

## "On the Fly"

By Shelby Evans

For Holly Christensen, RN, a NICU nurse at Children's Hospital & Research Center Oakland, transporting children from neighboring communities for specialized care is nothing new. A 23-year veteran of the hospital, she has accompanied critically ill patients for 20 years. But until recently, these routes were firmly routed on terra firma. Now, through a partnership between Children's Hospital Oakland and REACH air transport services, she finds herself in the domain of flight nurses.

Charged with the safe transport of neonates as young as 24 weeks and tiny as 2 kg in the confines of a helicopter - with a limited ability to hear and even more limited space - there is definitely a thrill in the air.

After more than six transport flights, Christensen has become accustomed to the unique challenges involved, but she recalls the steepest part of the learning curve. Although the neonates are of comparable acuity to those she sees in the NICU at the hospital, the transport "staff" - just the NICU nurse and the REACH flight nurse - means both nurses' skills are crucial.

"Most of the kids we've taken by REACH have been ventilated," she explained. "If we were doing a regular transport by ground, I'd have a doctor with me and a respiratory therapist, but when we do this via REACH transport, there's only the two of us.

"I found we really had to rely on each other. She relies on me for my neonatal expertise, and then I really rely on her because she's the one who knows about the ventilator."

### Need for Speed

The complementary expertise of the two nurses is the key to what makes the program successful, according to Tess Estocapio, RN, transport coordinator at the hospital. Though REACH nurses are highly skilled, the expertise of the hospital's NICU nurses means the "hybrid" program expands the service capacity.

"Initially they were doing most of the neonatal transports for us, but they had certain criteria - the babies had to be stable and they had to be more than 2 kilograms," Estocapio explained. "Then we discovered they couldn't support us better because we were getting sicker and sicker infants, which means we were going on ground transports and it was taking longer to bring those infants to Children's.

"Two years ago, we started a discussion about doing a hybrid program where they would come down and get one of our nurses to go with them."

Getting the program aloft wasn't easy. "It was a difficult sell with the nurses because it's totally outside of their comfort level," Estocapio acknowledged. "This is a totally new program and we're working with a different company; the REACH nurses are from a different institution, a different provider from what we're used to."

However, Estocapio knew the importance of providing the service would help the NICU nurses overcome their apprehension. Calls to transport neonates were coming in from Redding and Modesto - a 90-minute ride from the hospital each way by ground, totaling 5-6 hours to bring the infant to the facility. She began a campaign to involve nurses in the first step, FAA safety training, to drastically quicken transport. A group of 16 highly experienced nurses agreed to participate in the program, a 4-hour safety class that included both didactic and hands-on instruction, as well as acclimation to the tiny workspace within the helicopter.

"We spent a day at the airport and they talked about the physiology of being up in the air and the mechanics," Christensen said. "Then we actually got to go to the base and load and unload the Isolette."

"It's challenging in there because you're wearing this big helmet and you can't hear anything, so you're really relying on the monitors and how the baby looks," she continued. "You can't hear the ventilator alarms, but you can watch the pressure manometer."

After the safety orientation, the next step was a mock run-through that would give the team an opportunity to evaluate what further preparation would be needed. But it's not until a "live run" that the real learning takes place, Estocapio said. "We waited for a call where we actually had an infant we could bring in."

## Taking Wing

"We had two calls that gave us the opportunity to go out there - really with a lot of hesitation," Estocapio acknowledged. "We were not prepared for what to expect and how the nurses would react to all this. We went ahead and sent one of our nurses for a very stable infant."

From the very beginning of the process, when a call comes in, the nurses work closely with the neonatologists to prep for the patient. A red phone in the nursery connects directly to REACH dispatch when it's determined a patient needs air transport. For helicopter transport, the transferring facility must be within a 160-mile radius of Children's Hospital Oakland. If one of REACH's two flight nurses trained in neonates is unavailable, the NICU - with 16 hybrid-trained nurses, covering three shifts - likely has one available to go.

"Then, the path is in staffing. If the nurse has a light assignment, somebody will absorb it, and then she goes for transport," Estocapio explained. "There's much more preparation she has to do because she's the one person, whereas with ground transport, she has two EMTs with her and a respiratory therapist plus the doctor - there's five of them going out.

"This time she's by herself with the REACH nurse."

Handing off her patient load, the nurse works through a checklist, prepping supplies and stocking meds from the pharmacy, and consults with the neonatologist about the case and dons her flight suit for the trip. The emergency department acts much like air traffic controllers, coordinating the REACH flight's landing on the helipad at Children's Hospital Oakland, at the facility where they will be picking up the patient, and then back. Then it's a matter of the nurse waiting for her ride.

"There's a lot of communication between the ED, REACH and security," Christensen said. "When we get a call to the nursery saying they'll be landing in 4 minutes, it really is 4 minutes! So we go out and meet the helicopter on the helipad on top of our tower."

Communication with the specialists in the NICU always is available to the hybrid team in the air, but Christensen emphasized the nurses have the final say if a case is too complicated or they are uncomfortable going up for the transport. "We have two neonatologists who can go with the REACH flight nurse," she explained. "But, so far it's been a great experience; the kids have 'behaved' and we haven't had any problems."

## Two-Way Street

In the air, the nurse may be separated from her colleagues back in the NICU and expected to be highly autonomous, but through the program, the NICU and REACH nurses have learned to rely on each other. It's forged a learning opportunity on both sides.

"It's scary, but the [hybrid nurses] like the fact that their senses really become heightened because they know they're calling the first assessments on this child," Estocapio said. "I think they were unprepared for how they're going to be supported by the [REACH] nurse; they're so amazed by the support they're getting."

Estocapio was surprised to learn the REACH nurses - who are experts in landing at accident scenes and stabilizing and transporting acute patients - also were apprehensive about the hybrid program.

"It's the size of the patients, we found out; they were scared to have those tiny infants," she said. "It's quite daunting if you're used to big patients and all of a sudden, you have one that is the size of a soda can."

"The REACH nurses are trained to do all the intubations and procedures, and we come in with a ton of experience with the neonates, so it's a real team effort," Christensen said. "When we get back, they say, 'OK, let's debrief.' I'm not used to that word! We talk about

what we could have done differently, what we could have done better, how it went. So, on both sides, we're learning a ton."

The debriefing, including the NICU and REACH nurses, takes place after each transport, comparing notes, evaluating and figuring out how to improve the partnership and enhance the service.

On the Fly :

### Inner Space

For Estocapio, the need to coordinate both safety and space constraints has been a substantial challenge - and her biggest surprise. From minimizing the size and weight of the nurses' medication transport bags to accommodating the specialized equipment necessary for NICU patients, the new program means a new set of problems to solve.

"What we're tweaking now is equipment configurations; we're working on trying to bring nitric oxide on flights," she said. "Safety is always our No. 1 concern, so everything we bring has to be bolted in because the space is so limited and the weight is limiting. To get a configuration, I have to get people from REACH and people from our biomed department to work together."

The challenges of coordinating these moving parts has been the most unexpected surprise since beginning the program, Estocapio said.

"It would be easy for a doctor to say, 'I want to be able to bring nitrous oxide on my next trip; I want this capability,'" she noted. "Easier said than done! I have to find a way to execute what they want, and executing means you have to be within standard safety practices. In ground transport, you can belt it and bolt it, but in flight, if something comes flying off, you'd be in trouble.

"With the helicopter, you're talking about FAA safety standards and it's a totally different ball game!"

### Speedy Delivery

Since the launch of program, the first of its kind in Northern California, NICU nurses from Children's Hospital Oakland have been averaging about two transports per month. Of the benefits of the program, first and foremost is the ability to transport these infants quickly - a ground transport from Stockton that could have taken 5-6 hours round trip now can be executed in 1 hour by air. But the program has given the nurses a new vantage point in more ways than one.

"Children's services a huge area of Northern California, and to be able to see it from the air is amazing," Christensen said. "I've been doing transport for a long time, and it's fun

to still be excited about it. There's always something new and different happening around here.

"And I think more people are getting excited about this program and want to try it."

Estocapio's biggest satisfaction comes from seeing the project come to fruition, witnessing firsthand the benefit to some of the region's most critical, complicated neonatal cases. But she also has been pleasantly surprised by the feedback from the participating nurses.

"Truly our nurses have become the eyes and ears of our doctors," she said. "First they enjoy the ride, and second, they realize it's a totally new role for them; it's very independent.

"It was a difficult sell, but the reward for me is hearing they would go out again," Estocapio said. "I'm always happy to hear that when they come back."

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