2017

Arviat Birthing Centre Proposal

PRACTICUM REPORT

VICTORIA ZEFKIC

QUEEN'S UNIVERSITY

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Acknowledgements

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- Elders in Arviat, who took time to share their birthing experiences and explain midwifery back in the day

All of these individuals helped me a tremendous amount in my proposal and I am so honoured that I had the opportunity to engage with all of them and am grateful for my time in Arviat.

Introduction

I am a Master's of Public Health practicum student with Queen's University working under the supervision and guidance of the Aqqiumavvik Society to develop a report and proposal for the re-establishment of a community birthing centre in Arviat, Nunavut. The community has been lobbying for a community birthing centre since 1980, and after a short-lived operation in 2008, no consistent midwifery services have since been offered. Under the current system, pregnant women in Arviat are evacuated at 37-weeks' gestation to give birth in southern hospitals, most often Winnipeg. These women usually travel alone leaving behind their family and other children to stay in an unfamiliar place lacking traditional food and culturally sensitive care. My role as a practicum student was the following: to design and administer a community survey regarding opinions of women's birthing experiences and prenatal/postpartum care; conduct a literature review; engage in public awareness activities, focus groups, and interviews; and perform a needs assessment and cost analysis to provide the background information necessary for writing the proposal. I hope that my findings and recommendations will be useful to the Aqqiumavvik Society and other stakeholders in determining the need and capacity for a community birthing centre in Arviat.

Methods

To develop a proposal for the reestablishment of a birthing centre in Arviat, I needed to obtain information from various sources. I completed a thorough literature review focussing on the history of Inuit birthing and midwifery, the rationale and subsequent consequences of the evacuation of pregnant Inuit women to give birth, examples of Inuit birthing centres, and perinatal health indicators in Nunavut. This provided a background of the current maternal and

infant health in Arviat as well as how birthing centres were implemented in other regions. I then established key stakeholders in the community and proceeded to do interviews with these individuals. From my interviews, I gathered enough information to develop a survey, where I could collect a larger amount of data to analyze. I then conducted in-depth interviews with several women in the community, to gain a better insight into what their birthing experiences were like and their opinion on the prenatal, postnatal, and postpartum care they receive or received. A technical analysis was then completed, where certain themes and ideas were noted and included in my proposal.

Literature Review

Introduction

Arviat, Nunavut is a community of 2,657 people in the Kivalliq region along the Hudson Bay (Statistics Canada, 2017). From 2011 to 2016, the population experienced a 14.6% growth, almost three times greater than the national average of 5.0% (Statistics Canada, 2017). The largest age group in Arviat is 0-4 years old, the average age 25.4 years old, and average household size of 4.4 persons (Statistics Canada, 2017). From this data, it is evident that the population is rapidly growing and that women in the community are having many children. However, women in Arviat are unable to give birth in their own communities and rather must be flown to either Winnipeg or Rankin Inlet at Winnipeg at 37-weeks' gestation for the duration of their pregnancy. There is no birthing centre or midwife present in the community and thus women are sent out - often alone and separated from their children and other members of their family - to deliver their children. The Government of Nunavut (GN) spends almost a quarter of the Department of Health's budget on medical travel, with roughly $12,000 spent for each

pregnant woman to be evacuated out of the community to give birth (Skura, 2016). In 2006-2007, Arviat received funding from the federal government for the reconstruction of their health centre to include a birthing centre and to hire two midwives. However, by 2008 when the midwives and maternal care worker were hired and trained, the birthing centre had still not been constructed. Due to the high volume of pregnancies, lack of physical space, and the midwives feeling overwhelmed, the centre closed after only three births (Gerrard, 2011). Although Arviat's birthing centre was short-lived, other Inuit communities such as Rankin Inlet in Nunavut and the Nunavik region in Quebec have seen success with their birthing centres which have been running for over 20 years. These cases signify that Arviat has the potential to re-establish its birthing centre given careful consideration of the contributing factors that led to the past failure of such a project. The current situation for pregnant women in Arviat is inadequate and a more efficient and substantial long-term solution needs to be considered. It is possible to develop a birthing centre in the community; however, a proper implementation plan needs to be developed and adequate resources are essential.

History of Midwifery in Canada

In the 20th century, Canada witnessed the decline of midwifery and transition of births from the home to the hospital under physician services (National Aboriginal Health Organization (NAHO), 2004). In the early to mid 1900s, there was a new perception that midwifery was unsafe and outdated, largely due to the advancements in the medical profession and focus on Eurocentric beliefs (NAHO, 2004). The profession was even outlawed in some jurisdictions, completely forbidding midwives to practice (NAHO, 2004). Indigenous communities struggled a great deal with this legislation as medical services in these remote and rural areas was already

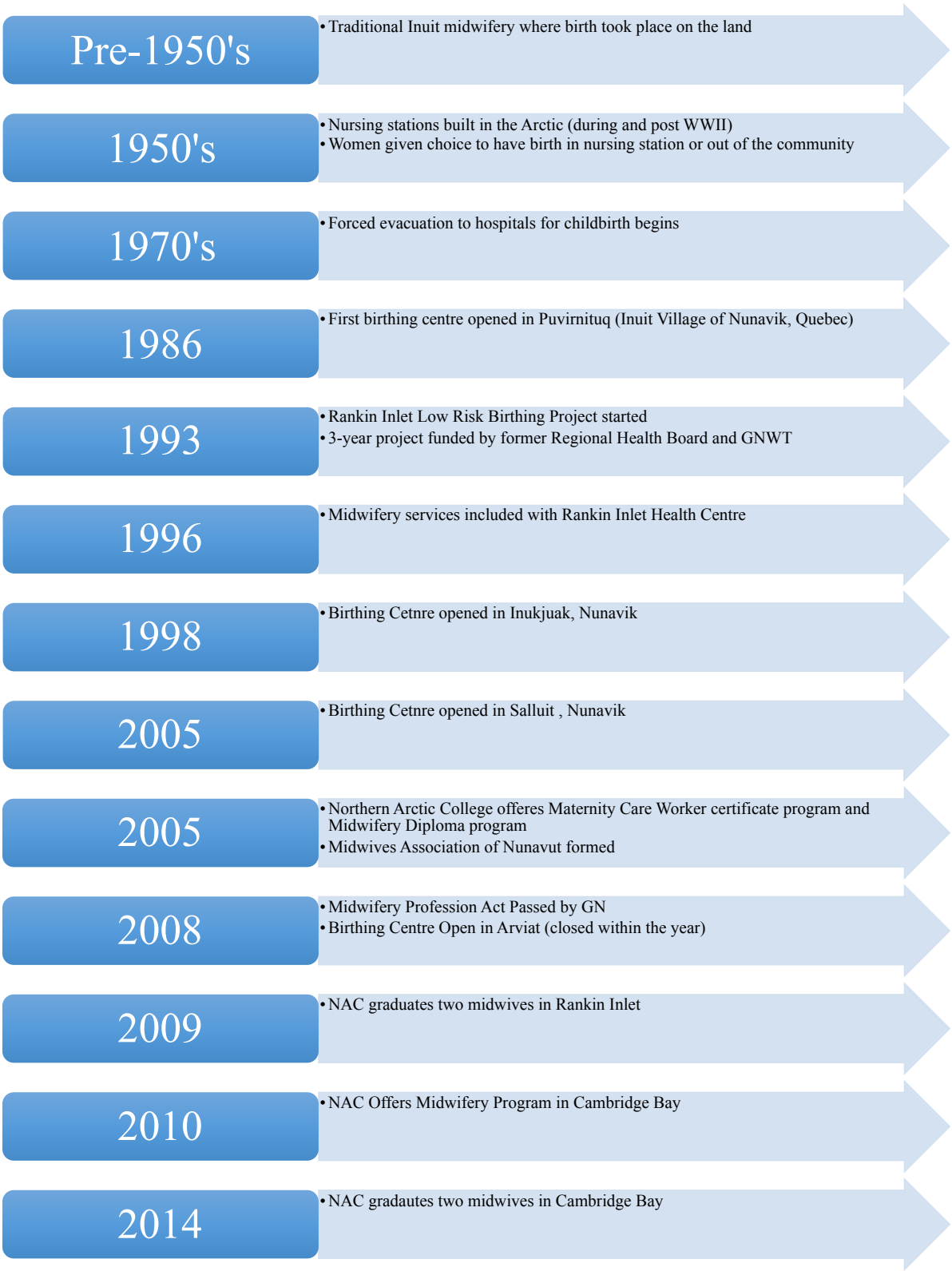
limited and very few regulated and approved nurse-midwife programs existed (NAHO, 2004). Up until the 1950's, Indigenous women gave birth on the land or in their own homes with the assistance of family, friends, and traditional midwives. Nurse's stations were developed in the 1950's post World War II, subsequently leading Indigenous women to give birth in these centres with federally trained southern nurses instead of in their homes or on the land (Lawford, 2011). In the 1960's to 1980's, the origins of the federal government's evacuation policy for pregnant Indigenous women living in rural and remote communities took place (Couchie & Sanderson, 2007). The decision to evacuate these women to regional centres and hospitals was meant to improve maternal health and reduce infant mortality (Couchie & Sanderson, 2007). Although this practice successfully helped to reduce mortality and morbidity at the time, associated hardships impacted emotional, social, and even physical health and wellbeing over the long run (Couchie & Sanderson, 2007). This practice has continued to present day where most Indigenous women are evacuated from their communities at around 37-weeks' gestation to give birth in unfamiliar societies. This has had significant cultural and spiritual consequences which are difficult to restore. However, re-emergence of culture and tradition related to birth is being rejuvenated in some communities through the development of birthing centres. Today, midwifery run birthing centres have proven to be safe and effective for low risk pregnancies and produce similar outcomes as hospital births. With proper training and regulation, midwifery services can be practiced in remote and isolated regions and incorporate culture and traditions to help restore the community.

Consequences of Evacuation of Pregnant Women

Research has indicated that **removing a woman from her community to give birth can result in: loss of cultural identity; increase in small, premature infants; maternal and newborn complications** (Klein et al., 2002**); postpartum depression** (Armstrong et al., 2000); **strained family relationships** (Armstrong et al., 2000**); and difficulty breastfeeding** (NAHO, 2004). Under the current system, women from Arviat often spend three or more weeks away from their communities and may experience language barriers, limited privacy in boarding houses, and lack of traditional food (Couchie & Sanderson, 2007). Through this process, the woman is removed from her other children, some who may be only infants, **leading to psychological stress and anxiety of both the mother and her children**. An additional burden may be placed on the woman's family who will have to care for her other children while she is away. There may be additional financial stress, especially if the woman is escorted by her partner and both are unable work. These factors lead to negative health outcomes for not only mother and baby, but the entire family and community, which have the potential to outweigh the benefits offered through remote births, especially among low-risk pregnancies.

Inuit culture has strong traditions when it comes to birthing -- many that have been lost due to evacuation policies. Cultural practices which occur at the time of birth such as naming and giving the child a blessing are considered central to establishing the identity and future path of the child. Bringing back tradition is essential in retaining and restoring the Inuit culture, and is necessary to ensure that these rituals remain and are passed on through generations.

Timeline of Inuit Midwifery



Inuit Birthing Centres

Nunavik Midwives and Inuulitsivik Midwifery Education Program

During the 1980's to early 2000's, three Inuit based birthing centres were opened in the Nunavik Region in Northern Quebec through collaboration of community members, healthcare workers and elders (Van Wagner et al., 2012). The goal was to end routine evacuation of pregnant women to southern hospitals, having Inuit midwives deliver babies in the region. Today, 92.2% of all deliveries are now performed in the Nunavik region, with only 7.8% having to be evacuated to Montreal (Epoo & Van Wagner, 2005). There are nurses present in all communities, an on-call physician on site in Puvirnituq, and an on-call physician by phone for other communities (Epoo & Van Wagner, 2005). Although some women are not able to deliver in their home community, they are often able to deliver in the Nunavik region where Inuktitut is spoken and more traditional Inuit midwifery is practiced. Student midwives undergo the Inuulitsivik midwifery training program and practice under supervision of a senior midwife. These midwives provide prenatal, intrapartum, and postpartum care in a culturally sensitive and appropriate manner. The midwives also provide care outside of pregnancy, such as contraception education, STI prevention, uterus cancer screening and self-breast exam (Centre du santé Inuulitsivik, 2017). The Inuulitsivik training program focuses on recruiting local Inuit women and incorporating traditional knowledge with modern techniques (Epoo et al., 2012). Providing community based midwifery education has helped foster community development and the sustainability of midwifery (Epoo et al., 2012). Moreover, the collaboration between the Indigenous regions and the government has helped foster a relationship that has otherwise been badly damaged due to colonialism and forced Eurocentric beliefs. The outcomes of the

Inuulitsivik midwifery services of have been proven as successful, if not more successful, when compared with the rest of Quebec (Epoo & Van Wagner, 2005). This includes improvements in: perinatal mortality, preterm labour, small for gestational age, rates of breastfeeding and hemoglobin postpartum (Epoo & Van Wagner, 2005). Less medical interventions were also performed when compared to the rest of Quebec, which include caesarean sections, inductions and episiotomies (Epoo & Van Wagner, 2005). Women also attend more and earlier prenatal visits, contributing to additional positive health outcomes associated with the birthing centre.

The Inuulitsivik Midwifery Education Program has received positive accolades from various organizations, such as the Canadian Society of Gynecologists and Obstetricians (SOGC), the World Health Organization (WHO), and International Confederation of Midwives (Centre du santé Inuulitsivik, 2017). Interestingly, the Inuulitsivik Midwifery Education Program was implemented before midwifery regulation occurred in Quebec in 1999. In 2008, the Quebec Ministry of Health and Order of Quebec Midwives (QSFQ) formally recognized the Inuulitsivik program and offered full licensure to its graduates (Centre du santé Inuulitsivik, 2017). Currently there are two midwives registered to the QSFQ and an anticipated 10 students should complete their training in the next few years (Centre du santé Inuulitsivik, 2017).

Overall, the Inuulitsivik midwifery services have proven to be well received in the community, culturally sensitive, safe, and reliable. The program is well known and respected around the globe and has become a model for midwifery in many other Indigenous regions.

Rankin Inlet Birthing Centre

The Rankin Inlet Birthing Centre (RIBC) in Nunavut was created in 1993 to provide women with low-risk pregnancies the opportunity to deliver in their home community. The

decision to establish the RIBC was due to increasing awareness of the social and psychological tolls that evacuating pregnant women to southern hospitals had on the woman, her family, and the community (Douglas, 2011). Through collaboration with the community, healthcare providers, researchers, government, and political figures, the birthing centre was established in 1993 as a trial project and included as a service at the Rankin Inlet Health Centre in 1996. It is important to note that there is a large population of non-Inuit people in Rankin due to its being a government centre and also to the emerging mining industry. Rankin thus differs from more traditional Inuit regions. This has had some influence over who works in the community, specifically at the health centre and birthing centre. During its first fifteen years of operation, the RIBC employed southern trained midwives, many of whom would work on a casual basis (Douglas, 2011). This differed from the Nunavik region who had locally trained women becoming midwives and working at their birthing centres. This practice of having casual employees work at the centre occasionally led to understaffing and forced the birthing centre to be closed for weeks to months on end (Douglas, 2011). Up until 2009, only about half of eligible deliveries were performed at the RIBC, leaving the remaining half to deliver in southern hospitals (Douglas, 2011). However, two local students from the Northern Arctic College Midwifery diploma program successfully passed the Canadian Midwifery Exam and began working at the birthing centre in Rankin in 2009. This has reduced staffing pressures and now only requires two additional midwives from the south to work alongside the NAC graduates. The RIBC originally practiced in a more southern biomedical-based fashion and lacked the traditional Inuit midwifery practices and techniques that the Nunavik birthing centres have. Nonetheless, when the Arctic College midwifery program was offered, it incorporated Inuit traditions and

allowed women to be educated predominately in their home community. This led to the successful teaching and training of two local midwives, allowing women in the community to have the opportunity to give birth amongst family and friends, having great implications for social, psychological, mental and even physical health. Outcomes for the RIBC are positive, with no reported maternal or fetal deaths, thus demonstrating its safety and effectiveness.

Cambridge Bay Birthing Centre

The Cambridge Bay Birthing Centre was opened in 2010, providing pregnant women the option to give birth in their home community while also offering infant and maternal health services and education. In the same year, Arctic College offered the Maternity Care Worker Certificate Program and Midwifery Diploma Program in Cambridge Bay. This eventually led to two local women graduating the program, passing the Canadian Registered Midwifery Exam and becoming midwives in Cambridge Bay in 2014. Maternal and infant care, education, and services are now provided by the four Cambridge Bay midwives, two of whom are Inuit and two who are from the south. Although the establishment of the birthing centre provides women the option to give birth in the community, many (up to half of all pregnant women) still choose to give birth in Yellowknife, NWT. This will hopefully begin to dissipate as more women give birth in the community and the perception regarding midwifery services becomes more well received and considered a safer, more holistic, and less stressful experience than evacuation. Rankin Inlet experienced similar issues with the emergence of their birthing centre, however, as more time has passed and more women give birth in the community, it became a societal norm to have a woman's pregnancy overseen by a midwife. Further data regarding maternal, fetal and infant

health outcomes in Cambridge Bay was not available, likely due to the birthing centre's relatively new implementation.

Benefits of a Birthing Centre and Midwifery Program

Evidenced by the Inuit midwifery services mentioned above, having a community birthing centre prevents a woman from having to be separated from her family and friends during childbirth. This helps reduce the stress that is associated with travelling to an unfamiliar area and leaving behind other children and family members. Research has shown that birthing centres in the Arctic regions have favourable outcomes and should be considered safe and effective (Douglas, 2011; Epoo & Van Wagner, 2005). Community birthing centres have been associated with improvements in: perinatal mortality, preterm labour, small for gestational age infants, rates of breastfeeding, hemoglobin postpartum and in future pregnancies, rates of caesarean section, surgical and medical interventions, births transferred out of the community, prenatal visit attendance and decreased alcohol consumption (Epoo & Van Wagner, 2005). A community birthing centre can provide care and support beyond pregnancy and delivery and incorporate a more holistic approach to women's health as is seen with the Nunavik and Rankin Inlet midwives. Birthing centres also provide a source of sustainability and longevity, which needs to be a key consideration when factoring in the natural growth and birth rates in the Kivalliq region. Currently around $12,000 is spent by the government on each low risk pregnancy delivered outside the community (Canadian Nurses Association (CNA), 2009). With high-risk pregnancies or complication in the postpartum/postneonatal period, this cost can exceed $33,000 per pregnancy. Health Canada's Non-Insurable Health Benefits (NHIB) program pays $250 for travel outside of the community and covers the cost of accommodation for up to 90 days at a boarding

home (Government of Nunavut (GN), 2017). The GN covers the costs of travel from the community less the $250 that the NIHB covers. Health Canada recently released a new policy providing some coverage for non-medical escorts to accompany pregnant Inuit women to southern hospitals to give birth at an expected cost of $22 million for 2017-2018 (Rogers, 2017). It is important to note that coverage for food and accommodation will not be warranted to an escort, possibly precipitating financial burden and stress. While a prenatal escort may reduce some of the isolation and stress these women experience, the issue of culturally sensitive care and removal from one's community, family, and friends remains. Moreover, this does not solve the issue associated with the lack of access and availability of prenatal, postnatal, and postpartum care. This new policy may provide some relief in the short term, however, a more long-term, sustainable, and cost-effective option needs to be considered. A birthing centre in Arviat may help solve many of these issues as has been seen in other Inuit communities throughout Canada.

Perinatal and Maternal Health Indicators in Nunavut

Pregnancy and childbirth in Nunavut has changed dramatically over the past several decades leading to significant impacts on maternal and infant health indicators. The sparsely populated communities spread out through the vast territory contribute to the difficulty in providing appropriate and efficient healthcare in each community. Through the Public Health Agency of Canada's (PHAC) Perinatal Health Indicators for Canada, it is evident that maternal and infant health in Nunavut is substandard when compared with the rest of the nation. The following health indicators provide examples of how the women and children of Nunavut are disadvantaged due to poor maternal and infant healthcare, services, and education.

Infant mortality

Infant mortality rate (IMR) is defined as "the number of deaths of live born babies in the first year after birth per 1,000 live births" (PHAC, 2008, p. 141). It is a statistic that helps demonstrate the quality of maternal and infant care in a society. Between 2000-2009, the Canadian national infant mortality rate varied between 4.9 to 5.4 per 1,000 live births (PHAC, 2013). **Nunavut's infant mortality rate between 2005-2009 was 14.0 per 1,000 live births, nearly triple the national average** (see Figure 1) (PHAC, 2013). The most common causes of neonatal death (0-27 days old) included immaturity, congenital anomalies, and asphyxia (PHAC, 2013). The most common causes of postneonatal deaths (28-364 days old) included congenital anomalies, infections, and sudden infant death syndrome (SIDS) (PHAC, 2013). Many of the causes of death are partially attributed to poor environmental factors (e.g. pollution, second hand smoke), lack of proper prenatal care (i.e. lack of supplements, maternal smoking), and poor sleep hygiene associated with SIDS (i.e. baby sleeping on stomach, bed sharing with non-parent, second hand smoke exposure). Nunavut ranks shockingly high in many of the mentioned factors, indicating that further education and support from trained maternal and infant health professionals is necessary.

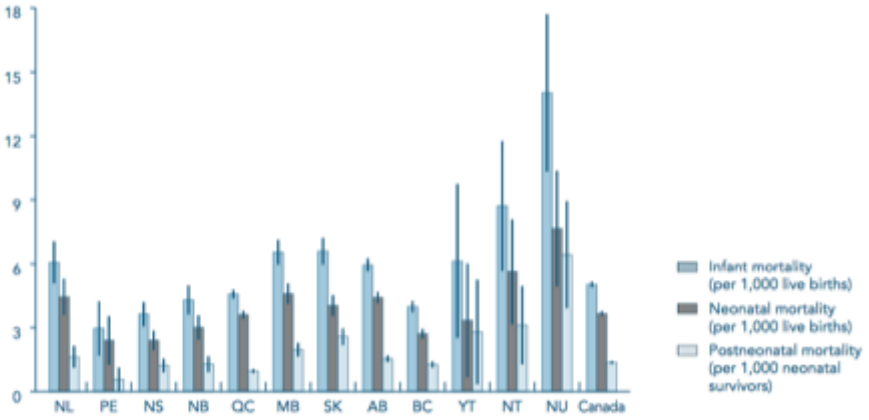


Figure 1. Rate of Infant, Neonatal, and Postneonatal Mortality by Province or Territory, Canada (Excluding Ontario) 2005-2009. Data from Statistics Canada, Vital Statistics.

Live Births to Teenage Mothers

PHAC (2008) make the following claim that:

> One key determinant of maternal behaviours and practices in pregnancy is maternal education. This factor is closely associated with rates of breastfeeding, maternal smoking, exposure to second-hand smoke and periconceptional folic acid supplementation; higher maternal education is typically linked with healthy choices. (p. 27)

Teenage mothers often have less education, and thus, are more likely to practice unhealthy behaviours during their pregnancies. In Nunavut between 2006-2010, **amongst 10 – 17 year olds, there were 29.4 live births per 1,000 females** (PHAC, 2013). This is exceptionally higher than the Canadian national average, which was 7.8 live births per 1,000 females in 2010 (PHAC, 2013). Among **women aged 18-19, that rate of live births per 1,000 females in Nunavut was 168.9 in 2010**, over 6.5 times greater than the national average of 25.8 (PHAC, 2013). Please refer to Figure 2 to see how Nunavut compares to the rest of the country on this health indicator. The high rates of births to teenage mothers in Nunavut indicate that additional resources, services, and education regarding pregnancy and childcare need to be offered to this

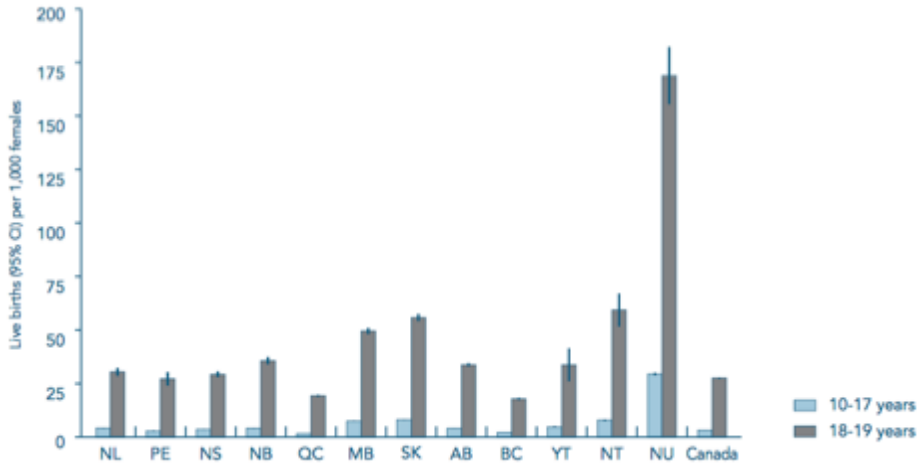


Figure 2. Age-Specific Live Birth Rates, Females Aged 10-17 and 18-19 years by Province or Territory, Canada (Excluding Ontario) 2006-2010. Data from Statistics Canada, Vital Statistics.

population. This indicator may help explain the other perinatal health indicators that Nunavut performs poorly in.

Maternal Smoking During Pregnancy

Smoking during pregnancy can lead to a multitude of negative health effects on the fetus and child, including intrauterine growth restriction (IUGR), preterm birth, placental complications, infections, asthma, and SIDS among others (PHAC, 2008). As mentioned previously, education plays a crucial role in influencing maternal smoking during pregnancy. Nunavut has consistently high rates of maternal smoking during pregnancy **with 59.5% of pregnant women admitting to smoking during their pregnancy** in 2005 (PHAC, 2008). This is much higher than the national average, which in 2005 – 2008 was 12.3% (PHAC, 2013). Maternal smoking during pregnancy is a key contributor to infant morbidity and mortality, which may help explain Nunavut's high IMR. Further education and services (i.e. smoking cessation resources for pregnant women) need to be offered in Nunavut to help decrease maternal smoking and reduce the negative consequences experienced by it.

Folic Acid Supplementation

Folic acid supplementation helps reduce neural tube defects, such as spina bifida and anencephaly, among other serious birth defects (PHAC, 2008). Although food fortification with folic acid has been implemented in Canada as of November 1998, it is important for women who are planning on becoming pregnant to take a folic acid supplement to reduce the likelihood of a fetus developing birth defects (PHAC, 2008). In 2005, **57.8% of all pregnant women in Canada took a folic acid supplement, over 20% greater than the Nunavut rate, which was only 37.5%** (PHAC, 2008). This may be partially due to the high teenage birth rate, which has

shown to decrease folic acid supplement intake (PHAC, 2008). Further initiatives need to be targeted at improving these rates.

Breastfeeding

Breastfeeding is considered the ideal method of infant feeding as it provides all the essential energy and nutrients needed for the first several months of life while promoting sensory and cognitive development and protecting against disease and infection (World Health Organization (WHO), 2017). Breastfeeding also benefits the postpartum woman as it reduces postpartum bleeding, improves bone remineralization, reduces the risk of ovarian and breast cancer, delays resumption of ovulation, and is cost effective (PHAC, 2008; WHO, 2017). As explained earlier, breastfeeding rates are closely tied to maternal education which is closely tied to maternal age, thus leaving Nunavut with subpar breastfeeding initiation rates (PHAC, 2013). In 2009-2010, the **Canadian percentage of mothers who reported breastfeeding initiation was 87.3%, where in Nunavut it was only 65.4%** (PHAC, 2013). However, the percentage of mothers who reported exclusive breastfeeding for six months or more in Canada was 25.9%, whereas in Nunavut it was 28.1% (PHAC, 2013). This shows that if women in Nunavut still need further education to initiate breastfeeding, but are meeting the national standard once they begin breastfeeding. Providing further maternal and infant supports and resources will hopefully encourage pregnant women, especially pregnant teenagers, to initiate breastfeeding, allowing for better health outcomes for mom and baby while being cost effective.

Preterm Birth

Rate of preterm birth in Nunavut is higher than the national average with 12.8% of live births in Nunavut being preterm versus the Canadian of 7.7% in 2006-2010 (PHAC,

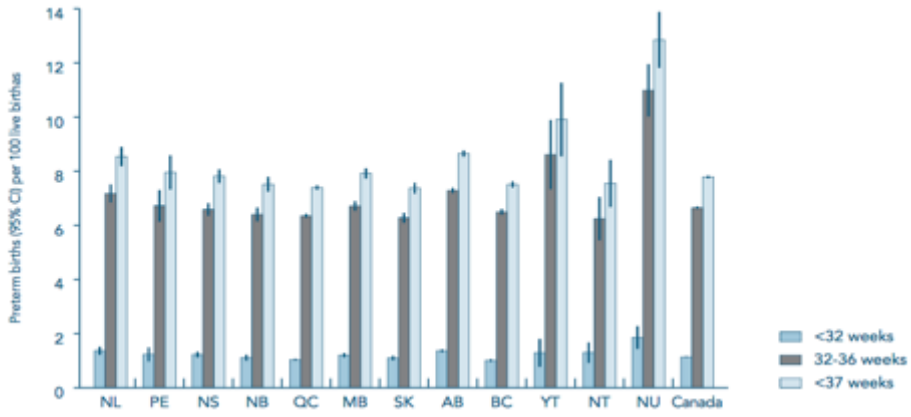


Figure 3. Rate of Preterm Birth by Province or Territory, Canada (Excluding Ontario) 2006-2010. Data from Statistics Canada, Vital Statistics.

2013). Please refer to Figure 3 to see how Nunavut compares to the rest of the country on this indicator. Preterm birth may be influenced by a myriad of factors, including but not limited to maternal age, smoking, infection, environmental exposures, psychosocial factors, and maternal stress**.** Preterm birth is a predominant cause of infant mortality and morbidity in developed countries, associated with respiratory failure, gastrointestinal complications, central nervous system issues, among others (PHAC, 2008). Forcing Inuit women to evacuate their community to give birth may contribute to these high rates of preterm birth adding sufficient maternal stress and leading to unfortunate health consequences. Further support is needed and bringing back birth to the community through birthing centres and midwifery services may assist in this. Educating women in Nunavut on ideal maternal health behaviours needs to be emphasized, as it is evident current interventions are not successful.

Conclusion

As is evidenced by the above indicators, Nunavut falls behind on many of the perinatal health indicators, reflecting poorly of the maternal and infant health services offered and available in the territory. Physicians and midwives, who provide much of the prenatal and

perinatal care in the south, are often only available on a casual or occasional basis in most communities in Nunavut, leaving most the care and education to nurses at the health centres who are often understaffed and overburdened. This ultimately leads to insufficient education and care provided to women throughout and after their pregnancy, leading to the poor health outcomes as noted above. Focussing on providing more maternal and infant health services will quite probably (based on the Nunavik experience) improve these health indicators and allow Inuit women in Nunavut to experience not only healthier pregnancies, but healthier lives. Birthing centres focusing solely on maternal and infant health can help improve these health outcomes by providing culturally relevant health education, resources, and support, much more than can be offered at the present.

Findings

Interviews

I have had the opportunity to engage in interviews with many women and stakeholders both in and out of the community to better my insight of maternal and infant care in Arviat and throughout Nunavut. The main findings and themes in these interviews will be identified in this section.

Health care workers and Service Providers

Through interviews with various health care professionals and service providers at the health care centre and involved with maternal/infant health, I have established main themes in their responses. To maintain confidentiality, I have not included the transcripts of my interviews, but I have summarized key findings in this section. Please refer to Appendix A to see a summary of these results. I conducted interviews with the Nurse in Charge (NIC), Community Health

Nurse (CHN) responsible for the prenatal program, Maternity Care Worker (MCW), Community Health Representatives (CHR) and the facilitators of the Healthy Mom's Healthy Babies (HMHB) program. **All participants supported the idea of re-establishing a community birthing centre** and one participant claimed, "it needs to happen" when considering the population growth in Arviat. The service providers who worked out of the health centre all shared the same concerns regarding the reestablishment of a community birthing centre in that there needs to be **sufficient and independent space and staffing that does not intrude on the health centre's resources**. All but one of the interviewees were working in Arviat in the same role during the original establishment of midwifery services in Arviat in 2008 and all expressed the same opinion that the lack of space and understaffing of midwives was responsible for the birthing centre's demise. When asked what they would like to see in a birthing centre, responses included: **"sufficient staffing and space", "Inuk trained midwives"**, and **"incorporation of families and Elders".**

Regarding maternal/infant health, each interviewee exhibited different roles and responsibilities. The MCW and CHN worked together and focussed on providing prenatal, postnatal, and postpartum care at the health centre, specifically on prenatal days which are Wednesday afternoons 1:00 pm – 3:00 pm. There are no set times for appointments and rather women arrive at 1:00 pm and can be seen anytime from then until 3:00 pm. The HMHB program took place in another building and was regarded as more of a support group which provided healthy snacks for pregnant women and women with children up to 36 months. The HMHB program is partially funded by the Canada Prenatal Nutrition Program (CPNP), a Health Canada initiative. The HMHB program occasionally has visitors come in to provide health education

sessions, such as the dental hygienist, CHR, and/or public health nurse (PHN). HMHB will also occasionally visit the high school to provide its program for pregnant teenagers. However, there are no set dates or consistent times for these visits and lessons. The HMHB program was temporarily closed in January and February of 2017 due to building maintenance issues. This has caused some confusion with programs and services running from it. There is enough space for 18 moms and babies to attend the drop program, which runs Monday to Friday 1:00 pm – 3:00 pm. The CHR is responsible for a myriad of public and community health issues, but does occasionally attend the HMHB program to hand out resources and providing health teaching to new and expecting moms. Again, there is no consistent date or time of week/month/year when this occurs, but I was told it happens occasionally.

Interviewees who worked at the health centre **explained that around 15 deliveries still occur in the community every year.** These deliveries are often premature and thus higher risk. One interviewee explained that **certain training programs would be beneficial in these situations but are not provided on a regular basis**, such as Neonatal Resuscitation Program (NRP), Advanced Cardiac Life Support (ACLS), and Pediatric Advanced Life Support (PALS). The interviewee explained that having this training would help emergency situations and would better prepare the staff at the health centre for such events.

Other than the HMHB program, all maternal/infant education is done on a one-on-one basis. Pregnant women have a one-hour appointment with the CHN when they first find out they are pregnant, at around 12-weeks' gestation, then the remaining appointments are around 15-30 minutes. Appointments are every 4 weeks until 28-weeks' gestation, then every 2 weeks until 35-weeks' gestation, and then every week until 37-weeks' gestation when they are then evacuated to

the south to wait out the rest of their pregnancy. A midwife from Rankin Inlet is meant to visit every 6-8 weeks, however, the last time this occurred is unknown and there is no information regarding the next time this will happen. An ultrasound technician comes every 3-months and stays for a week-long period to perform ultrasounds, which occurs on a regular basis. An obstetrician/gynecologist comes two to three times a year, but again, the timing is unknown. There is a newly hired public health nurse (PHN) totalling two PHN's in the health centre. One is focussed solely on tuberculosis (TB) prevention, screening, and treatment, whereas the other is still developing a new role. From my interviews with service providers and women in the community, PHN home visits for prenatal appointments are rare occurrences.

Several of the service providers I interviewed expressed much interest in further developing their knowledge and skill set regarding maternal and infant care. Some of these interviewees have tried to expand their scope of practice, but due to financial constraints and lack of an actual birthing centre, they were unable to. Overall, the service providers have at least some training in maternal and infant health, but are eager to learn more and would appreciate a birthing centre and all the resources and services it would offer.

Northern Arctic College (NAC) Midwifery and Maternity Care Worker (MCW) Programs Staff

I was fortunate enough to connect with two women who were heavily involved in the NAC midwifery and MCW programs. No transcripts from these interviews is provided as much of the information obtained will be expressed in this section. From these interviews I determined that the program was successful in producing four midwives; two from Rankin Inlet (graduated in 2009) and two from Cambridge Bay (graduated in 2014). All four midwives passed the Canadian Registered Midwifery Exam (CRME) on their first attempt and work full-time in their home

communities. They provide prenatal, intrapartum, postpartum and postnatal care while also educating women and families about contraception, family planning, and sexual health. The midwifery and MCW programs were funded by the GN and NAC provided in-community classroom and theory education. The MCW program is a one year-program with graduates eligible to practice as a MCW in Nunavut. The goal of the MCW was to work alongside midwives in a birthing centre, however, the GN's roles and responsibilities of the MCW did not necessarily match the curriculum taught. A total of ten maternity care workers graduated from the MCW program, however, it appears only 1-2 of these currently practice in the territory (according to the GN staff directory). One of these graduates is currently working in Arviat at the health centre and it is believed that the others work as CHRs in other communities. To enroll in the 2-year midwifery program, students who needed to achieve an average over 70% in the MCW program. After two years of classroom and practical experience, students receive a diploma in midwifery and are then eligible to take the CRME. These new midwives can then take night courses offered through Laurentian University to earn their baccalaureate in midwifery if desired. This design was meant to encourage the locally trained midwives to one day train and teach other potential midwives in their community, providing sustainability of midwifery services.

Through my interviews, I determined there were some key issues that impeded the progression of the program. The **cost of the program was the main limitation** as the expenses related to travel and accommodation to ensure students received appropriate placements and supervised deliveries were very high. Without secure funding from an outside source, the program is unable to run. The **lack of midwifery services in the territory makes it very**

challenging to organize placements for students, thus requiring them to have to travel to Manitoba, Alberta, and Ontario to fulfill the qualifications (i.e. 50 supervised births) for the program. Ultimately, this resulted in the program being deemed a "logistical nightmare" and has not been offered since 2013/2014.

The MCW program also had its limitations. From what I gathered in my interviews, the curriculum and training for a MCW was incongruent with the GN's job description of a MCW, leading to many issues with determining what the roles and responsibilities of a MCW were. The interviewees believed that the MCWs were not being used to their full potential and that many ended up becoming receptionist and/or interpreters. Both interviewees addressed **the need to revamp the MCW program** if NAC were to run the midwifery and MCW programs in the future.

The last theme I discovered through my interviews was the **focus on incorporating Inuit traditions and culture into the program**. Elders were consulted throughout the development and progression of the program and although many of the teachings focused on biomedical and southern models, there was a big push to incorporate the culture. One of the interviewees explained that the older generation of Inuit midwives is practically gone and since women have been convinced that giving birth in hospitals is the only safe way to give birth, it has become difficult to revert to traditional midwifery practices. The interviewee explained that the younger population is much more willing to give birth under supervision of a trained and qualified midwife who meets medical standards. However, having a midwife who is qualified but also culturally sensitive and from the community is crucial element, not only for sustainability of midwifery, but also to the woman and her family. Ultimately, the NAC program incorporated

many Inuit traditions, and although much has changed since women gave birth on the land, having culturally sensitive Inuit trained midwives was an essential feature of the program.

Rankin Inlet Midwives

I had the opportunity to speak with a midwife from Rankin Inlet Birthing Centre (RIBC). A more thorough summary of this information can be found in Appendix B. The main findings are reported below:

- The birthing centre has been running since the early 1990's but has suffered issues with staffing since it opened
- In past years, there were times where no registered midwives (RM) were available at the centre, forcing women to be sent to the south to deliver their babies
- A main contributor that alleviated many of the staffing issues was the training and implementation of Inuit trained midwives from NAC's Midwifery program
- There are now two Inuk trained indeterminate midwives and two southern RMs present at the birthing centre
- There is a maternity care worker present, however, she has no formal training and is responsible for organizing charts and room setup/restocking
- The birthing suites are in the health centre, whereas all other checkups and activities run by the midwives occur at the Wellness Centre
- Two midwives are present for each birth and only consult nurses/doctors if there is an anticipated complication
- Most births take place in the birthing centre; about 5-10 women were evacuated last year and 40 gave birth in the birthing centre

- **The community has become very familiar with the birthing centre and now expects that their pregnancy will be watched and cared over by midwives**
- The midwives counsel women and families on pre-conception counselling, contraception, STI testing, safe sex practices, prenatal risk factors, labour, and breastfeeding
- Having more permanent midwives would improve the facility and services

The RIBC is well received in its community. The fact that most women expect to have their pregnancy watched over by a midwife shows the shift away from physician supervised hospital births and acceptance of midwifery practices. A major contributor to the ongoing success of the RIBC was the NAC's Midwifery program being offered in the community, resulting in two local midwives being trained to work in the centre.

Women in Arviat who have been pregnant

I pursued in-depth interviews with women in Arviat who had been pregnant and given birth at some point in their lives. I interviewed a total of five women, with more detailed records of their responses found in Appendix C. The major findings are as follows:

- Most women received education regarding their pregnancy from their families (often mothers and sisters) and the CHNs at the health centre
- All women interviewed saw different nurses at each prenatal appointment and waited anywhere from 10 minutes to 2 hours for appointments; the appointments usually lasted 10-30 minutes but the women felt they had enough time to ask questions if they had any

- Three of the women did not see a midwife and the other two who did see a midwife either felt like it was just a regular appointment (like those with the CHN) and the other felt the midwife was too busy with other women to help her
- When asked what they learned during prenatal appointments the answers varied but included: how body would change during and after pregnancy, labour and delivery, healthy eating and breastfeeding
    - All women received iron supplements during their pregnancy but no one had taken any folic acid supplements (or not to their recollection)
- The women received pamphlets and books regarding their pregnancies, however, they were either unsure or very vague with what material was covered in these resources
- Only two of the five women attended Healthy Moms Healthy Babies at some point during their pregnancies, whereas the other three did not attend at all
    - One woman claimed she would have liked to have gone to the program but was during work hours and could not go
- All women believed they received enough support during their pregnancies and when asked about what they would have liked to learn more about, three of them said they felt prepared and did not need further information; two of them would have liked to learn more about what to expect during labour as well as what to expect/bring to Winnipeg
    - Some of the women said they would have also appreciated group classes, like prenatal, exercise, and cooking classes

- All women felt the most difficult parts of being sent down south for the last few weeks of their pregnancies was being separated from their family, being alone, and feeling bored
- When asked how the women felt regarding delivering their first child, one women claimed to feel prepared, three felt very scared, and one felt homesick
- All five women stayed at the Transient Centre in Winnipeg, but only one went to a prenatal class that was being held. The other four did not attend any classes, one claiming that since her roommates did not want to go, she did not want to go either. The one who did attend the class said it was very boring and did not attend any other classes.
    - English speaking southern trained nurses taught the prenatal classes, which focussed on labour, contractions, and what to expect during delivery
- When asked if there was any part of being away that the women enjoyed, four of them said they enjoyed shopping, particularly for baby clothes
    - Two women explained that baby clothes and supplies are quite limited and very expensive in Arviat, so it is nice to be able to shop for these while in Winnipeg
- Two of the women did not go to any postpartum appointments, one only went to get C-section stitches out, and two claimed to have attended their scheduled appointments
- Regarding postpartum/postnatal education, all women claimed to receive this support from family (mothers, mother-in-law's, sisters); no one claimed to receive help from

the health centre nurses or support groups (even those who went to their postpartum checkups)

- All five women claimed they would have appreciated home visits from a public health nurse or equivalent during the postpartum period
    - A few claimed to have had a PHN come in to the house after one of their pregnancies, but this was neither regular nor consistent
- All women supported the idea of a community birthing centre in Arviat
    - Would like to see classes offered (prenatal, labour, exercise, yoga, sewing, cooking)
    - Would like affordable baby clothes and supplies provided

The in-depth interviews with women in Arviat provided insight into what resources are currently available and how women in the community feel about their prenatal, postnatal, and postpartum care. Women appear supportive of the reestablishment of a community birthing centre, however, want to ensure all the resources and equipment are available. **Although the women claimed to have had enough support during their pregnancies, almost all indicated that they would appreciate having more classes and supports available to them.** I am concerned by the lack of prenatal/pregnancy classes attended by the women at the Transient Centre in Winnipeg as well as the postpartum/postnatal support available to women when they return home. **I also found it troubling that most of the women were unable to explain to me what they learned at their prenatal appointments or what resources they received and were not able to provide any details until prompted.** From these interviews, I feel that women in

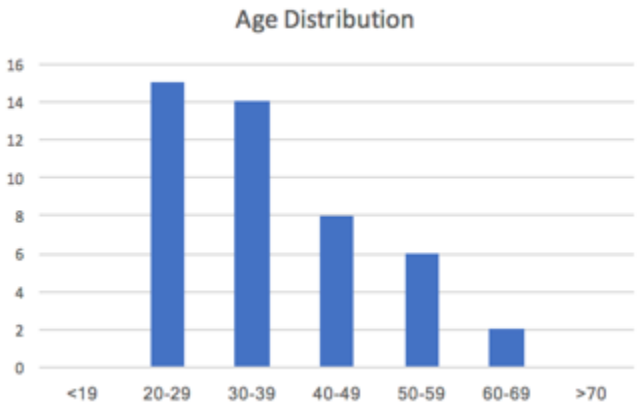
Arviat are unaware of what prenatal, postnatal, and postpartum supports they could be receiving and what they should be entitled to.

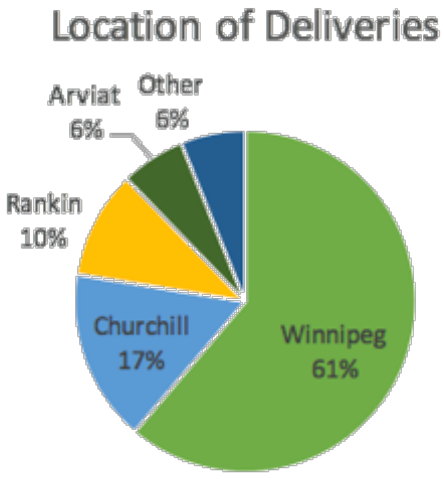
Survey

Results

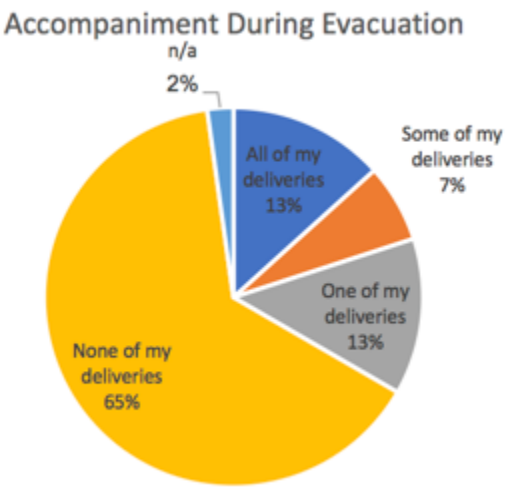
After four weeks of distributing a maternal/infant health survey to women aged 16 and older who were or had ever been pregnant, I received 45 completed surveys. The surveys were taken on an iPad and given in a variety of settings (i.e. Healthy Moms Healthy Babies classes, prenatal days at health centre, at CHR run booth at Northern, in community, etc.). For a full summary of the survey, please refer to Appendix E. The main results are indicated below:

- Over 60% of participants were between the ages of 20-39
- Over 30% of participants delivered 5+ children
- Over 60% of all deliveries from the sample group were performed in Winnipeg (89% of women have given birth in Winnipeg at least once)
- Almost two-thirds of women were alone during their deliveries (i.e. no family, friends, etc.) and only 13% had an escort for all their deliveries
- 61% of respondents claimed to have

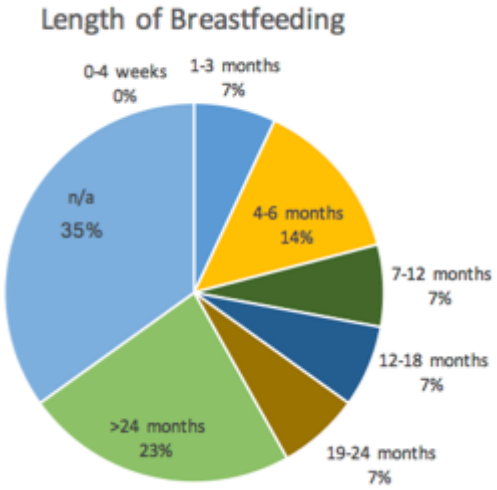




had an ultrasound during their last pregnancy, but only 45% saw a doctor and only 34% saw a midwife



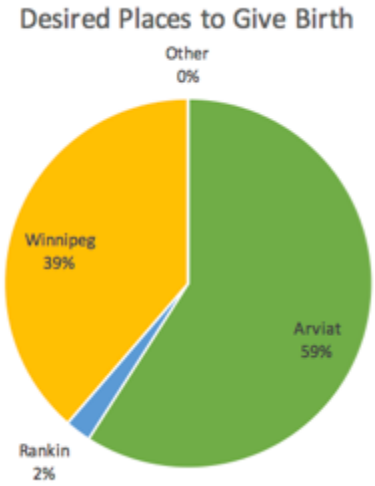
- 59% of women attended all their prenatal checkups while 25% attended most of them
- 72% of women did not attend any postpartum checkups (only 14% attended all of them)
- 66% of women had no prenatal/intrapartum complications, 82% had no postpartum complications
- 63% breastfed at least one of their children, and 23% breastfed for over 24 months
- Less than half the women attended any support groups, such as Healthy Moms Healthy Babies



- Most women felt they received great support/ help during their pregnancy and the postpartum period from their family
- Most women felt they received “good support” and “great support” from the nurses at the health centre during their pregnancy
- The amount of support/help women received from doctors, midwives, and support groups (e.g. Healthy Moms Healthy Babies) varied,

but over a third claimed they received no support from the mentioned resources

- In the end, 59% of women claimed they would prefer to give birth in Arviat, whereas 39% would rather give birth in Winnipeg
    - I followed up with these responses as I was interested in receiving a better understanding of why people answered in certain ways. When asked, "Why would you prefer to give birth in Winnipeg?" the following responses emerged:
        - “I like to go shopping and buy baby stuff”
        - “Safer – if they had more resources and if it was safer than maybe I would want to stay in Arviat”
        - “I’m scared to give birth here again, would much prefer Winnipeg”
        - “I would never have anything done medically in Nunavut”



The results from the survey help identify key themes and findings regarding maternal and infant care in Arviat. Although most women attend prenatal appointments, there is a definite lack of communication and information regarding postpartum checkups, a concern that needs to be addressed. The main individuals providing prenatal education to women in Arviat are the CHNs and family members, with women not regularly seeing doctors or midwifes during their pregnancies. The only support group available is the Healthy Moms Healthy Babies program, and less than half of all women attend these classes. I believe the lack of available support outside of the health centre is negligent and needs further consideration.

Most women surveyed claimed to have had uncomplicated pregnancies and deliveries, indicating that hospital and physician assisted births may not be necessary. Almost 60% of women surveyed said they would prefer to give birth in Arviat, and many of those who said they would rather give birth in Winnipeg claimed they chose so due to health and safety concerns. Other women indicated that they would rather go to Winnipeg to shop or to get away from Arviat. Overall, the majority of women would like to stay in Arviat to deliver their babies, but want adequate resources and personnel.

Limitations

There were several limitations with the implementation of the survey. I set an initial target of receiving 60 participants, however, I was only able to achieve 45. This also took much longer than anticipated as I was unable to collect as many responses as I would have liked during prenatal days at the health centre. Some of my questions were difficult to comprehend, and thus required significant explanation, inhibiting participants from completing the survey independently. My initial survey, which 10 participants completed, was much longer and much more complex. I modified the survey to make it shorter and simpler and used it for the other 35 participants. For my data analysis, I combined both surveys, as the second one contained all questions that were in the first survey, except for one question (i.e. Question 11: Did you attend your postpartum appointments). This led me to have 10 fewer responses for Question 11, significantly less than my other questions.

Focus Group – Elders

I conducted a small focus group with three elders in the community who experienced the adoption of southern birthing practices first hand and in its entirety. The results from the focus

group with the elders can be found in Appendix D. The main themes and findings from this focus group are as follows:

- The Elders experienced some of their children being born on the land, in shelters and igloos, as well as experiencing birth down in hospitals in Churchill and Winnipeg
- In some Inuit communities, husbands, fathers, and other males in the community used to assist the woman in labour, a tradition that is not commonly practiced anymore
- Most of the learning that a pregnant woman received in the community regarding her pregnancy and childrearing was from other females in her family (e.g. Elders, mothers, sisters, cousins, etc.)
- **Women felt scared and ashamed when forced to give birth in southern hospitals, especially if they had given birth on the land previously**
- **Husbands felt very lonely and were concerned for their wives when they were evacuated**, as they were gone for weeks at time; relied on family and prayer to help them get by
- **Elder's feel as though much of the traditional beliefs and ceremonies that used to occur have been lost** (i.e. naming of infant, talking to fetus/newborn about certain traits he or she will exhibit)
- Elder's believe that giving birth under a trained professional (doctor, nurse, midwife) is safer than how it used to be and that birth on the land was not as safe as it is now. Elder's believe that women are not as healthy during their pregnancies anymore and that they eat too much junk food, do not move around enough, don't breastfeed

enough; believe that women need to eat country food again and move around and exercise during their pregnancy.

- **Elders wish that some of the old traditions could be brought back; there are not many Elders left who could teach and pass down these traditions (often passed down orally; not all written down)**

Essentially, I gathered that the Elder population was profoundly impacted by the transition of birth from the land to the south. There was a general sadness and sense of disappointment with how certain traditions and Elder involvement is no longer incorporated into most pregnancies and births today. The Elder's believe that the lack of country food and increase in sugar and junk food intake has had significant impacts on a woman's life, health and subsequent pregnancy. The Elder's would appreciate seeing traditional customs integrated into current midwifery practices and implemented in Arviat.

Cost Analysis

The cost to run the NAC Midwifery and Maternity Care Worker programs is extremely expensive. This is largely due to the lack of midwifery services currently available in Nunavut, requiring midwifery students to have to travel out of the territory to obtain their required supervised births. The GN and Federal Government are spending millions of dollars annually to provide medical transport for pregnant women, a practice that is not sustainable or cost effective. I was unable to directly receive information from the GN regarding the costs of medical evacuations related solely to pregnant women in Nunavut, but various sources have claimed it is roughly $12,000 for a low risk pregnancy and up to $33,000 for a high risk or complicated pregnancy (Canadian Nurses Association, 2009). Currently in Arviat there are over 100 pregnant women, equating to at least $1.2 million dollars for medical transport of these presently pregnant women to southern hospitals to give birth. The GN and Health Canada have also started a new prenatal escort travel initiative, where pregnant women can now bring along their husbands, boyfriends, or other family members to escort them during their time away from their community. Health Canada estimates that this cost, for the territory, will be roughly $22 million dollars in 2017/2018. This following table estimates these medical evacuation and prenatal escort costs in Arviat, based on 100 women currently being pregnant in Arviat.

Table 1: Current Costs for Medical Evacuation

Category	Description	Costs
Low-risk pregnancy to evacuation	Average cost to GN for low risk pregnancy be delivered in southern hospital	$12,000/woman

High-risk or complicated pregnancy evacuation	Average cost to GN for high risk or complicated pregnancy be delivered in southern hospital	$33,000/woman
Prenatal escort	Average cost to GN for prenatal escort to accompany women during delivery in southern hospital	$2,500/round trip *(based on Calm-Air flight expenses)*
Estimated Costs in Arviat		
Assuming 75% of pregnancies in Arviat are low risk	100 pregnant women in Arviat at moment; if 75 are considered low risk	$12,000 X 75 = **$900,000**
Assuming 25% of pregnancies are complicated or high risk *(Based on survey data)*	100 pregnant women in Arviat at moment; if 25 are considered complicated or high risk	$33,000 X 25 = **$825, 000**
Assuming all 100 pregnant women have prenatal escort	100 prenatal escorts to accompany 100 pregnancies to southern hospitals	$2,000 X 100 = **$200,000**
Total Cost to send pregnant women from Arviat down south to deliver their child	(Estimate cost based on 100 pregnant women)	**$1,925,000**

Assuming 75% of women have low-risk pregnancies and 25% have high-risk pregnancies or complications and all have a prenatal escort, the total cost to send these women to the south to deliver their children is almost $2 million dollars.

The following table attempts to estimate the costs of running a birthing centre, which includes staffing, maintenance fees, material, supplies and utilities. The structure of Rankin Inlets birthing centre was used as an example for one in Arviat, due to the similar population sizes. Given lack of available information regarding financials of existing programs, this analysis has significant limitations. The intention of this analysis is to give a framework by which we can

anticipate the costs of undertaking the initiative and compare these figures with the financial costs under the current evacuation policy.

Table 2: Birthing Centre/Midwifery Anticipated Costs		
Description	**Rationale**	**Costs**
Midwives X 4	RIBC has 4 midwives on staff; with 2 present for each delivery. A staff of 4 will help prevent burnout *(One midwife will likely be the manager of the centre)*	$120,000/midwife X4 = **$480,000** *(Comparable salary to CHN as told by CHD)*
Maternity Care Workers (MCW) X 1	RIBC uses one MCW who assists the midwives. A MCW would provide similar benefits in Arviat	$70,000/MCW X 1 = **$70,000** *(Comparable salary to CHR as told by CHD)*
Other personnel	Receptionist, cleaning staff,	$60,000 X 3 = **$180,000** *(Average salary for employees without post-secondary)*

Maintenance, materials, & supplies costs	Maintenance fees to run the centre (i.e. heat, hydro, other utilities, etc.); materials & supplies (i.e. paper, pens, computers, printers, ink, etc.),	*(rough estimate based on GN financials for 2016-2017; <u>GN Main Estimates (all 22 Community Health Centres in Nunavut)</u>* *$11,969,000 (Materials and supplies)* *$147,000 (Utilities)* *= $12,116,000 (for all 22 health centres, hospitals, regional health authorities) (GN, 2016)* *$12,116,000/22* = **$550,727**
Total Cost		**$1,280,727**

The estimated cost of running the birthing centre will be roughly $1.3 million per year (re: Table 2), significantly less than the cost associated evacuating women and an escort. Further analysis will be required where access to financial statements and communication with the GN can be applied.

The last section of the cost analysis is the training of midwives and physical development of the centre. I was fortunate enough to obtain some cost-related information regarding the NAC Midwifery program. In 2013/2014, the midwifery program cost NAC $333,000, which included costs for instructors, travel (including travel for instructors), bursaries, scholarships, tuition, accommodation, etc. As there were only two students enrolled in the program, the result averaged about $165,000/student. Enrolling more students would reduce the per student cost, as a significant portion of these operating costs are fixed. The following table describes the estimated costs of running such an initiative and constructing the birthing centre. Given its

comparable population size and environmental factors, Rankin Inlet and the RIBC have been used as a baseline to draw estimates.

Table 3: Costs for Establishing a Birthing Centre/Educating Community Members		
NAC MCW Program	1-years prerequisite for midwifery program (need 70% to proceed to midwifery program; can practice as MCW post completion)	$333,000/year X 1 (as one-year program) = **$333,000** *(Very rough estimate; no financials available for program so using midwifery program costs (likely overestimated))*
NAC Midwifery Program	As there are currently no trained midwives in Arviat, the program would need to be rerun with locals	$333,000/year X 2 (as two-year program) = **$666,000** *(NAC Midwifery Program Financials for 2 students; includes: tuition, travel, accommodation, instructor costs)*
Birthing Centre – physical building	A new building needs to either be built or an old building needs to be renovated to yield sufficient space for a safe and effective birthing center	Need a thorough cost analysis to determine this
Equipment	Equipment for the birthing center is essential (currently have one birthing suite at the Health Centre; need more of this equipment to have at least 2-3 birthing suites)	Need a thorough cost analysis to determine this
Total Cost		To be determined with a through cost analysis

These costs could be further reduced by allowing other community caretakers to enrol in some of the courses relevant to their work. For example, the CPNP and Family Support workers could benefit from some courses as well as CHRs and some nursing staff. Opening the courses to the community would reduce costs per students and build capacity throughout the maternal/ infant support programs in the community.

I was limited in my role to conduct a proper cost analysis due to my restrictions accessing information. Nonetheless, I believe that the initial cost to open a birthing centre, train midwives, and acquire equipment will present high initial investment (re: table 3) but will benefit the community in the long term, as is evident in table 2. The current GN and federal government practice to send out pregnant women - and pay for a medical escort - is a temporary solution to a long-term problem. The population in Arviat - and all throughout Nunavut - is growing at an immense rate, and this practice will not be sustainable in the long run. The costs will continue to grow and the need for community birthing centres will persist. In the end, having community based birthing centres will help reduce the medical evacuation costs, which account for over a quarter of Nunavut's expenditures. Moreover, having a birthing centre in the community will assist in maternal/infant health care and education, hopefully reducing the number of medical transports needed in the postpartum/postneonatal period, or even longer term. Lastly, there is no price that can be put on providing accessible and effective health services in a community and embracing the rich traditions and culture of the Inuit people. To ensure equitable health care amongst all Canadians, services such as a birthing centre needs to be implemented. The long-term effects of a birthing centre will save the GN and federal government considerable amounts in the future while improving the lives and empowering those in Arviat.

Summary of Findings

I will briefly summarize my key findings identified through my literature review, interviews, focus group, and survey, which will relate directly to the recommendations introduced in the following section. The following table provides the key stakeholders in the development of a community birthing centre:

Stakeholders and Rationale	
Stakeholder	***Rationale***
Government of Nunavut (GN) - **Department of Health and Social Services (DHSS)**	Need approval, professional and financial support, and guidance from GN and DHSS
Women in the community	As a birthing centre directly impacts women's health, women in the community will play a key role in what is needed and wanted at such a centre
Elders in the community	Elders are much respected in the community and having their input on what should be included in a birthing centre will help bring culture back to the community
Health care workers (CHN, PHN, MCW, MD)	The roles and responsibilities of health care workers in Arviat will be impacted by the development of a birthing centre and will play a big role in its development and maintenance
Healthy Moms Healthy Babies	This is the only support group for pregnant women/new moms in Arviat; will have a good insight into what services and resources women would like and possible space to run programs in the interim
Northern Arctic College (NAC)	Will be the likely providers of the NAC midwifery program and MCW program; need to work with the community to establish specific wants and needs for program
Canadian Association of Midwives	Regulatory body for midwives in Nunavut; sets practice exam (CRME) and helps develop scope of practice
Hamlet of Arviat	Responsible for wellness programs in the community and thus will likely take a role in establishing such programs in a birthing centre

Community members	Need to ensure there is community support for project; all other birthing centres in Inuit regions had immense public support for the initiative

The stakeholders will need to work together to ensure that the reestablishment of a community birthing centre in Arviat will be successfully planned, implemented, and eventually evaluated. All parties will need to collaborate as each have an important role in the production of a birthing centre and the resources/services it will offer. Through my interviews, I determined that **communities that had successfully implemented birthing centres had abundant community support and advocacy**. This is a critical factor that Arviat will need to work on before ere-stablishing its birthing centre.

Other key findings I identified are as follows:

1. **Nunavut falls greatly behind the rest of the nation regarding its perinatal health indicators and outcomes**
2. **The main factors that contributed to Arviat's first birthing centre failure were lack of staff and lack of appropriate space**
3. **There appears to be a lack of communication and organization among service providers regarding who is responsible for different aspects of maternal/infant health**
4. **There is only one real support group for pregnant women and new mothers, Healthy Moms Healthy Babies, but it is not well attended and lacks structured programming and services**

5. **The NAC Midwifery program appears to be a successful program (all graduates have passed the CMRE on their first attempt) and incorporates Inuit traditions, but is very expensive to facilitate**
6. **The NAC MCW program needs to be redesigned and collaboration with the GN is necessary to ensure the curriculum matches the scope of practice and responsibilities set by the GN**
7. **Although women in Arviat claimed to have had sufficient prenatal/postpartum care, the majority never attended postpartum appointments, less than half had ever attended a support group, and those interviewed were unable to provide details regarding their prenatal education**
    - I believe that since evacuation of childbirth has become a norm in Arviat and only 0.5 days/week are allocated for prenatal care at the health centre, women in the community do not recognize the lack of education, service, and resources they are currently receiving
8. **Women would like more group classes, specifically sewing (baby clothes), cooking, labour, exercise, and yoga as well as home visits from a PHN post delivery**
9. **Elders are disappointed in the way the pregnancy is cared for today and would like to see more cultural practices incorporated in the birthing process**
10. **Over half the women surveyed would like or are open to delivering a baby at a birthing centre in Arviat, but would want to ensure safety and adequate resources prior to delivery**

11. **The women who said they would prefer to deliver in Winnipeg versus in Arviat explained they feel safer delivering their child in a southern hospital and also like the opportunity to go shopping (especially baby item shopping)**

The key findings identified will be the basis for my following recommendations. I used the evidence in my findings and research to develop ten recommendations that I believe will improve maternal/infant health in Arviat.

Recommendations

From the interviews, focus groups, survey, and literature review I conducted, I have developed the following recommendations to help improve maternal and infant health in Arviat. The concept of a community birthing centre goes far beyond a woman delivering a baby, but rather, carries cultural and emotional significance spanning across her pregnancy and postpartum experiences. From my findings, there is a definite lack of education provided to an Arviat woman and her family during her pregnancy and in the postpartum period. Nunavik and Rankin Inlet midwives have shown success in reducing the number of pregnant women evacuated from the community to give birth and have demonstrated that this practice is safe and effective. More research is needed to measure differences in long term health outcomes between these regions, however, midwifery services are a great resource for education and preventative health.

Recommendation #1: Government of Nunavut support and provide funding for Northern Arctic College Midwifery and Maternity Care Worker Programs

The NAC Midwifery program successfully produced four midwives, all who are currently working in their home communities and providing prenatal, intrapartum, postnatal, and postpartum care, support, and education. Understandably, the program is a significant cost to

implement when considering that midwifery students need to travel out of the territory to practice supervised midwifery services. However, the success in Rankin Inlet and Cambridge Bay shows the possibility for longevity and sustainability of midwifery services. The cost of evacuating pregnant women to deliver birth is an extraordinary cost for the GN and Federal Government, much that could be exonerated if low-risk pregnancies were delivered in home communities. Through my survey results most women indicated that they had low-risk, vaginal births, indicating that many could give birth in Arviat (refer to Appendix G for high-risk pregnancy conditions). Moreover, the NAC Midwifery and Maternity Care Worker programs incorporate Inuit traditions and culture, while also offering courses in home communities, satisfying the Elder's ideas and wants. Having southern trained midwives work on a causal basis in birthing centres in Nunavut has not been as successful as having locally trained midwives who are familiar with the communities and culture. Ultimately, to bring birth back to the community and support maternal and infant care and development in Arviat, the NAC Midwifery and Maternity Care Worker program needs to be offered in the community. Having locally trained midwives and maternity care workers to focus solely on maternal and infant health and wellbeing is crucial in a community where the birth rates continue to rise and a lack of education is currently available. To promote maternal health and wellbeing, more long-term, concrete solutions need to be implemented, and having locally trained Inuit midwives in the community would make a significant difference in how women access this information and care.

The program needs to have a reliable source of funding to ensure consistency in its program delivery. The NAC staff I interviewed explained the need to reorganize the MCW program, which will need to be done before the program is offered again. The scope of practice

and roles and responsibilities of this position need to be clarified, and collaboration between the GN and NAC staff is essential. Some costs regarding program placements and travel should be reduced due to two communities having birthing centres, allowing students to undergo some placements in Rankin Inlet and Cambridge Bay. The NAC midwifery and MCW program has had successful outcomes and produced midwives who are very capable of practicing in Nunavut in a culturally sensitive way. The program costs may be high upfront, but eventually, the cost associated with evacuating women to southern hospitals will be reduced, ultimately saving the GN and federal government ample money. Additionally, the need to improve maternal and infant health in Nunavut is imperative. In Arviat, Wednesday afternoons (1pm-3:30pm) are designated to prenatal care, not nearly enough time when considering the number of pregnant women. Providing fulltime midwifery services in the community will ensure that women are able to receive ample care and education that every Canadian is entitled to.

Recommendation #2: Development of a community birthing centre

When Arviat first implemented midwifery services in 2008, a major issue was the lack of physical space for a birthing centre. The old health centre was the proposed site, however, the steep flight of stairs needed to access the building proved to be a significant barrier for pregnant women. Midwifery services were then held in the health centre, which then became overcrowded and an unacceptable work environment. As identified in the findings, many healthcare workers and members of the community attributed the failure of the birthing centre to the lack of physical space available. To avoid this issue in the future, an allocated space for the birthing centre is essential. The centre will need to be in in close proximity to the health centre in the event of emergency situations and the need for a nurse or physician. The health centre currently has one

birthing suite for emergency deliveries, however, more suites would be necessary at a birthing centre. The building would need adequate space for not only birthing suites, but offices, examination rooms, supplies, and classroom/recreational space. Undoubtedly, for midwifery services to be implemented successfully in Arviat, a big enough space and building separate but close enough to the health centre that is accessible in all weather conditions is essential.

Another feature that should be added to the birthing centre is a space where baby clothes, items, toys, etc. could be sold. Many women claimed the reason they would prefer to deliver in Winnipeg is to shop, particularly for baby clothes and items that are very expensive and limited in Arviat. Having a store that sold these items would be very beneficial to the women in Arviat, and also potentially incentivize them to come to the birthing centre.

Recommendation #3: Proper Staffing

As identified in the findings, a major limitation with the initial birthing centre in Arviat was the lack of sufficient midwives to perform all prenatal, intrapartum, postnatal, and postpartum care. Originally two midwives were hired for this role, however, after being overburdened and overwhelmed, one resigned leaving only one to be the sole midwife. This led to nurses having to take on some of the responsibilities of the midwife, outside of their scope of practice, leading to many safety and workload concerns. Within a year, midwifery services were ceased and the working midwife was relocated to Rankin to work in their birthing centre. To avoid these issues in a future implementation of a community birthing centre, sufficient staff need to be hired and careful consideration regarding overtime, burnout, and the need for support staff must be addressed. Rankin Inlet, which has a similar sized population to Arviat, currently has four midwives and one maternity care worker employed at their birthing centre. Using this

example, Arviat should have a similar staffing arrangement. Proper staffing includes having Inuit trained local midwives, thus incorporating the concepts from recommendation #1. Rankin Inlet saw much more success and satisfaction when locally trained midwives were hired at their birthing centre, and thus should be used as an example for Arviat.

Recommendation #4: Enhancing Current Services and Programs

Through my discussions and interviews with women, health care workers, service providers, and other members of the community, it appears there is a lack of awareness and availability of supports and services. Most women receive education regarding their pregnancy from the health centre nurses and their families, often mothers and/or mother in-laws. As indicated in my survey (Appendix D) and interview results (Appendix E), most women claim to receive very good or great support from these individuals. The information received from the health centre appears to be informative and relevant, however, having only 15-30 minutes with a CHN once every few weeks may be inadequate. It concerns me that the women I interviewed were unable to express what they learned in prenatal appointments or what resources they were given without prompting, leading me to believe that the information received may not be as impactful as it could be. Regarding prenatal vitamins, all the women I spoke to received iron supplements during their pregnancies, but no one indicated that they took folic acid supplements before or during pregnancy. This is consistent with the results of my literature review, which indicated lower rates of folic acid supplementation amongst pregnant women in Nunavut. From this information, **I recommend longer and scheduled prenatal appointments, where a checklist of items needing to be discussed is provided to both the CHN and pregnant patient.** The lack of scheduling appointments for women on prenatal day forces them to wait up

to 2 hours to be seen, leaving them quite tired and eager to leave as soon as their appointments are done. I encourage the health centre to try and make scheduled appointments to overcome this barrier.

Most of the education is done one-on-one, with the only group support being the Healthy Moms Healthy Babies (HMHB) program, which is currently only offered during work hours (1:00 – 3:00 pm). During my two months in Arviat, I visited the HMHB program several times a week where I usually only saw two to three moms present at one time. My survey results indicated that only 44% of women surveyed had ever attended HMHB. I believe it is **necessary to extend these hours, promote when educational sessions are occurring** (e.g. PHN, CHR, Dental Hygienist visit), **and offer more formal prenatal classes on a regular basis.** Many women I spoke with who attended HMHB claimed to learn a great deal about healthy eating and nutrition from the program. From my interviews, this was the most impactful learning women received as they could reiterate what they learned from HMHB regarding nutrition while they had difficulty explaining or remembering what they learned from the health centre. With this, I believe that the women in Arviat would greatly benefit from more group classes and that the HMHB program is an ideal space to offer such programming.

The women I spoke with **expressed interest in having more prenatal and postpartum classes, such as labour, exercise, yoga, sewing, and cooking classes.** This would be a good way to develop a support system for pregnant women and help prepare them for their upcoming pregnancy and delivery. If HMHB could extend their hours, this may be a good place for these classes/programs to occur. Ideally a birthing centre would be able to run these classes and

programs, however, by leveraging existing programming and resources, will allow for a short to medium term solution in the interim.

Lastly, I believe **women need more support from visiting midwives and physicians during their pregnancies.** Only 44% of women surveyed saw a doctor during their last pregnancy and only 33% saw a midwife. These services need to be provided on a more regular basis to provide further teaching and care for women in Arviat. The CHNs have a tremendous amount of responsibility regarding maternal and infant health, often without any additional training. Having a visiting midwife or obstetrician/gynecologist whose speciality is maternal/ infant health come to the community on a more frequent basis would alleviate some of the responsibility of the CHN. Regardless of the development of a birthing centre, providing further education and programming to pregnant women in Arviat is vital, cost efficient, and has the potential to greatly impact later health outcomes.

Recommendation #5: Partnerships

As the process to re-establish a birthing centre and midwifery services in Arviat is a complex and multifaceted task, it will be essential to establish partnerships with various people, organizations, and agencies. Collaborating with different individuals and groups will allow for information sharing, knowledge generation, and capacity building. Partners will come from a variety of professional, educational and cultural backgrounds, each bringing a unique set of skills and expertise. There were many barriers and limitations with the initial birthing centre implementation back in 2008, and thus consulting other agencies and organizations who have experience with midwifery services will be essential in ensuring a proper, sustainable plan. The

following are organizations and agencies that would assist in the development and continuation of midwifery led birthing centres in Canada:

Potential Partners and Rationale	
Partner	***Rationale***
Government of Nunavut (GN)	Need professional and financial support from the GN as well as their approval
Federal Government (First Nations Inuit Health Branch (FNIHB))	Need support and guidance from federal government to ensure success
Pauktuutit Inuit Women's Society	This national non-profit organization represents Inuit women in Canada and has much experience encouraging maternal/infant health (Pauktuutit Inuit Women's Society, 2017)
National Aboriginal Health Organization (NAHO)	Has done extensive research on Aboriginal midwifery; with extensive knowledge in the field
National Aboriginal Council of Midwives (NACM)	Group of Aboriginal midwives who have experience delivering babies in remote communities; has first-hand experience in Aboriginal midwifery (National Aboriginal Council of Midwives, 2017)
Canadian Association of Midwives	Regulatory body for midwives in Nunavut; sets practice exam and helps develop scope of practice
Society of Obstetricians and Gynaecologists (SOGC)	Supply best practices and guidelines for maternal/infant health
Canada Prenatal Nutrition Program	Fund HMHB program
Inuit Tapiriit Kanatami	The National Representational Organization Protecting and Advancing the Rights and Interests of Inuit in Canada (Inuit Tapiriit Kanatami, 2017)
Nunavut Arctic College	Provides midwifery and MCW programs; determines curriculum for students
Nunavik Midwives	Successful midwifery services for over 30 years; will be helpful to know reasons to their success

Rankin Inlet Midwives	Successful birthing centre in Nunavut; will be helpful having their support and guidance
Cambridge Bay Midwives	Successful birthing centre in Nunavut; will be helpful having their support and guidance

Building partnerships will assist the stakeholders in Arviat to develop a safe, effective, and cost-efficient community birthing centre. By collaborating with a diverse group of experts across maternal/infant health fields, stakeholders will be able to determine the best strategies to implement consistent and culturally sensitive midwifery services in Arviat.

Recommendation #6: Postpartum Support

Through my findings, 72% of women surveyed did not attend any postpartum checkups. In my interviews, women who had caesarean sections had scheduled appointments to have their stitches removed, but otherwise did not attend postpartum appointments. In speaking to the CHN I found out that there is a "Well Women's Clinic" which provides postpartum care and support to women 6-weeks post-delivery. However, it is unclear whether this disconnect is occurring due to lack of demand or supply of these services. The Well Women's Clinic is responsible for postpartum appointments, pap smears, and family planning/birth control resources. This is clearly a very important initiative and concerning that more women do not attend these appointments. I recommend **further promotion of the Well Women's Clinic and further encouragement for women to attend these appointments**. Arviat mothers consistently bring in their newborns for neonatal appointments, yet do not attend their own postpartum appointments. This is an opportune time to ensure that women are aware of their own postpartum appointments and encouraged to attend.

Of the women I interviewed, two claimed to have had a PHN visit the home to in the postpartum/post-neonatal period, but only on one occasion and for one of their pregnancies. The CHN was unclear whether the PHN made home visits on a regular basis, demonstrating the lack of communication and awareness of the roles and responsibilities regarding maternal/infant care. Many women expressed that they would like to have a PHN come to the home versus them having to go to the health centre. This would allow the PHN to see the mom and neonate in their home environment and thus be able to offer education based on need (i.e. sleeping habits, bottle feeding versus breastfeeding, safety, etc.) while providing flexibility to the family. Essentially, I believe **PHN home visits should be implemented**, allowing for health teaching to happen in the home on a more reliable and consistent basis.

Lastly, **I believe that parenting courses should be further recommended and encouraged**. The Aqqiumavvik Society offers parenting courses – The Inunnguiniq Parenting Program - and these are great opportunities for parents to come and learn about traditional Inuit childrearing and how to integrate these teachings to present day parenting. These resources need to be funded and publicized to attract more families as awareness of them is currently very low among surveyed mothers. This initiative offers benefits of both education and a sense of community for attendees, potentially creating a great support network for these families, which can aid women in the postpartum period.

Recommendation #7: Data Collection and Evaluation

Consistent data collection, program monitoring, and subsequent evaluation of programs is needed to understand what resources and services are effective and which ones need improvement. There is currently a lack of data collection and evaluation of resources and

programs, thus inhibiting a proper understanding of available programs. Examples include: participation at Healthy Moms Healthy Babies, postpartum appointment attendance, pregnancy resources uptake (i.e. pamphlets, books, etc.), smoking cessation help, etc. Throughout my literature review I identified a common theme in that there was a lack of appropriate data collection throughout many communities in Nunavut. Without having proper data collection, it is impossible to have a thorough understanding if initiatives are successful or what specific areas need improvement. Essentially, a better baseline understanding of maternal/infant health programs in Nunavut, specifically Arviat, needs to be assessed and evaluated.

An example of a past initiative, the Closer to Home Strategy, developed by the Health Council of Canada in 2005, was a 20-year plan for Nunavut to produce more local Inuk trained health professions as to rely less on southern service providers (Health Council of Canada, 2005). There were five objectives to this project, including one to expand midwifery and maternity care worker practices in the territory. Since the dissolve of the Health Council of Canada, it is unclear what the Closer to Home Strategy accomplished and if it is still being implemented (as it was a 20-year plan). There is no clear data collection, documentation, analysis, or evaluation of this initiative, thus making it impossible to determine what aspects were successful and which needed improvement. Without this information, it is likely that similar initiatives or programs will once again be implemented, including ones that were previously unsuccessful. To avoid making the same mistakes and using funding inefficiently and ineffectively, it is important to continuously collect data and evaluate programs, ensuring proper documentation for future reference.

The Baby Box initiative has recently been implemented in Nunavut, where every woman who gives birth in the territory will receive a box that contains over 50 products for mom and baby. There are numerous resources in the box - in English, Inuktitut, Inuinnaqtun and French - that are targeted at encouraging breastfeeding, reducing SIDS, and promoting family planning, amongst others. The box itself has a mattress and sheets where the baby can sleep in for up to 6 months of age. This initiative is based off the Finnish Baby Box that was implemented in the 1930's after the infant mortality rate (IMR) in the country was one of the highest in the world at 90 deaths per 1000 live births (The Baby Box Company, 2017). Now Finland has one of the lowest IMR in the world, (3 per 1000 live births), which they largely attribute to the implementation of the Baby Box (The Baby Box Company, 2017). The GN now has a responsibility to properly monitor who receives a baby box, who uses the items in the box, and see if any changes in perinatal health indicators are affected. Proper program monitoring and evaluation is the only way to determine what programs are effective, and thus, this needs to occur with this Baby Box initiative.

When the birthing centre is re-established, it will be necessary to collect data and evaluate the services and programs offered. Data to be collected will include such questions as: how many deliveries are performed at the birthing centre, how many women are still sent down south to deliver, why are these women are still going down south, health outcomes of deliveries, how many people attend classes/programs, how many women attend prenatal/postnatal/ postpartum appointments, satisfaction surveys, etc. This data will help stakeholders identify what areas are successful and what areas need improvement. Evaluating the programs and services

offered will also assist in future birthing centre establishments in other communities across Nunavut and the Arctic.

Recommendation #8: Supports in Winnipeg

89% of the women surveyed and interviewed had given birth at least once in Winnipeg. They claimed the most difficult part about finishing their pregnancy in Winnipeg was being away from family, especially from their other children. Of the five women I interviewed, only one of them attended the prenatal classes offered at the Transient Centre (where Inuit women stay in Winnipeg), and few claimed that there were no classes offered. When asked why women did not attend, women claimed that they did not want to go alone and/or the women they roomed with did not want to go, ultimately persuading them to not go. I believe there needs to be stronger incentives to encourage these women to participate in these classes, as these would be beneficial resources. The prenatal classes are offered by southern trained nurses in Winnipeg, which the women from Arviat have no relationship with. There is very little incentive for the women to attend these classes and unfamiliarity with the southern nurses who usually have little experience with Inuit women adds a sense of awkwardness. **I recommend more culturally sensitive supports in Winnipeg to comfort these women and help them prepare for labour**.

During my discussions with the MCW at the health centre, she explained how at one time she and another MCW rotated going to Winnipeg to provide support for pregnant women from the Kivalliq region. Each MCW spent two weeks at a time living at the transient centre accompanying women to their deliveries, a trial project funded and supported by the GN. After several months this initiative was stopped, but the MCW expressed that women appreciated having someone who was familiar with their culture and community present at their deliveries. I

believe that this type of initiative should again be offered, possibly from Inuit trained doulas. Doulas can provide coaching and assistance during labour and incorporate traditional beliefs and ceremonies. As women appreciated having an Inuk trained MCW present with them at their deliveries, I believe **having an Inuit trained doula would also provide comfort and relief.** A doula is a person who is trained to provide support to a women during her pregnancy, delivery, and postpartum period. I believe having Inuit doulas present at the Transient Centre would influence more women to attend these classes. Throughout Manitoba there are new programs emerging to train Indigenous people to become doulas (e.g. Manitoba Indigenous Doula Initiative) which is an area that could be made available to the community. Having doulas present at birth has shown reduction caesarean births, labour length, and use of forceps and vacuum (Scot at al., 1999). The doula initiative may be a positive interim solution while a community birthing centre is established.

Recommendation #9: Teenage Pregnancy Support

As is evidenced in my survey results, most participants were in the 20-39-year age range with none of them being current teenagers. I realize this is a limitation in my results and recommend that future research be set out to determine the resources and services offered to teenagers who are pregnant. Nonetheless, many of the women I surveyed and interviewed were teenagers themselves during their first pregnancies. As indicated in my literature review, births delivered to teenage mothers are linked to poorer health behaviours, such as maternal smoking, decreased breastfeeding initiation, and lack of folic acid supplementation. As Nunavut has the highest rates of teenage pregnancy in the country, it is shocking how few resources seem to be available for this population. Healthy Moms Healthy Babies claims to go into the high school

once every month or two to hold their program (from 2:00 – 3:00 pm) for pregnant teenagers still in school. One hour every month or two is clearly not enough support and more resources need to be available. The PHN and/or CHR provide lessons on sexual health in the high school, however, this is not addressing the population already pregnant. From this **I recommend that more resources, specifically support groups, be offered to pregnant teenagers that do not interfere with school hours.**

My biggest concern regarding teenage pregnancy in Nunavut is the continuous cycle of negligent support, care, and education that is available. Women have become accustomed to the support and services they currently receive, not realizing that they are entitled to more and better care. I fear that this impacts the teenage population the most, who often need extra support, education, and care when undergoing a pregnancy**. A community birthing centre could incorporate more services focussed on teenage pregnancies/mothers with intention of improving health behaviours and health outcomes.** Resources offered could focus in Inuit concepts and beliefs, such as Inuit Qaujimajatuqangit, which will help rebuild Inuit culture in Arviat.

Recommendation #10: Other Supports

My last recommendation is related to providing further support and resources to encourage healthy behaviours during pregnancy and in the postpartum. Healthy behaviour, as mentioned previously, is closely related to maternal age and thus this recommendation will compliment Recommendation #9. Rates of maternal smoking are exceptionally high and resources to help with this are necessary. Service providers explained that they teach about smoking cessation and often try to refer women to visit the pharmacy for smoking cessation aids, however, this does not

appear to be effective. More research needs to be conducted to determine what smoking cessation tools are effective in pregnant women. For the interim, more resources should be made available at the health centre, such as support groups. A birthing centre could focus on smoking cessation during pregnancy, which may be more effective than more common smoking cessation resources.

Breastfeeding is another area I would recommend further support be provided. Many women in Arviat initiate breastfeeding, yet the length that they continue breastfeeding varies considerably. Many women claimed to have either not tried breastfeeding or were unable to do so. When asked who taught them about breastfeeding they said from family or the CHNs at prenatal appointments. If a woman's mom or family members did not breastfeed or are not present with her when she gives birth, it can make it very difficult then for her to learn about or be motivated to breastfeed. As indicated in the literature, women who deliver away from their home community have lower breastfeeding rates. There need to be strategies to overcome this barrier and having a PHN visit new mothers at their home's after their return to Arviat would be an ideal time to teach about breastfeeding.

Most women claim to receive a fair amount of prenatal education from CHNs, however, this resource is limited to those already pregnant. Adoption is very common in Arviat and I fear that those who do not deliver their child may have inadequate access to resources and services of similar efficacy to CHN appointments. Providing prenatal classes and services in a group setting would allow these expectant adoptive mothers to gain valuable insight and education regarding pregnancy and infancy. **Adoptive families receive barely any support in the community, aside**

from HMHB, and I believe this is an area that needs further attention. A community birthing centre could incorporate classes and resources for these individuals as well.

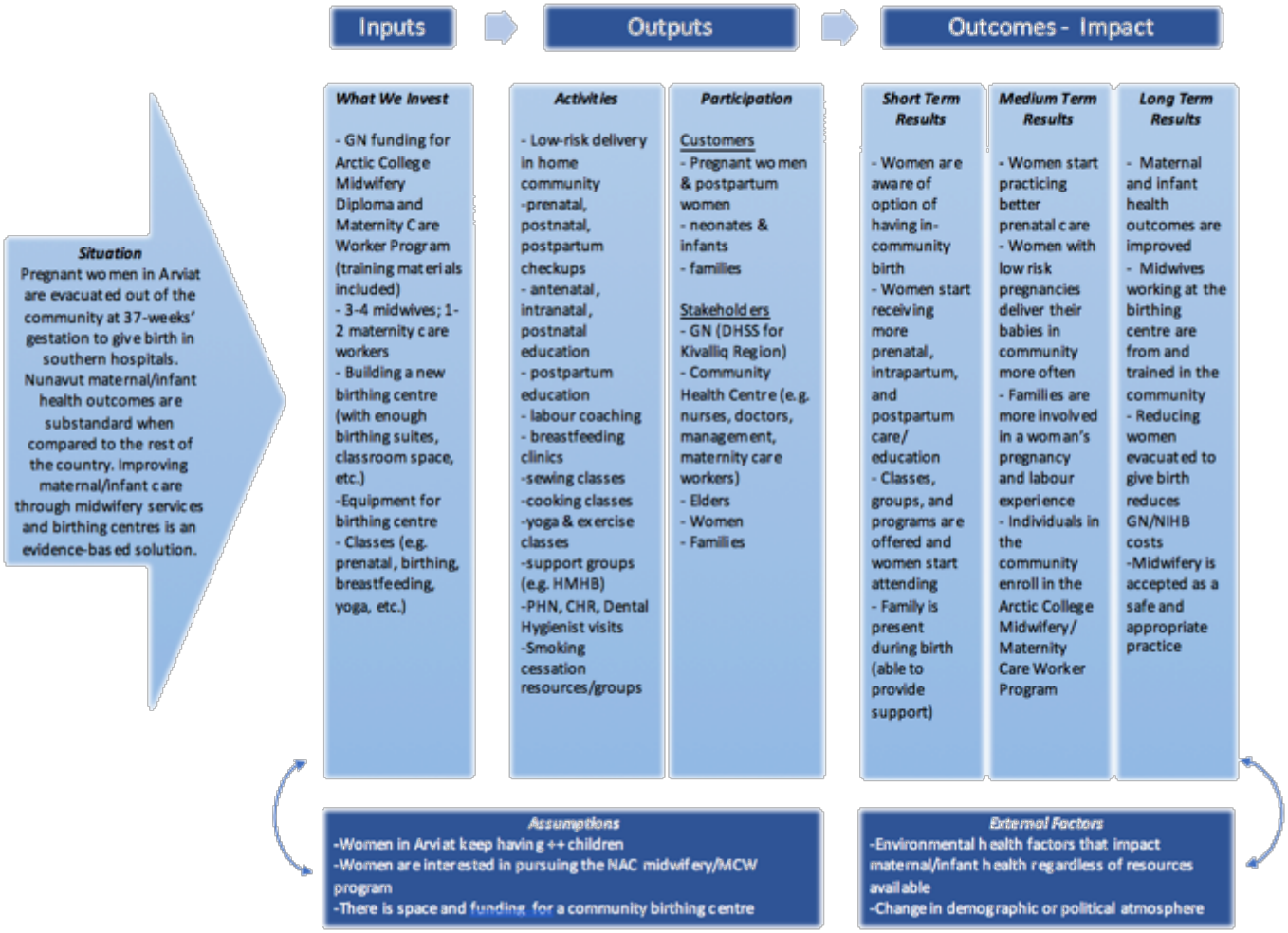
Lastly, further community support and engagement is necessary to influence policymakers and stakeholders that re-establishing a community birthing centre and improving maternal/infant health in Arviat is a priority. Public awareness initiatives such as public forums, radio shows, information sessions, etc. regarding maternal/infant health care and services in Arviat will help bring this issue to light. The community needs to want to improve the current services and resources as they are the main drivers to influence change. The main influences for the establishment of birthing centres in other Inuit regions in Canada was community advocacy, which needs to occur in Arviat.

Goals

The long-term goal of a community birthing centre in Arviat is to improve maternal and infant health outcomes, specifically infant mortality and preterm birth. This will be accomplished by having a well-equipped, sufficiently staffed birthing centre where the midwives are from and trained in the community. Although the upfront costs for a program such as this will be significant, long term cost savings created by no longer evacuating low risk mothers, along with the plethora of the long term benefits of increased education and support resources far outweigh the financial investment. Midwifery will once again be accepted as a safe and appropriate practice, and women in Arviat will have access to the proper care and services they are entitled to as Canadians.

In the short and medium term, women will be aware of the option to give birth in the community and be offered an array of classes, educational resources, and services that are

currently not available. Family and/or adoptive parents will be encouraged to join pregnant women at appointments and classes, emphasizing the importance of support systems in the pregnancy and birthing. Women will become aware of the NAC midwifery program after being cared for by locally trained midwives, possibly becoming motivated to apply and enroll in the program. The community birthing centre will build capacity in Arviat, empowering women and families to take control over maternal/infant health. Please refer to Appendix F to see a larger scale of the logic model below that indicates the inputs, outputs, and outcomes of a community birthing centre in Arviat.



Example Plans

The following provides an outline for an interim short-term plan to improve access and availability of maternal/infant health services in Arviat and a long-term plan for the development of a community birthing centre. The short-term plan can be accomplished in the community without a birthing centre present and will help build capacity, improve existing resources, and generate awareness of maternal and infant health in Arviat. The long-term plan is set out over five phases which will likely take 5-7 years to complete. The phases ensure that a community birthing centre will be properly implemented to ensure sustainability and longevity. Together these plans provide a vision for improved maternal/infant care and for a comprehensive community birthing plan.

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Interim Short-Term Plan

Interim Plan to Improve Maternal & Infant Health in Arviat

Immediate Action
(0 - 3 months)

Community Awareness Campaigns
(e.g. posters, forums, radio shows)
Gain support and build momentum for the following:
- Community birthing centre reestablishment
- Baby Box Initiative
- Prenatal and postpartum support groups, classes, and resources
- Postpartum appointments & Well Women's Clinic

Within first few months
(3 - 6months)

Schedule set dates and times for visiting health professionals and clinic appointments
(includes: visiting midwifes, family doctors, obstetrician/gynecologists, ultrasound technician, CHN)
- Provide sufficient notice before appointments
- Try to organize such that each woman sees the same CHN at each appointment (ensures ***continuity of care***)

Organize home visits by PHN to new mothers
(organize home visits within first week of returning home after delivery)
- Provide heath teaching to mom in privacy and comfort of own home
- Can ensure proper sleep hygiene, breastfeeding/bottle feeding routine, diaper changing schedule, environmental and general safety

Ongoing throughout
(6 + months)

Establish workshops, classes, and services to be offered for expectant and new moms *(includes adoptive families)*
(example locations: Healthy Moms Healthy Babies, Community Centre, Adult Learning Centre)
Types of classes and workshops:
- Cooking classes
- Sewing Classes
- Exercise/Yoga Classes
- Breastfeeding Workshops
- Labour Classes

Class providers:
- PHN
- CHR
- HMHB facilitators
- Community volunteers
- The Aqqiumavvik Society
- Hamlet of Arviat

Need to apply for funding & need to promote these!

Collect data for programs, services, and resources
(e.g. class/workshop attendance, prenatal and postpartum appointment attendance/ cancellations, Baby Box distribution, satisfaction surveys at classes, resource uptake.)
Data to be used in future for:
- Analysis
- Evaluation
- See what is working and what areas need improvement

Who collects data:
- Program administrators
- Health care centre
- Workshop/class leaders

NAC Midwifery and Maternity Care Worker Program Revamp

Recruit local community members as candidates for midwifery/

Enroll women in NAC Midwifery & MCW program
Year one of NAC program

MCW graduate - start working at health centre with focus on

Birthing centre

Phase 5

development complete
Community birthing centre is built, well equipped, and accessible
Local midwives graduate & begin practicing at local community birthing

Five Phase Long-Term Plan

Conclusion

Through my literature review, interviews, focus groups, and survey, I have created an in-depth analysis of maternal and infant health in Arviat. From these findings, I have determined that in its current state and with the resources currently available, the evacuation policy is not sustainable for low risk mothers, and will create severe long term financial and non-financial costs to the community. Extensive surveys and interviews among mothers have made clear that there is a systemic lack of awareness and education among the community about critical information regarding prenatal behaviours that must be addressed. The literature review I conducted displays the severity of this situation as Nunavut falls behind all other territories and provinces regarding perinatal health indicators and outcomes. The high rate of teenage pregnancies that often coincides with lower educational attainment, exacerbates the current poor health behaviours and outcomes of women and children in Arviat. My recommendations are based off my findings, focussing on enhancing current services and resources, and looking to more long-term, sustainable interventions, such as permanent midwifery services and a community birthing centre. Providing access to proper and effective maternal and infant health services, resources, and educational materials is essential to maintain long term healthy child development and behaviours. Introduction of the birthing centre staffed by local midwives would make available critical educational and health resources that will have enormous long term sustainable benefits to the mothers of Arviat. Support from the community and collaboration between stakeholders is a crucial element for success in the initiatives mentioned in my recommendations. Proper planning, implementation, and evaluation need to be done for all programs and services, ensuring that successful initiatives continue and unsuccessful ones be

modified or discontinued. Although the cost to develop new programs, build a birthing centre, and train potential staff is high, the outcome will improve maternal and infant health, ultimately decreasing costs in the long run. A sustainable solution to infant and maternal health is a need in Arviat and a community birthing centre can provide holistic care and services to this population that is lacking appropriate attention. It will take several years for the reestablishment of a birthing centre in Arviat, but by focussing on training local women and men to become midwives and maternity care workers, it will build capacity and help bring birth back to the community.

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Appendix A

Arviat Service Providers

How long have you worked at your position for?

- 15 years (CHN)
- 10 years (NIC)
- 7 years (MCW, CHR)
- 5 + years (HMHB)

What is your training?

- Diploma (X 2)
- Degree (X 1)
- GN training courses (X 2)

What are your roles and responsibilities regarding maternal/infant health?

- Prenatal program (X 2)
- Overseeing health centre (X 1)
- Public health education for maternal/infant health (smoking cessation, sexual health, etc.) (X 2)
- Organizing flights, charts, appointments for pregnant women (X 2)
- Postpartum care (X 1)
- Postneonatal appointments & care (X 1)

Do you support the reestablishment of a community birthing centre?

- Yes (X 5)

What do you feel went wrong with the first birthing centre in 2008?

- Not enough staff (X 5)
- Not enough space (X 5)

What would you like to see in a community birthing centre?

- Full time staff (X 3)
- Proper space (X 5)
- Inuit trained midwives (X 3)
- Family involvement (X 2)

Do you think women in Arviat would want to give birth at a community birthing centre if they had the option?

- 50/50 (X 1)
- No; most want to go to Winnipeg to shop (X 1)
- Yes (X 2)
- Unsure (X 1)

Appendix B

Rankin Inlet Midwives

How many babies are delivered at the birthing centre each year?

- We used to deliver 50-60 births in 2012, now around 25-40 births a year

How many women need to be evacuated to larger hospitals to give birth each year?

- Around 5-10

How many midwives do you have working at the birthing centre?

- Fully staffed is 4 registered midwives (RM) and a manager
- 2 indeterminate RM's & casual RM's who come up on 6-8 week contracts
- The 2 indeterminate midwives at Inuit graduates from NAC

Who is present for deliveries and are nurses/doctors present?

- Births are typically attended by 2 midwives
- Only time a nurse or physician would be present is if we are anticipating complications (e.g. preterm, meconium aspiration, etc.)

What are midwives responsible for regarding health teaching beyond delivery?

- Midwives counsel women and families on pre-conception counselling, contraception, STI testing/safe sex practices, prenatal danger/danger signs, labour and birth, breastfeeding
- Midwives can also prescript contraception and other medications in pregnancy and postpartum

What is the scope of practice, responsibilities, and duties of the midwives?

- Midwives see all pregnant women in the community
- Includes high risk pregnancies (in consultation with OB group in Winnipeg), women requesting terminations, and women who have had miscarriages

Do maternal care workers also work at the centre? If so, what are their roles and responsibilities?

- Have one maternity care worker, but has not had formal training
- Role is to assist the midwives with daily admin tasks and restocking of rooms

Where is your birthing centre in relation to the health centre? How big is your birthing centre?

- Clinic is based out of the Wellness Centre; 3 clinic rooms and a main office where prenatal charts are kept
- 2 birthing suites are located in the Health Centre on the same floor as the in-patient unit

Is the community generally satisfied with the birthing centre? Why or why not?

- Population is familiar with having a birthing centre as has been running since 1989

- Population expects to be followed for their pregnancy by midwives
- Many of the current clients were born at the birthing centres themselves
- There were times when there were no midwives in the community and women had no choice to go south for a birth; but has not happened recently

What are some of the greatest challenges about running a birthing centre in the north?

- Finding adequate staff

What do you think were some of the key factors that contributed to the development of the birthing centre and its continued operation?

- Having locally trained midwives has made a huge impact on the consistency of the birthing centre
- Prior to having local midwives, the centre was run by casual RMs from the south and often didn't meet the staffing requirements to provide care to all women

What are some areas that you believe could be improved or expanded?

- More permanent midwives

Appendix C

Individual interviews with women in the community who have ever been pregnant

- 5 women in the community

Prenatal Care (Home)

Who did you receive most of your prenatal education from?

- Nurses at health centre X 3
- Family (mom, sisters) X 4

Did you see the same nurses each time?

- Different X 5

How long did you have with the nurse when you saw him/her?

- 10 – 30 minutes X 3
- unsure X 2

How long did you have to wait to get seen for your appointment?

- 30 minutes – 2 hours X 3
- unsure X 2

Did you feel you had time to ask any questions you had?

- Yes, but would wait until end of appointments to ask x 1
- Not really; in and out like regular appointment X 1
- Yes, had lots of time X 3

What did you learn about in your prenatal appointments?

- How body would change during pregnancy X1
- Labour & delivery X2
- What to expect after I delivered X1
- Healthy eating X 4
- Breastfeeding X 4

Did you find seeing the midwife in your community helpful?

- Didn't see one X 3
- Not really (she was too busy with other women) X 1
- Just like regular appointment X 1

Did you receive any type of written resources? What kind?

- Yes; pamphlets and books on general pregnancy topics X 5

Did you have any family come with you to prenatal appointments?

- Yes; during my first pregnancy mom or sister came with me X 2
- Yes; husband came with me X 2
- No; was on my own X 1

Do you feel you had enough support/help during your pregnancy?

- Yes, I felt I had enough support X 5

Did you learn about how to eat healthy during your pregnancy?

- Yes; from Healthy Moms Healthy Babies X 2
- Yes; from CHN X 2

- No, given pills instead X 1

Did you receive any supplements?

- Yes; iron pills X 5

Did you learn about breastfeeding during your pregnancy?

- No; not from anyone X 1
- Yes; from CHNs X 3
- Yes; from family X 2

What do you wish you would have learned about?

- What to expect about labour X 1
- What to expect in Winnipeg/what to bring X 1
- Felt prepared/not sure what else X 3

What kind of support would you have liked with your pregnancies (prenatal)?

- More classes; exercise, prenatal classes, etc. X 2
- Unsure X 3

Did you attend any support groups like Healthy Moms Healthy Babies?

- Yes; for a few of my pregnancies X 2
- During work hours so I could not go X 1
- Did not go X 2

<u>Prepartum/Intrapartum/Postpartum Care (Away)</u>

What was the most difficult part about being away to deliver your child?

- Being alone X 1
- Being bored X 1
- Being away from family X 4

How did you feel delivering your first child?

- Scared X 3
- Homesick X 1
- Felt prepared X 1

What did you enjoy about being away?

- Shopping (baby clothes) X 4
- Nothing X 1

Did you go to prenatal classes at the Transient Centre in Winnipeg?

- Did not attend X 3
- No classes offered X 1
- Went to one class X 1

What did the nurses at the transient centre teach?

- Taught about labour and contractions and delivery X 2
- Unsure X 2
- Breastfeeding and took people to exercise classes; unsure what else X 1

Did they speak Inuktitut or have a translator present?

- Only English X 4
- English but had translator present X 1

Postpartum Care (Home)

Did you go to any postpartum appointments when you got home?

- No, didn't know about them X 2
- Only when I needed to get C-section stitches out X 1
- Yes, I went to them at the health center X 2

Who did you receive most of your postpartum/postnatal education from?

- Family (mother, mother-in-law, sister) X 5

What kind of support would you have liked after you delivered (postpartum)?

- Home visits from a public health nurse or someone else X 5

Birthing Centre

If you had the choice, would you deliver at a birthing centre in Arviat?

- Yes; but only if was safe and had all the resources it needed X 2
- Yes, it would be nice to stay with family X 3

What would you like to see in a community birthing centre?

- Classes (prenatal, labour, exercise, yoga) X 3
- Sewing classes X 2
- Cooking classes X 2
- Affordable baby clothes X 3
- Enough space and resources X 2

What are some of the reasons why you would still consider going away to deliver?

- Nice to get baby clothes and supplies (very limited options here and expensive) X 2
- Health and safety reasons X 1
- No reason X 2

Appendix D

Elder Focus Group

- *Three Elders in Attendance*

Where were your children born?

- 2 on land; 2 in hospital in Churchill
- 1 in igloo on land; 1 in shack on land; 4 in hospital in Churchill
- all born in hospital in Churchill or Winnipeg

Who helped women during their pregnancies and deliveries?

- Families; fathers and father-in-law's help during labour
- Parents; women in community
- Doctors and nurses when started going down south

How did you feel when women no longer gave birth in the community and out on the land?

- Scared and ashamed
- Very lonely

How did a woman leaving to give birth impact her family?

- Children had to be looked after by babysitters; often family
- Older children missed their mom, but younger ones would forget about her
- Had to stop breastfeeding younger children and switch to formula
- Husbands felt lonely
- Husbands felt they did not know their own infant when wife came home

How do you feel about the Inuit culture and traditions that used to happen during pregnancy and childbirth?

- Babies born on the land were happier, healthier, ate more traditional food, were breastfed; babies born in hospitals became chubbier kids, less happy, didn't like country food
- Used to eat country food, now too much junk food and sugar

Do you wish that traditions were carried on today?

- Yes; so many have been lost but would love to see them come back
- Not many Elders left to teach about traditions

How do you feel about the current birthing situation in Arviat?

- Had a lot of traditions back in the day; no longer have that
- Men used to help with deliveries; not anymore
- Elders had an important role with babies, like helping name the child, or giving it certain traits; do not have that role anymore
- Would prefer women do give birth in Nunavut

- In the old days, it would be scary for women to give birth if they had complications; better to give birth with doctors and nurses present – better to be safe
- Upset by the amount of junk food pregnant women and children eat these day

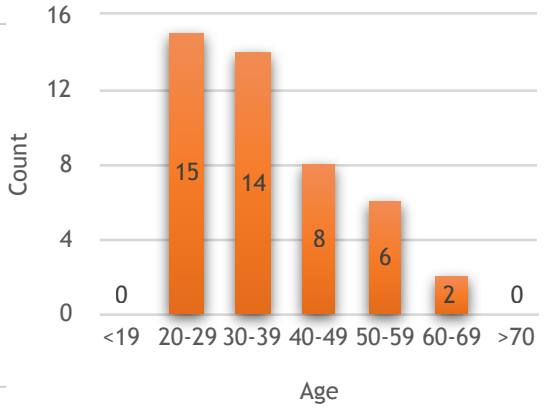
Appendix E

Survey Questions *(note: skipped questions were indicated as n/a for data analysis)*

Q.1

What is your age?

- <19
- 20-29
- 30-39
- 40-49
- 50-59
- 60-69
- >70



Q.2

How many children have you delivered?

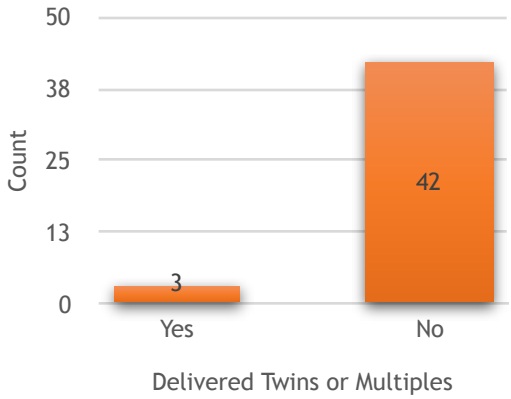
- 0
- 1
- 2
- 3
- 4
- 5+

Q.3

Have you ever delivered twins or multiples (i.e. triplets, quadruplets, etc.)?

- Yes
- No

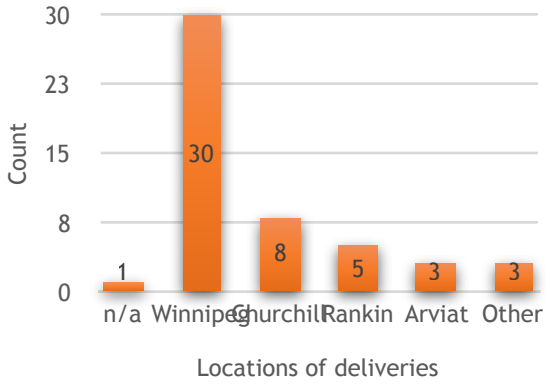
If yes, how many sets?



Q.4

Where did you deliver your child/children? (Select all that apply)

- [ ] Winnipeg
- [ ] Churchill
- [ ] Rankin
- [ ] Arviat
- [ ] Other:

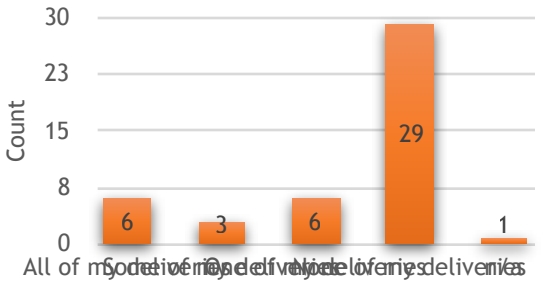


Locations of deliveries

Q.5

If you delivered out of your home community, did you ever have an escort? (i.e. did someone come with you out of the community?)

- ◌ Yes, all of my deliveries
- ◌ Yes, some of my deliveries
- ◌ Yes, one of my deliveries
- ◌ No, none of my deliveries
- ◌ Not applicable

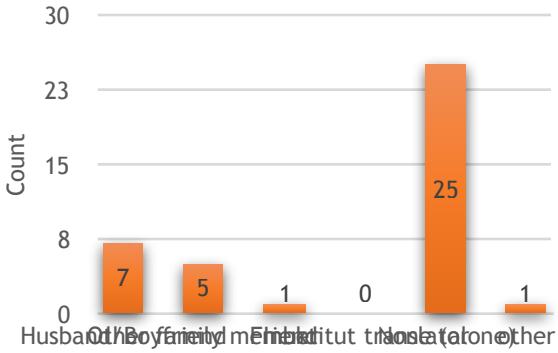


Escort during deliveries away

Q.6

Who was with you during your labour and delivery? (select all that apply)

- [ ] Husband/Boyfriend
- [ ] Other Family Member
- [ ] Friend
- [ ] Inuktitut Translator
- [ ] None (I was alone)
- [ ] Other:

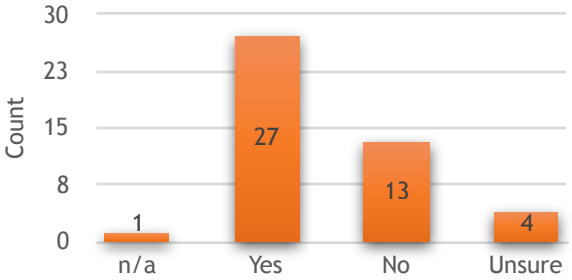


What escort was present

Q.7

During your last pregnancy, did you ever have an ultrasound in your home community?

- ◌ Yes
- ◌ No
- ◌ Unsure

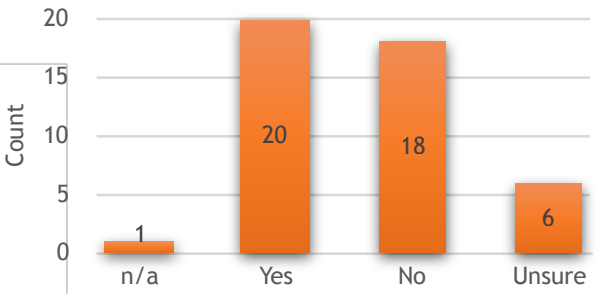


Ultrasound during last pregnancy

Q.8

During your last pregnancy, did you ever see a doctor in your home community?

- Yes
- No
- Unsure

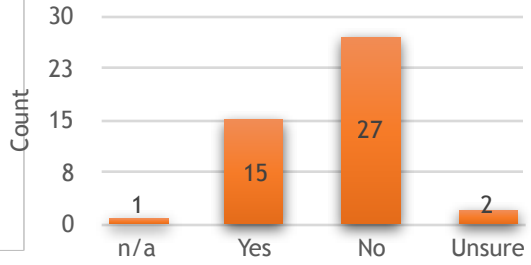


Visit with doctor during last pregnancy

Q.9

During your last pregnancy, did you ever see a midwife in your home community?

- Yes
- No
- Unsure

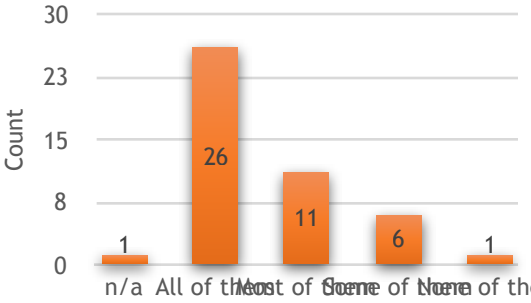


Visit with midwife during last pregnancy

Q.10

Did you attend your prenatal appointments?

- Yes - All of them
- Yes - Most of them
- Yes - Some of them
- No - None of them



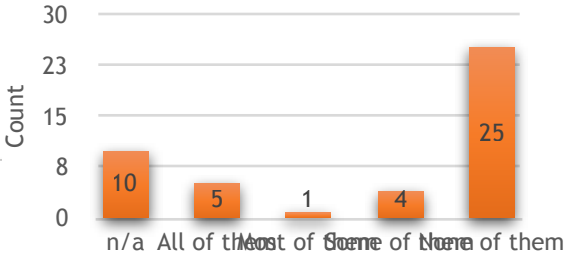
Prenatal appointment attendance

Q.11

Did you attend your postpartum appointments?

(i.e. appointments for mom after delivery; not appointment for baby)

- Yes - All of them
- Yes - Most of them
- Yes - Some of them
- No - None of them

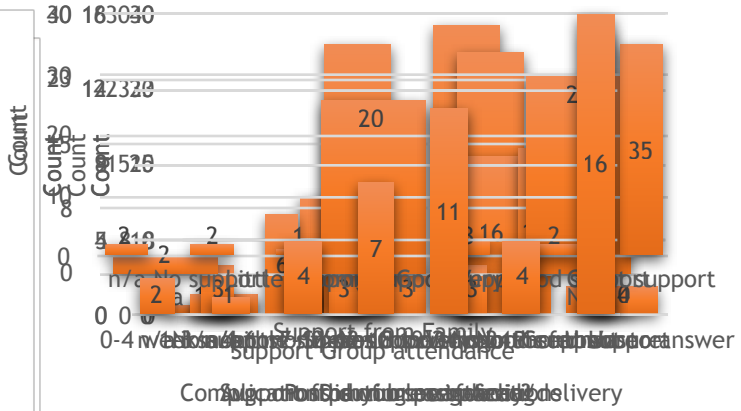


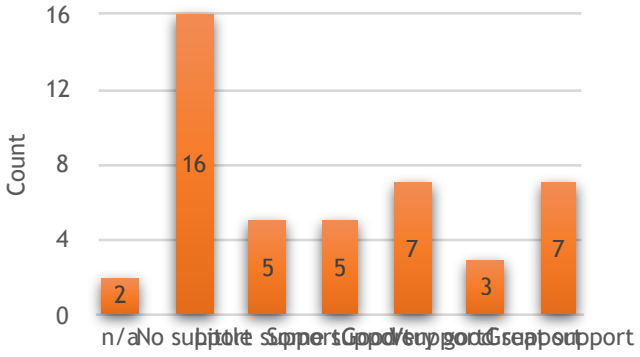
Pospartum appointment attendance

Q.17

On a scale of 0-5, how much prenatal/postpartum support did you receive from the following people in your home community? (0 - no support; 1 - little support; 2 - some support ; 3 - good support; 4 - very good support; 5 - great support)

	0	1	2	3	4	5
Family	○	○	○	○	○	○
Health Centre Nurses	○	○	○	○	○	○
Doctor	○	○	○	○	○	○
Midwife	○	○	○	○	○	○
Support Groups (e.g. Healthy Moms, Healthy babies)	○	○	○	○	○	○



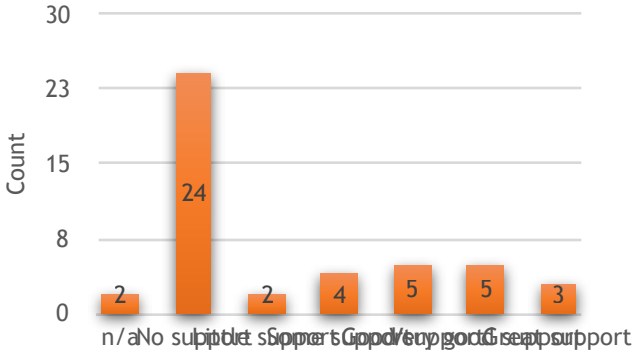


Suppoer from doctors in Arviat

Q.17

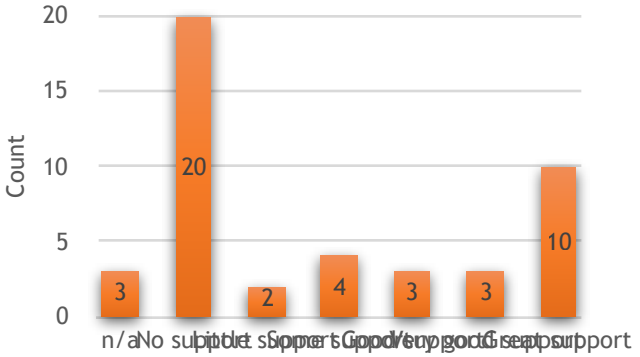
On a scale of 0-5, how much prenatal/postpartum support did you receive from the following people in your home community? (0 - no support; 1 - little support; 2 - some support ; 3 - good support; 4 - very good support; 5 - great support)

	0	1	2	3	4	5
Family	○	○	○	○	○	○
Health Centre Nurses	○	○	○	○	○	○
Doctor	○	○	○	○	○	○
Midwife	○	○	○	○	○	○
Support Groups (e.g. Healthy Moms, Healthy babies)	○	○	○	○	○	○



Support from midwives in Arviat

Q.14



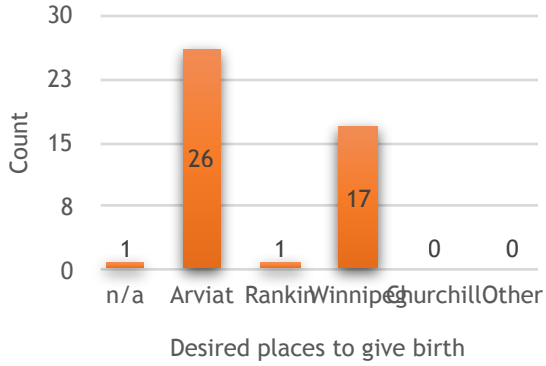
Support from support groups in Arviat

Q.18

What community would you like to give birth in?

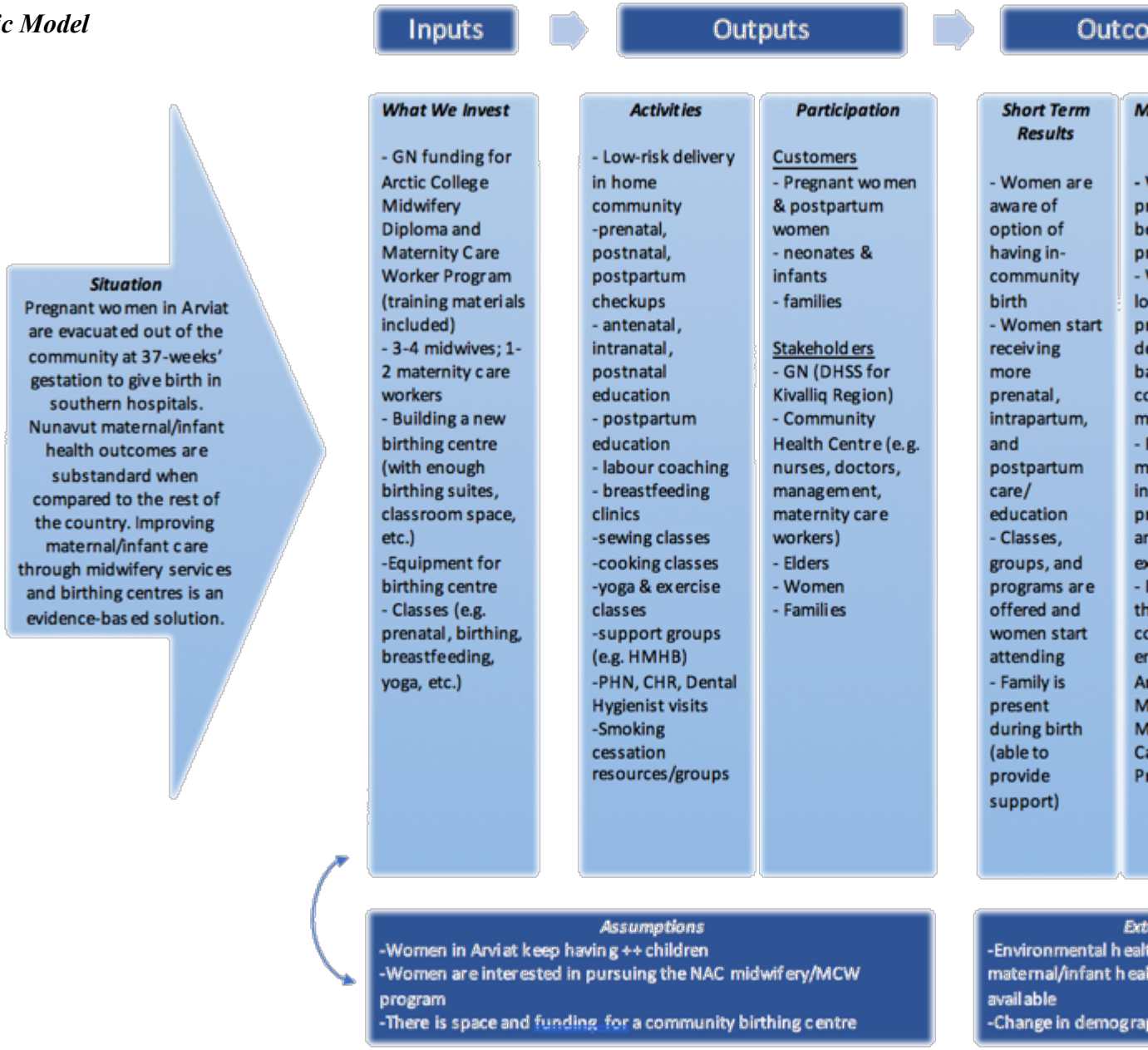
(i.e. if all communities had a place to give birth, which would you choose?)

- Arviat
- Rankin
- Winnipeg
- Churchill
- Other:



Appendix F

Logic Model



Appendix G

Pregnancy complications that result in the need to evacuate a pregnant woman from a community birthing centre

Pregnancy Conditions, Risk & Need for Evacuation			
Condition	**Explanation**	**Risk**	**Need for Evacuation**
Multiples	Twins, triplets, quadruplets, etc.	Medium to High	Yes
Preeclampsia	High blood pressure with protein in urine	Medium to High	If uncontrolled or worsens, yes
Eclampsia	Seizures during pregnancy (often follows preeclampsia)	High	Yes
HELLP Syndrome (Hemolysis, Elevated Liver Enzymes, and Low Platelet Count)	Life threatening complication of eclampsia	High	Yes
Gestational Diabetes	Diabetes (high blood sugar) during pregnancy	Depends	Depends
Placenta Previa or placenta abnormalities	Placenta fully or partially blocks the uterus (complicating delivery)	Medium - High	Yes
Premature labour	Labour prior to 37 weeks' gestation	Medium to High	Yes (if have time to be evacuated)
Premature Preterm Rupture of Membranes	(rupture of membranes before 37 weeks' gestation and prior to labour)	Medium to High	Yes
Ultrasound abnormalities	Any physical, congenital, etc. anomalies found during an ultrasound	Depends on abnormality	Depends on abnormality (but likely Yes)

Intrauterine Infection	Infection occurring in utero; can cause premature labour	Depends on infection	Yes
Intrauterine growth restriction or large for gestational age	Infant is either smaller or larger than it should be	Medium to High	Yes
Stillbirth	Fetus dies in utero or during delivery	Depends on cause	Depends
Breech or malposition	Baby is not head first	Medium to High	Yes
Venous thromboembolism	Blood clot formation	High	Yes
Vaginal Birth after Caesarean (VBAC)	Previous birth was delivered via caesarean section and current birth is to be delivered vaginally	Medium	Yes
First Trimester Complications	Any health complications that occur during first trimester of pregnancy (week 1- 12)	Depends on complication	Depends on Complication
History of postpartum hemorrhage (PPH)	Blood loss >1000 ml 24 hours post-delivery	Depends on cause; if current PPH then high risk	Depends (if experiencing PPH then Yes)
History Retained Placenta	All or part of placenta or membranes stay inside uterus after delivery	Medium – High	Yes
Planned Caesarean Section	Delivering baby via surgical incision (not vaginally)	Medium	Yes
(During/Post Delivery) **Vaginal Tears**	Tear to	Depends on level of tear	Possibly (3rd degree or higher)

References: SOGC