THE URBAN ANGEL | St. Michael's Hospital Foundation

NO MATTER WHAT.

THE CAMPAIGN FOR NICU AND MATERNAL CARE

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WHAT IF THE GREATEST MIRACLE TURNED OUT TO BE THE TOUGHEST MOMENT OF YOUR LIFE?

We've seen it again, and again. The overwhelming, indescribable love when parents hold their babies for the first time. And the shattering fear in their eyes when something goes wrong.

That's why our doctors and nurses are relentless in their determination to give healthy newborns the best start possible and to bring vulnerable babies back from the edge.

Every year, St. Michael's Neonatal Intensive Care Unit (NICU) cares for roughly 600 sick, fragile babies. Many are born right here at our hospital. Some are transferred to us for specialized care from centres across Ontario. Some are born to moms with complex medical conditions, like multiple sclerosis or bleeding disorders. Others are born to moms with addiction problems. Still others are born to healthy moms who expected a normal delivery, but something went wrong. No matter what the case, St. Mike's experts know what it takes to make these babies healthy again.

Our reputation for making sick babies healthy is legendary. So too is our commitment to serving a patient population that comes from all corners of Toronto and throughout Ontario.

But here's the challenge: Delivering the highest quality care to babies and their families requires more space and better facilities.

So we've launched a $10 million campaign to build a state-of-the-art maternity space with obstetrics and gynecology, neonatal intensive care and a recovery unit – all on a single floor.

Our new NICU will be the last of the St. Mike's intensive care units to be transformed into the most technologically advanced facility.

"We're not just creating a nice space. We are fundamentally changing the way babies are cared for," says Dr. Douglas Campbell, director of St. Michael's NICU. "This is about providing the right care, in the right space, at the right time. Everyone will benefit, including our most disadvantaged patients."

Join us.

- **We are Canada's only large teaching hospital with care for moms and babies on a single floor.**
- **We're the hospital other hospitals call when the moms in their care need complex medical care.**
- **We are one of the few hospitals to use FiCare, the gold standard in NICU care.**
- **We care for more pregnant women who suffer from homelessness, HIV, mental health challenges or addictions than any other hospital in the province.**
- **Our innovations not only impact medical practice, but national policy as well.**
- **We train the majority of University of Toronto obstetrics, pediatric and family medicine residents – including those from SickKids.**

ST. MICHAEL'S WILL BE CANADA'S ONLY LARGE TEACHING HOSPITAL WITH CARE FOR MOMS AND BABIES ALL ON A SINGLE FLOOR.

Keeping moms and babies together during a crucial time isn't just a nice-to-have. It's a fundamental part of care that science has shown improves the odds of a better and quicker recovery.

We treat cases where moms expect a normal delivery and something goes wrong – out of nowhere with almost no warning. We treat cases where expectant mothers have medical conditions – like multiple sclerosis, heart problems, or cancer – that require special treatment. We treat pregnant women who are homeless, have addictions or are faced with mental illness. Chances are, they'll need specialized care and so will their babies, who will likely be born prematurely and sick.

Having our state-of-the-art NICU, obstetrics & gynecology, and a recovery unit all on a single floor means that when moms need intensive care, they stay close to their babies instead of being transferred to an intensive care unit several floors away.

It means world-class care and facilities are right where mom and baby need them, 24-7. Like a larger "Golden Hour Room" – named after the critical hour following birth when immediate medical treatment can save lives – that will have the latest resuscitation technology, the latest in infection control, and enough room to accommodate three newborns at a time and all the medical resources focused on saving them.

Our new NICU will also have 12 single rooms for moms and babies and space for families. We'll have private care-by-parent rooms, furnished with a pullout double bed and bassinet where families have the opportunity to care for their baby, prior to discharge, with nurses just steps away offering support and guidance.

We'll also have a dedicated nutrition room and a modern comfortable area for moms to pump their breast milk. And a lounge for parents to take a break and rest between handling times so that they can take care of themselves as well as their baby.

When care is urgent, the ideal is that the right team members are close by. When there is a crisis, the ideal is family support in a space that nurtures and heals.

That's what our new NICU and single-floor model of care are all about. **Help us build it.**

ST. MICHAEL'S IS THE HOSPITAL OTHER HOSPITALS CALL FOR HELP.

When it comes to caring for vulnerable moms and their babies, we take on cases others can't.

We were there for Emerlinda Wania during her emergency delivery, mobilizing 24 health-care specialists to bring her baby into the world under life-threatening conditions. Emerlinda was pregnant with her fourth child when she developed placenta percreta, a condition where the placenta grows through the uterus, threatening other organs and potentially causing massive bleeding.

Though Emerlinda needed a C-section, a hysterectomy and additional surgery, she couldn't have a blood transfusion. So she came to St. Michael's – the only hospital in the country able to perform this complex delivery.

Thanks to a carefully constructed blood management and conservation plan, and a team of high-risk obstetrics nurses and surgeons, tiny Jerylle was born just short of 30 weeks gestation. Both mother and daughter have made a beautiful recovery.

Emerlinda's experience is just one example of how our medical teams go to the wall for our patients – day in and day out. We do the same for pregnant women living with cystic fibrosis, multiple sclerosis, blood disease, trauma, cancer, heart disease and other medical complications. For pregnant women dealing with cancer pain, for example, our doctors understand alternate forms of pain control.

"The journey can start even before conception for women living with medical challenges," says Dr. Filomena Meffe, Chief of Obstetrics & Gynecology. "We know how important it is to give hope to such women, hope that they too can fulfill their dream of having a family. Because we have the largest cystic fibrosis and multiple sclerosis centres in North America, we can take care of pregnant women with these conditions. What's more, we are quickly becoming the go-to centre for pregnant women with a bleeding disorder, such as hemophilia, because our clinic details every aspect of the labour and birth care for mother and baby before they run into trouble with bleeding."

> **"We've had some unbelievable cases – women in comas who have a little person growing inside of them. Who is going to look after them? We are."**
>
> *– Dr. Doug Campbell, Director of St. Michael's NICU*

Babies born to moms with medical conditions can be born healthy. That's why at St. Mike's we mean it when we say, "We never say no." Instead we ask, "What can we do and how are we going to do it?"

That takes an integrated medical team for moms and babies, and that's what we do best.

ST. MICHAEL'S USES FICARE, THE GOLD STANDARD IN MEDICAL CARE.

Many hospitals encourage “patient-centred” care in which families are “invited” to be at patients’ bedsides. That’s good. But we want to do better.

So we subscribe to a model known as Family Integrated Care (FiCare). FiCare asks parents to work alongside nurses and be fully involved in their baby’s care – from changing diapers to participating in daily rounds. And for a good reason.

The science tells us that when families stick close to vulnerable newborns, babies have lower infection rates, breastfeed more easily, gain weight faster and go home sooner. When families participate in traditional nursing care, it not only builds their skills and empowers parents, it also promotes bonding with their baby. With the expert teaching and guidance of nurses, this approach is now accepted as the gold standard in medical care for babies in the NICU.

Our redesigned NICU sets the stage for FiCare, which will offer a rare mixture of private rooms and shared spaces – each for different stages in a baby’s journey to wellness. And at each stage, FiCare’s benefits are readily apparent and scientifically corroborated.

Preterm babies who spend their first days and weeks in single-family rooms show better language and cognitive development compared to those who remain in traditional open-concept NICUs. Right now, just eight per cent of Canadian hospitals offer private rooms that accommodate families and newborns in need of intensive care. When our new NICU opens in 2020, we will be part of this vanguard. The floor will feature 12 single rooms for moms and babies and space for families. And when babies are stronger, they move to our more open Transitional Care Unit to get ready for home. Parents who have had this hybrid experience report less stress and more confidence when it comes to touching, feeding and cuddling their fragile newborns.

As Dr. Campbell puts it: “By the time these women go home, they are neonatal-trained moms.”

ST. MICHAEL'S TAKES ON THE TOUGHEST CASES, ANYWHERE.

We care for more pregnant women who suffer from homelessness, HIV, mental health challenges or addictions than any other hospital in the province.

As the only hospital in Canada with a dedicated perinatal addiction team, we treat babies with full-blown opioid addiction – babies who, with proper prenatal care, can be born healthy. Our team works with expectant moms to help them take care of themselves before giving birth.

Providing this level of expertise is more urgent than ever. St. Michael's family physician Dr. Suzanne Turner, who is researching the rising number of newborns suffering from opioid withdrawal, found a 15-fold increase in Ontario over the past 20 years, largely the result of moms addicted to prescription opioids. Babies born to moms living with addiction are more likely to be premature and have low birth weights and high mortality rates. It's a problem that cuts across all socio-economic backgrounds.

Our research has also revealed that human touch is especially helpful for babies suffering from opiate withdrawal. It helps them gain weight faster, reduces stress hormones and gets them home sooner. That's why we developed a program where specially trained "cuddlers" make sure newborns get the physical contact they need.

In 2015, we were one of the first hospitals in Canada to create a cuddling program and today, we field calls from hospitals across the country asking for advice and access to our program manual. It's no wonder. A recent St. Mike's study showed that babies recovering from opioid addiction saw their hospital stays drop after the cuddling program was introduced.

No matter the challenges, we are dedicated to giving our most vulnerable little patients the best possible start.

Like the rest of St. Michael's cuddlers, Dina McGovern is especially good at connecting with the most distraught babies.

One in particular will always stand out for her – a tiny boy, born dependent on opioids. His pain and irritability pulled at the staff's heartstrings for weeks. But when McGovern held him and jiggled him just right, he would fall into a deep, calm sleep.

His dad came in at one point and joked, "Is my son still here? I don't hear screaming." Heartened by the lack of crying, he carefully studied McGovern's technique to make it his own.

"They were first-time parents and they really appreciated the chance to learn from the nurses and cuddlers," says McGovern.

ST. MICHAEL'S IS A NATIONAL HUB FOR RESEARCH AND EDUCATION.

Right now, premature infants with underdeveloped lungs and respiratory muscles must rely on mechanical ventilators to help them breathe. But these ventilators are attached to their little faces and can cause damage to their sensitive skin. And the attachments that connect baby to ventilator make it very difficult to cuddle these babies, which is very upsetting to families.

Not for much longer. Drs. Jennifer Beck and Christer Sinderby, researchers and inventors with our Critical Illness and Injury Research Centre, along with Dr. Campbell, are the brains behind a better way to help babies breathe.

The answer? The NeoVest, a full-torso life jacket triggered by signals that create a gentle, synchronized pull on the baby's belly, helping them breathe more naturally and more comfortably. No wires and no machinery to come between baby and parents. This is the kind of modern technology we invent at St. Michael's to revolutionize care for babies.

Our innovations not only impact medical practice, but national policy as well. We set the standards for how babies should be resuscitated. And studies led by Dr. Campbell and our Chief of Pediatrics, Dr. Michael Sgro, have revealed that, contrary to popular belief, severe jaundice continues to have devastating consequences for babies, including brain damage. The work has resulted in more stringent protocols for catching jaundice early. That's good news because immediate treatment with light therapy or blood transfusions can prevent damage.

It's no wonder St. Michael's trains the majority of University of Toronto obstetrics, pediatric and family medicine residents – including those from SickKids.

When it comes to making sick babies healthy, "it can't be done" is not in our vocabulary.

Please support our life-changing work.

MEET OUR EXPERTS

DR. DOUG CAMPBELL, DIRECTOR (NICU)
DR. JENNIFER BECK, RESPIRATORY PHYSIOLOGIST

On a warm spring evening in 2015, Drs. Doug Campbell and Jennifer Beck stood in front of several hundred people and made their pitch for a life-changing intervention on behalf of the world's tiniest patients.

The pitch was for something they call NeoVest, a gentler, safer and more effective version of the old iron lung. NeoVest is designed for babies with breathing problems.

Dr. Campbell is the Director of St. Michael's Neonatal Intensive Care Unit (NICU) and takes care of sick babies every day. Dr. Beck is an expert in respiratory physiology and an internationally renowned researcher at St. Michael's Keenan Research Centre for Biomedical Science.

Their goal that night was to win over a panel of judges at St. Michael's Angels Den, a competition where every entry is life-changing. At stake was at least $50,000 in innovation funding.

Dr. Campbell was first up. "Here is the problem," he told the judges. "It may surprise you that up to 10 per cent of all babies are admitted to the intensive care unit. And the biggest problem they face every day is breathing: lung disease, premature lung development, lung infection and water in the lungs."

These babies, he said, end up with tubes down their throats and masks sealed over their noses. A mechanical ventilator breathes for them.

The tubes and masks often leave infants with deformed noses. The wires and machinery mean their mothers can't hold or breastfeed them. And the ventilator's forced breath is unlikely to mimic their own rhythm, making each inhale uncomfortable and unnatural.

"So this is our solution," said Dr. Beck, stepping up to the microphone. "Let me introduce you to the NeoVest."

NeoVest, she explained, does away with the tubes and wires. Instead, the baby wears a vest that surrounds the abdomen. Negative pressure inside the vest creates a vacuum which gently pulls on the baby's belly. This in turn draws air into the lungs, in a natural rhythm.

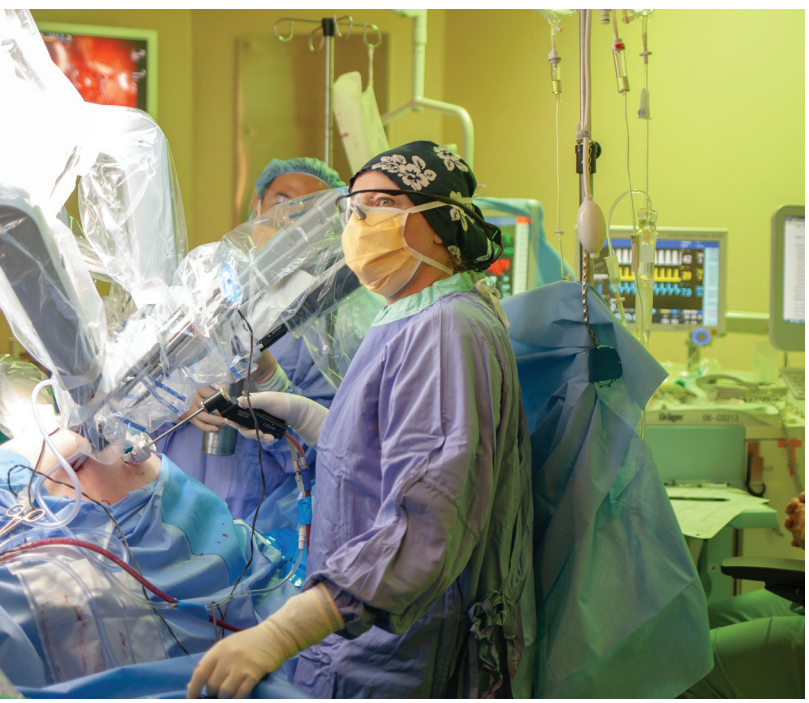
In healthy people, Dr. Beck says, the brain sends a signal to the diaphragm, telling the muscles to contract and relax – breathing. In critically ill patients, the brain still sends the signal but the body can't properly perform the request.

Working with her research and life partner Dr. Christer Sinderby, Dr. Beck came up with an elegant solution. A sensor attached to the baby's feeding tube picks up breathing signals, which synchronize the NeoVest to the baby's natural rhythm.

The judges couldn't resist. Drs. Beck and Campbell got their funding. St. Michael's will launch a pilot study of NeoVest in its NICU to demonstrate the feasibility of the innovation.

"From idea to product in under two years is incredible. From idea to clinical testing in three years is extraordinary," says Dr. Campbell. "We are truly blessed to work at St. Michael's and are excited about the next stage in revolutionizing breathing care for babies."

DR. DEBORAH ROBERTSON, DIRECTOR OF THE MINIMALLY INVASIVE GYNECOLOGICAL SURGERY FELLOWSHIP



Dr. Deborah Robertson likes to define her job in a single sentence: "My goal is to perform surgery with the least impact possible."

One way she does that is with the help of a specialized robot. Dr. Robertson is one of just three doctors in the province who perform robotic surgery to remove fibroids from the uterus (the other two work at St. Michael's as well).

Large fibroids can press against other organs and make a woman uncomfortable. During pregnancy, that discomfort can get much worse.

So Dr. Robertson and her colleagues perform a myomectomy, which involves placing long, thin, robotically controlled instruments into cuts in the abdomen. Once inside, the instruments can be maneuvered much like a hand, allowing them to remove the fibroid and repair the uterus.

Dr. Robertson sees what it "sees" in 3D, and controls the instrument from a specialized console, just steps away from the patient's bedside.

"When I move my fingers, the robot moves an articulated arm," she says.

Without the robot's help, Dr. Robertson would have to make a much larger incision, which comes with more potential for complications, post-operative pain and a much longer recovery time. She and her colleagues started using the robot in 2008. Many of their patients have since gone on to deliver babies. In fact, Dr. Robertson recently delivered a successful myomectomy patient's third child.

As the Director of the Minimally Invasive Gynecological Surgery Fellowship at St. Michael's, Dr. Robertson is teaching other doctors how to use the robot. While she gets a thrill out of passing on her expertise, the biggest payoff comes later.

"I perform women's robotic myomectomies, care for them in this stressful time and many times have the unique chance to deliver their babies because I also do obstetrics," says Dr. Robertson. "That final moment is the best reward."

NICU SOCIAL WORKER AMANDA HIGNELL AND CUDDLER DINA MCGOVERN

The way Amanda Hignell sees it, there's no better place to be a social worker than St. Michael's Neonatal Intensive Care Unit (NICU).

Her clients come to her at one of the most vulnerable moments of their often troubled lives. They are mothers who have just given birth to premature, sick babies. They may be living on the street. They could be struggling with addiction or mental illness.

But a new little life can be a powerful catalyst for change.

"I get to see them at a time when they are very motivated to make things better for themselves and their child," says Amanda. "I really, really love my job."

She helps them find housing, resources and the support they need to deal with their problems. Even mothers who are healthy and well off benefit from Amanda's nearly 20 years of experience as they strain to give their babies the best of themselves.

Amanda is particularly pleased to see her baby cuddling program work its magic on sick newborns. Together with nurse practitioner Karen Carlyle, she launched the program in 2015 after research showed health improvements in infants who were held.

St. Michael's was one of the first hospitals in Canada to create a cuddling program, and today Amanda finds herself fielding calls from hospitals across the country asking for advice and copies of the program manual. She recently wrapped up a study showing babies recovering from opioid addiction saw their hospital stays drop to an average of 24 days from 31 after the cuddling program was introduced.

St. Michael's now has 25 carefully selected volunteer cuddlers who step in when a baby's parents can't be present. They've all been specially trained in the best techniques for soothing otherwise inconsolable infants.

Dina McGovern, a cuddler since day one, volunteered even before the program was launched. St. Michael's first full-time lactation consultant and an experienced critical care and obstetrics nurse, Dina was on the verge of retirement when she asked if she could help.

"I didn't want to let go of the babies," she says. "It's a special feeling when you hold a baby. It's more than just holding them. It's a connection."

But, as Dina hastens to add, it's not a one-way street – the babies give her so much in return.

"This has helped me bridge the gap between being a health professional to being retired," she says. "Now it's just part of my life and my kids know they can't have me as a babysitter on my volunteer days."

ELAINE LAU,
LABOUR AND DELIVERY NURSE

Elaine Lau's first day as a labour and delivery nurse at St. Michael's Hospital was nine years ago, but it left such an impression, she remembers it as if it were yesterday.

The triage room was full of pregnant women in need of immediate medical attention. So were two overflow rooms down the hall. In the reception area, more moms-to-be with less urgent problems waited their turn. Elaine, along with the other nurses, moved deftly among the women, making sure each got what they needed.

Even though it was her first day, Elaine understood the women in her care needed more than just medical attention. They needed emotional support. "It can be a scary and confusing time," she says. "Triage nurses are the front line, the first to comfort mothers and the first to coach them through contractions."

This compassionate approach to care has guided Elaine throughout her career. It explains why she's eagerly looking forward to the enlarged and better-designed triage room planned for St. Michael's new Mother & Baby Care Unit.

The current cramped triage room can make giving patients the care they deserve a challenge. The area – roughly the size of a large living room – has space for just three beds, with only curtains separating patients and no way of ensuring privacy.

"I think our biggest problem has been the lack of privacy," says Elaine. "It's a vulnerable time for mothers. They're exposed as doctors check them and of course we have to ask sensitive questions, including about women's safety, if they've lost a baby before, or if they are taking drugs."

Still, Elaine wouldn't want to be anywhere else. "This is where I'll have my baby," she says, placing a hand on her swelling belly.

DR. MICHAEL SGRO, CHIEF OF PEDIATRICS

It's been a couple of decades since Dr. Michael Sgro's two sons were babies, but St. Michael's Chief of Pediatrics summons up that memory every time he talks to young parents.

"When you have an infant, you can be exhausted and overwhelmed," he says. "As a parent, I can appreciate what they're going through."

Even before he had children of his own, Dr. Sgro went the extra mile for his little patients. As a resident on the night shift, he would use his breaks to sit at the bedside of a nine-year-old boy hospitalized for leukemia.

"Sometimes he would be with nobody," says Dr. Sgro. "I still think about him."

While Dr. Sgro's profound sense of empathy is never far from the surface, he's also a tough-minded researcher. He has dedicated his career to fighting a trio of debilitating neonatal illnesses – severe jaundice, fetal alcohol spectrum disorder and blood infection.

At St. Michael's Li Ka Shing Knowledge Institute, Dr. Sgro has carried on life-changing research for sick babies. He and Dr. Doug Campbell, Director of St. Michael's Neonatal Intensive Care Unit, for instance, developed more stringent protocols for catching jaundice early. It has meant better prevention of possible brain damage in countless babies.

He is also part of a research team tracking babies born to mothers who drank excessively during pregnancy. The scientists want to figure out what makes a baby more or less likely to develop fetal alcohol spectrum disorder.

And in one area of his risk-assessment research, Dr. Sgro is looking at which babies are most likely to contract two of the most common and deadly bacteria among newborns. He found that premature babies, those born to moms who had a fever during pregnancy and those born after long labours are most at risk of Group B streptococcus and E. coli.

"Bacterial infection in the blood of newborns is an extremely serious condition," Dr. Sgro says. "Without treatment, they may not survive, or may have brain damage." Which is why he also conducts research showing which strains of these bacteria are most resistant to standard antibiotics, and how best to modify treatment.

He might work on some of the most serious infant diseases. But Dr. Sgro is still an optimist: "The irony is that babies are resilient," he says. "Most go home well, even the premature ones."

MALACHY'S STORY

AS TOLD BY HIS MOM, KERRY O'REILLY WILKS

No one expects to end up in the Neonatal Intensive Care Unit (NICU) with their newborn baby.

It was January 2014. I was 33 weeks pregnant with my second child. Looking for pain relief advice for back pain, I went to the hospital one evening. What I had thought would be an in-and-out visit quickly escalated, as I moved into uncharted territory.

I was told I was dying, and that my only choice was to deliver the baby that night or risk both of our lives. I had very quickly (and quietly) developed a life-threatening condition related to my pregnancy, and had only minutes to absorb what I was being told.

At first, it felt scientific. I was numb and it all seemed surreal. But it was when I realized that my son was being treated in a NICU that the walls came crashing down.

I remember thinking that if I just unhooked him and brought him home, he would likely die. I was racked by devastation and despair. Feelings of failure as a mom – that I had failed my baby – overwhelmed me.

Everything felt out of control. Thankfully, St. Michael's NICU was in control. My newborn son, Malachy, was in the hands of their very skilled and caring doctors and nurses.

It wasn't just the acute medical care that comforted me. I would find the nurses whispering to Malachy that he was strong; that he was brave; that he was a big boy. They would tell him how handsome he looked in his new pajamas.

One night I arrived to find a nurse carrying Malachy to the other nurses, showing off his new sleeper and calling him Mr. Handsome. I realized then I didn't need to worry that Malachy was alone in the NICU, or without an advocate. He was always with family – the nurses and doctors that had become his family.

They also became my family. The NICU team at St. Michael's did not just care for Malachy. They cared for me. They helped me see the sunshine through the darkness. They healed my son, and my heart.

I am delighted to tell you that, despite being born at a very tiny 3.3 lbs, Malachy is now a rambunctious young boy and the life of the party, leaving a path of destruction behind him (mostly in his sister's bedroom).

I knew when I walked out the doors of the St. Michael's NICU, finally ready to bring my baby home, that something had to be done. I needed to ignite change. I needed to help and support these tiny, fragile babies, and their struggling parents.

In 2015, Malachy's Soiree was launched. It has quickly become a key social event of Toronto's fall season. Driven by a powerhouse steering committee of the city's top women leaders, Malachy's Soiree is raising funds to support the building of the Transitional Care Unit within St. Michael's highly anticipated, state-of-the-art NICU. Please help us bring healthy babies home sooner.

We are St. Michael's, and we

STOP AT NOTHING.

NOTES

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