

TO: Chair and members of the Board of Health

MEETING DATE: September 6, 2017

REPORT NO: **BH.01.SEP0617.R21** Pages: 7

PREPARED BY: Melissa Potwarka, Manager, Family Health Promotion and Cynthia Montanaro, Public Health Nurse

APPROVED BY: Andrea Roberts, Director, Family Health Division

Original signed document on file

SUBMITTED BY: Dr. Nicola J. Mercer, MD, MBA, MPH, FRCPC
Medical Officer of Health & CEO

Recommendations

It is recommended that the Board of Health:

1. **Receive this report for information.**

Key Points

Introduction

- Approximately 50% of all pregnancies are unplanned.¹ By shifting attention to Preconception Health (PCH) it is possible to improve reproductive, maternal and child health outcomes.
- Wellington-Dufferin-Guelph Public Health (WDGPH) has developed an innovative and evidence-based PCH Risk Assessment tool for use in primary care settings called *My Health eSnapshot (MHeS)*.
- The results of MHeS are automatically integrated into the physician's or primary care provider's (PCP) Electronic Medical Record (EMR) and a customized patient handout with results and key PCH messages is generated.
- In 2016, the Family Health Promotion team, conducted a cohort study across seven primary care sites in Wellington, Dufferin and Guelph (WDG), to evaluate whether the use of MHeS during primary care visits could increase PCH knowledge and result in behaviour change among women of reproductive age.
- The MHeS research study is the first of its kind in Ontario and contributes to the growing momentum around PCH in Canada and internationally.

Discussion

What is Preconception Health (PCH)?

PCH is defined as the health of all individuals during their reproductive years, regardless of gender identity, gender expression or sexual orientation. PCH is an approach that promotes healthy fertility and focuses on actions that individuals can take to reduce risks, promote healthy lifestyles and increase readiness for pregnancy, whether or not they plan to have children one day.²

Why Preconception Health (PCH)?

Globally there are challenges from an individual to a systematic level in recognizing PCH risk factors and their impact on reproductive, maternal and child health. Approximately 50% of all pregnancies are unplanned and waiting until an individual is aware they are pregnant may be too late to prevent exposure to risk factors, since the first few weeks are the most critical for a developing fetus.¹ There are several PCH risk factors that may lead to poor birth outcomes including genetics, poor nutrition, obesity/underweight, poor oral health, tobacco/alcohol/drug use, chronic diseases, some infections, poor mental health, and environmental toxins. By managing and/or reducing these risk factors, there is a better chance of improving birth outcomes by reducing the rates of preterm birth, low birth weight, and congenital anomalies, all of which can lead to lifelong medical and developmental concerns or infant mortality.²

Background

WDGPH is mandated by the Ontario Public Health Standards to address PCH. However, there is no standardized programming or best practice approach.³ To address this challenge, WDGPH conducted a literature review, environmental scan, and community survey. The key findings to emerge from this work included:

- PCH care visits within primary care as a promising strategy,
- the use of innovative strategies, and
- the need for more research.

Based on this evidence, WDGPH developed and studied an innovative technology-based PCH strategy within the primary care setting.

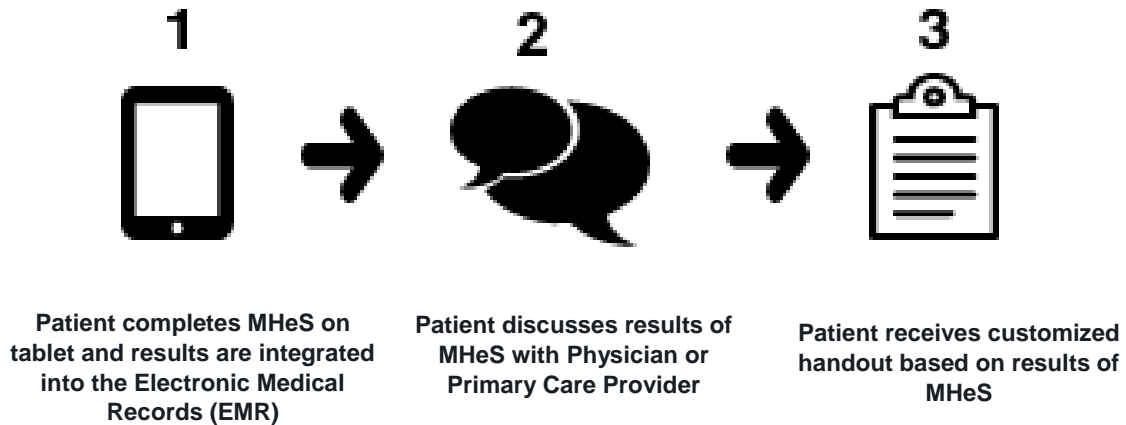
Research Project

This strategy involved the development and evaluation of a patient-driven electronic PCH Risk Assessment (RA) tool using tablet technology, called *MHeS*. In partnership with Boston Medical Centre, WDGPH created *MHeS*, which was adapted from The Gabby Preconception Care System for use in the Canadian primary care setting. The Gabby System is a patient-driven RA tool that uses health information technology to deliver preconception care to women in their home through a virtual nurse, Gabby.⁴ *MHeS* is a comprehensive tool designed to identify risks related to reproductive and sexual health. *MHeS* also complements the PCH Care Tool, a Canadian evidence-based resource created by the Centre for Effective Practice.⁵

The Family Health Promotion team, in partnership with Health Analytics, planned and implemented a research study to evaluate both the process and the outcome (i.e. impact) of MHeS. Specifically, the research goals were to:

- Determine whether the use of MHeS during primary care visits could increase PCH knowledge and behaviour change among women of reproductive age (15-49 years),
- Identify the most prevalent PCH risk factors,
- Assess the process and user-friendliness of the MHeS intervention model (Figure 1).

Figure 1: MHeS Intervention Model



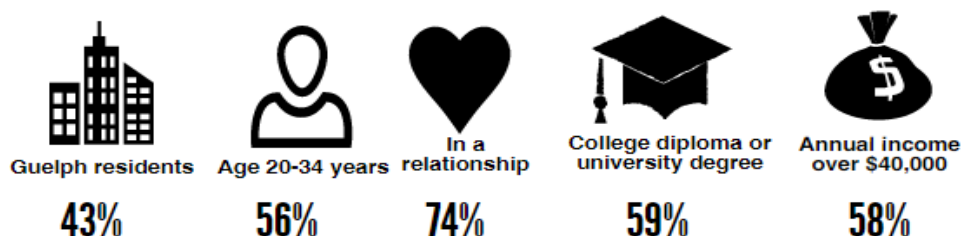
A cohort study, using a mixed method approach, was utilized to study MHeS across seven primary care sites in WDG from February to June 2016. WDGPH collected data from participants through MHeS and a series of follow-up online surveys. One-week and two-month online follow-up surveys were emailed to participants using an online survey platform. Key informant interviews were also conducted with primary care staff to identify the benefits, challenges and sustainability of implementing MHeS.

Preliminary Research Findings

Risk Assessment (RA)

A total of 300 participants completed the MHeS RA prior to their physician/PCP visit. The demographics of the participants are summarized in Figure 2.

Figure 2: Demographics of Study Sample

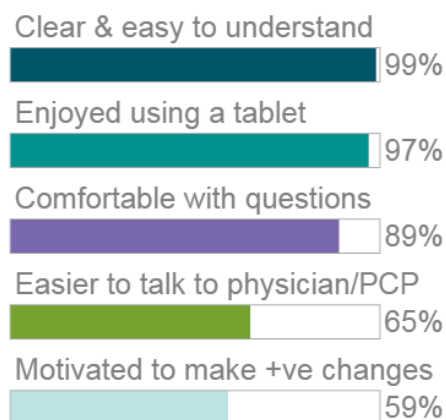


While MHeS identified individual risk factors, analysis of the results allowed public health to identify the most prevalent PCH risk factors across the group who participated.

One-Week Survey

Of the 300 participants who completed the RA, a total of 188 (63%) completed the one-week survey. Figure 3 summarizes feedback from the participants about their experiences using MHeS. Of particular interest, 65% of participants reports that the RA made it easier to have a conversation with their physician/PCP. Furthermore, the majority of participants were motivated to make positive changes after completing the RA (56%) and after having a conversation about their results with their physician/PCP (59%). The majority of participants would also recommend MHeS to a friend (72%).

Figure 3: Majority reported a positive experience using MHeS



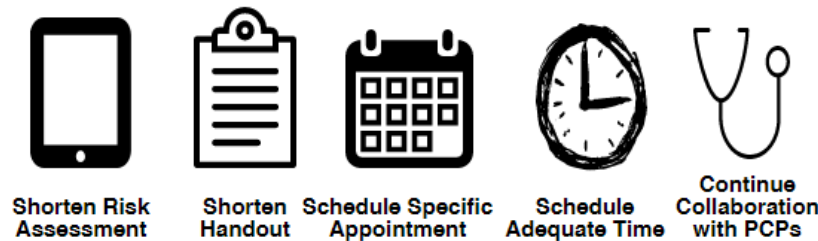
Two-Month Survey

Of the 300 participants who completed the RA, a total of 144 (48%) completed the two-month survey. The majority of participants reported that they learned about the importance of talking to their physician/PCP about life-long health needs (72%), and how their health now affects their own health and the health of their future children (51%). Over half of participants were motivated by the study to learn more about their health or to make positive change to their health (63%). Some participants also reported learning about new health concerns that they did not know they had before (36%). The data specific to behaviour change is currently being analyzed and will be included in the final report for this project.

Key Informant Interviews

Key informant interviews were conducted with seven primary care staff at four of the six research sites. Most key informants reported benefits to the clinic and to patients from participating in this study. Key informants also provided valuable feedback about the challenges they experienced with study implementation. The main suggestions for changes to the MHeS implementation model included are summarized in Figure 4.

Figure 4: Primary Care Feedback



All of the key informants had very positive feedback and reported that they would consider using *My Health eSnapshot* in the future, if their suggested changes were implemented.

Conclusion

The *My Health eSnapshot* research study and preliminary research findings are promising. Data analysis is ongoing in order to address the research questions and to make final conclusions and recommendations.

This research is the first of its kind in Ontario. A Women's Xchange \$15K Challenge Grant (Women's College Hospital) has supported many opportunities to share this research study through conference presentations to various professional audiences. As a result, this work is contributing to the growing momentum around PCH in Canada and beyond, and has potential to improve future reproductive, maternal and childbirth outcomes.

WDGPH is now engaging in conversations with preconception health professionals, researchers and primary care providers about the future of *MHeS*. Once improvements have been made, WDGPH will lead further implementation, research and evaluation.

Ontario Public Health Standard

Reproductive Health: To enable individuals and families to achieve optimal preconception health, experience a healthy pregnancy, have the healthiest newborn(s) possible, and be prepared for parenthood.

WDGPH Strategic Direction(s)

Health Equity

We will provide programs and services that integrate health equity principles to reduce or eliminate health differences between population groups.

Organizational Capacity

We will improve our capacity to effectively deliver public health programs and services.

Service Centred Approach

We are committed to providing excellent service to anyone interacting with Public Health.

Building Healthy Communities

We will work with communities to support the health and well-being of everyone.

Health Equity

Providing PCH care to Ontarians is not routine.² Clinical care standards supporting PCH care are fragmented and it is often up to individual patients to initiate a PCH conversation with their PCP in order to access advice and information.² This study allowed the opportunity for women of reproductive age at participating primary care sites to have a PCH conversation with their primary care provider that likely would not have happened without this study.

Given that 98% of residents in the Waterloo Wellington LHIN and 95% of residents in the Central West LHIN have a primary care provider, very few individuals would not have access to an intervention that is based in the primary care setting.^{6,7} In addition, Statistics Canada identifies that the majority of women in Ontario have a regular medical doctor (94%) and that they have had contact in the last 12 months (86%).⁸ This places physicians in a favourable position to deliver PCH services.

Eligibility criteria have excluded some individuals from participating, as it required individuals to be able to read and write in English, have a valid email address and be comfortable using a tablet. If this intervention continues based on the results of the study and recommendations, measures to mitigate these restrictions will need to be considered.

Appendices

None.

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