



Final Report:

Evaluation of the Partners in Inner-City Integrated Prenatal Care (PIIPC) Project

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Executive Summary

Prenatal care is a commonly used health service with the potential to improve maternal and child health outcomes. Previous research demonstrated high rates of inadequate prenatal care among women living in the inner-city of Winnipeg. Barriers, motivators and facilitators related to inner-city women's use of prenatal care were identified through a mixed methods study. Building on these findings, representatives of the Winnipeg Regional Health Authority; Healthy Child Manitoba; Manitoba Health, Seniors and Active Living (MHSAL); and Nanaandawewigamig - First Nations Health and Social Secretariat of Manitoba, in collaboration with researchers from the University of Manitoba, developed the Partners in Inner-city Integrated Prenatal Care (PIIPC) Project. The goal of PIIPC was to reduce inequities in use of prenatal care through implementation of four inter-related health system improvement initiatives: facilitated access to a prenatal care provider, involvement of midwives in Healthy Baby/Healthy Start community support groups, street outreach to pregnant women through existing mobile van services, and a social marketing campaign. Incentives, transportation enablers and a pregnancy passport were important components of the project. The PIIPC project started in September 2012 and women were enrolled in the evaluation phase until the end of March 2015.

Women were eligible for PIIPC if they:

- Lived in Point Douglas, Downtown or Inkster community areas of Winnipeg
- Had no prenatal care or were assessed as being at risk for inadequate prenatal care in the current pregnancy (e.g., late initiation of prenatal care; low number of visits relative to stage of pregnancy), or had a history of no prenatal care or inadequate prenatal care in previous pregnancies
- Had risk factors for inadequate prenatal care.

This study used a mixed-methods program evaluation design, combining both quantitative and qualitative components to assess the impact of the health system improvement initiatives.

Quantitative Component: Women participating in the PIIPC project who provided written informed consent had their health records reviewed to describe their demographic and social characteristics, use of prenatal care, and pregnancy outcomes (n=198 women). They were also interviewed to complete a questionnaire to assess barriers and facilitators to their use of prenatal care (n=101 women). The majority of PIIPC participants lived in the Downtown and Point Douglas areas of Winnipeg, self-identified as First Nation or Metis, received income assistance, had less than a high school education, had high rates of substance use, and were involved with Child and Family Services. We compared prenatal care utilization for women in the PIIPC project to a retrospective comparison group consisting of 202 women with inadequate prenatal care living in the same inner-city neighborhoods prior to implementation of PIIPC. For multiparous women (n=135 women with one or more previous births), we also compared use of prenatal care in their immediate previous pregnancy (in which they had access to "usual"

prenatal care) to their current pregnancy in which they received care through the PIIPC project. In both of these comparisons, a significantly higher proportion of women in the PIIPC project initiated prenatal care in the first trimester, and had more prenatal care visits, compared to the comparison group. In addition, women had a significantly lower rate of infant apprehension in their current pregnancy in which they received care from PIIPC (30.4%) compared to their rate of previous apprehensions (52.3%). The preterm birth rate was also lower in the PIIPC group than the comparison groups. Although this difference in preterm births was judged to be clinically relevant, it was not statistically significant due to a lack of power related to insufficient sample size.

Qualitative Component: In-depth individual interviews were used for the qualitative component of the study to evaluate women's (n=24) and health care providers' (n=30) experiences with receiving and providing prenatal care within these initiatives. The majority of women who participated in the interviews were single, had low income, and self-identified as First Nation or Metis. Women described access to prenatal care as convenient and coordinated, and appreciated flexible scheduling of visits and receiving incentives and assistance with transportation. Women commented on positive relationships with health care providers, using descriptors such as helpful, respectful, and nonjudgmental. A variety of health care providers participated in the interviews, including physicians, midwives, nurses, and social workers. They identified benefits of PIIPC such as better understanding of other programs, improved communication between programs/services, enhanced team work, positive changes in service delivery (e.g., more accessible and convenient prenatal care), and improved outcomes for pregnant women and their infants.

Population-based Component: The final step of the evaluation was conducted at the Manitoba Centre for Health Policy to evaluate changes in population-based rates of inadequate prenatal care in the three community areas before and after implementation of the PIIPC project, compared to other Winnipeg community areas, using an interrupted time series design. For each 6 month unit of time after the PIIPC intervention was implemented in the target areas of Point Douglas, Downtown, and Inkster, the rate of inadequate prenatal care significantly decreased by 9%, after adjusting for maternal age, parity and an area-based socio-economic measure. There was no significant change in the rate of inadequate prenatal care associated with time after the intervention in the other Winnipeg community areas.

In summary, the results indicate that the PIIPC project reduced barriers to care, improved communication and team work between providers and programs, and created positive changes in service delivery, resulting in improved use of prenatal care, better pregnancy outcomes, and fewer infant apprehensions for inner-city women at risk of inadequate prenatal care living in socio-economically disadvantaged neighborhoods. The results also suggest that the PIIPC intervention was associated with a decrease in inadequate prenatal care at a population level in the target areas. This project exemplifies how building successful partnerships involving researchers, clinicians, administrators, and policy makers can contribute to health system improvements.

Evaluation of the Partners in Inner-City Integrated Prenatal Care (PIIPC) Project

Background: Prenatal care is a commonly used health service with the potential to improve maternal and child outcomes. Despite the importance of prenatal care, inequities exist in women's access to and use of prenatal care. According to results of a national survey, *What Mothers Say: The Canadian Maternity Experiences Survey* (Public Health Agency of Canada, 2009), Manitoba had the highest proportion of women who reported not getting prenatal care as early as they wanted and a high proportion of women who initiated prenatal care after the first trimester, compared to other provinces. A population-based perinatal surveillance project conducted in Manitoba found that women living in the three inner-city community areas of Inkster (10.8%), Downtown (14.8%), and Point Douglas (19.1%) in Winnipeg had rates of inadequate prenatal care that were significantly higher than the Winnipeg average (7.7%) (Heaman et al., 2012). Therefore, these three areas were selected as the target sites for four new health system improvement initiatives. These initiatives built on knowledge gained from a previous study investigating barriers, facilitators and motivators that women in inner-city neighborhoods perceived as influencing their utilization of prenatal care (Heaman et al., 2014, 2015a, 2015b), hereafter referred to as the "Barriers to prenatal care" study. The initiatives for the project were developed by decision-makers from the Winnipeg Regional Health Authority (WRHA) - Public Health, Primary Care, and Women's Health portfolios; Healthy Child Manitoba; Manitoba Health, Seniors and Active Living (MHSAL); and Nanaandawewigamig - First Nations Health and Social Secretariat of Manitoba, in collaboration with researchers from the University of Manitoba. Refer to Appendices A and B for members of the research team, working groups, executive committee, and advisory committee.

Research Question and Outcomes: The purpose of the Partners in Inner-city Integrated Prenatal Care (PIIPC) project was to reduce inequities in use of prenatal care in the Winnipeg Health Region through collaborative, applied and policy-relevant research that had a strong emphasis on partnerships and knowledge translation (KT). The primary research question was: What is the effectiveness of implementing four new health system improvement initiatives in reducing inequities in access to and use of prenatal care in the Winnipeg Health Region? The expected outcomes of the PIIPC project were: (1) reduced rates of late initiation of prenatal care, low number of prenatal care visits, and inadequate prenatal care among pregnant women in Point Douglas, Downtown, and Inkster community areas in Winnipeg; (2) a reduced number of pregnant women who present to the Obstetrical Triage unit at Women's Hospital with no prenatal care from these three community areas; (3) a reduction in barriers associated with access to and use of prenatal care among inner-city women; (4) improved integration of prenatal health services, and (5) an increase in the proportion of women from priority populations who received care from midwives working out of inner-city clinics.

Health System Improvements: The four new PIIPC initiatives consisted of: (1) incorporating midwifery care at existing Healthy Baby/Healthy Start community support groups in the inner-city; (2) expanding the existing Street Connections mobile van services to offer pregnancy tests and some initial components of prenatal care, and link pregnant women

to the appropriate health care providers; (3) providing facilitated access to a prenatal care provider through Women’s Hospital at Health Sciences Centre, and the midwifery program at Mount Carmel Clinic and Downtown Access Centre; and (4) implementing a social marketing campaign to promote the importance of prenatal care and provide information on where women can receive prenatal care through strategies such as bus shelter posters, a website <http://www.thiswaytoahealthybaby.com/>, brochures, posters, and a YouTube video posted on Facebook <http://www.youtube.com/watch?v=wuhf7LRxXPw>. Further information on these initiatives is available on the WRHA website: <http://www.wrha.mb.ca/community/publichealth/piipc/index.php>

The PIIPC initiatives were designed to reduce barriers that inner-city women identified in the “Barriers to prenatal care” study, such as:

- Not knowing where to get prenatal care
- Hours at clinic not convenient, lengthy waiting time for appointments, or not able to get an appointment
- Problems with transportation or childcare that made it difficult to get to prenatal care appointments
- No perceived need or value in attending prenatal care; women held the belief that they could take care of themselves during pregnancy or could get advice from family and friends
- Family problems and personal problems
- Being under stress
- Being depressed or having other mental health problems
- Moving a lot

The PIIPC initiatives also focused on women’s motivation to have a healthy baby, and built on their suggestions for improving prenatal care, such as closer proximity of prenatal care, and providing transportation to prenatal services, tangible rewards, individualized care, and respectful caregivers.

Women were eligible for PIIPC if they:

- Lived in Point Douglas, Downtown or Inkster community areas of Winnipeg
- Had no prenatal care or were assessed as being at risk for inadequate prenatal care in the current pregnancy (e.g., late initiation of prenatal care; low number of visits relative to stage of pregnancy), or had a history of no prenatal care or inadequate prenatal care in previous pregnancies
- Had risk factors for inadequate prenatal care such as:
 - Alcohol or drug use during pregnancy
 - History of domestic violence/abuse during pregnancy
 - Unhappy about pregnancy
 - Lack of stable housing or homelessness
 - Minimal social supports
 - High levels of stress
 - Fear of baby being apprehended by Child and Family Services
 - No perceived need for prenatal care
 - Mental health problems.

Research Approach: This study used a mixed-methods program evaluation design, combining both quantitative and qualitative components to assess the impact of the health system improvement initiatives. Women participating in the PIIPC project who provided written informed consent were interviewed to complete a questionnaire to assess barriers and facilitators to their use of prenatal care, and their health records were reviewed to describe their demographic and social characteristics, use of prenatal care, and pregnancy outcomes. In addition, in-depth individual interviews were used for the qualitative component of the study to evaluate women's and health care providers' experiences with receiving and providing prenatal care within these initiatives. The final step of the evaluation was conducted at the Manitoba Centre for Health Policy (from December 2015 to November 2016) to evaluate population-based rates of inadequate prenatal care in the three community areas before and after implementation of the PIIPC project.

Significance: These initiatives fit well with the priorities of Manitoba Health, Healthy Child Manitoba and the WRHA health equity initiative. The Chief Public Health Officer's *Report on the State of Public Health in Canada* (2009) emphasized the importance of ongoing prenatal care in achieving a healthy pregnancy and birth, and positively influencing the health of the child in the early years. Thus reducing inequities in prenatal care is essential to improve the health of Canadians.

Evaluation Results: Quantitative Component

Who participated in the PIIPC project? The PIIPC project started in September of 2012. At the end of the evaluation period for the project (March 31, 2015), 281 women had been enrolled in the project. Women were followed to the end of their pregnancies, and data collection for the chart reviews and questionnaires was finished in February 2016. Of the 219 women who consented to chart review, 198 were completed after exclusions. Of the 156 women who consented to completing the questionnaire, 101 were completed. In addition, 24 women and 30 health care providers participated in in-depth interviews. Refer to Appendix C for a flowchart of participants.

- The majority of PIIPC participants came from the Downtown and Point Douglas areas of Winnipeg, self-identified as First Nation or Metis, were on income assistance, and had less than a high school education. The age of the participants ranged from 16 to 40 years, with an average age of 25.5 years. The participants had high rates of smoking (66.2%), alcohol use (26.8%) and drug use (47.2%) during pregnancy, and two-thirds (66.7%) had current involvement with Child and Family Services. Some of the women reported being homeless (7.2%).

Were the participants in PIIPC representative of women at risk of inadequate prenatal care?

- We used a retrospective comparison group consisting of 202 women who had inadequate prenatal care and participated in our earlier study of "Barriers to prenatal care" conducted from 2007-2010 (Heaman et al., 2014); women in the comparison group resided in the

same inner-city areas that were the target areas for the PIIPC project, but data were collected from them prior to implementation of PIIPC.

- The characteristics of women who participated in PIIPC were very similar to those of the inner-city women who had inadequate prenatal care in the previous “Barriers to prenatal care” study (Heaman et al., 2014). Refer to Tables 1 and 2 for a comparison of the two groups. These findings indicate that the PIIPC project was reaching the appropriate target population, as the characteristics of women in both groups were similar.

Did the women in the PIIPC project receive more prenatal care than comparison groups?

- Women in the PIIPC project had much better use of prenatal care (based on both chart review and self-report) compared to the retrospective comparison group of women with inadequate prenatal care in the “Barriers to prenatal care” study (i.e., who received prenatal care prior to implementation of PIIPC). Based on chart review, 58.1% of women in the PIIPC project had between 4 to 9 prenatal care visits compared to 24.8% of the women in the Barriers study, and 25.3% of the women in the PIIPC project received 10 or more visits, compared to 0% of the women in the inadequate care group in the Barriers study (Table 1). Based on self-report (responses to the questionnaire), 61.4% of women in the PIIPC project reported starting prenatal care in the first trimester and 61.4% had 10 or more prenatal care visits, compared to 24.8% and 1.0% respectively in the Barriers study (Table 2). The self-reported number of prenatal care visits was higher than those derived from the chart review, possibly because of women’s errors in recall or a tendency to “round up” the number of visits, social desirability response bias, or because women who were more engaged with the PIIPC project were more likely to consent to completing the questionnaire.
- For multiparous women (n=135 women who had one or more previous births), we compared their immediate previous pregnancy (in which they had access to “usual” prenatal care) to their current pregnancy in which they received care through the PIIPC project (Table 3). This is a stronger comparison group, because women are serving as their own controls. Based on chart review data, a smaller proportion of women in the PIIPC project (15.6%) had a low number of prenatal care visits (1-3 visits) compared to 24.3% in their previous pregnancy, and a higher proportion of women in the PIIPC project (25.9%) received 10 or more visits, compared to 13.6% in their previous pregnancy. In addition, a higher proportion of women initiated prenatal care in the first trimester in the PIIPC project (40.6%), compared to their previous pregnancy (24.7%).

Table 1. Comparison of 202 women with inadequate prenatal care (cases) who participated in the “Barriers to prenatal care” study (2007-2010), and 198 women enrolled in the PIIPC project (2012-2015) whose health records were reviewed.

Characteristic	Women with inadequate prenatal care in the previous “Barriers” study* N=202	Women in the PIIPC project ** N=198
	n (%)	n (%)
Education < high school	151 (75.1)	113 (57.1) Unknown 50 (25.3)
First Nation or Metis	171 (85.1)	120 (60.6) Unknown 62 (31.3)
Parity >=4	45 (22.3)	75 (37.9)
Smoking during pregnancy	155 (78.3)	129 (65.2)
Drug abuse during pregnancy	78 (39.0)	93 (47.0)
Number of prenatal care visits		
None or unknown	42 (20.8)	2 (1.0)
1-3 visits	110 (54.5)	31 (15.7)
4-9 visits	50 (24.8)	115 (58.1)
10+ visits	0	50 (25.3)
Preterm birth (< 37 weeks)	29 (14.4)	22 (11.1)

*The retrospective comparison group consisted of women with inadequate prenatal care (cases) in the study, “Barriers, motivators and facilitators related to prenatal care utilization among inner-city women in Winnipeg, Canada: A case-control study”; findings are based on review of health records (Heaman et al., 2014).

**Based on data from review of health records of women in the PIIPC project.

Table 2. Comparison of 202 women with inadequate prenatal care (cases) who participated in the “Barriers to prenatal care” study (2007-2010), and 101 women enrolled in the PIIPC project (2012-2015) who responded to the questionnaire

Characteristic	Women with inadequate prenatal care in the previous “Barriers” study* N=202	Women in the PIIPC project ** N=101
	n (%)	n (%)
Single marital status	121 (60.2)	57 (56.4)
Income < \$20,000	142 (77.7)	67 (66.3)
Education < high school	151 (75.1)	80 (80.0)
First Nation or Metis	171 (85.1)	93 (92.1)
Parity >=4	45 (22.3)	41 (40.6)
Weeks pregnant at first prenatal care visit		
No prenatal care or unknown	36 (17.8)	4 (4.0)
<=13 weeks	50 (24.8)	62 (61.4)
14-27 weeks	71 (35.1)	30 (29.7)
>=28 weeks	45 (22.3)	9 (8.9)
Number of prenatal care visits		
No prenatal care or unknown	31 (15.3)	1 (1.0)
1-3 visits	91 (45.0)	1 (1.0)
4-9 visits	78 (38.6)	37 (36.6)
10+ visits	2 (1.0)	62 (61.4)

*The retrospective comparison group consisted of women with inadequate prenatal care (cases) in the study, “Barriers, motivators and facilitators related to prenatal care utilization among inner-city women in Winnipeg, Canada: A case-control study”; findings are based on self-report data from completion of a structured questionnaire (Heaman et al., 2014).

**Based on self-report data from women in the PIIPC project who participated in an interview to complete the structured questionnaire.

Table 3. Comparison of prenatal care and newborn outcome variables for the previous and current pregnancy of multiparous women, based on health record review

Health care utilization and outcomes	Previous pregnancy ¹ (non-PIIPC) N=135 n (%)	Current pregnancy ² (PIIPC client) N=135 n (%)	p value
Gestation at first PNC visit	Missing = 42	Missing = 2	
<=13 weeks	23 (24.7)	54 (40.6)	Chi square
14-27 weeks	50 (53.8)	58 (43.6)	p=0.04
>=28 weeks	20 (21.5)	21 (15.8)	
Number of prenatal care visits	Missing = 32		
None	8 (7.8)	2 (1.5)	Fisher's
1-3 visits	25 (24.3)	21 (15.6)	p=0.01
4-9 visits	56 (54.4)	77 (57.0)	
10+ visits	14 (13.6)	35 (25.9)	
Number of visits to Fetal Assessment Unit	Missing = 32		
None	49 (47.6)	26 (19.4)	Chi square
One	38 (36.9)	61 (44.8)	p<.001
Two	6 (5.8)	26 (19.4)	
3+	10 (9.7)	22 (16.4)	
Preterm Birth (<37 weeks)	22 (16.3)	18 (13.3)	Chi square p=0.60
Previous apprehension of an infant ³ versus apprehension of the infant in current pregnancy ⁴	67 (52.3) Missing = 7 N=128	40 (31.3) N=128	McNemar test ⁵ p<.0001

¹Multiparous women who received “usual” prenatal care in their previous pregnancy

²Multiparous women who received their prenatal care from the PIIPC project

³Any previous apprehension of an infant; not limited to the immediate prior pregnancy

⁴Apprehension of infant in current pregnancy prior to maternal discharge from hospital; does not include later apprehensions

⁵Used McNemar statistical test for paired nominal data based on N=128 in each group

Did the PIIPC project have an effect on improving health outcomes?

- Results based on health record reviews of 198 PIIPC clients indicated that 11.1% had a preterm birth, compared to a rate of 14.4% for women with inadequate prenatal care who participated in the “Barriers to prenatal care” study (Table 1). This difference is clinically relevant, but it was not statistically significant due to a lack of power (i.e., insufficient sample size). Overall, outcomes for PIIPC clients were generally positive despite the fact that program clients had risk factors such as high rates of smoking, alcohol, and drug use.
- We also looked at multiparous PIIPC clients (n=135), comparing the outcomes of their immediate previous pregnancy in which they received usual prenatal care to the current pregnancy in which they received care from the PIIPC project. The preterm birth rate was 13.3% in the current (PIIPC) pregnancy, compared to 16.3% for the previous pregnancy. Refer to Table 3. This reduction in the preterm birth rate was deemed to be clinically relevant, but was not statistically significant due to a lack of power (i.e., insufficient sample size). In addition, 30.4% of women had an infant apprehended in the current (PIIPC) pregnancy, compared to 52.3% in a previous pregnancy. This reduction in infant apprehensions was statistically significant.
- When we compared the outcomes of women in the PIIPC project to women in chart review studies of women who presented to Women’s Hospital with no prenatal care in 2008/09-2010/11 (Knight et al., 2014) and again in 2013/14-2014/15 (Winchar, 2015), the outcomes of the PIIPC clients were better (e.g., reduced rates of preterm birth and small for gestational age infants), although the women had similar characteristics to those women who presented with no prenatal care. In addition, a higher proportion of PIIPC clients were involved prenatally with CFS but their rate of infant apprehension was lower. Refer to Table 4. These groups may not be directly comparable, but the findings serve to illustrate the poor outcomes associated with having no prenatal care, and the potential to improve outcomes through a care model such as PIIPC.

Table 4. Comparison of women who presented to Women’s Hospital Triage unit with no prenatal care (2008-2011) to PIIPC clients (2012-2015), based on review of health records

Characteristic	Triage unit study 2008/09-2010/11* N=109 women n (%)	Triage unit study 2013/14-2014/15** N=64 women n(%)	PIIPC clients *** N=198 n (%)
Smoking during pregnancy	70 (64.2)	37 (57.8)	129 (65.2)
Alcohol use during pregnancy	36 (33.0)	13 (20.3)	52 (26.3)
Drug abuse during pregnancy	35 (32.1)	18 (28.1)	93 (47.0)
Preterm birth (<37 weeks)	37 (33.9)	18 (28.1)	22 (11.1)
Small for Gestational Age Infant	15 (13.9)	15 (24.5)	4 (2.0)
Large for Gestational Age Infant	21 (19.4)	8 (13.1)	16 (8.1)
Baby admitted to Intermediate Care Nursery	29 (26.4)	11 (17.2)	32 (16.2)
Baby admitted to Neonatal Intensive Care Unit	8 (17.3)	4 (6.3)	7 (3.5)
Child and Family Services (CFS) involvement	56 (51.4)	36 (56.3)	126 (63.6)
Baby apprehended by CFS	38 (34.5)	20 (31.3)	54 (27.3)
Stillbirth	2	3	0
Neonatal death	1	0	0

*Data from Knight, Morris & Heaman (2014) study

**Data from replication of the triage unit study by Winchar (2015), under supervision of Dr. M. Morris

***Based on data from health record reviews of PIIPC clients

What were facilitators of prenatal care for PIIPC clients?

In the questionnaire, we asked the following question: “Please tell me if you received any of the following things to help you get prenatal care, and if so, to what extent the following things helped you get prenatal care?” Of the 101 participants who completed the questionnaire, the following facilitators were rated as helping “**a lot**”:

- Got help finding a health care provider: n=45 (46.4%)
- Got bus ticket or taxi slip to get to appointment: n=77 (79.4%)
- Got help setting up appointments: n=42 (43.3%)
- The staff were easy to understand: n=75 (77.3%)
- Clinic had hours that were convenient: n=47 (48.5%)
- Got a call to follow-up on missed appointments: n=48 (49.5%)
- Got incentives such as food voucher: n=35 (36.1%)
- You had emotional support: n=57 (58.8%)

Evaluation Results: Qualitative Component

Interviews with women who received prenatal care through the PIIPC project

A sub-set of women who completed the questionnaire also participated in an in-depth interview to ask about their experiences with the PIIPC project. Twenty-four women were interviewed. All interviews were audio recorded and transcribed. Content analysis was used to identify themes and categories that emerged from the interviews. Refer to Appendix D for a detailed summary of the numerous themes and categories that were identified. Some of the key findings are highlighted below, using quotations from participants as exemplar responses for some of the categories.

Characteristics of the 24 women who were interviewed:

- Age ranged from 18 to 40 years
- 17 women had at least one previous delivery
- 16 women were involved with Child & Family Services (CFS)
- 13 women moved 3 or more times in the past year
- 16 women wanted to be pregnant later, or not at all
- Prenatal care provider: obstetrician (17), midwife (14), or both (7)
- Timing of the first prenatal care ranged from as early as 3 weeks to as late as 29 weeks (average = 12 weeks)
- Number of prenatal care visits ranged from 5 visits to 17 visits (average = 11 visits)
- Outcome of infant at mother’s discharge from hospital: 14 infants went home with mother, 6 infants were apprehended by CFS, and 4 infants remained in hospital

What the women said they liked about receiving prenatal care through the PIIPC project:

- Prenatal care was convenient and coordinated
 - *“I wasn’t going all over the city for different things, so I felt really comfortable and it [prenatal care] was easy for me to get to.”*
- Flexible scheduling of visits

- Got help with making appointments
 - *“I find that the PIIPC project is more convenient and helps a lot more [than care in previous pregnancies] because they phone you and tell you, you have an appointment so you don’t miss it and then they also help you with transportation if you need it, so I find that very helpful” (G6P4)*
- Got help with transportation to prenatal care appointment (bus tickets or taxi slips)
 - *“With the PIIPC project, they would give me one or two taxi slips...I would use those for the birth or emergencies, and then the bus tickets, I would use for appointments...found that very helpful...[without them] it would be a financial burden...to get to those appointments” (G6P4)*
- Received incentives (food vouchers, pregnancy passport)
 - *“I would have been starving when I got home and the kids would be whiney and cranky, so that [food voucher] really helped” (G8P6)*
- Health care providers who were helpful, caring, respectful, and non-judgmental
 - Women used terms such as *“helpful, caring, understanding, concerned, reassuring, available, respectful, non-judgmental”* to describe their providers.
 - *“Well first of all I got to trust them [providers] and that’s a big huge thing for me. Because you know sometimes because of where I live and how I live my lifestyle, trusting your practitioner is really hard. ... They [providers] helped me connect with them so that I could trust them enough to say hey you know what, in the first three weeks in my pregnancy I did drugs cause I didn’t know if I was pregnant, and by being able to open up and tell them that and not be afraid that they are going to send down the police and everyone else..., it helped them to help me to get the proper care to check to make sure everything was okay... it made me want to go to my appointments. It made me want to ask questions” (G6P5)*

What women reported as positive outcomes of PIIPC:

- Were able to work with and plan ahead with Child and Family Services (CFS) for their infant’s care and outcome
 - *“If we [referring to herself & her partner] didn’t start going to the midwives in the beginning, if we didn’t do anything, if we didn’t take action, we probably would have been somewhere else by now or my baby would have been gone [apprehended]. So it’s good to have talked to the CFS workers and let them know what we want to do and tell them our side of the story. What our plans are.” (G3P1)*
 - *“The [social] worker at Women’s Hospital helped me and like talked with me about personal stuff, like about parenting, because I never parented any of my other children; this is the first baby that I was able to bring home.” (G7P3)*
- Learned the importance of getting prenatal care
 - *“How did the program affect me? It showed me that [prenatal care] was important.”*
- Had better relationships with their care providers (doctors, midwives, nurses, social workers at the hospital, and/or CFS workers)
- Had better communication with their care providers (doctors, midwives, nurses, social workers at the hospital, and/or CFS workers)
- Had a better overall prenatal care experience

What women wished for the future (“wish list”):

- Continue having the PIIPC program available for women
- Have prenatal care at a place that is familiar (Healthy Baby/Healthy Start Program, Women’s Hospital, St. Boniface Hospital).
- More care providers who are sensitive, supportive, respectful, and non-judgmental.
- More advertising about where women can get prenatal care and all the help they can receive.

Interviews with health care providers who were involved with the PIIPC project

The specific objective of the qualitative component with health care providers was to explore providers’ perceptions of: 1) changes in prenatal care delivery and access, integration of services, and collaboration between programs and providers as a result of PIIPC; 2) the pregnancy passport and enablers and incentives (bus tickets, taxi slips, food vouchers); 3) the social marketing strategies; 4) key components of PIIPC; 5) outcomes for women as a result of PIIPC; 6) suggestions regarding potential additions to improving prenatal care delivery; and 7) recommendation for sustainability of PIIPC.

The interviews with 30 health care providers were conducted in three phases from March 2013 to August 2015:

- Phase 1: March - May 2013 (n=11). These interviews focused on process evaluation and obtained feedback on the various PIIPC initiatives.
- Phase II: April - August 2014 (n=15). Questions were added to the interview to address the cultural appropriateness of service delivery, sustainability and key components of PIIPC.
- Phase III: July - August 2015 (n=7). Three providers from Phase I were re-interviewed and 4 new providers were interviewed. These interviews focused on the continuation of PIIPC and what worked and what didn’t work.

Participants in the interviews included nurses (n=9); physicians (n=6); midwives (n=5); social workers (n=7); and other providers (n=3). The primary location of practice for 18 of the participants was in the community and for 12 was in hospital. The average number of years working with pregnant women was 10.7 years (range=1-35 years). The majority of participants were female (n=26) and employed full time (n=22). All interviews occurred at the workplace, and were audio recorded and transcribed. Content analysis was used to identify themes and categories that emerged from the interviews. The interviews yielded a wealth of data, and Appendix E provides a detailed summary of the numerous themes and categories that were identified. Some of the key results are highlighted below, using quotations from participants as exemplar responses.

Theme: Positive outcomes resulting from PIIPC (i.e., what health care providers liked about PIIPC)

- Improved communication between programs and disciplines resulting in better collaboration and team work

- *“It [PIIPC program] really helps to facilitate more open communication between the disciplines...It really helps you keep an ear to the pavement...with the prenatal [clients] that we’re referring through [to the hospital] and continuity of care, so our clients tend to get more consistent care with that open collaboration.” (nurse)*
- *“The best thing that’s happened has been the links and the relationship building between community and acute care... .We function as a team.” (nurse)*
- Improved relationships between providers
 - *“I think just the relationship between the community midwives and acute care...just makes us feel that we’re part of a team. Definitely with the doctors as well, we feel more like an extension of their services and they’re an extension of ours rather than being two different places” (midwife)*
 - *“PIIPC has created a very good avenue for that shared care environment to be established and prior to the introduction of PIIPC project, ...it seemed like we were stuck in our own territories, in our own little boxes, but [now]...there’s been a lot of respect for various disciplines.” (social worker)*
- Improved understanding about other programs
 - *“I’m pretty sure we wouldn’t have gone into the Healthy Baby programs by ourselves without this project, and there’s been some really good outcomes coming from that; for us, as midwives, just understanding what’s in our community and how the Healthy Baby programs work.” (midwife)*
 - *“It is great to have a better knowledge of what Street Connections is because ...often when we work with different agencies, a lot of people don’t actually know what our service is. ...To have better knowledge about our client populations amongst the different sites is really great for accommodating client care.” (nurse)*
- Improvements in service delivery: Prenatal care is more accessible, flexible, coordinated, integrated and client-centered
 - *“We are certainly more aware of women who haven’t been getting prenatal care at all. We have a way of adapting our care to fit those women into our clinic at short notice and to see them when they need to be seen on the days that we’re there, and trying to get all of the critical aspects of their care while we have them in the building; so they can get bus tickets, they can get a meal ticket and they can get their ultrasound, they can get their blood work done and sometimes on the same day. So it offers us a chance to do the basics of that kind of care in an expedited sort of fashion which is facilitated by our nurse coordinator and social work as well.” (physician)*
 - *“They [Fetal Assessment Unit staff] are really trying to accommodate the lifestyle and the needs of the client...really trying to say that ... because of the nature of the clients, we will book them when they are more likely to show up” (midwife)*
 - *“The biggest one is for our clients to have some ability to get prenatal care on a kind of a walk-in basis, ...so for them to be able to get care when they are able to attend, that made a huge difference for our client population.” (nurse)*
- Improved client-related outcomes
 - *“PIIPC gives lots of marginalized women more avenue to access more prenatal care, medical care....psychosocial care...and services. Opens avenue for better*

therapeutic relationship...better experience...be it motivation, and ...different perspective in life, which is integral in achieving their goals be it in parenting their children, housing, stable source of income. PIIPC has opened those doors for them” (social worker)

- *“I do think that the Social Work department and hospital has done tons of work around preempted interventions so that babies go home with moms instead of being apprehended” (nurse)*

Theme: Key components of PIIPC needed to ensure sustainability

- Incentives and enablers: continue with the bus tickets, taxi slips, and food vouchers
 - *“All the incentives are clearly helpful.” (physician)*
 - *“So I think PIIPC is absolutely imperative because it’s one thing to tell a women you need to get to the hospital; it’s another thing to get her there and help that to happen fast because ... she doesn’t have money; that’s the whole problem is with the low income people. ...and the meals absolutely. If you’re going to be sitting there for a while and you’re hungry and we’re trying to reinforce positive things, I think the food voucher ...totally makes sense. And I absolutely know that facilitators make a difference.” (nurse)*
- A coordinator for PIIPC or a consistent contact person
 - *“The main things are a contact person that they [PIIPC clients] know they can call anytime; that would know who they are and what their situation is.” (physician)*
 - *A “coordinator for intakes for HSC, street outreach person, contact person, ...it’s very labor intensive so you need to have someone who is designated to do that work. ...It also needs to be somebody who can be a little more mobile to go out into the community.” (nurse)*
- Identifying the woman as a PIIPC client
 - *“We need to be able to say ‘this is a PIIPC client’ to everybody, and everybody saying that knows we’re all on the same team; we all need to bend a little in order to make sure that this client’s baby’s outcome is good.” (midwife)*
- Support of management team
 - *“The managers of the organization matter.... If you have the support of the management you can make it happen. They’ll go the rounds with you, they’ll figure it out..., it has to remain a priority in their eyes and if it’s not, then it’s allowed to slip off the table.” (nurse)*
- Flexibility in access to prenatal care
 - *“I think flexibility matters. ...I think flexibility will make them come, and what they come for and who, I think that those things matter to patients.” (physician)*
- Designated social work support for PIIPC clients
 - *“We also need designated social work ... because that is a huge part of the programour social workers were awesome, they went full board ahead and really helped support these moms... it’s very labor intensive.” (nurse)*

Evaluation Results: Population-Based Component

On a population basis, did the PIIPC project have an effect on rates of inadequate prenatal care?

We conducted a “before” (using fiscal years 2008/09 to 2011/12) and “after” (using fiscal years 2013/14 and 2014/15) study using administrative databases at the Manitoba Centre for Health Policy to assess if the PIIPC project had an effect on rates of inadequate prenatal care at a population level. The population cohort for the study was limited to women living in Winnipeg for at least 6 months prior to giving birth (to focus on women receiving most of their prenatal care in Winnipeg). In the target areas of Point Douglas, Downtown and Inkster, there was a significant reduction in the rate of inadequate prenatal care from 11.5% “before” to 10.1% “after” implementation of PIIPC ($p=0.02$). However, there was also a significant reduction in the other Winnipeg community areas from 3.7% “before” to 2.8% “after”, suggesting that other factors external to PIIPC may have been exerting an effect.

We then conducted an interrupted time series design (Wagner et al., 2002) to examine the effect of time, intervention (PIIPC), and time after intervention on the outcome (rate of inadequate prenatal care). We used Poisson regression, which is a form of regression analysis used to model rate data, for instance where a rate is a count of events divided by some measure of that unit’s exposure (Wikipedia). Our outcome variable (or dependent variable) was a count of deliveries with inadequate prenatal care divided by the number of deliveries, generating a rate of inadequate prenatal care. The independent predictors entered into the Poisson regression model were:

- Time measured in 6-month time periods (8 periods in the “before” time and 4 periods in the “after” time)
- Intervention: Target areas (Point Douglas, Downtown and Inkster) versus other Winnipeg community areas to look for an acute change following the intervention
- Time after intervention to allow for a change in slope following the intervention.
- Maternal age (3 groups: ≤ 21 years; 22-29 years; 30+ years)
- Maternal parity (2 groups: para 0-1; para 2+)
- Maternal socio-economic factor index (SEFI-2), which is a validated, area-based socioeconomic measure constructed from the following variables from the Canadian Census: average household income, unemployment rate for labour force population aged 15 years and older, proportion of population 15 years and older without high school graduation, and proportion of single-parent families (Chateau et al., 2012). Higher SEFI-2 values represent lower socioeconomic status (SES), and lower SEFI-2 values represent higher SES.

Refer to Table 5.

Table 5. Interrupted time series analysis for PIIPC project – data used for Poisson regression modelling: Rates of inadequate prenatal care (PNC) by time, age group, parity and SEFI 2, comparing target areas of Point Douglas, Downtown & Inkster to other Winnipeg community areas

Variable		Other Winnipeg Community Areas			Target Areas: Point Douglas, Downtown, Inkster		
		No. of deliveries	No. of cases	Rate of inadequate PNC (%)	No. of deliveries	No. of cases	Rate of inadequate PNC (%)
Time Frame (6 month blocks of time before and after intervention)							
“Before”	2008/09 A	2602	89	3.40%	975	115	11.80%
	2008/09 B	2321	83	3.60%	938	112	11.90%
	2009/10 A	2573	119	4.60%	995	124	12.50%
	2009/10 B	2450	121	4.90%	921	104	11.30%
	2010/11 A	2528	69	2.70%	1040	116	11.20%
	2010/11 B	2373	79	3.30%	993	110	11.10%
	2011/12 A	2485	85	3.40%	984	116	11.80%
	2011/12 B	2383	80	3.40%	966	103	10.70%
“After”	2013/14 A	2719	73	2.70%	1003	118	11.80%
	2013/14 B	2471	70	2.80%	963	107	11.10%
	2014/15 A	2708	69	2.50%	952	79	8.30%
	2014/15 B	2441	77	3.20%	928	83	8.90%
Age Group							
	<=21 years	2417	213	8.81%	2726	457	16.76%
	22-29 years	12835	501	3.90%	5487	665	12.12%
	30+ years	19881	470	2.36%	5469	378	6.91%
Parity							
	Para 0-1	28084	692	2.46%	9125	664	7.28%
	Para 2+	7011	490	7.00%	4533	834	18.40%
SEFI 2 Index							
	Lower SES ¹	1934	217	11.22%	5387	869	16.13%
	Moderate SES ²	9711	399	4.11%	6108	531	8.69%
	Higher SES ³	23407	567	2.42%	2167	96	4.43%

¹Lower SES: SEFI-2 score SD >=1

²Moderate SES: SEFI-2 score 0<=SD <1

³Higher SES: SEFI-2 score -1<=SD <0

For the target areas, the results of the Poisson regression indicated that for each 6 month unit of time after the PIIPC intervention, the rate of inadequate prenatal care significantly decreased by 9%, after adjusting for maternal age, parity and an area-based socio-economic measure. The findings also illustrate that it takes time for a new approach to care such as PIIPC to achieve an effect, with rates of inadequate prenatal care in the inner-city falling to the lowest levels (8.3-8.9%) in 2014/15. There was no significant change in the rates of inadequate prenatal care associated with time after the intervention for the other Winnipeg community areas, after adjusting for maternal age, parity, and an area-based socio-economic measure. Therefore we concluded that the PIIPC intervention may have been associated with a decrease in rates of inadequate prenatal care at a population level in the target areas. Refer to Figure 1.

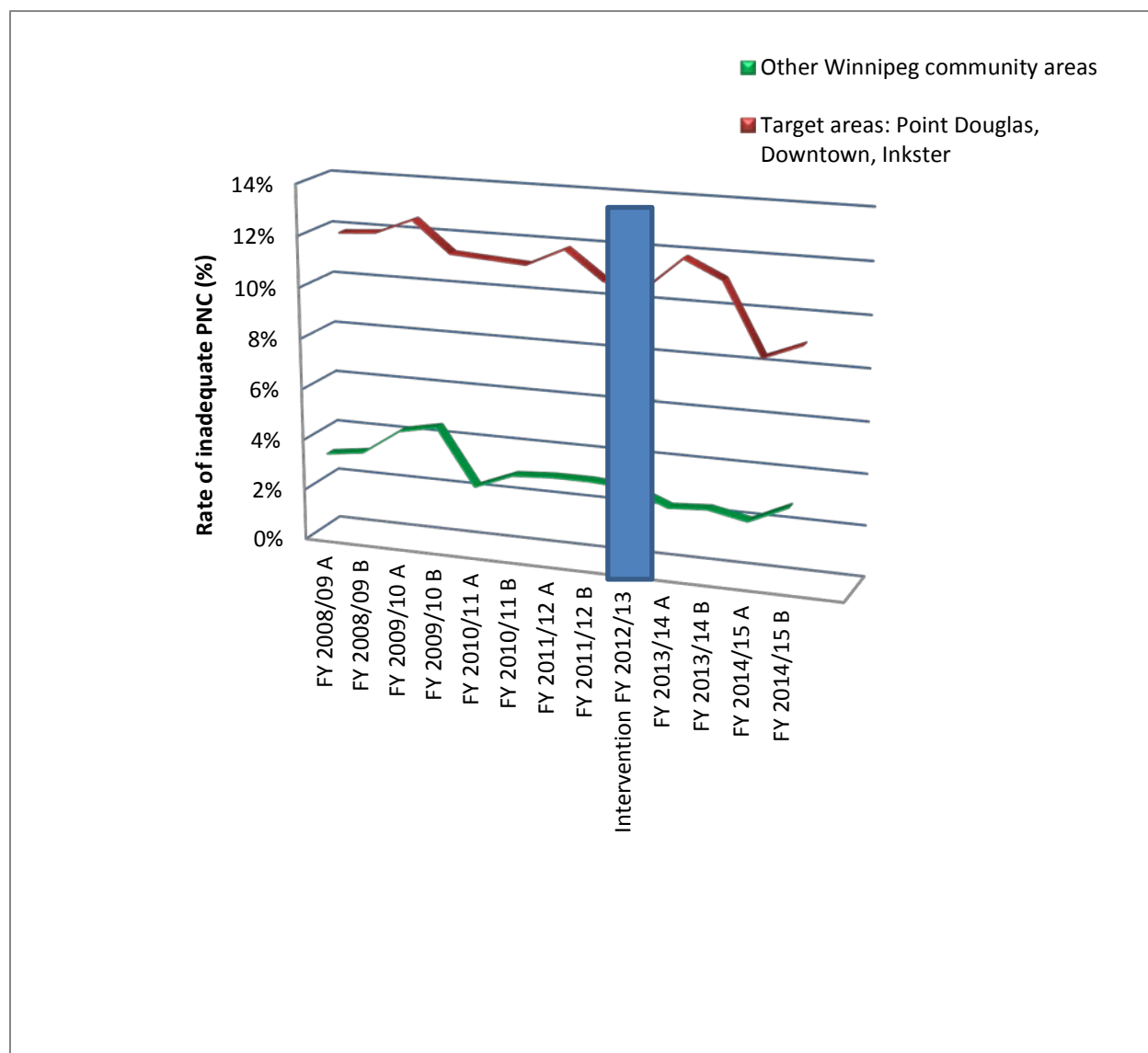


Figure 1. Comparison of unadjusted rates of inadequate prenatal care for target areas of Point Douglas, Downtown & Inkster to other Winnipeg community areas, by 6 month time blocks before (2008/09 – 2011/12) and after (2013/14 – 2014/15) implementation of the PIIPC project. FY = fiscal year

Evaluation Results: Other Research Questions

Did the PIIPC project result in an increase in the proportion of women from priority populations who received care from midwives working out of inner-city clinics?

When midwifery was implemented in Manitoba in 2000, the goal was for 50% of midwifery clients to come from priority populations, defined as single, adolescent (<20 years), Aboriginal, immigrant/newcomer, socially isolated, poor women, or other at-risk women (Manitoba Health, 2002). We anticipated that the PIIPC project would increase the proportion of women from priority populations who received midwifery care.

Each of the four original midwives working at Mount Carmel Clinic were involved with the PIIPC project for its duration, as well as one of the midwives working at Access Downtown until the 2014/15 fiscal year. The following figure indicates that the proportion of women from priority populations receiving care from the midwives working at Mount Carmel Clinic steadily increased following initiation of the PIIPC project, from 67% in 2012/13 to a high of 80% in 2015/16, while the proportion at Access Downtown rose to 50% in 2013/14 and then declined to 40% in 2015/16. Refer to Figure 2.

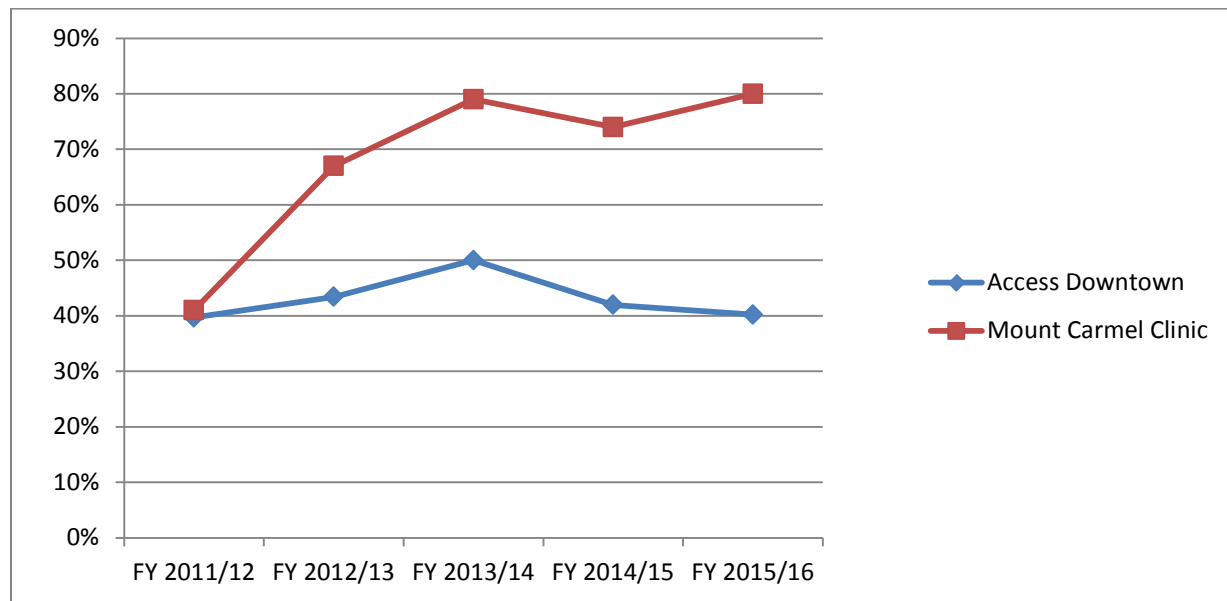


Figure 2. Proportion of midwifery clients at Mount Carmel Clinic and Access Downtown who were from priority populations (FY = fiscal year)

During the time frame of the PIIPC project, was there a decrease in the number of pregnant women who presented to the Obstetrical Triage unit at Women’s Hospital with no prenatal care from the Point Douglas, Downtown and Inkster community areas?

A BSc Medicine student (Ms. Kelcey Winchar, supervised by Dr. M. Morris) replicated the chart review for 2013/14 to 2014/15 that was originally conducted by another BSc Medicine student, Erin Knight, for 2008/09 to 2011/12. Knight, Morris & Heaman (2014) found that 109 women presented to the Obstetrical Triage Unit with no prenatal care between April 2008 to March 2011

(3 fiscal years), of whom 70 (64.2%) proceeded to deliver with no prenatal care, while 39 (35.8%) received some prenatal care prior to delivery. 72 of the 109 women (66.2%) presenting with no prenatal care resided in the Point Douglas, Downtown or Inkster areas of Winnipeg, averaging 24 women per year, and representing 0.47% of the deliveries at Women's Hospital over the 3 years (72/15,199). Winchar (2015) found that 64 women presented to the Obstetrical Triage Unit with no prenatal care between April 2013 to March 2015 (2 fiscal years), of whom 43 (67.2%) proceeded to deliver with no prenatal care, whereas 21 (32.8%) received some prenatal care prior to delivery. 42 of the 64 women (65.6%) presenting with no prenatal care resided in the Point Douglas, Downtown or Inkster areas of Winnipeg, averaging 21 women per year, and representing 0.41% of the deliveries over the 2 years (42/10,320). This demonstrates a small reduction in the number of inner-city women presenting with no prenatal care after implementation of the PIIPC project. However, the fact that 2/3 of the women presenting with no prenatal care resided in one of the three inner-city areas suggests that ongoing efforts are needed to reach this population.

What is the cost-effectiveness of the PIIPC project?

An analysis of the cost-effectiveness of the PIIPC project was conducted by the Evaluation Platform of the George and Fay Yee Center for Healthcare Innovation (CHI) (Metge & Fletcher-Cook, November 2016). The key findings of the analysis were as follows:

- The PIIPC program reduces hospital costs by an average of \$739 per infant born to women in the program by reducing the number of preterm births, and reduces costs to Child and Family Services by an average of \$9,169 per infant born to women in the program in the first year after birth.
- Research has shown that providing adequate prenatal care can prevent future societal costs by up to \$243,000 per child, depending on the severity of the effects of a preterm birth (Petrou & Kahn, 2012).

Conclusion

The principles underlying the PIIPC project include:

- Implementing an interdisciplinary collaborative approach to prenatal care
- Emphasizing teamwork and integration of services
- Providing flexible access and reducing barriers, with a “Yes we can” attitude
- Having a focus on the social determinants of health
- Providing culturally safe and trauma informed care
- Accepting women where they are at in their lives and being non-judgmental

These principles enabled the PIIPC project to reduce inequities in access to and use of prenatal care among inner-city women. The evaluation results indicate that:

- The PIIPC project reached the appropriate women (i.e., women who were at risk of inadequate prenatal care) and reduced barriers to receiving prenatal care.

- The PIIPC project provided integrated care for women and linked them to other relevant services (e.g., social work, Child and Family Services, addiction services).
- PIIPC clients had earlier initiation of prenatal care, more prenatal visits, and more fetal assessment unit visits than women in comparison groups.
- The PIIPC project contributed to improved pregnancy outcomes. For example, PIIPC clients had lower rates of preterm birth compared to women in comparison groups.
- Multiparous PIIPC clients had a lower rate of infant apprehension compared to their previous pregnancies. More of the women who had their infant apprehended were involved in planning for their infant's care because of earlier involvement with Child and Family Services and social work.
- There was a significant population-based reduction in rates of inadequate prenatal care in the Point Douglas, Downtown and Inkster areas of Winnipeg following implementation of the PIIPC project.
- Midwives associated with the PIIPC project provided care to an increased proportion of women from priority populations following implementation of the project.
- The PIIPC project may have contributed to a small reduction in the number of women from Point Douglas, Downtown and Inkster areas who presented to the Obstetrical Triage Unit at Women's Hospital with no prenatal care.
- The PIIPC project was cost effective.

Next Steps

Building on the positive results of the PIIPC project, our goal is to work toward sustaining and continuing to improve the PIIPC model of prenatal care in the Winnipeg Health Region. A PIIPC Steering Committee has been formed and includes representatives from the original partners and new members who are interested in expanding PIIPC to their service areas. This group will continue to plan with the following areas of focus:

- Exploring opportunities to expand the primary care sites that identify PIIPC clients and strengthen that model
- Drafting a description of the “ongoing PIIPC model” that can be shared with all stakeholders so everyone is aware the services are still available and how to make referrals
- Reviewing the role of midwifery in the Healthy Baby/Start sites and communicating that to all relevant stakeholders
- Reviewing the PIIPC approach at Women's Hospital and expanding to St. Boniface Hospital to ensure that the changes made to increase access to prenatal care for inner city women are sustained
- Reviewing the results related to the involvement with Child and Family Services (CFS), including meeting with CFS to share the results and discuss next steps
- Exploring sources of funding for human resources (e.g., a regional PIIPC coordinator)
- Developing a plan to sustain the incentives and enablers
- Developing a sustainment plan for the social marketing resources.

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- Zorina Marzan Chang, Project Coordinator
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- Miriam Gonzalez, Research Assistant
- Shelley Derksen, Programmer Analyst, Manitoba Centre for Health Policy
- Dr. Atul Sharma, Statistical Consultant
- Megan Keeling, Administrative Assistant and Transcriptionist
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(Former Clinical Nurse Specialist, Women's Health Program, Women's Hospital, Health Sciences Centre)

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Clinical Nurse Specialist, Population and Public Health, Winnipeg Regional Health Authority

**APPENDIX B:
MEMBERS OF THE WORKING GROUPS, EXECUTIVE COMMITTEE AND
ADVISORY COMMITTEE**

(Affiliations shown are those in effect at time of involvement on the committee)

STREET OUTREACH AND FACILITATED ACCESS WORKING GROUP

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Former Members, Street Outreach and Facilitated Access Working Group

Ms. Diane Heywood (Former Co-chair)	Former Team Manager- Healthy Sexuality and Harm Reduction, WRHA
Dr. Patricia Gregory	Former Director of Women's Health Program, Women's Hospital, WRHA
Ms. Mary Driedger	Women's Health Program, Women's Hospital
Ms. Kerrie Abel	Social Worker, Women's Health Program, Women's Hospital
Ms. Shellie Anderson	Former Manager of Patient Care – Antepartum/ Gynaecology/ Gyne-Oncology WRS5 - Women's Health Program, Women's Hospital
Ms. Tracey Ramsay	Nurse Educator, Women's Health Program, Women's Hospital
Ms. Jennifer Riddell	Public Health Nurse, Healthy Sexuality and Harm Reduction, Population & Public Health, Winnipeg Regional Health Authority

PIIPC COMMUNITY BASED PRENATAL CARE WORKING GROUP

Team Member	Affiliation
Ms. Kelly Klick (Co-Chair)	Manager of Midwifery Services, Winnipeg Regional Health Authority (WRHA)
Ms. Darlene Girard (Co-Chair)	Team Manager - Healthy Parenting & Early Childhood Development, WRHA
Ms. Tamara Hes	Program & Policy Consultant, Healthy Baby Program, Healthy Child Manitoba Office
Ms. Shannon Dennehy	Program & Policy Consultant, Healthy Baby Program, Healthy Child Manitoba Office
Ms. Dawn Wiscombe	Midwife, Mount Carmel Clinic
Ms. Linda Uhrich	Primary Care Nurse, Mount Carmel Clinic, WRHA
Ms. Davorka Monti	Executive Director, Healthy Start for Mom & Me
Ms. Lisa Merrill	Formerly: Clinical Nurse Specialist, Women's Health Program, Women's Hospital, WRHA
Dr. Larry Reynolds	Department of Family Medicine, Obstetrics and Gynecology, WRHA
Ms. Wanda Phillips-Beck	Nurse Program Advisor, Maternal Child Health, First Nations Health and Social Secretariat of Manitoba
Ms. Jennifer Gourlay Henning	Primary Care Nurse/Admin Supervisor, Nor'West Health Co-op at Access Nor'West
Dr. Maureen Heaman	Principal Investigator and Professor, College of Nursing, Rady Faculty of Health Sciences, University of Manitoba
Ms. Zorina Marzan Chang	PIIPC Project Coordinator, College of Nursing, Rady Faculty of Health Sciences, University of Manitoba

Former Members, Community Based Prenatal Care Working Group

Ms. Gail Wylie	Former- Executive Director, Healthy Start for Mom & Me
Ms. Gail Vande Vyvere	Former Manager of Midwifery Services, WRHA
Ms. Michelle Taylor	Primary Care Nurse, NorWest Health Co-op at Access NorWest, WRHA

PIIPC SOCIAL MARKETING WORKING GROUP

Team Member	Affiliation
Ms. Lea Mutch (Chair)	Clinical Nurse Specialist, Population and Public Health, WRHA
Ms. Darlene Girard	Team Manager-Healthy Parenting & Early Childhood Development, WRHA
Ms. Hedy Heppenstall	Clinical Nurse Specialist, Population and Public Health, WRHA
Ms. Lisa Merrill	Former: Clinical Nurse Specialist, Women's Health Program, Women's Hospital
Ms. Margaret Bryans	Mothering Project, Program Manager, Mount Carmel Clinic, WRHA
Ms. Tamara Hes	Program & Policy Consultant-Healthy Baby Program, Healthy Child Manitoba Office
Ms. Kim Bailey	Team Manager, Healthy Sexuality & Harm Reduction, WRHA
Ms. Lynda Tjaden	Principal Knowledge User and Director of Patient Services – Women's Hospital Program Director – Women's Health, WRHA
Dr. Maureen Heaman	Principal Investigator and Professor, College of Nursing, Rady Faculty of Health Sciences, University of Manitoba
Ms. Zorina Marzan Chang	PIIPC Project Coordinator, College of Nursing, Rady Faculty of Health Sciences, University of Manitoba
Mr. Joel Voth	Client Services Manager, ChangeMakers Marketing Communication

Former Members, Social Marketing Working Group

Ms. Diane Heywood (Former Chair)	Former Team Manager, Healthy Sexuality & Harm Reduction, WRHA
Mr. Horst Backe	Population Health Initiatives Leader, WRHA
Mr. Kelly Langevin	Former WRHA Communications Representative, Winnipeg Regional Health Authority
Ms. Val Steeves	Manitoba Health Representative and Former Director, Maternal & Child Healthcare Services, Regional Health Authorities of Manitoba
Dr. Lynne Warda	Medical Officer of Health, Winnipeg Regional Health Authority

PIIPC EXECUTIVE COMMITTEE

Team Member	Affiliation and/or Organization represented
Dr. Maureen Heaman	Principal Investigator Professor, College of Nursing, Faculty of Health Sciences, University of Manitoba
Ms. Lynda Tjaden	Principal Knowledge User Director of Patient Services – Women’s Hospital, Health Sciences Centre Program Director – Women’s Health, Winnipeg Regional Health Authority
Carolyn Perchuk	Director, Population and Public Health, Winnipeg Regional Health Authority
Ms. Margaret Kozlowski	Director, Family Medicine – Primary Care Community, Winnipeg Regional Health Authority
Dr. Margaret Morris	Medical Director, Women’s Health Program, Winnipeg Regional Health Authority Professor and Chair, Department of Obstetrics, Gynecology, and Reproductive Sciences, University of Manitoba
Ms. Shannon Dennehy	Program & Policy Consultant, Healthy Baby Program, Healthy Child Manitoba Office
Ms. Regan Spencer	Director of Social Work Health Sciences Centre, Child & Women’s Health Programs Winnipeg Regional Health Authority
Ms. Sylvia Buchholz	Policy Analyst, Primary Health Care, Manitoba Health
Ms. Zorina Marzan Chang	PIIPC Project Coordinator, College of Nursing, Faculty of Health Sciences University of Manitoba

PIIPC ADVISORY COMMITTEE

Team Member	Affiliation and/or Organization represented
Ms. Holly Gammon	Manager, FASD Programs, Healthy Child Manitoba Office
Dr. Sarah Kredentser	Low Risk obstetrics Co-ordinator and Medical Director, FMON(Family Medicine Obstetrics Network)
Ms. Michelle Mutton	Clinical Nurse Specialist , Maternal Child Health, Aboriginal and Inuit Health Branch, Health Canada
Ms. Kris Robinson	Clinical Midwifery Specialist, Winnipeg Regional Health Authority
Dr. Rob Santos	Senior Assistant Deputy Minister, Healthy Child Manitoba Office/Manitoba Education and Training; and Associate Secretary to Healthy Child Committee of Cabinet Government of Manitoba
Ms. Bobbette Shoffner	Executive Director, Mount Carmel Clinic, WRHA
Ms. Catheryn Marten	Director of Primary Health, Mount Carmel Clinic, WRHA (*for Bobette Shoffner while on leave)
Ms. Rebecca Wood	Midwifery Program, Mount Carmel Clinic

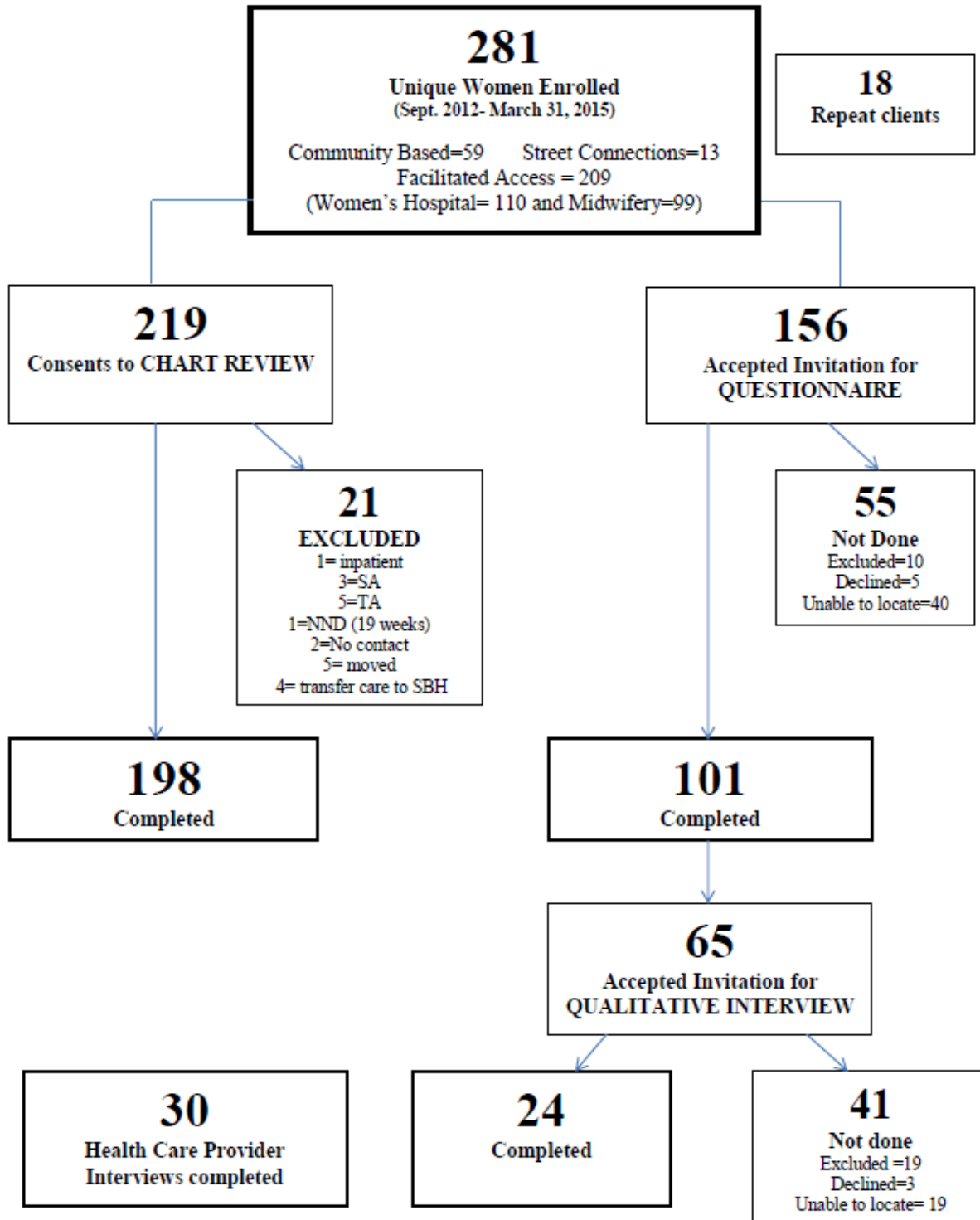
Ms. Nancy Heinrichs	Team Manager, Executive Director for NorWest Health Centre
Ms. Tanyalee Viner	Director, Wahbung Abinoojiiag Inc. and representative for CLOUT
Dr. Joanna Lynch	Director, Northern Connection Medical Centre Stream Lead, Northern Remote Family Medicine Residency Program, University of Manitoba
Ms. Elizabete Halprin	Community Development Coordinator-Social Work, NorWest Co-op Community Health Centre, WRHA
Ms. Kim Stoffel	Public Health Nurse, Norwest Access Centre, WRHA
Dr. Joss Reimer	Public Health and Preventive Medicine Medical Officer of Health, WRHA Primary Care Physician - Women's Health, Department of Family Medicine, College of Medicine, University of Manitoba
Ms. Monica Marx	ANCR Medical Liaison, representing Child and Family All Nations Social Worker, Health Sciences Centre

Former Members of Advisory Committee

Ms. Lisa Campomanes	Public Health Nurse- Inkster Community area, WHRA
Ms. Agnes Deveaux	Public Health Nurse- Inkster Community area, WRHA
Ms. Sandie Stoker	Executive Director, Child and Family All Nations Coordinated Response Network
Ms. Lynn Kurylko	Former- Team Manager, Women's Health Program, Women's Hospital, WRHA
Mr. Louis Sorin	Former- Community Area Director, Downtown, Public Health, WRHA

APPENDIX C: FLOW CHART OF PARTICIPANTS

Flow chart of Participants in PIIPC Program



APPENDIX D

Summary of Themes and Categories arising from interviews with women who received prenatal care through the PIIPC project

BARRIERS TO PRENATAL CARE

Personal Barriers for Women

- Chaotic lives (social issues)
- Avoidance of Child and Family Services (not liking their worker, fear of apprehension)
- Logistical Issues (childcare, transportation, no phone, homeless)
- Woman having a past negative experience with prenatal care
- Lack of knowledge (importance of prenatal care, where to get prenatal care, plans about their pregnancy)
- Difficulties with appointments (booking and keeping booked appointments)
- Financial (for transportation)

System related Challenges

- Time factor (Lengthy office wait; short visit; inflexible appointment hours)
- Care delivery (lack coordination, lack consistency)

Service Provider Challenges

- HCP too busy or lack of time
- Negative characteristics (impersonal- unable to have relationship, judgmental)

FACILITATORS TO PRENATAL CARE

Positive Caregiver Interventions

- Referral to or from other resources or care providers
- Sharing information with women

Caregiver Philosophical Approaches

- Individualized care
- Multidisciplinary approach to care

Caregiver Qualities

- Investing in relationship with client
- Positive personality characteristics
 - Listening/ show interest
 - Non-judgmental/ accepting
- Taking Time

Personal Facilitators for Women

- Incentives

- Transportation
- Meals/snacks

Program & Service Characteristics

- Accessible & Convenient
 - Geographic Proximity
 - Flexible Hours/Scheduling
 - Services in one location (“one stop shop”, having available at HB)
- Prenatal Care Features
 - Appointment reminders/follow-up for no-shows
 - Reduced wait time

OUTCOMES OR CHANGES AS A RESULT OF PIIPC INTERVENTIONS

Change in Vision

- Improved understanding of prenatal care.

Client related Outcomes

- Improved access to programs and services
- Improved prenatal care experience
- Improved Child and Family Services experience and outcome
- Receiving coordinated care
- Increased motivation to access prenatal care

Communication

- Improved communication between service provider and client
- Improved communication between service providers or programs (eg. Case planning with client)

Relationships

- Improved relationship between health care provider and clients

Service Delivery

- Accessible
- Client Centered
- Coordinated and organized
- Flexible

Key Components

- Relationship
- Health Care provider characteristics (can trust, sensitive, non-judgmental, supportive, shares information)
- Communication
- Incentives
 - Transportation (bus tickets/taxi slips)

- Meals (food and food vouchers)
- Accessibility
 - Location is convenient
 - Time (more time spent with provider, less time waiting)

Sustainability

- Wanting to keep program or continue

Wish List for Prenatal Care Program

- No change PIIPC prenatal care received

APPENDIX E

Summary of Themes and Categories arising from Interviews with Health Care Providers

PERCEIVED BARRIERS TO PRENATAL CARE

Personal Barriers for Women

- Chaotic lives (social issues)
- Fear of involvement with Child and Family Services (apprehension)
- Logistical Issues (childcare, transportation, inconsistent contact information-no permanent address and no minutes to phones)
- Woman having a past negative experience with prenatal care
- Lack of knowledge (importance of prenatal care, where to get prenatal care, plans about their pregnancy)
- Difficulties with appointments (booking and keeping booked appointments)
- Financial (for transportation and minutes for their phone)

System related Challenges

- Time factor (Lengthy office wait; short visit; inflexible appointment hours)
- Care delivery (lack coordination, lack continuity, lack consistency)

Service Provider Challenges

- HCP too busy or lack of time
- Limited scope of practice
- Negative characteristics (impersonal, judgmental)

PERCEIVED FACILITATORS TO PRENATAL CARE

Positive Caregiver Interventions

- Referral to or from other resources or care providers
- Sharing information with women

Caregiver Philosophical Approaches

- Client-centered care
- Multidisciplinary approach to care

Caregiver Qualities

- Investing in relationship with client
- Positive personality characteristics
 - Listening/ show interest
 - Non-judgmental/ accepting
- Taking Time

Personal Facilitators for Women

- Incentives
 - Transportation (bus tickets/taxi slips)
 - Meals (food and food vouchers)

Program & Service Characteristics

- Accessible & Convenient

- Geographic Proximity
- Flexible Hours/Scheduling
- Prenatal Care Features
 - Appointment reminders/follow-up for no-shows
 - Reduced wait time

OUTCOMES OR CHANGES AS A RESULT OF PIIPC INTERVENTIONS

Change in Vision

- Health Care Providers have improved understanding of other programs
- Others have improved understanding of health care providers
- Women's understanding of importance of prenatal care

Client related Outcomes

- Improved access to programs and services
- Improved prenatal care experience
- Improved Child and Family Services experience and outcome
- Receiving coordinated care
- Increased motivation to access prenatal care

Communication

- Improved communication between programs
- Improved communication between service provider and client
- Improved communication between service providers
- Having a common language

Relationships

- Improved relationship between programs
- Improved relationship between health care provider and clients
- Improved relationship between health care providers

Impact on Service Providers

- Change in client acuity
- Adjustments to case-load
- Ease in making referrals

Service Delivery

- Accessible
- Client Centered
- Collaborative
- Coordinated and organized
- Expanded
- Flexible

Key Components

- Coordinator
- Relationship building (between programs, providers, clients, and community)
- Communication (between programs, providers, clients and community, i.e. marketing)
- Incentives
 - Transportation (bus tickets/taxi slips)
 - Meals (food and food vouchers)

- Accessibility
 - Facilitated access (ease of referral)
 - Location (where women go)
 - Time
- Change in care-giver philosophical approach
 - Client-centered care
 - Holistic
 - Collaborative and multidisciplinary
 - Flexible
- Common goal
- Common language
- Consistency (contacts and attendance)

Sustainability

- Central coordinator
- Dedicated team (common goal)
- Funding
- Management support (redefining roles and expectations)
- Maintaining change in care-giver philosophical approach
 - Keeping momentum
- Solidify forms of communication

Wish List for Prenatal Care Program

- Care delivery model
 - Drop in
 - “one-stop-shop”
 - Holistic
 - Outreach component
 - Shared care (co-management between primary care providers)
- Accessible care (remove inner-city restriction)
- Ability to provide continuity of care (prenatal to postnatal period)
- Central coordinator who is mobile (between acute care and community)
- Established form of communication (same across the board)