

Prevalence of Breastfed Newborns at the Family Medical Center in Peoria, IL



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Relevance of Study



- Human breast milk is recommended as the sole nutritional source for term infants for the first 6 months of life. (1)
- Breastfeeding provides short and long term benefits to the infant as well as the mother.
- Not only is breastfeeding beneficial to mother and baby, but it also has significant economic benefits for the family and society.

Relevance of Study



- **Breast milk contains:**
 - growth factors that impact intestinal tract development
 - ✦ epidermal growth factor and nerve growth factor
 - Hormones that may affect intestinal mucosal function and growth
 - ✦ cortisol, somatomedin-C, insulin, thyroid hormone
 - secretory IgA- secreted by maternal plasma cells which provides passive immunity against antigens to which mother has been exposed (5,6)
 - neutrophils and macrophages which contribute to antimicrobial activity (7).

Relevance of Study



- In developed countries, breastfed infants have a lower rate of hospitalization and outpatient visits in the first year of life. (8,9).

Relevance Specific to Family Medicine



- Breastfeeding not only impacts our patients during infancy, but has long term benefits that carry over into adulthood, including decreased risk of chronic diseases such as:
 - obesity (10)
 - cancer (11)
 - adult coronary artery disease (12)
 - inflammatory bowel disease (13)
 - improved neurodevelopmental outcome compared to formula fed infants (14).

Relevance Specific to Family Medicine



- Not only is breastfeeding beneficial to infants, it provides advantages for the mother.
- Maternal benefits include:
 - reduction of maternal response to stress (15)
 - enhanced weight loss after pregnancy (16)
 - a reduction in the risk of breast cancer (17)
 - decreased risk of hypertension, diabetes and cardiovascular disease (18)

Relevance to the Patient-Family Unit



- The family can benefit from the estimated yearly savings of \$1000 on formula.
 - Additional savings for families are accrued by decreased healthcare expenses of breastfed infants.
- (19)

Relevance to Society



- In 2012, the CDC reported that in the state of Illinois
 - 76.8% of women ever breastfed
 - 49.8% were breastfeeding at 6 months
 - 35.7% exclusive breastfeeding at 3 months
 - 13.6% exclusive breastfeeding at 6 months.
- The Healthy People 2020 Breastfeeding Objectives set targets of ever breastfeeding at 81.9%, six months breastfeeding at 60.6%. (21)

Scope of Project



- Given the significant medical benefits and financial impact that breastfeeding can have, we chose to evaluate the prevalence of breast feeding in our clinic population at the Family Medical Center.
- Our hypothesis was that the prevalence of breastfeeding in our patient population was below the national average.
 - 2012: 35.7% exclusive breastfeeding at 3 months and 13.6% exclusive breastfeeding at 6 months. (21)

Research Design



- A retrospective review:
 - Mothers
 - ✦ who received prenatal care at the Family Medical Center in 2011 and 2012
 - ✦ were delivered by our residents and faculty members.
 - Newborns
 - ✦ Who had first well child check at the Family Medical Center.

Research Design



- Data gathered from mother's chart:
 - maternal ethnicity
 - marital status
 - maternal age
 - number of living children
 - zip code
- These data points were selected in order to help identify factors that may impede a mother's choice to breastfeed.

Research Design



- **Data gathered from infant's chart:**
 - Age of newborn at first visit
 - Feeding type- solely breastfed, solely formula fed, or combined formula fed and breast

Research Design



Inclusion criteria:

- Charts with documentation of prenatal care provided by faculty or residents at the Family Medical Center.
- First newborn visit to FMC charts with documentation of feeding type (breast, formula, or both).

Research Design



Exclusion criteria:

- Prenatal care provided outside of Family Medical Center with the exception of consultation by Perinatology.
- Babies that did not received their initial newborn care at our clinic.
- First newborn visit to FMC charts with NO documentation of feeding type (breast, formula, or combined).

Data Gathering



- 2011-2012
- 975 maternal charts identified as deliveries performed with our faculty members.
 - Dr. Amanda Wright
 - Dr. Fatimah Oloriegbe
 - Dr. Craig Griebel
 - Dr. Kelvin Wynn
 - Dr. Marc Carrigan
 - Dr. Rahmat Na'Allah

Data Gathering



975

- Deliveries performed by our residents/faculty 2011-2012.

219 met
criteria

- Did mother receive prenatal care at FMC?
- Was infant's initial visit at FMC?

48 breast

171
formula/co
mbined

Findings

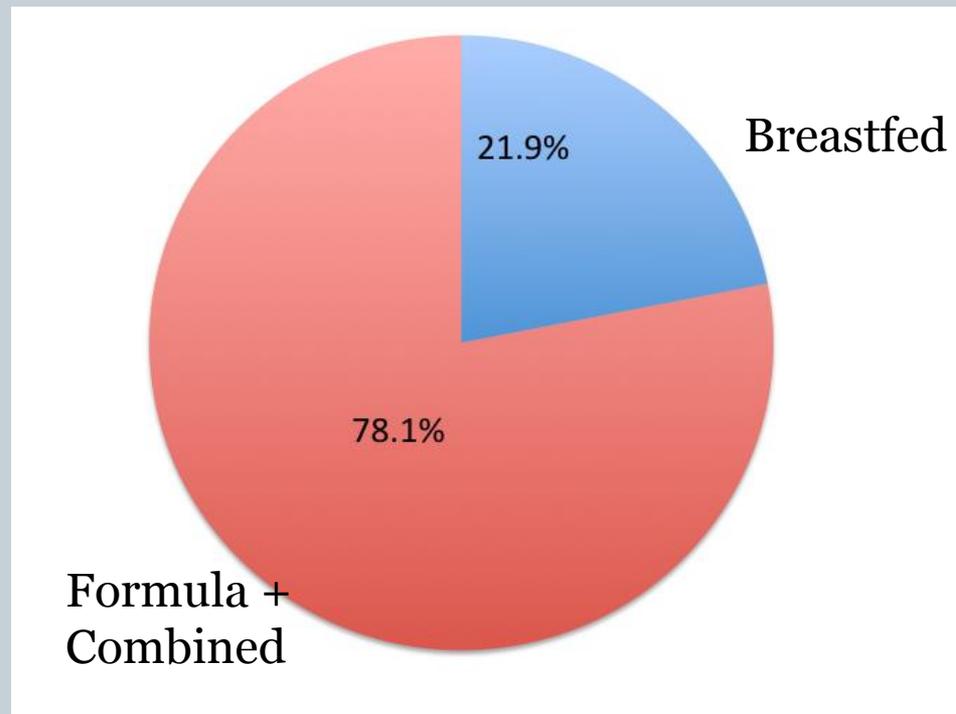


- **Breastfeeding Report Card- CDC 2012, for Illinois.**
 - 2012: 35.7% exclusive breastfeeding at 3 months and 13.6% exclusive breastfeeding at 6 months.
- **Family Medical Center.**
 - $48/219 = 21.92\%$ exclusively breastfeeding at initial prenatal visit.

Findings

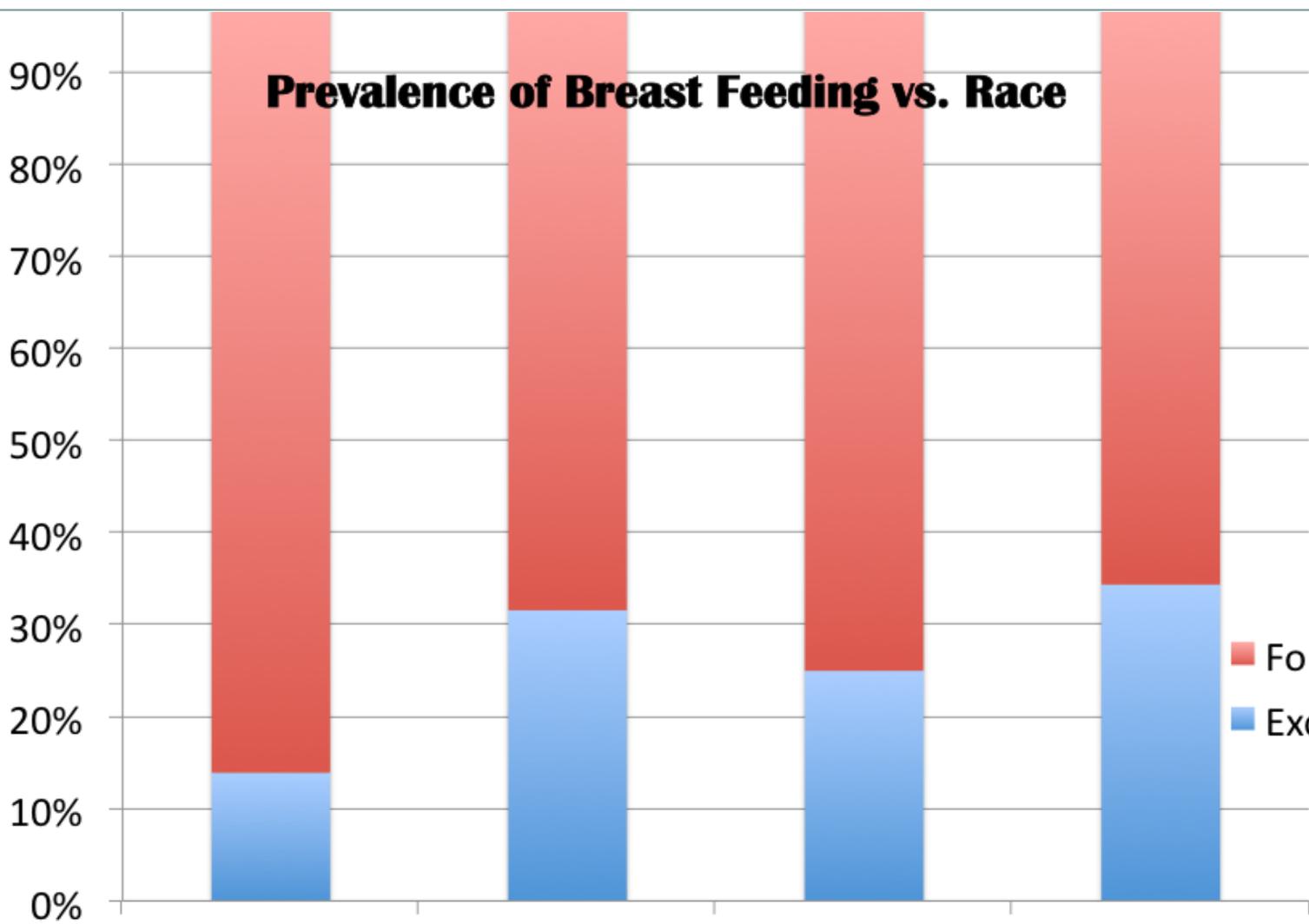


Prevalence of Breastfed Infants



Prevalence of Breast Feeding vs. Race

p value= 0.014



■ Formula/Combined
■ Exclusively Breast Fed

African American
13.93 %

Caucasian
31.58%

Hispanic
25%

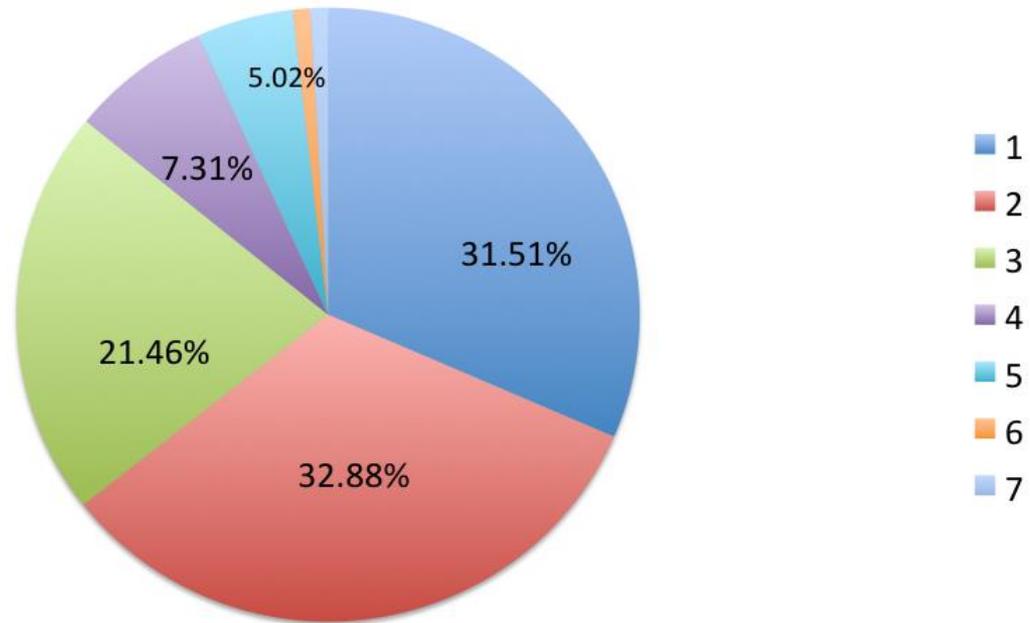
Other
34.48%



Findings



% Breast Fed babies in regards to children at home



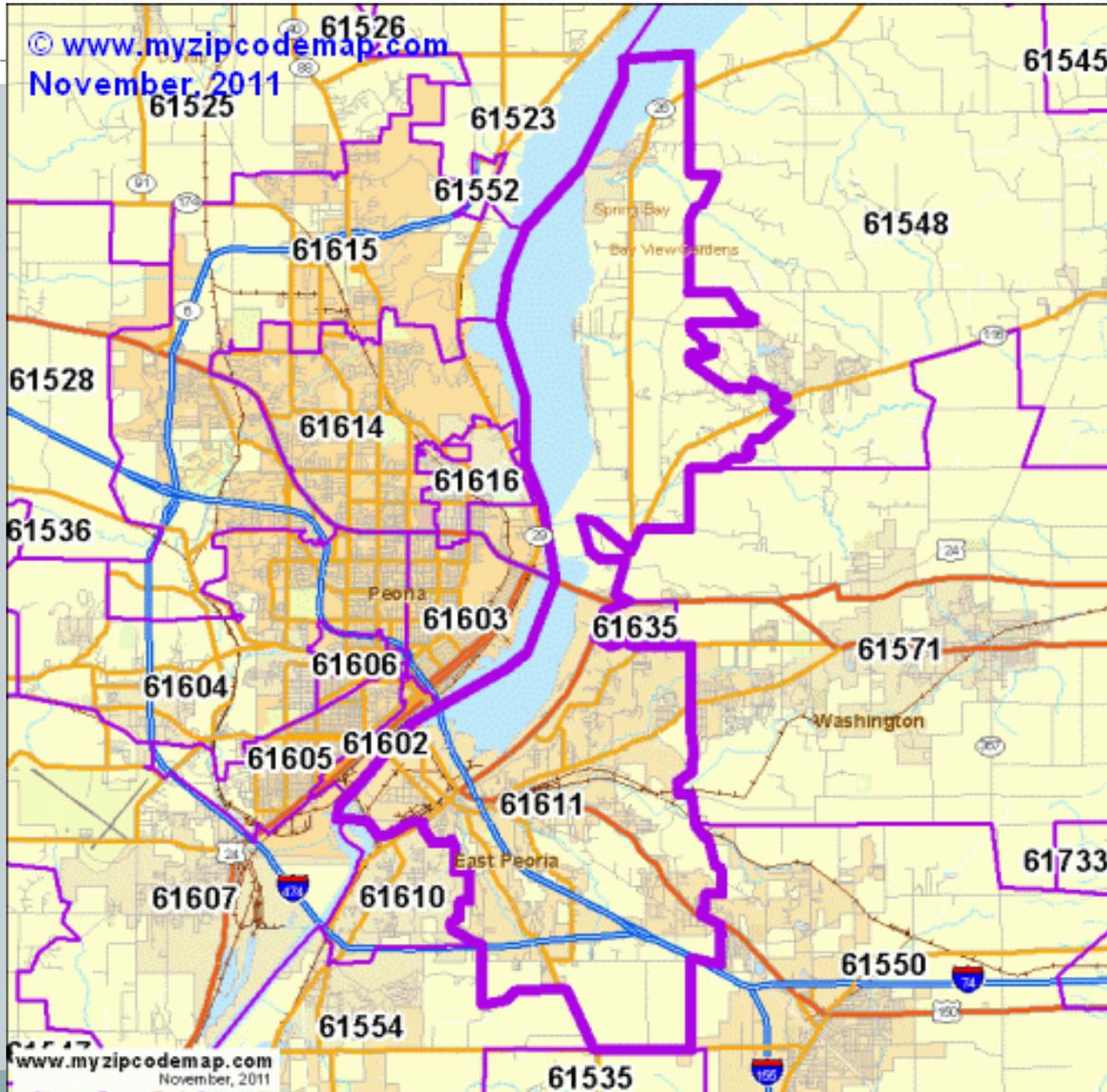
P = 0.178

Findings



- Marital status did not have statistical significance on breastfeeding rates.
- $P = 0.052$

Zip Code



FMC: 61602

Zone 1: 61601- 61611
-median household
income 2011: \$20,938
(61602), \$36479 (61606)

Zone 2: 61614-61616
-median household
income 2011: \$59,825
(61614)

Zone 3: Furthest from
FMC

(24)

Findings



Zip Code:

- Zone 1 is reference when baby age is controlled for using logistical regression model.
- There is statistical significance when comparing Zone 1 to Zone 3 (p value = 0.0123).
- There is no statistical significance when comparing Zone 1 to Zone 2 (p value = 0.054).

Findings



- After controlling for the zip code, infant age at first prenatal visit had statistical significant effect on breastfeeding.
- $P = 0.0142$

Conclusion



- Our hypothesis holds true. Our breastfeeding rates are below the national average at 3 month visit.
 - 21.9% vs 35.7%
- Factors that show statistical significance on breastfeeding rates:
 - Race
 - Zip code
 - Baby age at first newborn visit

Conclusion



- Breastfeeding must be addressed at each prenatal visit.
- Target population for increased breastfeeding education includes African Americans who live in closest proximity to FMC.
- Close newborn follow up after hospital discharge must be stressed.

Limitations and Weaknesses



- Small sample size (n) of study.
 - Many of initial 975 likely received care at Carver and Havana Clinics.
- We cannot directly compare our exclusive breastfeeding rates to the CDC report card data given that data was collected at 3, 6 and 12 month intervals.
- Did not differentiate between vaginal and cesarean deliveries.

Limitations and Weaknesses



- Some women transferred to our clinic mid to late in their prenatal course. This may have impacted prenatal counseling and education regarding importance of breast feeding.
- Did not follow infants past initial prenatal visit and did not determine duration of nursery stay.
- Did not identify which patients received consultation with Lactation Consultants while inpatient.

Impact on the Future



- **Further studies:**
 - Retrospective Review:
 - ✦ Include Carver and Havana Clinics.
 - ✦ Factor in role of lactation consultants.
 - Survey:
 - ✦ Resident self-survey to evaluate for knowledge gaps regarding breastfeeding. These gaps to be addressed with self study and additional didactic sessions.
- **Quality Improvement Opportunities:**
 - Create an educational handout to be given at each prenatal visit to stress the importance and benefits of breastfeeding.
 - Collaborate with community resources to support mothers in breast feeding.

Questions



Resources



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Resources



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Resources



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Resources



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