Initiation
Human milk is considered the gold standard for infant nutrition and is uniquely superior compared to any other substitutes. Breast milk within the first few days of lactation is extremely high in antibodies and growth proteins, and helps to develop the infant’s gut. This unique breast milk is referred to as colostrum.\textsuperscript{1,2}

The World Health Organization (WHO) and United Nations Children’s Fund (UNICEF) recommend that initiation of breastfeeding occur within the first hour of life. Proper and early initiation of breastfeeding is especially important because it is highly correlated with longer duration and is known to be beneficial for both mother and child.\textsuperscript{3}

Duration
It is widely recommended that infants be breastfed exclusively for at least the first six months of life and continue breastfeeding for at least 12 months. Exclusivity is defined as an infant’s consumption of human milk with no supplementation of any other liquid or food, including water.\textsuperscript{4} Breastfeeding can continue as long as mutually desired by both mother and child.\textsuperscript{4} The advisement that infants be breastfed exclusively for at least the first six months of life and continue breastfeeding for at least 12 months is the recommendation of the American Academy of Pediatrics (AAP),\textsuperscript{4} American Academy of Family Physicians,\textsuperscript{5} American College of Obstetricians and Gynecologists,\textsuperscript{6} American College of Nurse-Midwives,\textsuperscript{7} American Dietetic Association,\textsuperscript{8} and the American Public Health Association.\textsuperscript{9} These recommendations are based on the literature that indicates reduced adverse outcomes among breastfed babies and breastfeeding women. These benefits have been recognized to be enhanced by exclusivity and longer duration.

Call to Action
In 2011, the Surgeon General and the US Department of Health and Human Services released a call to action to support breastfeeding, which acknowledges the importance of breastfeeding and the need for education and support for mothers. Additionally, it provides 20 actions that are recommended to support breastfeeding across the US.\textsuperscript{10} For more information and access to the 20 actions, see the following website: www.surgeongeneral.gov/topics/breastfeeding/calltoactiontosupportbreastfeeding.pdf

Contraindications
Although breastfeeding is recommended for the majority of infants, there are a small number of women that should not or cannot breastfeed.\textsuperscript{4} Women should talk to their doctor to determine the appropriate choice.

**Fast Facts about Breastfeeding**

- Infants should be exclusively breastfed for at least six months, and ideally for the first year of life unless otherwise advised.
- In 2010, 81.6% of Wyoming mothers were initiating breastfeeding at hospital discharge.
- As of 2007, 16.7% of Wyoming mothers were breastfeeding exclusively for the first six months.
The Benefits of Breastfeeding

Health Benefits
Breastfed children have been found to have better short and long term health outcomes compared to formula-fed infants. Breast milk is filled with antibodies and immunologic properties that protect against infection. Breastfeeding is associated with decreased risks for a number of childhood infections such as diarrhea, ear infections, respiratory tract infections, urinary tract infections, and sudden infant death syndrome. Compared to children that were not breastfed, infants that were exclusively breastfed for at least four months were 72% less likely to be hospitalized for a lower respiratory tract disease within the first year of life. Furthermore, infants that were breastfed were 64% less likely to experience diarrhea and vomiting and had 36% less risk of sudden infant death syndrome compared to children that were ever breastfed. Protective effects have also been suggested and observed for many other long-term outcomes such as diabetes, asthma, and overweight and obesity among older children and adults who were breastfed. Compared to children that were not breastfed, children that were breastfed had a 22% decrease in risk for childhood obesity and a 39% decrease in risk for diabetes. Further, the risk associated with some relatively rare but serious illnesses, such as leukemia, is also lower among breastfed infants. Most health outcomes that have been studied show a dose-response relationship indicating that the longer the child is breastfed, the larger the decrease in risk.

Economic Benefits
In addition to the health benefits, for infant and mother, there are economic incentives for breastfeeding for families, employers and insurers. Families that follow optimal breastfeeding guidelines can save more than $1,200 in the first year alone, in formula costs. A study conducted in 2007 discovered that if 90% of US families followed guidelines to breastfeed exclusively for the first six months, the US would save $13 billion annually from reduced direct medical costs, indirect costs, and the cost of premature death. There are also economic incentives to breastfeeding for employers. One large company studied women that participated in their lactation support in the workplace program. Over two years, they found that the program saved the company $240,000 annually in health care expenses, with 62% fewer prescriptions and $60,000 savings in reduced absenteeism rates. Since breastfed children are healthier on average, working mothers tend to miss work less often to care for sick children. One study found one-day absences to care for sick children occur less than half as often for mothers of breastfed infants compared to formula fed infants. Additionally, retention rates of mothers with access to lactation support in the workplace programs are much higher. Several companies with lactation programs found a retention rate of 94.2% among the maternity workforce compared to the national average of 59%.

Other Benefits
Breastfeeding provides a bonding or closeness experience between mother and child. Although research is not conclusive, there is some evidence that breastfeeding may help reduce the risk of postpartum depression. Additionally, breast milk is the most environmentally sound option as it is natural, renewable, and there are no packages involved.
Healthy People 2020

“Healthy People provides science-based, 10 year national objectives for improving the health of all Americans.” Healthy People 2020 (HP2020) established four overall goals for this decade:

1. Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death;
2. Achieve health equity, eliminate disparities, and improve the health of all groups;
3. Create social and physical environments that promote good health for all;
4. Promote quality of life, healthy development, and healthy behaviors across all life stages.

To achieve these goals, objectives have been set for a variety of indicators that are used to measure progress. Some of these objectives also apply to the priorities set by the Maternal and Family Health Section of the Wyoming Department of Health to improve the health of Wyoming women and families.

The eight HP2020 breastfeeding goals are shown in Table 1 to the right.

In order to assess breastfeeding progress in Wyoming, several data sources and several indicators have been used. Data for Wyoming is available for all of these HP2020 objectives except the indicator ‘Increase the proportion of employers that have worksite lactation support programs.’ Data capacity respective to this goal should be researched, and developed.

Additionally, in order to quantify and measure the last HP2020 goal (increase the proportion of live births that occur in facilities that provide recommended care for lactating mothers and their babies) the percent of births that occur at Baby-Friendly Facilities will be used and presented. See page 6 for further discussion.

Table 1: Healthy People 2020 Breastfeeding Objectives

<table>
<thead>
<tr>
<th>Goal</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase the proportion of infants who are breastfed</td>
<td></td>
</tr>
<tr>
<td>Ever</td>
<td>81.9%</td>
</tr>
<tr>
<td>At 6 months</td>
<td>60.6%</td>
</tr>
<tr>
<td>At 1 year</td>
<td>34.1%</td>
</tr>
<tr>
<td>Exclusively through 3 months</td>
<td>46.2%</td>
</tr>
<tr>
<td>Exclusively though 6 months</td>
<td>25.5%</td>
</tr>
<tr>
<td>Increase the proportion of employers that have worksite lactation support programs</td>
<td>38%</td>
</tr>
<tr>
<td>Reduce the proportion of breastfed newborns who receive formula supplementation within the first two days of life</td>
<td>14.2%</td>
</tr>
<tr>
<td>Increase the proportion of live births that occur in facilities that provide recommended care for lactating mothers and their babies</td>
<td>8.1%</td>
</tr>
</tbody>
</table>
Data Sources

Beneficial information pertaining to the health of Wyoming men, women, and children are collected through surveillance projects and vital records. Access to this information allows the Maternal and Family Health Section (MFH) to better understand the health needs of Wyoming residents. Information specific to the MFH priority of breastfeeding was collected through the Wyoming Vital Statistics Services, the National Immunization Survey (NIS), the Wyoming Pregnancy Risk Assessment Monitoring System (PRAMS) and the National Center for Health Statistics (NCHS).

Wyoming Vital Statistics Services (VSS)

Vital Statistics Services is the custodian for official records for Wyoming residents regarding birth, death, marriage, and divorce. Information collected on the birth certificate is a critical resource for MFH because it contains comprehensive data including demographics, maternal outcomes and exposures. The breastfeeding measure collected on the birth certificate is breastfeeding at hospital discharge. In future years, VSS data will be available to determine the proportion of births that occur in accredited Baby-Friendly facilities that provide recommended care for lactating mothers and their babies.

National Immunization Survey (NIS)

NIS is conducted for the Centers for Disease Control and Prevention (CDC) and is a random-digit-dial telephone survey followed by a mailed survey. The survey began in April 1994 and targets a population of children between the ages of 19 and 35 months. The primary purpose of this survey is to assess progress towards set immunization goals. This rich information source is also used as a tool to acquire information on a large number of other behavioral characteristics such as breastfeeding. NIS reports breastfeeding specific data including: percent ever breastfed, percent breastfed at six and 12 months, percent exclusively breastfed at three and six months, and formula supplementation rates. The most current NIS survey year is 2007, which includes births from 2004-2006.

Wyoming Pregnancy Risk Assessment Monitoring System (PRAMS)

Maternal behaviors, exposures, and attitudes prior to, during, and shortly after pregnancy have been studied since 1987 through the CDC surveillance project called PRAMS. In participating areas, PRAMS collects state-specific data from women who have recently given birth to a live infant and were randomly chosen through the state’s birth certificate file. Information collected through PRAMS is used to monitor maternal and child health, identify emerging health issues, and measure progress in health behaviors. PRAMS has been actively collecting data in Wyoming since 2007. Breastfeeding measures reported from PRAMS include: proportion of women who initiated breastfeeding, and the proportion who breastfed for at least four weeks, for at least eight weeks, 12 weeks, and 16 weeks.

National Center for Health Statistics (NCHS)

NCHS is a data collection system conducted for the CDC and is the nation’s principal health statistics agency. They provide data to identify and address health issues by collecting data through a variety of sources. Sources of data collection include: birth and death certificates, medical records, personal interviews, standardized physical examinations and laboratory tests. Data used from NCHS in this overview is proportion of live births that occur in accredited Baby-Friendly facilities.
Wyoming Breastfeeding Data

Figure 1 provides an overview of how Wyoming and the US compare to three of the HP2020 objectives. Wyoming is considered to have met the HP2020 goals for ever breastfed, and breastfed at 12 months since the 95% confidence intervals overlap the HP2020 target. Respectively, these percentages for Wyoming are; 78.2% (95% CI: 71.8%-84.6%) and 29.0% (95% CI: 22.6%-35.4%). Wyoming did not meet the HP2020 goal for breastfed at six months, as the percentage was statistically lower than the objective. Nationally, the US did not meet any of these three goals and had percentages that were significantly lower than the HP2020 goal.

Figure 2 shows the HP2020 goals relating to exclusive breastfeeding. In 2007, Wyoming had significantly higher rates for exclusive breastfeeding through three months compared to the US. Wyoming met the HP2020 goal with 48.5% of women exclusively breastfeeding for the first 3 months. For exclusive breastfeeding through six months, neither Wyoming or the US met the HP2020 goal.
The last HP2020 goal is to ‘Increase the proportion of live births that occur in facilities that provide recommended care for lactating mothers and their babies.’ Standards have recently been set that outline exactly what the recommended care should be in facilities for mothers and children. These standards are further used to identify facilities that follow and implement these standards. Once a birthing facility has proven they meet all guidelines, they are evaluated and accredited as a ‘Baby-Friendly Hospital.’

The ten steps these facilities must implement to become accredited are those included in the box to the right.

In 2011, a study conducted in a US hospital discovered significant increases in breastfeeding initiation and exclusion when these ten steps were implemented. After accreditation, this study found a 9% increase in breastfeeding initiation and a 28% increase in exclusive breastfeeding rates.

Wyoming received its first baby friendly hospital accreditation in September 2010 for Powell Valley Healthcare. As of December 1st, 2011, 2.0% of Wyoming infants were born at this baby friendly hospital for 2011. Figure 4 shows percent births at baby-friendly facilities for each state for the US.
Initiation of breastfeeding should begin as soon after birth as possible. Figure 5 shows the proportion of women that initiated breastfeeding at hospital discharge compared to the HP2020 goal for ever breastfed. Since 2006, the proportion of women initiating breastfeeding have been steadily and significantly increasing (p<0.0001), and in 2010 Wyoming was very close to meeting the HP2020 goal.

Figure 6 shows proportions of breastfeeding and exclusive breastfeeding at infant ages of four, eight, 12, and 16 weeks. Breastfeeding rates decrease significantly as infant age increases. Additionally, for all four age groups, exclusive breastfeeding is significantly lower than still breastfeeding.
Barriers to Breastfeeding Initiation and Duration

Background
There are a number of barriers women cite as reasons for not initiating or not continuing to breastfeed. One common reason cited as a barrier is lack of knowledge. A national study of women enrolled in WIC found that only 36% of women knew that breastfeeding protects infants against diarrhea. Another study, found that only one-fourth of the US public agreed that feeding formula to infants instead of breast milk increases the chances a baby will get sick. Additionally, social norms and widespread exposure to substitutes for breast milk has led to the view that bottle feeding is the “normal” way to feed infants. Also, women can struggle with poor family and social support, feelings of embarrassment, lactation problems, and barriers with employment, child care, and health services.

Barriers to Duration
Table 3 summarizes reasons women cited for ceasing breastfeeding among women who initiated. Almost half (44.1%) of women cited they thought they were not producing enough milk. Additionally, 37% reported that they thought breast milk alone did not satisfy their child. Mothers that hold the belief that larger babies are healthier may be encouraged to supplement breastfeeding with formula. Additionally, experiencing a poor milk supply may result from infrequent feedings or incorrect techniques. Not understanding normal physiology of lactation or techniques may lead to the perception of insufficient supply when in fact the quantity is enough for the child. Difficulty nursing was reported by 27.4% of Wyoming women. In addition, 22.4% reported going back to school or work as a reason for stopping. A study of 712 mothers found that each additional week of maternity leave from work increased duration of breastfeeding by almost one-half week. These data should give insight to possible interventions and programs to support women to initiate and continue breastfeeding.

Table 2: Self-Reported Barriers to Initiating Breastfeeding, Wyoming PRAMS, 2007-2008

<table>
<thead>
<tr>
<th>Barriers to Initiation</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>I didn’t like breastfeeding</td>
<td>35.4%</td>
</tr>
<tr>
<td>Other</td>
<td>31.9%</td>
</tr>
<tr>
<td>I went back to work or school</td>
<td>19.8%</td>
</tr>
<tr>
<td>I had other children to take care of</td>
<td>18.6%</td>
</tr>
<tr>
<td>I was sick or on medicine</td>
<td>12.0%</td>
</tr>
<tr>
<td>I wanted my body back to myself</td>
<td>9.1%</td>
</tr>
<tr>
<td>I had too many household duties</td>
<td>8.8%</td>
</tr>
<tr>
<td>I didn’t want to be tied down</td>
<td>7.5%</td>
</tr>
<tr>
<td>I was embarrassed to breastfeed</td>
<td>6.1%</td>
</tr>
<tr>
<td>My baby was sick and could not breastfeed</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

Breastfeeding Barriers for Wyoming Women

Barriers to Initiation
From 2007-2008, 15.7% of Wyoming women reported they did not initiate breastfeeding. Table 2 shows the reasons these women listed for not initiating breastfeeding. Women could list as many reasons as applicable. The two most common reasons reported for not initiating breastfeeding were because women didn’t like it (35.4%) and other reasons (31.9%). Additionally, almost one in five women (19.8%) reported going back to school or work as a barrier. Employment is often listed as a barrier because women may have inflexible work hours, lack of privacy, no place to store breast milk, fear of job insecurity, or limited maternity leave.

Table 3: Self-Reported Barriers to Continued Breastfeeding, Wyoming PRAMS, 2007-2008

<table>
<thead>
<tr>
<th>Barriers to Continued Breastfeeding</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>I thought I was not producing enough milk</td>
<td>44.1%</td>
</tr>
<tr>
<td>Breast milk alone did not satisfy my baby</td>
<td>37.0%</td>
</tr>
<tr>
<td>My baby had difficulty nursing</td>
<td>27.4%</td>
</tr>
<tr>
<td>I went back to work or school</td>
<td>22.5%</td>
</tr>
<tr>
<td>Other</td>
<td>21.5%</td>
</tr>
<tr>
<td>My nipples were sore, cracked, or bleeding</td>
<td>21.1%</td>
</tr>
<tr>
<td>I thought my baby was not gaining enough weight</td>
<td>13.1%</td>
</tr>
<tr>
<td>I felt it was the right time to stop breastfeeding</td>
<td>11.1%</td>
</tr>
<tr>
<td>I had too many other household duties</td>
<td>9.8%</td>
</tr>
<tr>
<td>I got sick and could not breastfeed</td>
<td>8.6%</td>
</tr>
<tr>
<td>I wanted or needed someone else to feed the baby</td>
<td>8.5%</td>
</tr>
<tr>
<td>My baby was jaundiced</td>
<td>7.9%</td>
</tr>
<tr>
<td>My baby was sick and could not breastfeed</td>
<td>4.5%</td>
</tr>
</tbody>
</table>
Disparities among Women and Breastfeeding

Disparities

HP2020 defines a health disparity as “a particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage. Health disparities adversely affect groups of people who have systematically experienced greater obstacles to health based on their racial or ethnic group; religion; socioeconomic status; gender; age; mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion.”

Literature indicates breastfeeding rates differ depending on race, education, socioeconomic states, and other demographic factors. According to the CDC, the lowest rates of breastfeeding are found in non-Hispanic black women, mothers in poverty, mothers with less than a high school education, and mothers residing in rural areas.

**Figure 8: Percent of Women Breastfeeding by Race, Wyoming, 2007-2009**

![Figure 8: Percent of Women Breastfeeding by Race, Wyoming, 2007-2009](image)

Source: Wyoming PRAMS

**Race**

Figure 8 shows there are significant differences in the percentages for breastfeeding initiation and duration by race. Further analysis indicated that compared to White women, American Indian women were half as likely to initiate breastfeeding (OR=0.48, 95% CI:0.33-0.70), approximately 40% less likely to breastfeed for at least four weeks (OR=0.63, 95 CI: 0.45-0.88), and 40% less likely to breastfeed for at least eight weeks (OR=0.62, 95% CI:0.47-0.88). Asian/Pacific Islander women were two and a half times more likely to breastfeed for at least four weeks (OR=2.52, 95% CI:1.36-4.66) and almost two times more likely to breastfeed for at least eight weeks (OR=1.96, 95% CI:1.15-3.34) compared to White women.

**Figure 9: Percent of Women Breastfeeding by Ethnicity, Wyoming, 2007-2009**

![Figure 9: Percent of Women Breastfeeding by Ethnicity, Wyoming, 2007-2009](image)

Source: Wyoming PRAMS

**Ethnicity**

Breastfeeding percentages did not vary significantly by ethnicity for initiation or breastfeeding for at least four weeks (Figure 9). However, there was a significant difference when percent breastfeeding for at least eight weeks was examined. Among Hispanic women, 57.8% were breastfeeding for at least eight weeks compared to 63.8% for non-Hispanic women. This suggests non-Hispanic women tend to breastfeed longer.
WIC Enrollment
For all three measures of breastfeeding duration shown in Figure 10, women enrolled in WIC had significantly lower rates of breastfeeding (p<0.0005). The most drastic difference is for percent breastfed for at least 8 weeks. Among women on WIC 51.3% breastfed for at least eight weeks compared to 68.6% of women not on WIC.

Maternal Education
Figure 11 shows breastfeeding by maternal education level. There were no statistical differences in breastfeeding between women with less than 12 years of education, and women with 12 years of education. Women with greater than 12 years of education had significantly higher proportions of breastfeeding for all three categories, as shown by the percentages in the figure. Further analysis indicated that compared to women with 12 years of education, women with greater than 12 years were three and a half times more likely to initiate breastfeeding (OR=3.6; 95% CI:2.7-4.7), three times more likely to breastfeed for at least 4 weeks (OR=3.1; 95%CI:2.4-3.8), and greater than two and a half times more likely to breastfeed for at least 8 weeks (OR=2.8; 95% CI: 2.3-3.5).
BREASTFEEDING STRATEGIES

Wyoming’s Maternal and Family Health Section selected breastfeeding as a state priority for the 2011-2015 Maternal and Child Health Needs Assessment. The needs assessment is a federally mandated application for Title V funding whereby organizations identify state priorities for maternal, infant, and child health improvement for the next five years.

The focus areas for this priority:
1. Provide training opportunities for Wyoming health professionals
2. Support breastfeeding policies and partners

MFH will continue to collect specific breastfeeding information through PRAMS to support these strategies to encourage breastfeeding among Wyoming women. PRAMS, described on page 4, helps MFH identify and monitor populations of Wyoming women to identify why women are or are not breastfeeding.

A focus for 18 of Wyoming’s 23 counties is to work to improve breastfeeding initiation rates during FY 2011. Some of these counties plan to also encourage increasing the duration of breastfeeding beyond the first couple months after birth.

Breastfeeding Training Opportunities for Wyoming Health Professionals:
Certified Lactation Counselor (CLC) trainings are available to Public Health Nurses, WIC staff, and clinical nurses. MFH schedules both basic and advanced level training.

The Happiest Baby on the Block is a program that empowers parents to soothe babies, thus reducing parental stress. This program has several goals including the improvement of breastfeeding success rates. Crying and fussiness can pressure the mom to stop nursing if she believes her milk is not satisfying to the infant. Learning and using the techniques can prevent poor let down, poor milk production, loss of confidence, and maternal resentment.

Support for Breastfeeding Policies and Partners:
MFH has established one breastfeeding room on the fourth floor of the Qwest building. This room is available to breastfeeding moms who have returned to work to pump during breaks in the workplace. MFH supports a department-wide Breastfeeding Support in the Workplace (BSW) policy and participates in the BSW workgroup. This group launched a website with links to important information on supporting breastfeeding in the workplace. MFH is also participating with the statewide Breastfeeding Coalition, which is a partnership between WIC, MFH and local facilities. The purpose of the coalition is to support initiation and continuation of breastfeeding. See the box below for Wyoming specific breastfeeding resources.

Important Wyoming Links:


**Wyoming Breastfeeding Coalition:** http://www.wyobreastfeedingcoalition.org/home

**Breastfeeding Support in the Workplace:** www.wybreastfeedatwork.org
References

References-Continued

Maternal and Family Health provides leadership to ensure that all Wyoming women, children and families, including those with special health care needs, have access to prevention services and public health programs to create a strong foundation for optimal lifelong health.

Maternal and Family Health Priorities for 2011-2015

1. Promote healthy nutrition among women of reproductive age.
   * Promote folic acid intake among Wyoming women of reproductive age.
   * Promote a healthy prepregnancy body mass index and adequate weight gain during pregnancy.
2. Promote healthy nutrition and physical activity among children and adolescents.
3. Build and strengthen services for successful transitions for children and youth with special health care needs.
4. Reduce the rate of unintentional injury among children and adolescents.
5. Design and implement initiatives that address sexual and dating violence.
6. Reduce the rate of teen births.
7. Reduce the percentage of women who smoke during pregnancy.
8. Build and strengthen capacity to collect, analyze, and report on data for children and youth with special health care needs.
9. Support behaviors and environments that encourage initiation and extend duration of breastfeeding.