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**An Intervention to Promote Exclusive Breastfeeding by
Creating Continuing Medical Education Training Modules for
Healthcare Providers**

A capstone report submitted in partial fulfillment of the
requirements for the degree of

Master of Public Health in Public Health Nutrition Practice
University of Washington

2020

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Acknowledgments

I am grateful for the support I have received through the creation of this capstone project. I want to thank my capstone advisor, Michelle Averill, who provided the necessary guidance and unwavering support to make this project successful. I would also like to thank Scott Ickes, my community partner, who provided me with on the ground support in Kenya and facilitated key relationships with staff members at the Naivasha County Referral Hospital. This project was made possible due to funding provided by the Department of Global Health GO Health Fellowship and African Studies Program Ottenberg-Winans Fellowship.

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Chapter 1: Introduction

This capstone project focuses on the global health issue of exclusive breastfeeding practices. Dr. Scott Ickes is conducting a research study analyzing the opportunities and barriers to exclusive breastfeeding among working mothers in Naivasha, Kenya. As a part of this study, he interviewed twenty healthcare providers from June 2018 to December 2018. A common theme from these interviews was the need for continuing medical education (CME) training on the topic of breastfeeding, which prompted the development of this capstone project. This capstone project was an intervention, comprised of the development and implementation of CME trainings for healthcare providers at the Naivasha County Referral Hospital (NCRH) in Kenya by the MPH capstone student. Utilizing components of the Baby-Friendly Hospital Initiative curriculum and similar studies focused on training healthcare workers, this training aimed to improve the quality of breastfeeding education provided to mothers by educating the healthcare providers on how to communicate and counsel breastfeeding mothers effectively. Improving breastfeeding counseling skills through continuing education provides an additional way to promote exclusive breastfeeding among mothers living in Naivasha.

Exclusive breastfeeding (EBF) rates in Kenya are still lower than the global goals outlined in the World Health Organization's (WHO's) Global Nutrition Targets set in 2012. Countries should aim to increase their exclusive breastfeeding rates to 50% by 2025 (World Health Organization, 2012). However, in Kenya, only 40% of mothers are practicing exclusive breastfeeding 6 months after birth (Kenya National Bureau of Statistics, 2014). This could be attributed to the economic development of Kenya and the growing number of women entering the workforce, which is a known barrier to exclusive breastfeeding (Kavle, LaCroix, Dau, & Engmann, 2017; Victora et al., 2016). To help improve EBF rates, the Kenyan government recently passed laws requiring employers to provide three months of maternity leave and lactation rooms (National Council for Law Reporting, 2012). However, expressing and storing milk at work is not yet a cultural norm (Talbert, Tsofa, Mumbo, Berkley, & Mwangome, 2018). As a result, infants are being weaned off breastmilk and fed porridge once the mother returns

to work. The short duration of exclusive breastfeeding and early introduction of complementary foods can impair typical development and put the infant at increased risk of infection. The early introduction of complementary foods (i.e. before the infant reaches six months of age) can increase an infant's exposure to contaminated foods and fluids. A lower level of breast milk consumption and/or contaminated foods causing infections may result in infants facing malnourishment and/or experiencing poor growth (Rao, 2011; Romulus-Nieuwelink, Doak, Albernaz, Victora, & Haisma, 2011). The WHO identifies suboptimal breastfeeding practices such as non-exclusive breastfeeding and complementary feeding as the two infant and young child feeding practices that contribute to stunting (World Health Organization, 2012). Stunted growth is a predominant issue in Kenya where 26% of children under the age of five have stunted growth as of 2014. This is higher than the prevalence of stunting in the world, which as of 2014, 23.8% of children were experiencing stunting and it has continued to decrease every year (The World Bank, n.d.). Low exclusive breastfeeding rates are a contributing factor in impaired growth and high rates of stunting seen in Kenya. The increasing number of women entering the workforce and negative cultural beliefs towards expressing and storing breastmilk may be contributing factors to the low EBF rates in Kenya.

This intervention targets the residents living in Naivasha Town and the greater sub-county of Naivasha. The floriculture industry is one of the largest employers in Kenya and the majority of flower farms are located in Naivasha county due to the accessibility of water from Lake Naivasha (Kenya Flower Council, n.d.). Of note, a large proportion of flower farm employees are women which makes the population a valuable population to focus this public health intervention. NCRH is the ideal setting to conduct this intervention for several reasons. Firstly, it serves the entire Naivasha county as well as some neighboring counties and is the only healthcare facility in the area that provides Labor & Delivery services. Women travel from all over the county to reach NCRH; therefore the patient population represents the entire county rather than a small cross-section (County Government of Nakuru, n.d.). Secondly, the breastfeeding education provided by NCRH staff members may be the only information mothers receive from a healthcare provider. Thus, it is essential that the healthcare staff have appropriate training include both general and regionally-specific topics, as well as training in

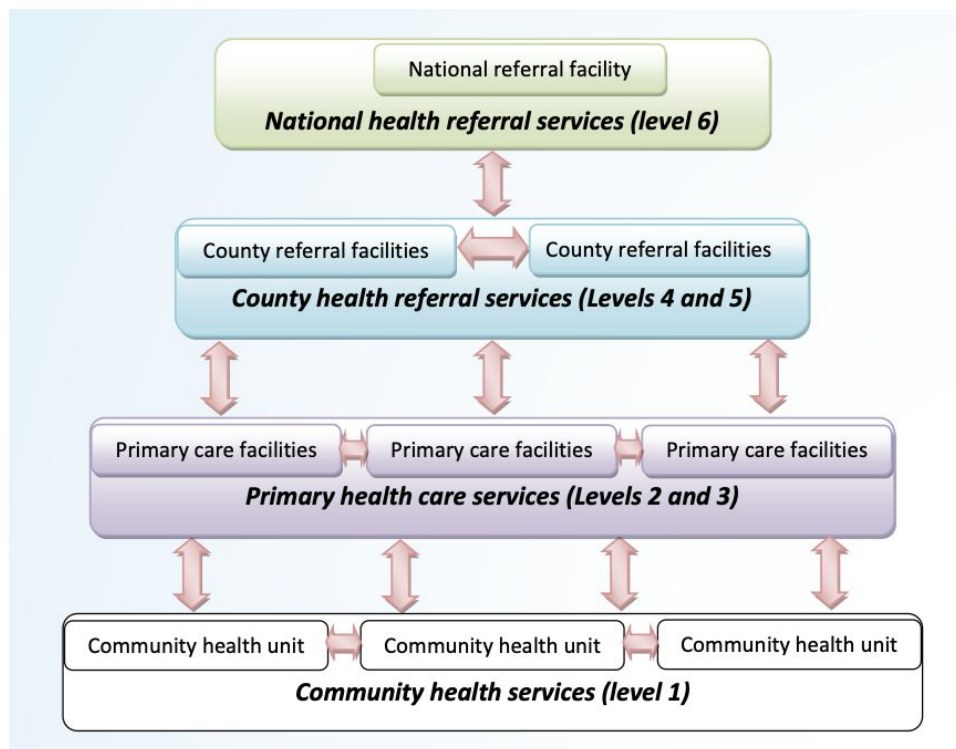
skills to promote exclusive breastfeeding. Lastly, the healthcare staff is in a position to empower women to practice EBF and influence the culture by normalizing manual expression. This intervention could be utilized by other, smaller healthcare facilities in the county that provide antenatal and postnatal care to continue to promote EBF.

Chapter 2: Naivasha County Referral Hospital and Target Population

Brief Overview of Kenya's Healthcare Referral System

In Kenya, the government-run health service delivery system is organized into six levels of care. The healthcare structure is based on a referral system and with each increasing level, there are more services provided as well as specialized care. Based on the level, the facilities are organized into four tiers: community level, primary care level, county referral hospitals, and national referral hospitals (Ministry of Health, 2011). Facilities can refer patients to other providers within or outside their own tier depending on the medical condition and the type of service a patient needs. The basic pyramid structure and interconnectedness of the referral system can be seen in Figure 1 (Kenya Ministry of Health, 2014).

Figure 1. Kenya Healthcare Referral System.



Tier 1 consists of only level 1 facilities and provides community health services. Tier 2 is comprised of level 2 and 3 facilities, which provide primary healthcare and respond to the demand created at the community level. Their services entail basic preventative services and act as a key link to referral facilities (Kenya Ministry of Health, 2014). Tier 3 are county referral health services (level 4 & 5) with more expertise and are able to treat more complex issues. It is important to note that only level 4 and 5 facilities have labor & delivery wards (World Health Organization, 2017). Lastly, tier 4 is at the top of the referral pyramid and only includes level 6 facilities. Level 6 healthcare providers received extensive training and offer specialized services such as services in orthopedic and spinal injuries. This structure provides a framework for the different types of services offered at each level as well as guide the providers on where to refer patients when the medical condition is out of their scope of practice (Kenya Ministry of Health, 2014).

Funding Structure for Government Healthcare

In Kenya, funding for public healthcare facilities is decentralized and receives funding from the county government (Government of Kenya, 2010). Prior to 2010, public hospitals were centralized through the national government and the main sources of funding for government hospitals were allocations from the national government, fee revenues from users of hospitals, reimbursements from insurance, and donations. However, this funding structure changed within the past decade as a part of the new 2010 constitution (Barasa, Cleary, Molyneux, & English, 2017). While the Ministry of Health still sets national policies and regulations, the responsibilities of allocating funding and managing healthcare resources were decentralized to the county governments. As a result, hospitals no longer received funding from the national government and all user fees paid to the hospital are funneled back to the county governments (Government of Kenya, 2010). Within the new funding structure, hospitals and other healthcare facilities have less autonomy over their budget and allocation of funds.

The devolution of the healthcare system has resulted in delays in procuring essential supplies and created an undesirable work environment for staff (Barasa et al., 2017). Previously, hospitals were able to retain all revenue from user fees and spend at their own

discretion. Due to the decentralization, hospitals now only collect user fees to then deposit into a bank account that only the county government has access to. A hospital must put in a request to the county government to receive funds before making any purchases. The inability to act independently and delay in receiving supplies has created unsafe work environments and poor morale among staff. Beyond the impact on hospital administration and staff, these conditions have also affected patients and reduced the quality of care they are receiving (Barasa et al., 2017). Through observations and informal conversations with hospital staff at NCRH, it was apparent that the hospital was lacking essential resources and staff felt constrained in the services they could provide.

History & Mission of Naivasha County Referral Hospital (NCRH)

NCRH is a public, government-funded hospital located in the town of Naivasha within the greater Naivasha sub-county. NCRH was started in 1920 as a dispensary as a part of the “Happy Valley”, now known as the area surrounding the town of Nyeri, Kenya (“Naivasha County Referral Hospital (NCRH) Level 5,” n.d.). In 1950, NCRH was promoted to a health center status and moved to its present-day location in Naivasha Town. Thirteen years later, NCRH became a subdistrict hospital within the Nakuru district. When Nakuru was made a county in 2007, Naivasha became a district and as a result, NCRH was upgraded to a level 4 hospital. NCRH’s last promotion to its current status as a Level 5 hospital occurred in 2017 in response to its high volume of patients and services (“Naivasha County Referral Hospital (NCRH) Level 5,” n.d.). As a level 5 hospital, NRCH treats an extensive amount of medical conditions and aims to provide quality and cost-effective care to the population (“Naivasha County Referral Hospital (NCRH) Level 5,” n.d.). NRCH provides outpatient, inpatient, laboratory, pharmacy, radiology, maternity, surgery, and youth center services. It also has dental, physiotherapy, occupational therapy, and comprehensive care (HIV treatment) units in addition to its main wards.

NCRH is the only level 5 hospital in the sub-county and serves the majority of the population living in the sub-county of Naivasha and other neighboring counties of Kiambu, Nyandarua, and Narok (County Government of Nakuru, n.d.; “Kenya Master Health Facility List: Find all the health facilities in Kenya,” n.d.). Naivasha sub-county is one of the eight

sub-counties within the larger county of Nakuru and has a total population of 253, 224 people with an area of 1, 685.4 Km² (“Subcounties – County Government of Nakuru,” n.d.). (“Naivasha County Referral Hospital (NCRH) Level 5,” n.d.). As of 2017, there were a total of 79 health facilities in Naivasha county, but only 21 are government hospitals. Of those 21 facilities, NCRH was the only hospital facility, the other 20 are either a dispensary or basic healthcare facility (“Kenya Master Health Facility List: Find all the health facilities in Kenya,” n.d.). Therefore, NCRH serves people from all over the county who need more specialized or advanced care than level 2 or 3 facilities can provide. Furthermore, it is the only public healthcare facility in the sub-county that provides labor and delivery services for expecting mothers.

In addition to the extensive medical services it provides, NCRH is a teaching hospital and places a strong emphasis on providing training for current and upcoming medical professionals. NCRH accepts interns from multiple different healthcare professions including nutritionists, pharmacists, medical officers, and clinical officers (County Government of Nakuru, n.d.). The hospital supports the professional development of staff by organizing weekly continuing medical education (CMEs) sessions and training conducted by third party providers on topics ranging from pharmacology to complicated births. Furthermore, the University of Washington School of Medicine partnered with NCRH in 2013 and established a program in which a Chief Medical Resident works at NCRH for a year organizing additional continuing education and professional development opportunities for the hospital staff. UW Medical Residents with an interest in global health may also choose to complete a one month rotation in Naivasha during their residency. Throughout the year, the Chief Resident organizes two additional weekly CMEs taught by staff from the different wards at the hospital.

Medical Education and Training for NCRH Staff

The target population for this intervention was the staff at NCRH. Due to the multitude of medical conditions treated at NCRH, the staff is comprised of Consultants (physicians), Medical Officers, Clinical Officers, Nurses, Midwives, Dentists, Occupational Therapists, Nutritionists, Nursing Assistant, Mother Mentors, HIV mentors, support staff, as well as hospital management and administrative staff. There are also medical officers, clinical officers, and

nutrition interns at NRCH (County Government of Nakuru, n.d.). While there are a variety of healthcare providers at NCRH, for the purposes of this project it was important to understand the schooling for consultants, medical officers, clinical officers, and nurses and if there is a core curriculum that includes breastfeeding education. These healthcare providers interact most with patients in the Maternal and Child Health (MCH) ward and have high attendance at continuing medical education training.

In Kenya, a doctor can either be a medical officer or consultant depending on the schooling and training received. All doctors attend medical school for five-years and graduate with Bachelor of Medicine or Bachelor of Surgery. After medical school, graduates complete an internship year at a hospital as a medical officer intern (MOI). Unlike in the U.S., in which interns are trained in a specific field for their internship and residency years, medical officer internship rotates throughout all departments at the hospital. MOIs become medical officers (MOs) and are licensed to practice medicine. Doctors can remain MOs for their careers and not seek additional training. A consultant is a level above a MO and is considered to be a specialist in the field. A MO must obtain a Master's degree in a specific field and additional training to become a consultant. The Master degree programs are very competitive and expensive; therefore, only a small portion of doctors in Kenya are consultants (Ndetei, Mathai, Khasakhala, Mutiso, & Mbwayo, 2010).

Clinical officers (COs) are non-physician clinicians and consider mid-level workers in hospitals (Mbindyo, Blaauw, & English, 2013). A CO either has a diploma in clinical medicine and surgery, bachelor of science in clinical medicine and community health, or a Masters in clinical medicine. Diplomas are less rigorous degrees compared to bachelor's or master's degrees. Out of 43 accredited institutions, only 10 offer bachelors and 1 offers a masters; therefore, the majority of COs have a diploma. Similar to MOs, COs complete a one-year internship after finishing schooling but are less qualified than an MO ("Clinical Officers Council | A respected, ethical and effective regulator of the clinical and surgical practices of clinical officers," n.d.). Nurses are also an important part of the health care system and work in every tier of the Kenyan healthcare pyramid. The schooling and training nurses and midwives receive vary as well. Programs are two to three years long and students can receive a certificate, diploma, or

bachelor degree in nursing or midwifery. Nurses with a Bachelor of Midwifery receive specialized training in labor and delivery. A nurse with a bachelor of nursing can work in the field of maternal and child health without additional education but is not able to deliver infants (“Nursing Council of Kenya,” n.d.).

Due to the difference in degrees and programs available in Kenya, it is difficult to determine the amount of breastfeeding education each profession receives. The difference in intensity and length of the programs indicates that the healthcare providers at NCRH have had variable exposure to breastfeeding education and counseling.

Naivasha County Demographics

Prior to the 1990s Naivasha was not a densely populated town, but once the growth of flower farms exploded many people migrated to the area due to the high labor demand (Becht, Odada, & Higgins, 2005). As of 2014, there were 90,000 flower farm employees with Lake Naivasha as the main hub of farms. The high influx of people resulted in the development of peri-urban centers comprised of one-room rental units housing an entire family. These units lack plumbing, a clean water supply, and a kitchen with proper ventilation (Anker & Anker, 2014). Prior to 2014, the estimated monthly living wage for a flower farm employee living in Naivasha is KSh18,542 or \$216USD. Since 2014, wages have continually decreased and flower farm employees earn only KSh9,741 or approximately \$100USD placing greater financial strain on the employees (Anker & Anker, 2014). Due to the concentration of flower farms in Naivasha and a large number of employees on each farm, a majority of the population in this region are living in less than ideal conditions and are financially strained. Over 45% of the population in the Rift Valley Region, where Naivasha is located, is in the second to lowest and lowest wealth quintiles (Kenya National Bureau of Statistics, 2014). Those in the two poorest quintiles predominantly seek healthcare at public health facilities (Ministry of Health, Government of Kenya, 2014). Therefore, a large proportion of the patient demographic at NCRH are of low socioeconomic status with limited resources.

Continuing Medical Education Intervention on Breastfeeding

Patients go to NCRH for more advanced medical services, one of which is labor & delivery. Furthermore, in 2013, delivery fees were removed at all public health facilities to encourage women to give birth at a hospital rather than in their homes. As a result, this made labor and delivery services more available to the Kenyan population, especially those of low socioeconomic status. As the only public hospital in the sub-county that provides labor and delivery services, a large proportion of mothers deliver their children at NCRH.

As the sub-county's main healthcare provider for maternal and child health and its values as a teaching hospital, NCRH is an ideal organization to deliver a continuing medical education on the topic of Breastfeeding Counseling for Healthcare Providers. The next sections of this report will discuss in further detail the current rates and barriers of exclusive breastfeeding (EBF) and the importance of promoting EBF among NCRH's patient population

Chapter 3: Benefits and Barriers of Exclusive Breastfeeding for Naivasha Mothers

Benefits & Current Rates of Exclusive Breastfeeding

Exclusive breastfeeding (EBF) is defined as feeding an infant only breastmilk, without any additional food or drink, including water. WHO recommends that an infant is exclusively breastfed for the first six months of life. The benefits of exclusive breastfeeding on an infant's growth and development have been well-documented. Breastmilk contains and provides all nutrients that an infant needs as well as supplies antibodies to build up their immune system and protect them from infections such as pneumonia and diarrhea within the first 6 months of life ("Breastfeeding," n.d.). Complementary foods can then be introduced while continuing to breastfeed until 24 months. An infant's energy and nutrient needs start to exceed what can be provided solely by breastmilk and so foods other than breastmilk such as cereal, vegetables, fruits, and meats can be fed to the infant. The texture of these foods should be modified to meet the appropriate texture depending on the infant's developmental readiness. These foods can be introduced at this age because an infant's intestinal tract is immunologically developed to defend against foreign agents. Furthermore, the intestines are able to digest and absorb proteins, fats, and carbohydrates other than those normally found in breastmilk (Committee on Nutrition, 1980).

Despite the proven benefits of exclusive breastfeeding and breastmilk, global rates of exclusive breastfeeding are still low. As reported by the WHO in 2014, only 38% of infants aged 0 to 6 months are exclusively breastfed (World Health Organization, 2013). While mothers in Sub-Saharan Africa have positive attitudes towards EBF and acknowledge its benefits, EBF rates are still low (Mgongo et al., 2019; Mundagowa, Chadambuka, Chimberengwa, & Mukora-Mutseyekwa, 2019). In Kenya, 80% of mothers start EBF within the first month of life but by 6 months that percentage dramatically decreases to only 40% of mothers practicing EBF (*Kenya Demographic and Health Survey*, 2014). Similar to the WHO's Global Nutrition Targets to increase EBF at 6 months to 50%, strategies are needed in Kenya to increase EBF at 6 months.

Strategies that target mothers with infants 1 to 6 months of age that encourage and help sustain EBF practices until 6 months of age may be the most effective.

There are serious health risks associated with the cessation of EBF and the early introduction of complementary foods. Suboptimal breastfeeding practices, including non-exclusive breastfeeding and introduction to complementary foods prior to 6 months of age, contributed to approximately 11% of Under-5 Child mortality worldwide in 2011 (Black et al., 2013; World Health Organization, 2013). Furthermore, pneumonia and diarrhea are the two global leading causes of mortality in children aged less than five and greatly affect this region (Cai, Wardlaw, & Brown, 2012; WHO, n.d.). Pneumonia alone caused close to one million deaths worldwide in 2018 (Unicef Data, n.d.). While pneumonia can affect children everywhere, it is estimated that more than half of the burden is experienced in Sub-Saharan Africa (Liu et al., 2016). In Kenya, acute respiratory infection and diarrhea caused 14% and 7% of children under the age of five deaths, respectively (UNICEF, n.d.-a, n.d.-b). An early introduction to complementary foods can compromise an infant's health by displacing breastmilk resulting in decreased nutrient intake and overall sub-optimal nutrient status. Consumption of complementary foods increases an infant's risk of exposure to contaminated foods or fluids. Malnutrition can have a multifactorial effect on the development of an infant's immune system and its ability to defend against infection from the consumption of contaminated foods or fluids. Poor nutrient intake can decrease mucosal barriers and specific immune functions, which then can result in dysregulation of the immune system and inflammation. This environment requires additional nutrients to help regulate and defend against harmful substances, but the nutrients are not available thus creating a detrimental cycle (Walson & Berkley, 2018). Thus, an increase in EBF and optimal breastfeeding practices are the most effective strategies for preventing child mortality (Akachi, Steenland, & Fink, 2018; Darmstadt et al., 2005; Roberts, Carnahan, & Gakidou, 2013; World Health Organization & UNICEF, 2013). Additionally, specific to Kenya, where deaths caused by infectious diseases is high, promoting the practice of EBF can be used as a way to promote adequate immunological development for the infant and prevent the acquisition and potential death due to infection. Furthermore, it can promote overall

growth development and decrease the prevalence of stunting among children under the age of five.

Maternal Employment and Exclusive Breastfeeding

There is a multitude of barriers and factors that contribute to a mother's ability to practice and sustain EBF for 6 months. Barriers to maintaining EBF through 6 months of life include maternal employment, financial strain, lack of social support, unintended pregnancies, and myths and misconceptions of EBF (Kimani-Murage et al., 2015). Within the past two decades, exclusive breastfeeding rates have remained the same despite global efforts to promote EBF (*Baby-Friendly Hospital Initiative*, 2009; Victora et al., 2016). At the same time, the percent of women entering the workforce has been increasing and as of 2012, females make up approximately 70% of the labor force in Sub-Saharan Africa (Verick, 2014). Specifically in Kenya, the proportion of women employed increased by 9% between 2009 and 2014 (Kenya National Bureau of Statistics, 2014). This could be the result of the international promotion of female employment. For example, the Sustainable Development Goals (SDG) have prioritized economic development and gender equality. SDG 5, target 5 aims to "ensure women's full and effective participation and equal opportunities for leadership at all levels of decision making in political, economic and public life" ("Sustainable Development Goals," n.d.; "WHO | Millennium Development Goals (MDGs)," n.d.). Although female employment is positive for female development and equality, it creates a challenge for mothers with newborn infants. Full-time employment impacts a mother's ability to EBF considering women who don't have maternity leave, those who work long hours, those who work far away from home, those who perform manual labor, or those who don't have the time or a place to express at work (Kavle et al., 2017). The increase in female employment may be a contributing factor to the stagnating EBF rates.

In Kenya, the floriculture industry is one of the top contributors to Kenya's GDP and country's largest employers. According to the Horticultural Crop Directorate, the floriculture industry earned 823 million USD, which is about 1.06% of Kenya's GDP. Furthermore, it is estimated to provide employment directly to over 100,000 people (Kenya Flower Council, n.d.).

There is a large concentration of flower farms in Naivasha County due to Lake Naivasha and the ability to use the lake water for irrigation. As seen in Figure 2, the black circles represent areas where flower farms are located and the size of the circle is dependent on the number of farms in that area with the largest circle located at Naivasha. Depending on the scale of production, a flower farm can employ between 500 to 1200 people (Kenya Flower Council, n.d.). Due to the number as well as the size of the farms in Naivasha, the floriculture industry is the predominant employer in the area and approximately 1 in 5 females in Naivasha work on a flower farm (Scott's Research – with permission).



Figure 2. Flower Farms throughout Kenya

The Kenyan government has recognized the growing female labor force and created policies in the hopes of promoting EBF. Laws were passed requiring all employers to provide three months of maternity leave, a place to express and store milk, and an extra hour break to express milk or go home to breastfeed (National Council for Law Reporting, 2012). While the three months of maternity leave have been adopted by the majority of employers, the additional time and place to express have yet to be implemented. In addition to the necessary policy changes, cultural norms around milk expression have yet to shift. Expressing and storing milk is not common practice, which could be contributing to why employers are delayed in setting up lactation rooms. Instead of expressing, mothers are weaning their infants off of breastmilk and introducing complementary foods such as porridge and cow's milk at the end of their maternity leave. Thus, the known challenges maternal employment has on EBF and high rates of female employment at flower farms negatively impacts the rates of EBF in Naivasha. The low rates of EBF may be a contributing factor to the high incidence of diarrhea and pneumonia. As a result, multi-faceted interventions to promote EBF could have a positive impact on an infant's development and reduce under-5 mortality in Kenya.

Chapter 4: Creation and Implementation of Continuing Medical Education Trainings

Evidence for Training Healthcare Providers and Breastfeeding Promotion

Healthcare providers play an important role in a mother's decision to start and continue exclusive breastfeeding. It is well established that a mother's personal knowledge and education on breastfeeding and exclusive breastfeeding is a significant predictor of good intention to practice (Britton, McCormick, Renfrew, Wade, & King, 2007; Ihudiebube-Splendor et al., 2019). Multiple studies have been conducted using various types of interventions and their effect on the initiation and duration of exclusive breastfeeding. A large proportion of studies utilized educational interventions predominantly focused on educating the mother through activities such as group counseling and one-on-one education. Several studies implemented an education intervention directed at healthcare providers and found positive impacts on the initiation and practice of EBF (Hannula, Kaunonen, & Tarkka, 2008).

Professional support and breastfeeding counseling provided by healthcare providers are positively associated with EBF. For example, Khanal et al. conducted a community-based prospective cohort study in Nepal to determine if education and support provided by health workers 6 months post-partum were associated with increased duration of EBF. The mothers were recruited within one month of giving birth and then followed up at three months and four months post-partum. At each interview, the researchers asked the mothers to recall any breastfeeding education they received either right after birth, or in between the separate interviews. The results showed that providing breastfeeding support immediately after childbirth had a positive association with the length of breastfeeding. Specifically, the advice to breastfeed on demand and avoid using teats or pacifiers were significantly associated with a lower risk of stopping exclusive breastfeeding (Khanal, Lee, Karkee, & Binns, 2015). In a community based cross-sectional study among mothers in Bahir Dar city in Northwest Ethiopia,

developing a prenatal exclusive breastfeeding plan and receiving counseling on infant feeding from health care providers were significantly and independently associated with practicing EBF. Mothers who received counseling and advice were five times more likely to practice EBF than those who had not. Additionally, planning to practice EBF during pregnancy was a predictor of EBF practice post-partum (Seid, Yesuf, & Koye, 2013). The results from both of these studies support that the education and support mothers receive from healthcare professionals is effective in increasing maternal knowledge, initiation and duration of EBF.

One method to encourage support and breastfeeding education for mothers is by training and educating healthcare providers on the importance of EBF and effective counseling skills. The Baby-Friendly Hospital Initiative (BFHI) is a globally recognized and implemented program aimed at training hospital staff and creating a supportive environment for breastfeeding. The BFHI and its *Ten Steps* were developed in 1991 by WHO and UNICEF to promote and support breastfeeding in maternal and newborn facilities. It is a multi-course program that provides extensive educational resources for hospital administrators and staff to strengthen their breastfeeding knowledge and the steps to becoming a “Baby-Friendly” hospital (World Health Organization & UNICEF, 2009). The Promotion of Breastfeeding Intervention Trial (PROBIT) is a widely-known randomized control trial that modeled the experimental intervention on the BFHI at 16 health facilities in Belarus. The chief obstetrician and pediatrician at each health facility took the 18-hour BFHI lactation management training course and all staff that worked with mothers pre and postpartum underwent the training designed for maternal staff. The control group consisted of 16 health facilities that provided standard care. A total of 16,442 mother-infant pairs were enrolled in the study. Infants in the intervention group were more likely to be breastfed at 12 months and were more likely to be exclusively breastfed at 3 months and at 6 months. The rigor and size of the PROBIT provide significant evidence that professional support, utilizing the BFHI framework, increases breastfeeding rates (Kramer et al., 2001). In a meta-analysis of interventions to improve breastfeeding outcomes, educational interventions delivered in healthcare settings, the baby-friendly hospital support interventions increased any breastfeeding and exclusive breastfeeding rates. However, the analysis does not indicate if the BFHI interventions were conducted in both high-income and low- and

middle-income countries (Sinha et al., 2015). Although the BFHI has a significant amount of evidence proving its positive impact on breastfeeding rates, there are few, rigorous studies examining the impact of BFHI in low- and middle-income countries (Pérez-Escamilla, Martinez, & Segura-Pérez, 2016). Therefore, parts of the BFHI training course for maternal staff were utilized for this intervention due to the positive impact it has on exclusive breastfeeding rates, but edits were made to be more relevant to the staff at NCRH. The intervention mainly utilized components from the communication skills section and birth practices for breastfeeding as the other sections were not as applicable to the environment and patient population at NCRH. Overall these studies prove the importance of training and educating healthcare staff with the knowledge to promote EBF so that accurate information is shared with the mother.

Providing breastfeeding education for healthcare staff also improves comfort level, and attitudes towards breastfeeding. In a quasi-experimental study conducted in the U.S., all staff in the maternal health unit were provided with a formal education program that included 1) implementation of a breastfeeding protocol, 2) development of a resource guide, and 3) an hour-long educational presentation created by a multi-disciplinary team. The course was delivered by a hospital staff member and content covered national breastfeeding goals and recommendations, the importance of early skin-to-skin contact, cue-based feeding, the impact of supplements and pacifiers on breastfeeding, feeding frequency and duration, and troubleshooting breastfeeding difficulties. Patients were surveyed before and after the intervention. Patients that delivered at the hospital after the implementation reported increased breastfeeding observation by nurses and the number of nighttime visits. Nurses reported an increased comfort level in mitigating breastfeeding issues and providing breastfeeding education to mothers (Mellin, Poplawski, Gole, & Mass, 2011). Furthermore, nurses and midwives that receive continuing breastfeeding education feel an improvement in their counseling skills and are more confident in their ability to provide support. Healthcare staff is more likely to present the mother with information rather than directing the mother on what to do after receiving additional training on breastfeeding (Ward & Byrne, 2011). In addition to improving healthcare providers' knowledge, breastfeeding educational

interventions for healthcare providers improve their confidence in counseling and sharing information with the mothers.

At Naivasha Country Referral Hospital (NCRH), continuing medical education training are well-established and attended by healthcare providers from all departments. Given the impact healthcare providers can have on a mother's decision to practice EBF and the teaching environment at NCRH, a CME on breastfeeding counseling was developed to equip the staff with the information and tools to promote EBF.

Methods

The MPH student conducted a needs assessment to determine the specific topics of the three CMEs. The MPH capstone student toured the MCH unit to understand the environment the healthcare providers worked in, conducted informal interviews with MCH staff, and distributed a survey to twenty-five MCH staff members. The information gained from the observations and interviews and results from the survey (see Figure 3 and Figure 4) were reviewed with Dr. Scott Ickes and informed the MPH capstone student's decision to create CMEs on the topics of "Breastfeeding & the Continuum of Care", "Developing a Return to Work Plan", and "HIV & Breastfeeding". The MPH capstone student then created three hour-long CME trainings, reviewed and edited by Dr. Ickes.

The MPH capstone student promoted and recruited HCPs to attend the CMEs through Whatsapp messages and in-person invitations. All NCRH HCP staff used Whatsapp and so the use of this application to communicate did not exclude any HCP from being informed about or attending the CME. NCRH has an established Whatsapp CME group message in which the administration sends a message with the topic of the CME and who will be leading it the day before the CME. Additionally, over the month of July 2019, the MPH capstone student collected contact information of HCPs that were interested in attending the breastfeeding CMEs and created a Whatsapp group to send reminders about the breastfeeding CMEs and invite them to add other coworkers that also would be interested.

The three CMEs were delivered by the MPH capstone student in the resource center on Wednesday, August 8th, Thursday, August 15th, and Friday, August 16th from 8:30 to 9:30am.

A post-training survey was distributed at the end of each CME to evaluate the HCP learning and gain additional feedback to improve the CMEs.

Needs Assessment Results for CMEs

The needs assessment for the CMEs was conducted through observations at the MCH unit, informal interviews with healthcare staff, and administering a short questionnaire. Through observations, the MCH unit was understaffed and sees a large number of patients on a daily basis. The building includes an antenatal care, labor & delivery, and immunization ward. Labor & delivery has four postpartum rooms with approximately forty beds in each and only one to two staff members present at all times. The immunizations unit is staffed with two to three dietitians and nurses to weigh and immunize a hundred or more infants a day. Due to the number of patients seen at MCH and low staff to patient ratio, the skills taught in the CME would need to build upon their current procedures and require little extra time.

In addition to observations, informal interviews were conducted with several staff members which included the director of nursing, the director of nutrition, a dietetic intern, an MCH nurse, and an HIV mother mentor. During these interviews, MCH staff shared that there are three opportunities in which the majority of healthcare providers are able to counsel mothers breastfeeding. First, is during a mother's first antenatal visit. For those that seek antenatal care at the hospital, they will be given a health talk by a nurse on a topic related to pregnancy. This health talk can be on any topic related to pregnancy, ranging from breastfeeding to complications during birth and changes every day. The second opportunity is immediately after birth. A dietitian or dietetic intern meets with the mother for thirty to sixty minutes and discuss proper latching, common breastfeeding issues, and practicing EBF. Lastly, a mother may receive additional breastfeeding counseling during her follow-up and immunization visits. During immunizations, the infant is weighed and measured by a dietitian or a dietetic intern. Only if the healthcare provider is concerned about the infant's growth or weight, the mother will be asked about her infant feeding practices. Otherwise, mothers are not asked about their breastfeeding or infant feeding practices. These conversations are rarely

private and only last five to ten minutes. All staff members shared interest to attend a CME on breastfeeding and how to effectively counsel the mothers in the restricted time they had.

Lastly, a questionnaire was distributed to twenty-five MCH staff. The survey asked about the frequency the staff member performed tasks related to breastfeeding, their confidence level, and CME topics they would be interested in learning about. As seen in Figure 3, the three areas in which the staff were least confident were managing common breastfeeding problems, counseling an HIV+ mother on breastfeeding, and developing a return to work plan. These coincided with the topics the staff would be most interested in learning about. The three topics the staff were interested in were HIV & Breastfeeding, Planning the Return to Work, and Common Breastfeeding Issues (Figure 4).

Figure 3. Naivasha Healthcare Provider Survey Results.

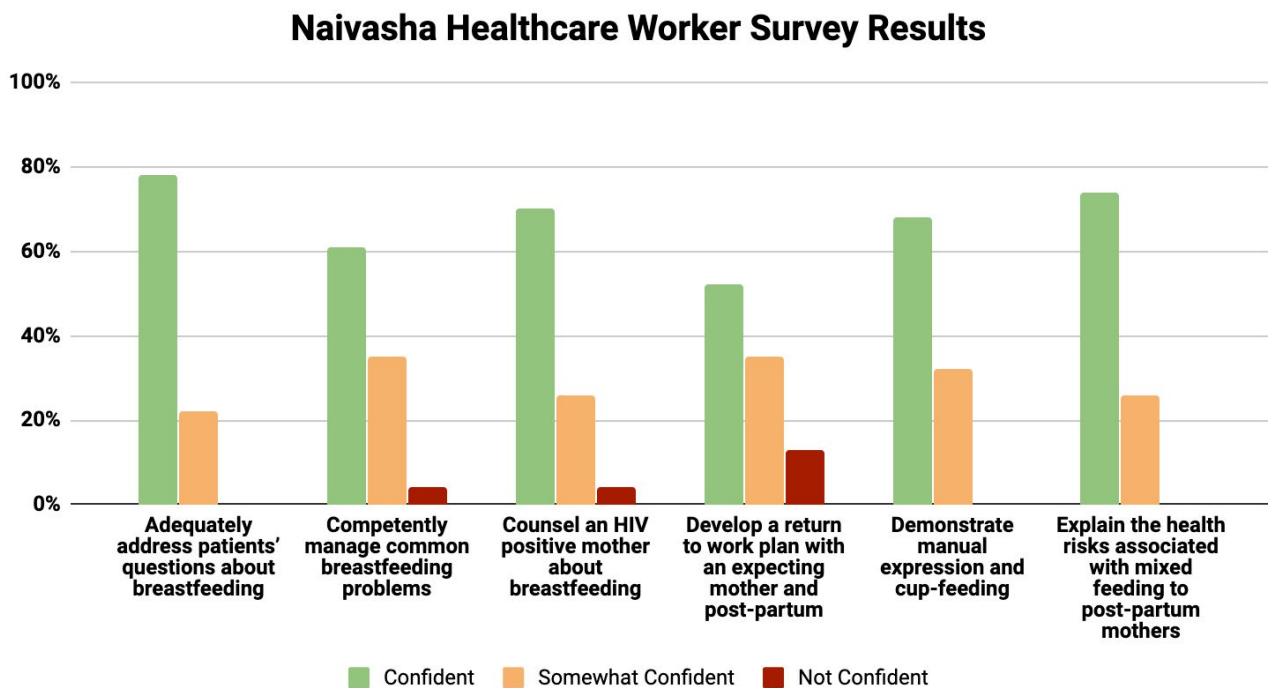
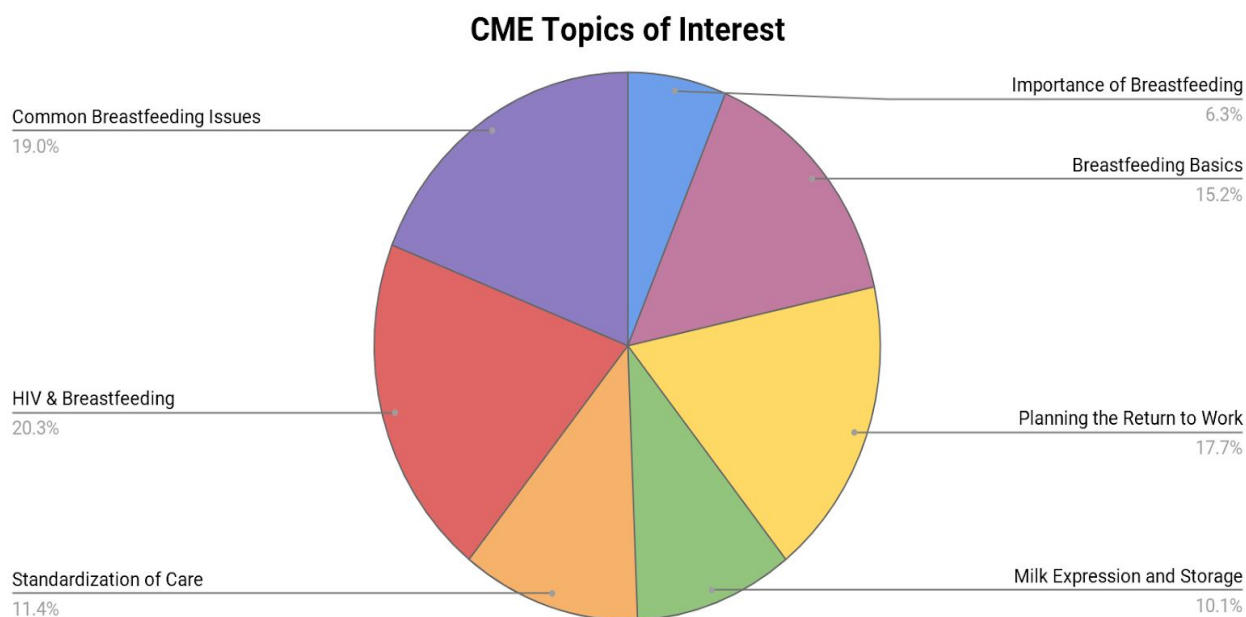


Figure 4. CME Topics



The observations, interviews, and survey informed the development of three, hour-long CMEs which focused on how to educate mothers about breastfeeding by using effective counseling skills. The CMEs followed a similar structure in which information pertinent to the healthcare provider was taught during the first portion of the module and then the second portion focused on how to counsel and share this information with expecting and new mothers. The second portion of the modules utilized the principles of motivational interviewing as an evidence-based counseling technique to help the providers effectively communicate the information covered in the CME with their patients. Effective communication skills were introduced in the first CME and expanded on in the following training sessions.

Goals & Objectives of CMEs

The goal of this intervention was to create trainings that would educate healthcare providers on how to promote and support mothers in the practice of exclusive breastfeeding. This would be accomplished through three objectives 1) create a continuum of care for

breastfeeding education and explain the importance of continuous breastfeeding education during antenatal and postnatal appointments, 2) train healthcare providers at NCRH on the principles of motivational interviewing and how to use them with expecting and new mothers, and 3) teach the difference between effective and ineffective communication and counseling between a HCP and patient.

At the end of the training, participants should be able to 1) use the principles of motivational interviewing to communicate with pregnant women, mothers, and coworkers, 2) discuss the importance of exclusive breastfeeding during antenatal and postnatal appointments, 3) recognize that employment or HIV status affects a mother's ability to exclusively breastfed, 4) develop a plan on how to continue exclusively breastfeeding after returning to work.

Outline of CME Modules

This section provides an outline of each CME. The complete modules can be found in the appendix. The MPH capstone student started the first CME training by outlining the three CME trainings and what information will be covered in each session. Next, the MPH capstone presents the results of the needs assessment questionnaire administered to MCH and hospital staff to show topics in which the staff feel less confident and desired topics the staff wants to learn about in relation to breastfeeding. This was to provide the reasoning behind selecting the CME topics and to identify areas the staff hopes to improve in. Next, the MPH capstone student divides the attendees into and leads them through a group activity. The MPH capstone student created a table on the board dividing up a women's pregnancy into five time periods, antenatal, 1st trimester, 2nd trimester, 3rd trimester, and post-natal. Next, each group is provided pieces of paper, each with a different breastfeeding topic written on it. The groups must determine when in the previously mentioned time periods the topics should be discussed with a mother. This activity was developed to emphasize the importance of continuity of care in regards to breastfeeding education. The MPH capstone facilitated a discussion after this activity if patients are receiving continuous breastfeeding education similar to what was created in the activity and if not, what steps could be taken to enable more breastfeeding education to be conducted.

Lastly, the MPH capstone student taught the foundations of effective communication such as open-ended questions, eye-contact, nodding, etc. The MPH student created two short scripts of the same scenario between a HCP and mother; however, the first script used non-effective ways of communication such as telling the mother she was wrong and interrupting her and the second used the principles of effective communication such as open-ended questions and validating the mothers feelings. The attendees were then asked to identify the differences between the two conversations. Through this exercise, staff can witness how to utilize the communication skills and gather information from the patient in a short period of time.

The second and third CMEs build upon the communication skills discussed in the first CME and apply them when counseling employed and HIV+ mothers on the importance of and how to practice EBF. The MPH capstone student begins the second CME by explaining the biological benefits of EBF to provide background to the HCP on why such an emphasis is placed on the practice of EBF. The MPH capstone student then shares that one of main reasons a Naivasha mother stops EBF is due to return to work and that this training will focus on the importance of learning a mothers employment status and how to help mothers develop a plan to continue EBF after they return to work. Next, the MPH capstone student defines motivational interviewing and outlines its key principles. It is explained that motivational interviewing is an effective way to communicate with patients and the HCP can use it as a tool to educate mothers and promote EBF after returning to work. The HCP pair up and practice motivational interviewing techniques during a mock counseling scenario provided by the MPH capstone student in which a mother expresses the desire to EBF, but unsure how to do so while at work. The pairs develop a return to work plan for the mother, and share out to the group what did and didn't work. The third CME follows a similar format by presenting the most recent breastfeeding WHO guidelines for HIV+ mothers and utilized motivational interviewing to promote EBF among HIV+ positive mothers.

Post-Training Quiz Results

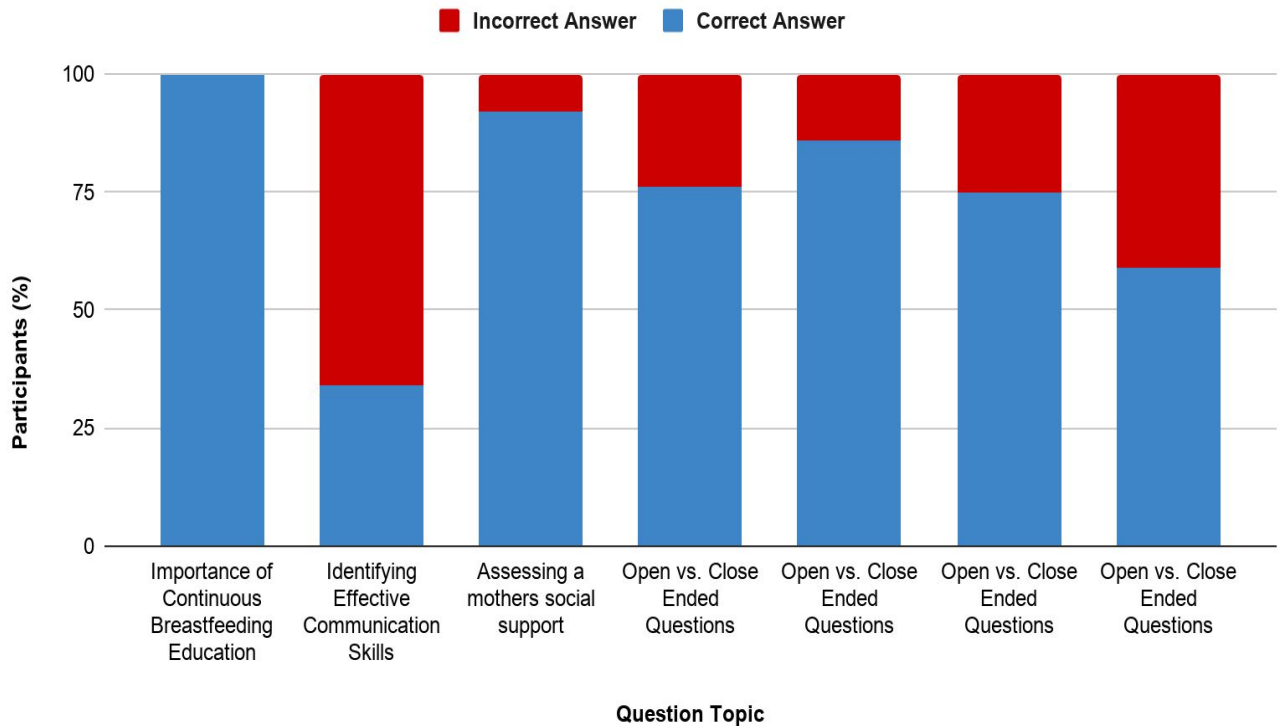
At the completion of each training, participants were asked to complete a quiz to measure their knowledge and the effectiveness of the training. Table 1 provides the questions

asked after the first CME and Figure 1 presents the results. For six out of the seven questions, the majority of participants answered the question correctly. Fifty participants attended this CME.

Table 1. Breastfeeding & the Continuum of Care Evaluation Questionnaire

1. What is the importance of continuous breastfeeding education?
2. Which of the following are components of effective communication skills? a. Ask Open Questions b. Nodding & Eye-Contact c. Using words like “good”, “well”, “bad” when speaking with a mom d. Ask closed questions
3. True or False: Inquiring about and assessing a mother’s social support system only needs to be done once during either prenatal or postnatal
4. Identify the following statements as closed or open-ended: Does your baby feed often?
5. Identify the following statements as closed or open-ended: Are you going to express breastmilk?
6. Identify the following statements as closed or open-ended: When does your baby feed?
7. Identify the following statements as closed or open-ended: Are you having any feeding problems?

Figure 5. Breastfeeding & the Continuum of Care Evaluation Results.



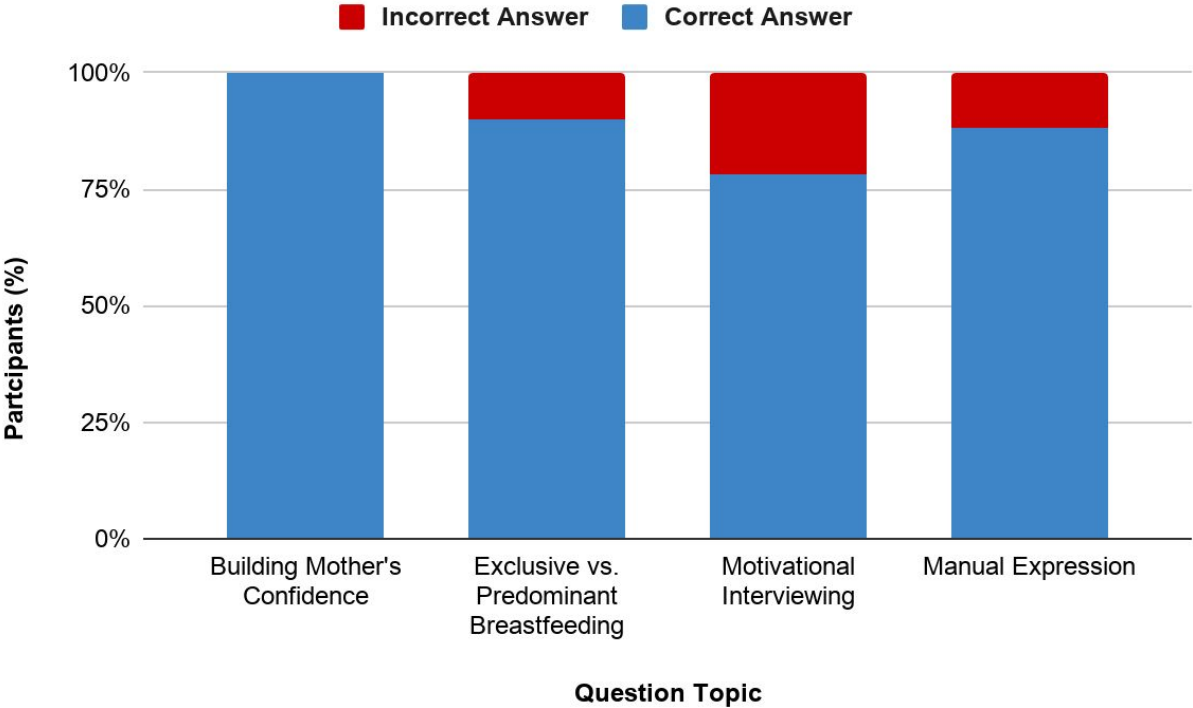
Below are the results for the second CME training on planning the return to work. There were 34 responses to the survey. Table 2 provides the questions posed to the participants. Figure 2 reveals that over 75% of the participants answered each question correctly.

Table 2. Developing a Return to Work Plan Evaluation Questionnaire

<p>1. The ways in which a healthcare provider can build up a mother’s confidence are by: (circle one)</p> <ul style="list-style-type: none"> a. Commanding her to EBF and express milk without listening b. Listen to her concerns and provide suggestions and correct information
<p>2. True or False: Exclusive breastfeeding is the same as predominant breastfeeding.</p>

3. Motivational interviewing is:
- a. Used by healthcare workers to tell a client how to change
 - b. A counseling technique that healthcare workers use to motivate other healthcare workers
 - c. A counseling technique that uses the client's ideas to evoke change
 - d. All of the above
4. The components of manual expression are: (circle one)
- a. Government Policy, Feeding, Storage
 - b. Mechanical, Storage, Feeding, Environment
 - c. Expression & Feeding
 - d. None of the above

Figure 6. Developing a Return to Work Plan Evaluation Results

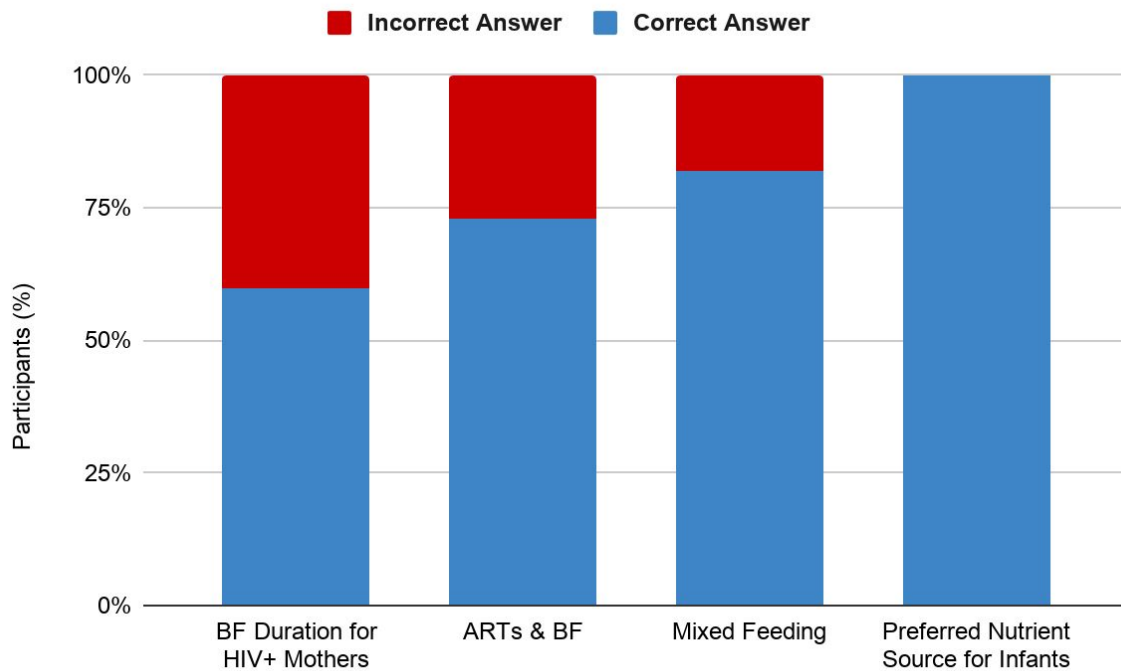


The last CME covered breastfeeding guidelines and counseling for mothers that are HIV+. The survey included the questions provided in Table 3. Twenty-three survey responses were recorded and are displayed in Figure 3. The majority of the participants answered each question correctly, but question one appeared to be the most challenging for the healthcare providers considering over 30% answered the question incorrectly (Figure 3).

Table 3. HIV & Breastfeeding Evaluation Questionnaire

<p>1. The WHO 2016 Guidelines recommend that an HIV+ mother should breastfeed for (circle one)</p> <ul style="list-style-type: none">a. 4 monthsb. 6 monthsc. 8 monthsd. 12 months
<p>2. True or False: ART does not reduce the risk of postnatal HIV transmission in the context of mixed feeding</p>
<p>3. Mixed feeding increases an infants risk of HIV infection due to:</p> <ul style="list-style-type: none">a. The infant's GI tract being exposed to contaminants and damages to the intestinal wallb. Not receiving as many antibodies compares to breastmilkc. Impaired development of the infant's immune systemd. All of the above
<p>4. True or False: Breastmilk is the preferred source of nutrients for infants to mother to child transmission</p>

Figure 7. HIV & Breastfeeding Evaluation Results



Discussion

While the results from the quiz demonstrate significant learning, there are several points in the quiz itself as well as in the CME curriculum that could be improved to best measure knowledge gain. For the first CME, it is important to note that more participants answered question two incorrectly than correctly. Question 2 asked the participants to select all the answers that described effective communication. Only a small percentage only chose the correct two options. A majority of the attendees were able to identify either asking open-ended questions or nodding and eye-contact as components of effective communication but failed to select both. The two correct options were chosen more than the wrong answers, asking open-ended questions being selected the most. This could be attributed to misunderstanding the question rather than a reflection of the CME training since many participants did select at least one correct option. The question could be reworded so that it is multiple choice rather than a select all to remove any confusion about what the question is asking. Additionally, additional time should be spent covering components of effective

communication during the CME. After reviewing the presentation, there was much less focus on non-verbal communication as compared to verbal communication which included the use of open-ended questions. While non-verbal communication such as making eye contact and having open body language was addressed, the CME's emphasized verbal communication by identifying open-ended questions in mock counseling demonstrations and group exercises. An additional activity should be added in which the participants identify the differences between receptive and closed-off body language. Furthermore, notes should be added to summarize this section before moving on to conclude the entire training. The quiz results from the third CME demonstrated that more than half of the participants selected the correct answer for each question. For question one, almost half of the participants selected the wrong answer. All of the providers chose either 6 or 12 months. The guideline for EBF is six months, but the question was asking about total breastfeeding duration, not solely EBF. Therefore, it could be assumed that the participants confused EBF with the general recommendation for how long an HIV+ mother should breastfeed for. This is an important distinction and reflects that this point was not clearly conveyed by the MPH capstone student to the healthcare providers. Notes should be made in the CME outline that the distinction between EBF and overall breastfeeding duration should be emphasized. When reviewing the CME, it first discusses the evidence for EBF for HIV+ mothers and then provides the WHO guidelines which include EBF and recommendations for how long a mother should breastfeed for. A clear distinction is not made and likely contributed to why a significant portion of the healthcare providers chose 6 months instead of 12 months.

The time and the days that the CMEs were held may have affected the number of HCP that attended. The first CME was scheduled during the CME organized by the hospital administration and typically has a higher attendance rate per reports from HCP and the UW chief resident. The second and third CME were scheduled during the Thursday and Friday CMEs scheduled by the UW chief resident. The attendance for these is fewer because they were created for the medical and clinical officer interns, but all hospital staff were welcome to attend. Additionally, MCH staff that worked in the afternoons or evenings were unlikely to attend because it would require them to come in many hours before the start of their shift.

Lastly, HCP were not required to attend all three sessions; therefore, the impact of the intervention could have been limited if the healthcare provider only attended the last CME and missed the introduction and use of MI in the previous two sessions.

Chapter 5: Future Directions

There are three key steps that the NCRH hospital can take to continue to support breastfeeding education for the hospital staff. First, is to provide breastfeeding education on a more regular basis, specifically utilizing the CMEs already developed by the MPH Capstone student. Prior to this session, breastfeeding education for healthcare providers had not occurred in an extended period of time. Many of the MCH staff had been working at NCRH for years and did not recall a CME that focused solely on breastfeeding. Implementing a regular CME on breastfeeding counseling would provide a chance for both new and seasoned MCH staff to practice their communication skills.

Secondly, it is evident that regardless of communication skills, MCH staff have very limited time to spend with patients. Global Health Media, which is funded by UNICEF, created an extensive library of videos specifically for health workers in low resource areas as a way to provide reliable medical information in the local languages. There are videos geared towards educating health workers on topics ranging from breastfeeding positions to how long expressed

milk can be stored and are only ten to fifteen minutes long. These could be used as supplements to the CMEs created for this capstone project (Cardellichio, n.d.). A study found that showing videos to HCP in conjunction with BFHI training workshops increase the HCP knowledge and confidence in teaching positioning and attachment and milk expression (Wallace et al., 2018). Additionally, Global Health Media also created videos on breastfeeding catered towards nursing mothers. The time mothers spend waiting to see a healthcare provider during both antenatal and immunization appointments could be an opportune time to play the videos. This could reduce the amount of time a hospital provider would have to spend explaining how to manually express and instead focus on answering questions generated after viewing the videos. The videos can be downloaded so they can be played without an internet connection and there are outlets to connect a TV monitor throughout the hospital. The use of mass media (videos, SMS, TV, radio) has been found to have a positive impact on infant and young child feeding practices (Graziose et al., 2018). For example, a study was conducted in Vietnam that showed breastfeeding educational videos to expecting and new mothers. Mothers reported improved BF knowledge, beliefs, and self-efficacy after watching the videos (Nguyen et al., 2014). Due to the limited resources and time of HCP at NCRH, using videos to educate HCP and mothers may be an effective way to increase BF knowledge among these two populations and improve overall EBF rates.

Lastly, the hospital could implement an antenatal and postnatal checklist for each healthcare provider to use with each patient. The antenatal checklist could include learning the mother's intention to practice EBF, employment status, family and support system as well as reviewing positioning and latching and manual expression. The postnatal visit would focus more on reviewing common breastfeeding issues such as engorgement, infections, and manual expression. This would be the most labor-intensive intervention as it would result in procedural changes, require support from the hospital administrators and department heads, and require retraining of the staff in order to implement the change. The purpose of the checklist would be to ensure the nursing staff discusses the intention to breastfeed, current social support, and employment status with the mothers and that all mothers are receiving breastfeeding counseling. Additionally, it would create standardization of care in the amount and information

mothers receive. Healthcare providers shared during the CMEs that healthcare providers rarely ask about a mother's social or work life and focus instead on the mechanics of breastfeeding. With a checklist, it would prompt the healthcare providers to ask these questions and promote EBF.



Chapter 6: Summary

The practice of EBF could significantly reduce child mortality. Breastmilk provides infants with nutrients and antibodies to develop their immune system and protect against infections. In Kenya, pneumonia and diarrhea caused 14% and 7% of childhood mortality, respectively. Concurrently, EBF rates after 6 months of age are below 40%. Maternal employment may be contributing to low EBF due to lack of maternity leave, long hours spent away from home, and the inability to pump or manually express milk at work. In Naivasha, the floriculture industry is one of the biggest employers in the area and one in five women work on a flower farm. Kenyan policy requires employers to provide mothers with a place to express but this has yet to be implemented on the flower farms. Furthermore, expressing milk is not a cultural norm. Breastfeeding education interventions targeting healthcare providers have been found to increase self-confidence in breastfeeding counseling and promotion of EBF. This intervention included the development and administration of three continuing medical educations (CME) at Naivasha County Referral Hospital (NCRH). This hospital was an ideal location for this intervention because it is the only facility in the entire sub-county that has a Labor & Delivery unit and it supports continuing education for its staff members. The CMEs were evaluated after each session through a post-training quiz. The results demonstrated the participants' knowledge met the training learning objectives. To continue to support breastfeeding

education for healthcare providers and promote EBF, NCRH can organize breastfeeding CMEs regularly as well as utilize external educational resources to support the current breastfeeding education mothers receive.

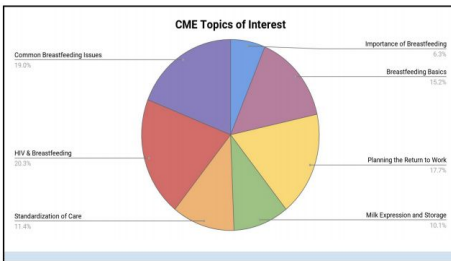
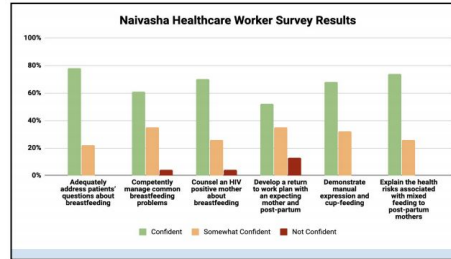
Appendix

CME#1: “Breastfeeding and the Continuum of Care”

<p>Something to think about before we start....</p> <p>Find someone you don't know in your group and share:</p> <ol style="list-style-type: none">Your nameYour department & roleBreastfeeding topics you encounter daily and/or want to learn about	<p>CONTINUOUS BREASTFEEDING EDUCATION & COUNSELING SKILLS</p> <p>Laura Blas University of Washington Master of Public Health Candidate 2020 Registered Dietetic Intern</p> <p>Affiliations: Dr. Scott Ickes, PhD, Wheaton College</p> <p> </p>
<p>TODAY'S TOPICS</p> <ul style="list-style-type: none">IntroductionContinuity of Breastfeeding EducationCommunication & CounselingConclusion	<p>Share Out</p> <p>Find someone you don't know in your group and share:</p> <ol style="list-style-type: none">Your nameYour department & roleBreastfeeding topics you encounter at NDH and/or want to learn about

Learning Objectives

1. Outline what information needs to be discussed with pregnant & postpartum women
2. Identify communication skills of listening & learning
3. Practice these skills through a group activity
4. Identify & practice good communication skills to use to discuss breastfeeding with a pregnant & postpartum woman



BREASTFEEDING & CONTINUITY OF CARE

Step 3 of the Ten Steps to Successful Breastfeeding states: Inform all pregnant women of the benefits and management of breastfeeding.

How are Continuous Breastfeeding Education & Breastfeeding Rates Related?

1. Breastfeeding education during both prenatal and postnatal periods were more effective than interventions focusing on a single time period¹
2. Mothers that receive continuous support from healthcare providers often results in continuation of breastfeeding.²
3. Mothers can decide their intention to breastfeed as early as the second trimester; therefore, it is important to introduce breastfeeding topics early and continue education throughout pregnancy and after birth^{3,4}

Group Activity

1. Every group has a set of breastfeeding topics, take 3 minutes to discuss at which point these should be taught to an expecting or new mom
2. Once you decide, have someone from your group come tape them under the time period on the wall



First Trimester	Second Trimester	Third Trimester	Labor & Delivery	6 Weeks Postpartum	10 Weeks Postpartum	14 Weeks Postpartum
Importance of EBF	Post-delivery Procedures	Positioning & Latching	Positioning & Latching	Assessment of current BF	RTW Plan	Assessment of current BF practices
Risks of not EBF for 6 months	Skin to Skin Contact	RTW Plan	First Feed vs. Continuous Feeding	Common BF problems	Stimulating Milk Production & Expressing Milk	Common BF Problems
Assessment of HIV Status	First Latch vs. Continuous Feeding	Storing & Expressing Milk	Feeding Patterns	RTW Plan	Storing Milk & Cup Feeding	Common BF Problems
Milk production	Feeding Patterns	Skin to Skin Contact	Skin to Skin Contact			
Address Mother's Initial BF Concerns	Feasibility of BF for HIV+ mothers	Common BF Problems	Hunger & Satiety Cues			
	RTW Plan & Expressing Milk	Feasibility of BF for HIV+ mothers	BF For Complicated Deliveries (CS, NBU, Pre-term)			

Assessing Mothers Social Support System

GROUP DISCUSSION

1. Were there any topics difficult to place or not commonly talked about at NDH?
2. How well do you feel this continuum of breastfeeding education is happening at NDH?

COMMUNICATION & COUNSELING

THINK, PAIR, SHARE

WHAT ARE THE KEY COMPONENTS OF EFFECTIVE COMMUNICATION & COUNSELLING?

EFFECTIVE WAYS TO COMMUNICATE

- 1. Non-verbal Communication**
Body Language & Positioning (same level & facing the mother)
Attentive listening (nodding, eye contact, reassurance)
- 2. Verbal Communication**
Ask open-ended questions
Avoid words that sound judging
Reflect Back & Empathize
- 3. Build Mother's Confidence**
Accept what a mother feels (Accepting ≠ Agreeing)
Offer suggestions rather than commands
Provide accurate information when needed

1. OPEN VS. CLOSED QUESTIONS

Open Questions

Encourage a conversation and builds trust between the healthcare worker and mother

For Example:

1. **How** are you feeding your infant?
2. **What** breastfeeding concerns do you have?
3. **How** is infant feeding going?

Closed Questions

Suggest a right and wrong answer and elicit "yes" and "no" responses

For Example:

1. **Are you** exclusively breastfeeding?
2. **Did you** feed porridge?
3. **Has the baby** gained enough weight?

1. OPEN VS. CLOSED QUESTIONS

Scenario: First time mom comes in for the 6 week check up at NDH

First Demonstration

Health worker: Good morning. **Are you** and your baby **well** today?

Mother: Yes, we are well.

Health worker: **Do you** have any difficulties?

Mother: No

Health worker: **Is** baby feeding often?

Mother: Yes

Second Demonstration

Health worker: Good morning. **How are** you and your baby today?

Mother: We are well.

Health worker: **Tell me, how are** you feeding your baby?

Mother: I breastfeed her often with some porridge in the evening.

Health worker: **What made you** decide to give porridge in the evening?

Mother: My baby wakes during the night, so my milk must not be enough for her/him.

2. AVOID JUDGING WORDS

Judging words creates a standard that the mother has to reach or that her baby is not behaving normally

EXAMPLES OF JUDGING WORDS

Well	Normal	Enough	Problem	Crying 'too much'
Good	Correct	Adequate	Fail	Unhappy
Bad	Proper	Inadequate	Failure	Happy
Badly	Right	Satisfied	Succeed	Fussy
	Wrong	Plenty of	Success	Colicky
		Sufficient		

2. AVOID JUDGING WORDS

Scenario: A working mother comes in for her child's 14 week immunization and her baby is underweight

First Demonstration

Health worker: Good morning, your baby's weight has gone down. You must not be feeding **well**. Are you working?

Mother: Yes, I am.

Health worker: You are expressing then? You know how to **properly** express, **right?**

Mother: Uh...yes, I think so?

Health Worker: **You should be** expressing, we teach it here.

Second Demonstration

Health worker: Good morning, how is breastfeeding going?

Mother: It is difficult now that I have returned to work.

Health worker: That must be difficult. How are you feeding your baby now?

Mother: I am breastfeeding and she is given porridge at daycare.

Health Worker: I see, what do you think about expressing breastmilk to leave with the daycare?

3. SUPPORT & BUILD MOTHER'S CONFIDENCE

Scenario: Hope and Joanne who are coming to the health facility for their antenatal visits.

Hope is 22 years old, in her second trimester and expecting her first baby.

Joanne is 28 years old, in her third trimester, and expecting her second baby.

Hope expresses that she is worried because she hears that breastfeeding is very painful. She recently moved to Naivasha without any family and has only a few friends and her partner.

<p>EFFECTIVE WAYS TO COMMUNICATE</p> <ol style="list-style-type: none"> 1. Non-verbal Communication Body Language & Positioning (same level & facing the mother) Attentive listening (nodding, eye contact, reassurance) 2. Verbal Communication Ask open-ended questions Avoid words that sound judging Reflect Back & Empathize 3. Build Mother's Confidence Accept what a mother feels (Accepting ≠ Agreeing) Offer suggestions rather than commands Provide accurate information when needed 	<p>CONCLUSION & UPCOMING CMES</p>
<p>EVALUATION</p>	<p>UPCOMING BREASTFEEDING CMES</p> <p>Wednesday, August 14th: Planning the Return to Work</p> <p>Thursday, August 15th: HIV & Breastfeeding</p>

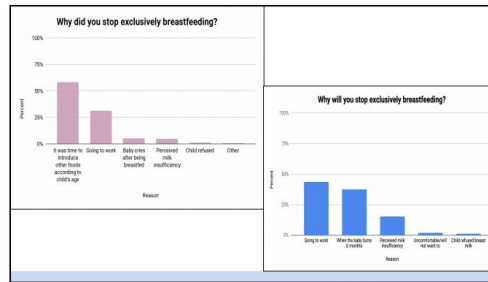
CME#2: “Planning the Return to Work”

<p>RETURN TO WORK PLAN FOR BREASTFEEDING MOTHERS</p> <p>Laura Blasi University of Washington Master of Public Health Candidate 2020 Registered Dietetic Intern</p> <p>Affiliations: Dr. Scott Ickes, PhD, Wheaton College</p> <p>SCHOOL OF PUBLIC HEALTH UNIVERSITY OF WASHINGTON</p> <p>DEPARTMENT OF GLOBAL HEALTH UNIVERSITY OF WASHINGTON</p>	<p>TODAY'S TOPICS</p> <ul style="list-style-type: none"> Introduction & Review Motivational Interviewing Manual Expression & Return to Work (RTW) Counseling Wrap Up & Evaluation
<p>WARM UP ACTIVITY</p> <p>Find someone you don't know in your group and share:</p> <ol style="list-style-type: none"> Your name Your department & role What you look forward to learning most in this session 	<p>RECAP: EFFECTIVE WAYS TO COMMUNICATE</p> <ol style="list-style-type: none"> 1. Non-verbal Communication Body Language & Positioning (same level & facing the mother) Attentive listening (nodding, eye contact, reassurance) 2. Verbal Communication Ask open-ended questions Avoid words that sound judging Reflect Back & Empathize 3. Build Mother's Confidence Accept what a mother feels (Accepting ≠ Agreeing) Offer suggestions rather than commands Provide accurate information when needed

EXCLUSIVE VS. PREDOMINANT BREASTFEEDING

Exclusive breastfeeding is defined as no other food or drink, not even water, except breast milk for 6 months of life, but allows the infant to receive ORS, drops and syrups (vitamins, minerals and medicines)¹

Predominant breastfeeding - the infant's predominant source of nourishment has been breast milk (including milk expressed or from a wet nurse as the predominant source of nourishment). However, the infant may also have received liquids (water and water-based drinks, fruit juice) ritual fluids and ORS, drops or syrups (vitamins, minerals and medicines)¹



MOTIVATIONAL INTERVIEWING

WHAT IS MOTIVATIONAL INTERVIEWING (MI)?

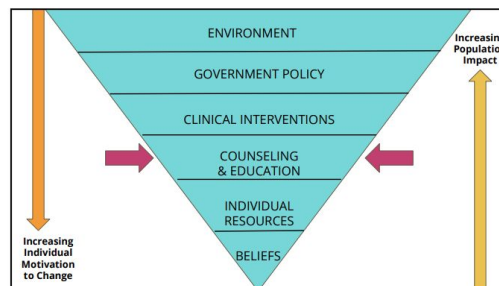
*"Motivational Interviewing encompasses collaborating with clients, using clients' ideas to evoke change, and respecting clients' autonomy."*²

4 Key Principles of MI

1. Expressing Empathy
2. Developing Discrepancy
3. Rolling with Resistance
4. Supporting Self-efficacy

SMALL GROUP DISCUSSION

- 1) Why is expression of milk so challenging for mothers?
- 2) As healthcare providers, how do you motivate people to change their behaviors around expressing milk?



MANUAL EXPRESSION & RTW PLAN

4 COMPONENTS OF MANUAL EXPRESSION

- 1) Mechanical
- 2) Storage
- 3) Feeding
- 4) Environment

MECHANICAL	STORAGE	FEEDING	ENVIRONMENT
<ul style="list-style-type: none"> - Hand Expression Technique - Manual Pumping 	<ul style="list-style-type: none"> - Can be stored in closed containers; don't need bottles - Storage techniques (i.e. put in a cool/shaded place, put in wet sand) 	<ul style="list-style-type: none"> - Cup Feeding Technique - Can be served cold; doesn't need to be heated up 	<ul style="list-style-type: none"> - Daycare (formal and informal) - Lactation Rooms - Cultural Norms & Expressing

COUNSELING DEMONSTRATION

Scenario: Helen is a new mom coming in for her 6-week visit. She told the healthcare worker that she will be weaning her baby to porridge when she returns to work. The healthcare worker introduces the idea of expression and how to approach the topic with her manager.

DISCUSSION

1. What was effective?
2. What was ineffective?
3. What could be improved?

GROUP COUNSELING ACTIVITY

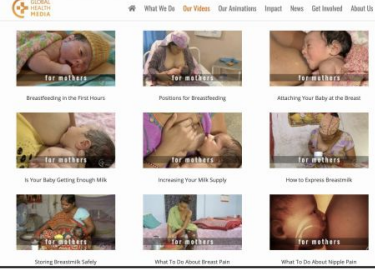
Scenario: Employed mother at 10 week visit who has decided to wean her child onto porridge before going to work. Her child will be at a formal daycare where the employees won't heat the milk.

Activity: Have 1 person be the HCP and the other be the mother. Use the communication skills and information to counsel the mom when approaching the daycare provider.

Key points for healthcare worker to mention:

- 1) **Heating:** Breastmilk doesn't have to be heated
- 2) **Storing:** Breastmilk can be stored in any closed container in a cool, shaded area, a basin with cold water, or placed in cold, wet sand
- 3) Some milk is better than no or very little breast milk

GLOBAL HEALTH MEDIA



Healthcare Worker BF Video

CONCLUSION & UPCOMING CME

RECAP

- The 3 ways to communicate are:
 - Non-verbal
 - Verbal
 - Building Confidence
- Exclusive breastfeeding is the gold standard, but we hope to start at least getting moms predominantly breastfeeding
- Returning to work is one of the biggest barriers to EBF
- Encouraging mothers to express is encouraging a behavior change
- HCP's have the ability to facilitate and support mothers to express milk when returning to work through motivational interviewing
- When time is limited, there are resources like GHM that provide well constructed and easy to understand videos about RTW and other BF topics

LAST BREASTFEEDING CME

Friday, August 16th: HIV & Breastfeeding

EVALUATION

Please take 5 minutes to fill out the evaluation worksheet and hand it back

Do not write your name on it - please keep it anonymous so I can receive your honest feedback!


THANK YOU!

CME#3: “Breastfeeding for HIV+ Mothers”

**EXCLUSIVE BREASTFEEDING FOR
HIV+ MOTHERS**

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TODAY'S TOPICS

Introduction & Review

WHO Recommendations for HIV+ Mothers

Breastfeeding Counseling for HIV+ Mothers

Conclusion & Evaluation

REVIEW/WARM UP: GROUP ACTIVITY

Scenario: Employed mother at **10 week visit** who has decided to wean her child onto porridge before going to work. Her child will be at a formal daycare where the employees won't heat the milk.

Activity: Have 1 person be the HCP and the other be the mother. Use the communication skills and information to counsel the mom on how to approach the daycare provider.

Key points for healthcare worker to mention:

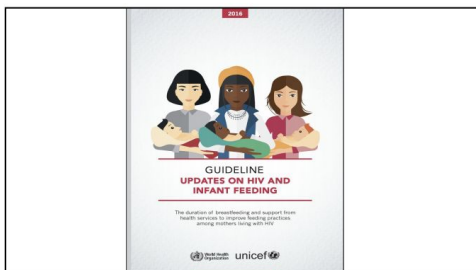
- 1) **Heating:** Breastmilk doesn't have to be heated
- 2) **Storing:** Breastmilk can be stored in any closed container in a cool, shaded area, a basin with cold water, or placed in cold, wet sand
- 3) Some milk is better than no or very little breast milk

WHO GUIDELINES

“BREAST IS BEST”

EVIDENCE FOR EBF FOR HIV+ MOTHERS

- **Evidence for Medication during pregnancy & postpartum**
 - *Kesho Bora Study*¹
 - giving HIV-positive mothers a combination of antiretrovirals during pregnancy, delivery and breastfeeding reduced the risk of HIV transmission to infants by 42%
 - *Breastfeeding, Antiretroviral, and Nutrition Study*²
 - risk of HIV transmission reduced to just 1.8% for infants given the antiretroviral drug nevirapine daily while breastfeeding for 6 months.
- **Evidence for EBF for HIV+ Mothers**
 - Mixed-feeding carries the highest risk of transmission from Mother to Infant due to damage to the infant's gut via exposure to contaminants, bacteria, and allergens³
 - Exposure to contaminants may lead to gut mucosal injury and disruption of immune barriers allowing for vertical transmission of HIV-1³
 - **Early mixed breastfeeding** was associated with a 4.03, 3.79, and 2.60 greater risk of HIV infection at 6, 12, and 18 months, respectively, compared with EBF⁴
 - **Predominant breastfeeding** was associated with a 2.63, 2.69, and 1.61 trend towards greater HIV infection risk at 6, 12, and 18 months, compared with EBF⁴



WHO 2016 Recommendations for HIV & Infant Feeding

Recommendation 1: Mothers living with HIV should breastfeed for at least 12 months and may continue breastfeeding for up to 24 months or beyond while being fully supported for ART adherence

Recommendation 2: In settings where maternal, newborn and child health services promote and support breastfeeding and ART to increase HIV-free survival among infants born to mothers living with HIV, National and local health authorities should actively coordinate and implement services in health facilities and activities in workplaces, communities and homes to protect, promote and support breastfeeding among women living with HIV.

WHO 2016 Guiding Principles

Guiding Principle 1: Mothers living with HIV and health-care workers should be aware that ART reduces risk of postnatal HIV transmission in the context of mixed feeding. If a mother is mixed feeding, she should continue breastfeeding when possible in the presence of ARV drugs.

Guiding Principle 2: Mothers living with HIV and health-care workers should be informed that shorter durations of breastfeeding of less than 12 months are better than never initiating breastfeeding at all.

COUNSELING HIV+ MOTHERS

COUNSELING DEMONSTRATION

Information-Motivation-Behavior Model

Scenario: Helen is a first time mother, who is HIV+. She has come in for an antenatal visit during her third trimester and discusses her concerns about breastfeeding and infecting her child with the healthcare worker.

GROUP ACTIVITY: COUNSELING SESSION

Instructions: Now you will act out a scenario in pairs, assign one person to be the mother and the other to be the healthcare worker.

Mother: This is a second time mother. She was HIV negative with her first child and EBF for 4 months and then started mixed feeding. Between pregnancies, her HIV status became positive and now she is pregnant again while HIV+.

Healthcare worker: The healthcare worker informs and counsels the mother as to why her feeding practices for the second birth will be different than the first, the importance of EBF, and what happens if she does not EBF for 6 months, and continue up to 12 months along with complementary foods.

CONCLUSION

RECAP

- Breast is Best!
- 2016 WHO Guidelines: EBF for 6 months, and breastfeeding for 12 months has the greatest impact in preventing mother to child transmission of HIV
- Education is key! The more that mother's know about the importance of EBF and how it protects her infant from HIV, the better equipped she is to decide to EBF.

EVALUATION

Please take 5 minutes to fill out the evaluation worksheet and hand it back

Do not write your name on it - please keep it anonymous so I can receive valuable feedback!

THANK YOU!

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