Hospital supplementation, cultural identity and breastfeeding measures
In a sample of Minnesota WIC participants born in 2015

The importance of breastfeeding exclusivity during the hospital stay

Numerous studies have found that formula supplementation of breastfed infants during the hospital stay is a risk factor for early cessation of breastfeeding. An analysis of infants enrolled in the Minnesota WIC program in 2010 found that breastfed infants fed formula in the hospital were 144% more likely to have stopped breastfeeding by three months than those not receiving formula in the hospital.\(^1\)

The American Academy of Pediatrics Policy Statement on Breastfeeding states, “Hospital routines to encourage and support the initiation and sustaining of exclusive breastfeeding should be based on the American Academy of Pediatrics-endorsed WHO/UNICEF ‘Ten Steps to Successful Breastfeeding’”. They recommend “Give no supplements (water, glucose water, infant formula or other fluids) to breastfeeding newborn infants unless medically indicated”.\(^2\)

The Baby-friendly Hospital Initiative (BFHI) Step 6 states “Give infants no food or drink other than breast-milk, unless medically indicated”.\(^3\) The BFHI sets an expectation that at least 75% of infants be either exclusively breastfed or exclusively fed human milk from birth to discharge.

The Healthy People 2020 objective MICH 23 aims to reduce the proportion of breastfed newborns who receive formula supplementation within the first 2 days of life, from a 2006 baseline of 24.2 to a target of 14.2%.\(^4\)

Purpose of this project

In late 2013, due to concerns about health disparities among diverse high risk populations that are aggregated in the current WIC race and ethnicity categories, some WIC agencies in Minnesota began piloting a new data field. If a participant selected Asian or Black or African American under the Federal categories for race/ethnicity, an additional question was asked about which group they identify with. Choices included African American, Somali, Liberian, Sudanese, Other - Black, Hmong, KaRen and Other - Asian. Agencies with a breastfeeding peer program were included in the pilot, and all participants in those agencies (not just peer clients) were included. These agencies included Hennepin, Ramsey, Olmsted and several suburban and Greater Minnesota agencies (see figure 4.) This information was collected for 9522 of 30,833 WIC participants born in 2015.

A second pilot question asked about breastfeeding status at infant certification, and included the following choices: BF & supplemented in hospital, BF Only – not fed anything else and Formula Only.
Breastfeeding and in-hospital formula supplementation by race/ethnicity

Figure 1. The rates of hospital supplementation varied widely by race/ethnicity, with Black/African American and Asian women who initiated breastfeeding most likely to supplement while in the hospital. White mothers were the least likely to supplement in the hospital, followed by Hispanic mothers. African American women were just as likely to initiate breastfeeding as White mothers, but almost twice as likely to supplement with formula while in the hospital.

Breastfeeding and in-hospital formula supplementation by cultural identity

Among the 9522 infants, 3400 of the Black or Asian mothers had an cultural identity specified. These mothers were primarily served in Ramsey, Hennepin and Olmsted counties.

Figure 2. Breastfeeding and supplementation among the Black mothers with a known cultural identity. Somali mothers had the highest breastfeeding initiation rates, at 98%, while the African American group (a mixture of foreign- and native-born mothers) had the lowest rate at 75%. 3/4 of the breastfed Somali infants and more than 2/3 of the breastfed Liberian infants were supplemented in the hospital, compared to half of the infants in the African American category.
Figure 2. Infant feeding during the hospital stay among African Americans 2015
(n=2214)

Figure 3. Among Asian mothers the breastfeeding rates also varied widely. Hmong mothers had far lower initiation rates (57%) than the other two categories (90%). All the Asian groups had supplementation rates over 50%, with almost 70% of the Hmong breastfed infants supplemented in the hospital.

Breastfeeding and in-hospital formula supplementation for selected WIC agencies

Figure 4. Rates of supplementation in the hospital also varied widely depending on location. Mothers in the NE area reported very little hospital supplementation (about 15% of breastfed babies). The highest rates of supplementation were in Olmsted, with 56% of breastfed infants supplemented, followed by St. Paul Ramsey, with 53% supplemented.
Breastfeeding at 3 months of age, comparing infants who had been given formula to those exclusively breastfed during the hospital stay

**Figure 4.** Infant feeding during the hospital stay by peer program agency* 2015 (n=8867)

* includes agencies where > 100 participants answered the question on exclusivity

**Figure 5.** Breastfeeding status at 3 months varied depending on whether breastfed infants had been given formula during their hospital stay. At 3 months, infants exclusively breastfed in the hospital were more likely to still be breastfeeding, and 4 times more likely to be fully breastfeeding, than were those who were given formula in the hospital.

**Figure 5.** Breastfeeding at 3 months, by infant feeding status at hospital discharge (n=7510)
Breastfeeding duration and formula usage, comparing infants who had been given formula to those exclusively breastfed during the hospital stay

Figure 6. Babies not supplemented in the hospital, breastfed on average 28 days longer than those who received formula in the hospital, and received their first formula vouchers on average more than two weeks later than supplemented infants. During their first year of life, infants exclusively breastfed in the hospital on average received less than two-thirds the amount of formula as infants supplemented during the hospital stay.

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<thead>
<tr>
<th>Average days breastfed:</th>
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<tbody>
<tr>
<td>Among those supplemented: 121 days</td>
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<td>Among those not supplemented: 149 days</td>
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<tr>
<th>Average number of days until first WIC formula voucher issued to breastfed infants:</th>
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<tr>
<td>Among those supplemented: 26 days</td>
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<td>Among those not supplemented: 42 days</td>
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<tr>
<th>Average ounces of formula issued in the first year to breastfed infants:</th>
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<td>Among those supplemented: 4845 ounces</td>
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<td>Among those not supplemented: 3042 ounces</td>
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