COVID & Breastfeeding

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PUERTO RICO AAP CONFERENCE
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‘A Tragedy Is Unfolding’: Inside New York’s Virus Epicenter
In a city ravaged by an epidemic, few places have been as hard hit as central Queens.
Working Wave After Wave at Elmhurst
Approaching 365 days in a hard-pressed hospital

By Anna Selman
@annaestiman
Photograph by Meric Ivey

New York Magazine March 2021
Elmhurst

- New York City: most dense large US city
- Poverty, overcrowded homes
  - Rich dense places: people can shelter in place, work remotely & have food & needs delivered.
  - Poor dense places: push people out onto the streets, into stores and crowded transit.
- Government inaction: the city initially did not communicate the level of danger to this population
Universal screening for SARS-CoV-2 infection among pregnant women at Elmhurst Hospital Center, Queens, New York

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Abstract

Universal screening for SARS-CoV-2 Infection on Labor and Delivery (L&D) units is a critical strategy to manage patient and health worker safety, especially in a vulnerable high-prevalence community. We describe the results of a SARS-CoV-2 universal screening program at the L&D Unit at Elmhurst Hospital in Queens, NY, a 545-bed public hospital serving a diverse,
## Maternal Demographics

<table>
<thead>
<tr>
<th>Maternal Demographics</th>
<th>SARS-CoV-2 + N=46 (37%)</th>
<th>SARS-CoV-2 - N=78</th>
<th>P</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age &gt;30</td>
<td>57%</td>
<td>45%</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Hispanic</td>
<td>78%</td>
<td>54%</td>
<td>0.007</td>
<td>3.1</td>
</tr>
<tr>
<td>Spanish 1^0 Language</td>
<td>74%</td>
<td>41%</td>
<td>0.000</td>
<td>4.1</td>
</tr>
<tr>
<td>Comorbidity</td>
<td>57%</td>
<td>45%</td>
<td>NS</td>
<td>NS</td>
</tr>
</tbody>
</table>

124 Moms total
Newborns of COVID-19 mothers: short-term outcomes of coloconing and breastfeeding from the pandemic’s epicenter

Uday P. Patil¹,² · Sheela Maru²,³,⁴ · Parvathy Krishnan¹,² · Rachel Carroll-Bennett²,⁴ · Joselito Sanchez¹,² · Lawrence Noble¹,² · Randi Wasserman¹,²

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Introduction

The United States of America has been severely affected by the COVID-19 pandemic during the spring of 2020 [1]. The largely immigrant and densely populated neighborhoods of Queens, NY, served by a large public hospital, Elmhurst Hospital Center (NYC H+H/Elmhurst), have emerged as one of the hardest-hit areas in the country [2]. Newborns are at high risk of acquiring severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) from their infected mothers who delivered during this period; however, data remains limited [3]. We aim to describe the unique experience from our Baby Friendly hospital at the epicenter of the COVID-

records. Descriptive statistics on the newborns of positive mothers along with maternal data is presented as overall results and percentages. BioReference laboratories and our hospital laboratory (Cepheid Xpert Xpress) were used for SARS-CoV-2 reverse transcriptase polymerase chain reaction (PCR) test. This study was approved under exempt status by the Institutional Review Board of Icahn School of Medicine at Mount Sinai (IRB number 20-03424), local ethics committee, and the office of research administration.

Results
AAP Initial Guidance: 4/2 – 7/22

- Separation of mother and newborn
- Mothers may express breast milk for FT & Preterm
- Expressed milk should be given by others
Our Policy

- Skin-to-skin care, rooming-in and breastfeeding, unless mother or infant require ICU
- When not BF, SSC, or other infant care: separation of ≥6 feet (2 meters)
- Hand hygiene, face mask even while breastfeeding
- Newborns screened for the virus
- BF 31/33 (94%)
- Any BM 40/45 (89%)
- 7 NICU
- 1st 2 weeks, no COVID related:
  - Symptoms
  - ER visits
  - Hospitalizations
- No short term adverse neonatal outcomes with SSC, rooming-in, or BF.
AAP National Perinatal Registry

- 8,178 positive mothers
- 3,653 (45%) Hispanic (18.5% pop)
- 1,649 (20%) Black (13.4% pop)
- Separated 31%
- Positive infants 2%
AAP Registry

- Symptomatic Infant 13%: respiratory distress
- Direct Breastfeeding 51%
- Mothers Milk 72%
- Donor Milk 3%
- Formula 25%
- 88 deaths, none Covid
AAP 7/22/20 Revised Guidance

- 1500 cases in registry
- No confirmed neonatal death during initial hospitalization from Covid.
- Rooming-in doesn’t increase chance of positive PCR in infant.
- SSC in DR
- Room-in & BF with distance, mask & hand-hygiene.
Covid Mother’s Study

- Retrospective cohort study of mothers with COVID-19 Infants <12 months
- Anonymous worldwide online survey between May 4 and September 30, 2020
- 60% USA
- Bartick M. Breastfeeding Medicine 2021 Mar; 16(3):189-99
No Increase Infant Covid

<table>
<thead>
<tr>
<th>Neonates</th>
<th>aOR (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin-to-skin ≥1 hour after birth compared to</td>
<td>1.44 (0.25, 8.36)</td>
<td>0.68</td>
</tr>
<tr>
<td>removal from mother</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rooming in at arms’ reach, compared to separate</td>
<td>1.42 (0.26, 7.55)</td>
<td>0.68</td>
</tr>
<tr>
<td>room</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct breastfeeding compared to breast milk not</td>
<td>RR: 0.60 (0.22, 1.62)</td>
<td>0.37</td>
</tr>
<tr>
<td>fed directly</td>
<td></td>
<td></td>
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</tbody>
</table>

(Bartick MC. Breastfeeding Medicine. 2021 Mar; 16(3):189-99.)
Nearly 60% of separated mothers felt “very distressed”

<table>
<thead>
<tr>
<th>Scenario</th>
<th>aOR (95% CI)</th>
<th>p</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>No SSC</td>
<td>0.39 (0.18-0.85)</td>
<td>.02</td>
<td>2.5X</td>
</tr>
<tr>
<td>No Rooming-In</td>
<td>0.26 (0.12-0.56)</td>
<td>.001</td>
<td>4X</td>
</tr>
<tr>
<td>No Direct Breastfeeding</td>
<td>0.17 (0.09-0.33)</td>
<td>.001</td>
<td>6X</td>
</tr>
</tbody>
</table>

Virus Can’t Enter Mammary Cells

- 5% cells express ACE2
- No cell co-expressed ACE2 with TMPRSS2
- Goad J. Plos one. Dec 2020; 15(12):e0243959
  RBD: receptor binding domain
Systemic Review: SARS-CoV-2 in BM

- 37 articles, 77 breastfeeding mothers with COVID-19
- 9 of 68 breastmilk samples were positive
- No evidence of transmission through breastmilk
SARS-CoV-2 in BM

- 64 samples from 18 women with confirmed infection.
- Only one sample positive.
- No replication-competent virus detectable in any sample, including the positive sample.

It was evident that 19/20 undiluted milk samples obtained from COVID-19-recovered donors exhibited Spike-specific IgA binding activity significantly above that of the pre-pandemic control milk samples.

sIgA in 95% @ 4-6 weeks post-infection. Fox A. Iscience. Nov 2020;23(11):101735
Vaccination

- Titers for 10 women in different color
- Green arrow 1\textsuperscript{st} vaccine, blue 2\textsuperscript{nd}
- Top Maternal blood, Bottom BM.
- Friedman MR. medRxiv. 2021
mRNA Not in BM 4-48 hours Post-Vaccine

COVID-19 mRNA vaccine is not detected in human milk

Yarden Golan, Ph.D., Mary Prahl, M.D., Arianna Cassidy, M.D., Ph.D., Christine Y. Lin, Nadav Ahituv, Ph.D., Valerie J. Flaherman, M.D., M.P.H., Stephanie L. Gaw, M.D., Ph.D.

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Take Home Messages: COVID & BF

- Most infants negative and asymptomatic
- Breastfeeding and practices that promote BF should be promoted to decrease infant infection.
- Mother–baby separation has negative health and emotional consequences.
- Mothers with suspected or confirmed COVID-19 can directly breastfeed with hand washing & face mask.
Message For Next Pandemic

- Skin to skin
- Rooming-in
- Direct breastfeeding
- Pumped breastmilk
- Should all be allowed unless there is clear evidence that these practices are dangerous.
- Anything else is unethical.