

PREGNETS: Network for the Prevention of Gestational and Neonatal Exposure to Tobacco Smoke

Final Report

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EXECUTIVE SUMMARY

The PREGNETS (Prevention of Gestational and Neonatal Exposure to Tobacco Smoke) project set out to reduce the negative consequences of smoking and environmental tobacco smoke (ETS) on women, fetuses, and children by encouraging health care providers to routinely offer smoking cessation advice to pregnant, pre-pregnant, and postpartum women who smoke or who live with a smoker.

Briefly, the goals of PREGNETS were to:

- a. Create a **network** of health care providers, researchers and agencies concerned with smoking by and ETS exposure of pregnant women.
 - b. Create a **toolkit** of evidence-based approaches and resources for health care providers to use in addressing smoking among pregnant and post-partum women.
 - c. Establish a **website** with evidence-based information for both health care providers and pregnant, pre-pregnant, and post-partum women.
 - d. **Train community health care providers** (HCPs) (physicians, dentists, pharmacists, nurses, social workers, etc.) in advising pregnant and post-partum women on smoking cessation.
 - e. **Train Smokers' Helpline and Motherisk counsellors** to help pregnant and post-partum women to quit smoking.
 - f. **Disseminate** relevant information and resources to health care providers across Ontario.
-
- a. **Network:** After an initial meeting to which a broad range of stakeholders were invited, a steering committee was formed to provide advice and input on PREGNETS activities, and to involve the organizations which the members represented in the dissemination work of the project. As work progressed, PREGNETS staff met with other concerned professional groups as the need arose. In evaluating the network, committee members reported that their organizations received benefits from participating in PREGNETS, that members were committed to the project, and that project goals were generally met. They suggested expansion of the PREGNETS training and resources throughout Ontario and the rest of Canada, partnering with relevant organizations as the process develops.
 - b. **Toolkit:** A downloadable toolkit of information and resources for health care providers, and information for pre-pregnant, pregnant, and post-partum women is available at the PREGNETS website: www.PREGNETS.org. Among the resources in the toolkit are copies of the laminated desk reference for service providers and referral card for women who want to quit smoking, both of which were developed specifically by PREGNETS. The toolkit and other resources have been downloaded by a large number of health professionals and pregnant women. In addition, this resource has generated a number of additional requests for information and training.

- c. **Website:** The PREGNETS website can be found at www.PREGNETS.org. It has resources for health care providers, including the downloadable toolkit described above, information for pregnant, pre-pregnant, and post-partum women about smoking and pregnancy and advice on quitting, and links to a wide range of Canadian resources and organizations with an interest in helping pregnant women quit smoking. From January 1 to March 31, 2004, there were an average of 84 visits to the website per day, with an average of 20 downloads of materials each day. Feedback on the website has been uniformly positive and additional contacts for training and information dissemination opportunities have been made through the website. Usage rates remain high.
- d. **HCP training:** PREGNETS provided training workshops for health care providers in the St. Joseph's Health Centre Community of Toronto and for Smokers' Helpline and Motherisk counsellors. Training delivery was interrupted by the SARS crisis in the spring and summer of 2003, but a total of 152 HCPs were trained. Evaluations of the training workshops were uniformly positive and HCPs reported that the training increased their confidence and would improve their practice in advising pregnant and post-partum women who smoke.

Participants in the training sessions were given questionnaires regarding their knowledge, current practice, attitudes, and barriers to effective practice with pregnant smokers before the training sessions, and again at least three months following training. Before training, a majority of respondents reported a need for more information on almost all topics related to smoking among pregnant women. After training, 75% or more of respondents reported that the training either "Greatly improved my knowledge" or "Improved my knowledge somewhat" for every one of the knowledge topics listed. A similar percentage of respondents reported that the PREGNETS training "Greatly helped my practice" or "Helped my practice somewhat" for almost all of the skill areas listed. Following the workshop, an increased proportion of respondents reported familiarity with materials to help pregnant women quit smoking. Also, fewer respondents reported barriers to practice involving their own lack of knowledge or lack of relevant materials to help advise pregnant women regarding smoking cessation.

- e. **Provincial resources (Helpline counselling):** Smokers' Helpline and Motherisk counsellors were trained in PREGNETS workshops and, following the training, women posing as pregnant smokers, and men posing as husbands of pregnant smokers, called these services for help in smoking cessation. Callers reported that the counsellors were helpful, supportive, and non-judgemental when they called. General advice on quitting was given, and mailed pamphlets were offered. On the other hand, callers recognized that counsellors were following a script and advice tailored to the caller's individual situation was not given. Steering committee members felt that training of these counsellors is one of the most important achievements of PREGNETS and the training should be continued and expanded.

- f. Dissemination:** PREGNETS materials and resources were disseminated to health care professionals and others throughout Ontario, Canada, and the world via:
- PREGNETS website: www.PREGNETS.org.
 - Distribution of materials (posters, desk reference, referral cards) through health care venues in Toronto and elsewhere and at presentations, rounds, and conferences.
 - Articles in professional newsletters
 - Community presentations
 - Oral and poster presentations at professional annual meetings and conferences

Despite the limitations imposed by the SARS crisis, PREGNETS achieved each of its major goals. In addition, a need was identified for more information on this topic for health care providers and women of child-bearing age and their families. Thus, the overall recommendation arising from PREGNETS is to continue and expand the information development, dissemination, training, and networking activities begun by PREGNETS. While challenges to sustained funding remain, project stakeholders in the PREGNETS network are convinced of the need for continuation of these activities and expansion of strategic alliances.

PREGNETS – FINAL REPORT

7. INTRODUCTION

b. Background

The prevalence of cigarette smoking among women of childbearing age continues to be a major health concern. A survey by Health Canada in 2002, found that 26% of Canadian women of childbearing age smokedⁱ. In 2002, 24% of Canadian young women (aged 15 – 24) smoked during their pregnancy.ⁱⁱ

Cigarette smoking during pregnancy increases the risk of vaginal bleeding, spontaneous abortion, abruptio placenta, placenta previa, prematurity, perinatal mortality, intrauterine growth retardation and sudden infant death syndrome. Despite knowledge of the adverse effects of smoking in pregnancy, the majority of smokers continue to smoke while pregnant. In Canada, 13 to 21% of female smokers quit and 50% cut down when planning to become pregnant or on finding out they are pregnant. An additional 2% to 22% may quit later in their pregnancy.^{iii,iv} Women who are younger, suffering from depression, less educated, living with a partner who smokes and economically disadvantaged are more likely to smoke. Women with previous “unaffected” pregnancies are also more likely to smoke in their current pregnancy.^v Up to 60-70% of women who quit during pregnancy relapse to smoking within six months post-partum.^{vi}

Smoking cessation by the mother before the third trimester significantly reduces health risks to the fetus and there are post-partum benefits for both mother and child.^{vii viii ix} Therefore, any attempts to enhance quit-rates will improve birth outcomes and also likely reduce ETS exposure.

Health professionals can be a credible source for cessation interventions. However, lack of education and time constraints prevent many providers from intervening effectively. Based on over 500 calls received at the Motherisk Information Line for pregnant and lactating women, it is evident that pregnant women receive mixed messages from their health care providers. Some themes that emerged include: not asked about smoking status; advised to stop smoking without referral to resources; advised to not quit due to excess stress on the baby; and advised to cut down but not attempt to quit altogether. There is greater need for clarity and use of effective interventions in prenatal and post-partum periods.

b. PREGNETS

The overall objective of PREGNETS was to decrease the negative consequences of smoking and environmental tobacco smoke (ETS) on women, fetuses, and children by encouraging healthcare providers to include evidence-based brief interventions into routine assessments and healthcare. Health care providers were advised to use existing resources and to refer clients who are pregnant or post-partum to smoking cessation services in their community or to the provincial Helplines.

In order to achieve the objective, PREGNETS was involved in various activities including: training the telephone staff at the Smokers' Helpline and at Motherisk Information Line on how to counsel pregnant and post-partum women to quit smoking; training perinatal and post-partum health care providers on delivering brief smoking cessation interventions to pregnant and post-partum women; establishing a website for smoking and pregnancy; developing a toolkit on the better practices resources; and dissemination of the resources. Several tools were developed to assist professionals to deliver smoking cessation interventions.

d. Funding

The funding for this project was provided by Health Canada, Tobacco Control Programme/Prevention, Cessation and Education. The total funding for 2002 – 2004 was \$236,841.00.

d. PREGNETS Staff

Dr. Peter Selby was the Project Leader and Ms. Rosa Dragonetti was the Project Coordinator. There was also a Project Assistant position filled by several people over the course of the project to assist with administrative tasks. The Leader and Coordinator were both responsible for developing the content of the workshop (PowerPoint presentation), the toolkit, the desk reference and referral card and the content of the website. Workshops and presentations were also delivered by both Dr. Selby and Ms. Dragonetti. Ms. Dragonetti was responsible for the overall organization of the project and ensured that objectives were met in a timely fashion and provided quarterly reports to Health Canada on activities of PREGNETS.

Dr. Joan Brewster provided the evaluation for PREGNETS. She was responsible for developing the pre- and post-training questionnaires, the evaluation form for the mock calls and provided feedback on PREGNETS activities related to evaluation throughout the project. Dr. Brewster was also responsible for carrying out the statistical analysis on all data (training, website, toolkit, etc). All data analyses were carried out using SPSS 10.1.

g. Steering committee

In March 2002, a meeting was held which brought together key stakeholders in tobacco, health care and pregnancy research/service. The focus of the meeting was to develop a consensus on how to proceed with the project, including identifying members of the steering committee. Many participants of that meeting agreed to sit on the steering committee and others were recommended.

The Steering committee assisted with many facets of the project. The members assisted in the planning of the training and provided feedback on the development of the various tools and the website. The members also provided recommendations for collaboration and some of the members were partners in delivering the training (CTI, Best Start,

Motherisk, Smoker's Helpline and St. Joseph's Health Centre). Steering committee members are listed in Appendix I.

h. Initial methods

At the meeting in March 2002, stakeholders provided information and helped illustrate the state of research and treatment pertaining to smoking among pregnant and post-partum women. Based on that feedback Dr. Selby and Ms. Dragonetti used the Precede-Proceed Model to develop a framework on how to address the goals and objectives of PREGNETS. Dr. Donald Dery from the Department of National Defence (Ottawa) was invited to the initial meeting and provided a draft document which was then revised based on feedback and information gathered at the consensus meeting. See Appendix II for an outline of the model. This model provides several directions on how to address the issue of smoking among pregnant and post-partum women and shows how PREGNETS has addressed one part of the model.

8. GOALS: SPECIFIC AND MEASURABLE

PREGNETS' vision is to decrease the negative impact on fetuses, children and women caused by smoking during pregnancy and during the post-partum period. In order to achieve this vision, several goals/objectives were set out. The following outlines the goals outlined in our proposal, refined by Steering Committee advice and feedback.

a. Creation of PREGNETS Network

Key stakeholders, including health care providers, researchers, and agencies, were asked to attend a community action-planning meeting to review current services and identify gaps. Members of the steering committee were chosen from this group and met regularly to review goals of PREGNETS and made recommendations on strategic directions.

b. Create consensus on better practices (Toolkit)

Create a toolkit for health care professionals that contains evidence-based information and resources on smoking cessation for pregnant and post-partum women.

c. Establish website for health care providers and consumers

Establish website for health care providers and consumers looking for information on smoking and cessation specific to pregnant and post-partum women. Website should contain evidence-based resources.

d. Training of health care providers

Train health care providers (physicians, dentists, pharmacists, nurses, social workers, etc) on how to deliver brief smoking cessation interventions to pregnant and/or post-partum women.

e. Establish Provincial resources

Train Smokers' Helpline and Motherisk Information Line to deliver counselling to pregnant and post-partum women looking to change their smoking status to ensure access to all women across the province.

f. Dissemination

Disseminate information and resources to health care providers across the Province.

9. ACTIONS AND FINDINGS RELATED TO EACH GOAL

g. Creation of PREGNETS Network

The Steering Committee closely advised the strategic directions of PREGNETS and helped clearly define goals. This network was also instrumental in assisting PREGNETS to disseminate information and resources, and several network members have committed to including PREGNETS goals in several of their own activities. For example, Best Start has invited PREGNETS to attend their annual conferences to present workshops or posters on PREGNETS. Clinical Tobacco Intervention (CTI) was instrumental in delivering a workshop to physicians, dentists and pharmacists in a target area of Toronto. Program Training & Consultation Centre (PTCC) has agreed to assist with training events and with dissemination of resources. All members of the steering committee agreed to provide a link to the PREGNETS website on their agencies' websites.

Other partnerships outside the network were also formed which facilitated meeting our goals and objectives. For example, PREGNETS met with the Ontario College of Family Physician (OCFP) which identified several opportunities to assist with training and dissemination. For example, PREGNETS was invited to deliver two presentations at a Healthy Babies, Healthy Children Workshop (September 2003) and at the OCFP Annual Meeting (November 2003) with the assistance of Dr. Patricia Mousmanis. Dr. Mousmanis has agreed to incorporate case studies on smoking in pregnancy in future training events. The OCFP also provided PREGNETS with a mailing list of all OCFP members across Ontario (approximately 6,800) so that we could distribute a copy of the desk reference to those members.

EVALUATION OF NETWORK EXPERIENCE – STEERING COMMITTEE

In December, 2003, questionnaires were distributed to steering committee members who participated in the PREGNETS project. Questionnaires were distributed at a steering committee meeting, and later mailed to those who had not attended. Questionnaires asked respondents for their opinions regarding how well PREGNETS had achieved its stated goals, their evaluation of the experience of participating in the PREGNETS network, including communication, benefits, and possible conflicts, and suggestions for sustaining and improving the PREGNETS initiative.

A total of ten completed questionnaires were received. Some members of the steering committee had recently replaced former members on the committee in 2003, so the length of experience on the committee was variable. All ten respondents stated that the goals of the PREGNETS project were clear to them.

Benefits to Member Organizations

Network members reported the following benefits they expected from participation in PREGNETS:

- Evidence-based training regarding smoking cessation in pregnancy for their members
 - Increasing members' confidence in dealing with smoking in pregnancy
 - Increasing significance of organizations' own training program
- Increased resources for service providers in dealing with smoking during pregnancy
 - Toolkit
- Increased awareness of smoking cessation in pregnant women and awareness of the resources available from their organizations.
- Enhanced service to pregnant women
- Networking with other agencies
- Input into PREGNETS program

Of the ten respondents, seven reported that their expected benefits had been realized; two said they had not. Comments given in explanation were:

Benefits Realized:

- Counsellors are now better equipped to deal with calls from pregnant smokers
- The website is a good resource to refer providers
- Organization's members increased awareness of the issue
- Website and toolkit are great resources for our patients

Reported Reasons Benefits not Realized:

- Toolkit is available but not widely accessed and used
- Lots more work needed
- Our organization was not ready enough to engage in this initiative
- Clients did not report reaching organization via PREGNETS

Effectiveness of and Benefits from PREGNETS Communication

All respondents rated communication (both formal and informal) with the PREGNETS team as very effective or somewhat effective. However, while just over half of network respondents rated communication with other members of the network as beneficial; the remainder reported that this communication was not very beneficial. One respondent commented that she had contact only with steering committee members. Many steering committee members already knew one another before the PREGNETS project began.

Conflicts

No respondents reported that there were conflicting priorities among the members of the PREGNETS network, and no respondent reported that PREGNETS created any conflicts within their organizations.

Level of Commitment of Members of the PREGNETS Network

All respondents rated members of the PREGNETS network as committed to the goals of the PREGNETS project, seven saw their fellow members as “Very Committed” and three saw members as “Somewhat Committed.” When asked whether they would maintain the contacts they made through the PREGNETS network, seven respondents reported that they will maintain the contacts and three responded that they maybe will maintain them. None said that they would not maintain the contacts. Some previously knew other members of the steering committee before the project began.

Organizations Included in PREGNETS Network

Four respondents reported that the PREGNETS network as organized included all organizations needed to achieve its goals and four reported that it had not. Additional organizations suggested for inclusion were:

- Public Health Nurses
- Representatives of pregnant women
- Ontario Public Health Association
- Ontario Hospital Association
- College of Physicians and Surgeons of Ontario

Evaluation of PREGNETS’ Effectiveness by Network Members

PREGNETS’ goals and the evaluation by network members of the project’s effectiveness in achieving them are given below (N of respondents):

Table 1

GOAL	<i>Very Effective</i>	<i>Somewhat Effective</i>	<i>Not Very Effective</i>	<i>Not Effective at all</i>
Training SHL and Motherisk workers	7	0	0	0
Training Hospital Community	1	2	3	0
Develop a useful website	6	4	0	0
Develop toolkit for service providers	6	4	0	0
Communicate PREGNETS message to pregnant, pre-pregnant, and post-partum women	0	2	6	0
Communicate PREGNETS message to larger audience of health professionals	0	4	4	0

Some respondents noted that they did not have sufficient information to evaluate PREGNETS’ training efforts. Among those who responded, the training of workers at the Smokers’ Help Line and at Motherisk were seen as uniformly effective, while training of the hospital community was seen as less effective. As described in the

section on training, a higher degree of penetration was achieved among the Helpline workers than among the hospital community. The website and toolkit development were seen as effective by all respondents. One commented that the website could use more advertising and that the toolkit should be revised (see suggestions below). A few respondents were also uncertain about PREGNETS' communication work; they did not know how effective the communication was. One respondent questioned whether direct communication with women was part of PREGNETS' mandate – in fact it was not one of the original goals of the project.

Most Outstanding Accomplishments of the PREGNETS Project

Network respondents were asked for their opinions on the most outstanding accomplishments of the PREGNETS project. Responses included:

- Motherisk and SHL counsellor training
- Relationships established at Motherisk and SHL
- Raising profile of smoking in pregnancy as an issue
- Bringing together organizations, agencies, and individuals with pregnancy and tobacco control as priorities
- Website
- Toolkit
- Desk Reference

What PREGNETS Could have done Better

Suggestions for what PREGNETS could have done better included:

- Wider dissemination of toolkit and the PREGNETS message – it takes time to reach beyond the initial users
- Communication of mandate and resources
- Act more proactively rather than reactively
- Better defined objectives; better communication; better organization
- Focusing on doctors can use a lot of energy for little return
- Website could have been managed more cheaply

Suggestions from Network members on how the PREGNETS initiative can be continued and expanded:

Suggestions for continuation and expansion of the PREGNETS initiative included:

Inclusion of other regions and organizations:

- Expand beyond Toronto to the rest of Ontario, and, in the future, to Canada
- Focus on Public Health & health units
- CAPC/CPNP are good ideas for expansion
- Focus on community workers, home visitors
- Team up with organizations such as Best Start
- Approach other hospitals and organizations with the PREGNETS message
- Form affiliations with groups of service providers who routinely see pregnant women, especially high risk

- Possibly broaden focus to smoke-free families

Further training efforts:

- Expand range of providers included in training
- Select specific target groups for training: specific professional groups; geographic areas
- Possibly focus on female primary care providers
- Periodic retraining of staff due to turnover

Other activities:

- Further advertising of toolkit
- Target pregnant women
- Maintain the active website
- Work on encouraging policy changes within organizations to make smoking in pregnancy a priority
- Research needs of ultimate target audience (pregnant women) through focus groups
- Advertise through the Ontario Health Promotion Network
- Revise toolkit based on feedback from users
- Provide members with a simple report telling who was trained, the numbers, the agenda of the training, time spent, key issues that came up. This feedback would help with:
- Develop a model of intervention in different care settings

Steering Committee:

- Steering committee needs to meet again for future planning, possibly in a more structured format with a presentation followed by Q & A led by a facilitator, then immediate feedback.
- The first meeting of stakeholders was much enjoyed

Other Observations and comments

Network members were aware of the delays imposed on the project by the SARS situation, which closed hospitals and prevented meetings of health professionals from April to September 2003. Respondents said that, in some ways, the PREGNETS project was just getting fully under way, and they were just beginning to feel fully involved, when the initial funding period was coming to an end. It was unfortunate that the toolkit was not available earlier and the website, along with the toolkit, should continue to be available.

Regarding the networking, committee members felt that the PREGNETS group was a good partnership and that the project supplemented, and fit together well with, other initiatives from other organizations. Many of the steering committee members previously knew one another so the PREGNETS project was not a new networking opportunity for them. PREGNETS did link them with some new resources, however.

There were uniformly positive comments about the PREGNETS Project Leader (Dr. Peter Selby) and Project Coordinator (Rosa Dragonetti).

h. Creation of consensus (Toolkit) on better practices

The Toolkit for health care providers provides information and resources on how to approach quitting smoking in pregnant and post-partum women. It can be downloaded from the website at <http://www.pregnets.org/providers/downloads.cfm> and is designed to give health care providers the essential steps to be taken to address smoking cessation. It provides evidence-based background information on smoking and pregnancy, discusses issues specific to pregnancy and also has step-by-step guidelines and various smoking cessation resources for pregnant women trying to quit.

One resource contained in the toolkit is a desk reference for service providers developed by PREGNETS. The one page double-sided laminated tool outlines the positive effects of quitting smoking and how to deliver brief cessation interventions to clients. The reference is accompanied by a resource card for pregnant women which lists the numbers for the Smoker's Helpline, Motherisk Information Line, CAMH Nicotine Dependence Clinic, St. Joseph's health Centre Quit for Life clinic, the PREGNETS website and an interactive smoking cessation website www.stopsmokingcenter.net. The desk reference provides the health professional with the basic information needed in ASKING about smoking, ADVISING clients to quit and REFERRING them to appropriate resources. These resources developed by PREGNETS appear in Appendix III.

EVALUATION - TOOLKIT

There were 348 toolkits downloaded from the website from December 2003 to March 2004. Visitors that looked at or used the toolkit were asked to complete a brief evaluation. From December 21, 2003 to June 21, 2004, there were 94 evaluations completed. Of those completing the evaluation, 7% were in medicine, 46% in nursing, 24% other health professional and 6% were pregnant women. Feedback indicated that there were very few problems with navigating through the toolkit or downloading materials; most found the toolkit useful and found the information they were looking for; 51% said that the toolkit will be extremely useful in their practice and 49% feel it will be somewhat useful. 50% wanted more training for themselves and 50% wanted more training for others. Of those who wanted more training, 61% want more downloadable materials, 43% want additional materials by email and 355 want to attend a workshop or seminar. See Appendix IV for detailed results.

Cost

The toolkit was developed specifically as an online resource in order to reduce costs as well as facilitate dissemination. There are extra costs involved in producing a hard copy of the toolkit, such as printing and shipping costs. For example, 348 toolkits were downloaded from the website. If hard copies of those toolkits were distributed to those requesting copies, it would have cost at least an additional \$10,000.00. Dissemination

is also easier as it is readily available on the website and visitors have instant access to the product. The additional cost involved in having this resource online is the cost of maintaining the website (approximately \$300.00 per month).

i. Establish website

The PREGNETS website www.PREGNETS.org was officially launched January 23, 2003. The website was developed to provide information to health care providers and to the public, including pregnant or post-partum women. Visitors can search the different sections of the website including:

- A section for health care providers:
 - Information about the PREGNETS project and the various objectives;
 - Downloads section of information and tools including the desk reference, referral card, toolkit and the PREGNETS presentation on smoking cessation in pregnancy. The project files are free and saved in Adobe Acrobat format;
 - Links to other websites including those of our steering committee members who represent agencies involved in tobacco research, education and health services.
- A section for Pregnant and Post-partum women:
 - Common questions about smoking in pregnancy and during post-partum period;
 - Relevant statistics;
 - Information on second hand smoke
 - Advice on how to talk to your doctor about smoking
- Canadian Resources
 - The third section provides brief information, contact information and links for resources for smoking cessation including Helplines, websites, and print materials.

Website Promotion

The Centre for Addiction and Mental Health (Public Affairs) prepared a press release (See Appendix V) describing the website and encouraging people to visit. We also compiled an e-mail list of various health professionals and agencies and sent out information about our website through email. Steering committee members were asked to include a link to our website on their agencies' websites to encourage interested visitors to explore the PREGNETS website.

EVALUATION - WEBSITE

We tracked site traffic in order to gather information about visits. From mid-January to December 31, 2003 (344 days), there were 60,192 page views, 17,950 visits, 8,293 unique users and a return rate of 116% (see Appendix VI for detailed results). With no additional promotion of the website, the traffic during the first quarter of 2004 remained constant. From January 1 to March 31, 2004 (91 days), there were 14,216 page views, 7,632 visits, 3,684 unique users, and an average return rate of 106%.

When visitors first come to the website, a survey pops up to encourage visitors to identify what category of visitor they are and their purpose for visiting the website.

The survey was initially implemented in June 2003 and the results from June 2003 to March 2004 indicate that the majority of visitors were health professionals (71%) looking for information for themselves or their patients.

Table 2a: Purpose in visiting the PREGNETS website

Visitor	Number	Percent
I am pregnant and looking for some assistance in quitting	173	19%
I am thinking of getting pregnant and want some assistance on quitting	37	4%
I am a friend or family member of a pregnant woman smoker	59	6%
I am a healthcare professional looking for clinical information	253	28%
I am a healthcare professional looking for information that I can give my patients	396	43%
Total Visitors responding to Pop-up Survey	918	

The pop up survey also inquired how visitors heard about the site. Visitors had the option of choosing more than one response. Most visitors were referred to the website by a colleague (34%) and 29% through “other methods”. One quarter found PREGNETS through a search engine.

Table 2b: How visitors heard about the PREGNETS website

Visitor	Number	Percent
Search engine	239	25%
Referred by a friend	62	6%
Referred by a colleague	333	34%
Pamphlet or other written material	91	9%
Other method	284	29%
Total Visitors responding to Pop-up Survey	1009	

Site Feedback Results

Visitors were asked to complete questions providing feedback regarding the website. Most visitors who completed the feedback section found the site very useful (69%) or useful (16%). 85% of the responders found the information they wanted on the PREGNETS website.

One of the objectives of the PREGNETS website was to encourage health care providers to access existing resources for smoking cessation in pregnancy. Some of the resources could be accessed through links to websites of our partner organizations such as PTCC and Best Start. We also made available many print resources so that visitors could easily download from the website. Our results indicated that people were very interested in the materials.

Table 3 indicates the number of downloads from December 2003 to March 2004 (101 days). There were 2009 downloads from the PREGNETS website during this short period. The toolkit was the most popular download and the PowerPoint presentations were second, indicating an interest in the training and the information on interventions for smoking cessation with pregnant women.

Table 3: Downloads from the PREGNETS website

Download/Resource	Number	%
PREGNETS Toolkit for Health Professionals	348	17%
Desk Reference Double-sided reference listing benefits of quitting smoking as well as an algorithm on ASK, ADVISE and refer developed by PREGNETS	204	10%
Patient Resource Card Business card for the patient containing list of resources such as Helplines, websites and local cessation clinics.	167	8%
ETS – Why do we care? PowerPoint presentation on second hand smoke provided by PTCC	157	8%
ETS – Bingo card	169	8%
The 5 A's Information on using the 5A's to intervene with pregnant smokers adapted from Quick Reference Guide for Clinicians: Treating Tobacco Use and Dependence	192	10%
Pros and Cons Chart outlining pros and cons of smoking and quitting smoking	184	9%
Smoking Cessation in Pregnancy PREGNETS PowerPoint presentation used in training/workshops	226	11%
Smoking Cessation during Pregnancy PowerPoint presentation provided by PTCC	211	11%
Opportunities and Challenges PowerPoint presentation on second smoking and pregnancy provided by PTCC	151	8%
Total	2009	
	Average downloads per day	19.9

Anecdotal Feedback

PREGNETS staff received feedback and requests through the email provided on the website (PREGNETs@PREGNETs.org). The following summarizes several responses/requests received since the website was launched.

Requests for training:

Four emails were received from agencies across Ontario (Sudbury District Health Unit; Jean Tweed Centre in Toronto and Durham Region Health Department, single individual). We were able to deliver training to staff at Jean Tweed Centre. Other agencies were advised of potential opportunities based on future funding and were referred to the PowerPoint presentation available on the website.

Future partnerships:

Sudbury District Health is interested in future pilot projects re: training and/or dissemination. Also Haldimand Norfolk Health Unit.

Request for consultation

Health Professional from Grand Prairie Alberta asked for our experience and expertise while they planned training with health professionals in Alberta.

Requests for Materials

Three emails requesting multiple copies of the desk reference.

Questions from Pregnant women

Two women asked about the safety of quitting smoking abruptly during pregnancy

Translation into French

Two nurses were interested in having the desk reference translated into French language so that they could disseminate to professionals in their area.

Links with other websites

Women's Health Matters Website: A website where women can access health information provided by experts at Sunnybrook and Women's College Health Sciences Centre and the Centre for Research in Women's Health in Toronto. They included information about PREGNETS in the Women's Health Matters Resource database and can be accessed at <http://www.womenshealthmatters.ca/resources/show+AF8-res.cfm?ID+AD0-39547>

Public Health Nurse in Waterloo, Ontario requesting permission to include a link to PREGNETS website for a web-based tobacco resource list prepared by Heart Health and Cancer Prevention Program, Region of Waterloo Public Health.

Women's Health Authority: request was made to link to their website and they would provide information and link to PREGNETS. <http://www.womenshealthauthority.com>

Other

Person sent us the Sarnia Observer article on Junk Science and asked for direction to research carried out by Health Canada that could balance the article's views.

Individual who developed website <http://www.notperfume.com> asked to promote their website and book on PREGNETs.org. Individual is suffering from COPD because of second hand smoke is looking to raise money to cover her health expenses.

j. Health Care Provider training

Based on feedback and recommendations of the Steering Committee, a training plan was developed, which included establishing provincial resources for pregnant and post-partum women as well as training health care providers at a local hospital.

The provincial resources were chosen based on existing resources that pregnant smokers might already access. The Smokers' Helpline and Motherisk Information Line were chosen as these sites. The Smokers' Helpline already delivers a stage-based approach to counselling people who are looking at changing their smoking behaviour. The staff at Motherisk Information Line are experts in counselling pregnant and post-partum women on medication use and safety during pregnancy. By providing telephone staff at both helplines with training on smoking cessation for pregnant and post-partum women, women across the province can access counselling and support to change their smoking status.

St. Joseph's Health Centre (SJHC) was chosen as the hospital to be included in the training component of PREGNETS. PREGNETS staff met with Pat Stephens, Patient Care Manager, Family Birthing Centre and Marilyn Abraham, Program Manager, Paediatrics at St. Joseph's Health Centre to discuss recruitment and format of training. It was decided that all staff in those units would be asked to attend the training so everyone involved in prenatal and post-partum care should be invited to participate including physicians, nurses, social workers, support staff, dentists, pharmacists, midwives and others. In addition to this training, we also provided a workshop in collaboration with CTI to physicians, dentists and pharmacists that work in the geographic area surrounding SJHC. We also provided presentations at family medicine and at OB/GYN rounds at the hospital and at rounds at Motherisk (Hospital for Sick Children). There were a total of 128 professionals trained in delivering brief smoking cessation interventions to pregnant and post-partum women.

Table 4: PREGNETS training events (does not include other community workshops)

Training Events		
Workshops	Date	# Trained
Smokers' Helpline Counsellors	Nov 1 & 8, 2002	10
Smokers' Helpline Counsellors	18-Sep-03	10
Clinical Tobacco Intervention Workshop Physicians, dentists, pharmacists	24-Feb-03	12
Motherisk Telephone Counsellors	13-Sep-03	4
Nicotine Dependence Clinic (CAMH)	16-Sep-03	6
St. Joseph's Health Centre Nurses, physicians, social workers	Sept 16, 23, 24, 26, and Oct 8, 2003	30
Rounds		
SJHC OBS Rounds	23-May-03	18
SJHC Family Med Rounds	25-Nov-03	12
Motherisk Rounds	9-Jan-04	50
CAPC/CPNP Annual Meetings	2002 and 2003	70
	TOTAL	222

EVALUATION – HEALTH CARE PROVIDER TRAINING

i. Evaluation of training workshops

Questionnaires evaluating the training workshop were completed at the end of the workshop by those attending. The numbers completing these process questionnaires from each of the training groups is give in Table 5 below.

Table 5: Numbers completing training workshop questionnaire

GROUP	N	% of completed Qs
Smokers' Helpline Counsellors	21	24
Clinical Tobacco Intervention Workshop Physicians, dentists, pharmacists	11	13
Motherisk Telephone Counsellors	4	5
Nicotine Dependence Clinic (CAMH)	5	6
St. Joseph's Health Centre Nurses, physicians, social workers	27	31
Community Action Program for Children/Canada Prenatal Nutrition Program (CAPC/CPNP) October 15, 2003	15	17
SJHC OBS Rounds	5	6
TOTAL	88	100

Reported satisfaction with various aspects of the training workshops are given below in Table 6.

Table 6: Participants' satisfaction with aspects of the training workshops

ASPECT OF WORKSHOP	<i>Satisfied or Very Satisfied</i>		<i>Slightly or Very Dissatisfied</i>	
	N	%	N	%
Length of workshop	79	91	8	9
Organization of workshop	85	98	2	2
Lectures/presentations	85	99	1	1
Group discussions	85	99	1	1
Case presentations	76	95	4	5
Location/training facility	78	93	6	7

More than 90% of respondents were satisfied with every aspect of the workshop, and 95% or more were satisfied with aspects related to content: organization; lectures/presentations; group discussions; case presentations.

Effect on views of smoking cessation for pregnant and post-partum women:

Seventy-seven respondents (88%) reported that the workshop affected their views on smoking cessation for pregnant and post-partum women. Of those who provided comments on this topic, the most common were that the workshop: validated their

present techniques; increased understanding of the risks of smoking during pregnancy; provided a clear systematic approach; provided good resources; increased their confidence; clarified the importance of the role of health care providers in helping pregnant women stop smoking.

Effect of workshop on confidence in providing smoking cessation services to pregnant and post-partum women:

All but two respondents (N = 85; 98%) reported that the workshop increased their confidence in providing smoking cessation services to pregnant and post-partum women. The most common comments on this topic were that the workshop: gave information to share with clients; increased awareness of resources for clients; increased confidence; increased understanding of evidence-based techniques; increased knowledge of how to approach clients.

Anticipated effect on practice/services of smoking cessation to pregnant and post-partum women:

Everyone who responded to this question reported that the workshop would improve their practice in providing smoking cessation services to pregnant and post-partum women. The most common comments on this topic were that the workshop: increased their knowledge; increased their confidence; will help them to be more proactive; increased their knowledge of referral sources and Helplines.

Topics not adequately covered:

Fifty-two respondents (68%) reported that there were topics that would increase their knowledge of how to help pregnant and post-partum women to quit smoking that were not adequately covered in the training workshop. Topics listed by most respondents were: special counselling techniques; caller simulations, case studies, and examples; Stage of Change; more concrete responses; preventing relapse; nicotine in breast milk; behavioural approaches.

In addition, many respondents made comments that the workshop was “excellent” or “informative” and that more information is needed on such an important topic.

ii. Pre-training and Post-training questionnaires

Questionnaires were developed for the Smokers’ Helpline (SHL) and Motherisk counsellors and for St. Joseph’s community health care providers who were trained. Initial questionnaires assessing participants’ knowledge, attitudes, current practices, and barriers to helping pregnant women quit smoking along with demographic and work setting information were mailed to potential participants before the training workshop, or were administered before the training began. Follow-up questionnaires assessing similar questions and asking about the helpfulness of the training were mailed to those trained at least three months following the training.

Partially due to the effects of SARS on the training schedule, the numbers of completed questionnaires are small. In addition, the respondents completing the follow-up questionnaires included some who had completed initial questionnaires and some who had not done so. As the number of respondents who completed both questionnaires was small (N = 20), data are presented as percentages of the group completing the initial questionnaire and the group completing the follow-up questionnaire. No statistical tests were performed.

Numbers of completed initial and follow-up training evaluation questionnaires are given in Table 7 below.

Table 7: Numbers of completed Initial & Follow-up questionnaires completed

GROUP	INITIAL		FOLLOW-UP	
	N	%	N	%
Telephone	20	38	8	33
St. Joseph's Community	33	62	16	67
TOTAL	53	100	24	100

Details of the characteristics of the groups completing the initial questionnaires before training are given in Appendix VII. Telephone counsellors were most likely to have a background in counselling or social work, or an "other" background, while those in the St. Joseph's Community groups were most likely to be nurses or doctors. Only three out of 53 initial questionnaires were completed by men. There was only one current smoker among all trainees completing questionnaires; 16 reported having been smokers in the past. A majority of the telephone counsellors were from Smokers' Helpline. About half of the St. Joseph's Community participants worked in the hospital; the remainder were in other work settings in the community.

Overall views of training workshop:

On the follow-up questionnaire, 38% of respondents reported that they had done self-directed reading on tobacco-related topics since the training, and 29% had read on pregnancy-related topics. While about half reported after training that they needed no further training on smoking and pregnancy, 39% said that they would like further training on both tobacco smoking and on pregnancy. The overall ratings of the workshop on the follow-up questionnaire are given below in Table 8.

Table 8: Overall ratings of PREGNETS training workshop on Follow-up questionnaire

Overall rating of workshop	N	%
Entirely adequate	18	78
Mostly adequate	4	17
Mostly not adequate	0	0
Not adequate	1	4
Total	23	100

Initial Knowledge and Skills:

On the initial questionnaire, one third or more of the respondents reported that they had “excellent knowledge & skills” in the knowledge topics of “Stages of Change” model, physical and emotional changes in pregnant women, fetal development, and post-partum emotional changes in mothers, and in the skill areas of initiating discussion with patients about quitting, motivating patients to quit, and making appropriate referrals for smoking cessation. Half or more of respondents said they would like to learn more about the pharmacology of nicotine, the interaction of nicotine with other drugs, effects of mother’s smoking on breastfeeding, effects of ETS on pregnant women and the developing fetus, the effects of ETS in breastfeeding, the use of gum and patches and bupropion for smoking cessation in pregnant women, and helping post-partum women to quit smoking or maintain abstinence.

Effect of training on knowledge & skills:

After the training, on the follow-up questionnaire, 75% or more of respondents reported that the PREGNETS training either “Greatly improved my knowledge” or “Improved by knowledge somewhat” for every one of the knowledge topics listed. A similar percentage of respondents reported that the PREGNETS training “Greatly helped my practice” or “Helped my practice somewhat” for most of the skill areas listed. However, 30% or more reported that the training had no effect on their practice in the skill areas of using bupropion for smoking cessation in pregnant women, use of pharmacological agents for smoking cessation in pregnant women, following up on patients quit progress, dealing with post-partum depression, advising patients about ETS in the home, and advising women about living with a partner who smokes. About one third of follow-up questionnaire respondents were Helpline counsellors who are instructed not to recommend NRT or pharmacological aids to pregnant patients, and who have little opportunity to follow up with their patients’ quit progress, possibly accounting for the workshop’s reported lack of effect on practice in these skill areas.

Practice with pregnant smokers:

Table 9 below shows the percentage of respondents on the initial and follow up questionnaires who performed each of the listed actions “with all or almost all of patients/clients who smoke.”

Table 9: Practice with pregnant smokers before and after training

	<i>Initial</i>	<i>Follow-Up</i>
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ACTION	Questionnaire N (%)	Questionnaire N (%)
Discuss the effects of smoking on pregnant women and the developing fetus	18 (38)	9 (41)
Advise cutting down or quitting smoking	27 (56)	16 (73)
Assess patient's readiness to quit smoking	20 (43)	12 (55)
Counsel patient/client on behavioural techniques for quitting smoking	17 (36)	10 (46)
Give pamphlets on quitting smoking	17 (35)	12 (55)
Refer patient/client to a smoking cessation program or 1-800 Quit Line	9 (19)	7 (33)
Suggest the use of nicotine gum or patches to help with quitting smoking	4 (9)	1 (5)
Suggest the use of bupropion (Zyban®) to help with quitting smoking	1 (2)	1 (5)
Refer patient/client to a physician for help in quitting smoking	13 (28)	8 (36)
Follow up on patient's progress with quitting	10 (21)	5 (23)

Most practice actions showed increases in the percentage of respondents who perform the action with all or almost all of their pregnant patients who smoke, except for those involving pharmacological interventions and follow-up. As mentioned above, about one third of training participants were telephone Helpline counsellors who are instructed not to advise pregnant women to use pharmacological agents to quit smoking and who have little opportunity to follow up with patients. These participants are less likely to increase their practice in these areas.

Actions when pregnant patients live with a smoker:

On both questionnaires, respondents were asked about actions they take when they learn that a pregnant patient lives with a smoker. In this situation, between 21% and 36% of respondents report (on both questionnaires) discussing the effects of ETS on pregnant women and the developing fetus, advising about reducing ETS in the home and advising about how to help a partner or other adult to consider quitting. However, while only 9% of respondents reported on the initial questionnaire reported that they gave “all or almost all pregnant patients/clients who live with a smoker” pamphlets about reducing ETS in the home, 32% of respondents reported on the follow-up questionnaire that they took this action, indicating that the training workshop increased participants’ awareness of available materials about ETS.

Familiarity with materials to help pregnant women quit smoking:

Table 10 below shows the percentage of respondents who reported that they were familiar with each of the listed materials to help pregnant women quit smoking, before and after the PREGNETS training.

Table 10: Familiarity with materials to help pregnant women quit smoking

MATERIAL	Initial Questionnaire N (%)	Follow-up Questionnaire N (%)
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Approaching Smoking in Pregnancy: A Guide for Health Professionals	0 (0)	8 (33)
Kick Butt for 2	3 (6)	2 (8)
Asking to Listen: Helping Pregnant & Post-partum women and their families to quit or reduce smoking	4 (9)	7 (29)
Treating Tobacco Use and Dependence: US Clinical Practice Guidelines and Quick Reference Guide	5 (11)	6 (25)
Stopping When You're Ready: A 5-part series for quitting smoking during pregnancy	3 (6)	6 (25)
How Not to Smoke: A program for women who want to quit smoking	6 (13)	5 (21)
Start Quit, Stay Quit: Preventing smoking relapse	2 (4)	3 (13)

For every manual except one, there is an increase after training in the percentage of respondents who report being familiar with the material. Unfortunately, on the follow-up questionnaire, still very few respondents reported that they make regular use of these materials in counselling with their patients.

Barriers to helping pregnant women quit smoking:

Respondents were asked to rate various factors on their importance as a barrier to counselling pregnant women about smoking. The percentage of respondents rating each factor as a “Very important barrier” or “Somewhat important barrier” on the initial and follow-up questionnaires is given below in Table 11 for selected factors.

Table 11: Important barriers to counselling pregnant women about smoking

FACTOR	<i>Initial Questionnaire N (%)</i>	<i>Follow-Up Questionnaire N (%)</i>
My lack of knowledge about smoking cessation techniques	27 (54)	11 (46)
My lack of knowledge about the use of NRT and pharmacological approaches to smoking cessation in pregnant women	41 (82)	11 (46)
Lack of laminated flow charts or reminder tip sheets about giving smoking cessation advice	32 (65)	11 (48)
Lack of adequate smoking-related pamphlets and materials for pregnant women	42 (84)	19 (79)
Lack of specific reimbursement for my time spent counselling pregnant patients/clients	12 (24)	2 (11)
Patients/clients are not interested in quitting smoking	39 (77)	16 (67)
Lack of clear guidelines for smoking cessation in pregnant women	37 (77)	10 (56)

The factors listed above were selected from a longer list of potential barriers on the questionnaire to represent those that might be most amenable to change by education and others that showed change from the initial pre-training questionnaire to the follow-up questionnaire. Fewer respondents endorsed lack of knowledge and lack of materials and guidelines as barriers after receiving the PREGNETS training. The lowered endorsement of lack of patient interest as a barrier could represent increased skill in motivating patients to quit. It is not clear that training would lower the barrier of lack of specific reimbursement for time spent counselling pregnant patients.

Summary of Health Care Provider training evaluation:

The numbers of health care providers trained and completing questionnaires was somewhat limited (see “Challenges” below), but among those who completed the training and the follow-up questionnaires, the level of satisfaction with the training was high. Almost all respondents were very satisfied with the training workshops and reported that they would benefit their practice with pregnant women. Increases in knowledge after the PREGNETS training were reported by a great majority of respondents. While respondents appeared to increase their advice-giving to patients/clients after the training, increased practice following training was especially marked in the numbers giving out smoking-related pamphlets and pamphlets about reducing ETS in the home. These findings are possibly reflected in respondents’ increased familiarity with the listed materials to help pregnant women quit smoking after training. One limitation on measures of practice change is the fact that counsellors at SHL are instructed not to recommend pharmacological approaches to smoking cessation to pregnant women, and have limited opportunity to follow up with callers. While reported knowledge of these areas increased after training, practice did not. Barriers to helping pregnant women quit smoking that were less likely to be reported after training were those involving lack of knowledge, lack of flow charts or tip sheets, and lack of materials to give to pregnant smokers. In sum, respondents reported satisfaction with the PREGNETS training, and increases in knowledge and in practice in important areas following the training workshops.

k. Establish Provincial Resources

To increase access to cessation support for pregnant and post-partum women across the entire province, PREGNETS trained telephone counsellors at the Smokers’ Helpline and at the Motherisk Information Line. Counsellors received training in information related to smoking among pregnant and post-partum women, effective interventions for smoking cessation, issues to consider while counselling this population, and information about the safety of pharmacotherapy for smoking cessation in pregnant and post-partum women. Smoker’s Help Line recorded 54 calls from pregnant women in the calendar year 2003, and a total of 73 calls from pregnant women from August, 2002 until March, 2004.

EVALUATION – HELPLINE SERVICES:

Following training of counsellors in Smokers Help Line (SHL) and Motherisk, volunteers called these help lines posing as pregnant smokers, or the husband of a pregnant smoker, asking for help. They recorded the advice they were given, and additional comments, on a checklist. Calls were made between November 2003 and March 2004.

Table 12: Number of simulated calls to Helplines

CALLER	Smokers Help Line	Motherisk
Pregnant woman	4	3
Husband	3	0

Half of callers to SHL were asked if they were pregnant. Callers to Motherisk volunteered the fact that they smoked.

Actions taken by Helpline Counsellors:

All callers were asked about their (or their wife’s) quantity and frequency of smoking. All but two callers were advised about the effects of smoking on the developing fetus. A similar number were advised to quit smoking, but, at SHL, they were advised to cut down gradually before quitting.

How to Quit: Seven callers received some advice on behavioural techniques for quitting smoking, and eight were offered pamphlets or other materials about quitting smoking. Two callers were advised to use a diary to record quit progress. When callers asked about the use of nicotine replacement (NRT) for smoking cessation, counsellors at SHL advised that NRT is not recommended for use in pregnancy. Motherisk counsellors advised callers to see their family doctor or their ob/gyn physician to discuss the use of NRT. Counsellors also advised callers to see their family doctor for help with quitting; some referred callers to websites for help – some to the PREGNETS website. Only two callers were encouraged to set a quit date, and they were told that this would be after a period of cutting down before quitting. Specific follow-up arrangements were not made by counsellors, but callers were encouraged to call back whenever they want.

Second-Hand Smoke: No counsellors asked the pregnant women whether there were other smokers in their homes, and advice about the effects of second-hand smoke on pregnant women and the developing fetus was not given. Only the husbands of pregnant smokers were given advice on how to help others stop smoking.

Recommend Service?

Callers were asked if they would recommend the service they called to a pregnant or postpartum woman who is interested in quitting smoking or wants to prevent relapse to smoking. Results are presented below. In general, the callers would recommend calling the services, but two pregnant woman callers were doubtful about recommending the SHL.

Table 13: Recommendations of Helpline services by simulated callers

CALLER/SERVICE	<i>Recommend highly</i>	<i>Think about recommending</i>	<i>Doubtful about recommending</i>	<i>Would not recommend</i>
Pregnant woman/SHL	0	2	2	0
Pregnant woman/Motherisk	2	1	0	0
Husband of pregnant smoker/SHL	2	1	0	0

Positive comments from the callers about the Helpline services were that the counsellors were non-judgemental, supportive, and encouraging about quitting smoking. One caller noted that she was not made to feel ashamed of smoking during pregnancy. Helpful behavioural strategies were given and the effects of smoking on the

fetus were explained. Counsellors told callers that pregnancy is a good time to quit smoking and that smokers should quit not only during pregnancy but not resume smoking after the baby is born. Some counsellors stressed the difficulty of quitting and praised the callers efforts to quit. One counsellor explored the link between smoking and depression and anxiety.

Negative comments were that the advice given was quite general and was given without the counsellor asking much about the caller's specific background or situation. Two callers to SHL reported that it was obvious that the person was reading from a script in advising the caller, and felt that the counsellor was in a hurry to conclude the call. One caller expressed ambivalence about quitting smoking and felt that this ambivalence was not understood by the counsellor. One caller reported that the counsellor was not aware of different strategies for quitting.

I. Dissemination

PREGNETS disseminated information, and delivered over 12,000 products through various methods, including website, presenting workshops and posters, email mailing list, links to websites, articles for newsletters and distribution of our products. The following provides details of our dissemination practices.

Website: The website contained a number of resources including the PowerPoint presentation, the desk reference and referral cards as well as information on smoking cessation resources. A press release was issued by the Centre for Addiction and Mental Health (Appendix V) to promote the website and people that attended the training were also encouraged to visit the website as well as encouraged to promote the website to their colleagues. Appendix VI provides details of the website traffic.

Posters: In response to feedback from staff at St. Joseph's Health Centre who attended the PREGNETS training, we developed 25 posters that staff could display in examination rooms, waiting rooms and other areas that pregnant and post-partum patients access. The posters outlined the benefits of quitting smoking as well as provided the resources that could help this population quit smoking.

We also developed similar posters (500) for Toronto Public Health to be distributed and posted in Toronto public libraries and family health units.

Articles were written and published in various newsletters including the following. See Appendix VIII for copies of articles.

- CTI Bulletin
 - Newsletter of the Clinical Tobacco Intervention Program. Volume 4, Issue 1, March 2004. *The CTI Bulletin* is a newsletter designed for physicians, pharmacists, and dentists interested in helping patients to quit smoking and preventing young people from starting. This bi-annual newsletter keeps

8,000 clinicians informed about the CTI Program and cessation news. The *CTI Bulletin* provides news and information on tobacco control issues, as well as tips and pointers to help practitioners implement CTI and increase the numbers and scope of interventions performed. The *CTI Bulletin* serves as a reminder of the importance of helping patients to stop smoking.

- **IMPrint**
 - Newsletter of the Infant Mental Health Promotion Project (IMP) at the Hospital for Sick Children. Spring 2004. IMPrint plays a major role in increasing understanding of the importance of relationships in the early years and raising standards of practice. As a result, thousands of families are receiving better services.
- **St. Joseph's Health Centre Family Medicine Newsletter (Fall 2003)**
 - A brief paragraph was included in the newsletter distributed to family physicians in the hospital and those associated with the hospital.
- **Ontario College of Family Physicians newsletter– A section describing PREGNETS was included in the electronic newsletter, which reaches approximately 6,800 family physicians across Ontario in the Fall of 2003**

Poster presentations were made at several annual meetings and conferences:

- National Conference on Tobacco or Health, Ottawa, ON: December 2002
- Best Start Annual Conference Toronto, ON: January 2003
- Environment and Health Conference, Toronto: October 2003
- CME Annual Meeting, Toronto, ON November 2003
- National Conference on Tobacco or Health, Boston, MA: December 2003
 - This poster was translated into a white paper available online at www.v-cc.net (Appendix VIII)
- Society of Obstetricians and Gynaecologists of Canada (SOGC) Annual Meeting, Toronto, ON: December 2003

Distribution of materials (desk references with referral cards):

Desk references were mailed out to 6,800 members of the Ontario College of Family Physicians across Ontario in March 2004. Another 2,355 were distributed at workshops, poster presentations, community presentation, rounds and conferences. There were special requests for 1,300 desk references for St. Joseph's Health Centre Family Medicine Clinic, Ontario College of Family Physicians and Ottawa physicians. Approximately 50 were distributed at a Catholic Children's Aid Society Meeting in May 2003 (Toronto).

Community presentations:

Smoking Cessation and Pregnancy Workshops were presented at:

- CAPC/CPNP Annual Meetings – September 2002 and October 15, 2003

- Making Gains Conference September 2003
- Healthy Babies, Healthy Children Workshops (OCFP): September 4, 2003 and November 9, 2003 (Toronto)
- Ontario Tobacco Network Retreat (London, ON) January 22, 2004
- Best Start Annual Meeting (Toronto) January 28, 2004
- Staff at Jean Tweed Centre and Pathways, February 25, 2004. Jean Tweed Centre is a treatment facility for women with substance abuse problems. Pathways to Healthy Families is a new project funded through Ontario's Early Years Plan to enhance the capacity for services to pregnant and parenting women with children ages 0-6 who have substance use concerns.
- Haldimand Norfolk Health Unit June 11, 2004 (Simcoe, ON)

10. CHALLENGES TO THE PROGRAM AND TO THE EVALUATION

The PREGNETS project had the misfortune to be just getting under way when the SARS crisis affected Toronto and Ontario hospitals and health care workers. During this time in the spring and summer of 2003, many non-clinical workers were kept from going to work in hospitals and health care workers were prohibited from meeting in groups, precluding PREGNETS training. This situation accounts for the lack of training events between February and September 2003, which otherwise would have been the most productive training months of the project. Training staff were left pressed to complete training events in the fall of 2003 before project funding ended. In addition to lost training sessions, information sessions educating groups about the project could not be held during this time. One effect of the reduced numbers trained was the small number of trainees completing pre- and post-questionnaires, precluding statistical analyses.

On the advice of members of the steering committee, and due to limited resources, a decision was made early in the project to focus training efforts on the two provincial Helplines for smoking cessation and for pregnant women, and on the Toronto St. Joseph's Health Centre clinics and community. This decision kept the training area manageable (although the PREGNETS team did respond to requests for training from others outside this area) but also increased the vulnerability of the project to SARS, as the restrictions on health professional activities were greatest in the Toronto area. This geographic selection might also limit the generalizability of the evaluation results, but differences from the rest of Ontario in health care provider practice are not known.

Over the duration of the PREGNETS project, staff responded to input from steering committee members and service providers who suggested various initiatives, resources for the website and toolkit, and requested training for a variety of groups throughout the province. The PREGNETS staff proved flexible in responding to various requests,

but the evolving nature of the project precluded development of a fixed evaluation plan at the beginning of the project. Nevertheless, initiatives were evaluated as they arose.

11. SUMMARY AND RECOMMENDATIONS

Despite the limitations imposed by the SARS crisis, the PREGNETS project achieved each of its major goals. The steering committee formed the core of a network of key resources throughout the province. Network members not only provided input to staff throughout the project but also reported that participation in the project was beneficial to themselves and to their organizations. A website was established for use by health professionals and pregnant women. It has proved to be very popular and continues to be used daily. The toolkit for health professionals is downloadable and has been used by many professionals. Other resources (Desk Reference and Referral Card) were widely distributed and requested. The Ontario Helpline resources of Smokers' Help Line and Motherisk offer increased support to pregnant smokers after training by PREGNETS and a wide variety of other health professionals have been trained in the knowledge and skills necessary to help pregnant women quit smoking. Awareness of the dangers of smoking by pregnant women, and of the PREGNETS project itself, has been raised throughout Ontario, Canada, and internationally through conference presentations and other dissemination activities.

Response to the project has been positive from all quarters: steering committee members; users of the website, both health professionals and pregnant women; users of the toolkit and other resources; Helpline counsellors and other health professionals who received training; health care providers, researchers, and agencies who learned about the project. There is a clear need for the information and training provided by PREGNETS, indicated by questionnaire responses and ongoing requests for information and training.

Planning and initiating a project with the scope of PREGNETS involved consultations with a variety of stakeholders to determine provider community needs and to establish effective links for the project's activities. The time taken for this groundwork, and the delays contributed by SARS, mean that some of the activities of PREGNETS were not long established before the end of the funding period. Therefore, recommendations focus on continuing and expanding the work begun by PREGNETS.

RECOMMENDATIONS:

Continue and expand the information development, dissemination, training, and networking activities of PREGNETS, specifically:

HEALTH CARE PROVIDERS:

1. Through networking, publicity, and education, raise awareness among health care providers and related organizations of the importance of addressing smoking among pre-pregnant, pregnant, and postpartum women and those who live with these women,

and with infants and children. Increasing this cultural awareness and priority should increase interest in, and uptake of, training specific to helping pregnant, pre-pregnant, and post-partum women quit smoking.

2. Develop and disseminate training modules and resource materials for all health care providers who have the opportunity to address smoking by pregnant, pre-pregnant, and post-partum women and their families. Support health care provider organizations in utilizing these materials for training and in developing practice environments supportive of smoking cessation services for pregnant, pre-pregnant, and post-partum women and their families.

WOMEN OF CHILDBEARING AGE AND THEIR FAMILIES:

3. Raise awareness among the general public, and especially among women of childbearing age, of the importance of addressing smoking among pre-pregnant, pregnant, and postpartum women, and those who live with these women, infants, and children.
4. Develop and disseminate materials for pregnant, pre-pregnant, and post-partum women and their families, to help them quit smoking.

ALL ACTIVITIES:

5. Develop and disseminate materials and training for health care providers, and materials for pregnant women, in French and other languages.
6. Expand these activities throughout Ontario and the rest of Canada.
7. Continue to monitor the needs for these services and evaluate their delivery.

12. VISION FOR THE FUTURE

a. Systemic approach

Appendix I (Precede-Proceed Model) provides recommendations for future directions. The model begins with defining the problem (negative effects of smoking and of environmental tobacco smoke on the mother, fetus and children). It also lists the various determinants of the problem, from biological, behavioural, environmental, social to health care. It describes various approaches that can address the problem. Some of the proposed solutions include:

- Education of the public
- Social marketing
- Persuasive communication
- Taxation
- By-laws (e.g., no smoking in public places)
- Training of health care professionals in brief interventions

- Increasing utilization of resources
- Increasing access to pharmacotherapy through research for safety and efficacy as well as financial access
- Encouraging Colleges to adopt standards of practice

PREGNETS was able to address several components of this model:

- Training of health care professionals in brief interventions
- Education of the public and health professionals through the website
- Increase awareness of community referral resources
- Website of better practices
- Toolkit of intervention and resources
- Creation of a network to increase collaboration

PREGNETS next direction?

According to the evaluation results, model components addressed by PREGNETS had a favourable response and did affect the knowledge and behaviour of many health professionals. The next steps should include further dissemination to reach a larger portion of the health care professionals in Ontario. Further education and training initiatives should focus on increasing capacity among health care professionals to address smoking among pregnant and post-partum women. One specific group that can provide access to pregnant and post-partum women are the CAPC (Community Action Program for Children) and CPNP (Canada Prenatal Nutrition Program) projects. These projects target services to women who are pregnant, or who have children from 0 – 6 years old and they work to address several determinants of health, including reducing the incidence of low birth weight babies. CAPC and CPNP projects have already expressed an interest in developing capacity among their projects to address the issue of smoking.

PREGNETS is situated well to continue in this direction because it already has an existing network necessary to address the issue of smoking in pregnant and post-partum women and also has the infrastructure in place to carry out the various activities (training capacity, partnerships, etc). In their feedback, steering committee members specifically suggested expansion in the these directions.

The PREGNETS project can also be adapted and disseminated across Canada. The Steering Committee or network would expand to consist of national bodies (i.e. Canadian Medical Association, Canadian Pharmacists Association, Canadian Dental Association, Canadian Nurses Association, Society of Obstetricians and Gynaecologists of Canada, etc). The National Consortium of Quitlines could also be involved to ensure that all smoker's helplines across Canada are equipped to assist pregnant and post-partum callers change their smoking status. Motherisk is already available at a national level.

Sustainability and funding

Through various partnerships, particularly with the Ontario College of Family Physicians, some of the training for physicians, will continue (i.e., a case study on pregnancy and smoking will be included in Health Child Development workshops).

The Smokers' Helpline and Motherisk Information Line will continue to offer supportive counselling and information to pregnant and post-partum women interested in quitting or reducing smoking. Motherisk has identified a need to develop a small training manual for future telephone counsellors which would provide them with information on smoking and pregnancy as well as cessation. Additional funding would be required for this product development.

We are currently exploring various options that would allow us to sustain and continually update the website. The website evaluation demonstrated how useful the website has been. The cost of maintaining the PREGNETS website is relatively low compared to the initial development costs and it is vitally important that this resource be continued. If we do not find funding, then the website, toolkit and the other products accessible through our website will no longer be available.

Future directions identified throughout the PREGNETS project include:

- Website: Update the website, expand and improve the section for pregnant women and keep the information current.
- Toolkit: Revise the toolkit to reflect feedback from the survey and from visitors. Disseminate toolkit to a larger number of health care providers across the province.
- Translation: Translate the website and the toolkit into French.
- Sub-populations of female smokers: Adapt PREGNETS to address smoking among lower socio-economic women. For example, partnering with CAPC/CPNP projects to incorporate smoking interventions into their services.
- Mass media campaign to educate women about smoking in pregnancy and about resources available to help make changes in smoking status.

AWARE (Action on Women's Addiction – Research and Education)***Wendy Reynolds***

Wendy is the Executive Director of Action on Women's Addictions - Research and Education (AWARE) which was founded in 1985 and has been incorporated as a not-for-profit, charitable organization since 1989. AWARE has a unique mandate and a nineteen year history of: developing innovative, women-centred, community strategies in the field of addiction; working with and providing support, information, and resources to women in priority populations; and disseminating community-based research, pilot projects, and evaluation services to service providers and organizations on a local, regional, provincial, and national level. AWARE's overall goal is health promotion and prevention of substance abuse by women which has led to the development of a broad range of projects and activities. All of AWARE's work is undertaken in close association with women from priority populations and with community partners. A guiding principle of AWARE's work is that women in priority populations are integral to the development of any of their projects. Further, all ideas for new projects come from women who will be the focus of the work. AWARE is committed to working with women in priority populations and to giving voice to women's experience. One of AWARE's key achievements includes maintaining integrity to their vision and to women. For the past five years, one primary focus of AWARE's work has been low-income single pregnant and parenting women who smoke. AWARE is an innovator in the participatory approach to community development and health promotion and is committed to the involvement of women in target populations in all aspects of their work. They have well-established connections with women from target populations, service providers, and umbrella organizations on a local, regional, provincial, and national basis. AWARE has the necessary working relationships, not only with women in target populations, but also with professionals in the tobacco and allied fields. Furthermore, AWARE has vast experience with the issue, having worked on tobacco issues with women as a group since AWARE's inception in 1985 and specifically, for the past five years, with low-income pregnant and parenting women who smoke.

Best Start (Community Action for Healthy Babies)***Mara Celmins***

Best Start is an innovative community-wide project that aims to reduce the prevalence of low birth weight babies by promoting the health of women and families before, during and after pregnancy. The unique comprehensive model and multi-risk factor approach of Best Start focuses on ways to support and mobilize communities to promote health of women and families. The interventions they have used target the consumer, health care provider and/or policy maker. Topics addressed to date include alcohol, tobacco and other substance use, anti-poverty, anti-violence, environment, low birth weight awareness, nutrition, reproductive health, social support, access to services and the workplace. Staff at the resource centre provide consultation, training, and resources to organizations across Ontario working in the area of maternal and newborn health promotion.

Clinical Tobacco Interventions***Jennifer Hart (OMA), Sherry Hertz (OPA), Nancy LaPlante (ODA)***

The Clinical Tobacco Intervention Program began in 1996 at the Ontario Medical Association (OMA), in collaboration with the Canadian Medical Association and two other provincial medical associations. In 1999, the OMA joined with the OPA and ODA and submitted the proposal "Mobilizing Ontario Health Care Professionals for Clinical Tobacco Intervention" that received funding as part of the Ontario Tobacco Strategy from the Ministry of Health and Long-Term Care. CTI is an evidence-based approach to enhance the smoking cessation interventions of health care practitioners, namely physicians, dentists, pharmacists, and their support staff, through the dissemination of information kits and training programs. Each association is working to increase the awareness, role, and quality of CTI program delivery to their members. Since January 2000, the CTI Program has held more than 80 training events throughout the province, training approximately 3,500 health care professionals. Recruitment efforts are successful, resulting in over 6,000 education kits being distributed to physicians, pharmacists and dentists. Recruitment of practitioners and dissemination of CTI information are ongoing. Evaluation of program activities is essential to the success of CTI. To this end, pilot projects and surveys of professional groups and pilot projects are conducted.

Motherisk, Hospital for Sick Children

Susan Santiago

Since its inception in 1985, Motherisk has provided counselling to over 200,000 pregnant women and their health professionals on the risks of drugs, chemicals, radiation, and infections during pregnancy and lactation. Motherisk has established several specialized counselling services to deal with alcohol and drug abuse, morning sickness, HIV and chicken pox in pregnancy. Presently, Motherisk is inaugurating a service for patients with schizophrenia. Motherisk staff has vast experience in planning and executing various elements, including focus groups, surveys with pregnant women and their health professionals, follow-up of pregnancy outcomes as well as needs assessments. Members of Motherisk have published over 250 peer-reviewed scientific papers on exposure risk in pregnancy and 10 medical books. In addition, they created and publish a monthly column for family physicians on risks in pregnancy (Motherisk Update) in Canadian Family Physician. They have established a frequently visited website: www.motherisk.org.

Ontario Tobacco Research Unit; University of Toronto

Joan Brewster

The Ontario Tobacco Research Unit (OTRU) is a Unit of the Department of Public Health Sciences at the University of Toronto. OTRU was established by the Ministry of Health and Long-Term Care of Ontario in 1993 to: exercise leadership in the design and conduct of tobacco-related research projects; monitor programs and activities conducted under the Ontario Tobacco Strategy and evaluate the overall Strategy; and to network and collaborate with tobacco control researchers and program people throughout Ontario, other provinces, and internationally. OTRU has a large network of co-investigators, collaborators and affiliates from Ontario, across Canada, and around the world. Dr. Joan Brewster is a Scientist in the OTRU and an Assistant Professor in the Department of Public Health Sciences at the University of Toronto. She conducted the evaluation of the PREGNETS project as a consultant.

Program Training Consultation Centre (PTCC)

Janet Nevala

The PTCC is a resource centre of the Ontario Tobacco Strategy and the Ontario Health Promotion Resource System. They are funded by Health Promotion and Wellness, Public Health Branch, Ontario Ministry of Health and Long-Term Care. PTCC itself is a partnership of three organizations: City of Ottawa Public Health, RBJ Health Management Associates, and the Centre for Applied Health Research at the University of Waterloo.

PTCC aims to improve the delivery of effective, comprehensive, tobacco use reduction interventions in Ontario by increasing the capacity of providers and organizations who engage in these activities. They provide training/workshops, consultation, information, networking opportunities and referral services related to tobacco control to Ontario health promoters. Services are provided to the following groups: health units, community coalitions, community health centres, voluntary organizations, health care providers, occupational health workers and other groups upon request. PTCC maintains a roster of Community Consultants in Tobacco who are available for on-site consultation support in program planning and implementation. Training and consultation supports cover a variety of topics, including: smoke-free spaces bylaw development and enforcement, strategic planning, minimal contact interventions for smoking cessation, smoking cessation in pregnancy, community awareness campaigns, youth advocacy for tobacco control, smoke-free homes promotion, smoke-free workplaces, and more. PTCC's Resource Dissemination Service aims to improve access to program resources for tobacco control. In collaboration with the Ontario Tobacco Research Unit, PTCC identifies program resources developed for Ontario audiences (end-users and intermediaries); reviews resources for effectiveness and plausibility; promotes those resources reviewed by experts and judged to be "recommended" or "promising"; warehouses resources not currently warehoused elsewhere; makes resources available for downloading where possible; provides resources to community workers on request; and maintains an on-line catalogue of tobacco control resources available through the PTCC as well as from other organizations.

Smokers' Helpline, Canadian Cancer Society

Gail Luciano

The Canadian Cancer Society's Smokers' Helpline is a free, confidential telephone service that provides easy access to a trained quit specialist. Telephone counsellors can help smokers develop a structured "Quit Plan", answer questions about quitting and refer smokers to services in their community.

St. Joseph's Health Centre- Centre for Addiction in Pregnancy

Dr. Alice Ordean

St. Joseph's Health Centre has been involved in the creation of a community network for the treatment of pregnant substance using women in Toronto. Both CAMH and St. Joseph's Health Centre provides priority access to treatment for pregnant women with addictions and includes both residential and outpatient care. Other members include Breaking the Cycle- a drop in addiction treatment centre for pregnant and post-partum women using drugs, public health nurses, maternity homes, child protection agencies, out-reach workers, women's detoxification and addiction treatment centres. They have created a co-ordinated service at St. Joseph's Health Centre Addiction Medicine Service in the last five years to provide woman-focused care to pregnant women using drugs including nicotine. The referrals are from across Ontario and come from midwives, child protection agencies, public health employees, Motherisk staff, and physicians (e.g. family doctors, obstetricians, and other Addiction Specialists). Most importantly, there are several self-referrals from patients who have heard about the program or who have benefited from the program in the past. Based on this experience he has provided extensive in-service training for health professionals on the issue of multidisciplinary and multi-agency care for pregnant substance using women. St. Joseph's Women's Health Centre offers help to disadvantaged and immigrant women deal with ongoing issues of sexual, physical and emotional abuse. They also have a prenatal food bank and host several groups to empower women from several different ethno-cultural and socio-economic groups.

Toronto Public Health

Catherine Clarke

Toronto Public Health is a division of the Department of Community and Neighbourhood Services of the City of Toronto. Operating under a provincial mandate to provide fundamental public health programs and services targeted at disease prevention, health protection and health promotion, Toronto Public Health aims to improve the health and wellbeing of Toronto residents and visitors. Toronto Public Health is involved in policy development, community capacity building and partnership development, social marketing, education and skill development, enforcement, clinical service provision and health status surveillance. The tobacco control program aims to reduce morbidity and mortality from tobacco use and exposure to second hand smoke by preventing the initiation of tobacco use by young people, protecting people from exposure to second hand smoke and supporting people of all ages to quit smoking.

University of Toronto

Kim Bercovitz, PhD

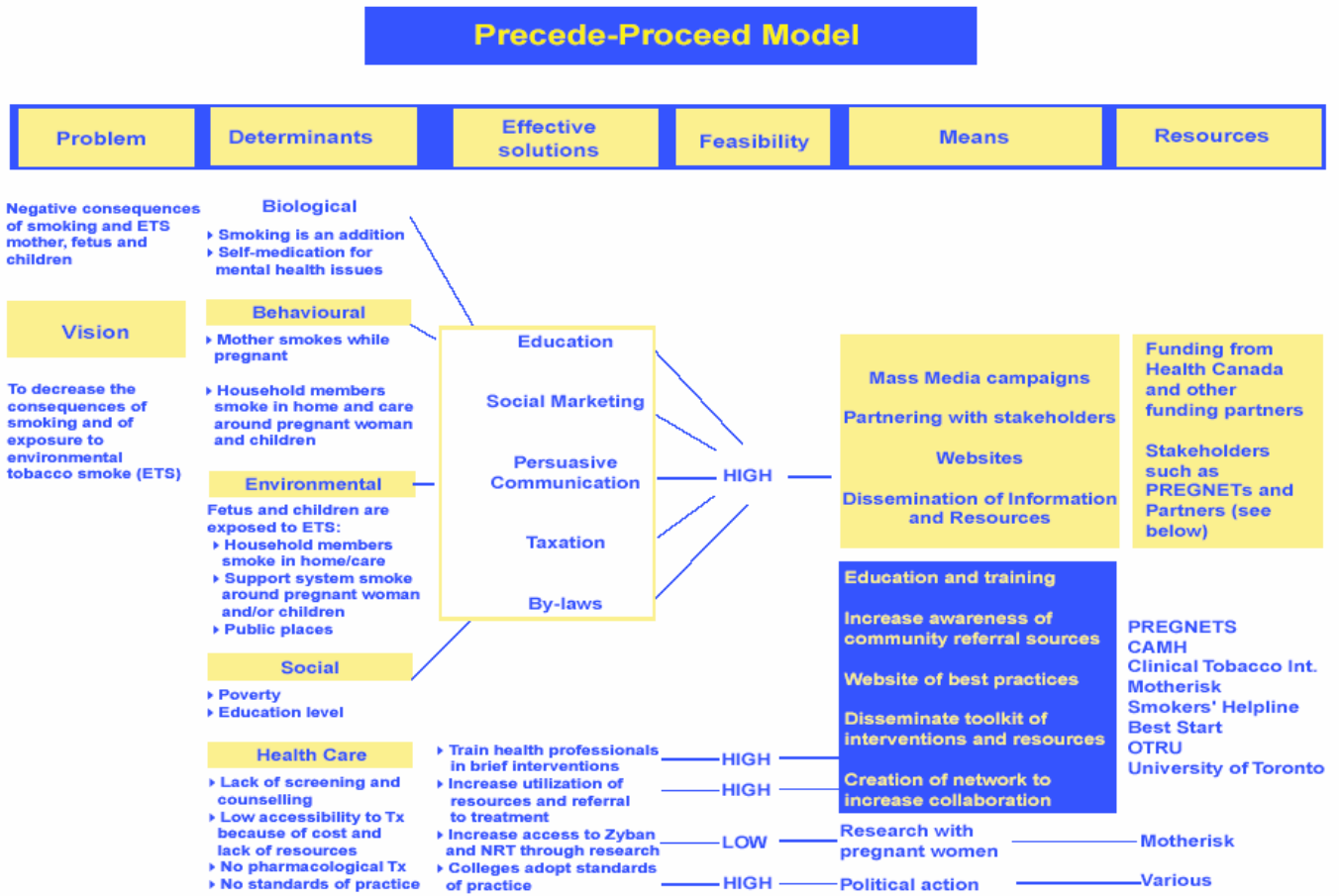
No information available.

Dr. Elizabeth MacSween

Dr. MacSween is a dentist in private practice.

APPENDIX II PRECEDE PROCEED MODEL

This is a model of health promotion developed by Lawrence Green and Marshall Kreuter is used as a planning framework to assist in designing health education and promotion programs. The model proposes that health and health risks are caused by multiple factors and all these factors should be taken into account when effecting behavioural, environmental and social change. (<http://lgreen.net/precede.htm>)



This model defines the problem and identifies all contributors/causes to the problem. Possible solutions are suggested, aiming to address all causes to ensure a comprehensive approach. A network of researchers, clinicians, and policy makers is essential to ensure that all areas are addressed.

This area represents the objectives addressed by PREGNETs.

www.pregnets.org



Benefits of quitting smoking

Smoking during pregnancy is a major public health problem because it can lead to serious health problems in the offspring. Smoking also harms a woman's health. There are many benefits to quitting smoking at any time during the pregnancy, especially in the first trimester.

Benefits of quitting smoking for the woman

- ▶ Decreased risk of developing cancers, heart disease, stroke, and circulatory problems
- ▶ Decreased risk of respiratory diseases (chronic obstructive pulmonary disease, emphysema, chronic bronchitis, flu, colds, pneumonia)
- ▶ Decreased risk of developing peptic ulcers, tooth loss, gum disease, osteoporosis, thyroid disease and menstrual problems

Benefits of quitting smoking for a pregnancy

- ▶ Decreased risk of spontaneous abortion and perinatal mortality
- ▶ Decreased risk of vaginal bleeding, premature delivery, developing abruption placenta and placenta previa
- ▶ Decreased risk of having a lower birth weight baby
- ▶ Decreased effect on quality and quantity of breast milk


Benefits of eliminating second hand smoke around infants and children

- ▶ Decreased risk of SIDS
- ▶ Decreased risk of children developing bronchitis and pneumonia
- ▶ Significant decrease in risk of developing asthma & allergies
- ▶ Children may develop fewer middle ear infections
- ▶ Infants may be less cranky or colicky

RISK means that the chance of suffering negative consequences is increased but does not mean it definitely will occur.

Screening for smoking among your female patients takes only a few minutes. Use the algorithm on the reverse for a quick, easy guide to screening your patients.

www.pregnets.org



How to screen for smoking in pregnant women

ASK

How many cigarettes do you smoke?

Smokes _____ cigarettes

Smokes 0 cigarettes

ADVISE

How do you feel about quitting smoking?

Ready to quit Not ready to quit

Does anyone smoke around you or your children?

Educate ways to stop or decrease exposure to second hand smoke.

- ▶ Encourage family/friends who smoke to quit
- ▶ Encourage family/friends to not smoke around the pregnant woman, the infant or child
- ▶ Do not allow smoking in the home or family vehicle
- ▶ Do not frequent places that allow smoking


Strongly advise patient to quit. Offer help or refer them to the Smokers' Helpline or Healthcare even if they are not ready to quit. Ask about exposure to second hand smoke.

Smokers' Helpline
1-877-513-5333

www.pregnets.org

Motherisk Helpline
1-877-327-4636

Centre for Addiction and Mental Health, 33 Russell St., Toronto, ON M5S 2M
 416-533-8301 ext. 6943 pregnets.org or www.pregnets.org
 Funded by the Tobacco Control Programme, Health Canada, 2002-2006.





Smoking Cessation Resources

Smokers' Helpline 1.877.513.5333
Motherisk Helpline 1.877.327.4636

CAMH Nicotine Dependence Clinic 416.535.8501
St. Joseph's Health Centre Quit for Life Clinic 416.530.6860

www.pregnets.org www.stopsmokingcenter.net

Tips to Help You Quit

Make a Quit Plan

How will I prepare: _____

My quit date: _____

Who will help me: _____

Medication Plan: *Discuss with Motherisk and your doctor* _____

Skills and Behaviours: *Get rid of cigarettes and ashtrays, keep busy,* _____

drink lots of water, etc. _____

APPENDIX IV TOOLKIT FEEDBACK

Toolkit Feedback Totals: December 21, 2003 – June 21, 2004

Total Toolkit Feedback Entries						94
To which professional group do you belong?						
Medicine						7%
Pharmacy						0%
Dentistry						0%
Nursing						46%
Counselling						5%
Social Work						6%
Psychology						1%
Health Professional Student						2%
Other Health Profession						24%
Pregnant Woman						6%
Other						1%
How did you hear about the toolkit?						
Link from Pregnets website						23%
Link from another website						16%
Referred by a colleague						43%
Pregnets training workshop						2%
Other						16%
Did you have any problems navigating the Toolkit, following links, or downloading materials?						
Yes						16%
No						84%
Was any element of the Toolkit not useful to you?						
Yes						17%
No						83%
Was there any information you would have liked that you didn't find?						
Yes						10%
No						90%
Do you think the Toolkit content will be useful to you in your practice?						
Extremely Useful						51%
Somewhat Useful						49%
Not Very Useful						0%
Not at all Useful						0%
Please rate the aspects of the Toolkit listed below on the following scale of 1 - 5						
	1	2	3	4	5	
Relevance of the subject matter to your work	27%	39%	8%	18%	8%	
Quality of resources and information	25%	42%	8%	10%	15%	
Usefulness of resources and information	23%	44%	8%	17%	8%	
Please indicate whether the Toolkit met each of the following objectives?				Yes	No	
Increased awareness and understanding of delivering smoking cessation interventions to pregnant women				94%	2%	
Improved knowledge of brief interventions for smoking cessation				93%	7%	
Increased knowledge of strategies to deal with second hand smoke in homes				96%	4%	
Strategies presented in the Toolkit can be easily incorporated into your practice				98%	2%	
Will you recommend this Toolkit to your colleagues?						
Yes						98%
No						2%

Toolkit Feedback Totals – Interested in More Training?

Toolkit Feedback Totals: December 21, 2003 – June 21, 2004

To which professional group do you belong?	
Medicine	8%
Pharmacy	0%
Dentistry	0%
Nursing	49%
Counselling	8%
Social Work	8%
Psychology	5%
Health Professional Student	3%
Other Health Profession	19%
I am not a health care professional but I am pregnant	0%
I am not a health care professional and I am not pregnant of currently breastfeeding	0%
Do you want training for:	
Yourself	50%
Others	50%
Is there a specific topic on which you would like more information?	
Yes	16%
No	84%
How would you like to receive further training (please check all that apply)?	
Workshop or seminar	35%
Additional materials by email	43%
Information added to the Toolkit	22%
Additional materials for downloading	61%
Interactive email advice	9%
Other	0%
Would you like to train your colleagues to help pregnant women who smoke?	
Yes	32%
No	68%

Note to Editors: National
Non-Smoking Week is
January 20 to 24



**PREGNETS.ORG
New Website to help
Pregnant and Postpartum Women Stop Smoking**

For Immediate Release, January 23, 2003 (Toronto): Up to one-quarter of pregnant women in Ontario smoke. The first website providing support for these women and those who are postpartum and their health providers was launched today by PREGNETS, a coalition of groups dedicated to preventing gestational and neonatal exposure to tobacco smoke.

"Smoking during pregnancy has serious harmful effects on the woman, the fetus and the child. Unfortunately, pregnant women don't often get the information that they need to help them to stop. Sometimes mothers do not want to talk to their health providers about their smoking due to the stigma. This website will assist women to access smoking cessation resources in their community and provide confidential assistance," says Peter Selby, the project leader and head of the Centre for Addiction and Mental Health's Nicotine Dependence Clinic and Assistant Professor, Departments of Family and Community Medicine and Psychiatry, University of Toronto.

The effects of smoking during pregnancy include an increased risk of spontaneous abortion, lower birth weight and difficulty feeding. Children who are exposed to second hand smoke have an increased risk of having SIDS and of developing asthma, allergies, bronchitis and learning disabilities.

In addition to the website, over the next two years, PREGNETS will train existing smoking cessation resource centres including the Smoker's Helpline and Motherisk at the Hospital For Sick Children to provide assistance to pregnant and postpartum mothers. A one-page reference tool will also be developed for health care providers, including family physicians, outlining the harmful effects of smoking on the woman, fetus and child and how to deliver brief cessation interventions to their clients.

PREGNETS includes representatives from the following agencies: Best Start Resource Centre, Ontario Tobacco Research Unit, Centre for Addiction and Mental Health, Clinical Tobacco Interventions, Motherisk (Hospital for Sick Children), Program Training and Consultation Centre, Smokers' Helpline, St. Joseph's Health Centre, and Toronto Public Health.

The Centre for Addiction and Mental Health (CAMH) is a Pan American Health Organization and World Health Organization Collaborating Centre and a teaching hospital fully affiliated with the University of Toronto.

Financial contribution for the PREGNETS project was provided by the Tobacco Control Programme, Health Canada.

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For a fact sheet on smoking, pregnancy and childbirth, please check out the CAMH website at www.camh.net.

For further information, please contact Anne Ptasznik, Media Relations Coordinator, at 416-595-6015.

APPENDIX VI WEBSITE STATISTICS



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PREGNETS MARCH 2004 STATISTICS

SITE TRAFFIC

	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. 04	Feb.	Mar.
Days	435	10	28	31	30	31	30	31	31	30	31	30	31	31	29	31
Page Views	74,408	9,496	10,150	12,706	8,746	1,982	2,786	4,604	2,572	2,850	4,212	3,523	2,565	5,875	3,327	5,014
Visits	25,582	916	1,540	1,901	1,833	1,343	1,147	1,477	868	1,620	1,846	1,433	1,806	2,980	2,036	2,616
Unique Users	11,977	543	682	750	702	637	526	731	530	751	866	773	802	1,390	1,011	1,283
Visit Duration		8min 36 sec	n/a	n/a	n/a	32 min 44 sec	7 min 25 sec	6 min 58 sec	6 min 18 sec	6 min 38 sec	7 min 24 sec	6 min 51 sec	5 min 27 sec	5 min 55 sec	6 min 53 sec	8 min 36 sec
Pages / Visit	2.9	3.8	6.8	6.7	3.7	3.0	2.0	3.1	3.0	1.8	2.3	2.2	1.4	2.0	1.6	1.9
Return Rate	114%	69%	129%	153%	161%	111%	118%	102%	64%	116%	113%	111%	125%	114%	101%	104%

POP-UP SURVEY RESULTS

	Total	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. 04	Feb.	Mar.
I am pregnant and am looking for some assistance in quitting smoking.	173	20	13	12	18	27	16	15	20	12	20
I am thinking of getting pregnant and want some assistance on quitting	37	2	4	4	6	6	6	1	5	3	0
I am a friend or family member of a pregnant woman smoker	59	8	7	7	4	12	2	5	6	5	3
I am a healthcare professional looking for clinical information	253	26	20	18	20	23	17	13	58	27	31
I am a healthcare professional looking for information that I can give my patients	396	27	23	19	32	21	12	27	168	30	37
Total Answers	918	83	67	60	80	89	53	61	257	77	91

APPENDIX VII CHARACTERISTICS OF RESPONDENTS COMPLETING INITIAL QUESTIONNAIRES BEFORE PREGNETS TRAINING WORKSHOPS.

CHARACTERISTIC	Helpline counsellors	St. Joseph's Health Centre	TOTAL
Occupational background**	N (%)	N (%)	N (%)
Counselling	4 (20%)	0	4 (8%)
Social Work	4 (20%)	2 (6%)	6 (11%)
Pharmacology	1 (5%)	1 (3%)	2 (4%)
Medicine	1 (5%)	9 (27%)	10 (19%)
Nursing	0	16 (49%)	16 (30%)
Dentistry	0	1 (3%)	1 (2%)
Psychology	0	1 (3%)	1 (2%)
Other ¹	10 (50%)	3 (9%)	13 (25%)
Total	20	33	53
Education			
College Diploma	4 (20%)	6 (18%)	10 (19%)
Baccalaureate	13 (65%)	14 (42%)	27 (51%)
Masters	2 (10%)	4 (12%)	6 (11%)
PhD	0	0	0
MD	1 (5%)	8 (24%)	9 (17%)
Other ²	0	1 (3%)	1 (2%)
Total	20	33	53
Gender			
Male	1 (5%)	2 (6%)	3 (6%)
Female	19 (95%)	31 (94%)	50 (94%)
Smoking Status			
Never	7 (35%)	12 (36%)	19 (36%)
Less than 100	7 (35%)	10 (30%)	17 (32%)
Yes, in the past	6 (30%)	10 (30%)	16 (30%)
Current smoker	0	1 (3%)	1 (2%)
	Mean (SD)	Mean (SD)	Mean (SD)
Years working with pregnant women**	2.2 (1.24)	9.7 (9.30)	6.85 (8.20)

** p = .000, Helpline counsellors vs. St. Joseph's Health Centre Community

CHARACTERISTIC	Helpline counsellors	St. Joseph's Health Centre	TOTAL
Type of Agency	N (%)	N (%)	N (%)
Motherisk	3 (15%)	0	3 (6%)
Smokers' Help Line	16 (80%)	0	16 (31%)
Hospital	0	17 (53%)	17 (33%)
Family Practice Clinic	0	7 (22%)	7 (14%)
CHC	0	2 (6%)	2 (4%)
Private Practice Office	0	2 (6%)	2 (4%)
Social agency ³	0	3 (9%)	3 (6%)
Other ⁴	1 (5%)	1 (3%)	2 (4%)
Total	20	32	52
	Mean (SD)	Mean (SD)	Mean (SD)
Months in Agency**	17 (13.56)	91 (94.46)	63 (84.31)
Hours worked per week	35 (6.72)	31 (12.06)	32 (10.48)

** p = .000, Helpline counsellors vs. St. Joseph's Health Centre Community

Counselling time in types of agencies

MEASURE	MOTHERISK	SHL	COMMUNITY	TOTAL
Number of respondents	3	16	39	58
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
% Time with pregnant women**	87 (2.89)	2 (2.55)	27 (33.26)	23 (33.03)
Patients counselled re smoking per month**	34 (28.92)	133 (122.62)	14 (23.44)	54 (90.33)
Pregnant women counselled re smoking per month	31 (24.76)	2 (1.15)	2 (2.22)	3 (8.92)

** p = .000, Helpline counsellors vs. St. Joseph's Health Centre Community

St. Joseph's Health Centre – Family Medicine Newsletter Fall 2003

IMPrint Vol 39, Spring 2004

Ontario College of Family Physicians Fall 2003

CTI Bulletin Volume 4, Issue 1, March 2004

White Paper www.v-cc.net January 2004

PREGNETS: Network for the Prevention of Gestational and Neonatal Exposure to Tobacco Smoke

By Peter Selby for St. Joseph's Health Centre – Family Medicine Newsletter

The prevalence of cigarette smoking among women of childbearing age continues to be a major health concern.^{i,ii,iii,iv,v,vi} A survey by Health Canada in 2001 found that 25% of Canadian women of childbearing age smoked; about 19% smoked daily and 6% smoked occasionally.^{vii} In the Ontario Health Survey of 1990,^{viii} 14% of pregnant women reported daily smoking and 2% reported smoking occasionally. Cigarette smoking during pregnancy increases the risk of vaginal bleeding, spontaneous abortion, abruptio placenta, placenta previa, prematurity, perinatal mortality, intrauterine growth retardation and sudden infant death syndrome.^{i-vi,ix,x}

Cigarettes contain over 4000 different compounds.^{xi} About 10% of these compounds constitute the particulate phase of cigarette smoke that contains nicotine and tar.^{xi} Tar is the general term for polycyclic aromatic hydrocarbon products, many of which are carcinogenic.^{xi} The remaining 90% includes carbon monoxide, carbon dioxide, cyanides, various hydrocarbons, aldehydes and organic acids.^{xi} Although, it is not certain which of these constituents are responsible for the adverse effects associated with cigarette smoking during pregnancy, hydrogen cyanide, carbon monoxide and nicotine are suspected.^{i-vi,ix}

Despite knowledge of the adverse effects of smoking in pregnancy, the majority of smokers continue to smoke while pregnant.^{xxiii} In Canada, 13 to 21% of female smokers quit and 50% cut down when planning to become pregnant or on finding out they are pregnant. An additional 2% to 22% may quit later in their pregnancy.^{xii,xxiii} Relapse during pregnancy after having quit is also substantial.^{xi,xxiv} It is estimated that 50-60% of women who quit while pregnant have relapsed to smoking within 6 months post-partum.^{xv,xxvi} This not only impacts the health of the mother but also affects the duration of breast feeding^{xvii} and increases infant exposure to ETS.^{xviii}

Attempts to enhance quit-rates improve birth outcomes.^{xix} Health professionals can be a credible source of such interventions. Based on over 500 calls received at MotheRisk, an information line for pregnant and lactating women, and the Ontario Smokers Helpline, it is evident that pregnant women get mixed messages from their health care providers. Some themes that emerged include: not being asked about smoking status, advised to stop smoking without referral to resources, advised not to quit due to “excess” stress on the baby, and advised to cut down but not attempt to quit altogether.

It has been estimated that for every dollar spent in prenatal smoking cessation programmes three dollars are saved in neonatal care due to maternal smoking.^{xx} Longer-term savings range from 5:1 to 17:1.^{xxi} Therefore, it is likely that the savings from a higher quit-rate the savings will be even greater.

Most formal or self help cessation programs follow cognitive-behavioural principles.^{xxiii} These include learning the health consequences for self and others, self monitoring of smoking patterns, preparation for quitting, coping with withdrawal, finding substitute coping behaviours, eliminating smoking cues from the environment, obtaining social support for quitting, dealing with urges and strategies for relapse prevention and finding incentives to stay smoke free.^{xxiii}

Most smokers quit without formal treatment.^{xxii} However, individual intensive counselling by physicians has quit rates of 22% versus 6% for brief intervention.^{xxiii} Due to the impracticality of intensive services, a combination of brief intervention and self-help materials are being tried. Self-help materials tend to have good quit rates that are sustained.^{xxiii} Telephone quit lines are a cost-effective way to reach smokers with some efficacy in promoting cessation.^{xxiv} Nicotine replacement therapy in pregnancy is controversial. Moreover, two randomized trials reported negative results.^{xxv,xxvi} However, these studies had several limitations including inadequate dose of nicotine replacement and poor compliance with medication.

PREGNETS is a project funded by Health Canada (Tobacco Control Programme/Prevention, Cessation and Education). The overall objective is to decrease the negative consequences of smoking and environmental tobacco smoke on the woman, fetus and child by encouraging health care professionals to include minimal contact intervention into routine assessments and health care.

PREGNETS will increase the knowledge and confidence of service providers to assess and refer when necessary, their pregnant and post-partum clients through the use of workshops and presentations. To date, we have trained all the staff from the Smokers' Helpline on the best practices of smoking cessation with pregnant and postpartum women and plan to train staff at Motherisk Information Line early in the New Year. These two resources offer a province-wide referral option. The training will also be offered to a sample of service providers from St. Joseph's Health Centre in Toronto and service providers in the catchment area who refer pregnant women to this hospital. Service providers will include obstetricians, family physicians, paediatricians, Labour & Delivery room nurses, public health nurses, mid-wives, prenatal social workers and post-partum support services, pharmacists, and dentists.

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- ⁱBenowitz, NL. Nicotine replacement therapy during pregnancy. *JAMA* 1991;266(22):3174-3177.
- ⁱⁱKoren, G. Fetal toxicology of environmental tobacco smoke. *Curr Opin in Pedia* 1995;7:128-131.
- ⁱⁱⁱLambers, DS, Clark, KE. The maternal and fetal physiologic effects of nicotine. *Semin in Perinatol* 1996;20(2):115-126.
- ^{iv}O'Campo, P, Davis, M, Gielen, A. Smoking cessation interventions for pregnant women: review and future directions. *Sem in Perinatol* 1995;19(4):279-285.
- ^vStillman, RJ, Rosenberg, MJ, Sachs, BP. Smoking and reproduction. *Fert and Ster* 1986;46(4):545-566.
- ^{vi}Werler, M, Pober, B, Holmes, L. Smoking and pregnancy. *Teratol* 1985;32:473-481.
- ^{vii}Canadian Tobacco Use Monitoring survey <http://www.hc-sc.gc.ca/hecs-sesc/tobacco/research/ctums/2001/summary.html>
- ^{viii}Health Canada (1994a). Survey on Smoking in Canada. Ottawa: Government of Canada.
- ^{ix}Abel, EL. Smoking during pregnancy: a review of effects on growth and development of offspring. *Hum Bio* 1980;52(4):593-625.
- ^xNess RB, Grisso JA, Hirschinger N, Markovic N, Shaw LM, Day NL, Kline J. Cocaine and tobacco use and the risk of spontaneous abortion. *N Engl J Med* 1999;340:333-9.
- ^{xi}Lee, EW, D'Alonzo, GE. Cigarette smoking, nicotine addiction, and its pharmacological treatment. *Arch Intern Med* 1993;153:34-48.
- ^{xii}Edwards N., Sims-Jones N., Hotz S., Pre and postnatal smoking: A review of literature, Ottawa: Health Canada, 1994:66.
- ^{xiii}Oncken C. Nicotine replacement therapy during pregnancy. *Am J Health Behav* 1996;20(5):300-303
- ^{xiv}Ockene JK. Smoking among women across the life span: Prevalence, interventions, and implications for cessation research. *Ann Behav Med* 1993;15:135-48.
- ^{xv}Fingerhut LA, Kleinman JC, Kendrick JS. Smoking before, during, and after pregnancy. *Am J Public Health* 1990; 80:541-4.
- ^{xvi}Carmichael SL, Ahluwalia IB. Correlates of postpartum smoking relapse. Results from the Pregnancy Risk Assessment Monitoring System (PRAMS). *Am J Prev Med* 2000; 19:193-6.
- ^{xvii}Ratner PA, Johnson JL, Bottorff JL. Smoking relapse and early weaning among postpartum women: is there an association? *Birth* 1999; 26:76-82.
- ^{xviii}Al-Delaimy WK, Crane J, Woodward A. Questionnaire and hair measurement of exposure to tobacco smoke. *J Expo Anal Environ Epidemiol* 2000; 10:378-84.
- ^{xix}Lumley J, Oliver S, Waters E. Interventions for promoting smoking cessation during pregnancy. *Cochrane Database Syst Rev* 2000; 2.
- ^{xx}Ershoff DH, Quinn VP, Mullen PD, Lairson DR, 1990. Pregnancy and medical cost outcomes of a self-help prenatal smoking cessation program in an HMO. *Public Health Rep.* 1990;105(4):340-47.
- ^{xxi}Floyd RL, Rimer BK, Giovino GA, Mullen PD, Sullivan SE. A review of smoking in pregnancy: effects on pregnancy outcomes and cessation efforts. *Annu Rev Publ Health* 1993;14:379-411.
- ^{xxii}Lichtenstein E, Glasgow RE. Smoking Cessation: what have we learnt in the past decade? *J of Consulting and Clinical Psychology.* 1992;60:518-27.
- ^{xxiii}Fiore M, Bailey WC, Cohen SJ, et al. Treating Tobacco Use and Dependence. Clinical Practice Guideline. Rockville, MD: US Department of Health and Human Services. Public Health Services, 2000.
- ^{xxiv}Stead LF, Lancaster T. Telephone counselling for smoking cessation. *Cochrane Database Syst Rev* 2001; 2.
- ^{xxv}Kapur B, Hackman R, Selby P, Klein J, Koren G. Randomized, double-blind, placebo-controlled trial of nicotine replacement therapy in pregnancy. *Current Therapeutic Research, Clinical & Experimental* 2001; 62:274-278.
- ^{xxvi}Wisborg K, Henriksen TB, Jespersen LB, Secher NJ. Nicotine patches for pregnant smokers: A randomized controlled study. *Obstet Gynecol* 2000; 96:967-71.

Cigarette Smoking During Pregnancy

The prevalence of cigarette smoking among women of childbearing age continues to be a major health concern.^{i,ii,iii} The true prevalence of smoking in pregnancy is not known. It is estimated that 16%-23% of pregnant women in Ontario smoke^v. About 87% of women who smoke regularly began smoking before 18 years of age.³ Consequently, many of these women have difficulty quitting smoking, even during pregnancy.³ Cigarette smoking during pregnancy increases the risk of vaginal bleeding, spontaneous abortion, abruptio placenta, placenta previa, pre-eclampsia, prematurity, perinatal mortality, intrauterine fetal growth retardation and sudden infant death syndrome.^{vii viii}

Cigarettes contain over 4,000 different compounds^v. Although, it is not certain which of these constituents are responsible for the adverse effects associated with cigarette smoking during pregnancy, hydrogen cyanide, carbon monoxide and nicotine are suspected^v. Cigarette smoke exposure causes significant morbidity and mortality in pregnancy and childhood. Cigarette smoking during pregnancy increases the risk of vaginal bleeding, spontaneous abortion, abruptio placenta, placenta previa, prematurity, perinatal mortality, intrauterine fetal growth retardation and sudden infant death syndrome.^{ix x xii}

Environmental Tobacco Smoke (ETS) and its relation to smoking in pregnancy:

The health effects of environmental tobacco smoke on both adults and children are well known.^{xiii} In infants and children this includes an increased risk of Sudden Infant Death syndrome (SIDS), upper respiratory tract infections, asthma, middle ear infections and possibly an increased risk of childhood cancers.^{xiv} The exposure is greatest in disadvantaged households, i.e. single parents, low income and poor food security. Awareness of the risk is high (86%) in people older than 12 years yet exposure continues in the home. It is important for both physicians and public health authorities to educate parents to eliminate exposure of their children to ETS ideally by quitting or smoking outdoors.

The Natural History of Smoking During Pregnancy

Despite knowledge of the adverse effects of smoking in pregnancy, the majority of smokers continue to smoke while pregnant. In Canada, 13 to 21% of female smokers quit and 50% cut down when planning to become pregnant or on finding out they are pregnant. An additional 2% to 22% may quit later in their pregnancy.^{xv,xvi} Women who are younger, suffering from depression, less educated, living with a partner who smokes and economically disadvantaged are more likely to smoke. Women with previous "unaffected" pregnancies are also more likely to smoke in their current pregnancy.^{xvii} Upto 60-70% of women who quit during pregnancy relapse to smoking within six months post-partum.^{xviii} In a focus group of post-partum relapsers, the number one reason cited for relapse was the exposure to other smokers in their environment.

The benefits of smoking cessation in pregnancy.

Smoking cessation by the mother before the third trimester significantly reduces health risks to the fetus and there are post-partum benefits for both mother and child.^{xix xx xxi} Therefore, any attempts to enhance quit-rates will also likely reduce ETS exposure. Relapse prevention in the post-partum period will also have the added benefit of prolonged reduction of ETS exposure for the child. However, no efficacious intervention has been described.^{xxii}

Efficacy of cessation programmes in pregnancy

Brief advice (<3min) and an offer of self-help materials tend to have quit rates of about 6%. However, "Augmented" interventions (more intense psychosocial contact) have quit rates between 13.1% to 20.5%.^{xxiii} These interventions are more useful for well motivated, light smokers with social support but not as effective in nicotine dependent smokers. In a recent trial conducted by our group in 19 women who smoked during the second trimester and were unable to quit spontaneously, we observed rapid metabolism of nicotine.^{xxiv} This has been associated with increased smoking and possibly explains their inability to quit. Therefore, more effective treatment is necessary for pregnant smokers and several authorities recommend the use of pharmacotherapy when pregnant women are unable to quit on their own.^{xxv, xxvi}

Cost-benefits of smoking cessation in pregnancy

It has been estimated that for every dollar expended in prenatal smoking cessation programmes three to six dollars are saved in neonatal care due to maternal smoking.^{xxvii} Longer-term savings range from 5:1 to 17:1.^{xxviii} These interventions are more cost-effective than all of prenatal care is.^{xxix} The implication for funders of health care systems is great. Therefore, it is likely that the savings from a higher quit-rate the savings will be even greater.

Health Care Professionals

There are approximately 5000 doctors who provide care to women and children in Ontario. Many of these women also come in contact with public health nurses or other supports during their pregnancy and in the post-partum period.

Based on over 500 calls received at the MotheRisk, an information line for pregnant and lactating women, it is evident that pregnant women get mixed messages from their health care providers. Some themes that emerged include:

- Not asked about smoking status.
- Simply advised to stop smoking without referral to resources.
- Advised not to quit due to “excess” stress on the baby.
- Advised to only cut down but not attempt to quit altogether.

During education sessions with health care providers on this topic, the author of this proposal is often asked about the use of tobacco cessation products in pregnancy. Some professional use them while others vehemently oppose their use although the majority of pregnant smokers continue to smoke while pregnant. There is greater need for clarity and use of effective interventions in prenatal and post-partum periods.

Rapidly changing knowledge and lack of current best practices for health care providers.

The number of studies and findings with respect to pregnant smokers has been increasing. There is also greater understanding of the effects of ETS in early life. Comprehensive strategies are needed to address these issues. The consensus conference allows us to create an inventory of current practices and update/complement the materials where needed.

Poor use of current guidelines.

Health professionals can be a credible source for such interventions. However, the lack of education and time constraints prevent many providers from intervening effectively. In a Health Canada document published in 1995, Tobacco Reduction in Prenatal and Postpartum programs for high priority families, most programs cited several barriers including high levels of addiction and need to socialize and cope with stress as reasons why their clients smoke. Current educational efforts have not specifically targeted obstetric care providers or paediatric care providers in a systematic fashion.

ⁱO’Campo, P, Davis, M, Gielen, A. Smoking cessation interventions for pregnant women: review and future directions. *Sem in Perinatol* 1995;19(4):279-285.

ⁱⁱStillman, RJ, Rosenberg, MJ, Sachs, BP. Smoking and reproduction. *Fert and Ster* 1986;46(4):545-566.

ⁱⁱⁱWerler, M, Pober, B, Holmes, L. Smoking and pregnancy. *Teratol* 1985;32:473-481.

^{iv}OTRU. Monitoring the Ontario Tobacco Strategy: progress towards our goals, 1998/1999. Toronto: *Ontario Tobacco Research Unit*, 1999; 45.

^vI. Werler MM. Teratogen update: smoking and reproductive outcomes. *Teratology* 1997;55(6):382-8.

^{vi}Abel, EL. Smoking during pregnancy: a review of effects on growth and development of offspring. *Hum Bio* 1980;52(4):593-625.

^{vii}Lee, EW, D’Alonzo, GE. Cigarette smoking, nicotine addiction, and its pharmacological treatment. *Arch Intern Med* 1993;153:34-48.

^{viii}Ness RB, Grisso JA, Hirschinger N, Markovic N, Shaw LM, Day NL, Kline J. Cocaine and tobacco use and the risk of spontaneous abortion. *N Engl J Med* 1999;340:333-9.

^{ix}Werler MM. Teratogen update: smoking and reproductive outcomes. *Teratology* 1997;55(6):382-8.

^xAbel, EL. Smoking during pregnancy: a review of effects on growth and development of offspring. *Hum Bio* 1980;52(4):593-625.

Paragraph for OCFP newsletter

PREGNETS: Network for the Prevention of Gestational and Neonatal Exposure to Tobacco Smoke: A Community Action Plan

The prevalence of cigarette smoking among women of childbearing age continues to be a major health concern.^{i,ii,iii,iv,v,vi} A Health Canada survey in 2001 found that 25% of Canadian women of childbearing age smoked; 19% smoked daily and 6% smoked occasionally.^{vii} Cigarette smoking during pregnancy increases the risk of vaginal bleeding, spontaneous abortion, abruptio placenta, placenta previa, prematurity, perinatal mortality, intrauterine growth retardation and sudden infant death syndrome.^{i-vi,viii,ix}

Despite knowledge of the adverse effects of smoking in pregnancy, the majority of smokers continue to smoke while pregnant.^{xix} In Canada, 13 to 21% of female smokers quit and 50% cut down when planning to become pregnant or on finding out they are pregnant. An additional 2% to 22% may quit later in their pregnancy.^{x,xi} Relapse during pregnancy after having quit is also substantial.^{xi,xii} It is estimated that 50-60% of women who quit while pregnant have relapsed to smoking within 6 months post-partum.^{xiii,xiv}

Attempts to enhance quit-rates improve birth outcomes.^{xv} Health professionals can be a credible source of such interventions. It has been estimated that for every dollar spent in prenatal smoking cessation programmes three dollars are saved in neonatal care due to maternal smoking.^{xvi} Longer-term savings range from 5:1 to 17:1.^{xvii} Most smokers quit without formal treatment.^{xviii} However, individual intensive counselling by physicians has quit rates of 22% versus 6% for brief intervention.^{xix} Due to the impracticality of intensive services, a combination of brief intervention and self-help materials are being tried.

The overall objective of the PREGNETS network is to decrease the negative consequences of smoking and environmental tobacco smoke (ETS) on women, fetuses, and children by encouraging healthcare providers to include evidence based brief interventions into routine assessments and healthcare.

We realize that busy clinicians sometimes don't know how to help this population or work under enormous time pressure. PREGNETS encourages all healthcare professionals, researchers, policy makers and consumers to help pregnant and post partum smokers. We have created an easy to use toolkit of best practices to address the issue of smoking and pregnancy. Health care providers are encouraged to use existing resources where feasible and to refer clients who are pregnant or postpartum to smoking cessation services in their community or the provincial quit line with trained staff. To help professionals, we have developed a one page double-sided laminated tool (also available on our website) that outlines the positive effects of quitting smoking and how to deliver brief cessation interventions to their clients, along with a resource card that can be handed directly to the client. The website www.pregnets.org hosts current information on smoking cessation practices for pregnant and postpartum women with easy to download resources. There are separate sections for health care providers and the lay public. The PREGNETS team will train health care professionals according to need and interest in this topic area.

ⁱBenowitz, NL. Nicotine replacement therapy during pregnancy. JAMA 1991;266(22):3174-3177.

ⁱⁱKoren, G. Fetal toxicology of environmental tobacco smoke. Curr Opin in Pedia 1995;7:128-131.

ⁱⁱⁱLambers, DS, Clark, KE. The maternal and fetal physiologic effects of nicotine. Semin in Perinatol 1996;20(2):115-126.

^{iv}O'Campo, P, Davis, M, Gielen, A. Smoking cessation interventions for pregnant women: review and future directions. Sem in Perinatol 1995;19(4):279-285.

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- ^vStillman, RJ, Rosenberg, MJ, Sachs, BP. Smoking and reproduction. *Fert and Ster* 1986;46(4):545-566.
- ^{vi}Werler, M, Pober, B, Holmes, L. Smoking and pregnancy. *Teratol* 1985;32:473-481.
- ^{vii}Canadian Tobacco Use Monitoring survey <http://www.hc-sc.gc.ca/hecs-sesc/tobacco/research/ctums/2001/summary.html>
- ^{viii}Abel, EL. Smoking during pregnancy: a review of effects on growth and development of offspring. *Hum Bio* 1980;52(4):593-625.
- ^{ix}Ness RB, Grisso JA, Hirschinger N, Markovic N, Shaw LM, Day NL, Kline J. Cocaine and tobacco use and the risk of spontaneous abortion. *N Engl J Med* 1999;340:333-9.
- ^xEdwards N., Sims-Jones N., Hotz S., Pre and postnatal smoking: A review of literature, Ottawa: Health Canada, 1994:66.
- ^{xi}Oncken C. Nicotine replacement therapy during pregnancy. *Am J Health Behav* 1996;20(5):300-303
- ^{xii}Ockene JK. Smoking among women across the life span: Prevalence, interventions, and implications for cessation research. *Ann Behav Med* 1993;15:135-48.
- ^{xiii}Fingerhut LA, Kleinman JC, Kendrick JS. Smoking before, during, and after pregnancy. *Am J Public Health* 1990; 80:541-4.
- ^{xiv}Carmichael SL, Ahluwalia IB. Correlates of postpartum smoking relapse. Results from the Pregnancy Risk Assessment Monitoring System (PRAMS). *Am J Prev Med* 2000; 19:193-6.
- ^{xv}Lumley J, Oliver S, Waters E. Interventions for promoting smoking cessation during pregnancy. *Cochrane Database Syst Rev* 2000; 2.
- ^{xvi}Ershoff DH, Quinn VP, Mullen PD, Lairson DR. 1990. Pregnancy and medical cost outcomes of a self-help prenatal smoking cessation program in an HMO. *Public Health Rep.* 1990;105(4):340-47.
- ^{xvii}Floyd RL, Rimer BK, Giovino GA, Mullen PD, Sullivan SE. A review of smoking in pregnancy: effects on pregnancy outcomes and cessation efforts. *Annu Rev Publ Health* 1993;14:379-411.
- ^{xviii}Lichtenstein E, Glasgow RE. Smoking Cessation: what have we learnt in the past decade? *J of Consulting and Clinical Psychology.* 1992;60:518-27.
- ^{xix}Fiore M, Bailey WC, Cohen SJ, et al. Treating Tobacco Use and Dependence. Clinical Practice Guideline. Rockville, MD: US Department of Health and Human Services. Public Health Services, 2000.



PREGNETS:

Network for the Prevention of Gestational and Neonatal Exposure to Tobacco Smoke

It is important for health care providers to deliver a clear and consistent message. Based on over 500 calls received at Motherisk pregnant women get mixed messages about tobacco use in pregnancy from their health care providers, or sometimes none at all. This may indirectly give the woman permission to continue smoking. Some misconceptions held about smoking cessation in pregnancy include: advice not to quit due to excess stress on the baby; reduce tobacco use but do not stop altogether; there is little support for pregnant women wanting to quit.

PREGNETS has created a network of health care providers, educators, researchers and policy makers with interest in tobacco control and expertise in obstetrical care. PREGNETS encourages collaborations to address the issue of smoking cessation in pregnant and postpartum women.

The project has several components including:

- ▶ Creation of a website www.pregnets.org which provides:
 - ▶ the most current information on smoking cessation with pregnant and postpartum women,
 - ▶ resources for both health care providers and the general public,
 - ▶ links to other relevant websites and useful information on quitting smoking.
- ▶ Production of several useful tools/products including:
 - ▶ a virtual toolkit for health care providers, available on the website and ready to download,
 - ▶ a desk reference guiding the clinician step by step on a quick and easy way to screen and intervene with pregnant smokers,
 - ▶ a referral card that can be given directly to the patient containing stop smoking resources such as the number for Smokers' Helpline and Motherisk Information Line.

PREGNETS is also involved in the training of health care providers and the dissemination of information regarding the use of tobacco products in pregnancy and post-partum. Extensive training has been carried out in a pilot site, a consensus framework will be developed and evaluation of the program will be conducted. This issue of the *CTI Bulletin* is one way of informing pharmacists, physicians and dentists about this valuable resource.

Funding for PREGNETS is provided by the Tobacco Control Programme/Prevention, Cessation and Education, Health Canada from March 2002 to March 2004. Networks are being established and collaborations encouraged in the hope that when funding ends, the information continues to be disseminated and the website continues to contain the most current information.

Systems Approach to Clinical Interventions with Pregnant Smokers

Based on a Presentation at the 2003 National Conference on Tobacco or Health, Boston
December 12, 2003

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Abstract

Problem/Objective: Exposure to cigarette smoke causes significant morbidity and mortality in pregnancy and childhood. Despite knowledge of the adverse effects of smoking in pregnancy, the majority of smokers continue to smoke while pregnant.

In Canada, 13 to 21% of female smokers quit and 50% cut down when planning to become pregnant or on finding out they are pregnant. An additional 2% to 22% may quit later in their pregnancy^{1,2}. Women who are younger, suffering from depression, less educated, living with a partner who smokes and economically disadvantaged are more likely to smoke. Women with previous "unaffected" pregnancies are also more likely to smoke in their current pregnancy³. Upto 60-70% of women who quit during pregnancy relapse to smoking within six months post-partum.⁴

In a focus group of post-partum relapsers, the primary reason cited for relapse was the exposure

to other smokers in their environment. Comprehensive and cost-effective strategies are required to address these issues.

A lack of education, for both mothers and health care professionals, contributes to the low percentage of mothers who quit while pregnant. Ideally, new intervention strategies and techniques will be developed that combine strategies for overcoming the three types of barriers to quitting smoking: biological, social and environmental. Future programs that will be most effective at eliminating smoking during pregnancy will address the biological effects of smoking on mothers and fetus, the way society views pregnant women who smoke, and the environment effects of smoking on both the mother and the fetus, e.g., environmental tobacco smoke (ETS), asthma, etc.. New strategies must also leverage existing cessation services within the health care system with enhanced awareness as many of the currently accessible resources are relatively unknown to both smokers and health care professionals.

Methods: A needs assessment was conducted at training events for health professionals and a consensus conference with tobacco experts was held to determine an integrated approach. Pilot training in smoking cessation with pregnant women was delivered to health care professionals at St. Joseph's Health Centre in Toronto, and to counselors at the Smokers' Helpline and Motherisk Information Line.

Evaluation of the training was conducted to measure impact on knowledge, attitudes and behaviour with respect to smoking interventions for pregnant women. The evaluation included pre-training and post-training questionnaires, training evaluation forms, and simulated callers.

Materials for health care professionals were also developed, including a desk reference and patient referral cards. All materials were widely distributed in print format at conferences, workshops, and by request. A print-based toolkit was developed to assist health professionals with the essential components on how to address smoking cessation among pregnant clients.

A website (www.Pregnets.org) was developed to host the most current information educational content for both pregnant women smokers and health care professionals. All educational materials (toolkit, desk reference cards, patient referral cards, etc.) were made available for download on the website, and visitor surveys and feedback forms solicited user comments. Traffic data, survey data and number of materials downloaded are currently being tracked to measure the effectiveness of the website as a cost-efficient strategy to disseminate information to pregnant mothers, friends and family members of pregnant women smokers, and health care professionals.

Conclusions: The most successful component of the project involved the creation of the network. Partnerships were established and future collaboration is evolving.

Training did help to educate health professionals in smoking cessation interventions for pregnant women. However, in-person training was time and resource consuming.

The website was successful in providing pregnant women and health professionals with information on smoking in pregnancy, and was successful in providing links to existing resources and services.

Introduction

The prevalence of cigarette smoking among women of childbearing age continues to be a worldwide health issue. Exposure to tobacco smoke during pregnancy increases the risk of vaginal bleeding, spontaneous abortion, abruption placenta, placenta previa, pre-eclampsia, prematurity, perinatal mortality, intrauterine fetal growth, retardation and sudden infant death syndrome (SIDS)^{5 6 7 8}.

Despite knowledge of the adverse effects of smoking in pregnancy, and the benefits gained by stopping smoking, the majority of mothers who smoke continue to do so while pregnant^{9 10 11}.

Health professionals are a key and credible source for smoking cessation interventions. However, a lack of training, combined with time constraints, prevent many health care professionals from intervening effectively. There are many agencies and providers of tobacco interventions, but there has been limited coordination or effort to maximize awareness of these services.

The creation of a resource network can significantly raise awareness of available resources. Referrals among organizations can also increase a single agency's capacity to intervene and ultimately reduce health care costs.

Method

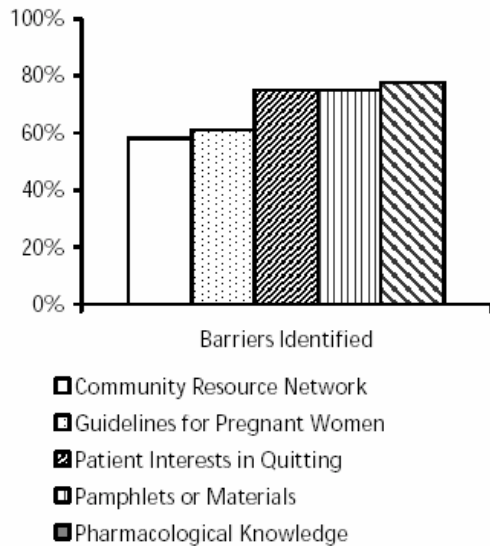
Workshop

30 Ontario-based cessation experts from a variety of disciplines and backgrounds gathered in Toronto on March 30, 2002 (PREGNETS workshop). The goal of the workshop was twofold: to create an educational program for those involved in the care of pregnant women and children, and to identify content for a website that would host the best practices as well as an inventory of local resources and self-help materials for both consumers and health care practitioners. The workshop resulted in a framework for developing the educational program and website.

In order to develop the educational program and website, health care professionals were

asked to identify the key barriers to providing smoking cessation for pregnant women. PREGNETS is addressing four of the five main challenges and is addressing the patient interest indirectly (figure 1).

Figure 1: Barriers to providing intervention Very or Somewhat Important



Health Professional Training

Following the workshop, partnerships were established with key stakeholders and possible collaborations were explored. Pilot training in smoking interventions with pregnant women was delivered to health professionals at St. Joseph’s Health Centre in Toronto.

Telephone counselors at the Smokers’ Helpline (Canadian Cancer Society) and the Motherisk Information Line (Hospital for Sick Children) were trained on how to deliver smoking cessation interventions to pregnant smokers. Simulated callers were conducted to evaluate the skills of the telephone counselors at the Smokers’ Helpline and Motherisk Information Line in helping pregnant women. Pre-training and post-training questionnaires were completed by the training participants to measure baseline and changes in knowledge, attitudes and behaviour in smoking cessation with pregnant smokers, and an evaluation questionnaire in regards to the training were completed by the participants.

Website

The website www.Pregnets.org was launched on January 1st 2003. The site contains information for pregnant women smokers, friends and family members, and health care professionals. The website also provides links to existing resources, as well as information on how to obtain assistance from Canadian agencies and services. The website also was designed to capture usage statistics including page views, visitors, unique visits, average visit duration, data from user survey’s, etc.

Toolkit

An electronic version of the Toolkit was developed to enable health care professionals to deliver effective intervention techniques to pregnant smokers. The Toolkit is an important initial step in establishing protocols for interventions with pregnant and postpartum smokers. The electronic file was made available for download on the website, along with nine other auxiliary pieces such as a Desk Reference for Health Professionals, a Patient Resource Card, etc.. The frequency of downloads for the toolkit and each auxiliary piece are currently being tracked. Electronic usage surveys are also being collected which, when combined with download data, will help assess the needs of both pregnant women smokers and health care professionals.

The PREGNETS toolkit is designed to give health care professionals and pregnant women the essential steps to be taken to address smoking cessation. It provides evidence-based background information on smoking and pregnancy, discusses issues specific to pregnancy, contains step-by-step guidelines as well as a list of various smoking cessation resources for those trying to quit.

The PREGNETS program and website include combined resources from the following agencies: Best Start Resource Centre, Ontario tobacco Research Unit, Centre for Addiction and Mental Health, Clinical Tobacco Interventions, Motherisk (Hospital for Sick Children), Program Training and Consultation Centre, Smokers’ Helpline, St. Joseph’s Health Centre, and The Stop Smoking Center (www.StopSmokingCenter.net), and Toronto Public Health. Information from these resources are combined and made available onto one online location.

Materials developed by PREGNETS were also distributed at various conferences, workshops, and meetings to help disseminate information on interventions and the PREGNETS project.

Results

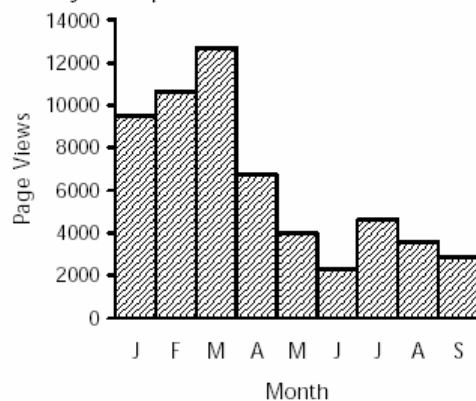
Website

Website usage was evaluated using a combination of implicit and explicit tracking. Implicit tracking was based on log file analysis using WebTrends® reporting software, while explicit tracing relied on user-supplied responses to the volunteer survey that were captured in a database.

Preliminary website traffic measures point to an interesting trend in site usage in the initial period since launch (January 1 – September 30 2003). Although the number of page views appeared to decrease in the summer months (figure 2), the number of unique users has remained relatively consistent (figure 3) and may be increasing. Long term data is needed to determine what accounts for these results, and whether traffic patterns are influenced by seasonality e.g. reduced usage in summer months.

While continued traffic-driving measures (i.e., advertising and promotion) will certainly impact site usage, explicit tracking data, i.e., user survey results, indicate that Pregnets.org is effectively reaching the intended target. Health care providers accounted for the majority (64%) of site traffic, while pregnant women made up an additional 22% of visitors (figure 4).

Figure 2: Page Views by Month
January 1 – September 30, 2003



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Figure 3: Visits and Unique Users by Month
January 1 – September 30, 2003

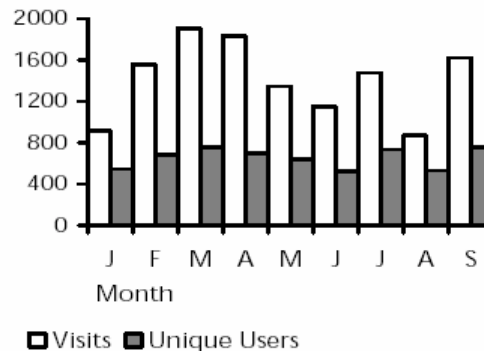


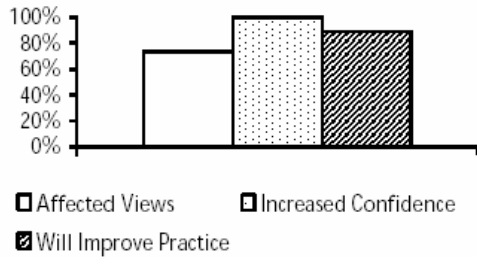
Figure 4: Website Survey Results



Health Professional Training

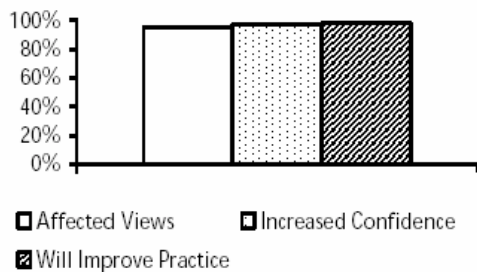
Evaluation of the PREGNETS training program was also conducted with very promising results. All (100%) Telephone counselors at the Smokers' Helpline (Canadian Cancer Society) and the Motherisk Information Line (Hospital for Sick Children) reported that the training will increase their confidence to deliver counseling to pregnant women, and 89% indicated the training will improve their practice (figure 5).

Figure 5: Effect of Training on Helplines



Results of health care professional training indicate an equally high potential for future success. Training proved very influential, with 98% of health care professionals indicated the training will improve their practice, while 95% indicated the training has affected their views (figure 6).

Figure 6: Effect of Training for HCP



The results of both types of training further solidify the hypothesis that offering even baseline training can significantly improve interventions for pregnant women.

Toolkit

The PREGNETS Toolkit provides much needed instruction to mothers and health care providers regarding positive and effective approaches to quitting smoking. The toolkit and nine auxiliary pieces can be downloaded for free from the Pregnets website (www.Pregnets.org) 24 hours a day, from anywhere in the world.

The toolkit was officially launched in December 2003, outside the initial study period comprised in this study. However, ad hoc analysis is promising. In the first 67 days since launch, 1,391 pieces were downloaded (average 21 pieces downloaded per day). These figures are especially encouraging for two reasons. First, the activity occurred over the

traditionally slow winter holidays. Second, there has been virtually no promotion, so all traffic has been generated via "viral" (word-of-mouth and referral) marketing.

PREGNETS is in the process of analyzing Return on Investment (ROI) figures for the website and electronic toolkit. Based on preliminary performance, a very high cost savings over traditional (offline) communications is anticipated. Electronic files offer an extremely cost-effective alternative to the hard costs and labor of printing and distributing (via post) PREGNETS materials. More research is required to determine the ROI figures for the Toolkit and the PREGNETS program overall.

Precede-Proceed Model

This Precede-Proceed Model (Appendix A) defines the problem and identifies contributors / causes to the problem.¹² Possible solutions are suggested, aiming to address identified causes to ensure a comprehensive approach. A network of researchers, clinicians and policy makers is essential to ensure that all areas are addressed.

Conclusion

Network: Establishing a network allowed PREGNETS to capitalize on existing efforts of partners to address the issue of smoking and ensured that dissemination efforts will continue. The partnership with St. Joseph’s Health Centre allowed the training of the health care professionals to take place, as well as ongoing collaboration to incorporate smoking cessation practices with pregnant women into routine prenatal visits.

Training: The most noticeable impact from training was establishing provincial resources through the Smokers’ Helpline and the Motherisk Information Line. Training of health professionals at the hospital was problematic for several reasons: attitudes of individual staff, scheduling conflicts, lack of resources, delays such as SARS, etc.

Website: The website development was cost efficient. Despite very little promotion there were a large number of visits to the website, and the average visitor spent 10 minutes and 49 seconds reading information. Website visitors included both pregnant women and health care professionals seeking information. Anonymous

surveys completed by pregnant women and health care professionals gave valuable insight in regards to services required.

Barriers: Health professionals identified the following as barriers to smoking cessation counselling with pregnant women: lack of knowledge (re: pharmacological approaches), lack of pamphlets or materials, patients not interested in quitting, lack of guidelines for pregnant women, and lack of a community resource network. Future directions should focus less on training health care professionals and focus more on disseminating information, as well as making changes at a systems level.

About the Authors

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Rosa Dragonetti, (B.A., M.Sc) completed a Master of Sciences in Mental Health Counselling and is a certified Addiction Counsellor with the Canadian Society of Counsellors and Therapists. She has been with the Centre for Addiction and Mental Health since 1992, working in Education and Training, conducting research in gambling, alcohol, depression and anxiety and has been a therapist in the Opiate Clinic since September 2000. She has published two articles in the area of gambling treatment, developed counselling manuals for gambling treatment and has conducted various workshops across Ontario. She is currently seconded half-time as the Project Coordinator for PREGNETS - an initiative that disseminates and evaluates training of health care providers on smoking cessation with pregnant and post-partum women and has developed the website for the project www.pregnets.org.

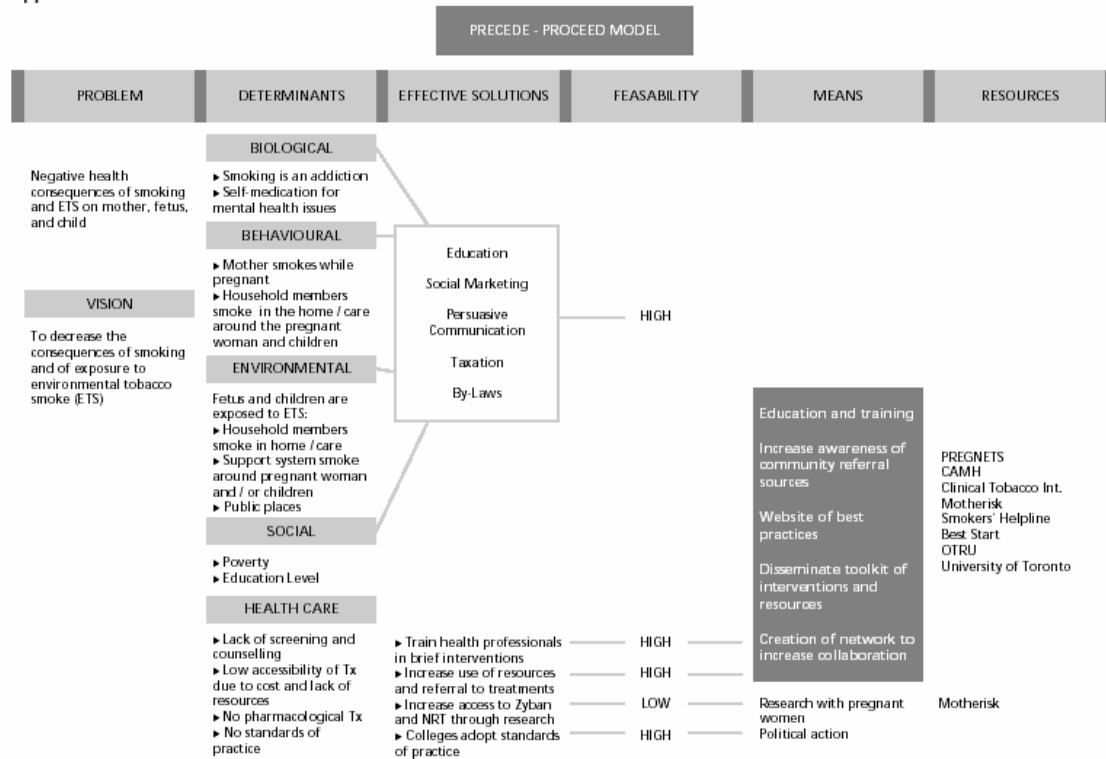
Dr. Peter Selby, MD., MBBs, CCFP, MHSc, ASAM

Dr. Selby is currently the Head, Nicotine Dependence Clinic, Centre for Addiction and Mental Health Medical Consultant, Addiction Medicine Clinic, CAMH; Staff Physician, Department of Family Medicine, St. Joseph's Health Centre, Toronto; and Medical Consultant, Division of Clinical Pharmacology and Toxicology, Department of Paediatrics, Hospital for Sick Children. Dr. Selby's areas of interest include treatment of substance use in pregnancy including smoking in pregnancy, smoking cessation, motivational interviewing, education of health care professionals, and psychotherapy, especially Brief therapy.

Joan Brewster, PhD

Dr. Brewster is a scientist at the Ontario Tobacco Research Unit (OTRU) and Assistant Professor, Department of Public Health Sciences, University of Toronto. A psychologist with expertise in health behavior, her interests focus on the role of health professionals in addressing the use of tobacco, alcohol and other drugs. Her tobacco-related projects include a background for an integrated health professional curriculum regarding substance abuse by pregnant women, carried out for Health Canada. Joan is currently directing projects regarding the expanding roles of pharmacists in smoking cessation and the role of Canadian primary care physicians in addressing environmental tobacco smoke (ETS) in home environments. Joan also has experience in research on a range of alcohol and drug-related issues including alcohol-related medical education, drug use by professionals and drug effects. Joan has an ongoing interest in the health of physicians and other health professionals.

Appendix A: Precede – Proceed Model



This model defines the problem and identifies all contributors/causes to the problem. Possible solutions are suggested, aiming to address all causes to ensure a comprehensive approach. A network of researchers, clinicians, and policy makers is essential to ensure that all areas are addressed.

Dark shaded area represents the objectives addressed by PREGNETS

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References

- Edwards N., Sims-Jones N., Hotz S., Pre and postnatal smoking: A review of literature, Ottawa: Health Canada, 1994:66.
- Oncken C. Nicotine replacement therapy during pregnancy. *Am J Health Behav* 1996;20(5):300-303.
- Hotz SB, Edwards N, Simms-Jones N. Identifying characteristics of hard-to-reach pregnant women who smoke and cessation recruitment interventions. Health Canada 1995
- Ockene JK. Smoking among women across the life span: Prevalence, interventions, and implications for cessation research. *Ann Behav Med* 1993;15:135-48.
- Werler MM. Teratogen update: smoking and reproductive outcomes. *Teratology* 1997;55(6):382-8.
- Abel, EL. Smoking during pregnancy: a review of effects on growth and development of offspring. *Hum Bic* 1980;52(4):593-625.
- Lee, EW, D'Alonzo, GE. Cigarette smoking, nicotine addiction, and its pharmacological treatment. *Arch Intern Med* 1993;153:34-48.
- Ness RB, Grisso JA, Hirschinger N, Markovic N, Shaw LM, Day NL, Kline J. Cocaine and tobacco use and the risk of spontaneous abortion. *N Engl J Med* 1999;340:333-9.
- Edwards N., Sims-Jones N., Hotz S., Pre and postnatal smoking: A review of literature, Ottawa: Health Canada, 1994:66.
- Oncken C. Nicotine replacement therapy during pregnancy. *Am J Health Behav* 1996;20(5):300-303.
- Hotz SB, Edwards N, Simms-Jones N. Identifying characteristics of hard-to-reach pregnant women who smoke and cessation recruitment interventions. Health Canada 1995.
- Green, L. & Kreuter, M. (1991). *Health Promotion Planning*, (2nd ed.). Mountain View: Mayfield Publishing Co.

REFERENCES

- ⁱHealth Canada (2002). Survey on Smoking in Canada. Ottawa: Government of Canada.
- ⁱⁱHealth Canada (2002). Survey on Smoking in Canada. Ottawa: Government of Canada.
- ⁱⁱⁱEdwards N., Sims-Jones N., Hotz S., Pre and postnatal smoking: A review of literature, Ottawa: *Health Canada*, 1994:66.
- ^{iv}Oncken C. Nicotine replacement therapy during pregnancy. *Am J Health Behav* 1996;20(5):300-303
- ^v Hotz SB, Edwards N, Simms-Jones N. Identifying characteristics of hard-to-reach pregnant women who smoke and cessation recruitment interventions. *Health Canada* 1995
- ^{vi} Ockene JK. Smoking among women across the life span: Prevalence, interventions, and implications for cessation research. *Ann Behav Med* 1993;15:135-48.
- ^{vii} MacArthur C, Newton JR, Knox EG. Effect of antismoking health education on infant size at birth: A randomized controlled trial. *Br J Obstet Gynaecol* 1987;94:295-300.
- ^{viii} Sexton M, Hebel JR. A clinical trial of change in maternal smoking and its effect on birth weight. *JAMA* 1984;251:911-5.
- ^{ix} Haddow JE, Knight GJ, Kloza EM, Palomaki GE, Wald NJ. Cotinine-assisted intervention in pregnancy to reduce smoking and low birthweight delivery. *Br J Obstet Gynaecol* 1991;98:859-65.