

# App connects mothers with lactation experts, improve breastfeeding rates

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Azza Ahmed, associate professor in Purdue's School of Nursing, and Jeffrey Brewer, associate professor of computer and information technology in the Purdue Polytechnic Institute, co-founded LACTOR LLC. The company is commercializing an app that connects breastfeeding mothers with pediatricians or lactation consultants to help collect data, monitor patients, and provide support while improving breastfeeding outcomes for new mothers. Credit: Purdue Research Foundation image/Oren Darling

A newly developed proactive app could instantly connect breastfeeding mothers with pediatricians or lactation consultants to help collect data, monitor patients and provide consultation and support while improving breastfeeding outcomes for new mothers.

Azza Ahmed, an associate professor in Purdue's School of Nursing, and Jeffrey Brewer, an associate professor of computer and information technology in the Purdue Polytechnic Institute, co-founded LACTOR LLC to commercialize the technology.

LACTOR's system has two main components - the mother's portal, where mothers can enter their breastfeeding data and receive notifications, and the lactation consultant's portal, where mothers' data is received by experts who can provide support and counsel if requested or needed.

"Mothers use the app as a type of diary to input data such as how many times she breastfeeds, for how long, how many ounces she may have pumped or additional data like if she's using a supplement," said Ahmed, who's also an International Board-certified lactation consultant and pediatric nurse practitioner. "The app is connected to a server that allows the mothers to receive notifications or interventions from a professional if any questions or concerns arise, giving an opportunity to track their children's feeding patterns and detect any problems early and communication with the lactation consultant."

Ahmed said the U.S. has achieved breastfeeding initiation rate based on Healthy People 2020 goals, but there is still a struggle with continuation rates.

"Breastfeeding provides short- and long-term benefits to both infants and mothers. It protects babies from many infections and illnesses, and research shows that breastfed babies are less likely to develop asthma or

become obese along with several other benefits," she said. "Although the United States has met the national objective for breastfeeding initiation, rates of breastfeeding at 6 and 12 months, as well as exclusive breastfeeding at 3 and 6 months, are still low, and only 22 percent of infants are exclusively breastfed at the end of six months, which demonstrates the challenges mothers continue to face after hospital discharge."

Ahmed said mothers face several challenges when breastfeeding that this app could address.

"The most common problem faced is the inability to latch. If the baby is not latching, they are not getting enough milk, which could result in weight loss or dehydration," she said. "It happens often that mothers must come back to the clinic or formula must be introduced early. The inability to latch also could result in hospitalization, sore nipples, discouragement and perceived insufficient milk. Mothers often need confidence to continue breastfeeding due to lack of self-efficacy, self-confidence and social support. This is especially common during the first month after birth, and it is the most critical breastfeeding period."

Brewer said a web-based intervention could provide continuous monitoring after discharge.

"Our main goal for this technology is to maintain the communication between the mother and the lactation consultant immediately after giving birth and going back home," he said. "We want to create a connection before mothers leave the hospital so that there's a virtual connection once they get home and the mothers can feel more confident. This way mothers do not have to call and make an appointment or travel back to a clinic if problems arise. This is highly beneficial in rural areas where access to lactation support is limited."

Brewer said there are over 100 breastfeeding apps available; however, no other app provides two-way communication like LACTOR's.

"The difference with our app is that the server ties into a hospital or clinic and is designed to be proactive," he said. "Our app is connected to a central database where we can have a lactation consultant on the other side of the world look at a mother's data and offer support. Our aim is for a nurse to view the lactation data and reach out immediately to the mother if there is an issue."

A video about the can technology can be viewed [here](#). Technology used by LACTOR has been licensed through the Purdue Research Foundation Office of Technology Commercialization. The company is a member of the Purdue Startup Class of 2017.

A study was conducted using the LACTOR system by 26 [breastfeeding mothers](#) over a 30-day period. The study concluded that the system was feasible and acceptable among [breastfeeding](#) mothers and a promising tool for maintaining communication between mothers and lactation consultants.

Brewer said the app eventually will incorporate other novel features.

"Eventually our system will have the ability to let the nurse or consultant make phone calls or set up virtual appointments directly with the mothers," he said. "We would incorporate a video call feature that lets the nurse see what the mother is doing to better determine what the issue might be. Currently the data is checked twice a day but as the app and users grow we could expand to have 24/7 consultation available."

Ahmed said the technology would be available for license.

"Our plan is to sell this technology to lactation consultants or hospitals

that would create their own routine," Ahmed said. "These individuals could be working in private hospitals or private clinics or primary care clinics and use our technology as part of an integrated system."

Brewer credited the Purdue Foundry, an entrepreneurship and commercialization accelerator in Discovery Park's Burton D. Morgan Center for Entrepreneurship.

"The Purdue Foundry was instrumental in helping us form this company," he said. "Everything from meeting with lawyers, drafting documents, applying for grants and help with marketing, the Foundry helped tremendously."

The company is seeking funding and personnel to help scale the platform.

"Professionals would help us build the website and database and make the app more efficient," Brewer said. "We want the app to eventually handle a thousand users, not just 50-100. To do this we need the funding and professional guidance. We are in the middle of recruiting to ultimately run a small clinical trial locally, after which we hope to scale up."

Provided by Purdue University

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