Medical News & Perspectives

A Day in the Life: NICU Medical Director Tends to Infants With Neonatal Abstinence Syndrome

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This is the first in an ongoing JAMA Medical News series profiling the daily routine of health care professionals making a difference in their communities.

Dina E. El-Metwally, MD, PhD

Bill Seiler/University of Maryland Medical System

Dina E. El-Metwally, MD, PhD, is the medical director of the level 4 neonatal intensive care unit (NICU) at the University of Maryland Children's Hospital (UMCH) in Baltimore. Medicine runs in the physician's family. Her mother was a professor of pediatrics and her father was a urological surgeon in her native Egypt. After graduating from medical school at Suez Canal University in 1990, El-Metwally joined the pediatric faculty there. She later trained in neonatal and perinatal medicine at Brown University School of Medicine before returning to Egypt to care for sick infants in 2000. She earned her doctorate in philosophy in neonatal neurodevelopment a year later.

"Neonatology was very new in Egypt at that time, and we didn't have survival of very low-birth-weight babies," El-Metwally said. "I wanted to deal with children, and I really wanted to train in something... that could [improve] the chances of those babies."

El-Metwally left Egypt in 2007 to join the neonatal transport team at the Hospital for Sick Children in Toronto. In 2008, she became the founding director of the neonatal fellowship program at the King Fahad Armed Forces Hospital in Jeddah, Saudi Arabia, before arriving at UMCH in 2011. Today, in addition to running the NICU there, she is an associate professor of pediatrics at the University of Maryland School of Medicine.

As Baltimore's opioid crisis has exploded, El-Metwally has seen a sharp increase in the number of infants with neonatal abstinence syndrome (NAS). Between 2007 and 2016, admissions for infants with the condition increased more than 4-fold at UMCH. The trend aligns with national statistics. According to a 2015 study of 299 NICUs in the United States, between 2004 and 2013 infants with NAS increased from 7 to 27 cases per 1000 admissions. These babies are usually born full-term or late preterm, El-Metwally said, but they need medical support to be weaned off drugs they were exposed to in the womb.

In El-Metwally's NICU, a squad of vetted and trained community volunteers helps soothe newborns while they withdraw from drugs including heroin, methadone, and opioid painkillers. The "baby cuddlers" have learned that for these vulnerable infants, holding, soft singing, reading, and rocking work best. El-Metwally launched the cuddlers program last year and is now studying its short-term outcomes in infants with neonatal abstinence syndrome. She recently spoke with *JAMA* about her day.

5:30 AM: Coffee and FaceTime

I FaceTime with my husband after my morning coffee, because I ask him not to talk to me before my coffee. He is an eye surgeon and a professor of ophthalmology at Suez Canal University. We met there when I was a medical student and he was a resident. For the last 5 years I've been here [at UMCH], it's been commuting for both of us. We meet in London, we meet in Paris. He's busy, and I'm so busy, that we do cherish when we meet—it's like we are dating again. After we talk, I have breakfast.

7 AM: Texts and Emails

In the morning I get a text from the attending saying, "This is what happened overnight." Then I'm planning and processing: What is my next step when I round on this baby, or I should change this, or do I need to give a report to the mom? I'm also looking at my emails. I always encourage my team to put in a report for anything that didn't go the right way. Blood that came from the blood bank late, a failure of a machine. Then there are requests from parents who want to meet or who do not want to leave the NICU when their babies are ready to leave and go to our continuity care facilities.

8 AM: Walk to Work

I'm multitasking on my phone, which I need to stop doing because there are lots of crossroads. I'm looking at my schedule. Also, I'm thinking of my research. Which babies are

available for my research? When will I approach their parents for consent? I call in to the NICU and talk to the bedside nurse about this. I'm always thinking of babies. They're all special. You start knowing your babies and developing this nonverbal relationship with all of them.

8:30 AM: On Call and Rounding on Babies

We round as a team and I lead. The NAS babies could be stiff as a board when you are examining them. They are usually so tired and clenched… they really break your heart. They are up all the time because they are crying. Some of them shake when you touch them, but some even shake without touching them. They are sucking as if they are hungry all the time and then when you feed them either they are vomiting or having diarrhea. They are so agitated that they rub at the bed and the sheets, so you find any rubbing area is excoriated. They spike temperatures. They have respiratory instability.

Lately, we've been talking about the cuddlers program to parents during our rounds. We tell them they can opt out of the program. But we say the main benefit is stimulation, and that the research has shown that early stimulation helps the baby develop neurologically. There's a checklist so the parents get to choose what the cuddlers will do, and we try to keep the same cuddlers with the same moms. NAS babies, they really are so agitated and hypertonic that the volunteers have to hold them and walk around the room in order to keep them calm. The other alternative is going up and up on the medications. We use morphine, but it is very, very diluted. We prefer not to use very high doses on those babies when we know all it takes [to clear the drugs from their system] is 1 or 2 weeks. They just need the support for this time.

1 PM: Daily Briefing

I've never had lunch in my life. I don't have time for it. Instead, I "huddle" with the case managers, the social workers, the attendings, the fellows, and the charge nurse. It's a planning meeting. We go over which babies are ready to be discharged and when, and the charge nurse gives updates on anticipated deliveries. If there is a high-risk baby or a micro preemie, I alternate with the attending on the other team to go to the delivery. There will be some times [when] I leave everything to go to a delivery.

1:30 PM: X-Ray Rounds

On Mondays, Wednesdays, and Fridays we go over new x-rays, ultrasounds, and MRIs [magnetic resonance imaging] and discuss them with the radiologists. With our new NICU, we have the facility to work remotely. They log in and we see the x-ray on the big huge screen. We can hear them and they discuss the x-rays. We don't have to move there and they don't have to come to the NICU.

2 PM: Speak to Parents

I like to walk into the rooms and see if the parents are there and touch base with them, see if they have any questions, give them updates on the babies. We are not only focusing on cuddlers, but also trying to enforce and endorse the importance of mothers rooming in with the babies. NAS babies' mothers, except for minority of them, are usually somewhere else. They are either in the rehab program or they feel guilty that they caused this to their babies and they don't want to come in. We need to tell them, "It's okay. Either you're already on the right track because you started in the rehab program or will start a rehab program, or if you are not compliant, it's time to be compliant now because you don't want this to happen to your next baby." There are lots of messages to be given to those mothers.

3 PM: Scheduled Family Meetings

For the NAS babies, it's usually us, social workers, and case managers. Usually we talk about the plan, we talk about how the baby is doing, and our anticipation for discharge or a transfer to another hospital. We leave the room and then the social worker will touch on personal stuff and what kind of support—psychological support or legal support—the mom will need.

4 PM: Hand Off and Electronic Notes

We sit with another attending who will be responsible for the babies until the morning. They have to know that today I lowered a NAS baby's morphine. This would explain why the baby is getting agitated and crying and having diarrhea and vomiting. Usually hand off takes an hour. At 5, I go back and I speak with the rest of the parents. If there is an unstable baby, I always like to introduce my fellow attendings to them and say, "This is Doctor *X* who will be here all night. I'll be back in the morning. If there are any issues, they will let me know." I also make sure I read all the electronic notes and cosign them. I mainly do this as I'm rounding in the morning, but I can't complete all the notes then.

7 PM: Walk Home

Especially when the weather is good I walk to the Inner Harbor at least 3 times a week. It's about 2 miles. It's relaxing. I just walk and I enjoy the water. I FaceTime again with my husband. We talk about his work, my work, conferences, papers. Which paper got accepted, which paper I have to resubmit. We discuss our daughter. She just graduated from College Park. She is doing her fellowship in marketing and social media. I like to go to this organic food store and get my stuff. Even if I'm just getting bananas, I just go and get the bananas.

8 PM: Dinner, Finally

Of course, I eat when I get home because I'm usually so hungry. I watch TV and I don't know what I'm watching. I enjoy *Seinfeld*. I watch CNN to know what's going on. I also go to all the Broadway shows when they're in Baltimore. I enjoy musicals. These are a part of my regular life. I think I watched *Mama Mia* 3 or 4 times.

10 PM: An Update and the Paper

The fellow who is present in the NICU calls with an update at 10. I want to know what happened in the hours since I left. Then I read the *Baltimore Sun* every night. The paper makes me go to sleep.

10:30 PM: Prayers and Sleep

Then I do my prayers. I pray for my patients. They become part of my life. I have mothers who ask me, "Could you pray for my baby?" I say, "I'm already praying for your baby." It's all integral. It's not separate. The babies that are very sick and you think they're not going to make it… when they make it, they just make your life. It's worth dedicating your life to doing this. Sometimes I know the babies will be fine, and I'm worried about the mom more than I'm worried about the baby. These parents will touch you. They are weak. They are crying. They are vulnerable. You have to be compassionate and sympathetic. You also have to be strong to help them. This balance is so difficult.

After my prayers, I go to sleep. But my phone is working 24/7. ■

Note: The print version excludes source references. Please go online to jama.com.

Correction: This article was corrected for an error in the title on April 28, 2017.