The Covid-19 pandemic posed significant challenges to in-person community breastfeeding-support groups in Long Island, New York. In response, their initiative capitalized on communication technology advancements to meet these challenges. An interdisciplinary team rapidly developed two distinct models, linking core breastfeeding knowledge with opportunities to interact and pose individual questions. Program development included addressing technology barriers, session timing, language barriers, and promotion. Lactation experts attempt to increase visible support to help pregnant women achieve their breastfeeding goals. Virtual group conversation, coupled with slides, graphics, and figures that represent important breastfeeding elements, and an opportunity for more detailed follow-up with a lactation expert off-line, if desired, have replaced face-to-face interactivity. This initiative has already served almost 100 mothers, demonstrating the unique niche that each model fills. Parents’ views are positive, especially valuing the opportunity to learn about breastfeeding from lactation experts in a virtual environment that creates a sense of community and togetherness to combat feelings of isolation during the pandemic. This article describes their success in converting in-person breastfeeding support to an innovative, virtual environment, using a stable telehealth platform. The approach demonstrates promise as a generalizable and sustainable framework for offering free, high-quality, accessible telehealth care. It provides breastfeeding education, guidance, and support virtually and in-person, notably addressing the needs of new mothers from a distance and expanding reach during and after public health emergencies.
The Challenge

Research demonstrates the profound advantages that breastfeeding confers upon infants\(^1\)\(^-\)\(^6\) and mothers.\(^1\)\(^,\)\(^7\)\(^,\)\(^8\) While recommendations suggest 6 months of exclusive breastfeeding and maintaining some breastfeeding for a year even as complementary foods are added,\(^1\) breastfeeding rates decline over time. Although 84.1% of mothers initiate breastfeeding at birth, only 57.6% are still breastfeeding at 6 months, with only 25% doing so exclusively.\(^9\)

Well-designed support groups, such as those created through the not-for-profit organization Baby Café USA, have been shown to successfully improve the initiation and maintenance of breastfeeding among mother/infant dyads from diverse backgrounds and geographical areas.\(^10\) The Baby Café USA model consists of weekly or biweekly free, drop-in breastfeeding-support sessions that combine peer support with the professional guidance of International Board Certified Lactation Consultants (IBCLCs), Certified Breastfeeding Counselors (CBCs), or Certified Lactation Counselors (CLCs). These lactation support experts have varied levels of training and experience, topped by IBCLCs who have completed 95 hours of lactation-specific education, 14 health science courses, and over 500 clinical hours.

We anticipated earlier postpartum discharge during the pandemic likely would limit in-hospital lactation education. This perception compelled us to consider how to further enhance breastfeeding care and education in the community via telehealth during the pandemic. The means by which such interventions are delivered became a critical consideration. People have been forced to shelter in place, challenging the ability to provide care. Research has documented gaps in care owing to the pandemic.\(^11\)\(^-\)\(^13\) Technology improvements, like video conferencing and more interactivity over the Internet via multiple modalities, coupled with ever-increasing access to such technology, have led to changes in how patient care and education can be delivered.\(^14\)\(^-\)\(^16\)

We simultaneously conducted a retrospective, observational study of health care utilization in support of breastfeeding among mother-infant dyads presenting for their first ambulatory postpartum visits during a pandemic surge versus the same time frame 1-year prior. Infant feeding information was collected at each contact during the first 90 days. Visits for general telehealth and “telelactation” (telehealth specific to lactation needs) used two-way audiovisual technology; telephone visits were audio only. Median postpartum lengths of stay were significantly lower in 2020. While the number of in-person visits was similar between the two groups, there were significantly more health care encounters, telelactation visits, and telephone contacts for the pandemic group. Telemedicine contacts had expanded connectivity between mother-infant dyads and our primary care practice in support of breastfeeding. As a result, we documented that breastfeeding rates did not decrease because telehealth and telelactation options, such as the virtual class models we had begun to offer, allow mothers the opportunity to close gaps that might have developed from short postpartum stays.

The Goal

The challenges of the ongoing Covid-19 pandemic demanded that alternatives for our in-person community-based groups be rapidly created to support breastfeeding initiation and duration.
This article describes how we converted our in-person breastfeeding support into telehealth interventions and assessed our success.

The Execution

Designing Telehealth Interventions

Our interdisciplinary breastfeeding-promotion work group, comprising IBCLCs, CLCs, dietitians, nurses, midwives, pediatricians, and other allied-health professionals, had previously partnered with Baby Café USA to establish in-person Baby Café sessions at different community locations across Long Island, New York, in the 4 years prior. Baby Cafés are free, drop-in, informal breastfeeding support groups offering ongoing professional lactation care and intervention.

Sessions were promoted through the interdisciplinary team’s connections with the local Women, Infants, and Children (WIC) program, a large hospital system, and community resources. With the emergence of the Covid-19 pandemic in March 2020, the content of our in-person Baby Café sessions needed to rapidly be converted to telehealth.

"The challenges of the ongoing Covid-19 pandemic demanded that alternatives for our in-person community-based groups be rapidly created to support breastfeeding initiation and duration."

A team of ten with medical education and breastfeeding expertise, including physicians, dietitians, lactation experts, and WIC counselors, undertook program development, inspired by a presentation from Baby Café USA with suggestions on how to transition to virtual sessions. Figure 1 describes several challenges identified and addressed in the development and adaptation phase, including technology access, session timing, language barriers, and marketing. We employed a HIPAA-compliant videoconferencing platform that could be accessed through a single, consistent, easy-to-use link. A toll-free conference line number was provided to increase accessibility for participants without Internet access. They were able to hear the meeting and ask questions, but they could not see video or the chat box. Each session was staffed by at least two individuals — one to manage technology, slides, attendance, and the chat box, and one to serve as subject-matter expert. These staff were trained beforehand on using the virtual platform. Two distinct teaching strategies emerged in support of breastfeeding: an individual-oriented small-group approach (Model A) and a larger, more information-dispensing prenatal-class approach (Model B). We planned three sessions per week at varied times, including one in Spanish, to offer flexibility for pregnant women and new mothers. Our facilitators and translators used patient feedback and their experiences to continuously refine our initiative and improve their skills.
**Challenges and Solutions to Breastfeeding Intervention**

**Telehealth Conversion**

| Challenges                                                                 | Solutions                                                                                           |
|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Technology barriers for lactation professionals                          | • Hold step-by-step training sessions<br>• Add tech expert to orchestrate each session              |
| Technology barriers for community members                                | • Create step-by<br>• Offer phone access<br>✓ Toll-free conference number to call in if no internet access was available<br>• Develop a shortened and consistent link |
| Timing of session may conflict with other responsibilities               | • Offer sessions at different times on different weekdays<br>✓ Tuesday evening sessions to accommodate working hours<br>✓ Thursday late morning sessions to accommodate child care responsibilities<br>• Establish a Warm Line in English and Spanish available for those unable to attend sessions |
| Language barriers                                                        | • Offer bilingual support during session<br>✓ Spanish translator available<br>✓ Spanish-speaking IBCLC available<br>• Produce bilingual presentations and promotional materials to increase access |
| Marketing and advertising sessions virtually                              | • Distribute flyers and materials through email listserv<br>✓ Accessible flyer versions available for those with disabilities<br>• Post on team and community Facebook groups in both English and Spanish<br>• Collaborate with community partners to expand marketing strategy and reach<br>✓ Use hospital system to increase network-wide promotion<br>✓ Partner with WIC organizations and peer counselors to distribute information |

Source: The authors

NEJM Catalyst (catalyst.nejm.org) © Massachusetts Medical Society

**Model A (Small Group Breastfeeding Support)**

The small-group model consisted of several weekly 1-hour IBCLC-led sessions that covered the topics desired by the women present at each individual session, similar to our in-person Baby Café sessions. Each session was structured around opportunities for individualized questions through the video and microphone feature, typed in the chat feature of the video-chat platform, or asked orally on the conference line. Local resources were also provided on slides and posted...
in the chat box. Three sessions were offered each week, one in the evening (English) and two in the morning (English and Spanish) to accommodate participants’ language preferences and schedules, especially with the necessity of family-lifestyle adjustments to accommodate remote learning. These sessions were intended to be small in number per session (<8) to better mirror the 1:1 lactation support given to mothers by breastfeeding experts during our in-person Baby Café sessions.

**Model B (Large Prenatal Class)**

This model consisted of monthly 2-hour sessions, including an educational slideshow presentation by a lactation expert in the first hour, followed by a second hour of question-and-answer. Each session covered multiple topics (e.g., breastfeeding, nutrition, car seat safety, jaundice and postpartum depression) selected by the IBCLC and agreed upon by our breastfeeding-promotion workgroup. These mirrored past in-person educational health fairs, where an IBCLC and a Spanish translator would provide breastfeeding education. In particular, the breastfeeding topics covered in Model A were incorporated in the virtual prenatal class. In contrast to Model A, these information-dispensing sessions could accommodate more women per session for knowledge acquisition, similar to our in-person prenatal classes. While advertised as prenatal classes, postpartum mothers were also welcome to join.

Lactation experts attempt to increase visible support to help pregnant women achieve their breastfeeding goals. Virtual group conversation, coupled with slides, graphics, and figures that represent important breastfeeding elements, and an opportunity for more detailed follow-up with a lactation expert off-line, if desired, have replaced face-to-face interactivity. Mothers are educated on issues such as:

- how to ensure ample opportunities for skin-to-skin contact
- how to hold the infant with face-to-face contact
- how to recognize and respond to the baby’s feeding cues, such as licking the lips and rooting
- how to recognize when the baby is done feeding (e.g., falling asleep after a period of sustained feeding, pushing the nipple out of the mouth)
- optimal latch and positioning techniques, using demonstrating tools such as plush breasts and dolls

**Promotion**

To promote these sessions, ADA-compliant flyers, including both verbal and pictorial/graphic content, were created in English and Spanish. Promotional materials — flyers with the direct link to the scheduled session, a document with instructions for joining, and an email to answer technology-related questions — were distributed to community partners electronically (e.g., WIC and local community centers). All group relationships were leveraged to spread the word about the upcoming sessions through word-of-mouth. Flyers and materials also were posted on our Facebook
page as well as in community Facebook groups for mothers across Long Island. Our health system also shared session information via emails to its employees. For those who could not attend a particular session, a bilingual “warm line” was advertised for women to ask their questions and receive an answer within 24 hours.

Evaluation

Attendance at each English session was recorded based on the names participants used on the virtual platform. Expectant mothers were distinguished from those who had recently given birth. WIC counselors in attendance also were identified, who served as conveyors of the relevant information to mothers with whom they work. They also encouraged their clients to join the sessions. Returning moms were noted, although this metric was imperfect, as some women only included first names. While a modest number of fathers periodically were in attendance, only metrics regarding the mothers were collected. An optional evaluation survey was given in English to participants at the end of all sessions through the chat feature or via email. Similar data were not routinely collected during Spanish sessions, as there were insufficient numbers of participants.

“We employed a HIPAA-compliant videoconferencing platform that could be accessed through a single, consistent, easy-to-use link. A toll-free conference line number was provided to increase accessibility for participants without Internet access.”

Despite limitations, these evaluation instruments provided insight into the interventions. Program success was assessed through the following metrics: (1) total number of sessions held; (2) number of attendees; (3) repeat attendance; (4) survey responses; and (5) qualitative comments offered.

Metrics

Development and implementation of the two telehealth educational models were initiated in early April 2020 following the rapid spread of Covid-19 in New York City. Overall, 21 people attended more than one session of either or both models.

Model A

A total of 56 small group breastfeeding-support sessions were held weekly through November 20, 2020. Table 1 summarizes attendance details for the weekly sessions. An average of 4.6 individuals attended each session, with 71 unique mothers (31% expectant; 69% recently delivered) and 16 attending more than one session. Multiple-session attendance ranged from 2 to 35 sessions (mean = 8.2; median = 5). Eight mothers then proceeded to attend a Model B session afterward.

Prompted by attendee questions, topics discussed included how to wean off breast milk, hand expression, engorgement, milk supply, nipple cream, and pumping. Women learned about these sessions from medical providers (34%), friends (19%), promotional flyers (16%), and Facebook
Table 1. Summary Attendance Details for Virtual Breastfeeding Support Models

|                        | Model A | Model B |
|------------------------|---------|---------|
| Number of sessions     | 56      | 6       |
| Expectant parent       | 22      | 40      |
| New parent             | 49      | 17      |
| Mothers who repeated session type | 16     | 6       |
| Mothers who attended this session first then other session | 8      | 6       |
| Average attendees/session | 4.6    | 17.2    |

Source: The authors.

(9%). Technology quality was rated on a five-point Likert scale — with at least 4 of 5 by 94%, 62% rating it 5/5. Qualitative feedback also has been very positive, including comments regarding the telecommunications platform, peer support, and breastfeeding information. Sample quotes from attendance surveys included:

- “I love that it is a Microsoft Teams meeting which could be done from the comfort of your own home. The video option gives it a personal touch. Not having to go to an actual place gives much more flexibility and makes me feel safer especially in this time of Covid.”

- “Everything was so helpful. I learned so much I didn’t know. How to properly use my breast pump, how much my baby should be eating, tips on breastfeeding.”

- “The support of hearing real moms and their experiences guided by a lactation consultant who is an expert in her field and so warm & wonderful was amazing!”

- “This group is definitely a great resource.”

Model B

A total of 57 unique mothers attended six monthly prenatal-class sessions, an average of 17 people per session. Of the mothers, 71% were expectant and 29% were postpartum. For 77% of the women, they were either pregnant with or just had their first child. Notably, 14 individuals who attended these sessions also attended at least one Model A session. Six individuals attended a Model B session followed by a Model A session after delivery. There also were at least six mothers who attended more than one Model B prenatal class. Prompted by attendee questions, sample topics discussed during the question-and-answer period included the hospital experience with breastfeeding during delivery, baby pillows, milk oversupply, CPR classes, circumcision, Tdap immunization, breastfeeding positioning, impact of breast implants, breast reductions, or nipple surgery on breastfeeding.

Attendees learned of these prenatal sessions through WIC (39%), our health system’s emails to its employees (23%), or their medical provider (15%). Technology quality was rated on a five-point Likert scale with at least 4 of 5 by all attendees, 62% rating it 5/5.

Qualitative feedback for Model B also has been positive and constructive. Sample quotes from attendance surveys included:
• “The breastfeeding information was very helpful.”

• “All the info was very helpful.”

• “Time of class is fine now but difficult when I was pregnant and still working. Was meaning to attend one more before giving birth but was unable to due to work conflicts.”

• “A little rough trying to work and listen in.”

Key Takeaways

This article describes the early success we’ve experienced in converting our in-person breastfeeding support to a telehealth environment. Two models — small-group breastfeeding-support sessions and large prenatal classes — were created to meet participant needs. Our virtual interventions served almost 100 mothers, some of whom attended both types of sessions, demonstrating the unique niche and perceived value of each. In addition, a number of women were repeat attendees, owing in many cases to the relationships formed with the lactation professionals and their fellow audience participants.

“Each session was structured around opportunities for individualized questions through the video and microphone feature, typed in the chat feature of the video-chat platform, or asked orally on the conference line.”

The incremental costs of the telehealth program were modest. The professional team primarily participated as part of their usual employment; some lactation experts, when needed, were paid $50 per hour. The primary additional expenditures were for technical support for the sessions ($16.50 per hour for one technician) and a Zoom license for $150 per year. We initially used the Teams platform but transitioned to Zoom as feedback from the audience suggested that the latter platform was easier to use and more accessible.

Our program increased accessibility to breastfeeding support for those with Internet or a phone. It also decreased time away from home, personal obligations, and family responsibilities through less travel time. The sessions can be challenging, as they are less hands-on and mothers cannot as comfortably demonstrate their breastfeeding problems to the lactation experts. There also is less opportunity for peer-to-peer support in a virtual environment, although mothers were encouraged to speak up with advice to other moms.

Despite these concerns, evaluation data suggest that parents viewed both session types very positively, valuing the opportunity to learn about breastfeeding from lactation expertise in both models. Mothers expressed that attending our virtual support groups offered a sense of community and togetherness that helped combat their feelings of isolation during the pandemic. Part of our program’s success appears to have been the result of effective promotion strategies, including
word-of-mouth by local WIC counselors and health care providers, bolstered by the previous establishment of in-person activities within some communities. Social media also served as a trackable means of expanding reach, with the Facebook page doubling in likes since the start of the pandemic.

There were limitations to the trial:

- The attendance system was unable to formally characterize demographic characteristics.
- Repeat attendees were not always identified, underestimating this subgroup.
- Evaluation survey completion was self-selected and not representative of all participants.
- Data were only collected in English despite also having Spanish sessions.
- Because we wanted to implement our virtual initiative as rapidly as possible, we did not set up a system for formally monitoring attendees’ breastfeeding rates over time.

More systematic data collection would better identify, characterize, and track participant attendance and feedback within and across models. Pre- and post-session testing could assess knowledge acquisition, while post-session daily diaries could gather actual breastfeeding behavior over time, yielding critical insights. Longitudinal study of these models compared with current in-person care could demonstrate scalability and incremental value in breastfeeding initiation and duration, including in medically underserved communities. We hope to pursue some of these investigations but have no formal plans while the pandemic is ongoing.

We envision several ways to expand the reach of our programming and serve mothers and infants more comprehensively, even after the pandemic. First, we envision more broad programming that addresses some of the same ancillary topics touched upon in our large-group model, such as newborn care, mental health, car seat safety, and more. Second, we envision increasing the availability of both telehealth models, and are currently piloting three sessions per week of Model A with one Model B session each month at varied times to offer flexibility for pregnant women and new mothers. Third, we envision coupling these approaches with our previous in-person strategy once the current public health emergency abates, allowing mothers to take full advantage of the menu of breastfeeding support options. Lastly, we expect refinements in the distance-based models through increased experience and feedback for facilitators and translators as they continue to conduct virtual health care.

In summary, our innovative approach to virtual breastfeeding support, using a stable telehealth platform for two educational models, demonstrates promise as a generalizable and sustainable framework for offering free, high-quality, accessible telehealth care. While further program development is warranted, this initial proof-of-concept has demonstrated merit. Developed during the current Covid-19 global pandemic, it is an emerging marriage of medicine and technology, addressing the breastfeeding support needs of new mothers from a distance.
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Disclosures: Julia Feinstein and Eric J. Slora have nothing to disclose. Henry H. Bernstein is principal investigator of a breastfeeding promotion grant from the New York State Department of Health. The content is the responsibility of the authors and does not necessarily represent the opinions, interpretations, or policies of the New York State Department of Health.

References

1. Gartner LM, Morton J, Lawrence RA. Breastfeeding and the use of human milk. Pediatrics. 2005;115(6):496-506

2. Oddy WH. Breastfeeding protects against illness and infection in infants and children: a review of the evidence. Breastfeed Rev. 2001;9(6):11-8

3. Vennemann MM, Bajanowski T, Brinkmann B. Does breastfeeding reduce the risk of sudden infant death syndrome? Pediatrics. 2009;123(6):e406-10

4. Marseglia L, Manti S, D’Angelo G. Obesity and breastfeeding: The strength of association. Women Birth. 2015;28(6):81-6

5. Jenkins LA, Barnes K, Latter A, Edwards RA. Examining the Baby Café model and mothers’ breastfeeding duration, meeting of goals, and exclusivity. Breastfeed Med. 2020;15(6):331-4

6. Victora CG, Bahl R, Barros AJ. Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. Lancet. 2016;387(6):475-90

7. Labbok MH. Postpartum sexuality and the lactational amenorrhea method for contraception. Clin Obstet Gynecol. 2015;58(6):915-27

8. Chowdhury R, Sinha B, Sankar MJ. Breastfeeding and maternal health outcomes: a systematic review and meta-analysis. Acta Paediatr. 2015;104(6):96-113

9. U.S. Centers for Disease Control and Prevention. Breastfeeding Report Card United States, 2020.  
Accessed April 1, 2021. https://www.cdc.gov/breastfeeding/pdf/2020-Breastfeeding-Report-Card-H.pdf.
10. Gregg DJ, Dennison BA, Restina K. Breastfeeding-Friendly Erie County: Establishing a Baby Café Network. J Hum Lact. 2015;31(6):592-4

11. Webb Hooper M, Nápoles AM, Pérez-Stable EJ. COVID-19 and racial/ethnic disparities. JAMA. 2020;323(6):2466-7

12. Chowkwanyun M, Reed AL. Racial health disparities and Covid-19 — caution and context. N Engl J Med. 2020;383(6):201-3

13. Vahidy FS, Nicolas JC, Meeks JR. Racial and ethnic disparities in SARS-CoV-2 pandemic: analysis of a COVID-19 observational registry for a diverse US metropolitan population. BMJ Open.

14. Health Resources & Services Administration. Telehealth Programs. U.S. Department of Health and Human Services. January 2021. Accessed January 26, 2021. https://www.hrsa.gov/rural-health/telehealth.

15. Assistant Secretary for Planning and Evaluation. Medicare Beneficiary Use of Telehealth Visits: Early Data from the Start of the COVID-19 Pandemic. U.S. Department of Health and Human Services. July 28, 2020. Accessed January 26, 2021. https://aspe.hhs.gov/system/files/pdf/263866/hp-issue-brief-medicare-telehealth.pdf.

16. Monaghesh E, Hajizadeh A. The role of telehealth during COVID-19 outbreak: a systematic review based on current evidence. BMC Public Health.