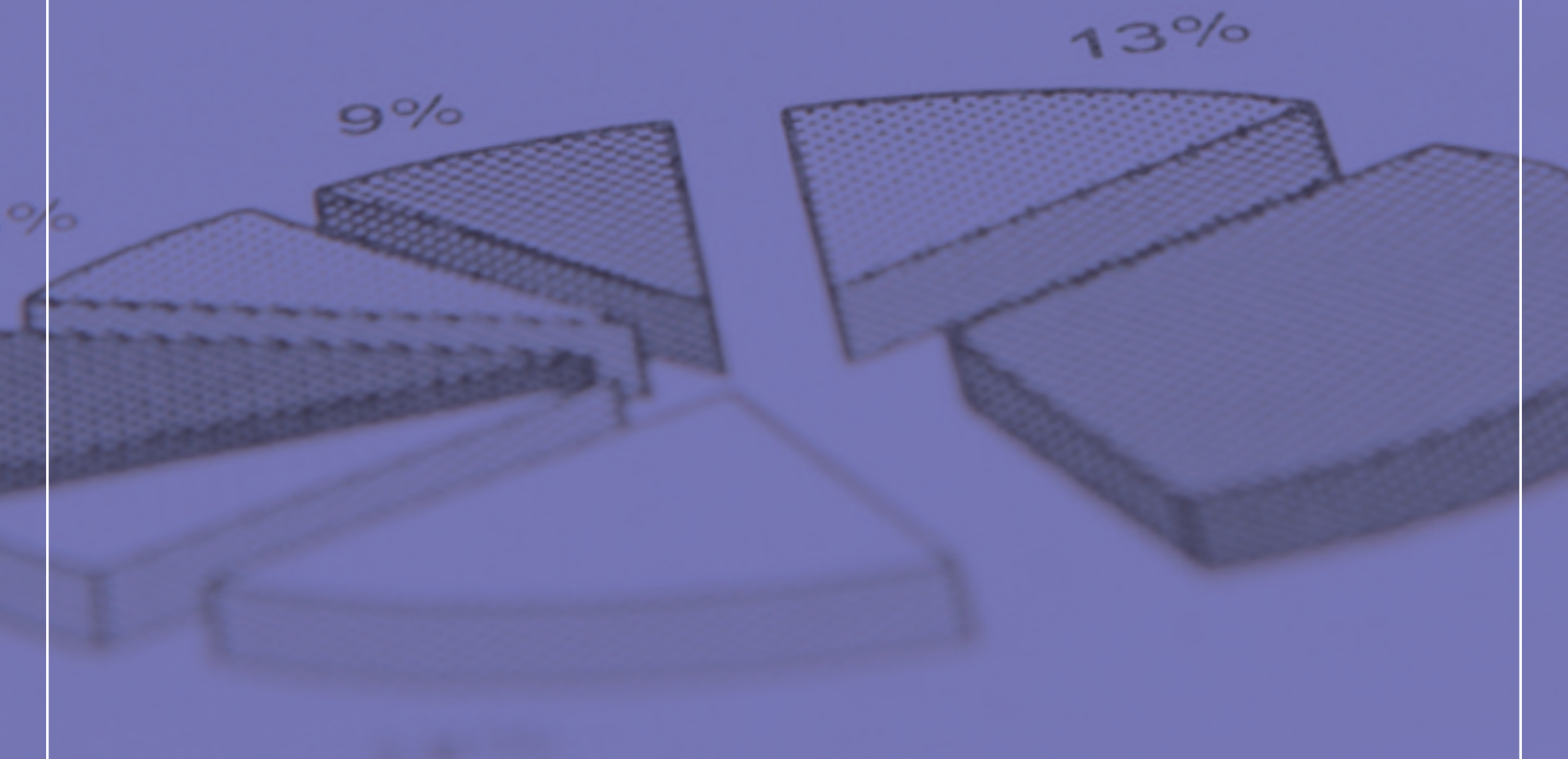
Preconception Health:
Awareness and Behaviours in Ontario



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Leger Marketing completed the 2008 phone survey of men and women of childbearing age, provided the data analysis and identified preliminary trends.

Wendy Burgoyne was the project lead from the Best Start Resource Centre and wrote this report. Best Start Resource Centre supports service providers across Ontario through consultation, training and resources, in the areas of preconception, prenatal and child health. Best Start is a key program of Health Nexus. For more information about the Best Start Resource Centre, contact:

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1. *Introduction*

1.1 Purpose

This report compares data from Ontario-wide surveys of men and women of childbearing age in order to explore issues around preconception health. It examines the trends from 2001 to 2008 for preconception awareness and behaviours, and makes recommendations relevant to local and provincial preconception initiatives. The information will help service providers to determine key messages, populations of interest, and to select effective preconception interventions.

This is the first in a series of 3 reports on preconception health in Ontario, which are available at www.beststart.org. In addition to this report, Best Start Resource Centre has completed surveys of public health preconception initiatives and, in collaboration with Motherisk, a survey of family physician preconception knowledge and practices:

- Preconception Health: Public Health Initiatives in Ontario (2009)
- Preconception Health: Physician Practices in Ontario (2009)

1.2 Preconception Health

Preconception health promotion is a prevention strategy that helps men and women to prepare for pregnancy by improving their health prior to conception. It includes health practices related to safeguarding fertility, preparing for pregnancy, and identifying and addressing risk factors. It also enhances pregnancy outcomes by optimizing health in the critical first weeks of pregnancy, before many women know they are pregnant. Preconception health strategies encourage men and women to actively plan their pregnancy, seek out health information and advice, and to make health changes prior to conception (Best Start Resource Centre, 2001). Preconception health strategies include approaches related to awareness, knowledge, skills, motivation, opportunity, access, supportive environments, policy development, and ultimately, behaviour change (Alberta Perinatal Health Program, 2007).

The general public understands that a woman's health during pregnancy can impact the health of her unborn baby, but is less aware of the importance of good health for both men and women prior to conception. The concept of actively preparing for pregnancy prior to conception is still relatively new to Ontario.

Over the last 10 years, there have been significant efforts to introduce preconception initiatives across Ontario. Public health units, in particular, have planned a range of strategies including awareness campaigns, web-based information, preconception classes and media strategies to encourage men and women to plan their pregnancies, assess their health and make appropriate changes, prior to conception (Best Start Resource Centre, 2009). Province-wide preconception strategies include:

- ✔ Release of service provider manual "Preconception Health: Research and Strategies" in 2001 (Best Start Resource Centre)
- ✔ Release of a range of provincial preconception resources for the general public in 2001-2003 including a workbook, display, poster and brochure. These were later updated and released with new titles and graphics (Best Start Resource Centre, adapted from resources developed in collaboration by Simcoe District Health Unit and Best Start Barrie)
- ✔ Launch of "It's Never too Early" folic acid provincial awareness campaign in 2002 (Folic Acid Alliance Ontario)
- ✔ Launch of "Is there a Baby in your Future?" provincial awareness campaign in 2005 (Best Start Resource Centre)
- ✔ Release of brochure "Men's Information – How to Build a Healthy Baby" in 2006 (Best Start Resource Centre)
- ✔ Availability of regional workshops, phone, email and onsite consultation services across Ontario from 2000 – 2008 (Best Start Resource Centre)

1.3 The Surveys

2008 Survey:

The August 2008 phone survey was implemented to determine changes in preconception awareness, intention and behaviours in Ontario. The survey was conducted by Leger Marketing and included 501 men and women aged 20 to 45. The survey used random digit dialing from an Ontario sample pulled from across the province, ensuring that numbers from across the province are utilized. The z-test was used to calculate the margin of error for differences over time, as well as differences between demographic groups.

The respondents included 200 women who were pregnant or had a child under the age of 7, 151 women who were not pregnant and did not have a child under the age of 7, as well as 150 men. For samples of these sizes, results can be considered accurate to within the following margins of error:

- Total n = 501: +/-4.4%, 19 times out of 20
- Women n = 351: +/-5.2%, 19 times out of 20
- Women with young children or pregnant n = 200: +/-6.9%, 19 times out of 20
- Women without young children and not pregnant n = 151: +/-8.0% 19 times out of 20
- Men n = 150: +/-8.0%, 19 times out of 20

Survey sample demographics include:

	Number of Respondents	Proportion of Respondents
Age		
20-29	111	22%
30-39	258	52%
40+	132	26%
Highest Level of Education		
High school	105	21%
College	171	35%
University	219	44%
Annual Family Income		
Under $60,000	166	40%
Over $60,000	251	60%
Children under Age of 7		
Yes	295	64%
No	167	36%

Table 1.3: Summary of Demographics of 2008 Respondents

Previous Surveys:

Best Start Resource Centre compared 2008 data to the following phone surveys:

- September 2001 – Survey to provide a benchmark for the provincial Folic Acid Campaign. The survey was conducted by Ipsos Reid and included 301 Ontario women between the ages of 18 and 40.
- March 2002 – Survey to learn more about planned and unplanned pregnancies. The survey was conducted by Ipsos Reid and included 300 Ontario women who were pregnant or had children under 6.
- May 2005 – Survey to determine the effectiveness of the 2005 Preconception Health campaign. The survey was conducted by Leger Marketing and included 315 Ontario men and women between the ages of 20 and 45.

Limitations:

Limitations of this report include:

- The surveys were completed by phone which may result in an under-representation of lower income respondents.
- The survey did not include cell phone numbers. There is an increase in the number of people who do not have a home phone, but own a cell phone. The implications to the results of this survey are uncertain.
- The survey was completed in English and was not translated to other languages.
- While all 4 surveys used random samples, resulting variation in survey demographics may affect comparisons.
- The 4 surveys were completed by 2 different marketing companies, over an 8 year time period and there were some differences in survey methodologies.

Please Note:

Data categories in this report may add up to slightly over or slightly under 100%. This may be due to rounding, or because response categories for don't know/not sure/refused were not included in the data table.

Data for survey subpopulations is shared in some tables to facilitate comparisons with previous data. For example, most previous surveys only included women of childbearing age, so many tables in this report share 2008 data from women. Table titles indicate the subpopulations that are represented in the data. The discussion below each table provides relevant information about other populations in the survey data.

In this report the term "significant" refers to statistical significance. In the tables, bold is used to indicate 2008 results that are statistically different from previous results with a minimum 95% confidence interval.

1.4 Additional Resources

This report discusses the data from 4 Ontario preconception surveys, and the implications to program practice; however it does not review foundational information on preconception health concerns and initiatives. In order to plan and implement effective preconception strategies, the reader may need additional information or resources, for example, information about preconception health risks, information concerning possible strategies or patient handouts. The reader is encouraged to use this report in conjunction with the other 2009 provincial preconception health reports (see Purpose) and the following Best Start Resource Centre resources:

- Preconception Health: Research and Strategies manual
- Is there a Baby in Your Future brochure, poster and display
- Is there a Baby in Your Future online workbook
- Is there a Baby in Your Future camera ready ads
- Men's Information: How to Build a Healthy Baby brochure
- Is there a Baby in Your Future campaign information, including media resources

These resources are available at: www.beststart.org. Many are in both French and English. The direct links to the "Is there a Baby in Your Future" workbook are www.healthbeforepregnancy.ca and www.sante-avant-grossesse.ca.

2. Survey Highlights

The 2008 survey results showed interesting trends when compared to previous results. This section focuses on the survey highlights, while later sections explore the data in more detail.



2.1 Planning and Timing of Pregnancies

- Most female respondents described their last pregnancy as planned (70%) with 30% indicating that their last pregnancy was unplanned. This was consistent with 2002 data.
- Most respondents were happy with the timing of their last pregnancy (66% of women, 67% of men). As compared to 2002, more female respondents indicated that they were happy with the timing of their last pregnancy and fewer wanted to be pregnant sooner.
- Compared to 2005, respondents were significantly less likely to indicate that they would have children in the next 5 years. In 2008 only 14% of respondents indicated that they were very likely to have a child in the next 5 years.

2.2 Preconception Awareness

- Preconception awareness has strengthened as compared to previous surveys. See bullets below for details.
- The family history of both men and women was considered to be important to the health of future children by almost all respondents. As well, almost all respondents believed that women's preconception health was important to the health of future children.
- Respondents identified important preconception health changes. The most commonly identified health changes for both men and women included eating well, stopping smoking, stopping drinking and increasing physical activity. Compared to 2002, there were significant increases in awareness of the importance of good nutrition and of not drinking alcohol prior to conception for both men and women.

- When asked about preconception health changes that men and women can make, there was an increase in specific suggestions (for example stopping drinking) and a decrease in general responses (such as improving general health).
- While two thirds of respondents believed that a woman's health prior to conception could affect the baby, only one third of the respondents believed that a man's health prior to conception could affect the baby (66% strongly agreed versus 35% strongly agreed). Respondents were also less able to identify specific preconception health changes for men, as compared to specific preconception health changes for women.
- In terms of men's preconception health, there was a significant decrease in respondents who mentioned the supportive role that men can play (be supportive, help around the house etc.) and a significant increase in those who referred to specific health changes for men (eating well, stopping alcohol and drug use).
- Very few respondents spontaneously identified that it was important to see a health care provider prior to conception.
- Knowledge of the benefits of folic acid has remained constant since the 2001. Women were better informed about the recommended timing and source of folic acid as compared to 2001.

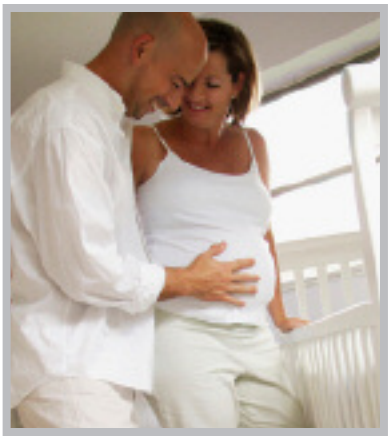
2.3 Preconception Behaviours

- More people implemented positive preconception changes as compared to previous years. See details below.
- Compared to 2002, more women indicated that they made health changes before pregnancy, while less said the changes were made during pregnancy. However, more than half (55%) of women in 2008 did not make preconception health changes, and about a quarter (26%) made no health changes at all in relation to their last pregnancy (either in preconception or during pregnancy).
- Of the women who said they made health changes before pregnancy, most (64%) made the changes more than three months before they hoped to get pregnant, with very few waiting until the month before.
- The most common health changes made by women were reducing/stopping drinking or smoking, taking folic acid and improving nutrition.
- Men were less likely to make preconception health changes than women. The most common changes made by men were reducing/stopping drinking, improving nutrition and reducing/stopping smoking.
- When compared to 2002 data, women were significantly more likely to say they talked to a heath care provider, took folic acid and reduced/stopped smoking.
- Most women said they were very likely to take folic acid when planning their next pregnancy (78%). This was a significant increase from 2001. Nine percent of women indicated that they were not likely to take folic acid.

2.4 Sources of Preconception Information

- Health care providers, followed by preconception classes, were seen as the most effective sources of preconception information.
- Almost all respondents recognized the importance of discussing family planning with a health care provider – for both men and women.
- The majority (58%) of respondents said their health care provider had not brought up the topic of health before conception. Women were significantly more likely to say they received preconception information from their health care provider than were men (48% as compared to 20%). Only a small number of respondents mentioned receiving print preconception information (2%), and very few recalled being advised to see a health care provider before conception (0.4%).

3. Planning and Timing of Pregnancies



In order to have the opportunity to assess health and make health changes prior to pregnancy, conception needs to be intended and planned. Pregnancies can occur sooner or later than expected, or they can be an unexpected event. The timing of pregnancy has a significant impact on opportunities for preconception health. If a pregnancy happens sooner than expected, opportunities for preconception health changes may be limited or missed. If a pregnancy is unexpected, there may be no opportunities for preconception health. This section examines the data related to planned/unplanned pregnancies and how respondents felt about the timing of their last pregnancy.

Changing demographics, social developments and economic trends can influence reproductive rates and interest in having more children. In order to anticipate the demand for preconception services, it is important to have an indication of reproductive trends. This report shares information about respondents' intention to have more children in the next 5 years.

3.1 Planned versus Unplanned Pregnancies

Survey Question: Would you describe your last pregnancy as planned or unplanned?

	2002	2008
Planned	71%	70%
Unplanned	29%	30%

Table 3.1: Planned Versus Unplanned Pregnancy (responses from women who were pregnant or had a child in the last 6 years)

Comparison to Previous Data: In 2008 the majority of female respondents described their last pregnancy as planned. The proportion of planned/unplanned pregnancies remains unchanged since 2002.

Trends in 2008: In the 2008 survey, respondents (male and female data combined) with an income over $60,000 and/or university-education were significantly more likely to indicate that their last pregnancy was planned.

3.2 Timing of Last of Pregnancy

Survey Question: When you found out that you/your partner was pregnant, which of the following best describes how you felt?

	2002	2008
Wanted to be pregnant sooner	22%	**14%**
Wanted to be pregnant at that time	50%	**66%**
Wanted to be pregnant later	11%	10%
Did not want to be pregnant	5%	2%
Unsure	12%	8%

Table 3.2: Timing of Last Pregnancy (responses from women who were pregnant or had a child in the last 6 years)

Comparison to Previous Data: In 2008, two thirds of female respondents were happy with the timing of their last pregnancy, significantly more than in 2002. Compared to the 2002 results, a significantly smaller percentage of female respondents said they wanted to be pregnant sooner.

Trends in 2008: In 2008 the majority (66% of women, 67% of men) said their last pregnancy came on time.

3.3 Likelihood of Having More Children

Survey Question: In the next 5 years, how likely is it that you will have a child?

	2005	2008
Very likely	22%	**14%**
Somewhat likely	15%	13%
Not very likely	15%	14%
Not at all likely	47%	**57%**

Table 3.3: Likelihood of Having a Child in the Next 5 Years (responses from men and women)

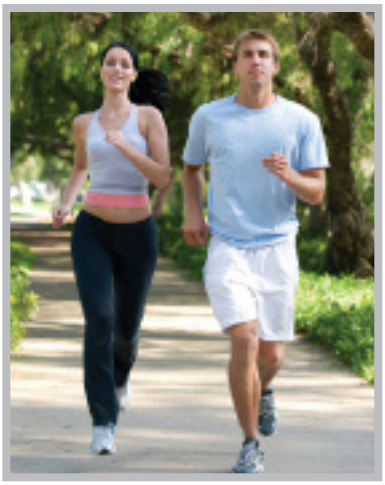
Comparison to Previous Data: Respondents were significantly less likely to intend to have a child in the next 5 years as compared to 2005. In 2005, 22% indicated that they were very likely to have a child in the next 5 years, and this dropped to 14% in 2008. Similarly, in 2008 57% said they were not at all likely to have children in the next 5 years, compared to 47% in 2005.

Trends in 2008: In 2008 the majority of respondents (57%) indicated that they were not at all likely to have a child in the next 5 years, and only 14% indicated that they were very likely to have a child in the next 5 years. In 2008 a significantly larger proportion of respondents who were college educated, aged 20-29 and/or no children at home said they were very likely to have children in the next five years. The factors associated with being very unlikely to have a child in the next 5 years included being female, aged 30-45, and/or having children in the home.

4. Preconception Awareness

In order to practice preconception health, men and women need to recognize the importance of making health changes prior to conception, be familiar with the preconception factors that could influence the health of their future children, and have an awareness of the changes they can make to improve their health prior to conception.

This section shares the understanding of the association between preconception health and the health of the baby, things men and women should do prior to conception, as well as awareness of folic acid recommendations. It provides information about risk factors that were well recognized, and those that were poorly understood.



4.1 Impact of Preconception Health on the Baby

Survey Question: For each of the following, please tell me whether you strongly agree, somewhat agree, somewhat disagree, or strongly disagree.

	2008			
	A man's family history can have serious consequences to the health of the baby	A woman's family history can have serious consequences to the health of the baby	A man's health before conception can have serious consequences to the health of the baby	A woman's health before conception can have serious consequences to the health of the baby
Strongly agree	52%	55%	35%	**66%**
Somewhat agree	39%	38%	48%	**29%**
Somewhat disagree	4%	3%	8%	2%
Strongly disagree	3%	3%	3%	1%

Table 4.1: Impact of Family History and Health Before Conception on the Health of the Baby in 2008 (responses from men and women)

Comparison to Previous Data: This question was asked in 2005, however, the question was phrased differently. While direct comparisons cannot be made, patterns of overall agreement were similar.

Trends in 2008: Virtually all respondents agreed that the family history of both parents can affect the baby's health. There was no significant difference between responses concerning the impact of men's family history and women's family history. Respondents over 40 years of age were significantly more likely to strongly agree that a man's family history can have serious consequences to the health of his baby.

Significantly more respondents understood that women's health before conception could affect the health of the baby as compared to a men's health before conception (66% strongly agreed versus 35% strongly agreed).

4.2 Changes that should be Made Prior to Conception

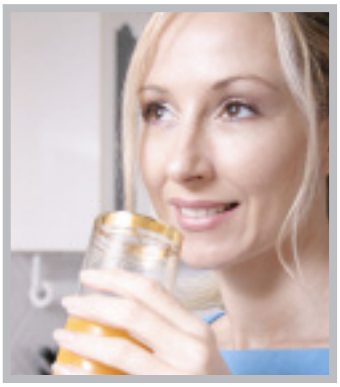
Survey Question: Now I would like you to think about when you or other people are considering having a baby. During this time period before becoming pregnant, what do you think, if anything, should be considered by women/men.

	Changes Women Should Make		Changes Men Should Make	
	2002	2008	2002	2008
Eat well / good nutrition / vitamins	56%	**83%**	23%	**32%**
Stop smoking	45%	46%	40%	36%
Stop alcohol use	29%	**38%**	20%	**28%**
Increase exercise / physical activity	36%	36%	–	16%
Stop drug use	–	15%	2%	**11%**
Visit doctor / health professional	3%	**13%**	1%	3%
Take folic acid	40%	**11%**	–	–
Improve general health	29%	**1%**	30%	**2%**
Avoid/reduce stress	4%	3%	–	1%
Help around the house	–	–	8%	**0%**
Be supportive	–	–	23%	**3%**
Nothing / no change	1%	1%	6%	8%

Table 4.2: Most Common Preconception Changes Women and Men Should Make (responses from women only)

Note: This question recorded top of mind responses. The response categories were not read to respondents.

Comparison to Previous Data: In 2008 there was a significant increase in female respondents who indicated that women should see a health professional, eat well and stop alcohol use before becoming pregnant. There was a significant decrease in the proportion of female respondents who indicated that women should take folic acid prior to becoming pregnant, however, there was a corresponding significant increase in female respondents who mentioned eating well, including good nutrition and vitamins.



There was a significant decrease in the proportion of female respondents who provided general responses about men and women improving health prior to conception, for example "improve general health". There was also a significant decrease in respondents who indicated that men should be supportive and help around the house. In 2008 there was a significant increase in female respondents who provided specific suggestions regarding men's preconception health, including eating well, and stopping alcohol and drug use.

Trends in 2008: In 2008, 83% of female respondents said women should improve their eating before conception, 46% believed they should stop smoking, 38% stop drinking, and 36% thought women should increase their exercise. Female respondents and university-educated respondents (male and female data combined) were significantly more likely to say that a woman should eat well before conception. University educated respondents and respondents with incomes over $60,000 (male and female data

combined) were significantly more likely to believe that women should increase their level of physical activity prior to conception. Respondents (male and female data combined) with university education were significantly more likely to indicate that women should take folic acid prior to conception.

In comparison, men were not expected to make as many changes prior to conception, with approximately 32% of the female respondents saying that men should eat well, 36% stop smoking and 28% stop drinking before conception. Respondents (male and female data combined) were significantly more likely to say that men should make no health changes prior to conception as compared to women (9% and 1% respectively).

4.3 Benefits of Folic Acid

Survey Question: Based on what you have heard or read about folic acid, I would like you to tell me if you think the following statement is true or false. If you are unsure please tell me so.

	2001			2008		
	True	False	Don't Know	True	False	Don't Know
Folic acid may reduce the chances or even prevent a child being born with Spina Bifida and other birth defects of the brain and spinal cord (also called neural tube defects)	71%	7%	22%	69%	2%	29%

Table 4.3: Recognition that Folic Acid Reduces the Risk of Neural Tube Defects (responses from women only)

Comparison to Previous Data: The proportion of female respondents who recognized that folic acid reduces the risk of neural tube defects has not changed significantly since 2001.

Trends in 2008: In 2008, the majority of female respondents recognized that folic acid reduces the risk of neural tube defects. Women were twice as likely as men to know that folic acid may prevent a child being born with neural tube defects (69% versus 35%, respectively). Respondents (combined data for men and women) whose last pregnancy was planned, with college or university education, aged 30-39, and/or with children at home, were more likely to recognize the health benefits of folic acid.

4.4 Timing of Folic Acid Use

Survey Question: For folic acid to prevent birth defects, should a woman start taking it:

	2001	2008
Before conception	65%	**81%**
Once pregnancy is diagnosed	14%	**5%**
In her second trimester	4%	1%
In her third trimester	0%	1%

Table 4.4: Awareness of Recommended Timing for Folic Acid Use (responses from women only)

Comparison to Previous Data: From 2001 to 2008 there was a significant increase in the proportion of women who recognized that folic acid use should be started before conception. There was also a significant decrease in the proportion of women who thought folic acid should be started once pregnancy was diagnosed.

Trends in 2008: In 2008 more women (81%) than men (45%) recognized that folic acid should be taken before conception. Respondents (data for men and women combined) with university or college education, aged 30-39 and/or with children at home, were significantly more likely to be aware of the recommended timing for initiating folic acid use.

4.5 Sources of Folic Acid

Survey Question: I am now going to read you two brief statements about folic acid and its ability to prevent neural tube birth defects. Once you have heard both statements, I would like you to tell me which one you believe is true.

	2001	2008
	True	True
Women can get enough folic acid to prevent neural tube defects from their diet.	24%	**14%**
Women need to add a multivitamin with folic acid to their diet in order to prevent neural tube defects.	67%	**80%**

Table 4.5: Awareness of the Need for a Folic Acid Supplement (responses from women only)

Comparison to Previous Data: In 2008 there was a significant decrease in the proportion of female respondents who believed they could get enough folic acid from their diet, as compared to 2001. There was also a corresponding significant increase in the proportion of female respondents who indicated that a multivitamin with folic acid was needed to prevent neural tube defects.

Trends in 2008: The majority of female respondents understood that a multivitamin supplement was needed to get sufficient folic acid. Women were significantly more likely than men to indicate that women needed a vitamin supplement with folic acid (80% and 50%, respectively). Men were significantly more likely to think women could get enough from their diet or to say they did not know. Respondents (data for men and women combined) whose last pregnancy was planned, aged 30 to 39, college-educated and/or had children at home were most likely to understand the importance of taking a multivitamin containing folic acid.

5. Preconception Behaviours

Preconception health is important for both men and women. Preconception health behaviours should include information seeking, talking to a health care provider to assess health, as well as improving health prior to conception. Examples of recommended preconception health changes include taking folic, stopping smoking, stopping alcohol use, addressing pre-existing medical conditions, adjusting medications, and considering risk factors at home and in the workplace.

This section provides information about preconception health changes that were being made by men and women, as well as areas that require further consideration. It shares details about whether or not health changes were made in relation to pregnancy, the timing of these changes, the type of changes, as well as intention to take folic acid.

5.1 Health Changes Related to Last Pregnancy

Survey Question: Did you make any changes to improve your health?

	2002	2008
Before Pregnancy	31%	**44%**
During Pregnancy	39%	**29%**
No	25%	26%

Table 5.1: Health Changes Before and During Pregnancy by Women (responses from women who were pregnant or had a child in the last 6 years)

Comparison to Previous Data: Compared to 2002, a significantly larger percentage of women indicated that they made health changes before pregnancy, while less said the changes were made during pregnancy.

Trends in 2008: Women whose last pregnancy was planned, with university education, incomes over $60,000 and/or aged 30-39 were significantly more likely to recall making health changes prior to conception. Women whose pregnancy was unplanned and/or aged 20-29 were significantly more likely to recall making health changes during pregnancy, as opposed to before pregnancy.

5.2 Timing of Health Changes for Women

Survey Question: How long before pregnancy did you make these changes?

	2002	2008
3+ months	58%	64%
1-3 months	35%	31%
< 1 month	5%	5%

Table 5.2: Timing of Preconception Health Changes made by Women (responses from women who were pregnant or had a child in the last 6 years, who indicated that they had made health changes before conception)

Comparison to Previous Data: There were no significant differences between 2002 and 2008 in terms of the timing of preconception health changes.

Trends in 2008: Of the women who said they made health changes before pregnancy, most indicated that they made the changes more than three months before they hoped to get pregnant, with very few waiting until the month before.

5.3 Type of Health Changes for Women

Survey Question: There are a number of things that you may or may not have done either before or during your pregnancy. I am going to read you a list of possibilities. For each one, I would like you to tell me whether you **first** did it before your pregnancy, during your pregnancy, or not at all. If the item I read is not applicable to you, please let me know.

	2002				2008			
	Yes	Before Pregnancy	During Pregnancy	No	Yes	Before Pregnancy	During Pregnancy	No
Did you look for information about how to improve your health?	66%	37%	29%	34%	63%	41%	22%	34%
Did you talk to a health care provider about improving your health?	53%	23%	30%	47%	**64%**	**35%**	30%	33%
Did you cut down or quit smoking?*	82%	38%	44%	19%	**94%**	35%	**59%**	6%
Did you cut down or stop drinking alcohol?**	96%	54%	42%	5%	99%	53%	45%	1%
Did you improve your eating habits?	85%	33%	52%	14%	87%	**47%**	**40%**	12%
Did you start taking folic acid?	80%	41%	39%	19%	**88%**	**54%**	35%	11%
Did you check to see if you were immunized for rubella?	61%	40%	21%	37%	67%	41%	26%	24%

Table 5.3: Type of Health Changes made by Women (responses from women who were pregnant or had a child in the last 6 years)

* Numbers based on the female respondents who smoked (17%) before conception

** Numbers based on the female respondents who drank alcohol (49%) before conception

Comparison to Previous Data: Compared to 2002, there were significant increases in the proportion of women who indicated that, in relation to their last pregnancy, they talked to their health care provider about improving their health (64% as compared to 53%), quit/cut down on smoking (94% as compared to 82%), and/or started taking folic acid (88% as compared to 80%).

As compared to 2002, there were significant increases in the proportion of women who indicated that they made specific health changes prior to conception including talking to their health care provider about improving their health (35% as compared to 23%), improving eating habits (47% as compared to 33%), and/or starting to take folic acid (54% as compared to 41%).

Smoking behaviours did not change in preconception, as compared to 2002. However, there was a significant increase in the proportion of women who indicated that they quit or cut back on smoking during pregnancy (59% as compared to 44%).

Trends in 2008: In all response categories, the majority of respondents indicated that they had made health changes in relation to their last pregnancy. Almost all women who smoked or drank prior to conception indicated that they cut back or stopped. In addition, the vast majority indicated that they had improved their eating habits and/or started taking folic acid. While most respondents made the identified health changes, some did not (1%-34%, depending on the health change).

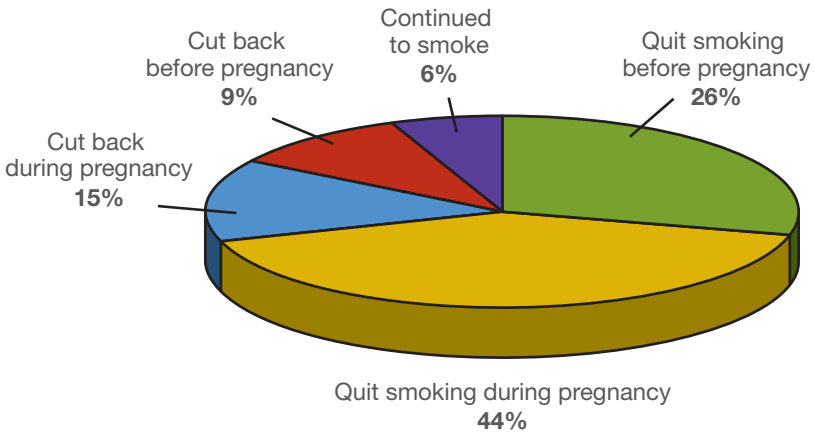


Figure 5.3a: Smoking Behaviour in Preconception for Women in 2008 (responses from female smokers who were pregnant or had a child in the last 6 years)

Of the women who smoked before conception, 24% cut back on smoking either before or during pregnancy, 70% quit smoking either before or during pregnancy and 6% did not change their smoking habits. More than half of those who quit or cut back smoking did not make this change until they were pregnant, i.e. they smoked at previous levels in the early stages of pregnancy.

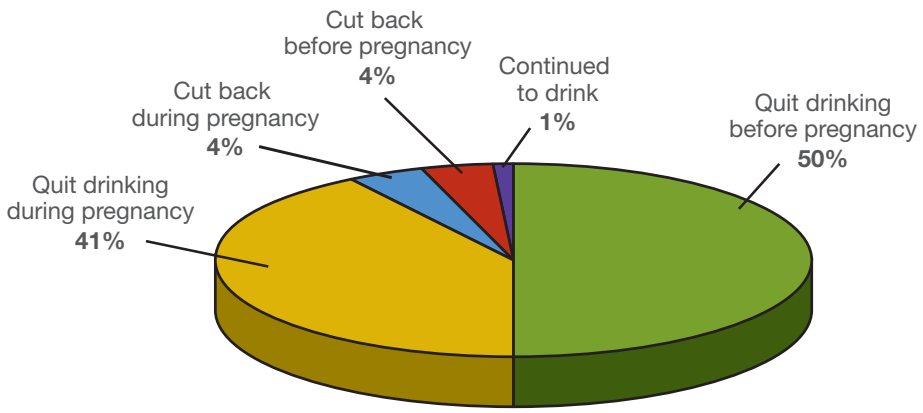


Figure 5.3b: Alcohol Behaviours in Preconception for Women in 2008 (responses from female drinkers who were pregnant or had a child in the last 6 years)

Of the women who drank alcohol before conception, 8% cut back either before or during pregnancy, 91% stopped drinking either before or during pregnancy and 1% did not change their drinking habits. Almost half of those who quit or cut back their alcohol use did not make this change until they were pregnant, i.e. they drank alcohol at previous levels in the early stages of pregnancy.

In all categories except smoking, women were more likely to make health changes prior to pregnancy, as compared to during pregnancy. In terms of preconception health changes, about a third to half of respondents indicated that they made each specific health change prior to conception. About a quarter to two thirds indicated that they made each specific health change during pregnancy.

Women who planned their pregnancy were significantly more likely to make health changes prior to conception including looking for health information, talking to their health care provider, improving their eating habits, taking folic acid and/or checking for immunizations.

Women with incomes under $60,000 were significantly more likely to make health changes during pregnancy (as opposed to before pregnancy) including talking to their health care provider and/or taking folic acid. Women aged 20 to 29 were significantly more likely to make health changes during pregnancy (as opposed to before pregnancy), including talking to their health care provider, improving their eating habits and/or taking folic acid.

Women who smoked were significantly less likely to indicate that their last pregnancy was planned. Respondents were significantly more likely to indicate that they smoked prior to conception if they had a lower education, lower income and/or lower age. Respondents were significantly more likely to indicate that they drank alcohol prior to conception, if they had a higher income.

5.4 Type of Health Changes for Men

Survey Question: There are a number of things that you may or may not have done either before or during your pregnancy. I am going to read you a list of possibilities. For each one, I would like you to tell me whether you **first** did it before your pregnancy, during your pregnancy, or not at all. If the item I read is not applicable to you, please let me know.

	2008			
	Yes	Before Pregnancy	During Pregnancy	No
Did you look for information about how to improve your health?	47%	33%	14%	45%
Did you talk to a health care provider about improving your health?	39%	27%	12%	55%
Did you cut down or quit smoking?*	89%	51%	38%	11%
Did you cut down or stop drinking alcohol?**	41%	17%	24%	59%
Did you improve your eating habits?	53%	27%	27%	37%

Table 5.4: Type of Health Changes made by Men in 2008 (responses from men who had a child in the last 6 years and from men whose partner was pregnant)

* Numbers based on the male respondents who smoked (18%) before conception

** Numbers based on the male respondents who drank alcohol (59%) before conception

Comparison to Previous Data: No previous data for comparison.

Trends in 2008: In most response categories, around half of respondents indicated that they had made health changes in relation to their last pregnancy, with the exception of addressing smoking. In each category, one tenth to two thirds of respondents did not make the health changes. Most men who smoked prior to conception indicated that they cut back or stopped. Men were more likely to say they made the following changes before pregnancy, rather than during pregnancy – talking to a health care provider, looking for information and quitting/cutting down smoking.

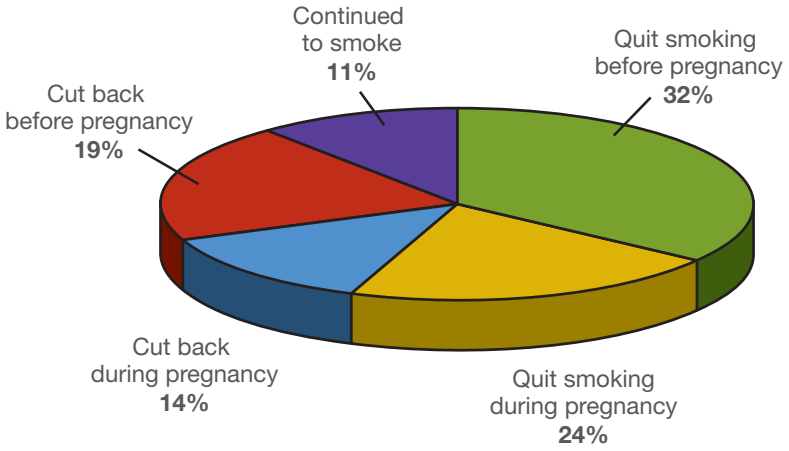


Figure 5.4a: Smoking Behaviour in Preconception for Men in 2008 (responses male smokers who had a child the last 6 years or whose partner was pregnant)

Of the men who smoked before conception, 33% cut back on smoking either before or after conception, 56% quit smoking either before or after conception and 11% did not change their smoking habits. Almost half of those who quit or cut back did not make these changes until their partner was pregnant, i.e. they smoked at previous levels in the early stages of her pregnancy.

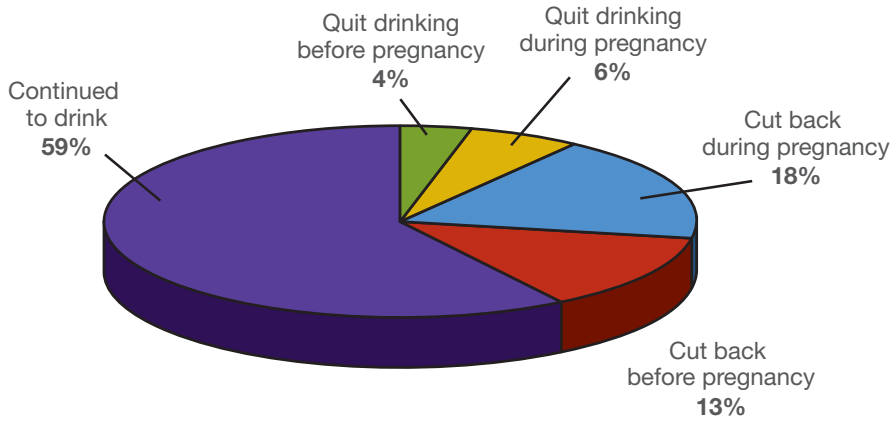


Figure 5.4b: Alcohol Behaviours in Preconception for Men in 2008 (responses from male drinkers who had a child in the last 6 years or whose partner was pregnant)

Of the men who drank alcohol before conception, 31% cut back either before or after conception, 10% stopped drinking either before or after conception and 59% did not change their alcohol use.

5.5 Intention to Take Folic Acid

Survey Question: If you were planning on having a child, would you be very likely, somewhat likely, not very likely or not at all likely to take folic acid supplements?

	2001	2008
Very likely to take folic acid	51%	**78%**
Somewhat likely to take folic acid	14%	7%
Not very likely to take folic acid	11%	4%
Not at all likely to take folic acid	12%	5%

Table 5.5: Intention to Take Folic Acid (responses from women only)

Comparison to Previous Data: There was a significant increase in the proportion of women who said they would take a folic acid supplement if planning a pregnancy as compared to 2001.

Trends in 2008: The majority of female respondents in 2008 indicated that they would take a folic acid supplement if planning a pregnancy, compared to only two in five men who said they would be very likely to encourage their partner to take folic acid supplement (78% versus 41%, respectively). College and university educated women, and women aged 30-39 were significantly more likely to say that they would be very likely to take a folic acid supplement if they were planning to have a child.

6. Sources of Preconception Information

In the last 10 years, service providers across Ontario have implemented a range of preconception strategies, including awareness campaigns, displays, information in the media, preconception classes and training for health care providers.

This section shares the perceived effectiveness of different preconception strategies, the level of importance of talking to a health care provider prior to conception, and the proportion of respondents who received preconception information or services from a health care provider. It points out gaps in ensuring that men and women have access to needed preconception health information and services.

6.1 Effectiveness of Information Sources

Survey Question: Now I would like you to rate several information sources on their effectiveness in convincing women to make changes improving health **before** pregnancy. Using a scale of 0 to 10 where 0 represents "not at all effective" and 10 represents "extremely effective", how likely do you think [READ ITEM] would be in convincing women to make health improvements **before** pregnancy?

	2002	2008
Advice from a health professional	83%	80%
Preconception classes	–	62%
Brochure from a doctor's office or pharmacy	60%	**52%**
Books from a library or bookstore	51%	49%
Information in the media, that is newspapers, radio or TV	41%	37%
Information on the internet	33%	35%
Advice from a friend or relative	42%	**34%**

Table 6.1: Effectiveness of Different Sources of Preconception Information (responses from women only)

Note: This table indicates the percentage of respondents who considered the source to be "effective", i.e. the percent of respondents who indicated a score of 8-10 for that source. A score of 10 indicated that the source was "extremely effective".

Comparison to Previous Data: The perceived effectiveness of most information sources remained consistent from 2002 to 2008. There were small but significant decreases in the perceived effectiveness of brochures and of advice from friends or relatives.

Trends in 2008: Advice from health professionals was seen as the most effective way to convince women to make health changes before pregnancy, followed by preconception classes. Women were significantly more likely than men to say that advice from a health professional was effective. Women were also significantly more likely to say that a brochure from a doctor's office or pharmacy was effective as compared to men.

6.2 Importance of Talking with a Health Care Provider

Survey Question: Which of the following best describes your views of family planning?

	2005	2008
It is most important for the man to discuss family planning with a health care professional	2%	0%
It is most important for the woman to discuss family planning with a health care professional	4%	6%
It is most important for BOTH man and woman to discuss family planning with a health care professional	87%	88%

Table 6.2: Talking to a Health Care Provider about Family Planning (responses from men and women)

Comparison to Previous Data: The 2008 results were consistent with data from 2005. There were no significant changes.

Trends in 2008: The majority of respondents (88%) believed it was most important for both men and women to discuss family planning with a health care professional. Women were significantly more likely than men to say it was most important for a woman to discuss family planning with a health care professional (7% versus 1%, respectively).

6.3 Advice Received from a Health Care Provider

Survey Question: Did your health care provider ever talk to you about being as healthy as possible prior to conception? What information did he/she provide?

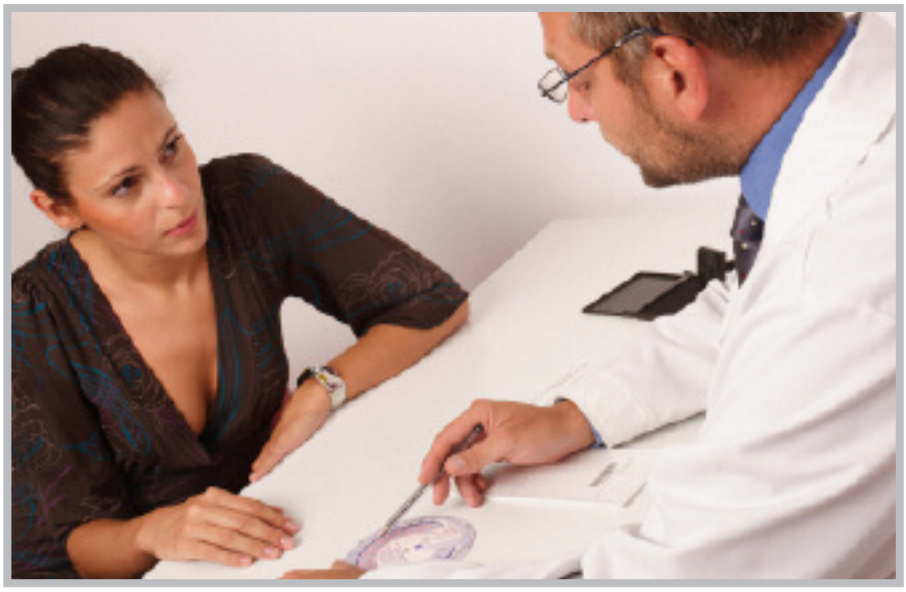
	2008
No information	58%
Diet/Nutrition	14%
Take folic acid	10%
Don't smoke / avoid 2nd hand smoke	8%
Don't drink	8%
Exercise	7%
Vitamins	4%
Good health	4%
Information about current medical conditions	4%
Losing weight	3%
Pamphlets	2%
Information about current medications	2%
Fertility / conception issues	2%
Avoid Stress	2%
Genetic issues	1%
Drugs	1%
See doctor before getting pregnant	0.4%

Table 6.3: Preconception Advice Received from a Health Care Provider in 2008 (responses from men and women)

Note: This question recorded top of mind responses. The response categories were not read to respondents.

Comparison to Previous Data: No previous data for comparison.

Trends in 2008: While 40% of respondents said their health care provider talked to them about being as healthy as possible prior to conception, 58% indicated their health care provider had not done so. Almost half of the women (48%) said their health care provider provided preconception information, compared to only 20% of men who received preconception information. Respondents (data from men and women combined) with children at home were significantly more likely to recall receiving preconception information from their health care provider. The most common preconception topics that respondents recalled being shared by their health care providers included nutrition (14%), folic acid (10%), tobacco smoke (8%), alcohol (8%) and exercise (7%). Out of all respondents, only 2% mentioned receiving print information on preconception from their health care provider, and only 0.4% indicated that they were advised to see a health care provider before conception.



7. Implications for Ontario

This section discusses the implications of the 2008 data and the trends since 2001. It considers the underlying factors for these results. It also reflects on the significance to preconception health and preconception services in Ontario and shares recommendations.

7.1 Discussion

Planning and Timing of Pregnancies

In the United States about half of all pregnancies are unintended (CDC, 2006). This survey shows higher levels of planned pregnancies, with 70% of female respondents describing their last pregnancy as planned, a level that was consistent with 2002 data. Actual rates of planned pregnancies may be lower, since the survey was completed by phone (this does not include cell phones). Access to a home phone may be limited by socioeconomic status, and respondents of lower socioeconomic status may be under-represented in this study. This survey shows that lower income and lower education were associated with a significantly increased likelihood that pregnancy will be described as unplanned.

Most 2008 respondents were happy with the timing of their last pregnancy (66% of women, 67% of men), a significant increase from 2002. Not only were most pregnancies intended (i.e. planned), most respondents also wanted to be pregnant at that time.

It is important to be aware of local and provincial trends in family planning, as well as trends in birth data over time, when considering short and long-term strategies for preconception services. Only 14% of respondents indicated that they were very likely to have children in the next 5 years, a significant decrease from 2005. Decreased intention to have children may have an impact on the demand for services; however it is important to recognize the value of preconception health services to the health of our future children, and its potential impact on societal, health care, community, family and individual costs.

Preconception Awareness

Preconception awareness increased significantly in many areas since 2002. The level of understanding regarding the overall significance of preconception health was very high in 2008. The vast majority of respondents recognized the importance of men's and women's family history, as well as the importance of preconception health in women. There was less recognition of the importance of preconception health in men, with 11% believing that men's preconception health does not affect the health of the baby.

Service providers who address preconception health consider a "planned pregnancy" to be one where the individual or couple makes an active choice to become pregnant and takes the opportunity to assess and improve their health before conception. The general public commonly considers a "planned pregnancy" to be equivalent to an intended pregnancy and may not associate the term with assessing or improving health. While most respondents indicated that their last pregnancy was planned, and most were happy with the timing of their last pregnancy, this high level of intention does not necessarily equate to increased information seeking behaviours or changes in health behaviours prior to conception.

The survey identified knowledge gaps for men and women. While understanding has strengthened since 2005, many respondents did not have the information they needed to make appropriate health changes prior to conception. The most commonly mentioned preconception health changes for men and women were eating well, stopping smoking and alcohol use, and increasing exercise.

There was an increase in specific suggestions regarding preconception health changes for men and women (i.e. eating well, stopping drinking) as compared to general suggestions such as improving health. In addition, fewer respondents mentioned the supportive role that men can play (be supportive, help around the house etc.) and more provided examples of specific preconception health changes for men (eating well, stopping alcohol and drug use).

While there were significant increases in awareness about recommended timing and sources for folic acid, awareness could be strengthened, especially with the recent release of new folic acid guidelines. Surprisingly, given the focus on folic acid over the last 10 years, the message that needs most reinforcing is the benefits of preconception folic acid use (31% of women did not recognize the benefits of folic acid).

Preconception Behaviours

While this survey showed that men and women were significantly more likely to make health changes prior to conception than in previous years, there is still ample room for improvement. More than half of the women in this survey did not make any health changes before conception (55%), and a quarter (26%) made no health changes at all in relation to their last pregnancy, either in the preconception or prenatal period.

Of the women who did make preconception health changes (44% of respondents), most made the changes more than 3 months prior to conception (64%). The majority of men and women can make recommended health changes relatively quickly, based on timely information. However, it can take longer to make some desired health changes, for example addressing a dependence on alcohol or tobacco, stabilizing blood sugar levels for a diabetic, or determining the level and type of medication that best manages a pre-existing condition and also poses the least risk to the growing fetus. In addition, issues of addiction, poverty, violence, workplace conditions, unintended pregnancies etc. can affect the opportunities and capacities of men and women to make preconception health changes.

While most respondents felt that men and women should talk to a health care provider about family planning, only 41% of the female respondents looked for information before conception and only 35% talked to their health care provider before conception.

While stopping smoking and drinking were among the most common preconception changes suggested by respondents, many women are still smoking or drinking in pregnancy. Of the women who smoked before conception, 24% cut back on smoking, and 6% did not change their smoking habits, i.e. 30% continued to smoke throughout pregnancy. More than half of those who quit or cut back smoking did not make this change until they were pregnant, i.e. they smoked at previous levels in the early stages of pregnancy. Of the women who drank alcohol before conception, 8% cut back and 1% did not change their drinking habits, i.e. 9% continued to drink alcohol throughout pregnancy. Almost half of those who quit or cut back their alcohol use did not make this change until they were pregnant, i.e. they drank alcohol at previous levels in the early stages of pregnancy.

Folic acid has been the specific focus of many Ontario health promotion efforts since the mid-1990's. Despite increased awareness (81% of female respondents identified that women should start taking folic acid before conception), only 54% of women reported that they took folic acid prior to their last pregnancy. In addition, while most women (78%) indicated that they would be very likely to take folic acid prior to their next pregnancy, 9% indicated that they would be unlikely to take folic acid. The survey did not ask questions related to recent changes in folic acid guidelines, for example recommended amounts, and women who might benefit from higher levels of folic acid supplementation.

Men were significantly less likely to make health changes than women. About half of the men did not seek information about improving their health and about half did not talk to a health care provider about their preconception health. While most men who smoked changed their smoking behaviour, most men who drank alcohol continued to drink, and about a third of men did not improve their eating habits. More research is needed on the types of reproductive health strategies that are effective in reaching men.

Sources of Preconception Information

Respondents clearly identified health care providers as the most effective source of preconception information, and believed that both men and women should talk to their health care provider before conception. There were also high levels of interest in preconception classes which have been offered in only a few geographic areas of Ontario.

Unfortunately, despite the high value placed on the role of the health care provider, 58% of respondents did not recall receiving preconception information from their health care provider. Of those who did receive information, only 2% recalled receiving print handouts and only 0.4% recalled being advised to talk to a health care provider when planning a pregnancy. There is a clear need to strengthen the preconception services offered by health care providers.

7.2 Recommendations for Program Planning

Compared to other health promotion topics, preconception health is still a relatively new issue. Continued efforts are necessary in order to integrate needed preconception information and services into daily practice, and to continue to strengthen preconception awareness and behaviours.

Populations of Interest

Until now, the main focus of preconception health strategies in Ontario has been broad population-based awareness strategies. As knowledge is growing, there is now a need to focus more on populations with lower levels of awareness, higher levels of risk, as well as those who require additional supports to address their health concerns.

Individuals who were younger, lower education and/or lower income frequently had lower levels of awareness and higher levels of risk behaviours in this survey, and should be considered as populations of interest. In addition, male respondents also had lower levels of awareness and were less likely to make health changes. Initiatives should be designed specifically for these populations.

Examples of populations that may need additional supports in order to improve their health include women who cannot afford folic acid, individuals struggling with alcohol or tobacco use and women at risk of an unplanned pregnancy. Where possible, efforts should be made to link these populations to needed services.

Key Messages

We have moved beyond the need for generic campaigns that promote messages about the importance of preconception health for women in Ontario. We now need preconception strategies that focus on the following messages:

- Specific preconception risks
- Changes that men and women can make prior to conception

Preconception health messages need to emphasize the importance of assessing health and making changes prior to conception. Key messages for the general public and for health care providers should emphasize the benefits of talking to a health care provider prior to conception. Messages should include key sources of information that are current, credible, relevant and easy to access, for example online materials.

Another priority is sharing messages about the importance of men's health prior to conception and things that men should do prior to conception in order to improve the health of their future children.

Key Strategies

A range of strategies can be used to build on existing preconception awareness and behaviours. Where possible, consideration should be given to the benefits of province-wide strategies in terms of reduced costs, greater impact, consistent messages, and ability to incorporate solid evaluation components.

Learning from Others

Ontario can learn from the preconception guidelines and frameworks developed by other provinces and countries. For example Alberta (2007) developed a provincial preconception health framework which identifies the following key strategies: promoting public awareness and knowledge, building capacity to provide preconception health services, and championing preconception health promoting environments. As well, the Centres for Disease Control and Prevention (United States) have recommendations to improve preconception health (CDC, 2006). Their goals are to improve the knowledge, attitudes and behaviours of men and women related to preconception health, assure that all women of childbearing age in the United States receive preconception care services (i.e., evidence-based risk screening, health promotion, and interventions), reduce risks through interventions during the inter-conception period, and reduce the disparities in adverse pregnancy outcomes.

Health Care Providers

In this survey, health care providers and preconception classes were identified as the most effective preconception strategies, and should be regarded as key sources of preconception information in Ontario. Most importantly, health care provider strategies should be considered in order to strengthen available preconception care services. Their role in informing, counselling, screening, identifying and referring patients should be fully explored. Some health care provider strategies are simple and easy to implement, for example providing preconception posters or print materials for health care providers to distribute to patients.

Health care providers could benefit from information concerning their opportunities to provide preconception information and care. These opportunities can be either opportunistic or designed for individuals who are actively planning a pregnancy. An example of opportunistic preconception care is asking a patient during their regular check-up about their intention to have children in the future, and following up with brief preconception information. More in depth preconception services are necessary for individuals planning a pregnancy, for example preconception appointments, or referrals to preconception classes.

Health care providers may also benefit from information on what to include in a preconception health visit. Information about the range of preconception services that can be provided may be beneficial, ranging from preconception screening, brief interventions, or referrals to specialists and/or additional services as required. Preconception care should assist in providing protection (e.g. folic acid supplements and rubella immunizations), avoiding teratogens (e.g. alcohol, some medications), and managing conditions (e.g. hypothyroidism, diabetes). Strategies to assist health care providers should include practical details such as links to patient and health care provider resources, information on specific screening tools, what to include in a preconception appointment, how to bill a preconception appointment, examples of opportunistic care, and how to respond to common preconception health concerns.

Preconception Classes

As interest in preconception health grows, and where there is a sufficient population base, preconception classes can be considered. Although health units have had low levels of success with preconception classes over the last 5 years (Best Start Resource Centre, 2009), classes are an opportunity to share important information, to respond to questions and for discussion about concerns and recommendations. In addition, they can help to raise the profile of the issue, and may help to change social norms around accessing preconception health information.

Additional Strategies

Individuals who are unable to attend preconception classes can be reached through a range of other methods, for example the media. Due to the personal and often private nature of reproductive health decisions, information should also be offered through the internet, for individuals who do not want to publicly state their intention to plan a pregnancy. Another cost effective approach is to build preconception messages into existing strategies. For example displays about preconception health can be included in prenatal health fairs, and women planning a pregnancy can be invited to participate in early prenatal classes.

Addressing Needs of Specific Sub-populations

As preconception awareness is strengthened, we move beyond the need for broad population based awareness strategies. The focus should now be on specific populations of concern, or messages that need reinforcing (e.g. changes that men and women can make prior to conception). For additional improvements in preconception health, preconception strategies also need to provide links to specialized programs such as substance use, housing security, food security and abuse services that address the underlying factors for poor health in many women and men. Women who are planning a pregnancy and those at risk of an unplanned pregnancy should be considered separately in program planning, as they have different information needs, and the strategies to reach them also differ. Different strategies are also needed for reaching other specific sub-populations of interest, for example men, and individuals with lower income, lower age and lower education. Additional research is needed on strategies that are effective in reaching men and in reaching individuals who are at risk of an unplanned pregnancy.

Normalizing Health Behaviours

Another approach is to normalize health behaviours, for example encouraging every woman who could get pregnant to take folic acid, rather than just focussing on the preconception period. Similarly, efforts that encourage youth to not start smoking, and smoking cessation initiatives for the general public also have an impact on preconception health. Broad strategies to address preconception health should include youth, men and women of childbearing age, as well as men and women who are planning a pregnancy.

Need for Additional Research

To support the implementation of evidence-based preconception services, additional research is needed on the effectiveness of a range of preconception health strategies. Organizations that are implementing or considering changes to preconception initiatives should carefully consider provincial and local evidence including existing levels of

awareness and behaviours, as well as higher priority populations and messages. Initiatives should be carefully planned, with a good understanding of the interests and needs of each population of interest. Evaluation and research should be built into local initiatives, to measure their effectiveness, further strengthen their impact, and to determine next steps. Ongoing monitoring of relevant local and provincial health indicators will provide information about the progress that is being made with this issue, and direction for future initiatives.

7.3 Concluding Remarks

Advancements in prenatal health services have made significant inroads in improving maternal and infant health outcomes. In order to build on this, improvements now need to be made to knowledge and practices prior to conception (Best Start Resource Centre, 2001). By the time a woman has her first prenatal appointment, it is too late to prevent many birth defects.

This report examines the awareness and behaviours of Ontario men and women of childbearing age. While preconception awareness and behaviours have improved over the last eight years, additional preconception information and services are required to strengthen preconception health in Ontario. In particular, initiatives should be designed to meet the needs of health care providers. Services also need to be developed for the general public, especially concerning specific preconception risks, and what men and women can do to improve their health prior to conception. These services should not be restricted to awareness strategies. Men and women may require a range of other supports in order to improve their preconception health. Consideration should be given to populations that have lower levels of awareness and lower levels of preconception behaviours.

While this report draws together provincial information and trends, local information is also important in selecting and defining preconception initiatives. Local levels of preconception awareness and behaviours, reproductive trends, demographics, and current/previous strategies and services will all influence the type of preconception initiatives that are needed at the community level. Service providers are encouraged to use this report in conjunction with the report on public health preconception initiatives and the report on family physician preconception awareness and practices, as well as their own knowledge of local realities in designing effective preconception health strategies.

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The Best Start Resource Centre supports service providers across Ontario through consultation, training and resources, in the areas of preconception, prenatal and child health. The Best Start Resource Centre is a key program of Health Nexus.