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A CROSS-SECTIONAL STUDY OF NEWBORN FEEDING PRACTICES AND SUPPORT AT HEALTHCARE FACILITIES IN GAUTENG

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A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of

Masters of Science in Medicine

in the branch of Community Paediatrics.

Johannesburg 2010

DECLARATION

I, Mimie Margaretha Jordaan, declare that this research report is my own work. It is being submitted for the Master of Science in Medicine at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other university. Where use was made of the work by others, it has been acknowledged in the text.



Mimie Margaretha Jordaan

September 2010

DEDICATION

In honour of my loving and supportive husband Leon and children, Len and Heléne.

PREVIOUS CONFERENCE PRESENTATIONS

A component of the project was presented as an oral presentation at the University of the Witwatersrand Faculty of Health Sciences Research Day held in Johannesburg on 20th August 2008.

ABSTRACT

Background:

Although breastfeeding is a key child survival strategy, breastfeeding practices in South African health institutions can generally be categorised as being poor. The global Baby-Friendly Hospital Initiative (BFHI), led by UNICEF and the WHO, aims to create a health care environment that promotes breastfeeding as the norm. This study aimed to document practices around breastfeeding support and compliance with the BFHI's "10 steps to successful breastfeeding" in both baby-friendly accredited and non-accredited facilities.

Methods:

This was a cross-sectional study, conducted in nine facilities in Gauteng, including tertiary, secondary and districts hospitals, and midwife obstetric units. Convenience sampling was used. Study questionnaires were based on the generic BFHI assessment tool, but were modified to include more detailed investigation of HIV related factors. The questionnaire was verbally administered on-site to 165 mothers of well infants, and 65 nursing staff.

Results:

Suboptimal practices were identified in both baby-friendly and non-baby-friendly accredited facilities, but more so in the latter. None of the facilities passed all of the 10 BFHI steps. None of the baby-friendly certified institutions achieved a score sufficient to be still deemed baby-friendly. Steps that required advice and support from nursing staff, viz. step 5 (showing mothers how to breastfeed), step 8 (encouraging breastfeeding on demand), and step 10 (breastfeeding support after discharge from the facility), were particularly poorly done in the majority of facilities. Baby-friendly certified institutions were significantly better than non-accredited facilities for steps 2 (training), 4 (initiating breastfeeding within 1 hour), and 7 (rooming-in).

Conclusion:

Although baby-friendly accredited facilities generally performed better than non-accredited facilities, their performance failed to justify maintenance of their accredited status based on this assessment. However, some positive practices were sustained over time. There is a dire need for greater attention to be directed to the promotion of good breastfeeding practices by health professionals and institutions.

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LIST OF ABBREVIATIONS

AFASS (criteria)	Affordable, Feasible, Acceptable, Sustainable, Safe
ANC	Antenatal Clinic
BFHI	Baby Friendly Hospital Initiative
CHBH	Chris Hani Baragwanath Hospital
EBF	Exclusive breastfeeding
HIV	Human Immunodeficiency Virus
MOU	Midwife Obstetric Unit
NGO	Non Governmental Organisation
QA	Quality Assurance
SADHS	The South African Demographic and Health Survey
UNICEF	United Nations Children's Fund
UK	United Kingdom
USA	United States of America
WHO	World Health Organization

1 LITERATURE REVIEW – A CROSS-SECTIONAL STUDY OF NEWBORN FEEDING PRACTICES AND SUPPORT AT HEALTHCARE FACILITIES IN GAUTENG

1.1 Nutrition

Adequate nutrition is essential for child health and development, especially during infancy and childhood. Appropriate feeding practices are critical for optimal nutritional status, growth and survival. Undernutrition is a leading contributor to child mortality globally.(1;2) About 5500 children die daily because of poor infant feeding practices. In addition, many of these children suffer long-term effects such as malnutrition, impaired development, and increased infections (such as diarrhoea) and chronic illnesses. Improved feeding in infants and young children is relevant everywhere in the world.(3) Malnutrition also has a negative impact on education and productivity.(4)

1.2 Millennium Development Goals

The Millennium Development Goals, which embody the widest commitment in history towards addressing global ill health,(5) were adopted by 189 countries in September 2000.(2) Eight goals were set. The aim of Goal 4 is the reduction of child mortality by two-thirds between 1990 and 2015, including both infant and under-five mortality rate.(2) According to the 2008 South African Health Review,(6) South Africa is not on track towards meeting Millennium Development Goal 4, given our current progress towards reducing childhood deaths. A publication in the Lancet in 2008 stated, "*South Africa is one of 12 countries in which the child mortality rate has increased instead of falling since 1990. As a result, South Africa has now to achieve an average yearly rate of reduction of 14% to meet MDG 4 by 2015".*(7) The single largest contributor to child mortality, HIV, is also linked with malnutrition – both compromise the immune system.(6)

1.3 Breastfeeding as a key child survival strategy

Promotion of breastfeeding is a key child survival strategy, especially in resource-poor countries.(2;8) More than half of deaths among children below 5 years of age are associated with malnutrition or a lack of optimal breastfeeding.(2) Exclusive breastfeeding is the first defence of a child against malnutrition and death.(4) Promotion of exclusive breastfeeding is the single most effective strategy to save lives in developing countries of millions of young children - an estimated 15 million children's lives could be saved over a 10 year period.(9) As a child survival intervention

that can be delivered in low-income settings at high coverage (feasible for large-scale implementation), the ability of breastfeeding to prevent death far exceeds that of any other single preventive intervention.(2;10) The level of evidence of its effectiveness and efficacy was graded as 'incontrovertible' in the Lancet neonatal survival series.(10) According to the 2007 South African Infant and Young Child Feeding Policy breastfeeding could prevent 13% of under-5 deaths in a country such as South Africa.(2)

1.4 Benefits of breastfeeding

Besides the reduction in mortality and morbidity, breastfeeding also provides a number of psychological, social, economic and family spacing benefits to mother and baby.(9) It facilitates mothers' recovery from childbirth, as well as mother-infant attachment.(11) Breastfeeding reduces the incidence and severity of respiratory infections, diarrhoea, allergies, atopic eczema, otitis media and bacterial meningitis.(2;11-13) There is strong evidence that exclusive breastfeeding during the first six months of life may reduce the risk of obesity, chronic diseases such as cancer and cardiovascular disease, and may improve cognition and education levels later in life.(2)

1.5 Breastfeeding practices in South Africa

Breastfeeding practices in South Africa can be categorised as being poor. Although most infants are breastfed at birth, only 10% of infants by age three months,(4) and 7% at six months are still exclusively breastfed.(9;14) The commonest practice is mixed breastfeeding with a rate of 75% for infants less than 10 weeks of age, and 88% for infants more than 10 weeks of age.(9) In infants aged 6-9 months, 46% were still breastfed even though complementary food had appropriately been introduced.(14) According to the 2003 SADHS report the proportion of mothers with no education that chose not to breastfeed their infants increased from 9% in 1998 to 26% in 2003;(7) 20% of children aged 0-3 months were not breastfed at all.(2)

1.6 Global Strategy on Infant and Young Child Feeding

UNICEF and the World Health Assembly endorsed the Global Strategy on Infant and Young Child Feeding in 2002.(3) The Global Strategy supports exclusive breastfeeding for 6 months, and aims to improve the nutritional status, health, growth and development and consequently the survival of infants and young children through optimal feeding.(3) Because inappropriate feeding practices of infants and young children still remains one of the biggest threats to child survival and health globally, the World Health Organization's (WHO) Global Strategy for Infant and Young Child

Feeding asked for a revitalisation of the commitment to appropriate infant and young child feeding in 1998.(2) The Global Strategy builds upon existing programmes such as the Baby-Friendly Hospital Initiative (BFHI).

1.7 WHO recommendations on Exclusive Breastfeeding

The WHO recommends exclusive breastfeeding (EBF) as the best method of feeding infants for the first 6 months of life for mothers whose HIV status is negative or unknown,(15) but avoidance of all breastfeeding for women known to be HIV-positive provided replacement feeding is acceptable, feasible, affordable, sustainable and safe (AFASS).(9) In situations where AFASS of formula feeds are doubtful, the WHO recommends exclusive breastfeeding.(15) In addition, the 2006 WHO Consensus Statement on Prevention of HIV Infections in Pregnant Women, Mothers and their Infants strongly encourages breastfeeding mothers of HIV infected infants or young children to continue breastfeeding.(16) If at 6 months age replacement feeding is still not AFASS, continuation of breastfeeding is recommended with additional complementary foods, while mother and baby are still regularly assessed.(16)

1.8 Polarization of views on breastfeeding in South Africa

Differences in opinion around HIV and optimal infant feeding has caused dilemmas for health policy makers as well as health care workers with resultant polarization of views.(17) Breastfeeding is a recognised route of HIV transmission from an HIV infected mother to her baby that could be responsible (in the absence of interventions) for one-third to one-half of the HIV infections in young children and infants.(2) But breastfeeding is also “an important pillar of child survival and part of a mother’s womanhood” according to Coutsoudis.(17) A pooled-meta analysis by WHO found that replacement-fed infants of unknown HIV status had a 6-fold increase in risk of dying during the first 2 months of life, with a 4-fold increase between 2-3 months, and 2.5 fold higher rate between 4-5 months, as compared with breastfed infants.(9) A substantial body of evidence exists that there is a lower risk of mother-to-child transmission of HIV with exclusive breastfeeding compared to mixed feeding.(2)

1.9 National Infant and Young Child Feeding Policy

The South African Department of Health was prompted by a variety of factors to develop a national infant and young child feeding policy.(2) These factors include: concerns about avoidance of HIV infection versus concerns about child survival, mixed messages communicated by health care personnel, sub-optimal infant feeding practices and the Global Strategy on Infant and Young

Child Feeding.(2) The final 2007 Infant and Young Child Feeding Policy document was the result of extensive deliberation with a variety of key stakeholders and has been developed in the context of numerous global initiatives, as well as national strategies, policies and programmes, with recommendations based on the most recent available scientific data.(2) The Policy endorses the WHO recommendations of exclusive breastfeeding for HIV positive women for the first six months unless the replacement feeding is AFASS. When replacement feeding is or becomes AFASS, HIV-infected women are advised to avoid or stop all breastfeeding.(2)

1.10 Key recommendations of the Infant and Young Child Feeding Policy

Some key recommendations of the 2007 Infant and Young Child Feeding Policy are:(2)

- Protection, promotion and support of breastfeeding as a primary focus.
- Every health establishment that is providing maternity services should be implementing the BFHI. The BFHI is also listed as a key survival and government nutrition relevant strategy within South Africa.(2;4;6;9) Doherty et al. in the 2006 South African Health Review call for emphasis on and setting targets for BFHI accreditation in each province and at all levels of hospitals.(9)
- Health care personnel should not recommend formula replacement feeding as an alternative to breastfeeding unless for a legitimate medical reason or when a mother has made a sufficiently informed decision not to breastfeed. Insufficient, inaccurate, or non-existent infant feeding counselling is leading to inappropriate feeding choices, both by HIV-uninfected and HIV-infected women.(16)
- For infant feeding practices to be optimised, health care workers should provide support and counselling to mothers during antenatal, intra-partum, postnatal and follow-up care.

1.11 The Baby-Friendly Hospital Initiative

The BFHI is a global initiative of UNICEF and the WHO that aims to create a health care environment (predominantly in maternity wards(18)) that is promotive, protective, and supportive of breastfeeding as the norm through implementing the Ten Steps to Successful Breastfeeding.(3;12;19) The Initiative was launched in 1991. Part of the Initiative is a global assessment and accreditation scheme that aims to recognise achievements of health facilities with practices supporting breastfeeding, while also encouraging facilities with sub-optimal

practices to improve.(3) Facilities that provide maternity care can apply for accreditation that involves evaluation of the hospital practice in relation to each of the 10 steps or standards of practice which are used as criteria by an external inspection team.(20)

1.11.1 The Ten Steps to Successful Breastfeeding

The Ten Steps include the following: the facility has a clear breastfeeding policy, staff need to be trained to have and teach knowledge and skills with respect to breastfeeding, the right of mothers to full information to make informed feeding choices and then to be supported in their chosen feeding method (even if not in line with these Ten Steps), teaching pregnant women and mothers about the importance and management of breastfeeding (for example how to hold their infants and attach them to the breast), giving newborns no food or drink other than breast milk unless medically indicated, allowing mothers and infants to remain together 24 hours a day, and advice regarding breastfeeding support groups (Figure 1).

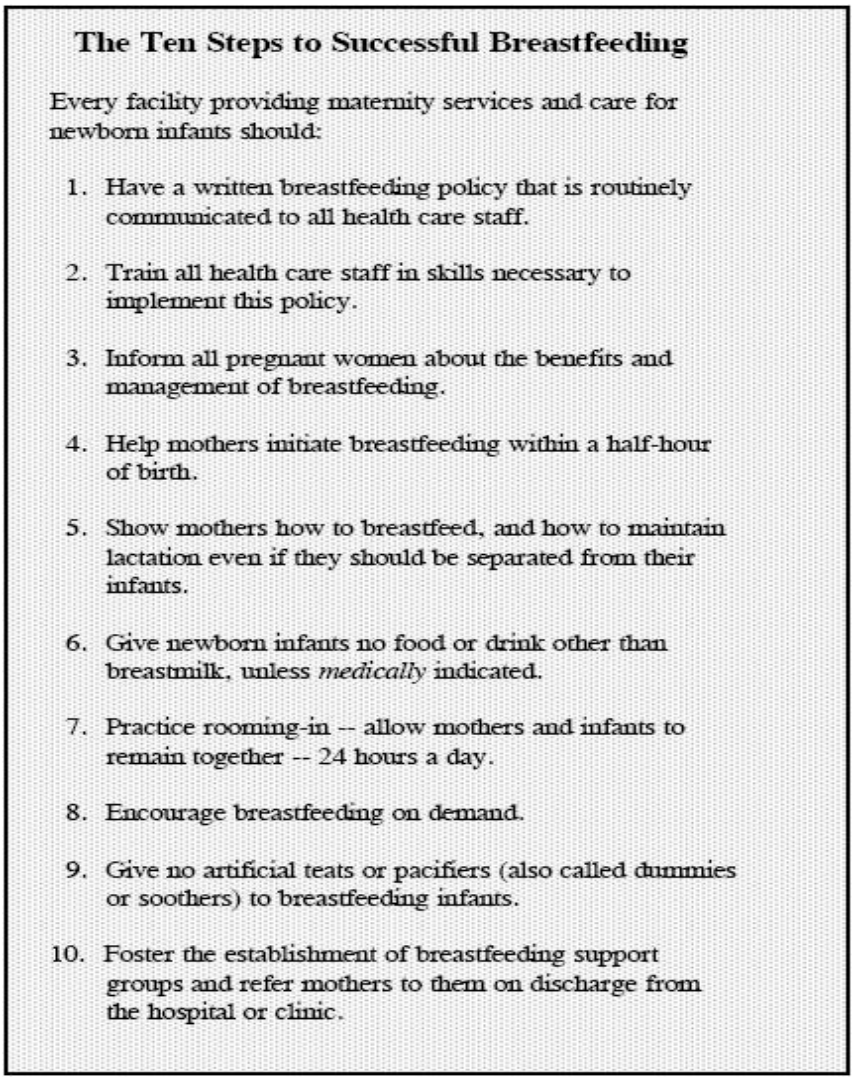

Figure 1.1 The Ten Steps to Successful Breastfeeding

1.11.2 Status of the BFHI in South Africa

By the end of 2006 more than 19 000 health facilities worldwide had been designated Baby-friendly through a global assessment and accreditation scheme.(3) By August 2008, 221 hospitals in South Africa (41%) had BFHI accreditation (personal communication, Ms. Ann Behr, National Department of Health, 2 March 2009) In 2007, 14 facilities in Gauteng (30%) were Baby-friendly (personal communication, Ms. Joan Matji, UNICEF, 7 September 2007). Accredited Baby-Friendly facilities are reassessed every 2 or 3 years to see whether they still comply with the 10 steps. As a result of reassessments in 2008, 17 facilities in South Africa lost their BFHI status (personal communication, Ms. Ann Behr, National Department of Health, 2 March 2009)

1.11.3 Benefits of the BFHI

One outstanding benefit of the BFHI shown in several studies globally is **increased breastfeeding initiation and longer length of exclusive breastfeeding maintenance**.(19) Birth at BFHI-accredited facilities increased median duration of any breastfeeding, full breastfeeding (exclusively breastfed infants, as well as infants receiving additional water-based liquids),(24) and exclusive breastfeeding with infants more likely to be exclusively breastfed at 7 days, 3 and 6 months, as well as significantly more likely to be still breastfed to any degree at 12 months.(12;18;21-29) Various Baby-Friendly accredited Health Care Facilities differ in their degree of compliance with the Ten steps. Merten et al. found in a study in Switzerland that breastfeeding duration was significantly associated with the degree of compliance with the UNICEF guidelines of the respective health facility.(25) In other words, the effects of the BFHI are stronger for mothers with infants born at facilities implementing the BFHI more fully.(12) Higher initiation rates of breastfeeding have also been reported in Baby-Friendly accredited health facilities.(24)

There are also **other benefits** to implementing the BFHI. One study reported a decrease in mothers reporting sore nipples from 37% to 11% in the 2 years after accreditation, with a further drop to below 3% five years thereafter.(24) The same study reported a decrease in infants classified as “reluctant feeders” from 17% to 9% in 2 years, with a further drop to below 3% in the next 5 years.(24) The change was attributed to equipping both mothers and staff with skills, and thereby avoiding common problems, as well as better knowledge about dealing with these.(24) This also translates into improved health care experiences for mothers,(24) with increased maternal satisfaction.(21) A Russian study reported a statistically significant drop in infant abandonment over a 6 year period from 50 to 28 per 10 000 births.(24)

1.11.4 The BFHI as a cost-effective intervention

Research in Latin America has shown that the BFHI is a highly cost-effective intervention.(18) The impact of BFHI on breastfeeding translated into health care savings that was associated with a decreased incidence of respiratory and diarrheal illness, based on Demographic and Health Survey data.(18) The cost-effectiveness of the BFHI was comparable to the cost-effectiveness of short-term tuberculosis treatment, immunisation, and vitamin A supplementation.(18)

1.11.5 The three steps with the most clearly established evidence for benefit for successful breastfeeding

Even though there is substantial evidence for most of the Ten Steps to Successful Breastfeeding even when considering each step separately, the evidence for the three steps concerning support and guidance for the mother are the most clearly established. These are Step 3 (antenatal education), Step 5 (showing mothers how to breastfeed), and Step 10 (continuation of support after discharge from hospital).(19) These are also the steps which are the most challenging to implement adequately, and often are slowest to be introduced, as they demand time commitment from the health worker and require skills which in turn require training.(19)

1.11.6 The BFHI in areas of high HIV prevalence

The BFHI is equally important in areas of high HIV prevalence. There is confusion about the role of the BFHI guidelines (which promote exclusive breastfeeding) in HIV-infected women (who may choose either formula or exclusive breastfeeding), but their special needs can be fully met without compromising the Baby-friendly hospital status, according to the 2006 BFHI, updated guidelines.(3)

HIV-infected mothers must receive counselling that includes information about benefits and risks of various infant feeding options, with specific guidance about selecting options that are best for them in their situations, as well as then supporting them in their choices.(30) This is a difficult area as additional time and skilled counselling (which often is not available in busy health care facilities) is required to provide sufficient information in order to achieve empowered decision making.(9) This often results in poor quality of infant feeding counselling with many HIV-infected mothers making inappropriate choices.(9) Besides the challenges of time and skill, there are also often low levels of knowledge amongst both trainers and participants. An evaluation found that health workers, even after training, consistently over-estimate risk of transmission of HIV through breastfeeding, while very few knew about health risks with formula feeding.(9) Health care workers have a significant influence on mothers' feeding decisions. One of the key

recommendations by Doherty et al. in the 2006 South African Health Review, is that the BFHI should be accelerated, striving for BFHI accreditation in each province and all levels of hospitals.(9)

1.12 Successful breastfeeding

The first week postpartum is critical for the initiation and establishment of breastfeeding. This is the time when both the mother and the baby are learning how to breastfeed.(31) A study in California found that lactation problems occured commonly even among mothers highly motivated to breastfeed, and unless managed correctly, were associated during the first week postpartum with a greater risk of early termination of breastfeeding and decreased breastfeeding success with subsequent children.(31) Studies in Brazil and Australia found that successful breastfeeding depends on the acquisition of some basic skills as well as accurate information and practice, and it is strongly influenced by the kind of support, encouragement and guidance provided after childbirth.(23;32) Most South Africa infants are born in a healthcare facility with 92% of deliveries conducted by skilled health care workers.(33) Breastfeeding activities in the clinic or hospital setting are important to later breastfeeding.(34) Health care professionals provide information, supervision and support for this important skill.(35)

1.13 Practices of midwives

1.13.1 In-hospital supplementation of breastfeeding

Despite guidelines supporting exclusive breastfeeding and the evidence for reduction in infant mortality and morbidity, supplementation of healthy breastfed newborns during their first few days of life is a common practice in many hospitals worldwide, according to studies in Canada and the UK.(34-36) Understanding reasons for in-hospital supplementation may help towards the successful implementation of the BFHI.(34) Some reasons offered for in-hospital supplementation are perceptions (of mothers and nurses) of insufficient maternal milk, maternal fatigue and illness, breastfeeding problems and infant behaviour.(34) Certain organisational characteristics of units lend themselves more to supporting breastfeeding,(34) such as the ease with which supplementary feeds are given to breastfed infants. Hospital midwives often feel that they do not have enough time to support mothers with feeding their infants.(35) Helping mothers to breast feed and explaining how a bottle may negatively affect subsequent breastfeeding often takes longer than simply offering an infant a bottle or a cup.(37) Subsequent use of formula feeds in the hospital is at least partly due to the fact that a first supplementation was already given.(34)

In-hospital supplementation is largely a nurse's decision based on preferences and characteristics of the infant and mother, unit practices, and the nurse's own knowledge, understanding, attitudes, beliefs and experiences.(34) Furber et al. described a management strategy used by midwives in the UK that she called "breaking the rules" for supporting mothers with infant feeding.(36) This concept represented practices not congruent with baby-feeding policy or recommendations. Formula feeds were frequently offered to breastfed infants because the midwives believed the mothers to be "shattered", "sleep-deprived" or "too tired". The midwives often 'hid' their actions from the mothers and their peers.

Potential harmful outcomes of breast milk supplementation include late establishment of breastfeeding (with subsequent decreased intake of protective maternal antibodies), difficulties with establishment of breastfeeding (breast refusal, decreased milk production, nipple soreness), increased maternal anxiety (which independently may cause reduced breastfeeding duration), short duration of breastfeeding, and reinforcement of unhelpful beliefs about breastfeeding (insufficient milk, greater infant weight loss, breast milk inferior to formula).(34)

1.13.2 Midwives spending limited time with mothers

The behaviour and expectations of midwives and mothers directly influence each other. Midwives often run into problems because of the unpredictability of their workload on the one hand, and meeting the expectations of the organisation on the other hand.(35) The midwives then devise strategies, routines, or patterns of practice enabling them to best use available resources, but limiting the demand on themselves from people accessing the service by just "popping-in" to check mothers, rather than spending time with them, as described by Furber et al..(35) This led to mothers feeling midwives ignored call-bells, were not attentive to their needs, and did not listen to their queries about breastfeeding, causing distress and sometimes even postpartum depression.(35) These routines might have serious implications for the success of breastfeeding.

1.13.3 Midwives not committed to the BFHI beyond accreditation

There are some outdated practices (practises not in keeping with the BFHI guidelines) employed by experienced midwives that confuse both mothers and newly graduated midwives. Reddin et al. describe this in a study conducted in eight Australian hospitals, seven of which were BFHI accredited, with the eighth working towards accreditation.(38) New graduates found the discrepancy between what they were taught and what they experienced in practice disconcerting. The attitude of many experienced midwives was that "breastfeeding was just a chore to get over and done with" – they will comply with BFHI guidelines provided workload and time allow, but

when the workload increases or time is limited, breastfeeding promotion is regarded as just another stressor putting pressure on their already overburdened work schedule.(38)

1.14 Factors that influence the initiation and duration of breastfeeding

There are multiple factors that influence the initiation and duration of baby feeding. These factors reflect psychological, social, economic and cultural issues, for example having significant support, having breastfeeding peers and having the opportunity to observe other mothers breastfeeding,(36) and the actual or perceived attitude of the baby's father and other friends and family members.(19) Baby feeding causes major anxiety for new mothers, and breastfeeding is not always so straightforward.(36) Breastfeeding might be a period of intense pride, facilitating closeness between baby and mother, but might also be painful, exceedingly tiring and requiring stoicism to persevere.(36)

A number of studies document **criticism by new mothers of the infant-feeding support** available in British hospitals, describing "contradictory and condescending information from midwives", as well as inadequate support.(36;39) The relief offered by providing a formula feed to a baby of a tired, struggling mother might only be short-term, as her confidence in her ability to breastfeed (an important factor for successful breastfeeding) is not built, and what probably was intended by the nurse to be a once off, may become an option that the mother frequently relies on, especially in difficult circumstances.(37) Moreover, breastfeeding mothers who have used formula report feeling undermined by the pressure to do this.(36) Women not feeding their infants as they planned to do feel significantly more sadness, guilt and depression.(37) Cloherty et al. found in a UK study that receiving conflicting or inaccurate advice, lack of support from the staff, and unwanted offers of formula milk were major sources of discontent.(37) Mothers need information, advice and assistance - significant practical support, for both breast and formula feeding, as well as emotional and social support.(35;36) They especially want direct contact from a supporter in a relaxed and unhurried environment.(35) The best practice would be when a supporter directly supervises the feed, observing for difficulties. If a mother requires additional support, this would take up even more time and contribute to workload pressure.(35)

Delayed breastfeeding at birth, lack of feeding support in the hospital, the use of formula as well as passive or neutral attitudes to formula-feeding options, have all been associated with discontinuing breastfeeding.(35) Supplementing the infant and late breastfeeding initiation were the strongest risk factors found by Di Girolamo et al. for **early breastfeeding termination** in the USA.(11) Of the reasons given by mothers for early termination of breastfeeding, 'insufficient milk supply' was the commonest.(40) Sore nipples, breast refusal by the newborn and insufficient milk

were cited as reasons to stop breastfeeding even in the first week postpartum, both in the US and the UK. (11) Other reasons were latching problems, returning to work or school, personal reasons, and illness or drugs provided to the baby or mother.(40) Dewey et al. found suboptimal infant breastfeeding behaviour to be significantly associated in the USA with, amongst others, primiparity, Caesarean section, and the use in the first 48 hours of non-breast milk fluids.(31)

Midwives may be the primary source of information and support, but **doctors** also have a role to play. While they might require less extensive training, they too need information to help them to provide effective breastfeeding support.(41) The lack, however, of breastfeeding skills and knowledge in paediatric trainees, has been reported in the UK and elsewhere.(41)

1.15 Quality Assurance

The need to improve quality of health care is now being recognised by health systems worldwide. The Quality Assurance (QA) Project defines QA as "all activities that contribute to defining, designing, assessing, monitoring, and improving the quality of healthcare."(42) It is important to understand how systems function before they can be improved. The problem is often not with a specific person, but in the system. Concentrating on ways to correct problems might enable people to work more efficiently.(42) The former South African Director-General of Health, Mr. T. D. Mseleku, wrote in the Foreword of the abbreviated version of the 2007 *Policy on Quality in Health Care for South Africa*: "… the public health care system is in dire need of again refocusing its collective efforts towards improving the quality of care provided in public health facilities and communities. Knowing that quality is never an accident, always the result of high intention, sincere effort, intelligent direction and skilful execution, and that it represents the wise choice of many alternatives to assure continuous improvement and quality in the health care being provided."(43)

Although globally the BFHI has shown increased breastfeeding duration and other benefits,(18) anecdotal information from Gauteng suggests that while facilities enjoy the prestige associated with baby-friendly accreditation, their supposed knowledge does not translate into superior practice (personal communication, Ms Zama Mtshali, Gauteng Department of Health, 6 September 2007). Few studies have been published in South Africa reporting the implementation and impact of BFHI on breastfeeding support practices of newborns.

1.16 Conclusion

Although breastfeeding is a key child survival strategy, especially in resource-poor countries,(2;8) breastfeeding practices in South Africa can be categorised as being poor with only 10% of infants exclusively breastfed by three months of age,(4) and only 7% of infants still being exclusively breastfed by six months of age.(9;14) The 2007 National Infant and Young Child Feeding Policy was developed by the South African Department of Health, and emphasizes the protection, promotion, and support of breastfeeding, partly through encouraging the implementation of the BFHI.(2) Successful breastfeeding depends on the acquisition of some basic skills, as well as accurate information and practice, and is strongly influenced by the kind of support, encouragement and guidance provided after childbirth.(23;32) Supplementation of healthy breastfed newborns during their first few days of life is a common practice in many hospitals worldwide.(34-36)

2 METHODS

2.1 Aim

This study aims to document practices around breastfeeding support in baby-friendly accredited, compared to non baby-friendly accredited facilities.

2.2 Hypothesis

Baby-friendly accredited facilities perform significantly better on the Ten Steps to Successful Breastfeeding.

2.3 Objectives

- To describe newborn feeding practices at health care facilities
- To compare baby-friendly accredited with non baby-friendly accredited health facilities, using the Baby-Friendly Hospital Initiative (BFHI) Monitoring tool
- To explore (and try to explain) the views, practices and dilemmas/constraints of healthcare workers in relation to breastfeeding support for newborns in healthcare facilities

2.4 Study design

This was a cross-sectional study, with analytical components.

2.5 Study setting and population

The study was conducted in a number of hospital and midwife obstetric units (MOUs)

The study comprised two components:

- Interviews with mothers
- Interviews with nursing staff

2.5.1 Facilities

Healthcare facilities reflecting all levels of health care provision were included. Baby-friendly certified facilities were matched with non baby-friendly facilities using the following criteria:

- Same level of designation (e.g. regional hospital or MOU).

- Facility of comparable size as determined by the number of deliveries per year.

Rationale for selection of facilities:

Convenience sampling was used. Nine institutions were surveyed.

- One tertiary hospital:

Chris Hani Baragwanath Hospital. This institution was chosen because it is the biggest facility in Gauteng with the largest number of deliveries per year. It was not possible to match this institution because no tertiary academic hospital in Gauteng is baby-friendly.

- Two regional hospitals:

Leratong Hospital. This institution was chosen as it was the only baby-friendly accredited regional hospital in Gauteng.

It was matched with Coronation Hospital which was not baby-friendly accredited. Coronation is classified as a regional hospital

- Two district hospitals:

South Rand Hospital (baby-friendly accredited). Selected because it was baby-friendly accredited and on the basis of convenience.

It was matched with Germiston Hospital (not baby-friendly accredited).

- Two MOUs selected in Soweto on the basis of convenience:

Mofolo Clinic (baby-friendly accredited) matched with Chiawelo Clinic (not baby-friendly accredited).

- One MOU selected in the West Rand on the basis of convenience:

Bekkersdal (baby-friendly accredited) matched with Discoverers MOU in Johannesburg (not baby-friendly accredited).

- Two Private Hospitals

Park Lane Clinic was selected. This was the only private facility in Gauteng that was certified as being baby-friendly. It was matched with Garden City Clinic which is the closest private hospital (± 7km away) with a maternity facility draining some patients from overlapping areas. Both clinics belong to the same hospital group (Netcare) which might reflect comparable practices. Unfortunately, Park Lane Clinic management refused to give consent for the study, and therefore Park Lane Clinic and Garden City Clinic were withdrawn from the study.

2.5.2 Patient and staff selection

Criteria used for including mothers in the study were: well mothers (able to take care of their infants) with well infants (not requiring oxygen or antibiotics, or no acute condition requiring referral) that were rooming-in. Infants needed to have a birth weight >1.8kg. Table 2.1 shows number of mothers and staff selected and interviewed.

- Number of mothers interviewed varied between sixty for Chris Hani Baragwanath Hospital, to six for the clinics. Number of mothers selected were calculated taking into account a number of factors:
    - The Monitoring Tool used (44) recommends that 30 mothers be interviewed per facility. Where this is not feasible, at least ten mothers should be interviewed.
    - For regional and tertiary facilities the number of mothers selected corresponded with the number of deliveries per day for the respective facilities, which correlates with about 0.3% of deliveries per year. For district hospitals and clinics, the number of mothers selected was roughly twice the number of deliveries per day, with a minimum of six mothers selected.
    - Time constraints: a feasible number was selected for completion of the study, in terms of number of days allowed to visit the facilities. Smaller facilities were visited for three days in order to interview at least six mothers.
- Number of staff interviewed varied between twenty for Chris Hani Baragwanath Hospital, to six for some clinics. The Monitoring Tool (44) suggests a minimum of ten staff interviews per facility. In smaller facilities, all staff working with mothers and infants that were available and gave consent were interviewed during the time spent at the facility.

2.6 Measuring tools

Tool used in this study

Studies assessing breastfeeding practices in hospitals generally used adaptations of the WHO/UNICEF Ten Steps to Successful Breastfeeding.(20;21;45) The tool used in this study was an adaptation of the Monitoring tool from the *Guide for monitoring and reassessing Baby-friendly Hospitals.*(44) The tool has been developed by WHO for adaptation and used by countries wanting to implement a BFHI monitoring process. The tool was forwarded to the researcher by Ms Ann Behr from the South African National Department of Health for use in this study. Both the WHO

and UNICEF encourage countries to monitor and/or reassess facilities designated baby-friendly as part of a strategy helping to maintain standards already achieved.(44)

The BFHI Monitoring tool assesses maternal and health care practices around infant feeding, and is still currently in use in South Africa. An adaptation of the Monitoring tool from the *Guide for Monitoring and reassessing Baby-friendly Hospitals* was the primary study tool.(44)

The BFHI monitoring tool is based on the "Ten steps to successful breastfeeding" (Appendix A) which summarizes the maternal and health care practices necessary to support breastfeeding, such as adequate teaching of mothers and nurses, a breastfeeding policy and providing information on breastfeeding support groups.

The tool is structured as follows: a section with Data Collection Sheets (Appendix B), a section for Data Summary and Reporting (Appendix C), and finally a section for Reporting on Results.

WHO has revised the tool to include an HIV component (counselling HIV positive mothers about and supporting them with their feeding choices), as well as a component supporting early skin-to-skin contact between mothers and newborn infants. This tool (Revised, updated and expanded version for Integrated care, January 2006), was not being used in South Africa at the time of the study (personal communication, Ms. Joan Matji, UNICEF, 6 September 2007; and Ms. Zama Mtshali, Gauteng Department of Health, 6 September 2007). According to Ms. Mtshali use of the revised tool is scheduled for national implementation by August 2009 (personal communication, Ms. Zama Mtshali, 5 February 2009).

The tool was adapted by adding an exploratory component to the standard questionnaires for "IV. Interview with mother " and "V. Interview with staff member" (Appendix B), in order to explore attitudes and practices around feeding support. Some questions from the HIV component of the 2006 revised tool,(30) were incorporated to explore practices around feeding support of HIV positive, both from the perspective of the mother and the staff.

2.7 Study duration

The researcher had two days of informal training, during December 2007, conducting interviews with mothers and staff at Leratong Hospital with Ms. Talent Tanase, an experienced National Assessor for the BFHI. The five interviews conducted with staff members were included in the main study, so as not to contaminate study data by re-interviewing the same staff members. The data collection component of the study was conducted from January to April 2008.

Table 2.1 Selection of patients and staff at the various health care facilities

Type of facility	Facility	Status	Deliveries per year (2006)	Deliveries per day	0.3% of deliveries per year	Number of mothers selected	Number of mothers interviewed	Number of staff selected	Number of staff interviewed
Tertiary	Chris Hani Baragwanath	NBF	20 010	56	60	60	60	20	20
Regional	Leratong	BF	6 828	19	20.4	20	20	10 - 15	11
Regional	Coronation	NBF	10 413	29	31	30	31	10-15	12
District	South Rand	BF	1 453	4	4	10	10	All available staff	7
District	Germiston	NBF	3 746	10	11	20	20	10	10
MOU	Mofolo	BF	981	2.7	2.9	6	6	All	7
MOU	Chiawelo	NBF	898	2.5	2.7	6	6	All	6
MOU	Bekkersdal	BF	712	2	2.1	6	6	All	6
MOU	Discoverers	NBF	543	1.5	1.6	6	6	All	7

BF=Baby-Friendly accredited facility. MOU= Midwife Obstetric Unit. NBF=Non Baby-Friendly accredited facility.

2.8 Study procedures

The researcher visited the selected facilities for three to eight days each, depending on the selected sample size. In most of the smaller facilities the researcher was welcomed by the nursing manager and introduced in the wards where the study was done. In a large facility (Chris Hani Baragwanath) the researcher introduced herself to the staff with the signed letter of consent from the nursing manager. In the two baby-friendly hospitals, the researcher was introduced to the staff by the dietician responsible for the baby-friendly accreditation of the hospital. Dates for the visits were arranged in advance with nursing management or the dietician.

Nurses and mothers were selected on the basis of convenience: staff on duty that were available to be interviewed were included as were mothers who were willing to participate just prior to discharge.

Data was collected through:

- In depth interviews lasting about ten minutes to one hour, with mothers and nurses, using an adaptation of the BFHI tool (Appendix B). The order of the interviews was determined by who was available (convenience sampling).
- In some instances, patient records were reviewed to confirm explanations that the mothers gave during the interview, such as whether the reason why a mother was not breastfeeding was a medically acceptable reason.

2.9 Calculation of the 10 steps: Explaining the BFHI assessment

By using the BFHI Monitoring process, scores were calculated for each step (Appendix C). Detail about how step scores were calculated using to BFHI guidelines (accreditation process), how the researcher calculated the step score (research process), and explanations where there were discrepancies, are given in Appendix D. Each step score was calculated by adding up the percentages for each component of the step, and then dividing it by the number of components for the particular step, thus coming to a final percentage for each step. Any facility needed at least 80% for each step in order to "pass" that step. They are required to "pass" all ten steps in order to be declared and accredited as a Baby-Friendly facility.

2.9.1 Step 1: Have a written breastfeeding policy that is routinely communicated to all health care staff

1a. Policy displayed in all areas serving mothers/infants. Key: "Yes" = 100%, "No" = 0%

1b. No posters or materials promoting breast milk substitutes, bottles or pacifiers displayed in the facility. "No posters/materials displayed" = 100%, "Posters/materials displayed" = 0%

2.9.2 Step 2: Train all health care staff in skills necessary to implement this policy

2b. Staff receiving 18 hours training (reported by staff): Percentage of staff interviewed that reported they received 18 hours of training on breastfeeding management.

2c. Staff with correct breastfeeding management knowledge: Percentage of staff interviewed that were able to answer correctly at least two out of three questions on breastfeeding management.

2.9.3 Step 3: Inform all pregnant women about the benefits and management of breastfeeding

3a. Written description of prenatal education. "Yes" = 100%, "No" = 0%

3b. Topics covered: Percentage of the specified seven topics covered in prenatal education.

2.9.4 Step 4: Help mothers initiate breastfeeding within a half-hour of birth

4c. Babies breastfed within one hour of birth (vaginal deliveries), and within one hour of mothers being able to respond (caesarean): Percentage of the mothers (who were breastfeeding) interviewed that reported their infants were breastfed within one hour.

2.9.5 Step 5: Show mothers how to breastfeed and how to maintain lactation, even if they should be separated from their infants

5a. Mothers offered help with breastfeeding: Percentage of the mothers (who were breastfeeding) interviewed reported that the staff offered help with breastfeeding since they came to their rooms.

5b. Mothers offered help with positioning and attachment: Percentage of the mothers (who were breastfeeding) interviewed reported that the staff offered help

5d. Staff demonstrating (or showing and describing) correct positioning and attachment: Percentage of the staff interviewed describing correct positioning and attachment.

5e. Mothers taught how to express milk: Percentage of the mothers (who were breastfeeding) interviewed that reported that they had been shown, or given information on, how to express their milk.

5f. Staff describing an acceptable technique for milk expression: Percentage of the staff interviewed that were able to describe an acceptable technique for expressing milk by hand.

2.9.6 Step 6: Give newborn infants no food or drink other than breast milk, unless medically indicated

6a. Babies breastfeeding exclusively: Percentage of the mothers (who were breastfeeding) interviewed that reported that their infants received no food or fluid other than breast milk (or vitamins, mineral supplements or medicine), or, if they have, the records showed an acceptable medical reason.

2.9.7 Step 7: Practise rooming-in - allow mothers and infants to remain together - 24 hours a day

7a. Babies rooming-in within one hour of birth: Percentage of mothers interviewed that reported that their infants were rooming-in and that they began staying together within one hour of birth, or in the case of caesarean, within one hour of being able to respond (except for a valid reason).

7b. Mothers and babies not separated for more than one hour: Percentage of mothers interviewed that reported that their infants had not been separated from them for more than one hour since they came to their rooms (except for a valid reason).

2.9.8 Step 8: Encourage breastfeeding on demand

8b. Mothers advised to breastfeed on demand: Percentage of mothers (who were breastfeeding) interviewed that reported that they had been advised to breastfeed their infants whenever they were hungry, or as often as their infants wanted.

2.9.9 Step 9: Give no artificial teats or pacifiers to breastfeeding infants

Percentage of mothers (who were breastfeeding) interviewed that reported that their infants had not been given pacifiers to suck on, and had not been fed with bottles.

2.9.10 Step 10: Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic

10a. Mothers given advice on where to get help with breastfeeding: Percentage of mothers (who were breastfeeding) that reported that they had been given advice on where to get help if they had problems with breastfeeding after leaving the facility.

10c. Mothers receiving written information on where to get help: Percentage of mothers (who were breastfeeding) that reported that they had received written information on where to get help if they had problems with breastfeeding after leaving the facility.

Using the BFHI tool it is possible, for every facility, to give a score for each of the 10 steps.

2.10 Data analysis

Data from individual interviews were captured on an Excel 2003 spreadsheet (Microsoft Inc., Seattle, USA). Individual variables in each questionnaire were analysed. The analytic component of the study includes comparisons between individual institutions, and between baby-friendly and non baby-friendly accredited institutions.

For statistical analysis of the comparison between baby-friendly and non-baby-friendly accredited facilities, the SPSS 15 statistical package (SPSS, Chicago, USA) was used. For each of the 10 steps a mean with standard deviation was calculated for the baby-friendly as well as the non-baby-friendly accredited facilities. For continuous, parametric data, a t-test for Equality of Means was used. Equal variances were not assumed. Two-tailed significance and Mean Difference were estimated as well as a 95% Confidence interval of the Difference with a lower and upper limit. A p value < 0.05 was considered significant.

Baby-friendly and non-baby-friendly accredited facilities were also compared for categorical data using the chi-square test, or the Fisher exact test when appropriate (cell containing < 5), using Epi-Info (CDC, Atlanta, USA). For each step the total number of both baby-friendly- and non-baby-friendly accredited facilities "passing" that step was put in a 2X2 table, and a two-tailed p-value was calculated. A p-value < 0.05 was considered significant.

2.11 Ethical considerations

- Permission to perform the study was obtained from the Committee for Research in Humans Subjects (Medical) at the University of the Witwatersrand (Appendix E).
- Permission to conduct the study was also obtained from Gauteng Department of Health (Appendix F), the Department of Health, Johannesburg-West Rand Region (Appendix G), and the Chief Executive Officer of each of the relevant facilities.
- Written consent was obtained from all participants (mothers and nursing staff). It was not necessary to obtain verbal consent as there were no illiterate mothers.

2.12 Funding

Funding for the study was obtained from the University of the Witwatersrand Johannesburg Medical Research Endowment Fund (MREF).

3 RESULTS

Data on individual institutions are presented first, and compared. Thereafter, the performance of baby-friendly accredited facilities is compared to non-baby-friendly accredited facilities. The format followed throughout the result section for each step is to:

a) Indicate the BFHI requirement
b) Describe factors that influence(d) this (where applicable)
   Data collected, but not used in the BFHI calculation of the 10 steps, is given in this section.
c) Provide quantitative data
   Data used in the BFHI calculation of the 10 steps is given in this section.
d) Offer qualitative data (where applicable)

Facilities:

Nine facilities were assessed. Four were baby-friendly accredited while five were not. There was no accredited level three facility (Table 3.1).

Table 3.1 List and categorisation of hospitals and midwife obstetric units included in study

Non-baby-friendly accredited facilities		Baby-friendly accredited facilities	
Name	Level	Name	Level
Chris Hani Baragwanath	3		
Coronation	2	Leratong *	2
Germiston	1	South Rand *	1
Chiawelo	MOU	Mofolo *	MOU
Discoverers	MOU	Bekkersdal *	MOU

Note: Baby-friendly accredited facilities are indicated with a * throughout the Results section.

Score:

A facility needed to score 80% for a step in order to “pass” the step, and needed to “pass” all ten steps in order to be declared “baby-friendly”.

3.1 Comparison between individual institutions

Comparison per step for each of the ten steps

3.1.1 Step 1: Have a written breastfeeding policy that is routinely communicated to all health care staff

a) BFHI requirement:

1a. Policy displayed in all areas serving mothers/infants. *1b. No posters or materials promoting breast milk substitutes, bottles or pacifiers displayed in the facility.*

b) Factors that influence(d) this

The policy needs to be displayed in all the required areas, namely the antenatal clinic, maternity ward, nursery, and infant special-care unit (if the area exists). Periodic check-up is necessary to ensure compliance with this step. If structural changes are made to the unit, for example if newborn infants are temporarily seen in a different area for whatever reason, the policy must also be moved to be displayed in the new area.

c) Quantitative data:

- *1a. Policy displayed in all areas serving mothers/infants.* Three of the four baby-friendly accredited facilities scored 100% for displaying the policy in *all* areas. The other six facilities (including one baby-friendly facility) scored 0% because they only displayed the policy in *some* areas.
- *1b. No* posters *or materials promoting breast milk substitutes, bottles or pacifiers displayed in the facility.* None of the facilities displayed posters or other materials promoting breast milk substitutes.
- Total % Step 1: Three of the four baby-friendly accredited facilities "passed" this step with a score of 100%. The other five facilities all failed the step with a score of 50%.

For further quantitative data on the ten steps, see Appendix H.

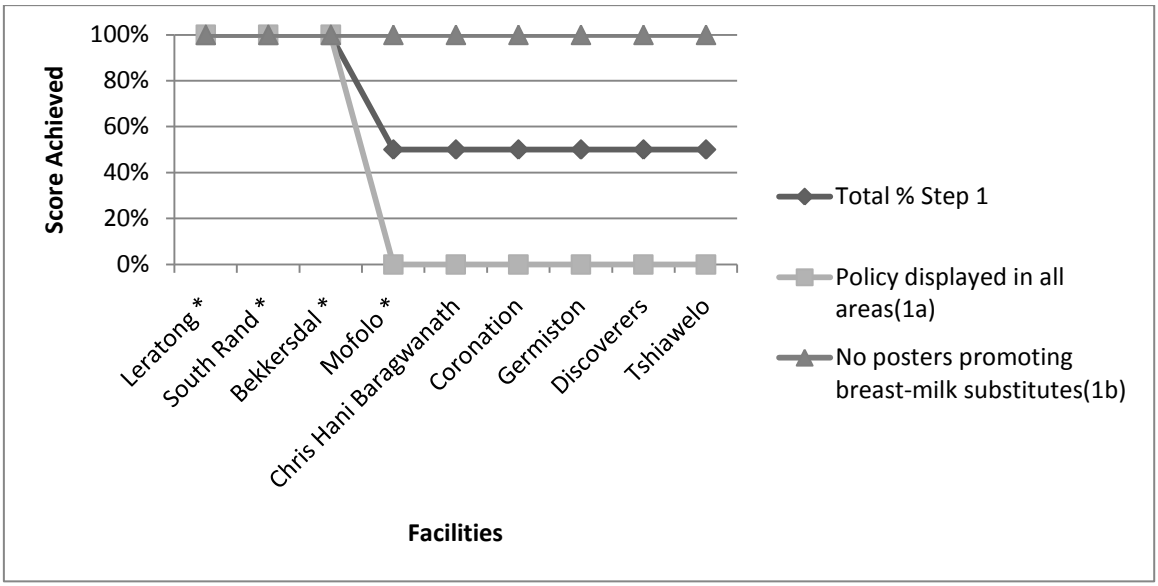

Figure 3.1 STEP 1: Have a written breastfeeding policy that is routinely communicated to all health care staff

3.1.2 Step 2: Train all health care staff in skills necessary to implement this policy

a) BFHI requirement:

2b. Staff receiving 18 hours training (reported by staff).

2c. Staff with correct breastfeeding management knowledge (Percentage of staff interviewed that were able to answer correctly at least two out of three questions on breastfeeding management).

b) Factors that influence(d) this

Training: The training referred to is an 18–20 hour training course in breastfeeding and lactation management that is presented by BFHI trainers in the different districts. Training schedules for the year are set at district or facility level. Since 2006 this training is called "Maternal Nutrition, Infant and Young Child Feeding Course in the context of PMTCT of HIV and AIDS". If a hospital wants to achieve baby-friendly accreditation status they have to arrange for their own training by individuals that have completed ten days training as a "Trainer of trainers".

Staff were sent for training in preparation for baby-friendly accreditation. Over time staff rotated out of the maternity section, so the proportion of trained staff dropped. Just before a facility is due for re-accreditation, staff tend to be sent again for training.

Timing of training: Some staff did their BFHI training years ago, while other staff members did their BFHI training only about a month before they were interviewed.

Number of staff on duty: MOUs had more staff on duty with more midwives in general. MOUs seemed to be much less busy than the hospitals with staff numbers occasionally exceeding patient numbers. In MOUs only uncomplicated patients are managed, with any potential complications or anyone needing a caesarean section being transferred to a hospital.

Category of staff interviewed: 50% or more of the interviewees were midwives. In Germiston Hospital, only 30% were midwives, and 50% (five out of the ten staff members interviewed) were nurses doing their community service year before being registered as Professional Nurses.

Staff retention and experience: Some hospitals such as Chris Hani Baragwanath *retained their staff* much better. Nine of the 20 (45%) staff members interviewed at Chris Hani Baragwanath had been employed there for more than 10 years, while three staff members worked there for more than 30 years. Staff at MOUs also tended to stay longer, while at hospitals there appeared to be more rotation of staff to other facilities. In Germiston Hospital, seven of the ten (70%) interviewees were very inexperienced and had worked in the maternity section for less than six months.

Table 3.2 Category of staff interviewed and staff experience

Facility	Staff with > 3 years experience	Staff >6 months in maternity	% of interviewees - midwives
Discoverers	86%	86%	71%
Chris Hani Baragwanath	80%	90%	50%
Tshiawelo	66%	100%	100%
South Rand *	57%	100%	57%
Bekkersdal *	50%	83%	67%
Mofolo *	43%	100%	86%
Leratong *	30%	82%	73%
Coronation	16%	58%	67%
Germiston	10%	30%	30%

c) Quantitative data:

- *2b. Staff receiving 18 hours training (reported by staff).* For the baby-friendly accredited facilities, South Rand Hospital scored 57%, Leratong 70%, and the two MOUs both 100%. The number of staff trained were generally higher for the MOUs than for the hospitals, both in the case of the baby-friendly, as well as the non baby-friendly accredited facilities. The percentage of staff trained in the non-baby-friendly accredited facilities ranged from 17% at Chris Hani Baragwanath Hospital to 67% in Discoverers MOU.

- *2c. Staff with correct breastfeeding management knowledge*. This was defined as answering at least 2 out of the 3 questions on breastfeeding knowledge correctly – see Appendix D. All four baby-friendly accredited facilities scored between 43% and 50%. Not more than half of the staff had correct breastfeeding knowledge even at the two facilities where all the staff had been trained (Mofolo and Bekkersdal MOUs). The non-baby-friendly accredited facilities scored between 5% (Chris Hani Baragwanath Hospital) and 29% (Discoverers MOU).
- "On the job training": "On the job training" included talks on breastfeeding management, report back from meetings, or report back from staff who went for breastfeeding management training. Very little "on the job training" was reported. Only between 9% (Leratong Hospital) and 50% (Mofolo MOU) of staff reported any "on the job training". This lasted anything between 30 minutes to three hours. Staff from South Rand Hospital, and Discoverers and Bekkersdal MOU reported that they attended breastfeeding meetings that were held on a monthly rotational basis, planned by the district. One person reported that they went for an eight hour course in breastfeeding management besides their original 18 hour training. Even in facilities that sent a representative to attend the monthly breastfeeding meetings, only 9-50% of the staff claimed that there was any report back from those meetings.
- Total % Step 2: None of the facilities scored ≥80% for Step 2 – therefore all facilities failed this step.

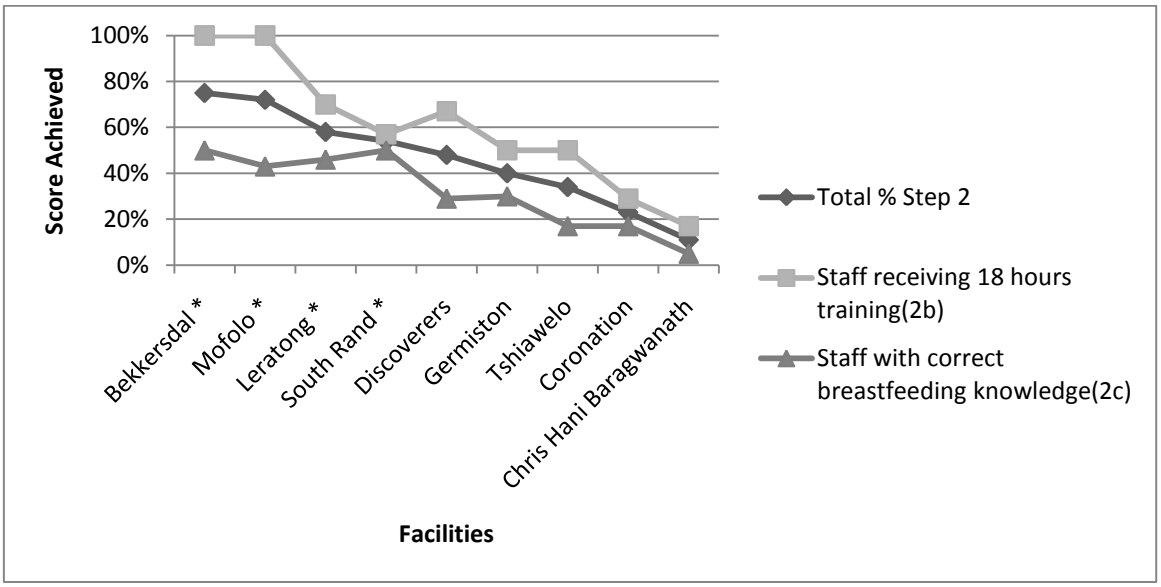

Figure 3.2 STEP 2: Train all health care staff in skills necessary to implement this policy

d) Qualitative data

A theme emerging from the data, was that staff were unwilling to learn and implement new practices, even though there was not always a heavy work load.

Table 3.3 STEP 2: Qualitative data related to Step 2

Theme	Quote/ Comment	Source of data
Mothers:		
Staff work hard	"Those sisters they are working very hard. I feel for them. They are always busy - not sitting down, doing many jobs. (They) Help us cleaning the babies, cleaning the beds."	Mother, Chris Hani Baragwanath
Staff:		
On-the-job training	"We in-service ourselves. We no longer have regular in-service. We get information from people coming back from training".	Tshiawelo, midwife, >20 years in maternity, 18 hour training
Difficulty implementing, staff reluctant to change	"I did an AFASS criteria (training course) last year December, but never practise it. Counsellors don't know about AFASS. Another sister went to the course two weeks ago. Now I have the sisters' support, maybe now we can implement some of this. People go to the course but don't give feedback; or come back from course but people are very reluctant to change. I was the youngest, very difficult for me to implement it"	Bekkersdal, midwife, 1-2 years in maternity, 80 hours training
Staff unwilling to learn	"The staff do not want to learn about breastfeeding or attend breastfeeding meetings. Our matrons must know breastfeeding is for all health care workers. Let's all speak one language"	Chris Hani Baragwanath, sister in charge of an unit, midwife, 18 hour training
Not always so busy	"At present we have a lot of staff and are not that busy".	Bekkersdal, midwife, 1-2 years in maternity, 80 hours training

3.1.3 Step 3: Inform all pregnant women about the benefits and management of breastfeeding

a) BFHI requirements:

3a. Written description of prenatal education.

3b. Topics covered (during the prenatal education).

b) Factors that influence/d this

Topics covered during the prenatal education: Often some topics were covered some days and other topics at other days. In facilities where this was done well, there was a roster with dates

allocated stating which topic was to be covered on which day and by which staff member. In other facilities, there was no formal planning to cover all topics – each staff member included material in the education session that she thought was important. Because mothers do not attend the clinic every week, and also not necessarily available when the group talk is held, they miss some topics. A staff member said: "There is just too much information that needs to be covered on other topics as well, beside breastfeeding, for it to be possible for a sister to cover everything on breastfeeding in every session".

Frequency of group talks: How regularly group talks were held also varied. Some of the mothers' responses were: "group talk every morning with feeding discussed every time"; "not always about feeding"; "not once about feeding"; "group talk only once" during the time she attended antenatal clinic (attended antenatal clinic 11 times); "no group talk in the mornings".

c) Quantitative data:

- *3a. Written description of prenatal education*.

Only two of the baby-friendly accredited facilities had this step in place, namely Leratong Hospital and Mofolo MOU. The other seven facilities all scored 0%.

- *3b. Topics covered* (*during* the prenatal education).

Six facilities scored 100% - they all claimed that they covered all seven prescribed topics during their prenatal education. This claim could not be verified by the researcher. Germiston Hospital scored 86%, Mofolo MOU 72% (baby-friendly accredited), and Coronation Hospital 57%.

- Total % *Step* 3:

Only two facilities (both baby-friendly accredited) "passed" Step 3, namely Leratong Hospital with a score of 100%, and Mofolo MOU with a score of 86%.

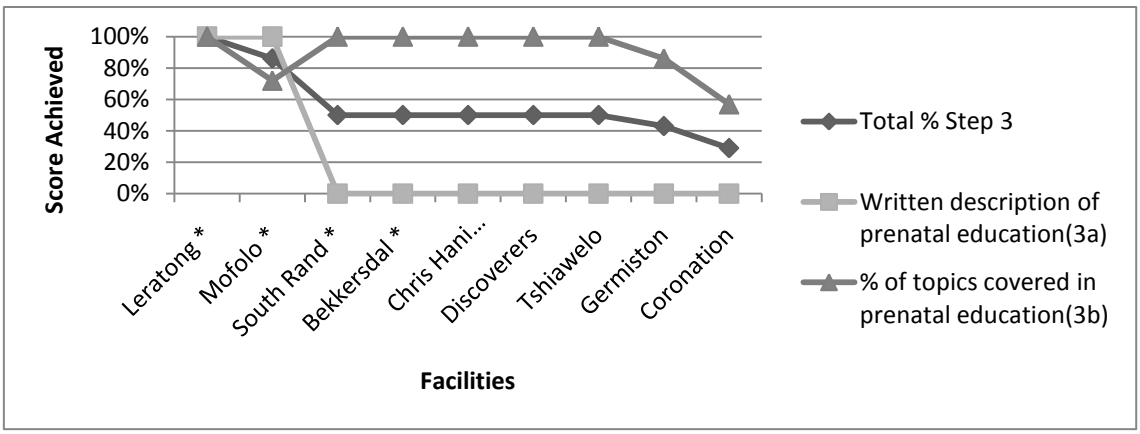

Figure 3.3 STEP 3: Inform all pregnant women about the benefits and management of breastfeeding

d) Qualitative data

Themes that emerged from the qualitative data were the problems created by discrepancy in counselling practices, and the frequency, accuracy and comprehensiveness of information.

Table 3.4 STEP 3: Qualitative data related to Step 3

Theme	Quote/ Comment	Source of data
Staff:		
Problems created by discrepancy in breastfeeding counselling	"Lots of problems from satellite clinics which are not baby-friendly. Patient booked there know nothing about breastfeeding. Now short of staff, not enough staff to teach mothers. Just teach them on discharge. Moms mostly taught at ANC, here reinforced. Concerned about rest that got no info at ANC".	South Rand, 11-20 years in maternity, midwife, 18 hour training
Mothers:		
Unbooked mothers	"Booked at Congo three to four times. Came to deliver here. I am new. Just asked the driver for the nearest clinic, brought here. I just came as a refugee. Will go back but first want things to stabilize - ? after one to two years. Family here - formal house Cresta. Came about one week before delivery"	Coronation
Special Risk Factors	"I am staying with my parents. My sister - 19 yrs old, also stay with my parents. She's got one child - 1 year 2 months old, healthy, used to drink bottle Nan. I've got bottles at home, not milk. Not sure what milk I will give. Going to work weekends, looking for a job. Not in a relationship with the father. I don't think he will support the baby. My mother works, but only part-time. Don't know whether she will be able to support me with milk". ANC three times	ANC Coronation. Mother 16 years old.
Frequency of advice on breastfeeding	"Feeding advice at Mofolo, not at Chris Hani Baragwanath. At the clinic they don't talk to us. They just test our urine, take our weight, examine us, then we can go home".	Chris Hani Baragwanath, ANC Mofolo
	"If it is necessary I will breastfeed him, otherwise I will buy the formula. Here (at the hospital) they said I must breastfeed. First time for me to hear about breastfeeding. That is why I came to you. They just said the baby needs to be breastfed".	Tshiawelo, ANC Tshiawelo two times
Some inaccurate information	"Breastfeed till 6 months, otherwise (she will) battle to get him off the breast". Asked me (the researcher) when best time to stop breastfeeding.	Leratong, ANC Dr Yusuf Dadoo Hospital
	"Breastfeeding is very healthy for the baby - stays healthy, can't get any sickness".	Chris Hani Baragwanath, ANC Mofolo
	"Can give Nan or breast or both - depend on the mother. Start solids like veggies at 4 months".	Coronation, ANC Coronation
	"Nestum in bottle and feed baby after 3 months"	Coronation, ANC

Theme	Quote/ Comment	Source of data
		Witkoppen
	"When 3 months introduce soft porridge in the bottle".	Coronation, ANC Witkoppen
	"If baby can't suck, then you can give formula".	Bekkersdal, ANC Westonaria
	"If baby doesn't want breast, then give formula. Okay to mix feed" (both breast and formula).	Chris Hani Baragwanath, ANC Porke Park
Information at times comprehensive	"Advice on breastfeeding here and at ANC: feed on demand, as long as baby wants, come back to clinic if problem with feeding".	Bekkersdal, ANC Bekkersdal
Mothers decide on mixed feeding before birth	"I am going to give Nan and breast. Decided on formula before birth because I am working (going back to work after 4 months). Got Nan at home - boyfriend bought yesterday - bottles and teats as well"	Chris Hani Baragwanath, ANC Eikenhof

Summary of other qualitative data: (Appendix I)

Sources of information on infant feeding quoted were: Newspapers (Sowetan, Daily Sun); Magazines (Your Pregnancy, Living and Loving, Soul City, Drum, True Love, Bona, My Baby); Booklets (Soul City booklet that came with Sunday Times newspaper, booklets from Jet and Edgars stores); Family and friends; Radio; Television ("Great Expectations"); Schoolteacher.

Some mothers attended private gynaecologists or general practitioners, but did not get any feeding advice from them.

3.1.4 Step 4: Help mothers initiate breastfeeding within a half-hour of birth

a) BFHI requirements:

> *4c. Babies breastfed within one hour of birth (vaginal deliveries), and within one hour of mothers being able to respond (caesarean):*

b) Factors that influence/d this

This step is strongly influenced by routine practices in the various facilities.

At Coronation Hospital, the **practise in labour ward** was for any mother to routinely lie on her stomach to control bleeding for one hour after delivery. The majority of mothers reported that after lying on their stomachs for one hour, their infants were brought to them while they were waiting to go to the postnatal ward. They sometimes fed the baby in labour ward if they were told to breastfeed, or if they waited long before going to the postnatal ward.

At Chris Hani Baragwanath infants were taken to the labour ward nursery after delivery, where they were fed a formula feed. The mother sat and waited in a chair (often for a couple of hours) until a postnatal bed became available. The baby was then taken to the mother for the first time, and mother and baby were taken to the postnatal ward together. Because of a shortage of beds in Chris Hani Baragwanath Hospital, mothers were sometimes taken to antenatal wards post delivery. The baby was then taken to the nursery of the postnatal ward on intake because there were not cribs and nursing care for infants at the antenatal wards. The mother was taken to the postnatal ward the next day when a bed became available, and if her baby was not in that ward it might be only that afternoon before baby and mother was reunited for the first time.

In three non-baby-friendly accredited hospitals, **Caesarean section infants** were only brought to their mothers more than 6 hours after delivery (Coronation), or often only the following day (Chris Hani Baragwanath and Germiston). The reason given for this approach was that mothers were expected to lie on their backs for six hours after a spinal or epidural anaesthetic. It was felt that they were unable to safely care for their infants during this time. In the two baby-friendly accredited facilities (Leratong and South Rand), when a mother came back from theatre observations were taken, she was turned on her side, made comfortable and the baby put in the bed with her well within one hour after arrival in the ward. At Leratong Hospital the sisters indicated that the chance of a headache occurring from mothers not lying flat on their backs after an epidural anaesthetic could be reduced or prevented by giving the mother just one pillow instead of more, and starting to give sips of water early on. At South Rand Hospital the baby was sometimes handed to the mother even in theatre so that the baby usually joined the mother before arrival in the ward.

c) Quantitative data:

In all four of the baby-friendly accredited facilities infants were brought to the mother within one hour of birth. All infants were breastfed within one hour of birth, thus those four facilities scored 100% for Step 4. They were the only facilities that "passed" step 4.

At Discoverers MOU, 83% of infants were brought to the mother within one hour, and 75% of infants were breastfed within one hour, thus scoring 75% for step 4. A possible reason for this might be that, even though not baby-friendly accredited, staff attended some of the breastfeeding meetings that were held once a month. Staff from South Rand Hospital, and Discoverers and Bekkersdal MOU reported that they attended breastfeeding meetings that were held on a monthly rotational basis, planned by the district. They were the only non-baby-friendly accredited facility where staff reported attending meetings as part of "on the job training".

At the remaining three facilities the percentage of infants breastfed within one hour of birth was 31%, 9% and 6% (at Germiston, Chris Hani Baragwanath and Coronation respectively). In these three facilities only 63%, 19% and 17% of infants respectively were brought to the mother within one hour of birth, and less than one-half of the infants brought to the mother within one hour, were breastfed within one hour.

At Chris Hani Baragwanath, over half (53%) of infants were brought to the mother for the first time five hours or more after delivery. The other 47% of infants were brought earlier. Yet even with many infants brought to their mothers earlier, still 82% of infants were breastfed for the first time five hours or more after delivery, and 28% were breastfed for the first time more than 24 hours after birth.

Only 14 of the 123 mothers (11%) in the study who were breastfeeding reported a medical problem with her or the baby as a reason for not breastfeeding within one hour. Most of these problems were vague and could not be confirmed, such as the mothers "bled a lot", or "felt dizzy". Problems encountered included a mother with a retained placenta who had to go back to theatre, another with a bleeding wound, one with a significant post-partum haemorrhage that warranted a blood transfusion, a baby with (transitory) respiratory distress and another with a "slow heart rate". Only one of the fourteen reported problems occurred at a baby-friendly accredited facility.

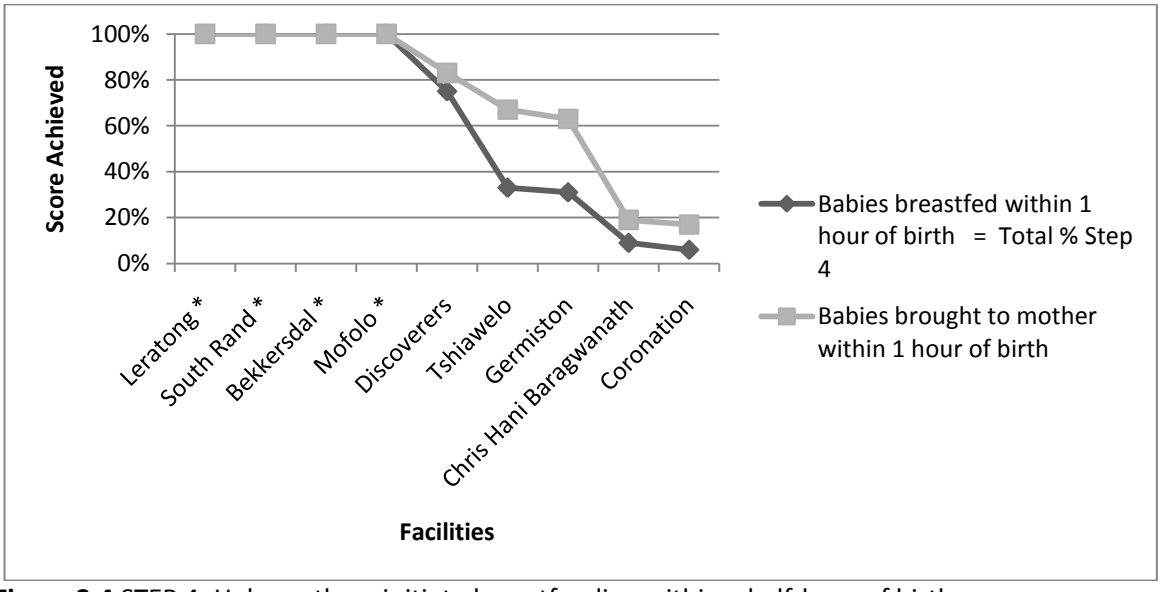

Figure 3.4 STEP 4: Help mothers initiate breastfeeding within a half-hour of birth

d) Qualitative data:

Themes that emerged from the qualitative data were the misconception that a mother needed to be cleaned first before she could start breastfeeding, mothers waited for permission before they started breastfeeding, and mothers not starting breastfeeding because of their perception of insufficient milk.

Table 3.5 STEP 4: Qualitative data related to Step 4

Theme	Quote/ Comment	Source of data
Staff		
Misconceptions	"Not healthy for mom to breastfeed in Labour Ward before bathed - liquor, faeces cleared".	Chris Hani Baragwanath, midwife, 11-20 years in maternity, no training
Practice after birth	"Eclamptic patient semi-conscious - breast is not semi-conscious" (meaning that a baby could be helped to breastfeed even when a mother is semi-conscious).	Leratong, Sister in charge of one of the postnatal wards, 6-10 years in maternity, 18 hour training)
Practice after Caesarean section influenced by directives from nursing management	“Lot of work to change mom from prone to lateral - it depends on the nurse from nursery. Nurse in nursery decide on feed for baby, unlikely to wake mom up. Usually we give formula. Now we must move away from that, mom to lie on side, pain management. Mom thinks you are so evil when you do that, you are such a horrible person when take baby of fresh Caesarean section to mom".	Germiston, midwife, 3-5 years in maternity, to go for training the following week
Mothers		
Wait to be told to breastfeed	Put to breast first time after ten hours - "Sister said to put to breast. Didn't understand previously that had to breastfeed".	Chris Hani Baragwanath
	"Was waiting for the nurses to tell us to feed the babies".	Chris Hani Baragwanath
Need to clean up before breastfeeding	Mom had not breastfeed yet - "Need to go home first and have a proper bath"	Chris Hani Baragwanath
Not enough milk, therefore don't start feeding	Not yet breastfed (26 hours after birth). Mom says: "The breast there is no milk". (Researcher checked - colostrum present).	Chris Hani Baragwanath
Baby doesn't want breast	“I tried two times - didn't want to take the breast, so I started giving him formula".	Coronation
Breastfeeding after caesarean section	"Easy to breastfeed first time even though lying on side and even though had a lot of pain"	Leratong

For more qualitative data on facility practices, see Appendix I.

3.1.5 Step 5: Show mothers how to breastfeed and how to maintain lactation, even if they should be separated from their infants

a) Provide BFHI requirement

5a. Mothers offered help with breastfeeding
5b. Mothers offered help with positioning and attachment.
5d. Staff demonstrating (or showing and describing) correct positioning and attachment.
5e. Mothers taught how to express milk
5f. Staff describing an acceptable technique for milk expression.

b) Factors that influence/d this

First-time mothers: In the district hospitals and MOUs, 0-33% of breastfeeding mothers interviewed were first-time mothers, while 44–47% of breastfeeding mothers at Leratong, Coronation and Chris Hani Baragwanath were first-time mothers.

Routine practices regarding education of mothers at the various facilities: Some facilities offered group education sessions every morning to the mothers, others only when staff had the time. At Coronation the sisters talked to mothers individually each morning when they examined all mothers and infants. At other facilities like South Rand MOU education was given primarily by the sister on discharge. The workload of staff had a direct impact on whether, or how much, education was given.

Quality of education given very variable: Education given varied on accuracy and comprehensiveness.

c) Quantitative data

- 5a. *Mothers offered help with breastfeeding*, and *5b. Mothers offered help with positioning and attachment* (Figure 3.6). With the exception of Bekkersdal (baby-friendly accredited) with 80% and Discoverers (non-baby-friendly accredited) with 50%, the score of facilities ranged between 2% and 38%. The worst was Chris Hani Baragwanath where only 2% of mothers said they were helped with breastfeeding, although 47% of the breastfeeding mothers there were first-time mothers.
- *5d. Staff demonstrating (or showing and describing) correct positioning and attachment*. (Figure 3.7) Not even in a baby-friendly accredited facility where all staff interviewed received *t*raining in breastfeeding and lactation management could a percentage higher than 50% be achieved. Results for baby-friendly accredited facilities ranged from 22% (South Rand) to 50%

(Bekkersdal), and for non-baby-friendly accredited facilities from 0% (Chris Hani Baragwanath) to 20% (Germiston). Despite this, the majority of staff (83–100%) claimed that they taught positioning and attachment to mothers.

- *5e. Mothers taught how to express milk (*as reported by the mothers). Scores ranged between 0-6% in non-baby-friendly accredited facilities, and 17-20% in baby-friendly accredited facilities, once again with the exception of Bekkersdal which scored 80%. (Figure 3.6)
- *5f. Staff describing an acceptable technique for milk expression*. (Figure 3.7) Even where all staff had been trained, not more than half the staff could describe an acceptable technique for milk expression. Results for baby-friendly accredited facilities ranged from 27% (Leratong) to 50% (Bekkersdal), and for non-baby-friendly accredited facilities from 0% (Discoverers) to 25% (Chris Hani Baragwanath).
- Total % Step 5: (Figure 3.5) None of the facilities "passed" this step. Results for baby-friendly accredited facilities ranged from 22% (Leratong) to 68% (Bekkersdal), and for non-baby-friendly accredited facilities from 6% (Chris Hani Baragwanath) to 21% (Discoverers).

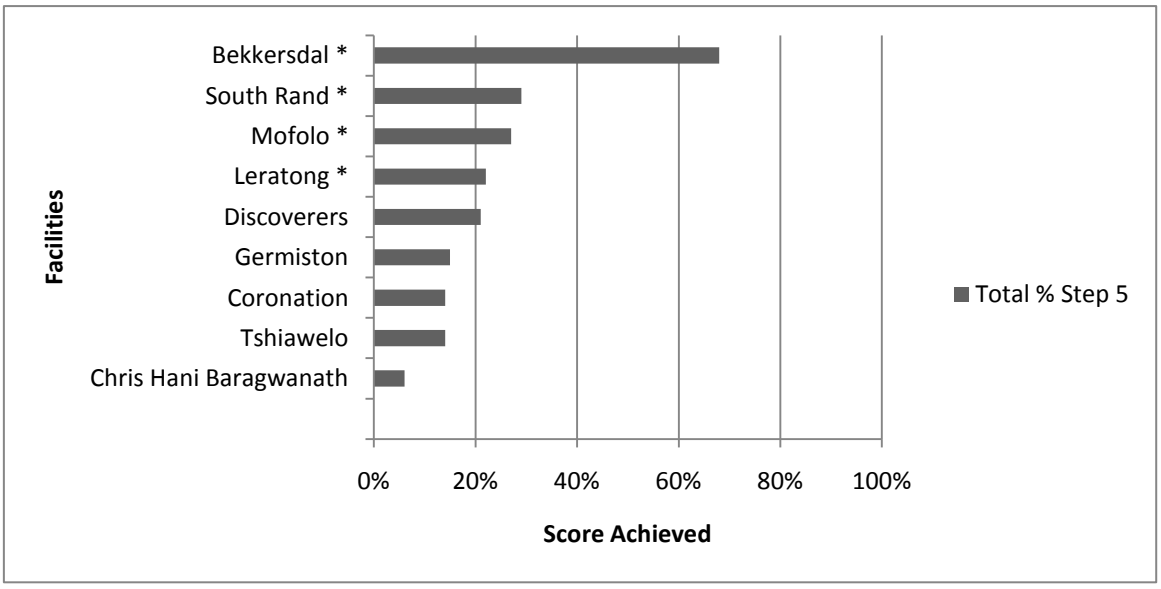

Figure 3.5 STEP 5: Show mothers how to breastfeed and how to maintain lactation, even if they should be separated from their infants: Total % Step 5

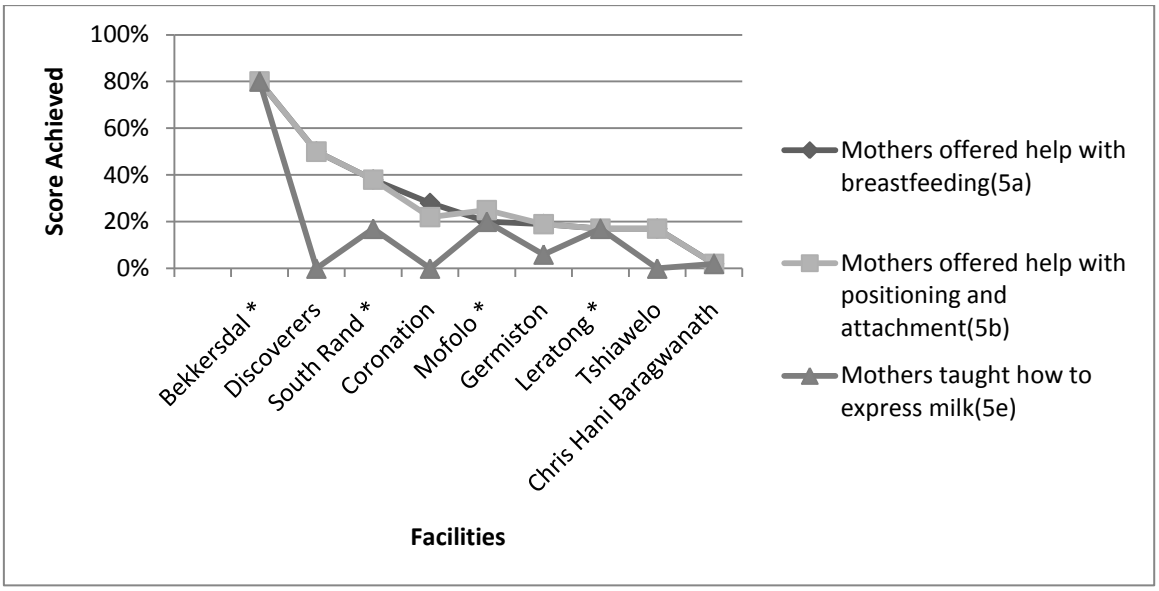

Figure 3.6 STEP 5: Show mothers how to breastfeed and how to maintain lactation, even if they should be separated from their infants: Mothers

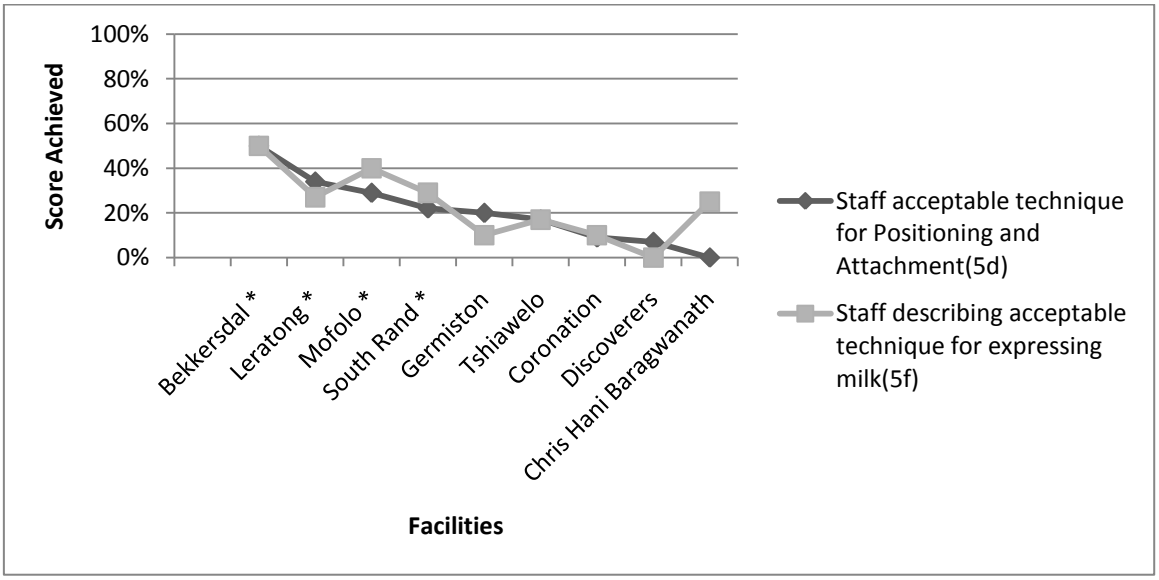

Figure 3.7 STEP 5: Show mothers how to breastfeed and how to maintain lactation, even if they should be separated from their infants: Staff

d) Qualitative data:

Themes that emerged from the qualitative data were mothers were not helped with breastfeeding unless they asked for help, mothers helped and advised each other, and the accuracy of the advice given by the nursing staff was variable.

Table 3.6 STEP 5: Qualitative data related to Step 5

Theme	Quote/ Comment	Source of data
Staff:		
Accuracy of advice given variable	"Must press on breast to help baby, baby has not got enough power. Suck 30 minutes to one hour till find milk. Baby must take nipple - areola is (too) big".	Germiston, nurse, < 2 months in maternity, no training. No on the job training. Does teach positioning and attachment to the mothers
No help unless mother expresses a problem	“We health care workers are to be blamed. We don’t supervise the ones that need help, especially the teenagers”.	Chris Hani Baragwanath, midwife, years in maternity, 18 hours training
	"Don't talk unless mom express a problem. Group session when there is time, not every day”.	Coronation, midwife, <2 months in maternity, no training
Mothers:		
Teenage mothers	"Going back to school in one month – to complete matric. Decided before not to breastfeed therefore. The sister here said no, I have a lot of milk, I must breastfeed him. “ Sister helped her with breastfeeding when she came in the day before –“ lift breast, put breast in his mouth"	Coronation. Mother in matric
	"Was difficult, was still drowsy, no help, but managed. Nipple very small (on the) left, didn't ask for help, baby struggled on that side".	Leratong. Mother 14 years old, Caesarean section
	"Sister said must put on breast. He drank, but I battled. Milk not coming out. Drinks 5 min, sleeps, drinks again after 10 min. Now sleeps (1 hour 20 min), he doesn't want to drink from the breast".	Coronation. Mother 16, still in school
Advice from other mothers	"Cried first time after eleven hours, then put to breast. This morning felt breast sore, so took formula. Another mother advised put baby on other (not sore) breast. (Baby) sleeping since 04h00 this morning the whole time" - nothing to drink at all (now nine hours later)	Chris Hani Baragwanath
Help from other mothers	"Firsts breastfeed, formula later - baby was crying and didn't want to breastfeed. Now drinks well. Another mother helped with breastfeeding".	Chris Hani Baragwanath
Managing with baby after Caesarian section	"Easy to breastfeed first time even though lying on side and even though had a lot of pain"	Leratong

Summary of other qualitative data: (Appendix I)

Accuracy and comprehensiveness of information varied from excellent to very poor, based on mothers' reports. Very little or no advice was given on expression of milk. Sometimes staff helped mothers, but at other times they only helped if mothers asked for help. Help and advice were also provided by other mothers.

3.1.6 Step 6: Give newborn infants no food or drink other than breast milk, unless medically indicated

a) Provide BFHI requirement

6a. Babies breastfeeding exclusively.

b) Factors that influence/d this

Formula supplementation: Ninety-five percent of mothers who chose to breastfeed, nevertheless received formula supplementation at Chris Hani Baragwanath. While some mothers said it was because they did not have enough milk, a substantial percentage of infants were given formula by the sister, (for example after a caesarean section when baby was taken to the mother only after 6 hours or the next day), or mothers were told by some staff to come and fetch formula, or a trolley with formula was set out and anyone who wanted could fetch formula. Not everywhere were infants just supplemented: at Coronation a mother asked for formula because she didn't think a baby 'got full' from breastfeeding, but staff refused, saying breast milk was adequate. She was shown how to put baby to the breast when the baby was first brought to her.

Number of times that a baby was supplemented with formula feeds: At Coronation, 86% of infants were supplemented more than once, while at Chris Hani Baragwanath the percentage was 71%.

Tap water given to newborns in the facility: While formula milk was mostly used for supplementation, two of the 165 mothers in the study gave water from the tap to their baby in the facility – one because the baby was hiccoughing (Discoverers), the other because she thought the baby was thirsty (Germiston).

Medically acceptable reasons for supplementation, as shown in Appendix B – IA Infant feeding record, are: premature baby, baby with severe hypoglycaemia, baby with inborn error of metabolism, baby with acute water loss, severe maternal illness, and mother on medication.

c) Quantitative data:

Total % for Step 6 = Percentage of infants breastfed exclusively. (Figure 3.8)

This is another area where baby-friendly accredited facilities did very well – all four scored 100%. The non-baby-friendly accredited MOUs also scored 100%. At Germiston 63%, and at Coronation 50% of infants were breastfed exclusively, but at Chris Hani Baragwanath 95% of mothers who chose to breastfeed got formula supplementation instead.

The knowledge of staff in baby-friendly accredited facilities on at least one cause of insufficient milk was better than their counterparts in non-baby-friendly accredited facilities, with baby-friendly accredited facilities scoring between 55% and 67%, and non-baby-friendly accredited facilities scoring between 14% (Discoverers MOU) and 33% (Tshiawelo MOU). (Figure 3.8)

However, baby-friendly accredited facilities did not perform better on the question of whether staff thought supplementation affected the success of breastfeeding. Baby-friendly accredited facilities scored between 50% (South Rand – the facility with lowest number of staff receiving 18 hours training in breastfeeding and lactation management) and 90% (Leratong), and non-baby-friendly accredited facilities scored between 25% (Coronation) and 50% (Germiston) for the hospitals, and 86% (Discoverers) to 100% (Tshiawelo) for the MOUs. (Figure 3.8)

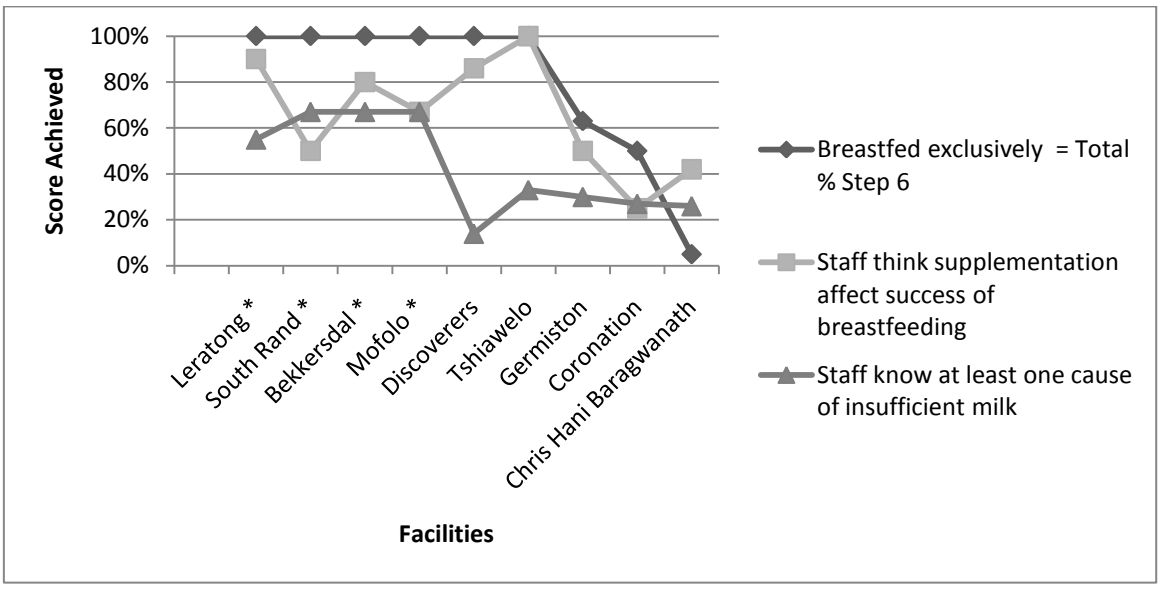

Figure 3.8 STEP 6: Give newborn infants no food or drink other than breast milk, unless medically indicated

d) Qualitative data:

Themes that emerged from the qualitative data were the incorrect perception of mothers that they did not have enough milk, mixed messages from the staff on infant feeding confused mothers, mothers planned to supplement breastfeeding with formula at home, and the perspectives of staff on formula supplementation changed once they attended the twenty hour training course on breastfeeding and lactation management.

Table 3.7 STEP 6: Qualitative data related to Step 6

Theme	Quote/ Comment	Source
Mothers		
No milk/not enough milk	"Decided at ANC to breastfeed, hasn't tried to put to breast yet. No milk. Fetch formula every time". (Almost 48 hours after birth).	Germiston, mother
Supplement because did not know colostrum was milk. Colostrum watery/ insufficient/ dirty	Mom says no milk. Researcher checked, there was colostrum. Mom: "is that milk? I had no idea".	Germiston, mother
	"I am not yet producing milk (second day after delivery) - it is still the watery substance in the breast so the baby is not getting full so I need to give hospital milk as well. If formula is not out yet and baby gets hungry and irritated I give breast. Most of the time I give both".	Chris Hani Baragwanath
	"I tried the formula but he doesn't want it so I only give breast. The milk is still the water, so let me give him the formula so that he can get food".	Chris Hani Baragwanath
Mixed messages from staff - mothers confused	"Staff give milk to every mother. If you breastfeed, you must tell them and not take milk. I was not sure whether to give breast or formula".	Chris Hani Baragwanath
	"We were confused because the other one said we must give the breast, then the other one said we must come and get the formula or she is going to go home and leave us like that. We were all confused. Most mothers went and took formula".	Chris Hani Baragwanath
	"Sister called everyone to come and get formula. That's why I was scared to breastfeed - I thought it might cause complications, maybe have to wait a day or two - I did not know".	Chris Hani Baragwanath
	"I gave formula because the sisters said we should give both, not because I did not think the milk was enough - maybe the formula is also good for the baby.	Chris Hani Baragwanath
Mothers' plan to supplement with formula at home	"Think I will give both breast and formula at home - just to make sure baby gets fed well.	Chris Hani Baragwanath
	"Going back to Mozambique soon. Think formula will help my baby grow better. Water from one month, think baby will get thirsty. Breastfeed because not enough money to buy enough formula". (Mozambique - tap water, no electricity).	Germiston Attended ANC Primrose
Start mixed feeding early even though months before returning to work	"Going to work in three months - worried baby will not want to drink formula then, so start now on both".	Chris Hani Baragwanath
	"Will be looking for a job after six months, therefore better to give formula and breast. Best for baby to have both".	Chris Hani Baragwanath
	"Will buy formula today. Heard from my mother that it is good for the baby".	Coronation
Staff advised to supplement with water	"Sister at clinic said water is very good, even for little babies".	Leratong
	"Told at ANC water is healthy for his body. Did not say water must be boiled first".	Germiston

Theme	Quote/ Comment	Source
Staff		
Do not believe enough milk firsts few days	Mom asked nurse whether she could breastfeed. Nurse advised breast and formula because "First time milk won't come out, so after breast try formula so baby can be full".	Chris Hani Baragwanath
Faulty perspective	"By second or third day expect breast to have something. If mom still always comes for cup, check HIV results. If negative, help with breastfeeding".	Chris Hani Baragwanath, midwife, 6-10 years in maternity, no training
Supplements don't affect the success of breastfeeding	Advice of a staff member to a mother: "Buy small tin of formula if milk not coming in - won't influence breastfeeding".	Discoverers, nurse, 3-5 years in maternity, 18 hour training
Giving of formula depend on individual	"Depends on staff on duty. Some just give formula, some don't give".	Chris Hani Baragwanath, midwife, 6-10 years in maternity, no training
	“If mom is dry, dry, dry (no milk) - encourage breastfeeding. Depends on individual - some would give formula, some would check first whether milk. Question of attitude, e.g. mom demands milk".	Coronation, midwife, 1-2 years in maternity, <18h training
Perception of the mother's attitude	"You tell them to (breast)feed, they think you are cruel – patients get cross "	Chris Hani Baragwanath, midwife, 6-10 years in maternity, no training
Give supplement without mother knowing	"If completely dry you will give a supplement, but without mom knowing".	Leratong, midwife, 1-2 years in maternity, no training
Give supplement, knowing it is not supposed to be done	"Supplement if mom is dry,dry,dry - baby's glucose might drop, baby just cries, baby and mom gets frustrated. We are not supposed to do this, but give just 25ml, put to breast anyway. Some HIV negative moms decide on formula, come with “storytjies”. We encourage breastfeeding, but cannot force her".	Discoverers, midwife, 6-10 years in maternity, 18 hour training
Influence of management	"Caesarean section infants stay in nursery for 24 hours. Matron now (in the past 1-2 months) says we must promote breastfeeding, take baby to mom, feed, bring baby back".	Germiston, nurse, 1-2 years in maternity, no training

Theme	Quote/ Comment	Source
Effect of training and experience on perception of insufficient milk	"If negative discourage formula feeding, encourage breastfeeding. In ten years never had to give a supplement".	Bekkersdal, nurse, 10 years in maternity, 72 hour training
	"Not come across a dry, dry, dry mommy, always at least a drop - enough for the baby. Mom must just eat and drink fluids".	Tshiawelo, midwife, > 20 years in maternity, 18h training
	"A question of training. Never happened after lactation management training. Before yes" (supplement for not enough milk).	Mofolo, midwife, 6-10 years in maternity, 18h training

Summary of other qualitative data: (Appendix I)

While occasionally infants received breast milk exclusively in the facility, many infants in non-baby-friendly accredited facilities received formula supplementation, sometimes without their mothers being aware of it. Two mothers gave water from the tap, while others planned to start giving water to their infants: some soon after being discharged from the facility, while other mothers thought they would wait a few months. Some mothers already had bottles and formula at home, or planned to buy soon. Staff at times advised mothers to give both breast and formula, or to give water or porridge. Training and experience influenced staff members' perception and management of "insufficient milk".

3.1.7 Step 7: Practise rooming-in - allow mothers and infants to remain together - 24 hours a day

a) BFHI requirement

7a. Babies rooming-in within one hour of birth

7b. Mothers and babies not separated for more than one hour

b) Factors that influence/d this

Rooming-in is defined as an infant brought to the mother within one hour of birth, and not separated from the mother for more than one hour once brought to the mother.

At all facilities mothers and infants were not separated for more than one hour once they were reunited, except for a valid reason. The problematic component for all non-baby-friendly accredited facilities was that infants were often not brought to their mothers within one hour of birth, as discussed in step 4.

c) Quantitative data

At Discoverers MOU, 83% of infants were brought to the mother within one hour, while at Germiston, Chris Hani Baragwanath and Coronation 63%, 19% and 17% of infants respectively were brought to the mother within one hour of birth.

At all facilities mothers and infants were not separated for more than one hour once they began staying together. Once again all baby-friendly accredited facilities scored 100%, as they did in step 4. Two non-accredited MOUs and Germiston Hospital also scored more than 80% and thus "passed" this step. Chris Hani Baragwanath and Coronation scored 60% and 59% respectively.

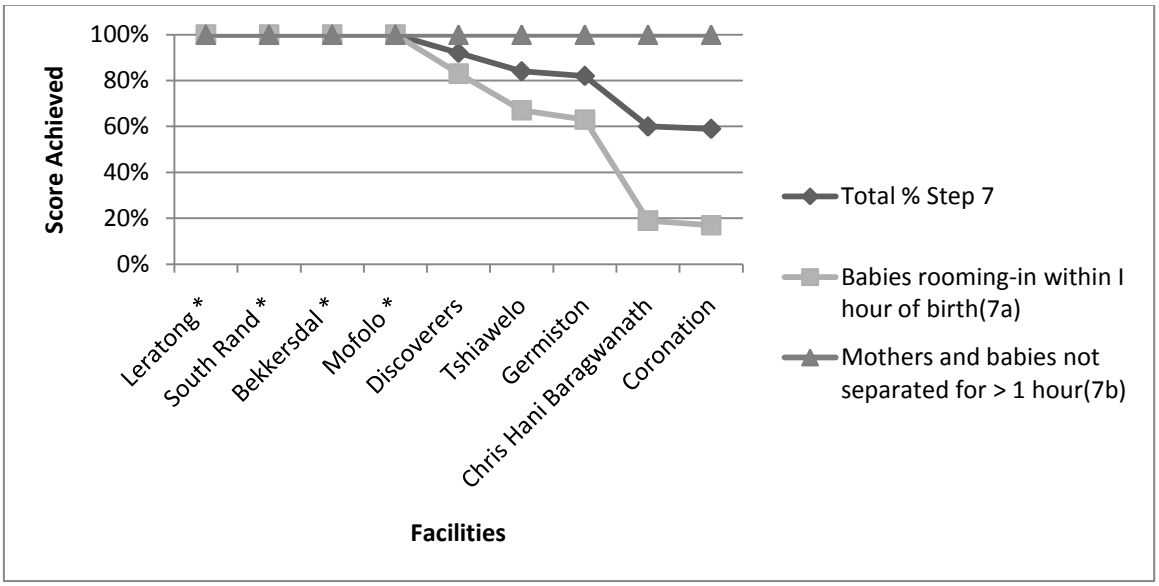

Figure 3.9 STEP 7: Practise rooming-in - allow mothers and infants to remain together - 24 hours a day

d) Qualitative data:

See Step 4

3.1.8 Step 8: Encourage breastfeeding on demand

a) Provide BFHI requirement

8b. Mothers advised to breastfeed on demand

b) Factors that influence/d this

Facility where advice was given: Mothers who reported receiving advice on when to feed their baby, mostly received this during their antenatal clinic visits and not in the facility where they gave birth. This distinction was not, however, made in the scoring of this step so the marks were awarded irrespective of where the mother received advice on the topic.

c) Quantitative data

- *8b.* ***Mothers advised to breastfeed on demand.*** This is also the total % for step 8.

  This was generally poorly done with only Mofolo passing the step with 80%. The other baby-friendly accredited facilities scored 60% (Bekkersdal), 43% (South Rand), with Leratong only obtaining 18%. The non-baby-friendly accredited facilities ranged from 0% (Tshiawelo) and 2% (Chris Hani Baragwanath) to 27% (Germiston).

- Mothers that received advice as to **when to feed the baby** ranged from 18% (Leratong) to 80% (Mofolo) for baby-friendly accredited facilities. Non-baby-friendly accredited facilities scores ranged from 0% (Tshiawelo) and 5% (Chris Hani Baragwanath) to 50% (Discoverers).

- If mothers were not the recipients of advice on when to feed a baby, only about two thirds knew that a **baby must be fed when hungry,** on average for all the hospitals. Responses from mothers varied between baby must drink hourly, to baby must drink three times per day (morning, noon and night), while 0-18% of mothers did not know.

- At the two biggest hospitals in the study, namely Chris Hani Baragwanath and Coronation, only just more than a third of the **staff thought a baby should breastfeed on demand**, while 60% of staff at Chris Hani Baragwanath and 37% of staff at Coronation wrongly believed that infants should breastfeed three hourly. At least 80% of staff at Germiston and at all the baby-friendly accredited facilities knew that infants should be breastfed on demand.

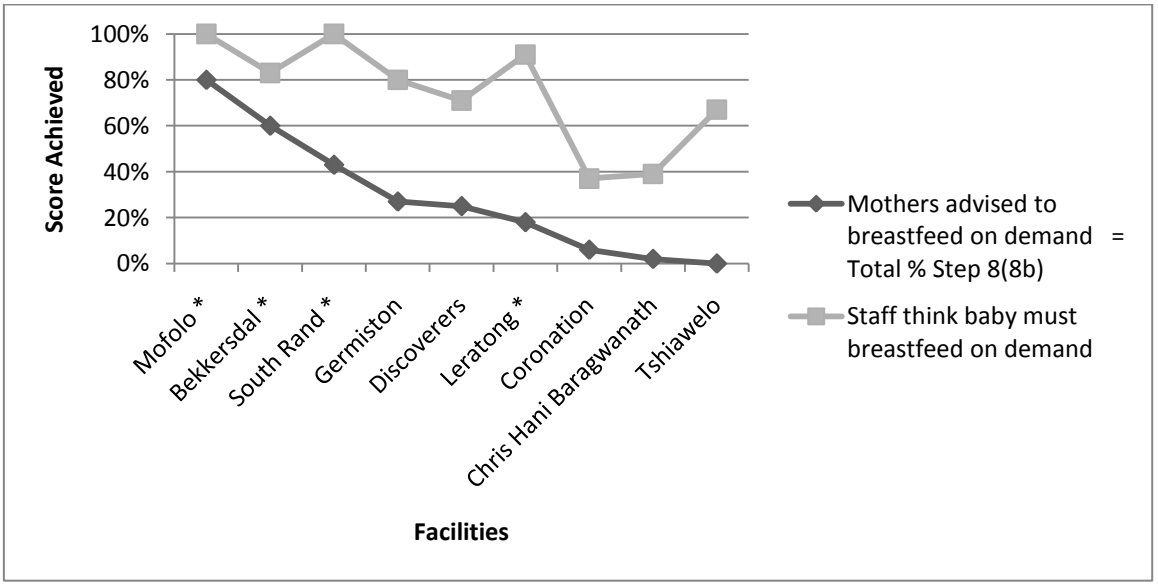

Figure 3.10 STEP 8: Encourage breastfeeding on demand: Mothers advised to breastfeed on demand

d) Qualitative data:

A theme that emerged from the qualitative data was the variance in the perceptions of mothers as well as nursing staff on how frequently, and for how long, a baby should be fed.

Table 3.8 STEP 8: Qualitative data related to Step 8

Theme	Quote/ Comment	Source of data
Staff:		
Advice given on frequency of feeds	"Advise breastfeeding two hourly because breast milk is light".	Coronation, midwife, 3-6 months in maternity, no training
	"They must (breast) feed three hourly, but these mothers give anytime. I ask them: *Mommy, why are you doing that?*"	Chris Hani Baragwanath, nurse, 20 years in maternity, no training
	"First day breastfeed as much as she can - every two hours. From second day, feed four hourly".	Bekkersdal, midwife, 6-12 months in maternity, 18 hour training
Advice given on how long to feed	"Told at ANC to feed five to ten minutes on each side – must not overfeed the baby".	Bekkersdal. Attended antenatal clinic in Carltonville
	"Must not over breastfeed the baby because his tummy is going to swell up and then he starts vomiting".	Chris Hani Baragwanath, nurse, 11-20 years in maternity, no training
	Group talk in the ward - sister said: "At least one hour on one breast. Next time on other breast".	Coronation
	Group talk - told "baby must drink every three hours for as long as he wants to drink"	Coronation
Mothers		
How frequently must baby drink?	"Don't know how frequently baby must breastfeed, think morning and afternoon"	Leratong
How long must baby drink?	"Don't know how long to feed - my mom will help me".	Coronation

3.1.9 Step 9: Give no artificial teats or pacifiers to breastfeeding infants

a) BFHI requirement

9a. Babies not given pacifiers

9b. Babies not fed with bottles

b) Factors that influence/d this

In the bigger hospitals no bottles were used. Infants fed formula were mostly fed with cups, or sometimes with a syringe. No pacifiers were used at any of the facilities. However, at three clinics (Mofolo, Bekkersdal and Discoverers) mothers were told at antenatal clinic to bring their own

bottles and teats if they were not going to breastfeed and wanted to use a bottle. This is contrary to Department of Health guidelines that state that supplements such as formula should be given with a cup, not with a bottle and teat. One HIV negative mother who decided to formula feed was told at an antenatal clinic to bring her own milk at the time of delivery (Discoverers).

c) Quantitative data

This is the only step where all facilities scored 100%.

3.1.10 Step 10: Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic

a) BFHI requirement

> *10a. Mothers report that they had been given advice on where to get help if they had problems with breastfeeding after leaving the facility*.
>
> *10c. Mothers receiving written information on where to get help*

b) Factors that influence/d this

Pamphlets: At Tshiawelo MOU pamphlets with general information were sometimes handed out, but staff reported that they ran out of them most of the time, and for them to photocopy these was very expensive, as well as of a poor quality. One mother mentioned that she got a pamphlet at Diepsloot antenatal clinic – the content of that pamphlet could not be established

Breastfeeding support groups: There were no confirmed existing breastfeeding support groups available. Some facilities used to have support groups, other facilities were (unsuccessfully) trying to start a support group.

c) Quantitative data

- *10a. Mothers report that they had been given advice on where to get help if they had problems with breastfeeding after leaving the facility*.

This was generally poorly done, even by baby-friendly hospitals, with a score of 0-33%, except for Mofolo with 60% and Bekkersdal with 80%.

If no advice was given, about one to two thirds of mothers reported they would go back to the hospital or clinic, while about one third reported they would give formula.

- *10c. Mothers receiving written information on where to get help* if they had problems with breastfeeding after leaving the facility.

No mothers in any of the facilities got any written information on any topic.

- Total % Step 10:

This step was very poorly done with even baby-friendly accredited facilities scoring between 0% and 40%. Non-baby-friendly accredited facilities scored between 0% and 13%. Thus, none of the facilities "passed" step 10.

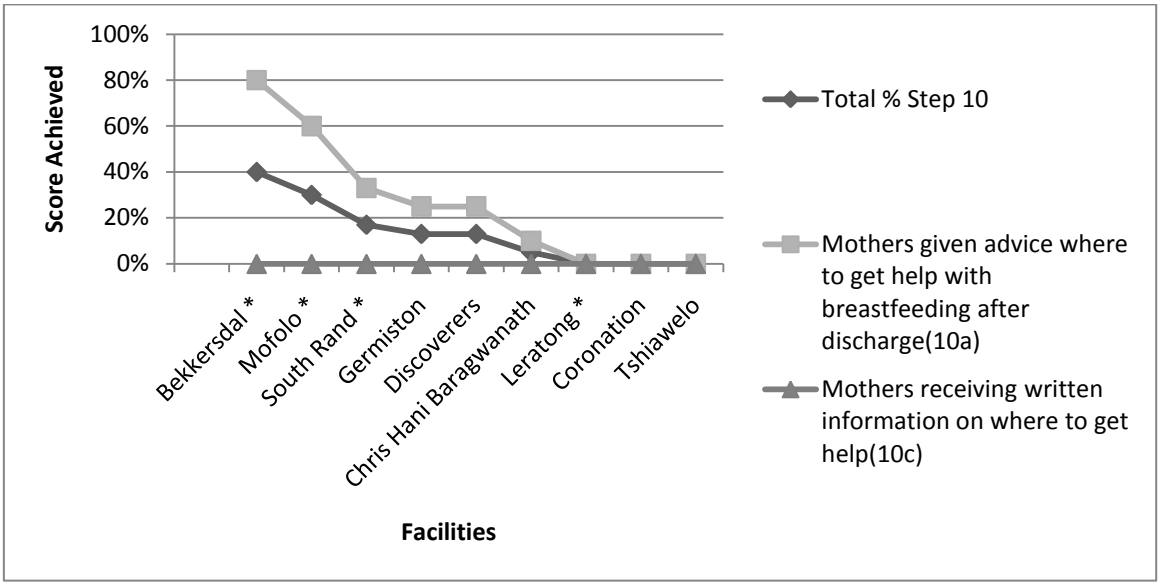

Figure 3.11 STEP 10: Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic: Data on mothers, and total % for step 10

d) Qualitative data:

Themes that emerged from the qualitative data were that mothers were often not counselled about what to do when feeding problems were encountered after discharge from the facility, and that mothers were unprepared to face (breast) feeding problems, thinking they would formula feed their babies if they encountered problems.

Table 3.9 STEP 10: Qualitative data related to Step 10

Theme	Quote/ Comment	Source of data
Mothers		
What mothers think they will do if they experience problems with (breast)feeding after discharge	"If after discharge I have problems with (breast) feeding, I have no idea what I will do. I never thought that there will be a problem".	Chris Hani Baragwanath
	I will go to the local clinic and use a bottle. Have got a bottle and Nan at home - bought for just in case".	Leratong
	"If problems breastfeeding, I will give her Cerelac or formula".	Leratong

Theme	Quote/ Comment	Source of data
from the facility	"I wouldn't force her to take breast milk if she doesn't want it. I will buy her formula".	Leratong
	"Think I will force him - put breast in his mouth".	Leratong
	"I would express milk and give with a cup".	Leratong
	"I should come back and ask them. I have got a follow-up appointment on day three".	Mofolo
	"That is my fear. I fear I will battle with him to drink and then he is hungry."	Leratong
Staff		
Frequency of problems with breastfeeding after discharge	"Some moms, and all new moms, get referred to a breastfeeding support group. First-time mothers always have problems. Not told to everyone, but some come back".	Bekkersdal, nurse, 6-10 years in maternity,72 hours training
Frequency of advice given	"Not necessarily always counselling on feeding before discharge - depend on the individual midwife".	Bekkersdal, midwife, 1-2 years in maternity, 80 hours training
Advice given	(The mothers must) "try and buy formula and mix it correctly".	Chris Hani Baragwanath, nurse, >20 years in maternity, no training
	"Normally ask them to phone back if any problems at home. If transport available they come back. 25% mothers mix-feed very early. Aunties/granny/mother buy small tin of milk, mostly Nan, at spaza shop. Moms come back on day three with engorged breasts".	Discoverers, midwife, 11-20 years in maternity, 18 hour training
Breastfeeding support groups	"Used to have volunteers coming to support moms with breastfeeding, not coming anymore. Only keep moms 12 hours, then they go to clinic".	Leratong, midwife, 3-5 years in maternity, 18 hour training
	"Breastfeeding support groups at clinics, moms to go there if problems. Used to have support group at ANC, moms stopped coming - no money. Counsellors and sisters not paid".	Leratong, sister in charge ANC, 6-10 years in maternity, 18 hour training

Summary of other qualitative data: (Appendix I)

Where advice was given, the advice from hospitals was mostly to follow-up at the clinic if any problems, except South Rand where some mothers were advised to come back to the antenatal clinic. MOUs advised mothers to come back or phone if any problems. MOUs, as well as Germiston Hospital followed mothers up by telling them to come back on day three for a check-up. The same practice did not apply to bigger facilities where mothers were supposed to go to the local clinic for any problems encountered.

3.1.11 Summary of facilities that "pass" the 10 steps

A score of 80% or more is needed to "pass" each step. A facility needs to "pass" all ten steps in order to be accredited baby-friendly status. None of the facilities passed all ten steps. Thus, none of the baby-friendly certified institutions could be deemed to be baby-friendly currently.

Table 3.10 Summary of the 10 Steps - compliance at all institutions

Step	Chris Hani Baragwanath	Leratong *	Coronation	South Rand *	Germiston	Mofolo *	Tshiawelo	Bekkersdal *	Discove-rers
1. Breastfeeding policy	X	✓	X	✓	X	X	X	✓	X
2. Training of staff	X	X	X	X	X	X	X	X	X
3. Antenatal clinic - benefits and management of breastfeeding	X	✓	X	X	X	✓	X	X	X
4. Initiate breastfeeding within 1 hour	X	✓	X	✓	X	✓	X	✓	X
5. Show breastfeeding and maintain lactation	X	X	X	X	X	X	X	X	X
6. Breast milk only	X	✓	X	✓	X	✓	✓	✓	✓
7. Allow rooming-in	X	✓	X	✓	✓	✓	✓	✓	✓
8. Breastfeeding on demand encouraged	X	X	X	X	X	✓	X	X	X
9. No pacifiers	✓	✓	✓	✓	✓	✓	✓	✓	✓
10. Breastfeeding support	X	X	X	X	X	X	X	X	X

3.1.12 Infant feeding in the context of HIV

An HIV component was included in the study to evaluate the influence of HIV on the feeding choices of mothers. Forty-seven of the 163 mothers interviewed (29%) were HIV positive. The HIV prevalence in the study sample ranged between 17-37% for the various facilities, which correlates with national prevalence rates. The number of mothers interviewed at the MOUs were limited, with only 1-2 out of the 6 mothers interviewed per MOU being HIV positive.

HIV positive mothers that claimed they received feeding counselling at antenatal clinic: At Chris Hani Baragwanath, South Rand, Germiston and Mofolo, 100% of the HIV positive mothers claimed they received feeding counselling at the antenatal clinic. (Appendix J). The percentage for Coronation and Leratong was 91% and 71% respectively. At Tshiawelo and Discoverers MOU the single positive mother did not receive feeding counselling, and at Bekkersdal only one of the two mothers was counselled. Some mothers reported that the counsellor did not say anything about feeding options, or simply indicated that the mother could choose either breast or formula feed, or did not mention anything about feeding at all. Counselling about feeding options was generally done by the counsellors after giving the HIV results to mothers, and by the dieticians.

Mothers told to give formula without given a feeding choice: At Coronation and Chris Hani Baragwanath, 50% and 44% of mothers respectively claimed they were not given a feeding choice, but all mothers at the other facilities claimed it was their choice whether they wanted to formula feed or breastfeed their infants.

Quality of the feeding counselling: The quality of the counselling appeared to be of poor quality. On one side of the spectrum HIV positive mothers were counselled to formula feed without taking into account whether that was an option (according to the AFASS criteria). One mother at Chris Hani Baragwanath asked whether she could breastfeed. She was told “no” because it might infect the baby. She wanted to breastfeed because “I can’t take the tin to day-care – they will wonder whether I am HIV positive”. Some mothers did not know how much or for how long they were going to get free formula. On the other side of the spectrum, (more in association with baby-friendly accredited facilities), mothers were counselled to breastfeed, sometimes also without being given all the necessary information, for example on HIV transmission or the availability of free formula for 6 months. Feeding advice was at times inadequate and inaccurate, for example mothers were told that with breastfeeding a baby would not get sick, never lose weight or have diarrhoea.

Mixed feeding of HIV positive mothers in the facilities: Some mothers decided on exclusively breastfeeding, but their baby got formula from the staff, such as a mother at Germiston who had a Caesarean section and whose baby was taken to the nursery till the next day. On the other hand an HIV positive mother in South Rand decided to formula feed, but was very dizzy after post-partum haemorrhage (she required more than one unit of blood). Staff had her put the baby to the breast, and only after seeing that she had no milk did they recognise that she had chosen to formula feed.

When talking about feeding options, few staff referred to AFASS criteria. (Appendix K) It must be taken into account that the staff interviewed were staff in the ward that did not generally do the primary counselling about feeding options. AFASS criteria refer to a set of criteria used to determine whether a mother can safely formula feed, and includes evaluation of whether replacement feeding is **A**ffordable, **F**easible, **A**cceptable, **S**ustainable and **S**afe. (Appendix K) One mother at Coronation claimed to have received a pamphlet stating her right to choose a feeding option based on her situation, e.g. water supply.

Mothers told how to prepare formula feeds and/or clean utensils at any given time: The majority of facilities scored between 20 and 50%, with Mofolo 100% (one mother), and 0% at Bekkersdal and Discoverers (one mother each). The majority of mothers were not told how to prepare the formula feeds or how to clean the utensils at any given time before discharge. Some of the mothers interviewed were still to see the dietician and get the information just prior to going home, but other mothers had already got their milk and were only awaiting transport home. Some mothers said that they would get that information when they came for milk three days after discharge. Some mothers knew how to prepare the formula and clean the utensils, others had mothers or sisters who would show them, some said they would read the instructions on the tin, while another group did not know. One mother at Coronation who could have gone home already was worried and was waiting to ask the researcher questions such as how frequently to feed the baby, how to clean the utensils and if she could use a flask. She said she would read the instructions on the tin. One mother stated that she saw on the tin that she had to feed the baby four times per day, but she was not sure what to do during the night!

Cup feeding: Most mothers planned to offer formula with a bottle and teat instead of using a cup. Many were never informed about the possibility of cup feeding, a practice encouraged by the South African Department of Health and practiced in facilities.

Qualitative data: HIV (Appendix I)

Themes that emerged from the qualitative data were incorrect knowledge of staff on HIV transmission, incorrect advice given on breast- and formula feeding, confusion of mothers and staff around best feeding options in the context of HIV, and mothers making feeding choices without considering AFASS criteria.

Table 3.11 Infant feeding in the context of HIV: Qualitative data

Theme	Quote/ Comment	Source
Mothers (HIV positive)		
Advised to breastfeed	Told by counsellor: "If HIV positive - exclusive breastfeeding for 4 months, then stop breastfeeding, give food and formula. If HIV negative - exclusive breastfeeding four months, then milk. Water from birth".	Leratong
Advice on formula feeding	"If HIV positive mustn't breastfeed, must give formula exclusively, no water or anything else. Free formula - don't know how long".	Leratong
Mothers sometimes choose formula without considering AFASS criteria	"My mother will help me. No tap close by. Must wait for (my) brother to fetch water. No electricity. Will use gas, flask". (Mother formula feeding)	Coronation
	"Disclosed only to mother. Boyfriend asked why formula - said problem breast, no milk. Stay in shack. First baby died at 3 months - diarrhoea - was breastfed". (Mother formula feeding)	Chris Hani Baragwanath
	"My boyfriend says I must give breast. He knows my HIV status, but is refusing to accept formula, says must give both".	Coronation
	"Can't afford formula, stay in squatter camp with sister, no electricity, water outside house. Not disclosed to mother or sister - afraid. First baby. Don't know to mix (prepare the feeds) or clean" (the utensils).	Germiston
Mothers mixed feeding practices in spite of counselling	The counsellor said it was her choice whether to breastfeed or formula feed. "I choose breastfeed 4 months, then formula 2 months. Going back to work in 1 month, will then give breast at night, Infacare during day. I asked about mixed feeding. Was told about exclusive breastfeeding - no water, but not told why must not give breast and formula together. Chose breastfeed because counsellor said not dangerous to breastfeed baby, transmission low".	Leratong
Consistency of Pellargon formula questioned	Can't really afford to buy milk, but perhaps buy Nan, this milk is funny".	Coronation
	Mom asked counsellor whether she could buy formula herself if she got money. Mother said: "I don't know what is in this milk. Nan is smooth, this one is different. Her daddy will buy it" (Nan).	Coronation

Theme	Quote/ Comment	Source
Other sources of information on HIV and infant feeding	"No one told me about feeding options. I think with breastfeed maybe they drink the blood. They can get the dark blood, then get HIV. Know from school, TV, Drum, Sunday Daily".	Discoverers
Staff		
Influence of group on mother's feeding choice	"Depends on group in ANC - group influence - group form a rapport, e.g. group of three, all three in the group will make the same decision.	Discoverers, midwife, 6-10 years in maternity, 18 hour training
Mothers confused	"Most moms are quite confused when come here. We have a tough time here. One moment breastfeeding, few minutes later formula feeding".	Leratong
Mothers leave formula or AZT syrup behind	"Others refuse to take milk because they are scared. Hide milk by the toilets or leave on bench outside. Don't say they are scared to take the milk. Most stay in a shack like Diepsloot - no running water or electricity inside".	Coronation, midwife, < 2 months in maternity, no training
	"Moms realize the problem only after delivery - that they didn't disclose, then don't want to take the milk. Dumped AZT syrup somewhere outside".	Leratong, midwife, 11-20 years in maternity, 18h training
	"Mom came back with tins - boyfriend said no, she must breastfeed, so she brought the tins back".	Discoverers, nurse, 3-5 years in maternity, 18 hour training
Staff are confused	"Either exclusive breastfeeding for 6 months (no water or formula), or exclusive formula (no water no nothing)".	Coronation, nurse, < 2 months in maternity, no training
	"Exclusive breastfeeding for 4 months before. Did advanced midwifery last year, came back this year, now told exclusive breastfeeding 6 months".	Leratong, midwife, sister in charge of an unit, 18 hour training
	"We are also very confused (about) HIV and feeding options. Can safely breastfeed till first tooth (about 3 months), then bite nipple, blood, can infect".	Germiston, nurse, 1-2 years in maternity, no training
Perceptions on HIV transmission	"Dangerous for teething baby to breastfeed - virus enter via gums. Start teething 4 months".	Coronation, midwife, < 2 months in maternity, no training

Theme	Quote/ Comment	Source
	"If breastfeed: breastfeed 4 months, then start teething, bite nipple - blood come out. No HIV transmission if < 4 months and no blood".	Leratong, midwife, sister in charge of an unit, 18 hour training
	"If exclusive breastfeeding, won't transmit HIV. If mix feed and not use condoms when breastfeed, will infect babies".	Tshiawelo, midwife, 6-12 months in maternity, no training
	"Taught about AFASS in twenty hour course (three weeks ago). Virus transmitted if cracked nipples. If no sores mouth or no cracked nipples, no transmission".	Bekkersdal, midwife, < 2 months in maternity, 18 hour training
Advice on mixing / preparing feeds; cleaning utensils	"Most of telling about mixing, cleaning is done at clinic. Some we do when we give out the milk. Depends on individual. Give mom a return date. No time to go into detail (mix/preparing, cleaning utensils). Suppose to happen at ANC from counsellors".	Coronation, midwife, < 2 months in maternity, no training
	"How to mix feeds, how to clean bottles often does not get taught".	Bekkersdal, midwife, 1-2 years in maternity, 80 hour training
Stigma	"In squatter camp stigma might be less, because numbers are so great, such a majority. Become a norm - it is okay. Those that refuse (formula) are from formal houses. Most of the time there is pressure from the community to breastfeed. Mother did not disclose - boyfriend does not know".	Coronation, midwife, < 2 months in maternity, no training
	"Informal settlement, most want formula; most from location do not want formula".	Bekkersdal, midwife, 6-12 months in maternity, 18 hour training
Mothers afraid to formula feed	"Most HIV positive mothers choose breastfeeding. Perhaps four in a week choose formula. Young moms all choose breastfeeding. Most of our moms don't disclose because afraid. A lot of 14 year olds. So mother decides on breastfeeding because did not disclose and are afraid about taking milk in front of others. Older mothers more mature, not worried about taking milk in front of others, choose formula".	Leratong, midwife, 3-6 months in maternity, no training

3.2 Comparison per individual institution for all Ten steps

All Ten steps are shown below in graphic form for each institution, first for the five hospitals, and then for the four Maternal Obstetric Units. Next, a summary is offered in graphic form with all steps for all facilities. The performance of each individual facility, with strong and weak areas, can then be seen at a glance. All steps with a score of 80% or more are deemed to have been "passed". A facility is required to "pass" all 10 steps in order to be accredited Baby-friendly.

All facilities scored 100% for step 9 with no pacifiers or bottles given to infants. For all facilities except Mofolo, steps 5, 8, and 10 were the most problematic. Step 5, 8 and 10 deal with helping, supporting and advising mothers on breastfeeding, with step 10 focusing more on support after discharge from the facility.

Data is presented first for the single tertiary hospital, then for the secondary and district hospitals, and lastly for the MOUs where the two facilities in Soweto, and the two facilities in the West Rand are presented together.

3.2.1 Hospitals:

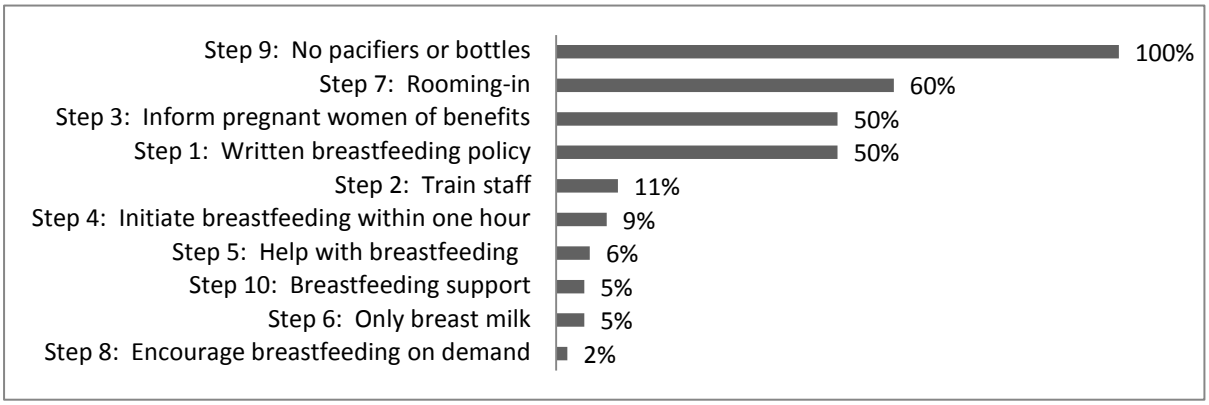

Figure 3.12 Chris Hani Baragwanath Hospital (tertiary hospital) – score for each step

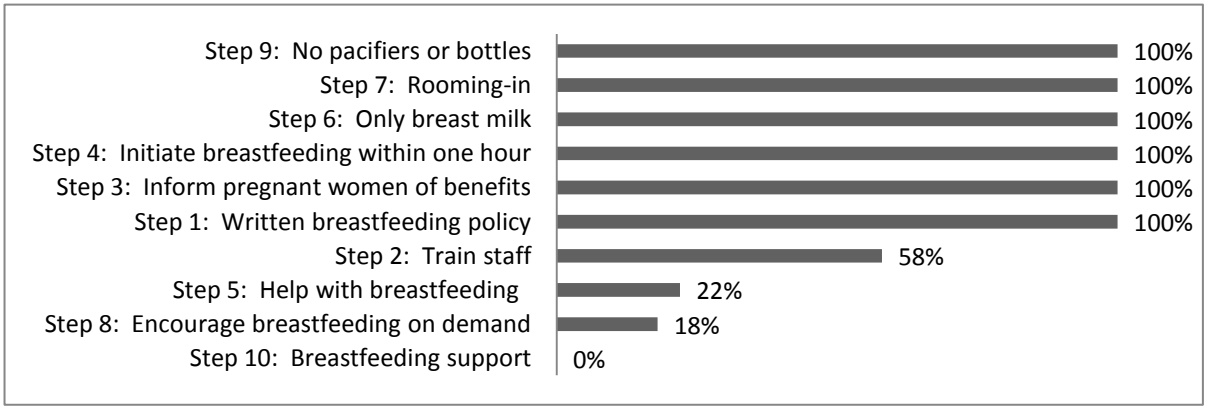

Figure 3.13 Leratong Hospital * (secondary hospital) – score for each step

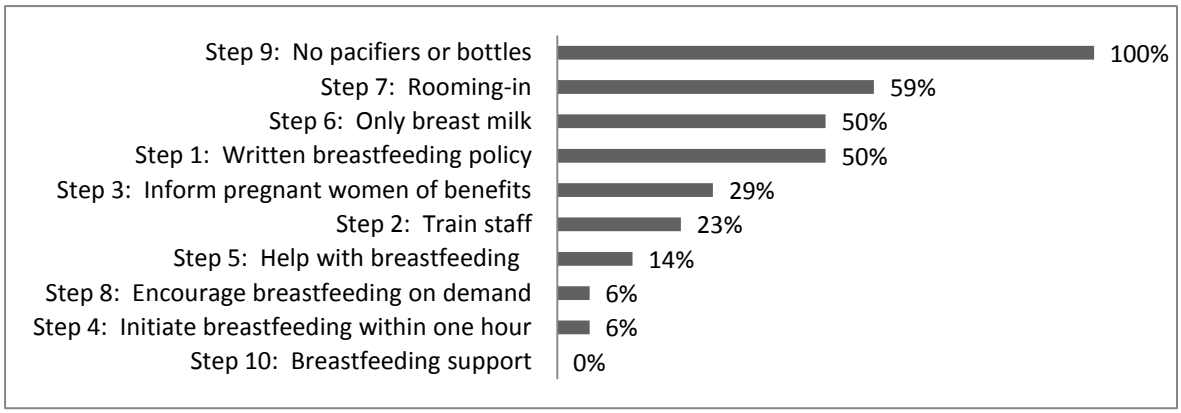

Figure 3.14 Coronation Hospital (secondary hospital) – score for each step

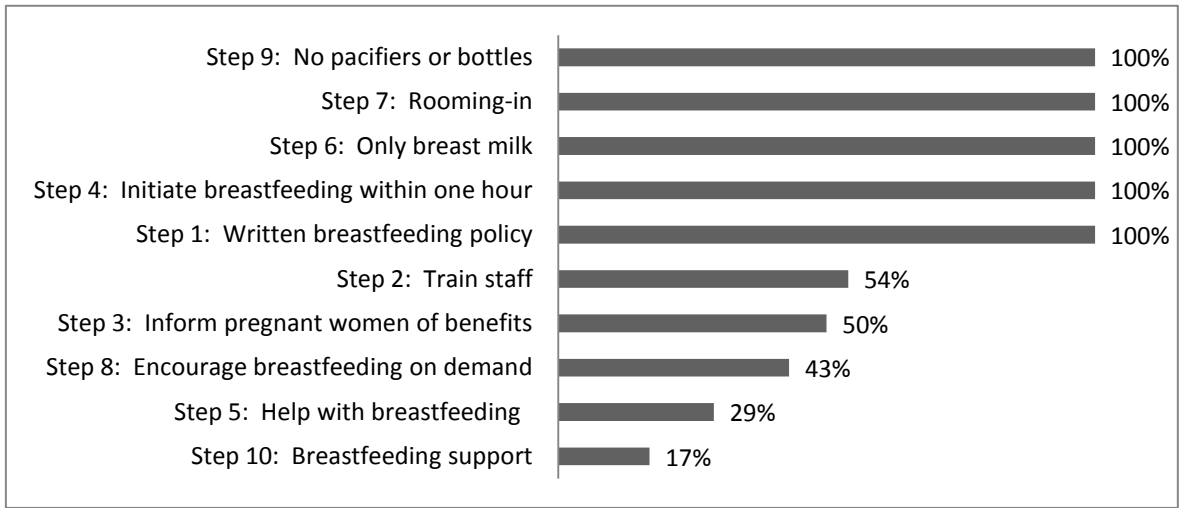

Figure 3.15 South Rand Hospital * (district hospital) – score for each step

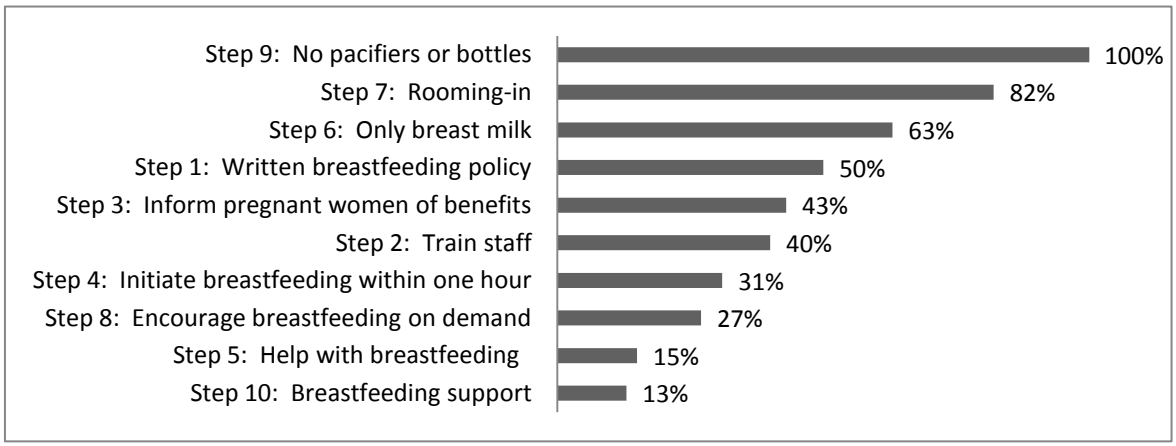

Figure 3.16 Germiston Hospital (district hospital) – score for each step

3.2.2 Midwife Obstetric Units

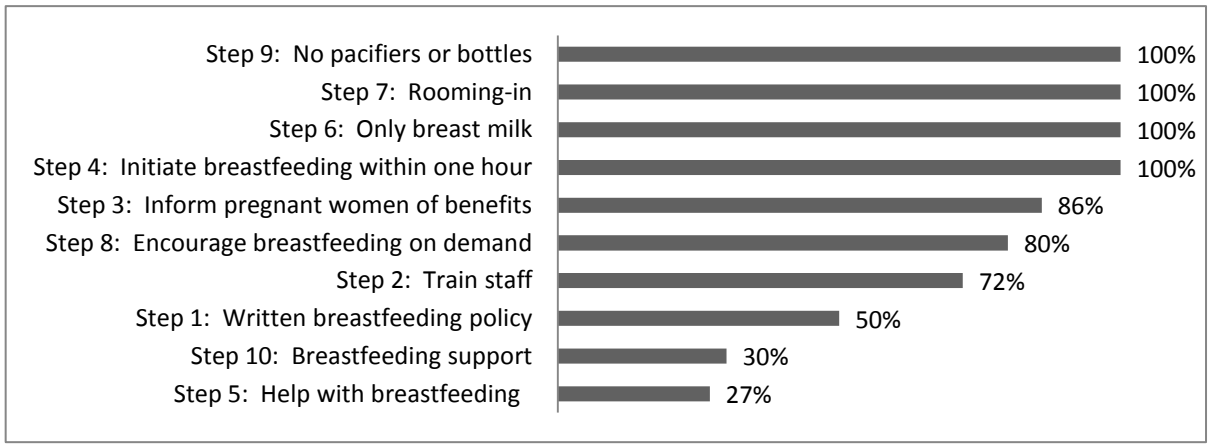

Figure 3.17 Mofolo * (MOU, Soweto) – score for each step

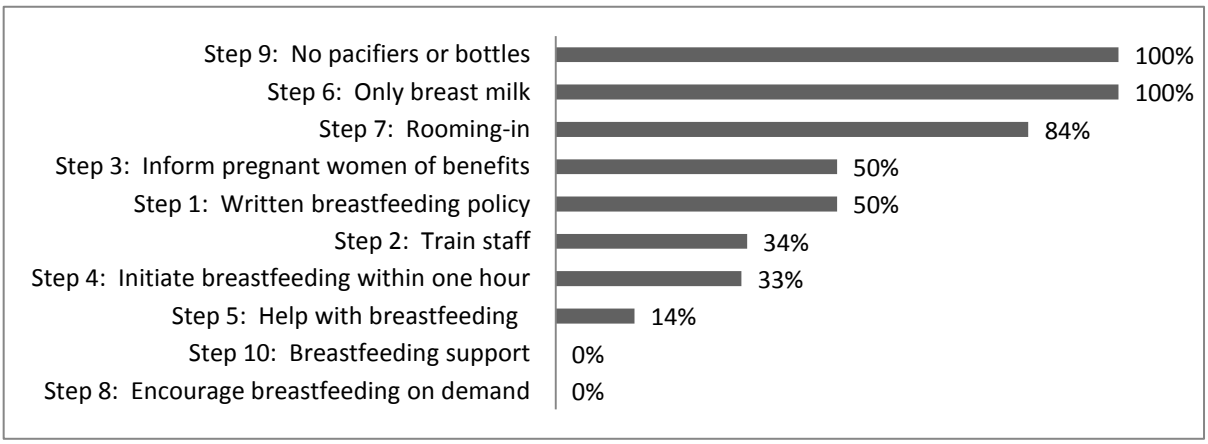

Figure 3.18 Tshiawelo (MOU, Soweto) – score for each step

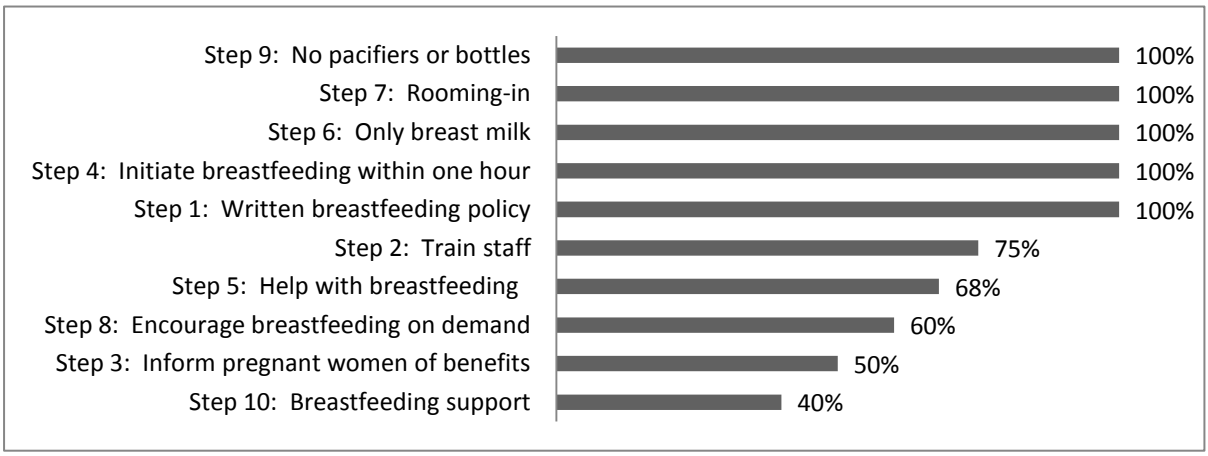

Figure 3.19 Bekkersdal * (MOU, West Rand) – score for each step

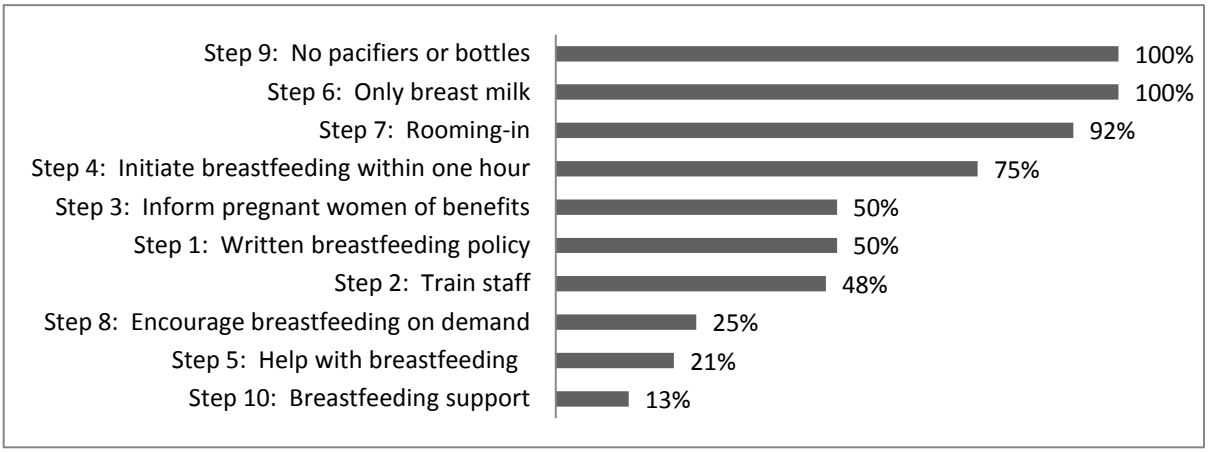

Figure 3.20 Discoverers (MOU, West Rand) – score for each step

3.2.3 Summary

Evaluated on the basis of the total score (for all steps), the two baby-friendly accredited MOUs performed best, followed by the two baby-friendly accredited hospitals, with the five non-baby-friendly accredited facilities fairing worst.

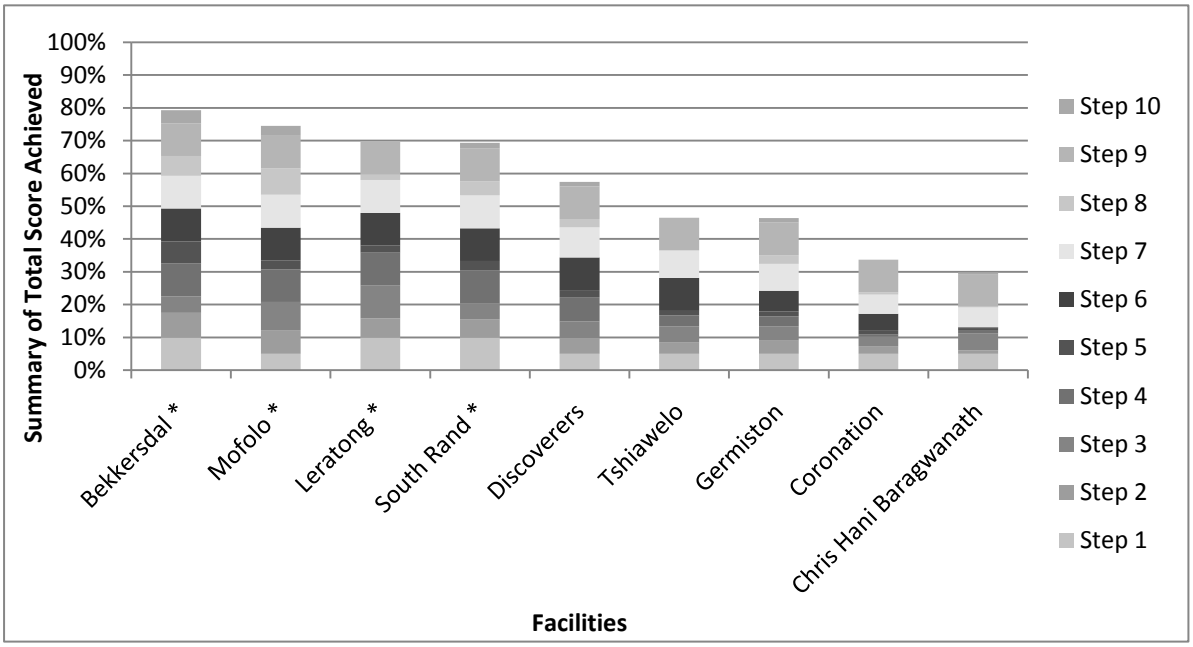

Figure 3.21 Summary of all steps in all facilities.

3.3 Comparison between Baby-Friendly Hospital Initiative accredited and non-accredited institutions

There was a significant difference between baby-friendly and non-baby-friendly accredited facilities for step 7 (rooming-in). The difference for step 2 (training) and 4 (initiating breastfeeding within one hour) was highly significant. For the rest of the steps this method of analysis (for continuous data) did not reveal any statistically significant differences (Table 3.12).

Table 3.12 Comparison of baby-friendly accredited and non-baby-friendly accredited facilities

Step	Baby-friendly accredited facilities		Non-baby-friendly accredited facilities		p value (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
	Mean	Standard deviation	Mean	Standard deviation			Lower	Upper
1	87.5	25.0	50.0	0	0.05	37.5	-2.3	77.3
2	64.8	10.3	31.2	14.5	**0.005**	33.6	13.9	53.2
3	71.5	25.5	44.4	9.1	0.12	27.1	-11.6	65.8
4	100	0	30.8	27.6	**0.005**	69.2	34.9	103.5
5	36.5	21.2	14.0	5.3	0.12	22.5	-10.4	55.4
6	100	0	63.6	39.6	0.11	36.4	-12.8	85.6
7	100	0	75.4	15.0	**0.02**	24.6	6.0	43.2
8	50.3	26.3	12.0	13.0	0.05	38.3	-1.0	77.5
9	100	0	100	0				
10	21.8	17.3	6.2	6.5	0.17	15.6	-10.7	41.8

There was a statistically significant difference between baby-friendly- and non-baby-friendly accredited facilities for steps 2 (training), 4 (initiate breastfeeding within one hour), and 7 (rooming-in). There was a borderline significance for steps 1 (breastfeeding policy), and 8 (breastfeeding on demand), with a trend towards significance for steps 3 (educating pregnant women on breastfeeding), 5 (help with breastfeeding), and 6 (exclusive breastfeeding). The MOUs also performed well in steps 6 (exclusive breastfeeding) and 7 (rooming-in).

There was a statistically significant difference between the number of baby-friendly, and non-baby-friendly accredited facilities that passed each step for the following two steps:

For step 1 (written breastfeeding policy), three baby-friendly accredited passed the step, with no non-baby-friendly accredited passing the step.

For step 4 (initiate breastfeeding within one hour), four baby-friendly accredited facilities passed the step, with none of the non-baby-friendly accredited facilities passing the step (Table 3.13).

Table 3.13 A statistical comparison of the number of baby-friendly, and non-baby-friendly accredited facilities, “passing” each step

Step	Number of baby-friendly accredited facilities "passing" each step N=4	Number of non-baby-friendly accredited facilities "passing" each step N= 5	2-Tailed P-value (Fisher exact test)
1	3	0	**0.048**
2	0	0	-
3	2	0	0.17
4	4	0	**0.008**
5	0	0	-
6	4	2	0.17
7	4	3	0.44
8	1	0	0.44
9	4	5	-
10	0	0	-

4 DISCUSSION

The study identified that the Baby-Friendly Hospital Initiative's Ten Steps to Successful Breastfeeding were not sustained, at least to the accreditation level, at the four Baby-Friendly accredited facilities investigated. Performance at the non-accredited hospitals was generally rated to be poor for most of the steps.

The maintenance of some practices at accredited facilities appeared to be more sustainable over time. Initiating breastfeeding within one hour (step 4), exclusive breastfeeding (step 6), and mothers and infants not separated for more than one hour since birth (step 7), were "protected" by a change in facility practice. The steps that required advice and support from nursing staff, were particularly poorly done in the majority of facilities, including baby-friendly accredited facilities.

The problem with this comparison between baby-friendly and non-baby-friendly accredited facilities, is that the different levels of care are grouped together, whilst practices in hospitals and MOUs differ a lot. The MOUs also performed well in steps 6 (exclusive breastfeeding) and 7 (rooming-in). Unfortunately, the number of facilities was too small to do a subset analysis of differences between different levels of care.

4.1 Training of staff

4.1.1 Percentage of staff trained in breastfeeding and lactation management:

At baby-friendly accredited facilities, the majority of staff in postnatal wards were sent for training in preparation for baby-friendly accreditation. Over time staff rotated out of the maternity section, so the proportion of trained staff dropped. Just before a facility is due for re-accreditation, staff tend to be sent again for training. In spite of this reduction in the number of trained staff, as well as the fact that the two baby-friendly accredited hospitals could not "pass" step 2 on training of health care staff in breastfeeding and lactation management skills, the statistical difference between baby-friendly accredited and non-baby-friendly accredited facilities on step 2 was still highly significant.

4.1.2 Training, but not implementing

An **unwillingness to learn** or attend breastfeeding meetings was noted in some settings. Even when staff had been trained, **retention of knowledge** was poor. Disappointingly, less than half of the staff had correct breastfeeding knowledge even in facilities where all the staff had been trained.

Staff members who had worked in a unit for a long time were particularly **reluctant to change**, and new or junior staff members indicated that they found it **difficult to implement things they learnt**, as was reported in the qualitative data on step 2. Reddin et al. in Australia reported that new graduates felt disempowered to voice their opinions and that they found the discrepancy between what they were taught and what they experienced in practice disconcerting.(38)

4.1.3 Beliefs / knowledge of staff on breastfeeding

One would assume that staff working with new mothers would have acquired some **basic knowledge** around breastfeeding, for example that a baby should be breastfed on demand rather than three hourly, merely by being based in a "good" (academic) unit. In reality this "knowledge" is influenced by the existing knowledge and practises in the facility, and can often be wrong. For example, at two of the academic non-baby-friendly accredited facilities only a third of staff knew that infants should be breastfed on demand.

Knowledge and practices get outdated, and need regular updating. When this is omitted, staff get confused. Guidelines and protocols change without all staff members being aware of the changes. For example, a number of staff members were told about exclusively breastfeeding infants for four months, and later heard from others that it is now expected to be for six months. This confused many, particularly if they were uninformed about the scientific basis for the shift. The perceptions of staff about HIV transmission in breast milk also varied and were not always accurate, and occasionally grossly inaccurate. A common misconception was that breast milk transmission mainly occurred through blood from an infant biting his/her mother's nipple. One consequence was to recommend termination of breastfeeding once the first tooth appeared. Reddin et al. concluded that even in baby-friendly accredited hospitals, out of date practices impact on the adherence to the Ten steps to successful breastfeeding.(38)

4.1.4 Training of all applicable staff

All staff that counsel and help a mother with breastfeeding require suitable and updated training. This applies to all categories of staff. Arora et al. argue that though doctors require less extensive training, they still need information in order to provide effective breastfeeding support.(41)

4.2 Counselling / education of the mother

4.2.1 Quality of education

The quality of antenatal education offered to pregnant women attending the antenatal clinic was generally poor. Despite this, there was evidence of better practice at a few baby-friendly accredited facilities. In most instances, however, mothers received very superficial information mainly about the benefits of breastfeeding, with little additional information or support whatsoever.

Accuracy of information: Information offered to mothers by nursing staff was not always accurate. For example, a mother was advised to introduce soft porridge into the bottle when her infant reached three months. A mother attending the antenatal clinic of a baby-friendly accredited facility is expected to be adequately counselled and prepared for breastfeeding with all the necessary information given. When mothers attended antenatal clinics at non-baby-friendly accredited facilities, they often got no or very little information. Because of perceived workload pressures in the maternity and postnatal wards, nurses often put aside little or no time for giving detailed advice or support, and consequently many mothers were unsure or confused about breastfeeding. An example is the mother who was told during a group counselling session in the ward that the baby should be breastfed at least one hour on one breast, with the same period to be spent latched to the other breast the next time round.

Staff regularly educating mothers, both at antenatal clinic and at facilities, tend to get into a habit conveying certain messages. Without a periodic audit or check to evaluate objectively what is being taught to the mothers, some **outdated or unacceptable messages** might still be given, even though national, provincial or facility policy may have changed. The sister in charge might or might not be aware of the messages being provided. These messages would also be part of the "culture" of what is acceptable and not acceptable in a certain setting; in other words these messages would possibly be acceptable to, and taught by more than one member of the staff at that antenatal clinic, or a number of antenatal clinics.

Quality of feeding counselling in HIV: Even though the majority of HIV positive mothers received counselling on feeding choices after getting their HIV results, most mothers were left uninformed about the need to consider AFASS criteria when making their feeding choices, how to prepare formula, or how to clean feeding utensils. One mother was anxious and waited to ask the researcher how to clean the utensils and how frequently to feed the baby (she had read the instructions on how to prepare the formula on the tin label in the shop). Most mothers, however, seemed very fatalistic, accepting what was happening to them without questioning, and seemingly without trying to be

more in control of their lives. For example, one mother thought that they would be told about how to prepare the formula when coming back on day three, while another mother thought they might be taught once they received milk just before being discharged. Advice offered sometimes contained a mixture of accurate and inaccurate components. Some mothers seemed to have got the right information, but did not understand the implications; for example one mother was told about and chose to exclusively breastfeed for six months, but planned to go back to work in one month and then give formula during the day and breast at night.

The quality of education, both by individuals and facilities, also depends on the **frequency of education sessions**. Frequency of education, for example whether there was a group counselling session every morning, sometimes depended on whether there was enough staff on duty that day. The mothers' responses on frequency of antenatal education varied between a group talk every morning with feeding discussed every time, to no group talks. One mother, who attended the antenatal clinic eleven times, stated that there was a group talk only once. In the postnatal wards frequency of education was influenced partly by the routine practices in the ward, and partly by whether there were enough staff on duty that day. For example, at Leratong Hospital there was a group education session every morning, while at Coronation Hospital there was a group education session if there were enough staff on duty. At Coronation and other facilities education to the mothers was given on an individual basis, usually during the morning round while examining the mother and baby, or just before discharge.

Often some topics around breastfeeding were covered at antenatal clinics on some days and other topics at other days. In facilities where this was done well, there was a roster with dates allocated stating which topic would be covered on which day and by which staff member. In other facilities, there was no formal planning to cover all topics – each staff member included material in the education session that she thought was pertinent. A staff member complained that there was too much information that needed to be conveyed making it impossible to cover everything on breastfeeding in one session. Because mothers do not attend clinics every week, and also are not necessarily available when the group talk is held, they miss some topics. This is a problematic area, as many mothers had the benefit of only one random education session.

4.2.2 Other sources of information

Sources of breastfeeding information included magazines, newspapers, booklets from Soul City, television (a programme called "Great Expectations"), education at school, and advice from friends or relatives. Printed material seems to be an underutilised source of information. Even though

written information might theoretically be available to hand out, it seldom happened in practise, either because of “lack of stock”, or the poor quality if the facility tried to photocopy material.

4.2.3 Knowledge / beliefs of mothers

Inadequate or inaccurate knowledge about breastfeeding: One mother thought that colostrum was watery and not satisfying the baby, while another mother was worried that she would not get the baby off the breast if she breastfed for longer than six months. It is often taken for granted that a mother naturally or instinctively know when and how long to feed her baby. In this study, however, about a third of mothers were unsure or incorrect in their assumptions. For example, one mother thought that the baby should be fed three times per day (morning, noon and night). This is another area where mothers need guidance, best given during antenatal clinic visits, and reinforced during the stay in the facility. The same applies to how long mothers should feed their infants. Mothers often indicated that they would get help and advice from family members – mothers, sisters, and aunts – on their return home.

Inadequate knowledge about formula feeding practices in the context of HIV: Two mothers were not happy with the consistency of the hospital supplied infant formula (Pelargon), and thought it was “different” or “funny” compared to “real” formula. Both mothers said they would rather buy another formula milk, even though one said she could not really afford to buy milk. Not all mothers knew how frequently the baby was supposed to be fed. Most mothers had not received any advice on how to clean utensils or how to prepare the feeds, by the time they were questioned by the researcher. This situation is not unique to resource poor settings. Studies from the US and the UK indicate that staff relied on mothers reading information about safe preparation of formula, or listening to complex instructions, with resultant unsafe preparation and storage of the formula milk in substantial numbers of instances.(35)

Mixed messages on best feeding choices confused mothers, for example on breast or formula feeding in the postnatal wards for both HIV positive and negative mothers. Messages are delivered both verbally, as well as non-verbally by behaviour. I found many mothers who were confused, not understanding why and for how long formula should be given, while some mothers concluded that formula was advantageous to a newborn, and that breastfeeding alone might even cause complications. Studies report that condescending, contradictory and inaccurate information from midwives rank as the major sources of dissatisfaction of mothers.(36;37)

4.3 Health system organisation

4.3.1 Inappropriate facility practices

Early breastfeeding initiation:

Delay before infants reunited with their mothers: Infants were often not brought to the mother within one hour, for various reasons. Even if brought to the mother within one hour, only about half of the infants were breastfed within one hour. A number of studies have shown a delay in putting the baby to the breast.(20;35) In the US a national survey found that only about two-thirds of mothers held their newborn baby in the first hour of life.(35) Women are mostly dependant on the actions of staff members to facilitate close physical contact with their newborn infants.(46)

At baby-friendly accredited facilities, all infants were brought to the mother within one hour, and were breastfed within one hour. Rowe-Murray et al. also found that the mean time to first breastfeed was significantly lower at a baby-friendly accredited hospital, compared to non-baby-friendly accredited hospitals, for all delivery groups.(46)

Mothers in all facilities seemed to **wait to be told that they must** breastfeed before actually putting the baby to the breast, and it applied to MOUs as well as hospitals, and not only to first-time mothers. This may be a manifestation of living in an authoritarian setting, or the hospital being viewed as such, where the command of an authority figure (such as a nurse) was required before any activity (such as breastfeeding) could be initiated.

Supplementation: Supplementation of healthy breastfed newborns during their first few days of life is a **common practice** in many hospitals worldwide,(34-36) although there is consensus among health care workers that mothers rarely have insufficient milk.(34) At Chris Hani Baragwanath Hospital, 95% of HIV negative mothers who chose to breastfeed got formula supplementation nevertheless.

Factors playing a role in supplementation of newborns with formula feeds: While some mothers said it was because they did not have enough milk, other infants were routinely given formula by the nursing staff. All post-caesarean section infants in non-baby-friendly accredited facilities were given formula by the sister, as well as most infants at Chris Hani Baragwanath Hospital after normal deliveries while the infants were routinely taken to the labour ward nursery where they were kept till a postnatal bed for the mother became available. At Chris Hani Baragwanath Hospital, mothers were told by some staff to come and fetch formula, or a trolley with formula was set out and anyone

who wanted could fetch formula. These mixed messages from the staff confused the mothers, leading some to believe that formula milk in combination with breast milk was advantageous to newborn infants, and the preferred option. Occasionally messages from the staff were overtly baby-unfriendly, telling mothers to collect formula. One mother said as a consequence she was scared to breastfeed and thought it might cause complications.

Lack of proper or comprehensive advice and guidance on breastfeeding from antenatal clinics, compounded the problem. Many mothers already had bottles and/or formula at home, or were planning to buy them soon. Often mothers planned to start mixed feeding early even though it would be months before returning to work, or even before they would start looking for work, so that the baby would not have difficulty with replacement feeds at that time. HIV positive mothers choosing exclusive breastfeeding as a feeding choice automatically received formula supplementation resulting in mixed feeding practices being established in some health care facilities.

The staff member's **perception of the mother's attitude** also played a role – some staff felt mothers demanded formula supplement and thought the staff were cruel when not providing it. Some said it was the mother's constitutional right to choose what she wanted to feed the baby. Sometimes staff provided **supplement without the mother knowing**, or gave supplement, **knowing it was not supposed to be done**. Gagnon et al. reported that most nurses recognised that formula supplementation should not be a frequent practice.(34) However, the nurses cited concerns about insufficient continuity of care, overworked staff, conflicting advice with every change in shift, insufficient teaching time, as well as their own lack of breastfeeding knowledge, as factors influencing the decisions they made.(34) The reasons they gave for supplementing, were breastfeeding problems, maternal fatigue, and infant behaviour.(34) Furber et al. also found that midwives often 'hid' their actions from the mothers and their peers, because they felt they were "breaking the rules" by practices that were incongruent with baby-feeding recommendations and policy.(36)

Beliefs/knowledge of staff members on breastfeeding: Many staff members did not believe that supplementation would affect the success of subsequent breastfeeding. Baby-friendly accredited facilities did not perform much better on the question of whether staff thought supplementation affected the success of breastfeeding.

A few staff members expressed a view that mothers did not produce enough milk during the first few days of life. The ease with which formula was given depended on the individual nurse, as well as the usual practice in the facility. Experienced staff in baby-friendly accredited facilities that had been

trained in breastfeeding and lactation management, almost never found it necessary to supplement infants with formula. Most staff members said they would only supplement a baby with formula if the mother was "dry-dry-dry", but actually, according to most mothers, the nursing staff never checked whether the mother had any milk before supplementing the baby. Supplementation thus depended to a large extent on the training, knowledge, and experience of the staff member, as well as the practice around supplementation in the unit or facility. However, experience did not necessarily correlate with better practice. Gagnon et al. found that **in-hospital supplementation** was largely a nurse's decision based on preferences and characteristics of the infant and mother, unit practices, and the nurse's own knowledge, understanding, attitudes, beliefs and experiences.(34)

4.3.2 The possibility of changing feeding practices:

Practises around breastfeeding are amenable to change. At Germiston Hospital staff used to bring the baby to the mother only the day after a Caesarean section, and feed formula till then. About two months before the researcher visited this facility, the matron requested staff to return infants to their mothers for breastfeeding earlier. Some staff were starting to implement this on and off. The practises followed depended on the individual staff member, even though most staff members were aware of the change required.

It was interesting to note that baby-friendly accredited facilities, as well as MOUs, still scored 100% for exclusive breastfeeding (step 6), even though knowledge and beliefs of staff on breastfeeding were suboptimal.

It seems as if initiating breastfeeding within one hour (step 4), exclusive breastfeeding (step 6), as well as mothers and infants not separated for more than one hour since birth (step 7), were "protected" by a change in facility practice, and that these three steps are better retained between baby-friendly accreditation and re-accreditation sessions. The problematic component for all non-baby-friendly accredited facilities was that infants were often not brought to their mothers within one hour of birth.

Step 9 requiring no provision of bottles or pacifiers to infants, is the only step where all facilities scored 100%. The reason why this is so universally done, is likely because it has become part of the routine practice in all facilities – something that is automatically done without even thinking about it. Hospital pharmacy or stock supply units do not have these available. About eight years ago, the National Department of Health issued a directive that all infants receiving formula must be cup fed, and no longer bottle fed. The reason why this particular directive has been implemented so effectively, while other directives on implementation of baby-friendly practices are ignored or poorly

implemented, is unclear. Nevertheless, this is another example of how facility practices (directed by national guidelines), can be protective of exclusive breastfeeding. Ms. Zama Mtshali from Gauteng Health postulates that it was an easy practice to change (easier for nursing staff to clean cups rather than bottles), with accepted benefit (reduced risk of infections) (personal communication, Ms. Zama Mtshali, 30 October 2009).

4.3.3 Help, guidance and support for the mother

Step 5 (showing mothers how to breastfeed), Step 8 (encouraging breastfeeding on demand), and Step 10 (breastfeeding support after discharge from the facility) were **particularly poorly done** in the majority of the facilities. Those three steps all require advice and support from the nursing staff, necessitating that the nurse spend time with the mother, helping and educating her. Step 8, as evaluated in this study, looked at whether mothers got advice on when and how long to feed their infants, in other words the emphasis was on whether they got advice or not, (not as much on the content of the advice), thus fitting in with the concept of requiring guidance that was generally not given, even by baby-friendly accredited facilities.

According to the WHO, steps 3 (antenatal education), 5 (showing mothers how to breastfeed) and 10 (continuing support after discharge) are the three steps concerning support and guidance for the mother, and could be the **steps most difficult to implement** adequately.(19) They often are the slowest to be introduced as skill is required, which needs training, and they take the health worker time. Together they are, however, among the most cost-effective of all the health interventions.(19)

Several studies have reported that mothers around the world, including in Canada, France, Australia, and the UK, were dissatisfied with the feeding support from health care practitioners while still in hospital.(35;39)

In this study, the majority of facilities did fairly well on step 3, differing from the WHO findings. In this study the component about the percentage of topics covered during antenatal education was assessed simply by asking the sister in charge of the antenatal clinic whether these topics were covered during their antenatal education sessions, and not checked whether it was actually done at all. However, when actually accrediting a facility, qualified assessors also interview mothers at antenatal clinic and ask them in detail what had been discussed with them about breastfeeding (the form they use is accessible to external assessors only, to prevent data contamination). This would then be at a level of evaluating whether mother was accurately and adequately guided and educated, thus explaining why the results of my assessment of step 3 differed from that of the WHO.

Except in Bekkersdal, where 80% of mothers were offered help with breastfeeding, less than half of mothers were helped with breastfeeding. The lack of help also applied to Caesarean section mothers in baby-friendly accredited facilities who just came back from theatre and were left with their baby in their bed. Despite this, the majority of mothers indicated that although it was difficult to implement, because they had a lot of pain and (some) were still drowsy, they somehow managed even without help from staff.

One of the **reasons for not helping mothers to breast feed** was the perception that there was not enough time to spend with mothers individually. Dykes et al. remarked on the pressing and enormous pressures upon midwives' time.(39) Furber et al. described how staff were just "popping-in" to check mothers, rather than spending time with them.(35) Supporting mothers with breastfeeding is undeniably time-consuming.(35) However, in some of the MOUs that were very quiet when the researcher visited them, the support of mothers was not done any better. Thus, if staff are not in the habit of helping mothers at times when it is busy, it is doubtful whether staff will help at times when it is quiet. Once again with the exception of Bekkersdal, 20% or less of mothers were taught about expressing milk. Bekkersdal may have been different because teaching about milk expression somehow became part of the routine breastfeeding education given to women in the facility, became part of the routine ward culture, helped by unit and facility management strongly supportive of breastfeeding. At Bekkersdal MOU 100% of the staff received training in breastfeeding and lactation management (even a new staff member who worked in the unit less than two months, had already been sent for the required eighteen hour training). However, at Mofolo MOU, also baby-friendly-accredited, although 100% of staff had been trained, only 20% of staff taught mothers about the expression of milk - so full training alone was not the critical difference, and institutional culture matters.

More than a third of the breastfeeding mothers were first-time mothers. Teenage mothers and first-time mothers did not get any more help or education than the rest of the mothers. The breastfeeding practices of mothers after leaving the facility, for example when and how frequently they decide to practice mixed feeding, may be influenced by the impact of the counselling sessions on their existing knowledge and beliefs. For example, a mother who believed it was acceptable to provide both breast and formula (because that is what everyone in her frame of reference was doing), might either be encouraged that she is doing what is best for her baby, (because all the nurses are giving formula), or might try more exclusive breastfeeding, if that was strongly advocated and well motivated. Even though it is questionable whether the little education that is given to mothers, is sufficient to really sway internalised beliefs, health practitioners should at least not be

reinforcing wrong practices. What might make a difference, is giving accurate information on breastfeeding to the proportion of mothers unsure about details such as how frequently to feed the baby, what to do if problems with breastfeeding occur at home, and options to consider when going back to work.

Not even in a baby-friendly accredited facility where all staff interviewed received training in breastfeeding and lactation management (Bekkersdal), could a score higher than 50% be achieved for describing correct positioning and attachment. It seemed difficult for staff to remember key points on positioning and attachment, and more difficult still to teach it to the mothers in such a way that they could remember it.

Variance in willingness of staff to help with breastfeeding: Even within facilities, some staff members were more likely to help than others. There was a range of responses from staff in a facility, from no help from staff, to staff helped after mother asked for help, or staff did not ask whether mother managed with breastfeeding, or staff asked whether mother managed with breastfeeding, to staff helped. Dykes et al. observed that there are "different styles of caring" – the approach of some staff are more facilitative, while other staff are more directive, authoritative and insensitive.(39)

Factors influencing the feeding support practices of staff: This was influenced by the training, knowledge, experience and attitude of the nursing staff, as well as the emphasis put on breastfeeding support from top management as well as the nurse and matron in charge of maternity at the facility. For example: if staff members did not think there was enough breast milk initially, they would not make an effort to help the individual mother with this problem.

Many of the factors outlined above help explain the variance observed between facilities, but the relative contribution of each was impossible to quantify.

4.3.4 Factors necessary for the successful implementation of a program:

For a facility to become baby-friendly accredited, as well as to retain its baby-friendly accredited status during subsequent re-accreditation, a person in the facility is required to take responsibility for, and actively promote, the programme. In baby-friendly accredited facilities, the dietician often plays a large role in this. The buy-in and support from management is also needed, as well as buy-in and continuous motivation of staff. Some steps are easy to comply with, for example step 1 (breast milk policy to be displayed in all areas serving mothers and infants), but even compliance with this step needs to be reviewed periodically.

Rowe-Murray et al. argue that appropriate hospital practices require "a hospital culture of solid support for the common goal of achieving Baby-Friendly practices, including strong leadership, effective interdepartmental communication and action, and participation of all staff members in the effort. Repeated education of medical staff is essential".(46) In my experience, all these factors are essential for achieving and retaining baby-friendly practices. Without continuing strong leadership, some achieved baby-friendly practices were lost again. If only some staff members participated, and/or communication and training updating was ineffective, the result was contradictory, out of date and inaccurate verbal and non-verbal messages being offered to the mothers. This is likely to lead to suboptimal feeding beliefs and practices by the mothers with increased rates of mixed feeding practices, rather than the ideal of exclusive breastfeeding as promoted by the National Department of Health and international organisations such as the WHO.

4.4 Limitations of the study

- **Data was only collected during the day between 08h00 and 16h00**, so practices during the late afternoon and night were not observed or recorded. When undergoing a full baby-friendly accreditation of a facility a team of 3-4 assessors with a team leader visit the facility for 1-2 days. They are expected to evaluate the situation during both day and night. As only one researcher was doing this study that was not possible to do. However most of the staff in all nine facilities rotate between day and night duty several times each year, so it is unlikely that night practices vary widely.

- **Recall and reporting bias**. The data collected depended on what mothers recalled and was not measured or checked; for example, whether it was more than, or less than one hour before the baby was first fed. This was an inherent limitation of the study design. The researcher relied on verbal accounts of practices from mothers and nurses, which might not corroborate with actual practices. There was little that could be done to overcome this hurdle as most of the events or practices relevant to this study were not formally charted in the facility records.

- **Sample size -** depend on the size and number of deliveries at a facility**.** For accreditation of a facility by a team of Baby-Friendly Hospital Initiative assessors, a sample is taken of approximately ten staff members, fifteen postnatal mothers (ten normal deliveries and five Caesarean sections), ten antenatal clinic mothers, as well as some mothers with infants in special care. The accreditation team also observe some deliveries to record practises in the delivery room. WHO has revised the tool to include an HIV component (counselling HIV positive mothers about and supporting them with their feeding choices), as well as a component

supporting early skin-to-skin contact between mothers and newborn infants. In this revised tool (Revised, updated and expanded version for Integrated care, January 2006),(3;3) larger sample sizes are required- for example fifteen to thirty postnatal mothers. For this study, the researcher obtained her sample only from staff and postnatal mothers, directing questions about antenatal care also to postnatal mothers. This was the result of logistical considerations. There is also the possibility of a Type II error for some of the statistical comparisons (sample size too small). Nevertheless, the sample size was adequate to obtain a variety of views and obtain statistical significance for some comparisons.

- **Selection of facilities was not random**, but based on convenience.

- **The researcher did not receive formal training as an assessor for the BFHI Tool** which may have affected the quality and interpretation of data collected. The researcher worked with a senior, experienced, qualified national assessor of the Gauteng Department of Health at Leratong Hospital (Ms. Talent Tanase) for a two day informal training period, and had telephonic and personal contact with her, as well as with a qualified national assessor in the Gauteng Department of Health offices (Ms. Zama Mtshali) about how to use the tool. Ms. Tanase is a principal assessor in Gauteng and one of the most experienced assessors in the province and even nationally, according to Ms. Mtshali. No formal training sessions were scheduled to be conducted during the last months of 2007. Assessors need to undergo 15 days of training before they can evaluate and accredit facilities (10 days training as a "Trainer of trainers", and then a 5 day "Assessor course"). The consequence is that the data presented here may not be the same as would be evaluated by a qualified national assessor, but is a best estimate that offers a fair indication of strong and weak areas of each step in each facility, thus identifying problem areas.

- Because the researcher **conducted the study in English**, the understanding of and response to the questions by mothers who did not speak English as their first language might have influenced the findings. Where communication was really a barrier, staff members or other mothers were asked to assist with translation.

- The **questionnaire used was not identical to the one used by national and provincial assessors** to assess the facility, i.e. the formal Baby-friendly assessment tool, as the formal assessors feared the use of the official tool would compromise data they would get when assessing and re-assessing facilities. The questionnaire was nevertheless very similar. Other similar tools exist which can be used by facilities as an internal assessment, discovering gaps and problem-areas during their preparation for formal assessment of their baby-friendly status.(30;44) The focus for

facilities should in any case be on correcting all areas of in-facility feeding practices, not on exact questions which might be asked when being evaluated for baby-friendly accreditation.

- The number of facilities selected for the study was too small to allow a **subset analysis of differences between different levels of care**. As only one researcher was doing this study, it was not practical to include more facilities in the study.

4.5 Providing of feedback to health facilities:

Feedback will be arranged for all facilities that took part in the study. A 10-15 minute presentation session will be arranged through the matron with relevant unit managers and other representatives of all relevant staff in the antenatal clinic, labour and postnatal wards, including doctors, nursing staff and managers.

A presentation of findings will also be arranged with the Gauteng Health Department, through Ms. Zama Mtshali (dietician Gauteng Health) who assisted in providing information for the study. Ms. Joan Matji and Ms. Ann Behr from UNICEF , who both assisted with providing tools and information for the study, will also be invited.

5 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The acceptance of the Baby-Friendly Hospital Initiative by facilities where deliveries take place, has been limited. However, it is possible to change feeding practices in a facility, if there is commitment from the staff.

This study found:

- Suboptimal practices in both baby-friendly, and non-baby-friendly accredited facilities, but more so in non-baby-friendly accredited facilities. The BFHI facilities had higher scores for all steps, although difference was only significant for certain steps. Some practices are easy to rectify, while others require substantial commitment. The Baby-Friendly Hospital Initiative's Ten Steps to Successful Breastfeeding were not sustained, at least to the accreditation level, at the four Baby-Friendly accredited facilities investigated.
- Statistically significant differences were found between baby-friendly, and non-baby-friendly accredited facilities for three of the steps: step 2 (training of all health care staff in skills necessary to implement the breastfeeding policy), step 4 (help mothers initiate breastfeeding within one hour of birth), and step 7 (practise rooming-in). Baby-friendly accredited facilities, as well as all MOUs performed well on step 6 (give newborn infants no food or drink other than breast milk, unless medically indicated). All facilities performed well on step 9 (no artificial teats or pacifiers).
- The maintenance of some practices at accredited facilities appeared to be more sustainable over time. Step 4 (initiating breastfeeding within one hour), step 6 (exclusive breastfeeding), and step 7 (mothers and infants not separated for more than one hour since birth), were "protected" by a change in facility practice.
- The steps that required advice and support from nursing staff, namely step 5 (showing mothers how to breastfeed), step 8 (encouraging breastfeeding on demand), and step 10 (breastfeeding support after discharge from the facility), were particularly poorly done in the majority of facilities, including baby-friendly accredited facilities.



Figure 5.1 Cartoon depicting that breastfeeding could be tiring for a mother

5.2 Recommendations

5.2.1 Community and family practice

	Recommendation	Why needed (value)	Responsibility	What needs to be done	Comment
	Initiate Breastfeeding support groups in each district.	Support lactating mothers' decision to breastfeed.	Primary health care centres, NGOs	Facilities could identify potential "group leaders" while mothers are still in the birthing facility, and offer them very basic training.	In the facility, the lactation consultant or a "lactation helper" could help form a support group as part of her scope of practice.

5.2.2 Individual mothers

	Recommendation	Why needed (value)	Responsibility	What needs to be done	Comment
	Special attention given to teenage mothers, first-time mothers, and mothers unsure about feeding.	These mothers are the most vulnerable with the least experience.	Ward nurses and lay counsellors	Identify women on admission to the facility.	The file could perhaps be marked (e.g. a specific colour dot) to identify this group.

	Recommendation	Why needed (value)	Responsibility	What needs to be done	Comment
	Mothers attending antenatal clinic should be encouraged to bring their partners or other support people along.	Support people would also be educated, and would be able to support mothers correctly in her feeding choice. With proper education, this could help to reduce the high mixed feeding rates in the community.	Facility managers need to approve the concept, before unit managers assess the feasibility of the idea.	Establish feasibility: (e.g. is there enough space in the ANC for this activity, could mothers have appointments at different time slots during the day?)	

5.2.3 Facility

	Recommendation	Why needed (value)	Responsibility	How	Comment
A. Training	Train at least 80% of all staff involved in infant feeding in breastfeeding and lactation management. These would include all staff in labour ward, postnatal wards, and special units where preterm or sick neonates and infants are managed.	Eliminate the practice that breastfeeding is delegated to be a responsibility of a single person or a group of individuals.	Facility middle management	Staff in labour ward, postnatal staff, and staff in neonatal high-care units needs to be sent for about 20-hours of breastfeeding and lactation management training. Training could be done in facilities by staff previously trained.	Special badges worn by graduates of the lactation training course might provide an incentive for staff to go for the training.
	Train all appropriate staff - Support staff, managers, matrons and doctors.				

	Recommendation	Why needed (value)	Responsibility	How	Comment
	As staff leave or are rotated out of the unit, new staff need to be trained so that at all times 80% of staff are trained (continuous training).	This is a way of in-service training – giving all staff members the benefit of new up-to-date training. This also acknowledges the importance of training, and will hopefully make it easier to implement changes.			
	Staff that undergo training need to implement newly learned skills immediately. Staff attending updates to report back to staff in the facility.	Facilitates unit support for established and new practices.	Manager / nurse in charge of the unit	A forum needs to be created where this can be done on a regular basis, for example a short staff meeting once a week.	Record needs to be kept as to who went to which training, at which date, a summary of what was learnt, at what date the "report back" took place, and which staff attended the session. Could be linked to performance assessments.

	Recommendation	Why needed (value)	Responsibility	How	Comment
	Knowledge of all levels of staff need to be regularly updated.	Allows management to understand the financial and health advantages for the facility. Without their buy-in and active support, the programme would not be implemented or sustained at an optimum level.		Keep record of all new directives and protocol changes. Every staff member must read these and then sign that they have read it.	Ask doctors in charge of the units to help identify gaps in knowledge or change protocols.
B. Management	Involve, sensitise, and get the active participation of hospital and nursing senior and middle management for the initiative.	Without this even the best programmes are crippled.	The person or team driving the BFHI programme in a facility	National and provincial Baby-Friendly Hospital Initiative Assessors are willing to meet and "sensitise" management if a meeting with relevant management is arranged.	
C. Human Resources	Evaluate and find innovative ways of increasing **staff productivity.**	Midwives would then have more time to do the work that they had been trained to do, and that could not be done by anyone else.	Facility management		In some MOUs, the number of staff on duty occasionally exceeded the number of patients, yet the breastfeeding support for mothers was still inadequate.

	Recommendation	Why needed (value)	Responsibility	How	Comment
	Free midwives to do the work they have been trained to do.	Lactation consultants would be in charge of all infant feeding in the unit.	Facility management	Employ and enable administrative or support staff to do a lot of the administrative work.	Administrative staff could, for example answer the telephone, and help with admitting and discharging patients.
	Lactation consultants could be employed by the facility with the specific task of educating and helping mothers with breastfeeding.	Lactation helpers could be taught to give group education sessions to the mothers every day, and to help with, and support breastfeeding.		A lactation consultant needs to be an experienced midwife with 20 hours training in breastfeeding and lactation management.	
	Lower level workers could easily be trained as "**lactation helpers**".	A team or person in charge is needed for every successful program to drive and coordinate the program.		Depending on the size of the facility, one lactation consultant could train and be in charge of a couple of "lactation helpers".	A midwife is not required to help all mothers with breastfeeding. They could help where problems have been identified.

	Recommendation	Why needed (value)	Responsibility	How	Comment
D. System design	Establish a team or person in charge of the initiative, who would drive the process.	Education messages given during antenatal clinic visits need to be reinforced during the stay in the postnatal ward.	Facility management	In a large facility like Chris Hani Baragwanath Hospital, a dietician, midwife and doctor should be involved. They could decide among themselves who would play the leading or supporting roles, and what would be areas of responsibility for each of them.	At Chris Hani Baragwanath Hospital, a Maternity / Neonatal Infant Feeding Committee was established following completion of the study, which now meets once a month with representatives of all units involved in infant feeding.
E. Practices	Frequency of education sessions:	Many mothers hear only one or two education sessions – topics not covered at that session are then missed by them.	Ward nurses	Have a group counselling session every morning, both at the antenatal clinic and at the postnatal wards.	

	Recommendation	Why needed (value)	Responsibility	How	Comment
	Check list of topics to be covered: positioning and attachment, expressing milk, feeding on demand, what to do if problems with breastfeeding after discharge from the facility.	Mothers seemed to wait to be told that they must breastfeed before actually putting the baby to the breast.	Ward nurses	Card with information. Should briefly touch on all topics in a few minutes at every session.	• Appendix B: "III.2 Prenatal health education" for the list of 7 topics that should be covered during an education session, according to the "BFHI Monitoring tool". • Appendix L: Example of a card with breastfeeding education
	Tell all mothers to start breastfeeding.	Part of one of the BFHI Ten steps to successful breastfeeding.	Ward nurses	Nurses in the postnatal ward who receive the mother from labour ward must tell the mother to start breastfeeding. If the mother is waiting in labour ward, the labour ward nurse should tell the mother to start breastfeeding. Posters in the wards could support this activity.	It applied to all mothers, not only to first-time mothers.

	Recommendation	Why needed (value)	Responsibility	How	Comment
	Start breastfeeding within one hour of birth for normal vertex deliveries. Early skin-to-skin contact - put the baby on the mother's chest as soon as the baby is born.	Part of one of the BFHI Ten steps to successful breastfeeding.	Ward nurses	• Identify counterproductive practices, and the reasons for these practices, for example some longstanding outdated standing orders. • Find practical solutions to the problems. Exploring how baby-friendly accredited facilities overcame similar problems, might be helpful.	• Mothers routinely lying on their stomachs for one hour post delivery. • Mothers sit in chair for hours post-delivery because of lack of postnatal beds, while all babies are fed formula in the labour ward nursery. Some staff do not believe it is safe for a mother just after delivery to hold the baby while she sits in a wheelchair. Perhaps babies could be tied to the mother's chest with a sheet in a Kangaroo-baby-care fashion.

	Recommendation	Why needed (value)	Responsibility	How	Comment
	Start breastfeeding within one hour of birth for caesarean section babies.	Giving baby only breast milk unless otherwise indicated, is one of the Ten steps to successful breastfeeding of the BFHI.	Ward nurses	Practices in baby-friendly facilities: • The baby comes from theatre with the mother in the same bed. • As soon as the mother arrives in the ward, she is put in her own bed on her side, observations taken, mother made comfortable, and then the baby is directly put in the bed with her. Other suggestions: Have a staff member in theatre who could help the mother put the baby on the chest or on the breast as soon as the mother is stable in the recovery room.	Staff should help the mother put the baby to the breast just after arrival from theatre, but a number of mothers said that even though no one helped them, and they were still in pain, they managed to breastfeed. Staff at Leratong Hospital said that giving the mother only one pillow, and starting to give sips of water early on, eliminated or reduced the chances of a post-epidural headache. Instead of taking the baby directly to the nursery, rather wait with baby in theatre till the mother arrives in the recovery room.

	Recommendation	Why needed (value)	Responsibility	How	Comment
	Stop practise of unnecessary supplementation of baby's feeds with formula.	Without first identifying problem practices and areas, any plan of action would be superficial and not comprehensive.	Ward nurses	Facilities need to audit their practices to see what the practices are in their units, and correct them, for example a trolley with formula pushed out every three hours and mothers called to come and fetch formula.	Support of, and enforcement by management is necessary. Correcting other practices would reduce this problem, for example if the baby and the mother were reunited within one hour of birth, the routine practice of formula supplementation after birth would no longer be necessary.
F. Monitoring and audit	**Audit every facility:** Facilities need to audit their practices, firstly to see what the practices are in their facilities, and secondly to see what the obstacles are, in order to identify specific problems in the context or framework of the specific facility, and find tailor-made solutions.	Quality assurance is necessary to sustain practices. Reassessment is a strategy for monitoring standards achieved. It is used to identify areas needing improvement, develop a plan of action, make the needed changes, and monitor periodically.	Facility management	Accuracy of information: Do a periodic audit or check to evaluate objectively what is being taught to the mothers, to sift out outdated or unacceptable messages. Periodically monitor knowledge of staff to sift out misconceptions, for example misconception that breast milk transmission mainly occurred through blood from infant's biting their mother's nipple.	Areas that need regular auditing include: identifying of problem areas, staff workload and how midwives spend their time, accuracy of information given by staff, and staff productivity.

	Recommendation	Why needed (value)	Responsibility	How	Comment
G. Supporting tools	**Assessment and periodic reassessment of a facility**	Regular updating of knowledge of staff, especially where protocols or guidelines are changed by National or Provincial Department of Health, or facility protocols.	Facility management	There are monitoring and reassessment tools available from the Baby-Friendly-Hospital Initiative that could easily be adapted, specifically for internal facility audits.	
H. Communication	New messages or changes in policy should be effectively communicated from National to Provincial Departments of Health, to all levels of workers in all facilities.		Facility management	Establish effective communication channels - both within departments, interdepartmental, as well as between facilities and provincial Departments of Health.	Must find a way of communicating a change in policy or practice to all staff members, for example exclusive breastfeeding for 6 months.

5.2.4 Provincial and National Department of Health

	Recommendation	Why needed (value)	Responsibility	How	Comment
	Design cards with accurate, short, but comprehensive messages on breastfeeding which would cover all relevant information in a nutshell, yet not take more than a few minutes to deliver.	Education given is not standardised – everyone tells the mother what they think is important, or what they remember at the time, or get swayed by the questions of a particular group. Some messages given are inaccurate or out of date. Inaccurate, mixed messages delivered by all levels of staff confuse mothers, and play a role in promoting mixed feeding practices.	Provincial or National Department of Health	Those cards should be made available to all facilities and NGOs, and should be used at every education opportunity and at every group education session every day.	Every nurse doing the education session should check during the session whether she covered all relevant topics. Appendix L: Example of a card with breastfeeding education
	As a back-up, cards with more comprehensive information could be made available to staff who require more detailed information, for example the sister in charge of the unit.	Same as above	Provincial or National Department of Health		These cards could be kept in a specific file, so that they could be easily updated should policy or information change. Keeping them up to date could be the job of the lactation consultant in the unit or facility.

	Recommendation	Why needed (value)	Responsibility	How	Comment
	Design another card with information on feeding choices in the context of HIV, using and explaining AFASS criteria. Information on the breastfeeding option should include the rate and mechanism of HIV transmission, and risk factors where higher transmission rates are expected, for example cracked or bleeding nipples. Information on formula feeding should be included to be given to mothers who choose the formula feeding option. Information should include clear messages on not mixed feeding and why not, availability of free formula milk (including quantity, for what period of time, consistency of Pellargon and reason why Pellargon was chosen), correct preparing and storing of formula, how to clean utensils, and how much and how frequently baby must drink (not feed every time baby cries, because then the mother will run out of milk too soon).	It is crucial that the same accurate messages are given universally, at clinics, hospitals, by NGOs, home-based care workers, health educators, in private facilities, during training of medical and nursing students, in the media.		These information cards should be used by anyone giving feeding counselling to HIV positive women, including all counsellors regardless of which setting or NGO they are working for.	

	Recommendation	Why needed (value)	Responsibility	How	Comment
	Health Promotion	Some accurate core messages around infant feeding need to become part of the general knowledge of the population, by messages repeatedly given in the media, during health promotion, and in all health care settings everywhere.	National Department of Health	Advertise breastfeeding with correct information in more magazines, newspapers, on radio and television.	
	Innovative ways of education – perhaps vendor machines at all facilities selling nice, glossy booklets with key messages on breastfeeding for R5 or R10.	Many mothers are buying magazines to read about breastfeeding.	National Department of Health	Refer to a relevant department.	Many mothers buy magazines like “Living and Loving” or “Drum” for much more than R10.
	A Video or DVD with breastfeeding and other antenatal information could be repeatedly shown to mothers during the ANC waiting time.	A way of education that does not take time from the nurse or midwife.	National Department of Health	Video/DVD developed and distributed by National Department of Health, starting with facilities with necessary equipment for showing the video. Before buying equipment for all facilities, evaluate effectiveness of the intervention first.	

	Recommendation	Why needed (value)	Responsibility	How	Comment
	Support of District Hospitals. Mothers and babies at the District Hospital should be appropriate for the level of care, with streamlining of referral channels and telephonic advice where needed.	If clinical emergency management were lowered to more appropriate levels, nursing staff might have more time to deal with routine issues like breastfeeding.	Provincial Department of Health	Enforce keeping to the proposed guidelines for levels of care, not be refused a transfer because of lack of availability of beds.	For example, a mother in labour with premature twins, should be transferred to an appropriate level without having to arrange ICU beds for the twins first.
	Standardise staff allocation at various levels of facilities.	Both too many and too few staff members on duty are counter-productive.	Provincial Department of Health	Do an audit to determine staff levels and workload at the various facilities.	In general, there was higher staff: patient ratio's at MOUs.
	Design of a better cup for cup feeding.	Much milk spilt with the cups being used at present.	National Department of Health	Refer to a suitable department.	

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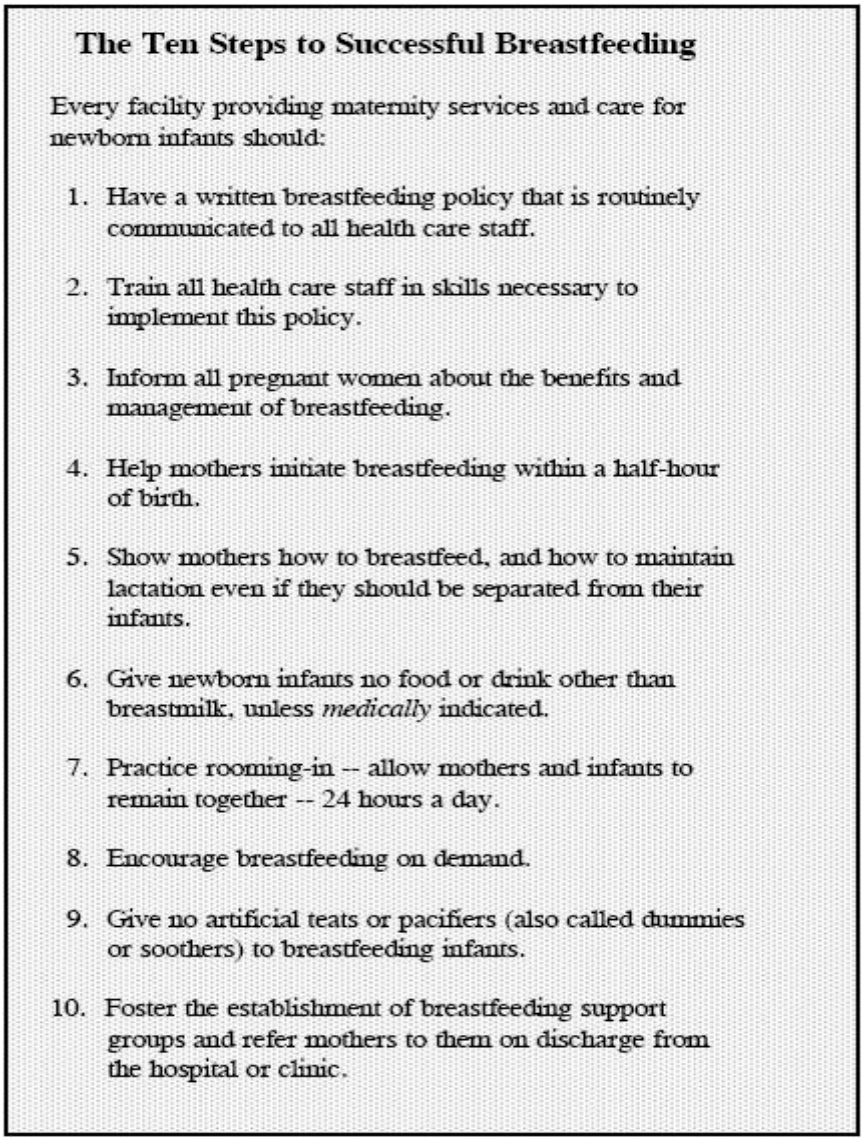
APPENDICES

APPENDIX A The Ten Steps to successful breastfeeding



The Ten Steps to Successful Breastfeeding

Every facility providing maternity services and care for newborn infants should:

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within a half-hour of birth.
5. Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infants.
6. Give newborn infants no food or drink other than breastmilk, unless *medically* indicated.
7. Practice rooming-in -- allow mothers and infants to remain together -- 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

Figure A1. The Ten Steps to Successful Breastfeeding

Baby-friendly Hospital Initiative
Monitoring tool [Adapted from WHO/Wellstart]

I.A. Infant feeding record

Name of health facility: _____

Recorder(s): _____

[Record information the day the baby is born (first 3 columns and at discharge). Use additional pages, as needed.

Mother /baby study no. (MB)	Mother HIV code and result		Delivery type	Time of first breastfeed[1]	Supplements[2]			How baby fed	Baby's location	Any problems related to infant feeding	Actions taken	Date of discharge	Breast-feeding at discharge
					Given	What	Why[3]						
			V=Vaginal C=c-section	1= ≤ 1 hour 2= ≥ 1 hour 3= not yet	Y= Yes N= No	1= Water 2= Formula 3= Other (specify)	*[See below]*	1= Breast 2= Bottle 3= Other	1= Rooming-in[4] 2= Nursery 3= Special care unit 4= Other (specify)	1= Mother (specify) 2= Infant (specify)			Y= Yes N= No

1. **Time of first breastfeed:** From time of birth for vaginal deliveries; and from the time the mother is able to respond to baby for caesarean deliveries.
2. **Definition of supplements**: Any liquids/foods besides breast milk
3. **Why:** 1. Premature baby, 2. Baby with severe hypoglycaemia, 3. Baby with inborn error of metabolism, 4. Baby with acute water loss (i.e. phototherapy for jaundice), 5. Severe maternal illness, 6. Mother on medication, 7. Other (specify)
4. **Definition of rooming-in:** Mother and baby stay in the same room 24 hours a day, starting within one hour of birth and not separated for more than one hour at any time

III. Review and observation form

Name of health facility: _____
Name of monitor: _____
Date: ___/___/___
(dd / mm / yy)

III.1. Breastfeeding policy

III.1.1. The policy is displayed in all required areas:

- Prenatal clinic ..... ☐ Yes ☐ No ☐ Area doesn't exist
- Maternity ward ..... ☐ Yes ☐ No
- Nursery ..... ☐ Yes ☐ No ☐ Area doesn't exist
- Infant special-care unit ..... ☐ Yes ☐ No ☐ Area doesn't exist
- Other *(specify)*:_____ ... ☐ Yes ☐ No

Total:
☐ Yes *(If all above are "Yes" or "Area doesn't exist")*
☐ No *(If some required areas don't have policy displayed)* 1a (p.23)

III.1.2. There are no posters or other materials displayed that promote breast-milk substitutes, bottles, or pacifiers:. ..... ☐ No posters or other materials displayed
☐ Some posters or other materials displayed 1b (p.23)

III.2. Prenatal health education

The hospital provides prenatal care for pregnant women ..... ☐
The hospital does *not* provide any prenatal care for pregnant women ... ☐
(Note: If hospital does not provide any prenatal care, go immediately to section III.3.) 3 (p.24)

III.2.1. There is a written description of the content and schedule for individual counseling and/or group education sessions on breastfeeding ..... ☐ Yes ☐ No 3a (p.25)

III.2.2. The sessions cover:

a. The benefits of breastfeeding ..... ☐ Yes ☐ No
b. The importance of breastfeeding soon after delivery ... ☐ Yes ☐ No
c The importance of rooming-in ..... ☐ Yes ☐ No
d. Positioning and attachment ..... ☐ Yes ☐ No
e. The importance of feeding on demand ..... ☐ Yes ☐ No
f. What a mother can do to ensure that she produces enough milk for her baby ..... ☐ Yes ☐ No
g. The importance of giving the baby only breast milk ..... ☐ Yes ☐ No 3b (p.25)

Sources of data:

IV. Interview with mother No. ____
(Maternity services interview)

Mother / baby study no: MB

Name of health facility: _____
Name of ward/unit: _____
Name of monitor: _____
Date: ___/___/___
(dd / mm / yy)

[The interview should be conducted as close to discharge as possible.]

Date of delivery: ___/___/___ (dd / mm / yy) Time: ___:___ (am/pm)

Introduction: Good *(morning/afternoon/evening)*. My name is *[INSERT YOUR NAME]* and I am working with *[INSERT THE NAME OF THE ORGANIZATION YOU WORK FOR]*. We are interested in learning more about some aspects of your stay here, in particular, about how your baby has been fed and about your interactions with the staff here. Our discussion will take about 5 to 10 minutes of your time. You are free to decide not to answer the questions, if you'd rather not. If you agree to answer the questions, your answers will be confidential and your name will not be used in any way. Your participation would be very helpful in determining how the hospital can best provide support to mothers and babies. May I continue?

IV.1 Was your delivery: ☐ Vaginal ☐ Caesarean section — 4a (p.25), 4b (p.26)

IV.2 How many days old is your baby? ..... _____ days
[If less than a day:] How many hours old is your baby? ..... _____ hours
[Check the answer with data available above]

IV.3 Since your baby was born, has he/she been breastfed at all? ... ☐ Yes ☐ No
[If not breastfeeding ➤ IV.7]
If not: why not?

IV.4 *[For mothers delivering vaginally:]*
How soon after birth did you breastfeed your baby for the first time?
[For mothers delivering by caesarean:]
How soon after you were able to respond to your baby did you breastfeed your baby for the first time? ___minutes ___hours ___days — 4a (p.25), 4b (p.26)
if > 30min - 1h: why so long?

IV.5 Have you, a staff member, or anybody else given your baby a pacifier/dummy to suck on?..... ☐ Yes ☐ No ☐ Don't know — 9a (p.31)
if yes: why?

IV.6 Have you, a staff member, or anybody else fed your baby with a bottle?..... ☐ Yes ☐ No ☐ Don't know — 9b (p.31)
if yes: why?

IV.7 Since your baby was born, as far as you know, has your baby received any of the following? *[Read list below.]*

Plain water	☐ Yes ☐ No	
Sweetened or flavoured water	☐ Yes ☐ No	
Infant formula	☐ Yes ☐ No	
Tinned, powdered or fresh milk (cow/goat/etc.)	☐ Yes ☐ No	
Vitamins, mineral supplements, medicine	☐ Yes ☐ No	
Anything else (other than breast milk?) *[specify:]*_____	☐ Yes ☐ No	6a (p.28)

If any of the above: Why?

[If baby has received anything other than vitamins, mineral supplements, or medicine, after the interview review the records of mother/infant to determine if the reason is an acceptable medical reason]

Records show that the reason for using food/liquids other than breast milk is an acceptable medical reason: ☐ Yes ☐ No ☐ Not recorded — 6a (p.28)

IV.8 Have you been shown how to express your breast milk since you delivered? ☐ Yes ☐ No — 5e (p.28)

IV.9 Have you been given written information on how to express your breast milk? ☐ Yes ☐ No — 5e (p.28)

IV.10 Has a staff member offered you help with breastfeeding since you got to your room? ☐ Yes ☐ No — 5a (p.26)
[If not breastfeeding ➤ IV.15]

IV.11 Have you been offered help with positioning and attachment? ☐ Yes ☐ No — 5b (p.27)

IV.12 Could you show me what you've been told about how to position and attach your baby for breastfeeding? ☐ Correct ☐ Incorrect ☐ Doesn't know — 5c (p.27)

[It is acceptable for the mother to demonstrate by feeding her baby, or to demonstrate by holding her baby or a doll in position while describing what she has been told.]

[Key points: Baby's body turned to mother, close, stomach to stomach; mouth wide open, lower lip not folded in; chin touching breast; more of areola below nipple in mouth; rhythmic burst-pause suckling and swallowing]

IV.13 Have any limitations been put on how often or how long you breastfeed your baby? ☐ Yes ☐ No — 8a (p.30)

IV.14 What advice have you been given by the staff about when you should breastfeed your baby? *[Don't read list. Probe if necessary]*

- ☐ Whenever the baby seems hungry (or as often as he/she wants to breastfeed)
- ☐ Every ____ hours *(List number of hours the mother mentions.)*
- ☐ Other *(describe)*: _____
- ☐ Not given any advice about this

(Note: Correct answer is "Whenever baby seems hungry..." or a similar answer indicating that the mother knows to feed "on demand".)

8b (p.30)

IV.15 Has your baby stayed with you in your room/bed/near your bed at all while you've been in the hospital? ..... ☐ Yes
if no: why?
☐ No [➤ *IV.18 or, if mother not breastfeeding,* ➤ *end]* 7a (p.29)

IV.16 *[For mothers delivering vaginally:]*
How soon after birth did your baby start staying in your room/bed/near your bed?
[For mothers delivering by caesarean:]
How soon after you were able to respond to your baby did your baby start staying in your room/bed/near your bed? ..... ☐ Within one hour
☐ After more than one hour

If more than one hour, why? _____
_____
_____

Reason is valid: ..... ☐ Yes ☐ No 7a (p.29)

IV.17 Has your baby been separated from you for more than one hour at any time during your stay? ..... ☐ Yes ☐ No
[If yes:] Why?
_____
_____

Reason is valid: ..... ☐ Yes ☐ No
7b (p.29)

(Note: The baby should not be separated from the mother for more than an hour, except if there is a valid reason.)

[If mother not breastfeeding ➤ *end]*

IV.18 Have you been given any advice about where to get help if you have problems with breastfeeding after you leave this facility? ..... ☐ Yes ☐ No*[➤End]* 10a (p.32)

IV.19 *[If yes]* What advice were you given?
[Do not read. Probe if necessary]

- ☐ Call or visit this or another health facility
- ☐ Ask for help from a mother-support group
- ☐ Ask for help from a community worker
- ☐ Other *[Specify:]*_____

10b (p.32)

Advice is appropriate, given local situation ..... ☐ Yes ☐ No

IV.20 Have you been given any *written* information about where or how to get help if you have problems with breastfeeding after you leave this facility? ..... ☐ Yes ☐ No 10c (p.32)

END. Thank you very much for your time.

IV.21 Have you been tested for HIV? Y N

IV. 22 Are you prepared to tell me the result? Y N

IV. 23 If yes: what was the result?

IV. 24 Have you been referred for posttestcounselling if ⊕ result? Y N
If no: mother refered?
(If not: refer mother for posttest counselling) Y N

IV.25 If ⊕ result: Did the baby receive Nevirapine? Y N

IV. 26 Did you get breastfeeding counselling at ANC? Y N

IV. 27 What were you told about infant feeding?

V. Interview with staff member No. ____
(Maternity services interview)

Staff study no: 5
Name of health facility: _____
Type of ward (postpartum, labor, etc.): _____
Name of interviewer: _____
Date: ____ / ____ / ____
(dd / mm / yy)

Introduction: Good *(morning/afternoon/evening)*. My name is *[INSERT YOUR NAME]* and I am working with *[INSERT THE NAME OF THE ORGANIZATION YOU WORK FOR]*. We are interested in learning more about some aspects of the services here, in particular, about how babies are fed. Our discussion will take about 5 to 10 minutes of your time. This is not a test. Our purpose is to try to improve/keep a high quality of service in this maternity. The information you will give me will be kept confidential.

V.1 When did you join the staff of the maternity services? _____, _____
Day and month Year

[Include in the sample only staff members that have been hired six or more months ago. If the staff member has been on the staff less than six months, thank him or her and terminate the interview.]

V.2 What is your position here in the maternity services?
- ☐ Physician ☐ Midwife ☐ Nurse
- ☐ Auxiliary worker, *type*: _____
- ☐ Other *[specify:]* _____

V.3 Have you received any training in breastfeeding and lactation management while you have been on the staff of the hospital? ..... ☐ Yes ☐ No — 2b (p.24)
[If Yes:] Duration (in hours) of
first training _____ second training _____ third training _____

V.4 Have you had some on the job training? ..... ☐ Yes ☐ No — 2b (p.24)
[If Yes:] How many hours was it in total? ..... _____ hours

Now, I'm going to ask you a few questions about breastfeeding. Don't worry if you do not know the answers to some of them, as it is not a test of your knowledge in particular, and your name will be kept confidential.

V.5 Do you teach or show mothers how to position and attach their infants for breastfeeding? ..... ☐ Yes ☐ No *[➤ V.7]*

V.6 Could you please:
- ☐ demonstrate how you teach positioning and attachment by teaching a mother with a baby on the ward, or
- ☐ show me a mother whose breastfeeding baby is correctly positioned and attached and describe why, or
- ☐ show me how you would teach a mother, by teaching me in your usual way, using a doll, and describing the key points?

Positioning: ☐ Correct ☐ Incorrect
Attachment: ☐ Correct ☐ Incorrect — 5d (p.27)

_____
_____
_____

*[**Key Points:** Baby's body turned to mother, close, stomach to stomach; mouth wide open, lower lip not folded in; chin touching breast; more of areola below nipple in mouth; rhythmic burst-pause suckling and swallowing]*

V.7 Do you show or teach mothers how to express their breast milk by hand? ..... ❒ Yes ❒ No *[➤ V.9]*

V.8 Please describe the technique for expressing milk by hand that you teach to mothers: .....
❒ Acceptable
❒ Not acceptable
❒ Didn't describe
5f (p.28)

_____
_____
_____

*[**Key points:** Thumb on areola, fingers opposite; press inwards; do not slide fingers on skin; repeat press-release for several minutes; stimulate let-down reflex; rotate around nipple to compress all sinuses]*
*[**Note:** It is not expected that staff will demonstrate with a mother.]*

V.9 What effects can giving formula or water before the breast milk comes in have on the success of breastfeeding? *(Probe if necessary.)*

_____
_____
_____
❒ Correct
❒ Incorrect or inadequate
❒ Didn't answer

*[**Key points:** Reduced desire of infant to breastfeed; nipple confusion if given by bottle; increased risk of allergy; may lead to mother feeling inadequate.] **Note:** Staff member should mention at least two key points for the response to be considered "correct".*

V.10 What is the major cause of painful nipples?

_____
_____
_____
❒ Correct
❒ Incorrect
❒ Didn't answer

*[**Key points:** Poor attachment; baby not taking enough of breast into mouth]*

V.11 What is the most common cause of insufficient milk?

_____
_____
_____
❒ Correct
❒ Incorrect
❒ Didn't answer

*[**Key points:** Correct if mention one or more of the following: infrequent feeding, improper suckling, poor attachment, using bottles or pacifiers, early supplementation]*

Total of correct answers on questions 9-11: _____ 2c (p.24)

END. Thank you very much for taking the time to answer these questions.

V. Exploratory part of interview with staff member no.____

[Adapted from baby friendly hospital initiative monitoring tool]

Name of health facility _____
Type of ward (postpartum, labour, etc)_____
Name of interviewer _____
Date (dd/mm/ccyy) _____

Indicates prompts for the interviewer.

Explore answers by asking "Why" questions

1. How often do you counsel mothers about breastfeeding?
   ☐ *Always* ☐ *Most mothers* ☐ *Sometimes* ☐ *Never*

2. What do you usually tell mothers?

3. How does your counselling differ for HIV positive mothers?
   - ☐ *One risk and one benefit of both breast- and formula feeding.*
   - ☐ *How to help her choose what is acceptable, feasible, affordable, sustainable and safe (AFASS) in her circumstances.*
   - ☐ *Safe and hygienic preparation, feeding and storage of breast milk substitutes.*
   - ☐ *How to teach preparation of feeding options the mother choose.*
   - ☐ *Dangers of mixed feeding.*
   - ☐ *How to minimise the likelihood that breastfeeding mothers will be influenced to use formula.*

4. Who decides what the first feed the baby gets is?
   ☐ *Mother* ☐ *Nurse* ☐ *Other*

5. Who decides what method, if not breastfed? (cup / bottle)
   ☐ *Mother* ☐ *Nurse* ☐ *Other*

6. Who decides what babies of HIV positive mothers are fed
   ☐ *Mother* ☐ *Nurse* ☐ *Other*

7. Which babies would you not consider placing immediately on its mothers breast breast (within 30 minutes)? Why?
   - ☐ *Premature < 1.8kg*
   - ☐ *Needs resuscitation*

- ☐ *Sick – need oxygen antibiotics, etc*
- ☐ *Floppy (asphyxiated) baby – not sucking*

8. When are babies in your unit offered fed fluids or milk other than breast milk?
   - ☐ *Mother does not have enough milk*
   - ☐ *Mother delivered via caesarean section*
   - ☐ *Mother too tired during the day*
   - ☐ *Mother too tired and need to sleep at night*
   - ☐ *Nursing staff too busy to help mother with breastfeeding*

9. Are there babies that do not routinely room in (stay) with their mother?
   - ☐ *Mother does not have enough milk*
   - ☐ *Mother delivered via caesarean section*
   - ☐ *Mother too tired during the night*
   - ☐ *Babies taken away for the doctor's rounds for more than 1 hour*

10. How frequently are babies usually put to the breast in your unit?
    - ☐ *Every 3 to 4 hours*
    - ☐ *Every time they cry*
    - ☐ *Every time they are awake*

11. When do you offer a dummy (pacifier) to a baby?
    - ☐ *When the baby is crying after being fed*
    - ☐ *Never*

12. How do you support mothers with breastfeeding in your unit?

13. Are there any breast feeding support groups that you usually refer mothers to?

APPENDIX C Data Summary and Reporting

Baby-friendly Hospital Initiative

Monitoring process:

Data summary and reporting forms

Monitoring process: Summary of data collected

Step 1. Have a written breastfeeding policy that is routinely communicated to all health care staff.

1a. Policy displayed

Policy available in all areas serving mothers/infants ..... ❒ Yes ❒ No [III.1.1.]
- Areas where the policy is not displayed: _____

[**Key:** "Yes" = 100 %, "No" = 0 %] ..... _____%

1b. No posters or materials promoting breast-milk substitutes

There are no posters or other materials that promote breast-milk substitutes (BMS), bottles or pacifiers displayed in the facility ..... ❒ No posters/materials displayed
❒ Some posters/materials displayed [III.1.2.]

[**Key:** "No posters/materials displayed" = 100 %
"Posters/materials displayed" = 0%] ..... _____%

Total % for Step 1:
_____% (1a) + _____% (1b) ÷ 2 = _____ %

Step 2. Train all health care staff in skills necessary to implement this policy.

2a. Staff receiving 18 hours training (from records)

Number of staff who care for mothers and infants ..... _____ [II.B.1.]

Percentage of these same staff who have received 18 hours of training (including a minimum of 3 hours of supervised clinical experience) ..... _____ % [II.B.3.]

Percentage of these same staff who have *not* been trained but have been on the staff less than 6 months and are scheduled to be trained within 6 months of joining the staff: ..... _____ % [II.B.5.]

_____ % (Staff trained) +
_____ % (Staff scheduled for training within 6 months of joining) = ____%

2b. Staff receiving 18 hours training (reported by staff)

Of the randomly selected staff, the following reported that they had received at least 18 hours of training on breastfeeding management:

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10

_____ **out of** _____ **(Total staff interviewed) =** _____**%** [V.3., V.4.]

2c. Staff with correct breastfeeding management knowledge

Of the randomly selected staff, the following were able to answer correctly at least two out of three questions on breastfeeding management:

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10

_____ **out of** _____ **(Total staff interviewed) =** _____**%** [V.9 - 11]

2d. Trained staff scheduled for refresher training

Percentage of trained staff who care for mothers and infants who have received, or are scheduled to receive, refresher training on breastfeeding at least every two years ..... _____ % [II.B.7.]

Total % for Step 2:
_____% (2a) + _____% (2b) +
_____% (2c) + _____% (2d) ÷ 4 = _____ %

Step 3. Inform all pregnant women about the benefits and management of breastfeeding.

The hospital provides some prenatal care for pregnant women ..... ❒
The hospital does *not* provide any prenatal care for pregnant women . ❒
*(Note: If hospital does **not** provide any prenatal care, skip this section)*

3a. Written description of prenatal education

There is a written description of the prenatal education . . ❒ Yes ❒ No [III.2.1.]

[**Key:** "Yes" = 100 %, "No" = 0%] . . . . . _____ %

3b. Topics covered

Number of topics covered in prenatal education: . . . . . _____ [III.2.2.]

Percentage of topics covered in prenatal education: . . . . . _____ out of 7 =_____ %

Total % for Step 3:
_____% (3a) + _____% (3b) ÷ 2 = _____%

Step 4. Help mothers initiate breastfeeding within a half-hour of birth.

4a. Babies breastfed within one hour of birth (vaginal deliveries)

Of the randomly selected mothers with vaginal deliveries, the following reported that they breastfed their babies within one hour of birth[1]:
[If the mothers delivered by c-section, circle their numbers and mark them "CS" and do not include them in the totals. If the mothers are not breastfeeding, circle their numbers and mark them "NBF"and do not include them in the totals.]

❒ 1 ❒ 2 ❒ 3 ❒ 4 ❒ 5 ❒ 6 ❒ 7 ❒ 8 ❒ 9 ❒ 10
❒ 11 ❒ 12 ❒ 13 ❒ 14 ❒ 15 ❒ 16 ❒ 17 ❒ 18 ❒ 19 ❒ 20
❒ 21 ❒ 22 ❒ 23 ❒ 24 ❒ 25 ❒ 26 ❒ 27 ❒ 28 ❒ 29 ❒ 30

_____ out of _____ (Total BF mothers with vaginal deliveries) = _____% [IV.1., IV.4.]

[1] Step 4 specifies the period which mothers should be offered help to initiate breastfeeding. The mother interview question concentrates on when breastfeeding actually begins.

4b. Babies breastfed within one hour of mothers being able to respond (caesarean)

Of the randomly selected mothers with caesarean section deliveries, the following reported that they breastfed their babies within one hour of being able to respond:
[If the mothers delivered vaginally, circle their numbers and mark them "VD" and do not include them in the totals. If the mothers are not breastfeeding, circle their numbers and mark them "NBF" and do not include them in the totals.]

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10
❒11 ❒12 ❒13 ❒14 ❒15 ❒16 ❒17 ❒18 ❒19 ❒20
❒21 ❒22 ❒23 ❒24 ❒25 ❒26 ❒27 ❒28 ❒29 ❒30

_____ **out of** _____ **(Total BF mothers with c-section) =** _____**%** [IV.1, IV.4]

4c. Babies breastfed within one hour (vaginal deliveries and caesarean)

[Enter the data of babies from both vaginal deliveries (4a) and caesarean section (4b) in the boxes that follow:]

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10
❒11 ❒12 ❒13 ❒14 ❒15 ❒16 ❒17 ❒18 ❒19 ❒20
❒21 ❒22 ❒23 ❒24 ❒25 ❒26 ❒27 ❒28 ❒29 ❒30

_____ **out of** _____ **(Total BF mothers) =** _____**%**

Total % for Step 4: = _____**% (4c)**

Step 5. Show mothers how to breastfeed and how to maintain lactation, even if they should be separated from their infants.

5a. Mothers offered help with breastfeeding

Of the randomly selected mothers, the following reported that the staff offered help with breastfeeding since they came to their rooms:

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10
❒11 ❒12 ❒13 ❒14 ❒15 ❒16 ❒17 ❒18 ❒19 ❒20
❒21 ❒22 ❒23 ❒24 ❒25 ❒26 ❒27 ❒28 ❒29 ❒30

_____ **out of** _____ **(Total mothers interviewed) =** _____**%** [IV.10]

5b. Mothers offered help with positioning/attachment

Of the randomly selected mothers who were breastfeeding, the following reported that they had been offered help with positioning and attachment:
[If the mothers are not breastfeeding, circle their numbers and mark them "NBF" and do not include them in the totals.]

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10
❒11 ❒12 ❒13 ❒14 ❒15 ❒16 ❒17 ❒18 ❒19 ❒20
❒21 ❒12 ❒23 ❒24 ❒25 ❒26 ❒27 ❒28 ❒29 ❒30

_____ **out of** _____ **(Total BF mothers interviewed) =** _____**%** [IV.11]

5c. Mothers demonstrating correct positioning/attachment

Of the randomly selected mothers who were breastfeeding, the following were able to demonstrate/describe correct positioning and attachment:
[If the mothers are not breastfeeding, circle their numbers and mark them "NBF" and do not include them in the totals.]

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10
❒11 ❒12 ❒13 ❒14 ❒15 ❒16 ❒17 ❒18 ❒19 ❒20
❒21 ❒22 ❒23 ❒24 ❒25 ❒26 ❒27 ❒28 ❒29 ❒30

_____ **out of** _____ **(Total BF mothers interviewed) =** _____**%** [IV.12]

5d. Staff demonstrating correct positioning/attachment

Of the randomly selected health care staff, the following were able to demonstrate, or show and describe, correct positioning and attachment:

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10

_____ **out of** _____ **(Total staff interviewed) =** _____**%** [V.6]

5e. Mothers taught how to express milk

Of the randomly selected mothers, the following reported that they had been shown, or given information on, how to express their milk:

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10
❒11 ❒12 ❒13 ❒14 ❒15 ❒16 ❒17 ❒18 ❒19 ❒20
❒21 ❒22 ❒23 ❒24 ❒25 ❒26 ❒27 ❒28 ❒29 ❒30

_____ **out of** _____ **(Total mothers interviewed) =** _____**%** [IV.8, IV.9]

5f. Staff describing an acceptable technique for milk expression

Of the randomly selected health care staff, the following were able to describe an acceptable technique for expressing milk by hand that they teach to mothers:

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10

_____ **out of** _____ **(Total staff interviewed) =** _____**%** [V.8.]

Total % for Step 5:
____ % (5a) + ____ % 5b) + ____ % (5c) +
____ % (5d) + ____ % (5e) + ____ % (5f) ÷ 6 = ____%

Step 6. Give newborn infants no food or drink other than breast milk, unless *medically* indicated.

6a. Babies breastfeeding exclusively

Of the randomly selected mothers, the following reported that their babies have received no food or fluid other than breast milk (or vitamins, mineral supplements or medicine) or, if they have, the records show an acceptable medical reason:

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10
❒11 ❒12 ❒13 ❒14 ❒15 ❒16 ❒17 ❒18 ❒19 ❒20
❒21 ❒22 ❒23 ❒24 ❒25 ❒26 ❒27 ❒28 ❒29 ❒30

_____ **out of** _____ **(Total mothers interviewed) =** _____**%** [IV.7]

Total % for Step 6: _____ %

Step 7. Practise rooming-in — allow mothers and infants to remain together — 24 hours a day.

7a. Babies rooming-in within one hour of birth

Of the randomly selected mothers, the following reported that their babies were rooming-in and that they began staying together within one hour of birth, or in the case of caesarean, within one hour of being able to respond (except for a valid reason):

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10
❒11 ❒12 ❒13 ❒14 ❒15 ❒16 ❒17 ❒18 ❒19 ❒20
❒21 ❒22 ❒23 ❒24 ❒25 ❒26 ❒27 ❒28 ❒29 ❒30

_____ **out of** _____ **(Total mothers interviewed) =** _____**%** [IV.15, IV.16]

7b. Mothers and babies not separated for more than one hour

Of the randomly selected mothers, the following reported that their babies had not been separated from them for more than an hour since they came to their rooms (except for a valid reason):

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10
❒11 ❒12 ❒13 ❒14 ❒15 ❒16 ❒17 ❒18 ❒19 ❒20
❒21 ❒22 ❒23 ❒24 ❒25 ❒26 ❒27 ❒28 ❒29 ❒30

_____ **out of** _____ **(Total mothers interviewed) =** _____**%** [IV.17]

Total % for Step 7:
_____ % (7a) + _____ % (7b) ÷ 2 = _____ %

Step 8. Encourage breastfeeding on demand.

8a. No limitations put on mothers breastfeeding

Of the randomly selected mothers who were breastfeeding, the following reported that no limitations had been put on how often or how long they breastfed:
[If the mothers are not breastfeeding, circle their numbers and mark them "NBF" and do not include them in the totals.]

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10
❒11 ❒12 ❒13 ❒14 ❒15 ❒16 ❒17 ❒18 ❒19 ❒20
❒21 ❒22 ❒23 ❒24 ❒25 ❒26 ❒27 ❒28 ❒29 ❒30

_____ **out of** _____ **(Total BF mothers interviewed) =** _____% [IV.13]

8b. Mothers advised to breastfeed on demand

Of the randomly selected mothers who were breastfeeding, the following reported that they had been advised to breastfeed their babies whenever they were hungry, or as often as their babies wanted:
[If the mothers are not breastfeeding, circle their numbers and mark them "NBF" and do not include them in the totals.]

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10
❒11 ❒12 ❒13 ❒14 ❒15 ❒16 ❒17 ❒18 ❒19 ❒20
❒21 ❒22 ❒23 ❒24 ❒25 ❒26 ❒27 ❒28 ❒29 ❒30

_____ **out of** _____ **(Total BF mothers interviewed) =** _____% [IV.14]

Total % for Step 8:
____% (8a) + ____ % (8b) ÷ 2 = _____ %

Step 9. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.

9a. Babies not given pacifiers

Of the randomly selected mothers who were breastfeeding, the following reported that their babies had *not* been given pacifiers/dummies to suck on (that is, they answered "No" to question IV.5):
[If the mothers are not breastfeeding, circle their numbers and mark them "NBF" and do not include them in the totals.]

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10
❒11 ❒12 ❒13 ❒14 ❒15 ❒16 ❒17 ❒18 ❒19 ❒20
❒21 ❒22 ❒23 ❒24 ❒25 ❒26 ❒27 ❒28 ❒29 ❒30

_____ out of _____ (Total BF mothers interviewed) : _____% [IV.5]

9b. Babies not fed with bottles

Of the randomly selected mothers who were breastfeeding, the following reported that their babies had *not* been fed with bottles (that is, they answered "No" to question IV.6):
[If the mothers are not breastfeeding, circle their numbers and mark them "NBF" and do not include them in the totals.]

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10
❒11 ❒12 ❒13 ❒14 ❒15 ❒16 ❒17 ❒18 ❒19 ❒20
❒21 ❒22 ❒23 ❒24 ❒25 ❒26 ❒27 ❒28 ❒29 ❒30

_____ out of _____ (Total BF mothers interviewed) = _____% [IV.6]

Total % for Step 9:
____% (9a) + ____ % (9b) ÷ 2 = _____ %

Step 10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

10a. Mothers given advice on where to get help with breastfeeding

Of the randomly selected mothers who were breastfeeding, the following reported that they had been given advice on where to get help if they had problems with breastfeeding after leaving the facility:
[If the mothers are not breastfeeding, circle their numbers and mark them "NBF" and do not include them in the totals.]

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10
❒11 ❒12 ❒13 ❒14 ❒15 ❒16 ❒17 ❒18 ❒19 ❒20
❒21 ❒22 ❒23 ❒24 ❒25 ❒26 ❒27 ❒28 ❒29 ❒30

_____ **out of** _____ **(Total BF mothers interviewed) :** _____**%** [IV.18]

10b. Mothers who could list at least one appropriate way they were advised to get help.

Of the randomly selected mothers who were breastfeeding, the following could list at least one appropriate way they had been advised to get help:
[If the mothers are not breastfeeding, circle their numbers and mark them "NBF" and do not include them in the totals.]

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10
❒11 ❒12 ❒13 ❒14 ❒15 ❒16 ❒17 ❒18 ❒19 ❒20
❒21 ❒22 ❒23 ❒24 ❒25 ❒26 ❒27 ❒28 ❒29 ❒30

_____ **out of** _____ **(Total BF mothers interviewed) :** _____**%** [IV.19]

10c. Mothers receiving written information on where to get help

Of the randomly selected mothers who were breastfeeding, the following reported that they had received written information on where to get help if they had problems with breastfeeding after leaving the facility:
[If the mothers are not breastfeeding, circle their numbers and mark them "NBF" and do not include them in the totals.]

❒1 ❒2 ❒3 ❒4 ❒5 ❒6 ❒7 ❒8 ❒9 ❒10
❒11 ❒12 ❒13 ❒14 ❒15 ❒16 ❒17 ❒18 ❒19 ❒20
❒21 ❒22 ❒23 ❒24 ❒25 ❒26 ❒27 ❒28 ❒29 ❒30

_____ **out of** _____ **(Total BF mothers interviewed) :** _____**%** [IV.20]

Total for Step 10:
____% + (10a) ____ % (10b) + ____ % (10c) ÷ 3 = _____ %

APPENDIX D Calculation of the Ten Steps

Table E1 Detail about how steps were calculated according to BFHI guidelines, how researcher calculated the steps, and explanations where there were discrepancies

BFHI - Comparing my approach vs BF approach for calculation of the 10 steps

Step	What is the step	Clarification	BF approach	My approach and reasons for the discrepancy
1	**Have a written breastfeeding policy that is routinely communicated to all health care staff**	Required areas are: prenatal clinic, maternity ward, nursery, and infant special-care unit (if the areas exist).	Total % for Step 1 = % (1a) + % (1b) ÷ 2	Same as BF approach
1a	Policy displayed in all areas serving mothers/infants.	*"Yes" = 100%, "No" = 0%*		
1b	No posters or materials promoting breast milk substitutes, bottles or pacifiers displayed in the facility.	"No posters/materials displayed" = 100%, "Posters/materials displayed" = 0%		
2	**Train all health care staff in skills necessary to implement this policy**	Staff were chosen on a basis of convenience, in other words who were in the wards and who could I talk to.	Total % for Step 2 = ***% (2a)*** + % (2b) + % (2c) + ***% (2d)*** ÷ 4	Total % for Step 2 = % (2b) + % (2c) ÷ 2
2a	Staff receiving 18 hours training (from records).	The training referred to is an 18–20 hour training course in breastfeeding and lactation management that is presented by BFHI trainers in the different districts. Training schedules for the year are set at district or facility level. Since 2006 this training is called "Maternal Nutrition, Infant and Young Child Feeding Course in the context of PMTCT of HIV and AIDS". Where a hospital wants to achieve baby-friendly accreditation status they must arrange for their own training by some of their staff that did the 10 days training as a "Trainer of trainers".		This was not evaluated by the researcher as this information was mostly not available either in the ward or from nursing management. It was expected that baby-friendly accredited facilities at least would have a record of which staff had which training at which dates, but the records were mostly not up to date, as staff rotated in and out of maternity .
2b	Staff receiving 18 hours training (reported by staff).			
2c	Staff with correct breastfeeding management knowledge.	At least 2 out of 3 questions needed to be answered correctly in order to be assessed as having correct breastfeeding management knowledge: effects of giving formula before the milk comes in on success of breastfeeding, major cause of painful nipples, and most common cause of insufficient milk (See Appendix 2. Although acceptable answers are provided in the Monitoring tool and although I have personally communicated with a qualified national assessor (Ms T. Tanase at Leratong hospital), there might still be some difference in opinion as to how these are interpreted. This is an area where my calculations might differ from those of qualified assessors and thus be a limitation of the study. It takes 15 days of training to be a qualified national assessor – 10 days training as a "Trainer of trainers", and then a 5 day "Assessor course".		
2d	Trained staff scheduled for refresher training.			This was also not evaluated by the researcher as in many facilities % of staff trained even once was quite low.

3	**Inform all pregnant women about the benefits and management of breastfeeding**	This component was assessed simply by asking the sister in charge of the antenatal clinic whether there was a written description of prenatal education and whether these topics were covered during their antenatal education sessions, and not checked whether it was actually done at all.	Total % for Step 3 = % (3a) + % (3b) ÷ 2	Same as BF approach
3a	*Written description of prenatal education*.	This requires a written description of the content and schedule for individual counselling and/or group education sessions on breastfeeding performed at the centre. "Yes" (there is a written description) = 100%, "No" = 0%		
3b	*Number and percentage of topics covered in prenatal education.*	The prenatal education session should cover 7 topics, namely benefits of breastfeeding, importance of breastfeeding soon after delivery, importance of rooming-in, positioning and attachment, importance of feeding on demand, what a mother can do to ensure that she produces enough milk for the baby, and the importance of giving only breast milk.		
4	**Help mothers initiate breastfeeding within a half-hour of birth**	The Baby-Friendly Hospital Initiative prescribes that the % of mothers interviewed with caesarean sections should be similar to the hospital proportion for caesarean sections. In all hospitals the caesarean section rate was about 22 – 30%, and the % of caesarean section mothers selected for interviews were 25-30%.	Total % for Step 4 = % (4c)	I have combined these two components and just give the total % (4c). Same as BF approach
4a	*Babies breastfed within one hour of birth (vaginal deliveries*),			
4b	*Babies breastfed within one hour of mothers being able to respond (caesarean section*).			
4c	*Babies breastfed within 1 hour (vaginial deliveries and caesarean)*			
5	**Show mothers how to breastfeed and how to maintain lactation, even if they should be separated from their infants**		Total % for Step 5 = % (5a) + % (5b) + ***% (5c)*** + % (5d) + % (5e) + % (5f) ÷ 6.	Total % for Step 5 = % (5a) + % (5b) + % (5d) + % (5e) + % (5f) ÷ 5.
5a	*Mothers offered help with breastfeeding*			
5b	*Mothers offered help with positioning and attachment.*			
5c	*Mothers demonstrating / describing correct positioning and attachment.*			This was not evaluated by the researcher due to time constraints, as well as lack of training.

5d	*Staff demonstrating (or showing and describing) correct positioning and attachment*.	In this study staff were only asked to describe key points for correct positioning and attachment, and not asked to demonstrate. Seven key points are mentioned in the Monitoring tool – see Appendix 2. The three key points for **positioning** are: body turned to mother, close, stomach-to-stomach. After discussion with the assessor (Ms. T. Tanase at Leratong hospital), two more criteria were added for evaluating positioning, namely baby must face the mother, and support of the baby (head, neck and buttocks). I took answer about positioning as correct if staff member mentioned 2 out of the 1st 3 criteria, or 3 or more out of the extended 5 criteria. The 5 key points for **attachment** were: mouth wide open, lower lip not folded in, chin touching breast, more areola below nipple in mouth, and rhythmic burst-pause suckling and swallowing. I took answer about attachment as correct if staff member mentioned at least 2 of the criteria. A qualified national assessor in Gauteng Department of Health feel that staff should actually get all key points correct as in a "all or nothing" principle – a stricter approach. She explains that if you miss even one crucial point in positioning or attachment, the baby will struggle to breastfeed, and a lot of problems arise from that. She stresses that even where staff can theoretically mention all the key points correctly, many are still not able to demonstrate correctly and can consequently not teach the mother properly. (Personal communication, Ms. Zama Mtshali, 4 February 2009). On the other hand it could be argued that it might be easier for staff to demonstrate correct positioning and attachment, even where they might struggle to correctly phrase the key points.	In the monitoring tool these 2 sections (positioning and attachment) are not calculated separately, and therefore a qualified assessor evaluating the same staff might come to a different score which might show knowledge and technique of staff in a better light.	My total for this component was calculated by getting the mean of the 2 sections. I was interested in looking at the 2 components separately to see whether staff managed better with either positioning or attachment.
5e	*Mothers taught how to express milk as reported by the mothers.*			
5f	*Staff describing an acceptable technique for milk expression*.		The assessor (Ms. T. Tanase at Leratong hospital) said the 1st 4 of the 7 key points should be correct for the technique to be accepted as acceptable.	I took answer as acceptable if the 1st 4 key points were more or less correct.
6	**Give newborn infants no food or drink other than breast milk, unless medically indicated**	There is only one component used in the Baby-Friendly Hospital Initiative Monitoring tool to calculate step 6, namely *babies breastfeeding exclusively*. That means mothers report that their babies received no food or fluid other than breast milk (or vitamins, minerals supplements or medicine), or, if they have, the records show an acceptable medical reason. Medically acceptable reasons for supplementation are given in Appendix 2.	Total % for Step 6 = % infants breastfed exclusively	Same as BF approach
7	**Practise rooming-in - allow mothers and infants to remain together - 24 hours a day**		Total % for Step 7 = % (7a) + % (7b) ÷ 2	Same as BF approach
7a	Babies rooming-in within I hour of birth			
7b	Mothers and babies not separated for more than 1 hour			

8	**Encourage breastfeeding on demand**		Total % for Step 8 = ***% (8a)*** + % (8b) ÷ 2	Total % for Step 8 = % (8b)
8a	*No limitations put on mother's breastfeeding*.			This component was not evaluated as most mothers interviewed in the study did not get any advice as to when or how long to feed their baby.
8b	*Mothers advised to breastfeed on demand*	Breastfeeding on demand: whenever infants were hungry, or as often as their infants wanted. The distinction on where the mother got the advice was not made in this step, so the marks were scored wherever the mother got advice on the topic (at ANC, at another facility, in the ward, etc).		
9	**Give no artificial teats or pacifiers to breastfeeding infants**	Both components only take into account breastfed infants.	Total % for Step 9 = % (9a) + % (9b) ÷ 2	Same as BF approach
9a	*Babies not given pacifiers*			
9b	*Babies not fed with bottles*			
10	**Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic**		Total % for Step 10 = % (10a) + ***% (10b)*** + % (10c) ÷ 3	Total % for Step 10 = % (10a) + % (10c) ÷ 2
10a	*Mothers report that they had been given advice on where to get help if they had problems with breastfeeding after leaving the facility*.			
10b	*Mothers who could list at least one appropriate way they were advised to get help*.			This component was not evaluated by the researcher as a very low number of mothers got any advice. Mothers that got advice were asked what advice they were given. Mothers who didn't get any advice were asked what they thought they would do if they encountered problems with breastfeeding after discharge
10c	*Mothers receiving written information on where to get help* if they had problems with breastfeeding after leaving the facility.			

APPENDIX E Ethical Clearance

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
R14/49 Jordaan

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER M071002**
PROJECT	A Cross Sectional Study of Newborn Feeding Practices and Support at Healthcare Facilities in Gauteng
INVESTIGATORS	Dr MM Jordaan
DEPARTMENT	Community Paediatrics Dept
DATE CONSIDERED	07.10.26
DECISION OF THE COMMITTEE* from the Gauteng Dept of Health	Approved subject to obtaining writen permission

Unless otherwise specified this ethical clearance is valid for 5 years and may be renewed upon application.

DATE 07.11.14 **CHAIRPERSON** .....
(Professors PE Cleaton-Jones, A Dhai, M Vorster, C Feldman, A Woodiwiss)

*Guidelines for written 'informed consent' attached where applicable

cc: Supervisor : Dr H Saloojee

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10005, 10th Floor, Senate House, University.
I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to a completion of a yearly progress report.**

APPENDIX F Consent Gauteng Department of Health

PROVINCIAL RESEARCH COMMITTEE.

RESEARCH EVALUATION FORM FOR APPROVAL BY THE HEAD OF THE DEPARTMENT.

Researcher's Name: Dr Mimie Jordan
Researcher's contact details: Tel: 011 694 3710
Fax: 011 694 3815
Research Topic: A cross-sectional study of new born feeding practices and support at health care facilities in Gauteng.

Supervisor's Name: Dr H Saloojee

Date submitted: 16-11-2007

Date Reviewed: 29-11-2007

Reviewer's name: Dr ML Likibi

Research Site(s): Four clinics/MOUs (Mofolo, Chiawelo, Bekkersdal and Discoverers) and all level hospitals

Type of research: Health system research

SECTION A

	YES	NO	N/A
1. Is this research project within the scope of the Department of Health key policy priorities/directives?	X		
2. Content of Research: Original work • New facts, ideas	X X		

• Confirmation of uncertain data • Repetition of known data and consequently of limited importance • Unreliable and/or inadequate • Confusion of topics/questions • Intervention study		X X X X X	
3. Is the title of the research project suitable?	X		
4. Are the objectives of the research project adequate?	X		
5. Could the objectives be limited to better focus on the project's main objective?	X		
6. writing style • The text of the proposal is clear • The nomenclature used is correct • The references used are relevant, comprehensive and accurate (corrected) • The spelling and grammar are correct • The language needs improvement • The research proposal needs restyling and rewriting	 X X X X	 X X	
7.Are the research methods appropriate to the study	X		
8. Does the study have ethical approval? If yes, name the ethics committee **Wits University ETHICS COMMITTEE**	X		
9. Is the definition and measurement of variables consistent with the scope of the proposal	X		
10. Is data collection method in line with study design?	X		
11. Is time frame of the proposal adequate to meet the objectives?	X		
12. Is it stated in the proposal the method of dissemination of the results of the research project?	X		
13. Is the possible conflict of interests clarified? Are financial implications and financial support transparent?	X		

Section B: Proposal summary

This is a cross-sectional study comparing baby friendly with non baby friendly accredited facilities, using a modification of the Baby-friendly Hospital Initiative (BFHI) Monitoring tool.

The objectives of the study are:

- To describe newborn feeding practices at health care facilities.

To compare a baby friendly accredited with non baby friendly accredited health facilities, using a modification of the baby friendly hospital initiative (BFHI) Monitoring tool. developed by the WHO \ Well start International in 1999 and still in use at present in South Africa,assesses maternal and health care practices around infants feeding. This will be the primary study tool.

- To explore the view s, practice and dilemmas/ constrains of healthcare workers in relation to breastfeeding support of newborns in healthcare facilities in Gauteng.

The researcher will visit selected facilities for 2-3 days each.
Nurses and mothers will be selected on the basis of convenience to be interviewed.

In depth interview lasting about 10-15 minutes, first with the managers, then with mothers and finally with nurses using an adoption of the B FHI.will be carried out.

This will be coupled with patient record review to confirm data that mother give during the interview, like mother's HIV code or Nevirapine given the baby.

The reseach is planned to be carried out in healthcare facilities reflecting all levels of health care provision namely 1 tertiary (Chris Hani Baragwanath) 2 Region (Leratong and Coronation) 2 districts (Southrand and Germiston) and 2 private Hospitals (Park Lane Clinic and Garden City Clinic) as well as Maternal Obstetric Units (Mofolo, Chiawelo, Bekkersdal and Discovers) – 11 facilities in total
Baby-friendly (B F) facilities will be matched with non baby-friendly (NBF) facilities using same level of designation and facilities of comparable size as determined by the number of deliveries per year.

Criteria used for including mother in the study will be mothers with well babies (not requiring oxygen or antibiotics, or on alert post-deliver, babies with birth weight>1.8kg mother anticipated to be discharged within 72 hours after delivery.
The study is conducted for partial fulfillment of a master's degree in community pediatrics.
The protocol has been submitted to the ethics committee if the University of the Wiitwatersrand and approval abtained subject obtaining writted permission from Gauteng Department of Health Protocol with all relevant forms are submitted to Dr Likibi of

There are no financial implications to the Department of Health.
Therefore we have no objection to recommend that the study be carried out in this province pending thi issuing of a clearance certificate from the Wits Ethics committee

The Evaluator:

Dr ML Likibi
Specialist Research and Epidemiology

Date:

THIS IS A STUDENT STUDY PROJECT. PERMISSION IS HEREBY GRANTED FOR THIS STUDY TO START IMMEDIATELY IN GAUTENG PROVINCE WHILE THE PROCESS OF OBTAINING THE HOD APPROVAL IS ONGOING.

APPENDIX G Consent Department of Health Johannesburg- West Rand Region

From:elizma To:00114815195 12/12/2007 16:02 #550 P.001/001

Department of Health
Lefapha la Maphelo
Departement van Gesondheid
Umnyango wezeMpilo
Office of the Chief Director:
JHB-WEST RAND REGION
FAMILY MEDICINE & PHC

MEMORANDUM

TO : **Dr M Jordaan**

FROM : **Dr P Maduna**

DATE : **10 December 2007**

SUBJECT : **Permission for Research at four Clinics**

Permission is granted for your research project at the following four clinics / MOU's namely:

- Mofolo
- Chiawelo
- Bekkersdal
- Discovers

Please make the necessary arrangement with the Facility Manager.

Dr P Maduna
Chief Director: Johannesburg / West Rand Region

Cc:
- Ms P Muso
- Dr C Manitshana
- Mrs Z Saloojee
- Dr S Moosa
- Mrs C Kula

APPENDIX H Quantitative data on the Ten Steps to successful breastfeeding

Table H1 Quantitative data on the Ten Steps to successful breastfeeding

Facility	Total % Step 1	Policy displayed in all areas[1a]	No posters promoting breast milk substitutes[1b]	Total % Step 2	Staff receiving 18 hours training[2b]	Staff with correct breastfeeding knowledge[2c]	On the job training No (%)	Number of hours on the job training
Bekkersdal *	100%	100%	100%	75%	100%	50%	2 (33%)	8h course, report back
Mofolo *	50%	0%	100%	72%	100%	43%	3 (50%)	Report back
Leratong *	100%	100%	100%	58%	70%	46%	1 (9%)	½h
South Rand *	100%	100%	100%	54%	57%	50%	2 (29%)	Report back, meetings 1X/month
Discoverers	50%	0%	100%	48%	67%	29%	3 (43%)	Report back, meetings 1X/month
Tshiawelo	50%	0%	100%	34%	50%	17%	2 (33%)	Report back
Germiston	50%	0%	100%	40%	50%	30%	1 (10%)	½h
Coronation	50%	0%	100%	23%	29%	17%	2 (17%)	1h, 1h
Chris Hani Baragwanath	50%	0%	100%	11%	17%	5%	3 (15%)	2h, 2h, 1h

Facility	Total % Step 3	Written description of prenatal education[3a]	% of topics covered in prenatal education[3b]	Babies breastfed within 1 hour of birth = Total % Step 4	Babies brought to mother within 1 hour of birth
Bekkersdal *	50%	0%	100%	100%	100%
Mofolo *	86%	100%	72%	100%	100%
Leratong *	100%	100%	100%	100%	100%
South Rand *	50%	0%	100%	100%	100%
Discoverers	50%	0%	100%	75%	83%
Tshiawelo	50%	0%	100%	33%	67%
Germiston	43%	0%	86%	31%	63%
Coronation	29%	0%	57%	6%	17%
Chris Hani Baragwanath	50%	0%	100%	9%	19%

Facility	Total % Step 5	Mothers offered help with breastfeeding[5a]	Mothers offered help with positioning and attachment[5b]	Mothers taught how to express milk[5e]	Staff acceptable technique for Positioning and Attachment[5d]	Staff describing acceptable technique for expressing milk[5f]	Breastfed exclusively = Total % Step 6	Staff think supplementation affect success of breastfeeding	Staff know at least one cause of insufficient milk
Bekkersdal *	68%	80%	80%	80%	50%	50%	100%	80%	67%
Mofolo *	27%	20%	25%	20%	29%	40%	100%	67%	67%
Leratong *	22%	17%	17%	17%	34%	27%	100%	90%	55%
South Rand *	29%	38%	38%	17%	22%	29%	100%	50%	67%
Discoverers	21%	50%	50%	0%	7%	0%	100%	86%	14%
Tshiawelo	14%	17%	17%	0%	17%	17%	100%	100%	33%
Germiston	15%	19%	19%	6%	20%	10%	63%	50%	30%
Coronation	14%	28%	22%	0%	9%	10%	50%	25%	27%
Chris Hani Baragwanath	6%	2%	2%	2%	0%	25%	5%	42%	26%

Facility	Total % Step 7	Babies rooming-in within I hour of birth[7a]	Mothers and babies not separated for > 1 hour[7b]	Mothers advised to breastfeed on demand = Total % Step 8[8b]	Staff think baby must breastfeed on demand	Total % Step 10	Mothers given advice where to get help with breastfeeding after discharge[10a]	Mothers receiving written information on where to get help[10c]
Bekkersdal *	100%	100%	100%	60%	83%	40%	80%	0%
Mofolo *	100%	100%	100%	80%	100%	30%	60%	0%
Leratong *	100%	100%	100%	18%	91%	0%	0%	0%
South Rand *	100%	100%	100%	43%	100%	17%	33%	0%
Discoverers	92%	83%	100%	25%	71%	13%	25%	0%
Tshiawelo	84%	67%	100%	0%	67%	0%	0%	0%
Germiston	82%	63%	100%	27%	80%	13%	25%	0%
Coronation	59%	17%	100%	6%	37%	0%	0%	0%
Chris Hani Baragwanath	60%	19%	100%	2%	39%	5%	10%	0%

APPENDIX I Qualitative data on the Ten Steps to successful breastfeeding

Table I1 Qualitative data on the Ten Steps to successful breastfeeding STEP 2

Theme	Quote/ Comment	Source of data
Mothers:		
Staff work hard	"Those sisters they are working very hard. I feel for them. They are always busy - not sitting down, doing many jobs. Help us cleaning the babies, cleaning the beds."	(6)Chris Hani Baragwanath
Staff:		
Rotation	"Staff allocated yearly. Sisters, auxilliary and enrolled nurses work in chosen department as long as choose. Students and community service sisters rotate every 3 months because they are still learning".	(43)Leratong, sister in charge ANC, 18 hour training
On-the-job training	"We inservice ourselves. No longer regular inservice. Get information from people coming back from training".	(74)Tshiawelo, midwife, >20 years in maternity, 18 hour training
	"Updates from colleagues who are back from a course".	(48)South Rand,midwife, 3-5 years in maternity, 18 hour training
	"Breastfeeding meetings once a month".	(45)South Rand, midwife, 3-5 years in maternity, 18 hour training
	"One prepare a topic for an inside hospital talk - about half an hour".	(58)Germiston, nurse, no training*
Difficulty implementing, staff reluctant to change	"I did AFASS criteria (training course) last year December, but never practise it. Counsellors don't know about AFASS. Another sister went to the course two weeks ago. Now I have the sisters support, maybe now we can implement some of this. People go to the course but don't give feedback; or come back from course but people are very reluctant to change. I was the youngest, very difficult for me to implement it"	(84)Bekkersdal, midwife, 1-2 years in maternity, 80 hours training
Staff unwilling to learn	"The staff do not want to learn about breastfeeding or attend breastfeeding meetings. Our matrons must know breastfeeding is for all health care workers. Let's all speak one language"	Chris Hani Baragwanath, sister in charge of an unit, midwife, 18 hour training
Not allways so busy	"At present a lot of staff and not that busy".	(84)Bekkersdal, midwife, 1-2 years in maternity, 80 hours training
	*Training: refer to 18 hour course in breastfeeding and lactation management	

Table I1 Qualitative data on the Ten Steps to successful breastfeeding STEP 3

Theme	Quote/ Comment	Source of data
Staff:		
Volume of information on breastfeeding too much to cover in each session	"There is just too much information that needs to be covered on other topics as well, beside breastfeeding, for it to be possible for a sister to cover everything on breastfeeding in every session" .	
Problems created by discrepancy in breastfeeding counselling between baby-friendly and non-baby-friendly facilities	"In our ANC patients are taught about breastfeeding. In other (sattellite) clinics (Chris Hani Baragwanath,Rosettenville) not being taught, most don't have an idea about breastfeeding. Education is given just before discharge from the hospital".	(45)South Rand, 3-5 years in maternity, midwife, 18 hour training)
	"Lots of problems from sattellite clinics which are not baby-friendly. Patient booked there knows nothing about breastfeeding. Now short of staff, not enough staff to teach mothers. Just teach them on discharge.Moms mostly taught at ANC, here reinforced. Concerned about rest that got no info at ANC	(49)South Rand, 11-20 years in maternity, midwife, 18 hour training
Mothers:		
Unbooked mothers	"Never booked. Came here when in labour. I had problems with the father of the baby. Quarrelled - undecided whether to keep the baby"	(56) Chris Hani Baragwanath
	"Booked at Congo 3-4 times. Came to deliver here. I am new. Just asked the driver for the nearest clinic, brought here. I just came as a refugee. Will go back but 1st want things to stabilize - ? After 1-2 years. Family here - formal house Cresta. Came about 1 week before delivery"	(63) Coronation
Special Risk Factors in infants	Mom 16 years old." I am staying with my parents. My sister - 19 yrs old, also stay with my parents. She got 1 child - 1 year 2months old, healthy, used to drink bottle Nan. I've got bottles at home, not milk. Not sure what milk I will give. Going to work weekends, looking for a job. Not in a reationship with the father. I don't think he will support the baby. My mother works, but only part-time. Don't know whether she will be able to support me with milk". ANC 3 times	(87)Coronation, ANC Coronation
Pamphlets	"Pamphlets Diepsloot clinic - about breastfeeding and pregnancy. You just take if you want"	(79)Coronation, ANC Diepsloot
	"Pamphlet how to breastfeed"	(122) South Rand, ANC South Rand
	Pamphlets clinic.	(151)Tshiawelo, ANC Tshiawelo
Frequency of group information sessions at antenatal clinic	"Feeding advice at Mofolo, not at Chris Hani Baragwanath. At the clinic they don't talk to us. They just test our urine, take our weight, examine us, then we can go home".	(28) Chris Hani Barawanath, ANC Mofolo
	"No group talks, also not on feeding or anything else. Only check-ups. Previously 2 times miscarriages". ANC 5 times or more	(58)Chris Hani Baragwanath, ANC Eldorado Park
	"No group health talk, no one talked about feeding". ANC more than 5 times	(108)Leratong, ANC Westonarea
	"If it is necessary I will breastfeed him, otherwise I will buy the formula. Here (at the hospital) they said I must breastfeed. First time for me to hear about breastfeeding. That is why I came to you. They just said the baby needs to be breastfed". ANC 2 times	(149)Tshiawelo, ANC Tshiawelo
	"Booked early went to clinic 11 times, only 1 time group talk"	(96)Leratong, ANC Tshepisong
	"Everytime group talk, sometimes about feeding". ANC 4 times	(53) Chris Hani Baragwanath, ANC Tshiawelo

Theme	Quote/ Comment	Source of data
	"Group talk and feeding every morning". ANC 3 times	(111)Leratong, ANC Westonarea
Frequency of advice on breastfeeding	"No one talked about feeding". ANC 3 times	(32)Chris Hani Baragwanath, ANC Zola
	"No breastfeeding advice given during ANC". ANC 4 times	(125)Germiston, ANC Primrose
	"No breastfeeding talks during ANC visits". ANC 4 times	(138) ANC Venda and Germiston
	"No one talked about feeding options or ask what she is going to give the baby. (The staff)Told everyone (all the mothers): if not going to breastfeed, must bring own milk and bottles". ANC 4 times	(144)Discoverers
	Everytime group talk, sometimes about feeding. ANC 4 times	(53)Chris Hani Baragwanath, ANC Tshiawelo
	"Talked about feeding everytime". ANC 3 times	(52)Chris Hani Baragwanath, ANC Tshiawelo
Not all the information given is accurate	"Health education every day, not (about) feeding every time. Breastfeed best, (talked about) expressing.Breastfeed till 6 months, otherwise (she will) battle to get him off the breast". Asked me (the researcher) when best time to stop breastfeeding.	(110)Leratong, ANC Dr Yusuf Dadoo Hospital
	"Breastfeeding is very healthy for the baby - stays healthy, can't get any sickness".	(46)Chris Hani Baragwanath, ANC Mofolo
	"Group talk moms feeding every time. Can give Nan or breast or both - depend on the mother. Start solids like veggies at 4 months".	(66)Coronation, ANC Coronation
	"Group talk every morning, feeding every time. Nestum in bottle and feed baby after 3 months"	(81)Coronation, ANC Witkoppen
	"When 3 months introduce soft porridge in the bottle".	(90)Coronation, ANC Witkoppen
	"Group talk both times: S26 if don't want breastfeed. Breastfeeding is best".	(148)Discoverers, ANC Discoverers
	"If baby can't suck, then you can give formula".	(164)Bekkersdal, ANC Westonarea
	"If baby doesn't want breast, then give f. Okay to mix feed (both breast and formula)".	(26)Chris Hani Baragwanath, ANC Porke Park
Information at times very comprehensive	"Advice on breastfeeding here and at ANC: feed on demand, as long as baby wants, come back to clinic if problem with feeding".	(166)Bekkersdal, ANC Bekkersdal
Accuracy of mother's knowledge	Mom will breasfeed 1-2months, then buy food like Nestum, Cerelac, Nan. Mom will look for work when baby >1yr. Her mom can afford formula	(109)Leratong, ANC Kagiso 2
	"I am going to give Nan and breast. Decided on formula before birth because I am working (back to work after 4 months). Got Nan at home - boyfriend bought yesterday bottles and teats as well"	(50)Chris Hani Baragwanath, ANC Eikenhof
Where do mothers get inormation on breastfeeding:	Newspapers: Sowetan, Daily Sun	
	Magazines: Your Pregnancy, Living and Loving, Soul City, Drum, True Love;Bona, My Baby, Your Pregnancy	

Theme	Quote/ Comment	Source of data
	Booklets: "Read in Soul City booklet (came with Sunday Times newspaper)"; "Breastfeeding is good - Jet magazine - how to breastfeed a baby. They send it from my brother's account". Also from Edgars.	
	Family/ friends: Mother, sister, aunt	
	From hospital or clinic: Sister or nurse giving advice, pamphlets on the walls	
	Radio: 11-12 FM talk about pregnancy; Tswana; Radio Metro	
	TV: "Great Expectations"	
	Doctor	
	School: "Heard from schoolteacher and my mother while pregnant that breastfeeing is good for the baby". Mother doing matric.	(70)Coronation, ANC Coronation
	"My daughter is 11 - even she knows about bf better for baby. Grow up knowing breastfeeding is best - it is a woman thing".	(85)Coronation, ANC Coronation
	"Friends, radio, everyone says you can't breastfeed if you have HIV. Radio Metro, ANC, True Love, mother".	(77)Coronation, ANC Coronation
Private doctors	Went to private gyne till medical aid exhausted. Lab technician. Got no feeding education.	(126)Germiston
	"Saw a private gyne - never spoke about feeding. Pamphlet - how to breastfeed, e.g. shouln't hear sounds when breastfeeding"	(98)Leratong
Reasons for breastfeeding:	"Breastfeeding cheaper, also good for her";	
Content of breastfeeding information: breastfeeding on demand; expressing milk; showing how to breastfeed; exclusive breastfeeding; giving water, etc.	"Expressing if working, breastfeeding best, bottles/formula not healthy"	(111)Leratong, ANC Westonarea
	"Group talk about feeding. Breastfeeding most important. Not talk about expressing. Read that in a book on Soul City from sister in law".	(151)Tshiawelo, ANC Tshiawelo
	"Showed how to put baby to breast, how to hold breast. Told about expressing milk".	(61)Chris Hani Baragwanath, ANC Koos
	Group talk every morning, every morning about breastfeeding. Breastfeeding important, baby never sick, expressing, how long and frequently (baby must drink), how to put baby to breast. Not talk about formula". ANC 6 times	(161)Bekkersdal, ANC Westonarea
	ANC: "Must give water at 3 months - don't know why"	(59)Chris Hani Baragwanath, ANC Dobsonville

Table I1 Qualitative data on the Ten Steps to successful breastfeeding STEP 4

Theme	Quote/ Comment	Source of data
Staff		
Misconceptions	"Not healthy for mom to breastfeed in Labour Ward before bathed - liquor, faeces".	(17)Chris Hani Baragwanath, midwife, 11-20 years in maternity, no training
Practices with caesarean sections	(Under radiant) "warmer 1st 6 hours, difficult to breastfeed, give them formula so that mommy can be well. Every 3 hours 50 ml, mostly 2 feeds. If visitor come before that she might breastfeed"	(28)Coronation, nurse, <2 months in maternity, no training
	"Mom lie 6 hours on her back because spinal headache, can't turn. Nan after caesarean section, mom still in theatre. Encourage early initiation, give her baby after 6 hours"	(31)Coronation, nurse, 1-2 years in maternity, 18 hour training
	"We don't like mom lying down to feed unless under supervision. With supervision: hold baby for her, let baby latch while mom is still on her back after theatre"	(32)Coronation, Sr in charge postnatal wards, 11-20 years in maternity, 18 hour training)
	"Caesarean section babies brought to their moms the next day"	(20)Chris Hani Baragwanath, nurse, >20 years in maternity, no training
	"Caesarean section babies taken to mom ± 07h00 (next day) unless sick or jaundiced. Most staff give formula at night. Baby in nursery 1st 12-24 hours, mom sleep 1st night. Lot of work to change mom from prone to lateral - it depend on the nurse from nursery. Nurse in nursery decide on feed for baby, unlikely to wake mom up. Usually we give formula. Now we must move away from that, mom to lie on side, pain management. Mom thinks you are so evil when you do that, you are such a horrible person when take baby of fresh Caesarean section to mom".	(60)Germiston, midwife, 3-5 years in maternity, to go for training the following week
Practice after birth	(There are) "20 delivery cubicles. Use mostly Moonlighters especially at night. Stay on bed 1 hour (post delivery), then to postnatal ward. Sometimes up to 6 hours. If need bed (mom sit in) chair. Hospital often full with no beds in postnatal ward. Short staffed. Not safe for mom to hold baby, what if she feels bad".	(17)Chris Hani Baragwanath, midwife, 11—20 years in maternity, no training
	"Eclamptic patient semi-conscious - breast is not semi-conscious".	(44)Leratong, Sr in charge of one of the postnatal wards, 6-10 years in maternity, 18 hour training)
Mothers		
Wait to be told to breastfeed	Mom didn't know whether she can breastfeed or wait to be told. She asked for formula in night (baby hiccoughed), sister said why waiting, should have started breastfeeding	(11)Chris Hani Baragwanath
	Put to breast 1st time after 10 hours - "Sister said to put to breast. Didn't understand previously that had to breastfeed".	(14)Chris Hani Baragwanath
	"Was waiting for the nurses to tell us to feed the babies".	(17)Chris Hani Baragwanath
	Breastfeed after about 1½ hours. Was sleeping. Baby born 00h30. Staff not told her to bf earlier	(154)Tshiawelo
Need to clean up before breastfeeding	Mom hasn't breastfeed yet - "Need to go home first and have a proper bath"	(19)Chris Hani Baragwanath
Not enough milk, therefore don't start feeding	"Right now I don't have milk (researcher pressed and milk squirted out). Haven't yet tried to put to breast because thought no milk. I want to give her the breast".	(35)Chris Hani Baragwanath
	Not yet breastfed (26 hours after birth). Mom says: "The breast there is no milk". I checked - ++ colostrum. (Chris Hani Baragwanath blue 52)	(52)Chris Hani Baragwanath
	Not yet breastfeed, about 8 hours after birth. Fed 1st time while researcher talked to her. The sister translated. When she heard not breastfed yet, she told the mom to breastfeed. Mother said no milk. The sister checked - there was colostrum.	(153)Tshiawelo
Supplement because colostrum watery / insufficient /dirty	"I am not yet producing milk - it is still the watery substance in the breast so the baby is not getting full so I need to give hospital milk as well. If formula is not out yet and baby gets hungry and irritated I give breast. Most of the time give both". Second day after delivery	(40)Chris Hani Baragwanath

Theme	Quote/ Comment	Source of data
	"I tried the formula but he doesn't want it so I only give breast. The milk is still the water, so let me give him the formula so that he can get food".	(45)Chris Hani Baragwanath
	"Idea that 1st milk is dirty and not supposed to be given".	(16)Chris Hani Baragwanath. Midwife, 6-10 years in maternity, no training
Baby doesn't want the breast	"1st breastfeed, formula later - baby was crying and didn't want to breastfeed".	(54)Chris Hani Baragwanath
	I tried 2 times - didn't want to take the breast, so I started giving him formula. Staff told us to breastfeed. Don't know when to feed baby - I will ask my sister".	(87)Coronation
Breastfeeding after caesarean section	"Easy to breastfeed 1st time even though lying on side and even though had a lot of pain"	(93)Leratong
Infants not yet breastfed		

Table I1 Qualitative data on the Ten Steps to successful breastfeeding STEP 5

Theme	Quote/ Comment	Source of data
Staff:		
Think breast milk is not enough initially	"By 2nd or 3rd day expect breast to have something. If mom still always come for cup, check HIV results. If negative, help with breastfeeding".	(16)Chris Hani Baragwanath, midwife, 6-10 years in maternity, no training
Advice given at times accurate, at times inaccurate, at times a mixture of accurate and inaccurate components	"Must press on breast to help baby, baby has not got enough power. Suck 30 min - 1 hour till find milk. Baby must take nipple - areola is big".	(52)Germiston, nurse, < 2 months in maternity, no training. No on the job training. Does teach positioning and attachment to the mothers
	Only 2 moms in room, other one not breastfeeding, so sister stood next to her, showed and helped her. Advice included: Express, support, whole areola in mouth, drink till enough, wake up if sleeping. Exclusive breastfeeding till 6 months, feed on demand.	(160)Mofolo
No help unless mother expresses a problem	“We health care workers are to be blamed. We don’t supervise the ones that need help, especially the teenagers”.	Chris Hani Baragwanath, midwife, years in maternity, 18 hour training
	"Don't talk unless mom express a problem. Group session when there is time, not every day. Today just 2 registered nurses. Talk to moms individually. Early morning examine all moms and babies. Advise breastfeed 2 hourly"	(22)Coronation, midwife, <2 months in maternity, no training
Expressing milk	"Moms are no longer expressing milk manually, most moms buy machines".	(64)Discoverers, midwife, <2 months in maternity, no training
Mothers:		
Teenage mothers	"Going back to school in 1 month - matric. Decided before not to breastfeed therefore. The sister here said no, I have a lot of milk, I must breastfeed him. Sister helped her with breastfeeding when she came in the day before - lift breast, put breast in his mouth"	(86)Coronation. Mother in matric
	"Was difficult, was still drowsy, no help, but managed. Nipple very small left, didn't ask for help, baby struggle on that side. Breastfeeding good for the baby - (according to) clinic and pamphlets. Go back to school after holiday (<1 month). Express or Nan while at school". (Caesarean section)	(107)Leratong. Mother 14 years old
	"Going back to school in 2 months - Grade 12. Then will give formula. Not told about expressing milk. Another patient helped (her) with breastfeeding".	(54)Chris Hani Baragwanath
No help from staff	"Sister said must put on breast. He drank,but I battled. Milk not coming out. Drink 5 min, sleep, drink again after 10 min. Now sleep (1 hour 20 min), he doesn't want to drink the breast".	(70)Coronation. Mother 16, still in school
	Mom says he is closing his mouth, not drinking at all. Staff haven't helped her since, she also hasn't asked fo help. Sister examining her didn't ask baby drinking well	(87)Coronation
Staff helped after mother asked for help	"Didn't want breast at first. Later I asked for help, sister came and helped her. Initially I was too sore to bother with breastfeeding, but they didn't ask".	(85)Coronation
Staff helped	Staff helped mom - lie on her side, gave baby to her, put baby back in crib when finished	(75)Coronation
	Mom very unsure - "what must I do now? If struggle e.g. baby crying - don't know why - they come to help me, they are so kind. Baby fed 5 hours ago, slept ever since. Coronation is the best. They care about their patients. The service is good".	(84)Coronation
Staff asked whether mother managed with breastfeeding	Only breast since birth. While sister was examining her this morning she asked whether mom managed with breastfeeding. Mom said yes.	(81)Coronation
Staff didn't ask whether mother managed with breastfeeding		
Advice from other mothers	"Cried 1st time after 11 hours, then put to breast. This morning felt breast sore, so took formula. Another mother advised put baby on other (not sore) breast. (Baby) sleeping since 04h00 this morning the whole time" - nothing to drink at all (now 9 hours later)	(60)Chris Hani Baragwanath

Theme	Quote/ Comment	Source of data
Help from other mothers	"1st breastfeed, formula later - baby was crying and didn't want to breastfeed. Now drinks well. Another mother helped with breastfeeding".	(54)Chris Hani Baragwanath
Managing with baby directly after caesarean section	The lack of help also applies to caesarean section mothers who just came back from theatre and are now left with their baby in their bed. The majority of mothers say that it was difficult because they had a lot of pain and some were still drowsy, but somehow they managed, even without help from the staff.	
	"Easy to breastfeed 1st time even though lying on side and even though had a lot of pain"	(93)Leratong
Expressing milk	"Never heard about expressing (milk)".	(59)Chris Hani Baragwanath
	"Three months breastfeeding, then formula by day, breastfeeding at night. Never told about expressing. Will look for work after 3 months ".“Actually I have learned a lot from you” said mother to researcher.	(60)Chris Hani Baragwanath
	"Will give expressed breast milk when look for work at 4 months. Another lady that worked with me liked to express the milk"	(91)Coronation

Table I1 Qualitative data on the Ten Steps to successful breastfeeding STEP 6

Theme	Quote/ Comment	Source of data
Mothers		
Only breastfed since birth	"Since baby brought only breastfeed".	(77)Coronation
Sometimes don't know that formula was given to the baby	Mother said no formula given. Hospital feeds chart: Nan 10h20, 14h30. Caesarean section 9h35	(75)Coronation
Mom wait to be told to breastfeed before starting		
No milk / not enough milk	"He drinks a lot and doesn't get satisfied. Mom thought not enough milk. Baby didn't cry. Bf 1 time yesterday, 1 time today. Staff said can give breast and formula".	(59)Chris Hani Baragwanath
	"Decided at ANC to breastfeed, hasn't tried to put to breast yet. No milk. Fetch formula every time". Now almost 48 hours after birth.	(136)Germiston
	"I want to breatfeed, but no milk coming out. I saw she is not interested - sleeping. Does drink a lot of formula. I give sometimes breast, sometimes formula".	(29)Chris Hani Baragwanath
Didn't know colostrum was milk	Mom says no milk. Researcher checked, there was colostrum. Mom: "is that milk? I had no idea".	(127)Germiston
Mixed messages from staff - mothers confused	"Staff give milk to every mom. If you breastfeed, you must tell them and not take milk. I wasn't sure whether to give breast or formula".	(7)Chris Hani Baragwanath
	"We were confused because the other one said we must give the breast, then the other one said we must come and get the formula or she is going to go home and leave us like that. We were all confused. Most moms went and took formula".	(23)Chris Hani Baragwanath
	"Sister called everyone to come and get formula. That's why I was scared to breastfeed - I thought it might cause complications, maybe have to wait a day or two - I didn't know".	(11)Chris Hani Baragwanath
	"I gave formula because the sisters said we should give both, not because I didn't think the milk was enough - maybe the formula is also good for the baby. Sisters said breast milk is the best. Other times staff say to all the moms: The milk is ready - you must come feed your babies - not talk about can breastfeed. Everyone fetches the milk, so I fetch as well".	(39)Chris Hani Baragwanath
	"Staff told us to breastfeed (breastfeeding is best), then after 3 hours said all moms to go and get formula - don't know why, perhaps because all moms were complaining milk is not coming out".	(44)Chris Hani Baragwanath
Mom supplement with formula	"Cried 1st time after 11 hours, then put to breast. Ths morning felt breast sore so took formula".	(60)Chris Hani Baragwanath
	"Giving formula to baby helps to produce more breast milk; now gets enough".	(5)Chris Hani Baragwanath
Mother plan to supplement with formula at home	"Think I will give both breast and formula at home - just to make sure baby gets fed well. I am going to use the cup".	(40)Chris Hani Baragwanath
	"Going back to Mozambique soon. Think formula will help her baby grow better. Water from 1 month, think baby will get thirsty. Breastfeed because not enough money to buy enough formula". Mozambique - tap water, no electricity.	(125)Germiston. Attended ANC Primrose
Mother gave water	"Mom gave a bit of water from tap (±2 teaspoons full) after breatfeed, thought he might be thirsty. Said the sister saw and didn't say anything. Only 1 time. (blue 128)	(128)Germiston
	"I gave him a little water from the tap because he was hiccoughing".	(146)Discoverers
Mother planning to give water soon	"Water (boiled) clean the stomach - take out the green things inside. Previous (6) babies water 3 times per day since birth. The water is very healthy - my mother taught me".	(46)Chris Hani Baragwanath
	"I know from school - babies need water from birth".	(48)Chris Hani Baragwanath
	This baby mom will give milk and starch water from 10 days to make him strong, not every day.	(118) (South Rand)
Start mixed feeding early even though months before returning to work	"Going to work in 3 months - worried baby wouldn't want to drink formula then, so start now on both".	(10)Chris Hani Baragwanath
	"Will be looking for a job after 6 months, therefore better to give formula and breast. Best for baby to have both".	(14)Chris Hani Baragwanath

Already bottles / formula at home, or plan to buy soon	"Sister gave formula because no milk. Wants to give formula and breast - want to work after 6 months. Has got bottles at home".	(16)Chris Hani Baragwanath
	"Nan 1 at home - bought last week with bottles and teats. Will start with formula when 3 months old, look for job when 4 months old".	(73)Coronation
	"Will buy formula today. Heard from my mother that it is good for the baby". (blue 71)	(71)Coronation
Staff say it is okay to give both breast and formula	He drinks a lot and doesn't get satisfied. Mom thought not enough milk. Baby didn't cry. Bf 1 time yesterday, 1 time today. Staff said can give breast and formula.	(59)Chris Hani Baragwanath
Staff advised to supplement with formula	"At first baby didn't want to suck. Tried formula, also didn't want. Later breastfed - drank. Staff said must breastfeed. If baby doesn't want to breastbeedf you can fetch a cup. "	(58)Chris Hani Baragwanath
	"Gave little bit formula early this morning. He was crying - thought not enough milk. Sister suggested formula - didn't check breast milk".	(56)Chris Hani Baragwanath
Staff supplement with formula	"Staff said only moms not breastfeeding must get formula; if not enough milk keep trying. They give you formula if you ask for it".	(6)Chris Hani Baragwanath
	"Gave formula first because the sister brought it to her. Sister didn't ask whether she wanted to breastfeed. Decided before birth to give both".	(15)Chris Hani Baragwanath
	"Staff brought formula to everyone - I think it was up to you whether you take or not. Nurse didn't ask about breastfeeding yesterday, but did this morning with health education".	(19)Chris Hani Baragwanath
	"When got here told by staff could breastfeed if want to. When they brought milk I decided to take one because my milk was not coming and baby hungry".	(20)Chris Hani Baragwanath
	"Don't ask us about breastfeeding before handing out formula, just told to take the formula. On day 1 no one checked for milk. On day 2 another sister (lactation counsellor) went around, checked, said to stop formula".	(23)Chris Hani Baragwanath
	"Before birth I decided to breastfeed. After delivery no one said anything about breastfeeding or ask her whether she is breastfeeding, staff just gave the formula".	(25)Chris Hani Baragwanath
	"Nurses just gave us formula - gave formula to everyone. Didn't ask whether mommies are giving formula, they know we are breastfeeding".	(32)Chris Hani Baragwanath
Staff advised to supplement with water	"Breast sometimes doesn't come out fully. When (going to) breastfeed, they say you must breastfeed, the milk will come out. You tell them milk not coming then they bring cup to you. Didn't check, just bring the cup".	(61)Chris Hani Baragwanath
	"Sister at clinic said water is very good, even for little babies".	(105)Leratong
	"Told at ANC water is healthy for his body. Didn't say water must be boiled 1st".	(128)Germiston
	T"old at ANC here water good for the baby - cleans inside the stomach".	(134)Germiston. ANC Landele clinic
Staff advised to supplement with porridge	One mother said her previous baby was crying a lot from being hungry. The sister at the clinic then advised her to give soft porridge to the 2 week old baby.	(50)Chris Hani Baragwanath
Supplements advertised elsewhere	Mom asked: "Why do Nestle products say food from 3-6 months?"	(157)Mofolo
Staff		
Breast milk is enough	Mom asked for formula, thought baby doesn't become full by breastfeeding. Staff refused, said "breast milk enough".	(90)Coronation
Don't believe enough milk 1st few days	Mom asked nurse whether she could breastfeed. Nurse advised breast and formula because "1st time milk won't come out, so after breast try formula so baby can be full".	(28)Chris Hani Baragwanath
	"By 2nd or 3rd day expect breast to have something. If mom still always come for cup, check HIV results. If negative, help with breastfeeding".	(16)Chris Hani Baragwanath, midwife, 6-10 years in maternity, no training
	"First day formula, 2nd day breastfeed".	(19)Chris Hani Baragwanath, nurse, 3-5 years in maternity, < 18h training
Don't think supplements affect the success of breastfeeding	Advice of a staff member to a mother: "Buy small tin of formula if milk not come in - won't influence breastfeeding".	(63)Discoverers, nurse, 3-5 years in maternity, 18 hour training

Some staff give supplements, some don't	"Depends on staff on duty. Some just give formula, some don't give".	(15)Chris Hani Baragwanath, midwife, 6-10 years in maternity, no training
	If mom is dry-dry-dry (no milk) - encourage breastfeeding. Depend on individual - some would give formula, some would check 1st whether milk. Question of atttitude, e.g. mom demand milk".	(24)Coronation, midwife, 1-2 years in maternity, <18h training)
Perception of the mother's attitude	"You tell them to (breast)feed, they think you are cruel - patient cross. Engorged breasts." (15) (6-10 yrs experience, midwife, no training)	(15)Chris Hani Baragwanath, midwife, 6-10 years in maternity, no training
Give supplement without mother knowing	"If completely dry you will give a supplement, but without mom knowing".	(41)Leratong, midwife, 1-2 years in maternity, no training
Give supplement, knowing it is not supposed to be done	"Supplement if mom is dry-dry-dry - baby's glucose might drop, baby just cry, baby and mom gets frustrated. We are not supposed to do this, but give just 25ml, put to breast anyway. Some HIV negative moms decide on formula, come with “storytjies”. We encourage breastfeeding, but cannot force her".	(68)Discoverers, midwife, 6-10 years in maternity, 18 hour training
Influence of management	"Caesarean section babies stay in nursery for 24 hours. Matron now (in the past 1-2 months) says we must promote breastfeeding, take baby to mom, feed, bring baby back".	(58)Germiston, nurse, 1-2 years in maternity, no training
Effect of training and experience on perception of insufficient milk	Find it necessary to "supplement about 2-3 times per week. Check 1st, mom encouraged to breastfeed, check Glucose (of the baby) if dry or baby >4kg or baby not yet fed".	(41)Leratong, midwife, 1-2 years in maternity, no training
	"If dry-dry-dry we encourage breastfeeding. Sometimes we do give supplementation especially primups, to prevent hypoglycaemia. Happens <1X/month".	(71)Tshiawelo, midwife, 3-5 years in maternity, no training
	"? 1 patient in 6 months really dry-dry-dry. Massage, hot compresses - baby crying, no milk. These are exceptions. Supposed to get drip, struggle vein – formula".	(45)South Rand, midwife, 3-5 years in maternity, 18h training
	"HIV negative: Especially white ladies want formula - have to educate and support mom. Give Nan. Supplement about once in 1½ years. Mom dry (especially caesarean section): support.Only supplement if glucose of the baby drops".	(44)Leratong, Sister in charge of a postnatal ward, 18 hour training
	"If negative discourage formula feeding, encourage breastfeeding. In 10 years never had to give a supplement".	(87)Bekkersdal, nurse, 10 years in maternity, 72 hour training
	"Not come across a dry-dry-dry mommy, always at least a drop - enough for the baby. Mom must just eat and drink fluids".	(74)Tshiawelo, midwife, > 20 years in maternity, 18h training
	"Never a dry-dry-dry mom. They tell you no milk, only water coming out. Never had to supplement".	(73)Tshiawelo, midwife, > 20 years in maternity, no training
	"A question of training. Never happened after lactation management training. Before yes" (supplement for not enough milk).	(81)Mofolo, midwife, 6-10 years in maternity, 18h training

Table I1 Qualitative data on the Ten Steps to successful breastfeeding STEP 8

Theme	Quote/ Comment	Source of data
Staff:		
Advice given on frequency of feeds	"Told by nurses here in the ward that baby must be breastfed every 2 hours."	(65)Coronation
	"Advise breastfeeding 2 hourly because breast milk is light".	(30)Coronation, midwife, 3-6 months in maternity, no training
	An auxiliary nurse who worked in Chris Hani Baragwanath Hospital maternity services for 20 years said: “they must (breast)feed 3 hourly, but these mothers give anytime. I ask them: *Mommy, why are you doing that?*”	( )Chris Hani Baragwanath, nurse, 20 years in maternity, no training
	Mom asked sister how frequently baby must drink - told 3 hourly	(77)Coronation
	Group talk (not every morning) - sister said "breastfeeding is good, every 3 hours or when baby wants to drink".	(78)Coronation
	"First day breastfeed as much as she can - every 2 hours. From 2nd day, feed 4 hourly".	(85)Bekkersdal, midwife, 6-12 months in maternity, 18 hour training
Advice given on how long to feed	"Told at ANC to feed 5-10 min each side - musn't overfeed baby".	(165)Bekkersdal. Attended antenatal clinic in Carltonville
	"Musn't overbreastfeed the baby because his tummy is going to swell up and then he starts vomiting".	(21)Chris Hani Baragwanath, nurse, 11-20 years in maternity, no training
	Told by night nurse (group talk) to put baby to breast 15 minutes each side	(63)Coronation
	Told to "feed 15 minutes each breast, sometimes longer, feed 2 hourly".	(148)Discoverers
	Sister said she must feed baby 30 min each side	(80)Coronation
	"Drink 30 minutes each breast, at least an hour on the breast".	(24)Coronation, midwife, 1-2 years in maternity, <18 hour training
	Group talk in the ward - sister said: "At least one hour on one breast. Next time on other breast".	(90)Coronation
	Group talk - told "baby must drink every 3 hours for as long as he wants to drink"	(79)Coronation
	Told during a group health talk the baby must feed "as long as want "	(157)Mofolo
Mothers		
How frequently must baby drink	"Don't know how frequently baby must breastfeed, think morning and afternoon"	(104)Leratong
How long must baby drink	"Don't know how long to feed - my mom will help me".	(66)Coronation

Table I1 Qualitative data on the Ten Steps to successful breastfeeding STEP 9

Theme	Quote/ Comment	Source of data
Some clinic staff advise mothers to bring their own formula if they are HIV negative and don't want to breastfeed.	"Night sister said no bottles, must breastfeed here, bottle at home. Day sister made her a bottle", mom gave it. Infasoy, because mom gave it to her previous 2 children who had allergies.	(144)Discoverers
Some clinic staff advise mothers to bring their own bottles and teats if they are going to formula feed.	Brought bottle and teat from home. Staff asked whether she got her own bottle. Staff helped her with feeding. Fed Pelargon from the clinic once only, 5hours before. (Mom HIV positive)	(159)Mofolo
	Mom brought own bottle and teat - told at ANC to bring own if want to use bottle. (Mom HIV positive)	(164)Bekkersdal

Table I1 Qualitative data on the Ten Steps to successful breastfeeding STEP 10

Theme	Quote/ Comment	Source of data
Mothers		
What mothers have been told to do if problems with breastfeeding after discharge from the facility	"If problems, I will come back to the clinic". Was told at the antenatal clinic.	(122)South Rand
	The sister who delivered the baby said if problems with feeding after discharge, to go to the clinic.	(131)Germiston
	"The night sister gave breastfeeding advice and said to come back here if problems with feeding after discharge".	(148)Discoverers
	"Told by the sister here and at the clinic - will come back to clinic".	(161)Bekkersdal
What mothers think they will do if problems with (breast)feeding after discharge from the facility	"If after discharge I have problems with (breast)feeding, I have no idea what I will do. I never thought that there will be a problem".	(42)Chris Hani Baragwanath
	I will go to the local clinic and use a bottle. Have got a bottle and Nan at home - bought for just in case".	(107)Leratong
	"If problems breastfeeding, I will give her Cerelac or formula".	(95)Leratong
	"I wouldn't force her to take breast milk if she doesn't want it. I will buy her formula".	(100)Leratong
	"I will give with bottle and teat. If still problems - go to the clinic".	(146)Discoverers
	"Think I will force him - put breast in his mouth".	(103)Leratong
	"I would express milk and give with a cup".	(101)Leratong
	"I should come back and ask them. I have got a follow-up appointment on day 3".	(160)Mofolo
Lack of supporting feeding advice	Going home 14h00, now 12h30, not yet any information about what to do if problems at home with feeding.	(93)Leratong
	“That is my fear. I fear I battle with him to drink and then he is hungry.”	(110)Leratong
	Mother in matric, going to formula feed from home. Don't have milk at home yet. "My sister can help me, she is formula feeding. If feeding problems, I will have to put back on the breast".	(86)Coronation
Staff		
Frequency of problems with breastfeeding after discharge	"Some moms, and all new moms, get referred to a breastfeeding support group. First-time mothers always have problems. Not told to everyone, but some come back".	(86)Bekkersdal, nurse, 6-10 years in maternity,72 hour training
Frequency of advice given	"Not necessarily always counselling on feeding before discharge - depend on the individual midwife".	(84)Bekkersdal, midwife, 1-2 years in maternity, 80 hours training
Advice given	(The mothers must) "try and buy formula and mix it correctly".	(20)Chris Hani Baragwanath, nurse, >20 years in maternity, no training
	"If problems feeding after discharge to go to clinic".	(131)Germiston
	The mothers are "to come back here if problems at home feeding".	(148)Discoverers
	"Normally ask them to phone back if any problems at home. If transport they come back. 25% moms mix-feed very early.	(66)Discoverers, midwife, 11-20 years in maternity, 18 hour training
	Aunties/granny/mother buy small tin of milk, mostly Nan, at Spaza shop. Mom come back on day 3 with engorged breasts".	
	"Write on the Road to Health chart to go to local clinic if problems".	(24)Coronation, midwife, 1-2 years in maternity, < 18 hour training
Follow-up day 3 after delivery	"Follow-up all deliveries at ANC at day 3. If problems within 6 weeks come to ANC for advice and help. >6 weeks: well baby clinic - also at ANC, but different staff".	(75)Mofolo, midwife, 6-10 years in maternity, 18 hour training
	"Follow-up all mommies and babies day 3 in labour ward. Follow-up clinic on 3rd floor at 6 weeks".	(66)Discoverers, midwife, 11-20 years in maternity, 18 hour training
	"ANC 3 day check-up. If any problem, consult the sister". After 3d - Women's clinic or ANC (56) (Sr Germiston)	(56)Germiston, sister doing community service, < 2 months in maternity, no training

	"Follow-up day 3. If problem transport, those far away go to nearest clinic".	(85)Bekkersdal, midwife, 6-12 months in maternity, 18 hour training
Breastfeeding support groups	"Used to have volunteers coming to support moms with breastfeeding, not coming anymore. Only keep moms 12 hours, then they go to clinic".	(39)Leratong, midwife, 3-5 years in maternity, 18 hour training
	"Breastfeeding support groups at clinics, moms to go there if problems. Used to have support group at ANC, moms stopped coming - no money. Counsellors and sisters not paid".	(43)Leratong, sister in charge ANC, 6-10 years in maternity, 18 hour training
	"Not yet support group established. Find out from people who fetch them whether anyone to support her. Mom can phone labour ward for advice, even at night, or phone clinic".	(49)South Rand, midwife, 11-20 years in maternity, 18 hour training

Table I1 Qualitative data on the Ten Steps to successful breastfeeding HIV

Theme	Quote/ Comment	Source of data
Mothers (HIV positive)		
Mixed feeding in hospital	Mom said she chose breastfeeding based on what the clinic sister said, but gives only formula in hospital.	(67)Coronation
	Mom confused. Chose breastfeeding at ANC. Baby got formula and breast in hospital (caesarean section). Wants to breastfeed at home for 3 years, also give water sometimes, also bottle-feed".	(137)Germiston
	Caesarean section. After back from theatre baby cried, sister said to put to breast, mom was dizzy, tried to put to the breast, no milk, then sisters found out status. (Mother chose to formula feed).	(119)South Rand
Advised to formula feed	Mom asked whether she could breastfeed - told no because might infect baby. Wanted to breastfeed because knew pressure to breastfeed from daycare - will wonder whether HIV positive.	(18)Chris Hani Baragwanath
	Counsellor: "Must not breastfeed, must fetch formula till 6 months - because transmission".	(55)Chris Hani Baragwanath
Advised to breastfeed	"Counsellor said breast milk is best for the baby".	(97)Leratong
	Told by counsellor: "If HIV positive - exclusive breastfeeding for 4 months, then stop breastfeeding, give food and formula. If HIV negative - exclusive breastfeeding 4 months, then milk. Water from birth".	(95)Leratong
Advice on formula feeding	"Booked early, went to clinic 11 times, only 1 time group talk. If HIV positive musn't breastfeed, must give formula exclusively, no water or anything else. Free formula - don't know how long".	(96)Leratong
Advice on breastfeeding	"Counsellor said breast milk is best for the baby. Can transmit to baby only once baby (has got) teeth - bite - blood. Will breastfeed 4 months, then buy formula. Baby'sfather is working, (stay in house with) running water and electricity. No talk about mix feeding".	(97)Leratong
Inadequate feeding advice	The counsellor said it was her choice whether give breast or formula. "Breast good for baby, then exclusive breastfeeding 6 months. Didn't talk about HIV transmission".	(140)Germiston
Advice mixture of accurate and inaccurate components	Counsellor: mom can choose exclusive breastfeeding for 6 months or formula. Told breastfeeding better. Told about HIV transmission in breast milk. Told can get free formula for 6 months if don't want to breastfeed. Not mixed feeding. Not told what to do if cracked/bleeding nipples/sores mouth/to use condoms. Said "breastfeeding better - no diseases, allways right. Also (told that by) my mother, the sister" (in the ward).	(161)Bekkersdal
No feeding advice	Mom says counsellor didn't tell her anything about feeding options, just said she can choose breastfeed or formula.	(104)(Leratong)
	"Feeding counselling by sister to whole group, later counsellor gave (HIV) result, talked about Nevirapine, but after got results no one talked about feeding options".	(139)Germiston
	Not post-counselled. The sister gave the results, spoke to her, but not about feeding. Nobody spoke to her individually about feeding.	(164)Bekkersdal
Mothers sometimes choose formula without considering AFASS criteria	My mother will help me. No tap close by. Must wait for (my) brother to fetch water. No electricity. Will use gas, flask". (Mother formula feeding)	(83)Coronation
	"Disclosed only to mother. Boyfriend asked why formula - said problem breast, no milk. Stay in shack. 1st baby died at 3 months - diarrhoea - was breastfed". (Mother formula feeding)	(43)Chris Hani Baragwanath
	Boyfrend says she must give breast. He knows HIV status, but is refusing to accept formula, says (she) must give both".	(78)Coronation
	"Can't afford formula, stay in squatter camp with sister, no electicity, water outside house. Not disclosed to mother or sister - afraid. First baby. Don't know to mix (prepare the feeds) or clean" (the utensils).	(139)Germiston
Advice taking AFASS criteria into account	Counsellor said: choose self. Must bottle feed. Coronation pamphlet - right to choose based on situation e.g. water supply.	(92)Coronation
Mothers mixed feeding practices in spite of counselling	The counsellor said it was her choice whether to breastfeed or formula feed. "I choose breastfeed 4 months, then formula 2 months. Going back to work in 1 month, will then give breast at night, Infacare during day. I asked about mixed feeding.Was told about exclusive breastfeeding - no water,but not explained why must not give breast and formula together. Chose breastfeed because counsellor said not dangerous to breastfeed baby, transmission low".	(101)Leratong
Mothers unsure how much or for how long they will get formula	Sister said must come after 10 days, will give milk. Don't know whether will get milk here, they didn't tell me. Mom stay in shack, no running water or electricity.	(146)Discoverers
Stigma	Still to fetch milk now. No stima attached to milk from hospital. No one will put pressure on her to breastfeed.	(67)Coronation

Consistency of Pellargon formula "funny"	(Advice about) "mix only on pamphlet I got from sonar and nurse today. Can't really afford to buy milk, but perhaps buy Nan, this milk is funny".	(92)Coronation
	Mom asked counsellor whether she could buy formula herself if she got money. Mother said: "I don't know what is in this milk. Nan is smooth, this one is different. Her daddy will buy it" (other formula).	(89)Coronation
Other sources of information on HIV and infant feeding	"No one told me about feeding options. I think with breastfeed maybe they drink the blood. They can get the dark blood, then get HIV. Know from school, TV, Drum, Sunday Daily".	(146)Discoverers
	The counsellor didn't post-counsel or give feeding advice. Doctor at clinic told her not to breastfeed, gave her papers to bring to hospital. CD4 count 159. Wasn't informed about free formula. "The baby's father will buy formula, he is working".	(108)Leratong
Cleaning utensils; mixing / preparing the formula	"I was doing a counselling skill certificate at Meadowlands. Firstst baby breastfeed 3 months, then formula. Vomited, changed formula. Lactogen, then Nan, then back to Lactogen. Mom anxious - waited to talk to the researcher. Worried: how frequently must she feed, how to clean the bottles and utensils, can she use a flask? She said she would read the mixing instructions on the tin.	(51)Chris Hani Baragwanath
	"I know because I clean bottles at work, (help at creche). Got 4 tins (Pellargon) from sister already. (Already got formula, still no advice on cleaning utensils)	(89)Coronation
	"Maybe they will tell us when we get the milk when we get discharge".	(62)Coronation
	"Will tell about mixing at day 3". Mother read instructions on tin in shop.	(24)Chris Hani Baragwanath
	"They will tell me now when I get the milk before I leave how often the baby must drink, also (how to) mix (feeds), clean" (utensils). 13h45 on day of discharge.	(96)Leratong
	"Told how to clean bottles and mix feeds just before discharge"	(119)South Rand
	(Told) at ANC - clean, mix, sterilize".	(68)Coronation
	"Told by counsellor, also at ANC (Witkoppen), also group talk in the ward".	(78)Coronation
	"ANC sister told about cleaning bottles, mixing/preparing feeds. Not told about cup feeding".	(142)Germiston
Staff		
Influence of group on mother's feeding choice	"Depends on group in ANC - group influence - group form a rapport, e.g. group of 3, all 3 in the group will make the same decision.	(68)Discoverers, midwife, 6-10 years in maternity, 18 hour training
Mothers confused	"Most moms are quite confused when come here. We have a tough time here. One moment breastfeeding, few minutes later formula feeding".	(34)Leratong
Mothers leave formula behind	A patient was discharged, not breastfeeding. Then her husband phoned the ward and said: "I understand you told my wife not to breastfeed - why?" She left her tins of formula behind.	(15)Chris Hani Baragwanath, midwife, 6-10 years in maternity, no training
	"Others refuse to take milk because they are scared. Hide milk by the toilets or leave on bench outside. Don't say they are scared to take the milk. Most stay in a shack like Diepsloot - no running water or electricity inside".	(22)Coronation, midwife, < 2 months in maternity, no training
	"Some don't want to take milk home, say they will rather breastfeed or some say they will buy (formula). We make her sign: I, this morning, can afford (to buy formula). Sign in the file".	(23)Coronation, nurse, < 2 months in maternity, no training
	"Moms realize the problem only after delivery - that they didn't disclose, then don't want to take the milk. Dumped AZT syrup somewhere outside".	(42)Leratong, midwife, 11-20 years in maternity, 18h training
	"Mom came back with tins - boyfriend said no, she must breastfeed, so she brought the tins back".	(67)Discoverers, nurse, 3-5 years in maternity, 18 hour training
Husbands / boyfriends phone	"Mostly hubbies and boyfriends phone - you said something to my wife, can you verify, or what must she do".	(74)Tshiawelo, midwife, > 20 years in maternity, 18 hour training
Staff are confused	"Either exclusive breastfeeding for 6 months (no water or formula), or exclusive formula (no water no nothing)".	(23)Coronation, nurse, < 2 months in maternity, no training
	"Four months exclusive breastfeeding, some say it is now 6 months exclusive breastfeeding. Unsure when mom on antiretroviral therapy".	(39)Leratong, midwife, 3-5 years in maternity, 18 hour training

	"Told at antiretroviral therapy course that can exclusively breastfeed 4 months, now hear it is 6 months".	(67)Discoverers, nurse, 3-5 years in maternity, 18 hour training
	"If mom well, exclusive breastfeeding 4 months - someone told her policy is now 6 months - she doesn't know".	(76)Mofolo, midwife, 3-5 years in maternity, 18 hour training
	Sr in charge: "EBF 4 months before. Did advanced midwifery last year, came back this year, now told exclusive breastfeeding 6 months".	(44)Leratong, midwife, sister in charge of an unit, 18 hour training
	"We are also very confused (about) HIV and feeding options. Can safely breastfeed till 1st tooth (about 3 months), then bite nipple, blood, can infect. Exclusive breastfeeding or exclusive formula feeding".	(58)Germiston, nurse, 1-2 years in maternity, no training
	"If mom breastfeed - never diarrhea, never loose weight. Diarrhoea if bottle not prepared right, lie around, flies".	Tshiawelo, midwife, 6-12 months in maternity, no training
Perceptions on HIV transmission	"Dangerous for teething baby to breastfeed - virus enter via gums. Start teething 4 months".	(22)Coronation, midwife, < 2 months in maternity, no training
	"If breastfeed: breastfeed 4 months, then start teething, bite nipple - blood come out. No HIV transmission if < 4 months and no blood".	(43)Leratong, midwife, sister in charge of an unit, 18 hour training
	"If exclusive breastfeeding, won't transmit HIV. If mix feed and not use condoms when breastfeed, will infect babies".	Tshiawelo, midwife, 6-12 months in maternity, no training
	"Taught about AFASS in 20 hour course (did that 3 weeks ago). Virus transmitted if cracked nipples. If no sores mouth or no cracked nipples, no transmission".	(83)Bekkersdal, midwife, < 2 months in maternity, 18 hour training
Re-educate if mother choose formula	"ANC encourage formula, while here we re-educate, counsel breastfeeding".	(85)Bekkersdal, midwife, 6-12 months in maternity, 18 hour training
	"If HIV positive and chose formula, we will counsel again".	(82)Bekkersdal, midwife, 6-10 years in maternity, 18 hour training
Advice on mixing / preparing feeds; cleaning utensils	"Most of telling about mixing, cleaning is done at clinic. Some we do when we give out the milk. Depend on individual. Give mom a return date. Not time to go into detail (mix/preparing, cleaning utensils). Suppose to happen at ANC from counsellors".	(27)Coronation, midwife, < 2 months in maternity, no training
	"Wednesdays special clinic for HIV positive patients, reinforce feeding, told about cleaning, mixing/preparing feeds".	(68)Discoverers, midwife, 6-10 years in maternity, 18 hour training
	"How to mix feeds, how to clean bottles often don't get taught".	(84)Bekkersdal, midwife, 1-2 years in maternity, 80 hour training
Stigma	"In squatter camp stigma might be less, because numbers are so great, such a majority. Become a norm - it is okay. Those that refuse (formula) are from formal houses. Most of the time there is pressure from the community to breastfeed, hasn't disclosed yet - boyfriend doesn't know".	(27)Coronation, midwife, < 2 months in maternity, no training
	" Informal settlement, most want formula; most from location don't want formula".	(85)Bekkersdal, midwife, 6-12 months in maternity, 18 hour training
	"Pellargon: yellow label tin - afraid of stigma".	(39)Leratong, midwife, 3-5 years in maternity, 18 hour training
	"Most of our moms choose breastfeeding because of stigma attached to Pellargon".	(44)Leratong, midwife, sister in charge of an unit, 18 hour training

	"Patients are afraid of stigma: carry Pellargon - community will knowthey are HIV positive, then opt for breastfeeding".	(68)Discoverers, midwife, 6-10 years in maternity, 18 hour training
	"There is stigma – patients must come with bags (that you) can't see through".	(82)Bekkersdal, midwife, 6-10 years in maternity, 18 hour training
Mothers afraid to formula feed	"Most HIVpositive mothers choose breastfeeding. Perhaps 4 in a week choose formula. Young moms all choose breastfeeding. Most of our moms don't disclose because afraid. A lot of 14 year olds. So mom decide on breastfeeding because didn't disclose and are afraid about taking milk in front of others. Older moms more mature, not worried about taking milk in front of others, choose formula".	(34)Leratong, midwife, 3-6 months in maternity, no training
At times a lot of staff	"At present a lot of staff and not that busy".	(84)Bekkersdal, midwife, 1-2 years in maternity, 80 hour training

APPENDIX J HIV in the context of feeding practices

Table J1 HIV

Facility	Mothers in postnatal ward tested for HIV	Mothers HIV positive	Mothers claimed they received feeding counselling at ANC	Mothers not given a feeding choice - told to give formula	Told how to prepare feeds (at any given time)	Told how to clean utensils (at any given time)	At home going to offer bottle (as compared to cup)	When talking about feeding options, % of staff referring to AFASS criteria
Chris Hani Baragwanath	100%	27%	100%	44%	25%	23%	95%	10%
Leratong *	95%	35%	71%	0%	20% (1)	40% (2)	100%	40% (2)
Coronation	100%	37%	91%	50%	33%	43%	100%	40%
South Rand *	70%	30%	100%	0%	50% (1)	50% (1)	No data	40%
Germiston	90%	26%	100%	0%	20% (1)	20% (1)	100%	11%
Mofolo *	100%	17% (1)	100%	0%	100% (1)	100% (1)	100%	29%
Tshiawelo	100%	17%	0% (1)	0%	No data	No data	No data	17%
Bekkersdal *	67%	33%	50% (1)	0%	0% (1)	0% (1)	100% (1)	50%
Discoverers	100%	17%	0% (1)	0%	0% (1)	0% (1)	100%	29%

APPENDIX K AFASS Criteria

AFASS criteria to assist with infant feeding choice in HIV-positive women

Acceptable:

The mother perceives no barrier to choosing and executing the option for cultural or social reasons, or for fear of stigma and discrimination.

Feasible:

The mother (or family) has adequate time, knowledge, skills and other resources to prepare and feed the infant, and the support to cope with family, community and social pressures.

Affordable:

The mother and family, with available community and/or health system support, can pay for the purchase/production, preparation and use of the feeding option, including all ingredients, fuel and clean water and equipment, without compromising the health and nutrition spending of the family.

Sustainable:

Availability of a continuous and uninterrupted supply and dependable system of distribution for all ingredients and commodities needed to safely implement the feeding option, for as long as the infant needs it.

Safe:

Formula milk would be correctly and hygienically prepared by clean hands, using clean, safe water and clean utensils. Nutritionally adequate quantities of formula milk would regularly be available. Clean water and fuel would be regularly available. Formula milk would be fed using clean hands and utensils, and preferably with cups rather than bottles.

Data sourced from: Policy and Guidelines for the Implementation of the PMTCT Programme. National Department of Health South Africa. 2008.

APPENDIX L Example of a card with education on breastfeeding, to be covered in every education session:

1. Benefits of breastfeeding:

- Breastfeeding is the best for the baby, unless there is a specific reason why you should not breastfeed
- Breast milk contains everything the baby needs to grow well.
- Breastfeeding will also help to protect the baby against getting ill.
- Breast milk is always available, and is always at the right temperature.
- Breast milk also does not cost you anything.

2. The importance of breastfeeding soon after delivery: The baby must be put to the breast within half an hour to one hour after delivery. You can do that immediately once the baby is given to you – you don't have to wait for the sister to tell you to start breastfeeding. If the baby is not brought to you within one hour, ask the sister whether you could fetch and feed the baby.
3. The importance of rooming-in: Once the baby is brought to you, he or she should stay with you all the time, even if you had a caesarean section.
4. Positioning and attachment:

- Seat the mother comfortably
- Show the mother how to hold her infant
    - With the infant's head and body straight
    - Facing her breast, with infant's nose opposite her nipple
    - With infant's body close to her body – stomach to stomach
    - Supporting infant's whole body, not just neck and shoulders.
- Show her how to help the infant attach. She should
    - Touch her infant's lips with her nipple
    - Wait until her infant's mouth is opening wide
    - Move her infant quickly onto her breast, aiming the infant's lower lip well below the nipple.
- Look for signs of good attachment and effective suckling. If the attachment is not good, try again. The infant's lower lip should be turned outward, the chin should be touching the breast, the mouth should be wide open, and more areola should be visible above than below the mouth. All of these should be present for good attachment.

- Most of the common breastfeeding problems expressed by mothers are related to poor positioning and attachment.

5. The importance of feeding on demand: The baby should be fed as often and as long as he or she wants. Feed till the infant had enough, wind him, then put him on the other breast if he still wants more.
6. What a mother can do to ensure that she produces enough milk for the baby:

- Breast milk is enough for the baby from birth. Initially baby needs very little milk, just the colostrum that is in the breast.
- The more the baby sucks, the more milk will form
- The mother just need to eat and drink enough herself.

7. The importance of giving the baby only breast milk: The baby does not need any supplementation with formula feeds. If the baby is given formula, he will not be hungry, won't suck, and then enough milk won't form.
8. What to do if problems are encountered with breastfeeding at home: Many infants do have problems with feeding initially. The mother just have to keep trying, make sure the baby is properly positioned and attached, and not feed formula. If the problem persists, take the baby to the nearest clinic, or bring the baby back to this MOU. You could also phone this facility for advice. The telephone number is: ……., and is written in your baby's Road to Health Chart.

It takes about 4 minutes to run through the list. Should be accompanied by pictures, or demonstrated.