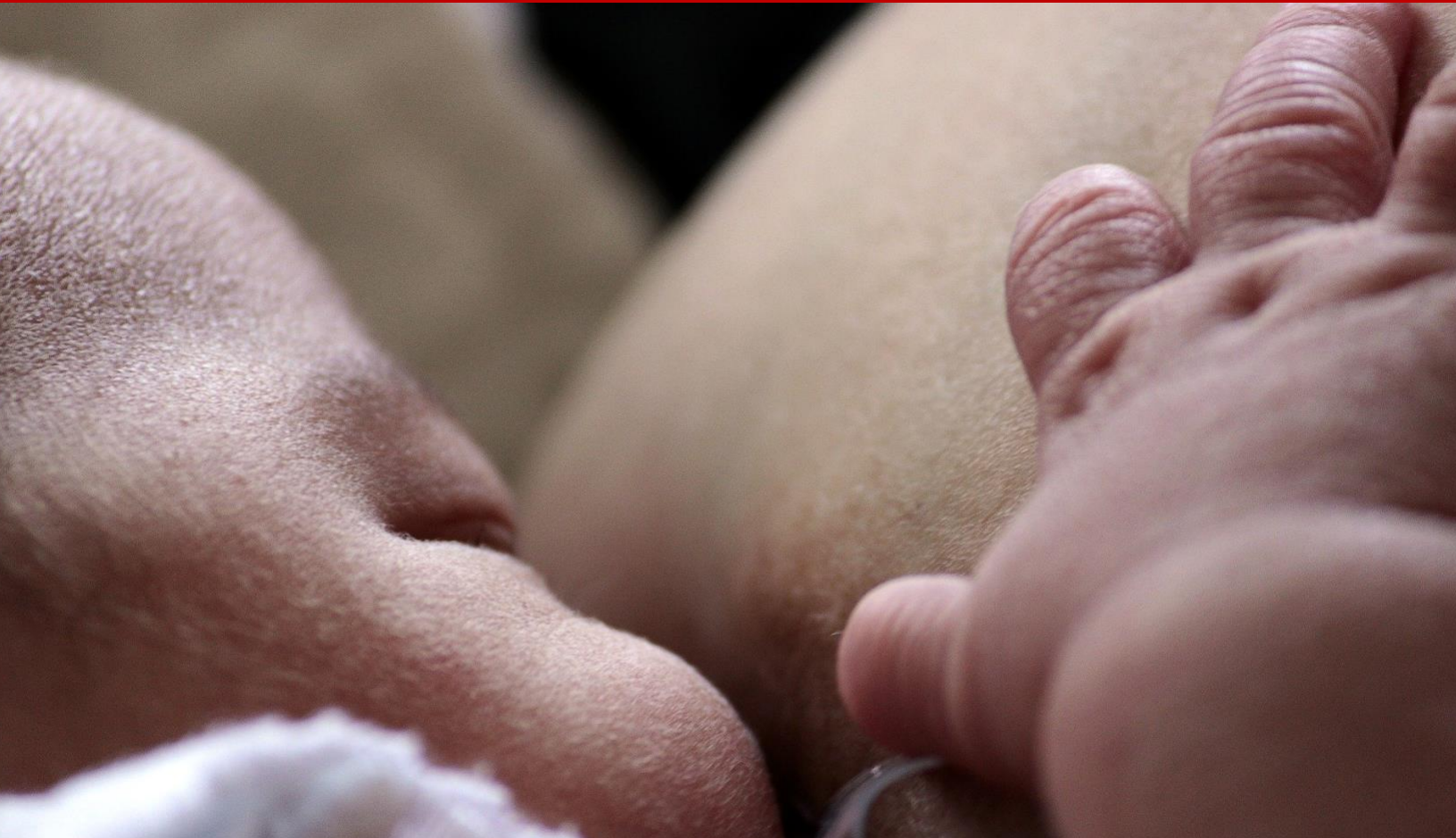


# Nurse's Role in Breastfeeding Support



## Introduction

In recent years, there has been a push within the current health care system to increase breastfeeding support. Therefore, it is essential that health care professionals understand how to provide breastfeeding support. This course will provide insight into breastfeeding support as well as related concepts to help health care professionals build and improve upon their breastfeeding support skill set.

## Section 1: The Importance of Breastfeeding and Related Education

### *Case Study 1*

A 22-year-old first-time mother would like to continue breastfeeding her 4-month-old infant - however, she has a few concerns regarding breastfeeding. The new mother has no known drug allergies and is taking Celexa 20 mg daily for depression. The new mother's concerns regarding breastfeeding center around a lack of family support, the physical pain associated with breastfeeding, and her occasional alcohol consumption. Moreover, the new mother is very concerned about breastfeeding while taking Celexa. The mother feels Celexa is "helping with the depression," allowing her to "feel much better" and helping her "function on a daily basis." Essentially, the new mother does not want to stop taking Celexa but believes she has to if she wants to breastfeed. The mother continues to breastfeed her infant; however, her concerns and lack of overall family support eventually cause her to stop breastfeeding and, ultimately, initiate formula. Shortly after stopping breastfeeding and initiating formula as the infant's primary source of nutrition, the new mother observes that her infant has become lethargic, often spits up, and often forcibly vomits.

### *Case Study 2*

A 30-year-old mother has been exclusively breastfeeding her infant for the past 3 months. The mother reports that her breastfeeding is going "smoothly." Recently, the mother has been concerned that her infant is not effectively latching or getting enough breast milk. The mother also has several questions regarding breast milk storage and her diet. The mother understands the importance of breastfeeding and acknowledges she is dedicated to breastfeeding; however, she is unsure how to proceed due to her concerns and questions.

### ***Case Study 3***

A 28-year-old woman presents with the following symptoms: breast pain, tenderness, redness, and what the patient refers to as a "slight fever." The patient has no known drug allergies and is not currently taking any medications. However, the patient does report she is taking a multivitamin daily. Upon questioning, the patient reveals that she has been exclusively breastfeeding her child for the past 3 months. Upon further questioning the patient reports that her breasts became "very large" after giving birth and have since increased in size. The patient also reports that she has specific questions regarding infant gastroesophageal reflux disease (GERD) and the use of a pacifier.

The three case studies above highlight scenarios that may require breastfeeding support. Breastfeeding support may refer to any effort made to assist, guide, and/or facilitate breastfeeding. Health care professionals can provide breastfeeding support to new mothers in a variety of ways. However, often, the first step to providing breastfeeding support is education centered around the importance of breastfeeding and related questions and concerns. With that in mind, this section of the course will focus on breastfeeding education, which highlights reasons why mothers should breastfeed their infants and information that may be used to address any questions and/or concerns mothers may have about breastfeeding. Health care professionals should note that the information found in this section may be used to encourage new mothers to breastfeed their infants. The information found in this section will be broken down and presented in informational segments. The information found in this section was derived from materials provided by the Centers for Disease Control and Prevention (CDC), the United States Food and Drug Administration (FDA), the United States Department of Health & Human Services, the American Academy of Pediatrics, the office of U.S. Surgeon General, and the World Health Organization (WHO)<sup>1,2,3,4,5,6</sup>

### ***Breastfeeding Can be Beneficial to Infant Health***

- Breastfeeding is recognized as the best source of nutrition for most infants.
- Breastfeeding often results in improved infant health outcomes.
- Breastfeeding may reduce/prevent infant digestion issues - evidence suggests that human breast milk is easier for infants to digest when compared to formulas (in the context of this course, the term formula may refer to any human milk substitute intended for infant consumption). Thus, by breastfeeding infants, mothers can eliminate the digestive stress some formulas may cause infants, allowing them to protect their infants' delicate digestive systems and reduce/prevent infant digestion issues.

- Breastfeeding may reduce the incidence of nonspecific gastrointestinal tract infections - research indicates that any breastfeeding is associated with a reduction in the incidence of nonspecific gastrointestinal tract infections.
- Breastfeeding may prevent hospitalizations due to respiratory tract infections - research indicates that the risk of hospitalization for lower respiratory tract infections in the first year is reduced when infants breastfeed exclusively for more than 4 months.
- Breastfeeding may reduce the incidence of otitis media - research indicates that any breastfeeding compared with exclusive commercial infant formula feeding will reduce the incidence of otitis media (OM); exclusive breastfeeding for more than 3 months reduces the risk of otitis media.
- Breastfeeding may reduce the risk for sudden infant death syndrome (SIDS) -research indicates that breastfeeding is associated with a reduced risk of SIDS. SIDS may refer to the unexplained death of a healthy infant, which typically occurs while the infant is asleep.
- Breastfeeding may reduce the incidence of allergic diseases - research indicates there is a protective effect of exclusive breastfeeding for 3 to 4 months in reducing the incidence of clinical asthma, atopic dermatitis, and eczema in a low-risk population and in infants with positive family history.
- Breastfeeding may reduce the incidence of celiac disease - research indicates there is a reduction in the risk of developing celiac disease in infants who were breastfed at the time of gluten exposure.
- Breastfeeding may reduce the incidence of inflammatory bowel disease - research indicates that breastfeeding is associated with a reduction in the risk of childhood inflammatory bowel disease.
- Breastfeeding may help prevent obesity - research indicates rates of obesity are significantly lower in breastfed infants.
- Breastfeeding may reduce the incidence of diabetes - research indicates a reduction in the incidence of type 1 diabetes mellitus is reported for infants who exclusively breastfed for at least 3 months; breastfeeding may be associated with a decrease in the incidence of type 1 diabetes mellitus.
- Breastfeeding may reduce the incidence of leukemia and lymphoma - research indicates there is a reduction in leukemia that is correlated with the duration of breastfeeding. Research also indicates there is a significant reduction in the risk of



acute lymphocytic leukemia and the risk of acute myeloid leukemia in infants breastfed for 6 months or longer.

- Breastfeeding may affect neurodevelopmental outcomes - evidence suggests higher intelligence scores are noted in infants who exclusively breastfed for 3 months or longer.
- Breastfeeding can be beneficial to preterm infants - the term preterm infant may refer to any infant born before 37 completed weeks of gestation. Evidence suggests all preterm infants should receive human milk. Evidence also suggests there are several significant short and long-term beneficial effects of feeding preterm infants human milk, including lower rates of sepsis.
- Breastfeeding may reduce the risk of necrotizing enterocolitis - necrotizing enterocolitis may refer to the death of tissue in the intestine. Health care professionals should note that necrotizing enterocolitis occurs most often in premature or sick babies.

### ***Breastfeeding Can be Beneficial to Mothers' Overall Health***

- Breastfeeding can help lower mothers' risk of high blood pressure, type 2 diabetes, ovarian cancer, and breast cancer - research indicates mothers who breastfeed have lower incidences of the aforementioned conditions.
- Breastfeeding can help women lose weight - the way breastfeeding can help women lose weight is very straightforward. Breastfeeding burns calories, and when individuals burn calories on a consistent basis, it can help them lose weight.
- Breastfeeding may help a mother's uterus return to its pre-pregnancy size - research indicates breastfeeding may help release the hormone oxytocin, which in turn may aid the uterus in returning to its pre-pregnancy size.
- Breastfeeding may have positive psychological effects for new mothers - evidence suggests that breastfeeding may help mothers bond with their infants, which in turn can help mothers avoid any anxiety or postpartum depression associated with giving birth. Health care professionals should note that postpartum depression may refer to depression that occurs after a woman gives birth. Health care professionals should also note that postpartum depression can be quite common in today's health care landscape. Unfortunately, postpartum depression can be very dangerous to the lives of a mother and her infant, especially when postpartum depression reaches a point where it hinders or limits a mother's ability to care for her child. Health care professionals should make efforts to identify individuals suffering from postpartum

depression and provide care to those in need. Additional information regarding postpartum depression may be found in Figure 1.

## **FIGURE 1: INFORMATION REGARDING POSTPARTUM DEPRESSION**

- Postpartum depression is relatively common.
- Postpartum depression may interfere with a woman's ability to breastfeed and/or care for an infant.
- Postpartum depression may result from a combination of physical and emotional factors.
- The more common symptoms associated with postpartum depression include the following: feeling sad, hopeless, empty, or overwhelmed; crying more often than usual or for no apparent reason; worrying or feeling overly anxious; feeling moody, irritable, or restless; oversleeping, having trouble concentrating, having trouble remembering details, having trouble making decisions, experiencing anger or rage, losing interest in activities that are usually enjoyable, suffering from physical aches and pains, frequent headaches, stomach problems, muscle pain, eating too little or too much, withdrawing from or avoiding friends and family, having trouble bonding or forming an emotional attachment with an infant, thinking about self-harming and thinking about harming an infant.
- If a new mother experiences the aforementioned symptoms for a period of 2 weeks or more, they should seek the care of a health care professional.
- Postpartum depression should be diagnosed by a health care professional.
- If left untreated, postpartum depression may lead to the following: additional health problems, an inability to care for an infant, and/or self-harm/infant harm.
- Treatment for postpartum depression can include one or a combination of the following treatment options: psychotherapy, cognitive behavioral therapy, and medications.
- Medications used to treat postpartum depression include selective serotonin reuptake inhibitors (SSRIs).
- Some SSRIs or closely related medications, such as Celexa, are not contraindicated during breastfeeding.

- When providing breastfeeding support to women diagnosed with postpartum depression, health care professionals should review patients' medications.

### ***Breastfeeding Can Have Economic Benefits***

- The office of the U.S. Surgeon General provides the following information regarding the potential economic benefits of breastfeeding There are economic benefits associated with breastfeeding that can be realized by families, employers, private and government insurers, and the nation as a whole. For example, a study conducted more than a decade ago estimated that families who followed optimal breastfeeding practices could save more than \$1,200 - \$1,500 in expenditures for infant formula in the first year alone. Also, better infant health means fewer health insurance claims, less employee time off to care for sick children, and higher productivity.
- The Agency for Health Care Research and Quality provides the following information regarding the potential economic benefits of breastfeeding - a detailed pediatric cost analysis based on a report concluded that if 90% of U.S. mothers complied with the recommendation to breastfeed exclusively for 6 months, there would be a savings of \$13 billion per year.

### ***Breastfeeding Can Have Environmental Benefits***

- The office of the U.S. Surgeon General provides the following information regarding the potential environmental benefits of breastfeeding - breastfeeding also confers global environmental benefits; human milk is a natural, renewable food that acts as a complete source of infants' nutrition for about the first six months of life. Additionally, there are no packages involved, as opposed to infant formulas and other substitutes for human milk that require packaging that ultimately may be deposited in landfills. For every one million formula-fed babies, 150 million containers of formula are consumed; while some of those containers could be recycled, many end up in landfills. In addition, infant formulas must be transported from their place of manufacture to retail locations, such as grocery stores, so that they can be purchased by families. Although breastfeeding requires mothers to consume a small amount of additional calories, it generally requires no containers, no paper, no fuel to prepare, and no transportation to deliver, and it reduces the carbon footprint by saving precious global resources and energy.

### ***Breastfeeding Myths***

- There are many myths regarding breastfeeding, several of which discourage new mothers from breastfeeding their infants. Possessing insight into the following myths

can help health care professionals dispel any unnecessary misgivings mothers may have about breastfeeding. Insight in the following myths can also help healthcare professionals address any questions and/or concerns related to breastfeeding.

- Formula has more vitamins than breast milk and is better for infants - many individuals simply believe formulas have more vitamins than breast milk and is, therefore, better for infants. The truth of the matter is quite the opposite. Evidence suggests formula is inferior when compared to breast milk, in both vitamin and nutritional value. Additionally, breast milk contains antibodies that are essential to infant health. Thus, one may conclude that formulas are not necessarily better for infants.
- Mothers cannot make enough milk to feed their infants - statistics show that mothers almost always make enough milk to feed their infants. If mothers drink plenty of water, maintain healthy eating habits, and nurse, often they should produce enough breast milk to feed their infants.
- Breastfeeding can be extremely painful - again, this common myth about breastfeeding is incorrect for the most part. Breastfeeding is not supposed to be extremely painful. Mothers report breastfeeding does create a sensation. However it is not, typically, extremely painful. With that said, if breastfeeding does become extremely painful, mothers should be advised to contact a health care professional because extreme pain is not normal and may be a sign of a more serious underlying issue.
- Women with "small breasts" cannot breastfeed their infants - as with the above myths, this common myth regarding breastfeeding is also not true. The size and/or shape of a woman's breasts do not typically affect her ability to breastfeed. Women with breasts of all shapes and sizes should be able to breastfeed their infants.
- "Plus size" women with "large breasts" cannot breastfeed their infants - once again, this myth is incorrect. Women of all shapes and sizes should be able to breastfeed their infants.
- Breastfeeding makes women's breasts "sag" - breastfeeding does not necessarily contribute to sagging. More often than not, it is the pregnancy itself that may lead to breast sagging. Health care professionals should note that pregnancy does not always lead to breast sagging.

### ***Breastfeeding Barriers***

- There are many cited barriers to breastfeeding, many of which discourage new mothers from breastfeeding their infants. Possessing insight into the following barriers

can help health care professionals address any questions and/or concerns related to breastfeeding. Moreover, possessing insight into the following barriers can help health care professionals assist mothers in overcoming such barriers.

- **Lack of knowledge** - one of the most cited barriers to breastfeeding is a lack of knowledge. Even though breastfeeding is natural, many women report they are not sure how to carry it out or what to expect when breastfeeding. Additionally, mothers report they are not sure where to receive education regarding breastfeeding. That being said, education is an essential element of breastfeeding support and an element of support health care professionals can provide. Possessing an understanding of breastfeeding can allow health care professionals to help women overcome the lack of knowledge barrier and ensure mothers possess a fundamental knowledge of breastfeeding/how to adequately breastfeed their infants.
- **Breastfeeding culture** - unfortunately, in the United States, a strong culture or subculture centered around breastfeeding does not exactly exist. Due to advertising, marketing, and other social cues, many individuals believe it is best to provide infants with formula instead of human breast milk. Health care professionals can help new mothers overcome the cultural barrier to breastfeeding by providing them with education centered around the benefits of breastfeeding and how human breast milk compares to formula. Health care professionals can also help mothers overcome the cultural barrier by working to establish a subculture within the landscape of health care that revolves around the importance of breastfeeding.
- **A lack of support from family and friends** - unfortunately, many mothers say they do not breastfeed their infants because they lack the necessary support from family and friends. The simple truth of the matter is that some mothers do not receive the necessary support from their family and friends to adequately breastfeed their infants, even if they have an interest in doing so. To help mothers overcome the lack of support barrier to breastfeeding, health care professionals can refer new mothers to breastfeeding support groups.

A breastfeeding support group may refer to any social group that offers breastfeeding information, education, guidance, and assistance to mothers interested in breastfeeding their infants. Breastfeeding support groups can be a means for mothers to surround themselves with like-minded individuals who breastfeed their infants or simply support breastfeeding. Furthermore, breastfeeding support groups can help mothers develop new friendships with individuals open and willing to help support them as they breastfeed their infants and embark on motherhood. Often mothers who take part in breastfeeding support groups report that the connections they make with other individuals in the group not only help them as they breastfeed their infants but



grow into relationships that help them throughout motherhood. Health care professionals should note that breastfeeding support groups can be especially beneficial to first-time mothers. Health care professionals should recommend new mothers to breastfeeding support groups when applicable.

- **Employment/Work Schedules** - typically, employed mothers find that their career/employment schedule is a major impediment to breastfeeding their infants. Surveys show that new mothers often face inflexibility from their employers when it comes to taking time off to care for their infants or simply to adjust their schedule to accommodate breastfeeding. Additionally, mothers often encounter pressure from their co-workers and peers to not take extended breaks from work to allow them to breastfeed their infants. The reality of the situation concerning employment and breastfeeding is that the work-related culture in the United States does not often permit accommodations for breastfeeding. Many individuals find it an uphill battle to breastfeed their infants while maintaining employment. However, no matter the challenges employment may present when it comes to breastfeeding, new mothers should still be encouraged to breastfeed their infants.

To help mothers overcome the employment barrier to breastfeeding, health care professionals can work with new mothers to show them ways to incorporate breastfeeding into their schedules. Health care professionals can also encourage new mothers to seek child care close to their place of employment, which may allow them an opportunity to breastfeed their infants. Along those same lines, health care professionals should note that evidence suggests the length and quality of a mother's maternity leave can impact breastfeeding. New mothers should be encouraged to pursue maternity leave duration that best accommodates their efforts to breastfeed their infants.

- **Health care** - this last barrier may seem counterintuitive to common beliefs regarding health care however, some aspects of the health care system may pose a barrier to breastfeeding. According to materials provided by the office of the U.S. Surgeon General, studies indicate major deficits exist relevant to breastfeeding in hospital policies and clinical practices, including a low priority given to breastfeeding support and breastfeeding education. Essentially, based on the evidence, it appears breastfeeding support is not given enough priority or resources within the current health care system to effectively create a big enough impact to ensure the majority of new mothers adequately breastfeed their infants. Fortunately, health care professionals may have the biggest influence over this particular barrier.

To help remove the health care barrier to breastfeeding, health care professionals can work to create change within the health care system to allow for more of a priority,

along with more resources, to be placed on breastfeeding support. Through policy changes and clinical practice alterations, health care professionals can ensure new mothers receive the breastfeeding support they require to adequately and successfully breastfeed their infants. Additional recommendations that may help health care professionals, while acting within the current health care system, ensure new mothers receive the breastfeeding support they may require can be found in Figure 2.

## **FIGURE 2: RECOMMENDATIONS TO HELP ENSURE BREASTFEEDING SUPPORT**

- **Health care organization policies** - to help promote breastfeeding, health care organizations should have written breastfeeding policies that are routinely communicated to health care staff. If breastfeeding-related policies do not exist, health care professionals can work to create such policies to help ensure new mothers receive the breastfeeding support they require.
- **Health care organization breastfeeding support checklists** - individuals within health care organizations should consider developing breastfeeding support checklists or guides for internal use. Breastfeeding support checklists (i.e., a list that includes specific areas of breastfeeding support that should be reviewed with each new mother within the health care facility) could increase the continuity of breastfeeding support, as well as the comprehensive nature of the type of breastfeeding support provided to each individual. If breastfeeding checklists or guides do not exist within a health care facility, health care professionals may consider developing such checklists or guides.
- **Health care professionals should receive education on how to provide breastfeeding support to those in need** - health care organizations should provide education/training to health care professionals on how to provide breastfeeding support to patients. If such education programs do not exist within health care organizations, health care professionals can work to create education/training for other health care professionals.
- **Health care professionals should help mothers initiate breastfeeding within the first hour of birth** - to help facilitate the overall breastfeeding process, health care professionals should help new mothers initiate breastfeeding within the first hour of their infant's birth.

- **The main source of initial infant nutrition should be breast milk unless medically indicated** - health care professionals should focus their initial infant nutrition efforts on breast milk to help establish the breastfeeding process and to ensure the new mother can adequately breastfeed her infant.
- **Allow mothers and infants to remain together** - allowing mothers and infants to remain close while they are receiving health care within a health care facility may help foster the mother-infant bond and promote breastfeeding.

## ***Medications and Breastfeeding***

- Some of the most common questions from individuals regarding breastfeeding center around medications and the use of medications. Thus, health care professionals should possess insight into the impact of medications on breastfeeding. Possessing insight into the impact of medications on breastfeeding can help health care professionals address any questions and/or concerns related to medications and breastfeeding. Moreover, possessing insight into the impact of medications on breastfeeding can help health care professionals ensure patient safety when it comes to the use of medications during breastfeeding. That being said, this subsection will provide educational points of interest related to the use of medication during breastfeeding to build awareness among health care professionals and to provide the necessary insight to ensure patient safety.
- Health care professionals **should** inform new mothers that it is vital for them to provide information regarding all of the medications they are taking, including herbal products.
- Health care professionals should note that most medications do not present in clinically significant amounts in human breast milk, which poses a significant risk to most infants. However, specific classes of medications can be a concern for patients, either because of their accumulation in breast milk or because of their effects on the infant or mother.
- When contemplating the administration of medications to mothers who may be breastfeeding, health care professionals should consider the benefits and risks of medication administration.
- **Antibiotics** - antibiotics represent one of the most common classes of medications administered to mothers. Health care professionals should note that if an antibiotic

can be administered directly to an infant, then it is typically safe for the mother to take during breastfeeding.

- **Antimicrobial agents** - when considering the use of antimicrobial agents in mothers who may be breastfeeding, much like with antibiotics, health care professionals should note that if an antimicrobial agent can be administered directly to an infant, then it is typically safe for the mother to take during breastfeeding.

- **Pain medications** - typically, acetaminophen (e.g., Tylenol) and Ibuprofen (e.g., Advil, Motrin) are safe to administer to mothers who may be breastfeeding. Health care professionals should note the following: rarely, regular doses of codeine given to nursing women may result in dangerously high levels of its active metabolite morphine in breastfeeding infants; in rare cases, mothers can be codeine hyper-metabolizers, and this can be associated with sleepiness and apnea (stopping breathing) in breastfeeding infants; caution is advised for use of codeine and hydrocodone in both the mother and breastfeeding infant, close monitoring for signs and symptoms of neonatal as well as maternal toxicity is recommended; narcotic agents, such as oxycodone, pentazocine, propoxyphene, and meperidine, are not often recommended for nursing mothers, relatively high amounts of oxycodone are excreted into human milk, and therapeutic concentrations have been detected in the plasma of a breastfeeding infant.

- **Antidepressants, anti-anxiety agents, and antipsychotics** - many anti-anxiety agents, antidepressants, and antipsychotics appear in low concentrations in human milk; mothers who desire to breastfeed their infant(s) while taking these agents should be counseled about the benefits of breastfeeding as well as the potential risk that the infant may be exposed to clinically significant levels and that the long-term effects of this exposure are unknown; growth and neurodevelopment of the infant should be monitored.

- **Medications used for smoking cessation** - women should be advised to refrain from smoking during and after pregnancy; limited information is available regarding the use of medications in lactating women for smoking cessation; however, as previously alluded to, smoking nicotine products is not typically compatible with or after pregnancy.

- **Medications used to treat substance abuse and alcohol dependence** - methadone, buprenorphine, and naltrexone are agents approved by the FDA for use in the treatment of opioid dependence; continued breastfeeding by women undergoing such treatment presumes that the individual remains abstinent, is HIV-negative, and is monitored by an appropriate drug treatment program; potential adverse effects on breastfeeding infants from methadone and buprenorphine include lethargy,

respiratory difficulty, and poor weight gain; limited information is available for disulfiram and naltrexone, agents that are used to treat alcohol dependence.

- **Over-the-counter medications** - health care professionals should provide mothers who may be breastfeeding their infants with the following information regarding over-the-counter medications: take care with over-the-counter medications that contain pseudoephedrine because it can decrease breast milk supply; avoid combination products.
- **Contraindicated medications** - amiodarone, chemotherapeutic/antineoplastic agents, chloramphenicol, ergotamine, gold salts, phenindione, radioactive pharmaceuticals, retinoids, tetracyclines (chronic > 3 weeks) and certain psychotropic medications.
- **Herbal products** - usable and reliable information on the safety of many herbal products is lacking; according to materials provided by the FDA, adverse events have been reported in both breastfeeding infants and mothers (e.g., St John's Wort may be linked to drowsiness, or lethargy in breastfed infants); caution is advised.

### ***Breastfeeding and Vaccines***

- Another area that generates questions and concerns from mothers who may be breastfeeding their infants is the administration of vaccines. Possessing insight into the administration of vaccines can help health care professionals answer any related questions and may help them alleviate any unnecessary concerns related to vaccine administration.
- Vaccines that are recommended for the mother during the postpartum period are designed to protect the infant and the lactating mother.
- Health care professionals should note that lactating women may need to be immunized.
- Health care professionals should note that breastfeeding does not interfere with the infant's immune response to most routine immunizations.
- Typically, inactivated vaccines (e.g., tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine; inactivated poliovirus vaccine; influenza; hepatitis A vaccine; HBV; or human papillomavirus vaccine [HPV]) administered to a mother that may be breastfeeding do not pose a risk to the breastfeeding infant.
- Health care professionals should note the following: vaccines, such as tetanus toxoid, reduced diphtheria toxoid, acellular pertussis vaccine, and influenza



vaccine, are recommended for the mother during the postpartum period to protect the infant as well as the new mother.

- Most live vaccines are not associated with virus secretion in human milk.

### ***Human Breast Milk Production and the use of Galactagogues***

- Understanding how human breast milk is produced and having insight into the use of galactagogues can help health care professionals answer related questions.
- The production of human breast milk is typically a response to giving birth and/or active nursing.
- The hormones prolactin and oxytocin drive the milk production and milk-releasing processes. Prolactin is responsible for informing the milk-producing glands in the breast to produce milk. Oxytocin is responsible for the initiation of the let-down reflex. The let-down reflex may refer to the process that allows milk to be released into and through the milk ducts. The let-down reflex makes it easier for the infant to obtain milk from the breast. Health care professionals should note that the let-down reflex may occur within a few seconds or several minutes after breastfeeding has been initiated. Health care professionals should also note that the let-down reflex may occur in response to hearing an infant cry.
- Galactagogues may be used in mothers that are having difficulties with the breastfeeding process. Galactagogues may be used to stimulate and/or facilitate lactation. Galactagogues are often used to stimulate and/or facilitate lactation in mothers of preterm infants. Health care professionals should note that there is not a tremendous amount of evidence to support the use of galactagogues agents.

### ***Marijuana and Alcohol use while Breastfeeding***

- In the current social climate, health care professionals may receive questions regarding the use of marijuana and the consumption of alcohol during breastfeeding. Thus, health care professionals should have some insight into marijuana and alcohol use during breastfeeding to best serve patients.
- According to materials provided by the CDC, using marijuana while breastfeeding may allow harmful chemicals to pass from the mother to the infant through breast milk or secondhand smoke exposure; to limit the potential risk to an infant, breastfeeding mothers who use marijuana should be encouraged to abstain from or significantly reduce marijuana use.

- Research and evidence regarding the use of marijuana while breastfeeding are not sufficient enough to conclude that it is completely safe to use marijuana while breastfeeding.
- Health care professionals should note the following: when advising mothers on the medicinal use of marijuana while breastfeeding, consideration should be given to the potential risks of marijuana exposure and the benefits of breastfeeding to the infant as well as the mother.
- Health care professionals should note the following: marijuana use may impair a mother's ability to care for an infant.
- Drinking alcoholic beverages is not an indication to stop breastfeeding.
- According to materials provided by the CDC, not drinking alcohol is the safest option for breastfeeding mothers; however, moderate alcohol consumption (up to 1 drink/day) is not known to be harmful to the infant.
- Health care professionals should note that alcohol may be found in breast milk after consumption by a mother; alcohol levels are usually highest in breast milk 30 - 60 minutes after an alcoholic beverage is consumed.
- Health care professionals should note that over time, excessive alcohol consumption may lead to decreased milk production; excessive alcohol consumption while breastfeeding could also affect an infant's sleep patterns and early development.
- Health care professionals should note the following warning/recommendation for breastfeeding mothers: caring for an infant while intoxicated is not safe; drinking alcohol could impair a mother's judgment and her ability to safely care for an infant; if a caregiver drinks excessively, he or she should arrange for a sober adult to care for an infant during this time.

### ***Tobacco and E-Cigarette use while Breastfeeding***

- Health care professionals may receive questions regarding the use of tobacco and e-cigarettes while breastfeeding. Thus, health care professionals should have some insight into the use of tobacco and e-cigarettes while breastfeeding to best serve patients.
- According to materials provided by the CDC, using tobacco and/or e-cigarettes while breastfeeding can allow harmful chemicals to pass from the mother to the infant through breast milk or secondhand smoke exposure; mothers who use tobacco or e-cigarettes should be encouraged to quit; regardless, breastfeeding provides numerous health benefits and breast milk remains the recommended food for an infant.

- Health care professionals should note the following: the chemicals found in tobacco, including nicotine, can be passed from a breastfeeding mother who uses tobacco to an infant through breast milk; smoking may also decrease a mother's milk supply.
- Health care professionals should note the following: little is known about the effects of e-cigarette use by mothers on infants' health; e-cigarette aerosol can contain potentially harmful chemicals.

### ***Contraindications to Breastfeeding***

- Breastfeeding is natural - however, some new mothers may not be able to breastfeed their infants due to a variety of different factors. Details regarding contraindications to breastfeeding and related information may be found below.
- Mothers should not breastfeed or feed expressed milk (expressed milk may refer to human breast milk that has been taken from the breast) to infants diagnosed with classic galactosemia, which is a rare and dangerous genetic metabolic disorder.
- Mothers who are infected with the human immunodeficiency virus (HIV) should not breastfeed nor provide expressed milk to their infants.
- Mothers who have suspected or confirmed Ebola virus disease should not breastfeed nor provide expressed milk to their infants.
- Mothers using an illicit street drug, such as PCP (phencyclidine) or cocaine, should not breastfeed nor provide expressed milk to their infants. With regards to the previous recommendation, health care professionals should note the following exception: narcotic-dependent mothers who are enrolled in a supervised methadone program and have a negative screening for HIV infection, and other illicit drugs can breastfeed their infants.
- Mothers who are positive for human T-cell lymphotropic virus type I or II or untreated brucellosis should not breastfeed nor provide expressed milk to their infants.
- Breastfeeding should not occur if the mother has active (infectious) untreated tuberculosis.
- Mothers should temporarily not breastfeed and should not feed expressed breast milk to their infants if the mother has an active herpes simplex virus (HSV) infection with lesions present on the breast. With regards to the previous recommendation, health care professionals should note the following: mothers can breastfeed directly from the unaffected breast if lesions on the affected breast are covered completely to avoid transmission.

- Mothers should temporarily not breastfeed and should not feed expressed breast milk to their infants if the mother is undergoing diagnostic imaging with radiopharmaceuticals.
- Mothers should temporarily not breastfeed but can feed expressed breast milk to an infant if they have an active varicella (chicken pox) infection that developed within the 5 days prior to delivery to the 2 days following delivery.
- Health care professionals should note the following: airborne and contact precautions may require temporary separation of a mother and infant, during which time expressed breast milk should be given to the infant by another health care professional. Mothers should be able to resume breastfeeding after consulting with a health care professional to determine when there is no longer a risk of spreading infection.

### ***Section 1: Summary***

Breastfeeding is recognized as the best source of nutrition for most infants and is often cited as an essential element of infant health. In addition, breastfeeding can have many potential health benefits for new mothers. Thus, it is important that new mothers breastfeed their infants. To help new mothers through the breastfeeding process, health care professionals can provide breastfeeding support. Breastfeeding support may refer to any effort made to assist, guide, and/or facilitate breastfeeding. When providing breastfeeding support health care professionals should note the following: health care professionals can provide breastfeeding support to new mothers in a variety of ways. However, often the first step to providing breastfeeding support is education centered around the importance of breastfeeding and related questions and concerns.

### ***Section 1: Key Concepts***

- Health care professionals can provide breastfeeding support to new mothers in a variety of ways - however, often the first step to providing breastfeeding support is education centered around the importance of breastfeeding and related questions and concerns.
- Breastfeeding is recognized as the best source of nutrition for most infants.
- Breastfeeding often results in improved infant health outcomes.
- Breastfeeding may be beneficial to mothers' overall health.
- Breastfeeding may have economic benefits and environmental benefits.

- There are many myths regarding breastfeeding, several of which discourage new mothers from breastfeeding their infants. Possessing insight into breastfeeding myths can help health care professionals dispel any unnecessary misgivings mothers may have about breastfeeding. Insight into breastfeeding myths can also help health care professionals address any questions and/or concerns related to breastfeeding.
- Health care professionals should possess insight into reported breastfeeding barriers so they may help new mothers overcome such barriers.
- Health care professionals can encourage breastfeeding by addressing questions and concerns regarding the following aspects of breastfeeding: breastfeeding benefits to infants, breastfeeding benefits to mothers, the economic and environmental benefits of breastfeeding, medications and breastfeeding, vaccines and breastfeeding, human breast milk production and the use of galactagogues, the use of marijuana and alcohol while breastfeeding, tobacco, and e-cigarette use while breastfeeding, and contraindications to breastfeeding.

## **Section 1: Key Terms**

**Breastfeeding support** - any effort made to assist, guide, and/or facilitate breastfeeding

**Formula** - any human milk substitute intended for infant consumption

**Sudden infant death syndrome (SIDS)** - the unexplained death of a healthy infant, which typically occurs while the infant is asleep

**Preterm infant** - any infant born before 37 completed weeks of gestation

**Necrotizing enterocolitis** - the death of tissue in the intestine

**Postpartum depression** - depression that occurs after a woman gives birth

**Breastfeeding support group** - any social group that offers breastfeeding information, education, guidance, and assistance to mothers interested in breastfeeding their infants

**Let-down reflex** - the process that allows milk to be released into and through the milk ducts

**Expressed milk** - human breast milk that has been taken from the breast



## ***Section 1: Personal Reflection Question***

When engaging in breastfeeding support, how can health care professionals provide education centered around the importance of breastfeeding while addressing related questions and concerns?

## **Section 2: Effective Breastfeeding**

As previously highlighted, often, the first step to providing breastfeeding support is education centered around the importance of breastfeeding and related questions and concerns. Once a new mother decides to breastfeed, breastfeeding support can then begin to focus on areas essential to effective breastfeeding. Effective breastfeeding occurs when an infant receives human breast milk for ingestion (health care professionals should note that the American Academy of Pediatrics recommends exclusive breastfeeding for a period of about 6 months, followed by continued breastfeeding, while introducing complementary foods, until the child is 12 months old or older). With that in mind, this section of the course will shed light on information relevant to effective breastfeeding. The information found in this section of the course was derived from materials provided by the CDC, the FDA, the United States Department of Health & Human Services, the American Academy of Pediatrics, the office of the U.S. Surgeon General, and the WHO.<sup>1,2,3,4,5,6</sup>

### ***Latching and How to Hold a Child During Breastfeeding***

Once new mothers decide to breastfeed, it is important they learn about latching and how to hold their child during breastfeeding. Latching may refer to the process of securing a child to a nipple/breast. Mothers can effectively engage in latching by adhering to the following suggestions.

- **Suggestion 1:** Pull the child close to the nipple/breast in a manner that allows the child's chin and lower jaw to move into the nipple/breast first.
- **Suggestion 2:** When pulling the child close to the nipple/breast, aim the child's lower lip as far from the base of the nipple as possible to encourage the child to take a large mouthful of the breast.
- **Suggestion 3:** Tickle the child's lips or mouth with the nipple/breast to encourage the child to open his or her mouth.

Mothers can look for the following signs to ensure they effectively or successfully latched their child to their nipples/breasts.

- **The latch feels comfortable** - an effective/successful latch should not cause extreme pain or an uncomfortable pinching sensation to the mother.
- **Little to no areola is visible** - the term areola may refer to the dark or pigmented areas around the nipple(s). If the latch is effective/successful, there should be little to no areola visible to the mother. Health care professionals should note the aforementioned sign can depend on the size of the areola and the size of a child's mouth.
- **The child's mouth appears to be full with breast** - essentially, if the latch is effective/successful, when the mother looks at the child's mouth, it should look like it is full of breast (i.e., the child's mouth should look like it is around a portion of the breast consisting of the nipple).
- **The child's lips turn outward** - if the latch is effective/successful, the child's lips should turn outwards, not inwards.
- **The mother hears the child swallow** - typically if the latch is effective/successful, the mother should hear the child swallow. Health care professionals should note that some children's swallowing sounds may be very soft.

Along with latching, new mothers should learn or obtain insight into how to hold their child during breastfeeding. Health care professionals should note the following: different breastfeeding holds can be associated with varying advantages. The term breastfeeding hold may refer to the position of a child in relation to the individual breastfeeding or simply to the way an individual holds a child during breastfeeding. Information regarding the more common types of breastfeeding holds may be found below.

- **Cradle hold** - the cradle hold can be advantageous for infants who take to breastfeeding with ease. To engage in the cradle hold, an individual should hold the child with his or her head on the forearm, with the child's body facing the body of the individual breastfeeding. Health care professionals should note that the cradle hold is considered one of the most comfortable holds for an individual breastfeeding a child. Health care professionals should also note that the cradle hold is typically a standing breastfeeding hold.
- **Clutch hold** - the clutch hold, otherwise referred to as the "football hold," may be advantageous for individuals who had a C-section, have large breasts, have flat or inverted nipples, and/or experience a strong let-down reflex. The clutch hold may also be advantageous for infants who prefer to breastfeed in a more upright position. To engage in the clutch hold, individuals should hold the child at the side of their body, with the child lying on his or her back and with his or her head at the level of

the nipple. The child's head should be supported by placing the palm of a hand at the base of the child's head. In essence, when engaging in the clutch hold, the individual should hold the child up to the nipple/breast, like they would hold a football, hence the alternative name for the clutch hold, "football hold." Health care professionals should note that the clutch hold is typically a standing breastfeeding hold.

- **Cross-cradle hold** - the cross-cradle hold, otherwise referred to as the transitional hold, may be advantageous for preterm infants, infants that have trouble obtaining milk from the breast, and/or infants that require extra head support. To engage in the cross-cradle hold, individuals should hold the child along their body with the head of the child in front of the nipple. The child's head should be supported by placing the palm of a hand at the base of the child's head. Health care professionals should note that when utilizing the cross-cradle hold, individuals should ensure the child is secure across their bodies. Health care professionals should also note that the cross-cradle hold is typically a standing breastfeeding hold.

- **Laid-back hold** - the laid-back hold, otherwise referred to as the straddle hold, may be advantageous for infants who take to breastfeeding with ease or for individuals who favor a breastfeeding hold that allows them to lie down. The laid-back hold may also be advantageous for individuals who prefer a relaxed or gentle/delicate breastfeeding approach. To engage in the cross-cradle hold, individuals should lie back on a pillow with the child's head just above and between the breasts. When an individual is in the previous position, they may gently guide the child to the nipple or simply allow the child to find the nipple on his or her own. Individuals should support the child's head, shoulders, and body as they approach the nipple and breastfeed.

- **Side-lying hold** - the side-lying hold, otherwise referred to as the side-lying position, may be advantageous for individuals who had a C-section and/or for individuals who would like to lie down and rest while breastfeeding. To engage in the side-lying hold, individuals should lie on their side with their child close to the nipple. When an individual is in the previous position they may gently guide the child to the nipple or simply allow the child to find the nipple on his or her own. Individuals should support the child as deemed appropriate/comfortable.

### ***Signs an Infant is Receiving Enough Breast Milk***

One of the more common questions a health care professional may receive from individuals engaging in breastfeeding is as follows: how can we tell if an infant is getting enough milk? Fortunately, individuals can answer the previous question by looking for specific signs that can let them know an infant is receiving enough breast milk. Some of the more widely accepted signs that an infant is receiving enough breast milk may be found below.

- **The child passes clear/pale yellow urine** - a child passing mostly clear/pale yellow urine can be an apparent sign that a child is receiving enough breast milk. In essence, the clear/pale yellow urine can be an indication that a child is hydrated and well-nourished. On the other hand, dark/deep yellow or orange urine can be a sign that a child is dehydrated and/or malnourished. Dehydration and malnutrition can be dangerous for infant health. Health care professionals should be aware of the following signs of child dehydration: sleepiness, irritability, thirst, dry mouth, and a decrease in the amount of wet diapers (health care professionals should note that infants should produce approximately 6 wet diapers per 24 hours, beginning after the first 72 hours post birth). Health care professionals should also be aware of the following signs of child malnutrition: not growing at the expected rate, changes in behavior, and low energy levels.

- **The child is producing consistent bowel movements** - a healthy child receiving enough breast milk should produce approximately 1 - 3 bowel movements per 24 hours, beginning after the first 24 hours post birth. Health care professionals should note that the color and texture of the bowel movements should be yellowish and loose, beginning after the first 72 hours post birth.

- **Consistent sleep patterns** - a child receiving enough breast milk should switch between short sleep periods and wakeful, alert periods. Health care professionals should note that an infant may experience quiet alert periods and crying alert periods.

- **The child appears content after breastfeeding** - essentially, in this context, a content child is a well-fed child.

- **The breasts feel different after breastfeeding is complete** - if the child received enough breast milk, the individual breastfeeding should notice that the breast(s) feels different and/or softer.

In addition to the previous information, health care professionals may also consider reviewing the following counseling points when discussing infant milk consumption.

- At birth, an infant's stomach can comfortably digest what would fit in a hazelnut (about 1 to 2 teaspoons).

- By around 10 days, an infant's stomach grows to approximately the size of a walnut and can hold about 2 ounces.

- Once breastfeeding is established, exclusively breastfed infants who are 1 to 6 months old take in between 19 and 30 ounces of breast milk each day.

- Often, individuals will breastfeed about 8 times per day, allowing the infant to receive approximately 3 ounces per feeding.

## ***Breast Pumps***

Breast pumps may play an important role in breastfeeding. The term breast pump may refer to any device designed and used for the removal of milk from a woman's breast. Individuals should know how to use and clean a breast pump. Health care professionals may consider reviewing the following counseling points when discussing breast pumps with patients and/or other individuals.

- Individuals should wash their hands with soap and water for 20 seconds before using and/or handling a breast pump.
- Individuals should inspect a breast pump before using it. If the breast pump, or related parts, has any mold growing on it, the breast pump should be appropriately discarded.
- For extra germ removal, individuals should sanitize breast pumps and breast pump parts at least once daily. Sanitizing is especially important if a child is less than 3 months old, was born prematurely, or has a weakened immune system due to illness or medical treatment.
- When sanitizing breast pumps and breast pump parts, individuals should clean the breast pumps and breast pump parts first.
- When sanitizing breast pumps and breast pump parts, individuals may use a microwave on manufacture-recommended settings or a dishwasher on manufacture-recommended settings. Individuals may also simply boil the breast pump parts for a total of 5 - 10 minutes.
- After sanitization is complete, individuals should allow the breast pump parts to air dry. Once the breast pump parts are clean, individuals should store the breast pump parts in a clean, protected area to prevent contamination during storage.
- When cleaning the electrical unit for powered breast pumps, individuals should remember the following points of interest: electrical units, which hold the motor and batteries, should be wiped down with a clean paper towel or soft cloth after each use; the electrical unit should never be put into water or other liquids for cleaning; it should also never be cleaned using a microwave sterilizer; some breast pump manufacturers make wipes just for cleaning breast pumps, which can make cleaning more convenient; even if these wipes are used, breast pump parts that come into



contact with breast milk should be cleaned using liquid dishwashing soap and warm water before pumping.

- Individuals should also be aware of the following points of interest regarding breast pump tubing: when used correctly, breast pump tubing should not touch the pumped milk; individuals should keep a spare set of tubing on hand in case the original set gets soiled or damaged; if the tubing has water droplets in it at the end of a pumping session, disconnect the tubing from the flange/pump kit, but leave it attached to the pump, run the pump for a few more minutes until the tubing is dry.
- Individuals should review breast pump instruction manuals for specific information regarding their breast pump.

### ***Breast Milk Storage***

Breast milk storage may play an important role in breastfeeding, especially for those individuals providing expressed milk to infants. Health care professionals may consider reviewing the following counseling points when discussing the storage of breast milk with patients and/or other individuals.

- Freshly expressed breast milk may be stored at room temperature for up to 4 hours.
- Freshly expressed breast milk may be stored in the refrigerator for up to 4 days.
- Freshly expressed breast milk may be stored in the freezer for up to 12 months, although frozen breast milk is best 6 months after freezing.
- When storing breast milk, individuals should use breast milk storage bags or clean food-grade containers with tight-fitting lids made of glass or plastic to store expressed breast milk.
- Individuals should never store breast milk in disposable bottle liners or plastic bags that are not intended for storing breast milk.
- Individuals should not store breast milk in the door of the refrigerator or freezer due to the potential for temperature changes when the refrigerator/freezer door is opened.
- If freshly expressed breast milk will not be used within 4 hours of removal from the breast, it should be frozen right away to help protect the quality of the breast milk.
- Individuals should freeze breast milk in small amounts, such as 2 to 4 ounces or the amount that will be offered to a child at one feeding.

- When freezing breast milk, individuals should leave about an inch of space at the top of the container because the breast milk will expand as it freezes.
- When traveling, individuals may store breast milk in an insulated cooler bag with frozen ice packs for up to 24 hours.
- Individuals may thaw frozen breast milk in the refrigerator overnight. Individuals may also place the breast milk container in a container of warm water.
- Individuals should never thaw or heat breast milk in a microwave.
- Individuals should use breast milk within 24 hours of thawing in the refrigerator.
- Once breast milk is brought to room temperature after storing it in the refrigerator or freezer, it should be used within 2 hours.
- Individuals should never refreeze breast milk once it has been thawed.
- Breast milk does not need to be warmed. It can be served to a child at room temperature or cold. However, individuals should note a child's preference to promote feeding.
- If infants prefer warm breast milk, individuals can warm breast milk by placing the container of breast milk into a separate container or a pot of warm water for a few minutes or by running warm, but not hot, tap water over the container for a few minutes.
- Individuals should not heat breast milk directly on the stove or in the microwave.
- Individuals may test the temperature of the breast milk before feeding it to an infant by putting a few drops on the wrist. The breast milk should feel warm, not hot.
- Before providing the breast milk to a child, individuals should swirl the breast milk to mix the fat, which may have separated.
- If a child does not finish his or her breast milk, the leftover breast milk may still be used within 2 hours after the child is finished feeding. However, after 2 hours, leftover breast milk should be appropriately discarded.

## ***Diet***

Breastfeeding mothers should also receive information regarding diet. Health care professionals may consider reviewing the following counseling points when discussing diet with breastfeeding mothers.

- A healthy diet for mothers during breastfeeding is important to support the health of both the mother and the infant.
- Breastfeeding mothers typically require more calories to meet their nutritional needs while breastfeeding; an additional 450 to 500 kilocalories (kcal) of healthy food calories per day is recommended for well-nourished breastfeeding mothers.
- Typically, women do not need to limit or avoid specific foods while breastfeeding.
- Breastfeeding mothers should be aware of the following: fish is an excellent source of protein and contains essential vitamins and minerals for breastfeeding women; however, some care must be taken in deciding on the amount and types of seafood to consume; most fish contain some amount of mercury, which accumulates in fish flesh and can pass from mother to infant through breast milk; mercury can have adverse effects on the brain and the nervous system of the breastfed infant; thus, breastfeeding mothers should limit some types of fish.
- Breastfeeding mothers should be aware of the following: caffeine passes from the mother to the infant in small amounts through breast milk but usually does not adversely affect the infant when the mother consumes low to moderate amounts (about 300 milligrams or less per day, which is about 2 - 3 cups of coffee).
- If mothers are consuming more than 2 - 3 cups of coffee per day, they should monitor their infant for the following signs of too much caffeine intake: irritability, poor sleeping patterns, fussiness, and jitteriness.
- Breastfeeding mothers should be aware of the following: breastfed infants of mothers who do not consume any animal products may have very limited amounts of vitamin B12 in their bodies; low amounts of vitamin B12 can put infants at risk of vitamin B12 deficiency, which can result in neurological damage; therefore, it is recommended that mothers who do not consume any animal products consider taking a vitamin B12 supplementation while breastfeeding.
- Breastfeeding mothers may want to consider taking a daily multivitamin or prenatal supplement every day containing 150 µg of iodine.
- Breastfeeding mothers should be aware of the following: breast milk contains very little iron; therefore, the American Academy of Pediatrics recommends that infants who only receive breast milk (exclusively breastfed) will need a supplement of iron each day at a dose of 1 milligram of iron for each kilogram of body weight; the supplement of iron should start at 4 months of age; at approximately 6 months of age, an infant's iron needs can be met through the introduction of iron-rich foods, iron-fortified cereals, or iron supplement drops.

- Breastfeeding mothers should be aware of the following: vitamin D is required for infants to support healthy bone development and to prevent rickets, a condition that causes weak or deformed bones; the American Academy of Pediatrics recommends breastfed and partially breastfed infants be supplemented with 400 IU per day of vitamin D beginning in the first few days of life.

- Breastfeeding mothers should be aware of the following: vitamin K is required to form blood clots and to stop bleeding; infants are born with very small amounts of vitamin K stored in their bodies, which can lead to serious bleeding problems like vitamin K deficiency bleeding (VKDB); the American Academy of Pediatrics recommends that all newborns receive a one-time intramuscular shot of vitamin K1 (phytonadione) at a dose of 0.5 to 1.0 milligrams shortly after birth. Health care professionals should note the following: the aforementioned dose of vitamin K1 is typically given during the birth hospitalization.

## ***Section 2: Summary***

Effective breastfeeding occurs when an infant receives human breast milk for ingestion (health care professionals should note that the American Academy of Pediatrics recommends exclusive breastfeeding for a period of about 6 months, followed by continued breastfeeding, while introducing complementary foods, until the child is 12 months old or older). With that in mind, the second phase of breastfeeding support should focus on areas essential to effective breastfeeding, such as the following: latching, how to hold a child during breastfeeding, signs an infant is receiving enough breast milk, breast pumps, breast milk storage, and breastfeeding mother's diet.

Latching may refer to the process of securing a child to a nipple/breast. Mothers who are breastfeeding should understand how to effectively engage in latching. Mothers should also understand how to hold an infant during breastfeeding. Health care professionals should note that there are many ways an individual can hold an infant during breastfeeding. Mothers should select the best breastfeeding hold that facilitates effective breastfeeding.

When breastfeeding infants, individuals should be able to determine if an infant is receiving enough breast milk. Signs that an infant is receiving enough breast milk include the following: the infant is passing clear/pale yellow urine, the infant is producing consistent bowel movements, the infant exhibits consistent sleep patterns, the infant appears content after breastfeeding, and the breasts feel different after breastfeeding is complete.

Individuals breastfeeding infants should also possess an understanding of how to use and clean breast pumps as well as how to store breast milk. Health care professionals should note that information regarding breast pumps and breast milk storage can be especially relevant to individuals providing expressed breast milk to infants.

Finally, breastfeeding mothers should also receive information regarding diet. A healthy diet for mothers during breastfeeding is important to support the health of both the mother and the infant.

## ***Section 2: Key Concepts***

- The American Academy of Pediatrics recommends exclusive breastfeeding for a period of about 6 months, followed by continued breastfeeding, while introducing complementary foods, until the child is 12 months old or older.
- Mothers can look for the following signs to ensure they effectively or successfully latched their child to their nipple/breast: the latch feels comfortable, there is little to no areola visible, the child's mouth appears to be full with breast, the child's lips turn outward, and the mother hears the child swallow.
- The following types of breastfeeding holds may be advantageous for breastfeeding: cradle hold, clutch hold, cross-cradle hold, laid-back hold, and side-lying hold.
- Signs that an infant is receiving enough breast milk include the following: the infant is passing clear/pale yellow urine, the infant is producing consistent bowel movements, the infant exhibits consistent sleep patterns, the infant appears content after breastfeeding, and the breasts feel different after breastfeeding is complete.
- Individuals should know how to use and clean a breast pump.
- When storing breast milk, individuals should follow storage recommendations to help prevent any related issues that may arise from poorly stored breast milk.
- Breastfeeding mothers typically require more calories to meet their nutritional needs while breastfeeding; an additional 450 to 500 kilocalories (kcal) of healthy food calories per day is recommended for well-nourished breastfeeding mothers.
- Individuals should follow breastfeeding diet recommendations to help prevent any related issues that may arise from a poor diet or a lack of diet supplementation.

## ***Section 2: Key Terms***

***Latching*** - the process of securing a child to a nipple/breast

***Areola*** - the dark or pigmented areas around the nipple(s)

***Breastfeeding hold*** - the position of a child in relation to the individual breastfeeding; the way an individual holds a child during breastfeeding

***Breast pump*** - any device designed and used for the removal of milk from a woman's breast

## ***Section 2: Personal Reflection Question***

How can health care professionals help ensure individuals effectively breastfeed infants?

## **Section 3: Obstacles to Breastfeeding**

For many individuals, the breastfeeding process will be enjoyable and free of obstacles. However, that being said, breastfeeding is not without its potential difficulties. Therefore, the third phase of breastfeeding support should focus on the potential obstacles associated with breastfeeding and strategies to overcome such obstacles. This section of the course will provide information relevant to the potential obstacles that may interfere with or prevent effective breastfeeding. The information found in this section of the course was derived from materials provided by the CDC, FDA, the United States Department of Health & Human Services, the American Academy of Pediatrics, the office of the U.S. Surgeon General, and the WHO.<sup>1,2,3,4,5,6</sup>

### ***Insufficient Breast Milk Supply***

One of the first obstacles that may come to mind when considering breastfeeding challenges is insufficient breast milk supplies. The truth of the matter is that most women will produce enough breast milk to sustain their infants. However, for some mothers, breast milk supply may be a concern. Health care professionals may consider reviewing the following counseling points when discussing breast milk supply with patients or other individuals.

- At times during the process of breastfeeding, it is normal for the breasts to no longer feel full. Essentially, the aforementioned feeling is a woman's natural physical reaction to the adjustments required to breastfeed.
- Growth spurts can cause an infant to want more breast milk. Growth spurts can happen when an infant is around 2 to 3 weeks, 6 weeks, and 3 months of age. Mothers should be aware of growth supports and should allow their infants additional milk. During periods when infants require additional milk, mothers should not be overly

concerned about their supply of breast milk. An increase in feeding is natural for most infants.

- Mothers should let the infant decide when to end a breastfeeding session. As previously mentioned, it is natural for infants to want additional breast milk at times.
- Mothers should remember the more often the breasts are emptied, the more milk they will produce.
- Mothers can offer both breasts at breastfeeding sessions to encourage emptying and, ultimately, the production of more breast milk.

### ***Oversupply of Breast Milk and Strong Let-Down Reflex***

On the other side of the coin, some women may be concerned with producing too much breast milk. Health care professionals may consider reviewing the following counseling points when discussing breast milk supply with patients or other individuals.

- Breasts over-full with milk is a concern for some women because it may lead to an uncomfortable feeling. If women experience a feeling that their breasts are over-full with milk, they should be sure to offer the breast that feels over-full to infants when breastfeeding to encourage emptying.
- If a breast feels too full and/or uncomfortable, a woman may remove the breast milk by hand or by breast pump.
- Women may burp their infant during breastfeeding to encourage breast milk consumption and the emptying of breast milk from the breast.

Along with producing too much milk, some women may be concerned that they may have a strong let-down reflex. Health care professionals may consider reviewing the following counseling points when discussing strong let-down reflexes.

- Some women may have a strong let-down reflex, which may cause milk to rush out of the breast. A strong let-down reflex may be associated with an overproduction of breast milk.
- Women can overcome a strong let-down reflex by holding their nipples with their fingers when breastfeeding to compress the milk ducts and reduce the flow of milk.
- Women should note that if an infant chokes while breastfeeding due to an increased flow of milk, they should gently break the latch.



- Women should also note that they should allow infants to latch on and off the breast at their discretion.

## ***Breast Enlargement***

It is natural for a woman's breasts to become larger, heavier, and slightly tender when they begin producing milk. However, some women's breasts can become so large that they experience pain, tenderness, warmth, and/or redness. When breasts reach the point where they cause pain, tenderness, warmth, and/or redness, they are said to be engorged. Essentially, breast engorgement is a result of breast milk build-up, and should be avoided when possible. Health care professionals may consider reviewing the following counseling points when discussing breast engorgement.

- Breast engorgement may also lead to a low-grade fever.
- Breast engorgement typically occurs between the 3 - 5 days after a woman gives birth. However, it should be noted that breast engorgement may occur at any time during breastfeeding, especially when breast milk is not regularly removed from the breast.
- Women can prevent breast engorgement by breastfeeding often after giving birth.
- Women can overcome breast engorgement by removing breast milk by hand or with a breast pump.
- Women can overcome the pain associated with engorgement by massaging the breasts.

## ***Plugged Duct***

Plugged ducts, otherwise referred to as plugged milk ducts, can be common in breastfeeding women. When a milk duct is plugged, it typically feels like a hard, tender swelling in the breast(s). Women can overcome plugged ducts by following the recommendations found below.

- Women should breastfeed on the affected side every two hours, which will help loosen the plug and keep breast milk flowing.
- Women should massage the area, starting behind the sore spot, by moving their fingers in a circular motion toward the nipple.
- Women may use a warm compress on the sore spot.
- Women should try to relax and get as much sleep as possible. Relaxation and sleep can help release tension, which in turn may help heal the plugged duct.

## ***Sore Nipples***

One of the more common obstacles women may face while breastfeeding is sore nipples. Sore nipples can often prevent women from breastfeeding infants. Thus, health care professionals should provide women with methods or strategies to overcome or prevent sore nipples. Health care professionals may consider reviewing the following methods/strategies to overcome or prevent sore nipples.

- Women should ensure they achieve an effective/successful latch when breastfeeding.
- Women should change positions or breastfeeding holds each time they breastfeed.
- After breastfeeding, women should express a few drops of milk and gently rub it over the nipples with clean hands; human breast milk has natural healing properties and oils that often soothe tender areas.
- Women should allow the nipples and breast(s) to air-dry after breastfeeding.
- Women should avoid harsh soaps and/or ointments.

## ***Breast Infection***

Breast infections may present as soreness or a lump in the breast and may lead to the following symptoms: fever, nausea, vomiting, and yellow discharge from the nipple. Health care professionals may consider reviewing the following counseling points when discussing breast infections.

- Breast infections may require health care treatment. Women should seek health care if both breasts are affected and/or they observe pus or blood in their breast milk.
- Women should massage the potentially infected breast, starting behind the sore spot by moving their fingers in a circular motion toward the nipple.
- Women may use a warm compress on the sore spot.
- Women should try to relax and get as much sleep as possible to promote healing.

## ***Breastfeeding an Infant with Jaundice***

Some infants may experience jaundice. Jaundice results from a buildup of bilirubin. Jaundice typically presents as a yellowing of the skin and eyes. Health care professionals may consider reviewing the following counseling points when discussing jaundice and breastfeeding.

- Jaundice can occur early on in an infant's life.
- Jaundice may develop if an infant does not get enough breast milk.
- Jaundice is typically not harmful.
- More frequent breastfeeding can help clear up jaundice.
- Some infants may require health care if they develop jaundice, although jaundice often clears up naturally on its own.

### ***Gastroesophageal Reflux Disease (GERD)***

Some infants may develop GERD. Health care professionals may consider reviewing the following counseling points when discussing GERD and breastfeeding.

- Symptoms of GERD include the following: spitting up, projectile vomiting, inconsolable crying, obvious discomfort, refusing to eat, waking during the night, and problems swallowing.
- It is important for a woman to continue breastfeeding even if an infant exhibits signs of GERD.
- Severe GERD cases may require health care intervention.

### ***Colic***

The term colic may refer to periods of frequent and/or prolonged distress from an otherwise healthy infant. Typically, when infant colic occurs, the infant may inconsolably cry and/or fuss. Health care professionals may consider reviewing the following counseling points when discussing colic and breastfeeding.

- Infant colic usually starts between 2 and 4 weeks after birth.
- Infant colic will likely improve or disappear by 3 or 4 months after birth.
- Infant colic may be caused by a breastfeeding woman's diet.
- Dietary changes, such as limiting caffeine, can help alleviate colic.
- Infant colic may be a sign of an underlying issue with an infant.

### ***Section 3: Summary***

For many individuals, the breastfeeding process will be enjoyable and free of obstacles. However, that being said, breastfeeding is not without its potential difficulties. Therefore, the third phase of breastfeeding support should focus on the

potential obstacles associated with breastfeeding and strategies to overcome such obstacles. Potential obstacles that may arise during breastfeeding include the following: insufficient breast milk supplies, producing too much breast milk, exhibiting a strong let-down reflex, breast enlargement, plugged ducts, sore nipples, breast infections, and breastfeeding infants with jaundice, GERD, or when they are colic.

One of the first obstacles that may come to mind when considering breastfeeding obstacles is insufficient breast milk supplies. The truth of the matter is that most women will produce enough breast milk to sustain their infants. However, if breast milk production is a concern, women should note the following: the more often the breasts are emptied, the more milk they will produce.

On the other side of the coin, some women may be concerned with producing too much breast milk. If women experience a feeling that their breasts are over-full with milk, they should be sure to offer the breast that feels over-full to infants when breastfeeding to encourage emptying. Additionally, if a breast feels too full and/or uncomfortable, a woman may remove the breast milk from the breast by hand or by breast pump.

Along with producing too much milk, some women may be concerned that they may have a strong let-down reflex. Women can overcome a strong let-down reflex by holding their nipples with their fingers when breastfeeding to compress the milk ducts and reduce the flow of milk.

During the process of breastfeeding most women will experience some type of breast enlargement. Breast enlargement is natural when breastfeeding. However, some women's breasts may become so large that they experience pain, tenderness, warmth, and/or redness. When breasts enlarge to the point where they cause pain, tenderness, warmth, and/or redness, they are said to be engorged. Breast engorgement is a result of breast milk build-up. Thus, women may overcome breast engorgement by removing milk from the breast.

Some women may experience sore nipples while breastfeeding. Sore nipples can prevent some women from breastfeeding. Thus, sore nipples should be prevented by a variety of strategies including changing breastfeeding holds when breastfeeding.

Breast infections may present as soreness or a lump in the breast and may lead to the following symptoms: fever, nausea, vomiting, and yellow discharge from the nipple. Women should seek health care if both breasts are affected and/or they observe pus or blood in their breast milk.

Lastly, infant jaundice, GERD, and colic may be obstacles to breastfeeding. Although potentially concerning, women should continue breastfeeding their infants if they experience any of the aforementioned conditions unless a health care professional advises them to stop breastfeeding.

### ***Section 3: Key Concepts***

- Most women will produce enough breast milk to sustain their infants.
- The more often the breasts are emptied, the more milk they will produce.
- Breasts over-full with milk is a concern for some women because it may lead to an uncomfortable feeling. If women experience a feeling that their breasts are over-full with milk, they should be sure to offer the breast that feels over-full to infants when breastfeeding to encourage emptying; women may also remove the breast milk by hand or by breast pump.
- Some women may have a strong let-down reflex, which may cause milk to rush out of the breast; women can overcome a strong let-down reflex by holding their nipples with their fingers when breastfeeding to compress the milk ducts and reduce the flow of milk.
- Women can prevent breast engorgement by breastfeeding often after giving birth.
- Women may prevent sore nipples by ensuring they achieve an effective/successful latch when breastfeeding, changing positions or breastfeeding holds each time they breastfeed, rubbing breast milk over the nipples with clean hands, allowing the nipples and breast(s) to air-dry after breastfeeding, and avoiding harsh soaps and/or ointments.
- Women should seek health care if they suspect or believe both breasts are infected and/or they observe pus or blood in their breast milk.
- Women should continue breastfeeding infants that develop jaundice and/or GERD or may be colic unless a health care professional advises them to stop breastfeeding.

### ***Section 3: Key Terms***

**Colic** - periods of frequent and/or prolonged distress from an otherwise healthy infant

### ***Section 3: Personal Reflection Question***

What are the potential obstacles associated with breastfeeding and how may women overcome such obstacles?

## Section 4: Case Studies Revisited

The three case studies presented at the beginning of this course will be revisited in this section to further explore the concepts found in this course. Each case study will be re-presented below, followed by a case study review. The case study review includes the types of questions health care professionals should ask themselves when attempting to provide breastfeeding support. Additionally, reflection questions will be posed within the case study review to encourage further internal debate and consideration regarding the presented case study and breastfeeding support. The information found in this section of the course was derived from materials provided by the CDC, FDA, the United States Department of Health & Human Services, the American Academy of Pediatrics, the office of the U.S. Surgeon General, and the WHO.<sup>1,2,3,4,5,6</sup>

### Case Study 1

A 22-year-old first-time mother would like to continue breastfeeding her 4-month-old infant - however, she has a few concerns regarding breastfeeding. The new mother has no known drug allergies and is taking Celexa 20 mg daily for depression. The new mother's concerns regarding breastfeeding center around a lack of family support, the physical pain associated with breastfeeding, and her occasional alcohol consumption. Moreover, the new mother is very concerned about breastfeeding while taking Celexa. The mother feels Celexa is "helping with the depression," allowing her to "feel much better" and helping her "function on a daily basis." Essentially, the new mother does not want to stop taking Celexa but believes she has to if she wants to breastfeed. The mother continues to breastfeed her infant. However, her concerns and lack of overall family support eventually cause her to stop breastfeeding and, ultimately, initiate formula. Shortly after stopping breastfeeding and initiating formula as the infant's main source of nutrition, the new mother observes that her infant has become lethargic, often spits up, and often forcibly vomits.

### Case Study 1 Review

***What patient details may be relevant to breastfeeding support?***

The following patient details may be relevant to providing breastfeeding support: the woman is a 22-year-old, first-time mother; the new mother would like to continue breastfeeding her 4-month-old infant; the new mother is taking Celexa 20 mg daily for depression; the mother reports the following information regarding her Celexa use: Celexa is "helping with the depression," allowing her to "feel much better," and helping her "function on a daily basis," the mother has concerns regarding breastfeeding which center around the following areas: a lack of family support, the

physical pain associated with breastfeeding, and occasional alcohol consumption, the mother stops breastfeeding and initiates formula as her 4-month-old infant's main source of nutrition, and the infant begins to exhibit the following changes after the initiation of formula: the infant has become lethargic, often spits-up, and often forcibly vomits.

Are there any other patient details that may be relevant to breastfeeding support; if so, what are they?

***How are each of the aforementioned patient details relevant to breastfeeding support?***

Each of the previously highlighted patient details may be potentially relevant to providing breastfeeding support. The potential relevance of each patient detail may be found below.

The woman is a 22-year-old, first-time mother - the previous patient detail may be potentially relevant to providing breastfeeding support because it indicates a possible lack of experience regarding breastfeeding. First-time mothers typically lack experience in breastfeeding. Health care professionals should be sure to identify first-time mothers to ensure they receive breastfeeding support. When providing breastfeeding support to new mothers, health care professionals should be sure to review the importance of breastfeeding and relevant breastfeeding recommendations, as well as address any questions and concerns the new mother may have.

The new mother would like to continue breastfeeding her 4-month-old infant - the previous patient details may be potentially relevant because it indicates the woman wants to breastfeed her infant. Often, the first step to effective breastfeeding is the mother deciding she wants to breastfeed her infant. Mothers that want to breastfeed should be encouraged to do so unless contraindications are present. When providing breastfeeding support to individuals that want to breastfeed their infants, health care professionals can reinforce the idea of breastfeeding by providing information relevant to the health benefits of breastfeeding (e.g., a health care professional could review the following potential health benefits associated with breastfeeding: breastfeeding may reduce/prevent infant digestion issues, breastfeeding may prevent infant hospitalizations due to respiratory tract infections, breastfeeding may reduce the risk for SIDS, breastfeeding can help lower mothers' risk of high blood pressure, type 2 diabetes, ovarian cancer, and breast cancer, breastfeeding can help women lose weight, and breastfeeding can help a mother bond with her infant). Essentially, just because a woman wants to breastfeed, it does not mean she fully understands the reasons why she should breastfeed. Providing



information relevant to the benefits of breastfeeding or the reasons to breastfeed could help solidify a woman's dedication to effective breastfeeding.

The new mother is taking Celexa 20 mg daily for depression - the previous patient detail may be potentially relevant because, unfortunately, many individuals believe they cannot breastfeed their infants if they are taking medications, which in turn could prevent them from effective breastfeeding. When individuals present and raise concerns regarding medications health care professionals should provide them with specific information regarding the medications in question, and they should reinforce that most medications do not present in clinically significant amounts in human breast milk to pose a significant risk to most infants.

Regarding Celexa specifically, Celexa is an antidepressant, which means it does require attention from health care professionals. Antidepressants, along with anti-anxiety agents and antipsychotics, may appear in low concentrations in human milk; mothers who desire to breastfeed their infant(s) while taking these agents should be counseled. Health care professionals should note that breastfeeding is not contraindicated while taking Celexa. Health care professionals should also note that the decision whether to continue or discontinue either nursing or Celexa therapy should take into account the risks of Celexa exposure to the infant and the benefits of Celexa treatment for the mother.

The mother reports the following information regarding her Celexa use: Celexa is "helping with the depression," allowing her to "feel much better," and helping her "function on a daily basis" - the previous patient detail may be potentially relevant because it provides insight into the possible benefits of the mother's Celexa use. As previously alluded to, the decision whether to continue or discontinue either nursing or therapy with antidepressants, anti-anxiety agents, and antipsychotics should take into account the risks of medication exposure to the infant and the benefits of treatment for the mother. In essence, when it comes down to discounting a form of therapy that may affect an individual's mood and potential capacity to care for a child, the risks and benefits of that therapy should be evaluated.

In this case, and in cases like it, the medication in question is potentially helping the individual. Thus, after she is provided counseling regarding the potential effects of the medication, a risk/benefits analysis should take place to decide whether to continue or discontinue either nursing or therapy. Health care professionals should note that patients may provide their own insight into whether they would like to continue their therapies. Health care professionals should also note the warnings associated with antidepressants, anti-anxiety agents, and antipsychotics such as the following warnings associated with Celexa: antidepressants increased the risk

compared to placebo of suicidal thinking and behavior (suicidality) in children, adolescents, and young adults in short-term studies of major depressive disorder (MDD) and other psychiatric disorders; anyone considering the use of Celexa or any other antidepressant in a child, adolescent, or young adult must balance this risk with the clinical need; short-term studies did not show an increase in the risk of suicidality with antidepressants compared to placebo in adults beyond age 24; there was a reduction in risk with antidepressants compared to placebo in adults aged 65 and older; depression and certain other psychiatric disorders are themselves associated with increases in the risk of suicide; patients of all ages who are started on antidepressant therapy should be monitored appropriately and observed closely for clinical worsening, suicidality, or unusual changes in behavior; families and caregivers should be advised of the need for close observation and communication with the prescriber.

The mother has concerns regarding breastfeeding, which center around the following areas: a lack of family support, the physical pain associated with breastfeeding, and occasional alcohol consumption - a lack of family support may be relevant because it is often cited as a barrier to breastfeeding. To help individuals overcome the potential barrier of a lack of family support, health care professionals may refer individuals to breastfeeding support groups. Health care professionals should note the following: a breastfeeding support group can provide breastfeeding information, education, guidance, and assistance to mothers interested in breastfeeding their infants; breastfeeding support groups can be a means for mothers to surround themselves with like-minded individuals who breastfeed their infants or simply support breastfeeding; breastfeeding support groups can help mothers develop new friendships with individuals open and willing to help support them as they breastfeed their infants.

The mother's concerns regarding the physical pain associated with breastfeeding is relevant because it represents many of the common myths surrounding breastfeeding. Health care professionals should note the following: there are many myths regarding breastfeeding, several of which discourage new mothers from breastfeeding their infants; possessing insight into the breastfeeding myths can help health care professionals dispel any unnecessary misgivings mothers may have about breastfeeding. Health care professionals should also note the following: breastfeeding is not often reported to be extremely painful; mothers report breastfeeding does create a sensation; however, it is not, typically, extremely painful; if breastfeeding does become extremely painful, mothers should be advised to contact a health care professional because extreme pain is not normal and may be a sign of a more serious underlying issue.

The concern regarding occasional alcohol consumption is relevant because it may have contributed to the new mother's decision to stop breastfeeding. Health care professionals should note the following: according to materials provided by the CDC, not drinking alcohol is the safest option for breastfeeding mothers; however, moderate alcohol consumption (up to 1 drink/day) is not known to be harmful to the infant.

The mother stops breastfeeding and initiates formula as her 4-month-old infant's main source of nutrition - the previous patient detail is relevant because of the following recommendation: the American Academy of Pediatrics recommends exclusive breastfeeding for a period of about 6 months, followed by continued breastfeeding, while introducing complementary foods, until the child is 12 months old or older.

The infant begins to exhibit the following changes after the initiation of formula: the infant has become lethargic, often spits up, and often forcibly vomits - the previous patient detail is relevant because it may indicate the infant is experiencing digestive problems as a result of the formula. Health care professionals should note the following: evidence suggests that human breast milk is easier for infants to digest when compared to formulas; evidence also suggests that any breastfeeding is associated with a reduction in the incidence of nonspecific gastrointestinal tract infections. Health care professionals should also note that an infant may require health care if he or she exhibits the following symptoms: lethargy, often spitting up, vomiting forcibly or often, and vomiting blood or bile.

What other ways, if any, are the patient details relevant to breastfeeding support?

***How may breastfeeding support help the new mother effectively breastfeed her infant?***

Due to the mother's desire to breastfeed, it appears breastfeeding support could help the mother effectively breastfeed her infant.

Retrospectively, breastfeeding support could have addressed the mother's concerns regarding her Celexa use and her questions regarding breastfeeding pain and alcohol consumption. Breastfeeding support could have also enabled the mother to overcome the barrier of lack of family support. Moreover, it is possible that breastfeeding support could have prevented the mother from stopping breastfeeding and initiating formula as her 4-month-old infant's main source of nutrition, which in turn may have prevented the infant's potential digestive issues.

The following is an example of how Case Study 1 could have transpired if the patient received breastfeeding support: a new mother would like to continue breastfeeding her 4-month-old infant - however, the mother has concerns centered around the use

of Celexa while breastfeeding, a lack of family support, the physical pain associated with breastfeeding, and occasional alcohol consumption; the mother receives adequate breastfeeding support; the mother's aforementioned concerns are addressed; the mother is referred to a breastfeeding support group; the mother establishes relationships with fellow new mothers which provide her with the support she requires to continue breastfeeding; the mother continues to exclusively breastfeed her infant; after a total breastfeeding time period of about 6 months, the mother continues breastfeeding, while introducing complementary foods; the infant does not develop digestive issues/problems.

Health care professionals should note that, moving forward, breastfeeding support could still be beneficial to the new mother. For example, adequate breastfeeding support could help the new mother address her infant's potential digestive issues/problems and reinitiate effective breastfeeding.

Are there any other ways breastfeeding support could help the new mother effectively breastfeed her infant; if so, what are they?

## **Case Study 2**

A 30-year-old mother has been exclusively breastfeeding her infant for the past 3 months. The mother reports that her breastfeeding is going "smoothly." Although, recently the mother has been concerned that her infant is not effectually latching or getting enough breast milk. The mother also has several questions regarding breast milk storage and her diet. The mother understands the importance of breastfeeding and acknowledges she is dedicated to breastfeeding - however, she is not sure how to proceed due to her concerns and questions.

## **Case Study 2 Review**

***What patient details may be relevant to breastfeeding support?***

The following patient details may be relevant to providing breastfeeding support: the mother understands the importance of breastfeeding and acknowledges she is dedicated to breastfeeding, the mother has been exclusively breastfeeding her infant for the past 3 months, the mother reports that her breastfeeding has been going "smooth," the mother has concerns centered around latching, the mother is not sure if her infant is getting enough breast milk, and the mother has several questions regarding breast milk storage and diet.

Are there any other patient details that may be relevant to breastfeeding support; if so, what are they?

***How are each of the aforementioned patient details relevant to breastfeeding support?***

Each of the previously highlighted patient details may be potentially relevant to providing breastfeeding support. The potential relevance of each patient detail may be found below.

The mother understands the importance of breastfeeding and acknowledges she is dedicated to breastfeeding - the previous patient detail is relevant because it indicates the mother understands the importance of breastfeeding and wants to breastfeed her infant. Health care professionals should note that when individuals report that they understand the importance of breastfeeding and are dedicated to breastfeeding, it may be advantageous to focus breastfeeding support on areas essential to effective breastfeeding.

The mother has been exclusively breastfeeding her infant for the past 3 months - the previous patient detail is relevant because it is another indication that the mother wants to continue breastfeeding her infant. It also provides insight into the mother's breastfeeding knowledge and dedication because it potentially shows she is following the American Academy of Pediatrics-related recommendation, which advises exclusive breastfeeding for a period of about 6 months.

The mother reports that her breastfeeding is going "smooth" - the previous report by the mother is relevant because it provides a context for the mother's overall breastfeeding experience. When providing breastfeeding support to mothers, it may be beneficial for the health care professional to ascertain information which can shed light on an individual's overall breastfeeding experience. Such information can help a health care professional better understand individuals' breastfeeding perspectives, the effectiveness of their breastfeeding, and where they may or may not need help or support.

The mother has concerns centered around latching - it is natural for individuals to have questions regarding latching. That being said, it is important mothers understand how to effectively engage in latching. Health care professionals can provide the following suggestions to help promote effective latching: women should pull the child close to the nipple/breast in a manner that allows the child's chin and lower jaw to move into the nipple/breast first when pulling the child close to the nipple/breast women should aim the child's lower lip as far from the base of the nipple as possible to encourage the child to take a large mouthful of the breast, and women could tickle the child's lips or mouth with the nipple/breast to encourage the child to open his or her mouth. Health care professionals can also provide women with information regarding the following potential signs of effective latching: the latch feels

comfortable to the woman, little to no areola is visible, the child's mouth appears to be full with breast, the child's lips turn outward, and the mother should be able to hear the child swallowing if the latch was successful.

The mother is not sure if her infant is getting enough breast milk - being able to tell if an infant is getting enough breast milk is relevant to effective breastfeeding. Thus, health care professionals should provide individuals with information regarding the following signs that may indicate an infant is receiving enough breast milk: the child passes clear/pale yellow urine, the child produces approximately 1 - 3 bowel movements per day, beginning after the first 24 hours post birth, the child exhibits consistent sleep patterns, the child appears content after breastfeeding, and the women's breasts feel different after breastfeeding is complete (e.g., soft). Health care professionals may also provide individuals with the following information: once breastfeeding is established, exclusively breastfed infants who are 1 to 6 months old typically take in between 19 and 30 ounces of breast milk per day.

The mother has several questions regarding breast milk storage and diet - breast milk storage is relevant to an infant's health. Individuals who are providing expressed breast milk to an infant should understand how to effectively store breast milk to ensure infant safety. Health care professionals should provide, at the very least, some practical information regarding breast milk storage, such as the following: freshly expressed breast milk may be stored at room temperature for up to 4 hours, freshly expressed breast milk may be stored in the refrigerator for up to 4 days, freshly expressed breast milk may be stored in the freezer for up to 12 months, although frozen breast milk is best 6 months after freezing, individuals should never thaw or heat breast milk in a microwave, and individuals should never refreeze breast milk once it has been thawed. Health care professionals should note that if individuals are inquiring about breast milk storage, they may also require information regarding breast pumps.

The mother's diet is relevant to both the infant and the breastfeeding mother's health. When receiving dietary-related questions, health care professionals should provide, at the very least, some practical information regarding diet such as the following: breastfeeding mothers typically require more calories to meet their nutritional needs while breastfeeding; an additional 450 to 500 kilocalories (kcal) of healthy food calories per day is recommended for well-nourished breastfeeding mothers, breastfeeding mothers may want to consider taking a daily multivitamin or prenatal supplement every day containing 150 µg of iodine, breastfeeding mothers should be aware of the following: breast milk contains very little iron; therefore, the American Academy of Pediatrics recommends that infants who only receive breast milk (exclusively breastfeed) will need a supplement of iron each day at a dose of 1

milligram of iron for each kilogram of body weight; the supplement of iron should start at 4 months of age, and the American Academy of Pediatrics recommends breastfed and partially breastfed infants be supplemented with 400 IU per day of vitamin D beginning in the first few days of life.

What other ways, if any, are the patient details relevant to breastfeeding support?

***How may breastfeeding support help the mother from Case Study 2 effectively breastfeed her infant?***

Due to the mother's desire to breastfeed, it appears breastfeeding support could help the mother effectively breastfeed her infant. Essentially, breastfeeding support could help provide the mother from Case Study 2 with relevant information to help facilitate continued breastfeeding.

Are there any other ways breastfeeding support could help the mother from Case Study 2 effectively breastfeed her infant; if so, what are they?

### ***Case Study 3***

A 28-year-old woman presents with the following symptoms: breast pain, tenderness, redness, and what the patient refers to as a "slight fever." The patient has no known drug allergies and is not currently taking any medications. However, the patient does report she is taking a multivitamin daily. Upon questioning the patient reveals that she has been exclusively breastfeeding her child for the past 3 months. Upon further questioning the patient reports that her breasts became "very large" after giving birth and have since increased in size. The patient also reports that she has specific questions regarding infant gastroesophageal reflux disease (GERD) and the use of a pacifier.

### ***Case Study 3 Review***

***What patient details may be relevant to breastfeeding support?***

The following patient details may be relevant to providing breastfeeding support: the patient reveals that she has been exclusively breastfeeding her child for the past 3 months; the patient reports that her breasts became "very large" after giving birth and have since increased in size, the patient presents with the following symptoms: breast pain, tenderness, redness as well as what the patient refers to as a "slight fever," the patient is not currently taking any medications, the patient reports she is taking a multivitamin daily, and the patient reports that she has specific questions regarding infant GERD and the use of a pacifier.



Are there any other patient details that may be relevant to breastfeeding support; if so, what are they?

***How are each of the aforementioned patient details relevant to breastfeeding support?***

Each of the previously highlighted patient details may be potentially relevant to providing breastfeeding support. The potential relevance of each patient detail may be found below.

The patient reveals that she has been exclusively breastfeeding her child for the past 3 months - the previous patient detail is relevant because it may indicate the patient is following the American Academy of Pediatrics related recommendation, which advises exclusive breastfeeding for a period of about 6 months.

The patient reports that her breasts became "very large" after giving birth and have since increased in size - it is natural for a woman's breasts to become larger, heavier, and slightly tender when they begin producing milk. That being said, health care professionals should note women's reports regarding breast size, especially when an increase in breast size is reported with the accompanying signs and symptoms of breast engorgement.

The patient presents with the following symptoms: breast pain, tenderness, redness as well as what the patient refers to as a "slight fever" - the previous patient detail is relevant because the patient's symptoms, along with her reports centered around the size of her breasts, support the potential for breast engorgement. Breast engorgement typically occurs between 3 - 5 days after a woman gives birth. However, health care professionals should note that breast engorgement may occur at any time during breastfeeding, especially when breast milk is not regularly removed from the breast. It is important for health care professionals to identify women experiencing breast engorgement so they may provide practical information such as the following: women can prevent breast engorgement by breastfeeding often after giving birth, removing breast milk by hand or with a breast pump, and women can overcome the pain associated with breast engorgement by massaging the breasts. Furthermore, when administering care to women breastfeeding, health care professionals should attempt to identify potential breastfeeding obstacles that may impede the process of breastfeeding, such as the following: breast engorgement, sore nipples, and breast infections. To help identify breastfeeding obstacles, health care professionals should ask patients questions that may reveal such obstacles. Examples of the types of questions health care professionals may want to consider asking women that are breastfeeding can be found below. Health care professionals should note that each of the following questions may help them reveal or identify different breastfeeding

obstacles. Follow-up questions may be required to help identify specific breastfeeding obstacles.

- Do you experience any pain when breastfeeding?
- Do you have any breast pain?
- Do your breasts feel hard or like they are extremely full?
- How often do you breastfeed your child?
- Do you have to remove excess milk from the breast(s) by hand or by breast pump after breastfeeding your child?
- Are you experiencing any breast(s) tenderness?
- When breastfeeding, do you experience a rush of milk from the breast(s).
- Have you recently experienced a hard, tender swelling in the breast(s).
- Have you ever experienced a plugged duct?
- Have you ever experienced sore nipples?
- Have you ever experienced the following symptoms: fever, nausea, vomiting, and/or a yellow discharge from the nipple?
- Have you ever observed a yellowing of your child's skin and/or eyes?
- Has your infant ever exhibited the following symptoms: spitting up, projectile vomiting, inconsolable crying, obvious discomfort, refusing to eat, waking during the night, and problems swallowing?
- Does your child inconsolably cry for hours or seemingly days?

The patient is not currently taking any medications - when providing breastfeeding support to patients, health care professionals may consider obtaining information regarding medications. Such information can help health care professionals identify any medications that may be contraindicated or problematic for the nursing mother and/or her child.

The patient reports she is taking a multivitamin daily - when providing breastfeeding support to patients, health care professionals may consider obtaining information regarding vitamins and herbal products. Such information can help health care professionals identify dietary supplementation a nursing mother may or may not need.

Such information may also be valuable in identifying vitamins/herbal products that may be contraindicated or problematic for the nursing mother and/or her child.

The patient reports that she has specific questions regarding infant GERD and the use of a pacifier - health care professionals should encourage patients seeking breastfeeding support to ask any questions they may have. Patient questions can help health care professionals focus their breastfeeding support efforts as well as help them identify any breastfeeding obstacles or concerns that may be present. For example, the woman in Case Study 3 reported that she has specific questions regarding infant GERD and the use of a pacifier, which could mean GERD and/or the use of a pacifier may be a current obstacle or concern. With that in mind, if patients ask questions regarding infant GERD, health care professionals should provide the patient with information regarding infant GERD, such as the following: symptoms of GERD include the following: spitting up, projectile vomiting, inconsolable crying, obvious discomfort, refusing to eat, waking during the night, and problems swallowing; it is important for a woman to continue breastfeeding, even if an infant exhibits signs of GERD.

If a patient asks questions regarding the use of a pacifier while breastfeeding, health care professionals may want to consider providing the patient with information regarding the use of a pacifier. The term pacifier may refer to any nipple-shaped device/object that may be provided to an infant for the intended purpose of sucking and/or biting. The American Academy of Pediatrics and the CDC provide the following information regarding the use of pacifiers: evidence suggests that the early introduction of pacifiers negatively impacts breastfeeding outcomes; however, pacifier use during infant hospitalization can provide comfort during painful procedures when the infant cannot otherwise be comforted; pacifiers may also reduce the risk of SIDS, which occurs most commonly between 2 - 4 months of age; the introduction of pacifiers for breastfed infants should be delayed until breastfeeding is firmly established, which is generally within the first few weeks.

What other ways, if any, are the patient details relevant to breastfeeding support?

***How may breastfeeding support help the patient from Case Study 3 effectively breastfeed her infant?***

Breastfeeding support could help the patient overcome and prevent potential breast engorgement. Breastfeeding support could also help the patient identify the presence of infant GERD as well as obtain information regarding the use of a pacifier. In essence, breastfeeding support could help the patient overcome any current or future obstacles that may impede breastfeeding, ultimately allowing the patient to breastfeed as desired.

Are there any other ways breastfeeding support could help the patient from Case Study 3 effectively breastfeed her infant; if so, what are they?

### ***Section 4: Summary***

Breastfeeding support can be beneficial to nursing individuals in a variety of different capacities. Health care professionals should work to identify those individuals who may require breastfeeding support. When providing breastfeeding support, health care professionals should address any questions or concerns individuals may have. Additionally, health care professionals should ask nursing individuals questions to identify any areas of concern that may not be obviously apparent. Health care professionals should note that, often, one of the main goals of breastfeeding support is to facilitate safe and effective breastfeeding.

### ***Section 4: Key Concepts***

- Health care professionals should work to identify patient details that may be relevant to breastfeeding support.
- When providing breastfeeding support, health care professionals should consider how important patient details may be relevant to breastfeeding support.
- Before providing breastfeeding support, health care professionals may want to consider how breastfeeding support may help nursing individuals.
- When providing breastfeeding support, health care professionals should provide individuals with practical information.
- When providing breastfeeding support, health care professionals should address any questions or concerns individuals may have.
- Often, one of the main goals of breastfeeding support is to facilitate safe and effective breastfeeding.

### ***Section 4: Key Terms***

***Pacifier*** - any nipple-shaped device/object that may be provided to an infant for the intended purpose of sucking and/or biting

### ***Section 4: Personal Reflection Question***

Why is it important for health care professionals to identify relevant patient details when providing breastfeeding support?

## Conclusion

Breastfeeding is recognized as the best source of nutrition for most infants and is often cited as an important element of infant health. In addition, breastfeeding can have many potential health benefits for new mothers. Thus, it is important that individuals breastfeed their infants. To help individuals through the breastfeeding process, health care professionals can provide breastfeeding support. Breastfeeding support may refer to any effort made to assist, guide and/or facilitate breastfeeding. Health care professionals can provide breastfeeding support to individuals in a variety of ways - however, often, breastfeeding support requires 3 major steps or phases.

The first step or phase to providing breastfeeding support is education centered around the importance of breastfeeding and related questions and concerns. When initially engaging individuals in breastfeeding support health care professionals may want to consider touching upon the following areas of interest: breastfeeding benefits to infants, breastfeeding benefits to mothers, the economic and environmental benefits of breastfeeding, common breastfeeding myths and barriers, medications and breastfeeding, vaccines and breastfeeding, human breast milk production and the use of galactagogues, the use of marijuana and alcohol while breastfeeding, tobacco and e-cigarette use while breastfeeding, and contraindications to breastfeeding.

The second major phase of breastfeeding support should focus on areas essential to effective breastfeeding. Effective breastfeeding occurs when an infant receives human breast milk for ingestion (health care professionals should note that the American Academy of Pediatrics recommends exclusive breastfeeding for a period of about 6 months, followed by continued breastfeeding, while introducing complementary foods, until the child is 12 months old or older). When providing breastfeeding support focused on effective breastfeeding health care professionals should consider the following points of interest: latching, how to hold a child during breastfeeding, signs an infant is receiving enough breast milk, breast pumps, breast milk storage, and the breastfeeding mother's diet.

The last major phase of breastfeeding support should focus on the potential obstacles associated with breastfeeding and strategies to overcome such obstacles. Potential obstacles that may arise during breastfeeding include the following: insufficient breast milk supplies, producing too much breast milk, exhibiting a strong let-down reflex, breast enlargement, plugged ducts, sore nipples, breast infections, and breastfeeding infants with jaundice, GERD, or when they are colic.

Finally, health care professionals should note that breastfeeding support can be beneficial to nursing individuals in a variety of different capacities. Health care professionals should work to identify those individuals who may require breastfeeding

support. Health care professionals should also note that, often, one of the main goals of breastfeeding support is to facilitate safe and effective breastfeeding.

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