

Examining the Effects of Social Determinants of Health and Remote Outreach on Breast Milk Feeding Outcomes and Well Visit Completion

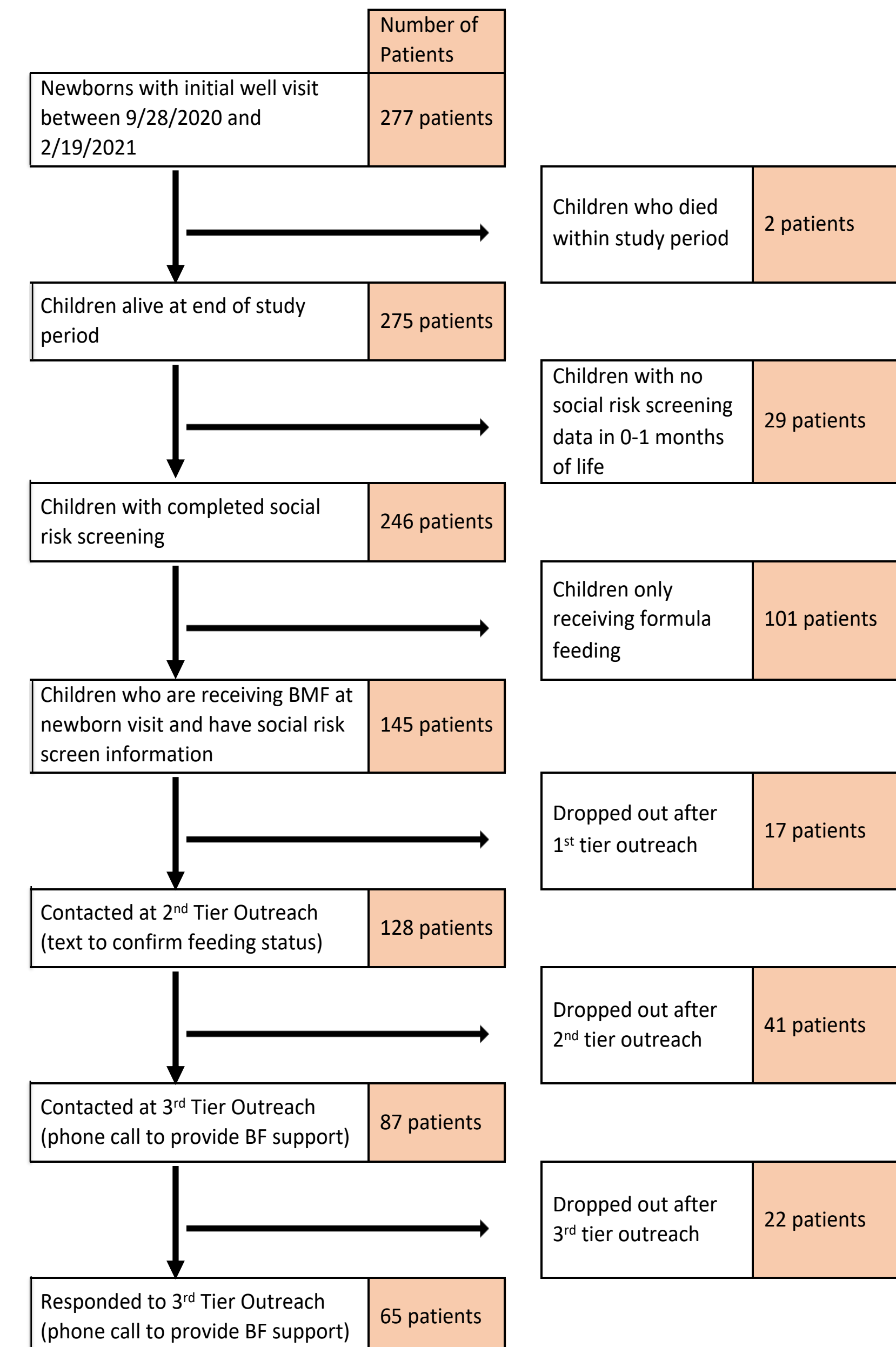
Laura Hardy, MD, PhD; Chidiogo Anyigbo, MD, MPH; Melinda C MacDougall, MS; Shelley Ehrlich, MD, ScD, MPH; Michelle Costanzo, MBA; Benjamin Foley, BA; Becky Haehnle, RN, CLC; Robin Steffen, MSN, RN, IBCLC; Kyle Kaplan, MPH; John Egbo, MPH; Kristy High, M.Ed.; Lakeya McNary, BA; Sheela Geraghty, MD, MS, IBCLC



Background & Methods

Universal screening within the CCHMC primary care clinic identifies health related social needs that can impact well being and health care utilization.

Retrospective review of 277 newborn visits from a quality improvement project to increase breast milk feeding rates via remote lactation support.



Flowsheet demonstrating patient selection for the breast milk feeding outreach.

Tier 1: texting to confirm patient phone number
 Tier 2: texting to confirm feeding status of newborn
 Tier 3: phone outreach with lactation consultant (**full engagement**)

	Not Fully Engaged	Fully Engaged (3 rd Tier Response)	p-value
Sample size	80	65	
Child Sex:			0.456 [^]
Female	48 (60%)	35 (54%)	
Male	32 (40%)	30 (46%)	
Premature birth	16 (20%)	6 (9%)	0.072 [^]
Child Race/Ethnicity			0.013 [#]
Hispanic	7 (9%)	0	
Non-Hispanic White	11 (14%)	16 (25%)	
Non-Hispanic Black	61 (76%)	45 (69%)	
Non-Hispanic Asian, Other, Unknown	1 (1%)	4 (6%)	
Insurance:			0.739 [#]
Public	69 (86%)	53 (82%)	
Private	9 (11%)	10 (15%)	
Self-Pay	2 (3%)	2 (3%)	
Primary Language:			0.825 [#]
English	77 (96%)	63 (97%)	
Non-English	3 (4%)	2 (3%)	
Delivery method:			0.661 [^]
C-section	32 (41%)	24 (37%)	
Vaginal	47 (59%)	41 (63%)	
Maternal age:			0.124 [^]
< 26	29 (38%)	15 (23%)	
26 – 35	40 (52%)	44 (69%)	
> 35	8 (10%)	5 (8%)	
Maternal age (mean)	27.6	29.5	0.046 [~]
Has another living child:			0.811 [^]
Yes	70 (88%)	56 (86%)	
No	10 (13%)	9 (14%)	
0 reported social risks	20 (25%)	18 (28%)	0.714 [^]
≥ 1 reported social risks	60 (75%)	47 (72%)	
Number of reported social risks			0.881 [^]
0	60 (75%)	47 (72%)	
1	10 (13%)	8 (12%)	
2+	10 (13%)	10 (15%)	
Unmet Social Risk Domain:			0.850 [^]
Food Insecurity	15 (19%)	13 (20%)	
Benefits Issue	7 (9%)	9 (14%)	0.326 [^]
Financial Strain	3 (4%)	2 (3%)	0.825 [#]
Unstable Housing	8 (10%)	5 (8%)	0.615 [^]
Caregiver Mental Health	0	6 (9%)	0.005 [#]
Household Trauma	2 (3%)	0	0.197 [#]

Table 1. Summary of patient demographics. Comparing patient families that did not receive breast milk feeding support via both texting and phone outreach vs families who did.

There was no statistical difference in social risk between groups.

[^] Chi-square test
[#] Fisher's exact test
[~] t-test

Conclusion

Mothers who were fully engaged in a remote lactation support outreach program were significantly more likely to return to primary care clinics with their infants for a 2-month well child check as compared to mothers who were not fully engaged in the program. They were also 45% more likely to still be breastfeeding their infants at 4 months.

Return for Well Child Visits and Breast Milk Feeding Duration

	2-month WCC Breast milk feeding		4-month WCC Breast milk feeding		6-month WCC Breast milk feeding	
	RR (95% CI)	p-value	RR (95% CI)	p-value	RR (95% CI)	p-value
Fully engaged vs Not fully engaged	1.29 (0.97, 1.71)	0.076	1.45 (0.99, 2.12)	0.054	1.47 (0.84, 2.57)	0.176
≥ 1 reported social risks vs 0 reported social risks	0.81 (0.56, 1.16)	0.252	1.09 (0.73, 1.63)	0.669	0.96 (0.51, 1.78)	0.886

Table 2. Remote breast milk feeding support did not significantly increase breast milk feeding rates at 2, 4, or 6-months. There was a trend towards significance at the 2 and 4-month mark for continued breast milk feeding after full engagement with remote outreach. Analysis performed using adjusted relative risk and controlling for social risk.

	2-month WCC		4-month WCC		6-month WCC	
	RR (95% CI)	p-value	RR (95% CI)	p-value	RR (95% CI)	p-value
Fully engaged vs Not fully engaged	1.16 (1.04, 1.29)	0.009	1.16 (0.98, 1.36)	0.081	0.98 (0.78, 1.24)	0.891
≥ 1 reported social risks vs 0 reported social risks	1.29 (0.97, 1.71)	0.076	1.45 (0.99, 2.12)	0.054	1.47 (0.84, 2.57)	0.176

Table 3. Full engagement in remote breast milk feeding support significantly increased return for the 2-month well child visit. There was also a trend towards significance for the 4-month well child visit. Analysis performed using adjusted relative risk and controlling for social risk.

Strengths and Limitations

Strengths:

- Novel integrated approach using community health worker text-based outreach and phone-based lactation support.

Limitations:

- The study may be underpowered and not fully representative of the effect of remote breast milk feeding outreach on duration of breast milk feeding and impact on return visit rates (type I statistical error).

