decide if they can fly. Lindstrom said they are not told what kind of emergency to which they are being called so that won't influence their decision.

"Last Tuesday I flew, and the wind speed was 50 knots," he said. That translates to 58 mph.

Lindstrom said while the helicopter is en route to a scene, the crew will communicate with the fire department's scene commander to find out where the landing zone will be and be updated on the patient's condition. ProMedica Air flight nurse Todd Dowe said the helicopter usually flies at about 2,000 feet. ProMedica Air pilot Ed Gabryszewski said they ask fire departments to find a space 100 feet by 100 feet large, but the helicopter can land in spaces as small as 75 feet by 75 feet.

"The rotor diameter is 40 feet, so you don't want to do much less than 75 feet," he said.

All the services provide training for fire departments on setting up landing zones and how to work around the helicopters.

"It doesn't cost them a dime," Gabryszewski said. "It's all a part of our community service so that they understand how to work safely."

After picking up the patient, the crew will try to tell the patient what is happening, step by step.

Lindstrom said they have a set of headphones the patient can use if they like. They'll let them know when they are about to lift off and land and what to expect at the trauma center, which will likely be very busy.

"Since my accident, I've got to work with two people that have been flown," Tanner said. "I use that as a tool to work with them. I like to think that it helps them."

"We meet a lot of really nice patients," ProMedica Air flight physician Jeff Hugus said. "They're talking to you. We enjoy interacting with them. We're constantly talking to them. That way we can keep a good track on their mental states, make sure there's nothing we're missing."

Patient follow-up

The services like to do follow-up with their patients, both for quality improvement and just to see how they recuperate.

Hugus said children are the most likely to send thank-you notes.

"The parents, obviously, are very grateful for what we do," Hugus said. "We do a lot of pediatric flights."

Rank said Life Flight will have presentations where community members can check out the helicopter and meet the crews.

"I had a patient come up and tell me, 'I do remember they were excellent to my wife,'" Rank said. It turned out that Rank had been on the crew that had flown that man from Coldwater, and his wife had been upset about her husband being injured.

"That makes you feel good, to be thanked," Rank said. "We didn't do anything more than get you from one place to another quickly."

Pasztor said Life Flight is planning a reunion for its patients on July 25 at Fifth Third Field in Toledo as part of its 25th anniversary celebration. All four Life Flight helicopters will land on the baseball field as part of the reunion.

"We're very excited to bring as many together as possible," she said.

Despite his injuries, Tanner was back at his job as a corrections officer at the Gus Harrison Correctional Facility in Madison Charter Township in seven weeks and six days. A month later, he was cleared for firefighter duty.

"I can still do the same things I could do before, but I need to be more careful," he said.

He said his accident and injuries were a "life-changing experience," and he's happy to tell people about the services air ambulances provide.

"When you get in that helicopter, you're going with good people to get great help," he said.

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