

Effective interventions to promote smoking cessation in pregnancy

A Rapid Review

July 2016

By:

Amanda Mongeon, Program Evaluator

Caroline McBride, Public Health Dietitian

Erin Cowan, Research and Policy Analyst

Shari Brown, Public Health Nurse

Shauna McGill, Research and Policy Analyst



Services de santé du
TIMISKAMING
Health Unit

Table of Contents

Key Messages	3
Executive Summary	4
1 Issue.....	6
2 Context	6
3 Literature Review Question.....	8
4 Literature Search.....	8
5 Relevance Assessment	9
6 Results of the Search	9
7 Critical Appraisal.....	9
8 Description of Included Studies	10
9 Synthesis of Findings	16
10 Key Messages	18
11 Next Steps	19
References.....	20
Appendices.....	21
Appendix A: Search Strategy.....	21
Appendix B: Literature Search Flowchart.....	43
Appendix C: Data Extraction Tables.....	44
Appendix D: Data extraction of secondary outcomes	50
Appendix E: Applicability & Transferability Worksheet.....	51

Many thanks and acknowledgement to...

The following individuals for their valued contributions in this Rapid Review process:

Dr. Marlene Spruyt, *Medical Officer of Health*, Timiskaming Health Unit

Ghislaine Julien, *Manager*, Timiskaming Health Unit

Kerry Schubert-Mackey, *Manager*, Timiskaming Health Unit

Ryan Peters, *Manager*, Timiskaming Health Unit

Celine Butler, *Epidemiologist*, Timiskaming Health Unit

Tracey Zurich, *Public Health Librarian*, Thunder Bay District Health Unit

Our external mentors for sharing their time and expertise:

Donna Ciliska, *Senior Knowledge Translation Advisor*, National Collaborating Centre for Methods & Tools (NCCMT)

Maureen Dobbins, *Scientific Director*, NCCMT

Key Messages

1. All pregnant women should be screened for smoking status, encouraged to stop smoking, and referred to or provided smoking cessation support, while taking into account the needs of disadvantaged patients.
2. Those providing smoking cessation services should have specialized training and credentials.
3. Contingent incentives are the most effective intervention for smoking cessation among pregnant women, while counselling and health education may be effective for some pregnant women.
4. If NRT is the preferred treatment, once information on the risks and benefits is provided, it should be offered in combination with behavioural counselling
5. Pregnant women should not take Varenicline (Champix, Chantix) or Bupropion (Wellbutrin, Zyban).
6. All work and public places should be smoke-free.

Executive Summary

Purpose

The Timiskaming Health Unit conducted a rapid review to determine the most current and effective interventions for promoting smoking cessation among pregnant women.

Research Question

Which interventions are effective in promoting smoking cessation among pregnant women?

Context

The rationale for this question was based on local data which demonstrates that the smoking rate in pregnant women in Timiskaming is 3x greater than the Ontario rate.²

Methods and Results

A search for published literature was conducted in January 2016 by Thunder Bay Health Unit's Librarian through the Shared Library Services Partnership. The search was for guidelines and systematic reviews (SR) published from 2008 onwards, using the following databases: NICE, National Guideline Clearinghouse, Medline, Embase, CINAHL and PsychInfo.

The search identified 357 potentially relevant results. After removing duplicates, title and abstract review, and the full text review, 14 articles were relevant and selected for critical appraisal.

Key Findings

The evidence described in this rapid review suggests the following implications for public health practice:

1. All pregnant women should be screened for smoking status, encouraged to stop smoking, and referred to or provided smoking cessation support, while taking into account the needs of disadvantaged patients.
2. Those providing smoking cessation services should have specialized training and credentials.
3. Contingent incentives are the most effective intervention for smoking cessation among pregnant women, while counselling and health education may be effective for some pregnant women.
4. If NRT is the preferred treatment, once information on the risks and benefits is provided, it should be offered in combination with behavioural counselling.
5. Pregnant women should not take Varenicline (Champix, Chantix) or Bupropion (Wellbutrin, Zyban).
6. All work and public places should be smoke-free.

1 Issue

Smoking in pregnancy was identified by the Timiskaming Health Unit as a key public health issue that should be addressed in its catchment area. Use of tobacco during pregnancy can increase the risk of sudden infant death syndrome, stillbirth, placental complications and an overall increased risk of infant mortality and morbidity (1). In 2015, 23.2% of pregnant women in Timiskaming smoked at some point in their pregnancy (2). This number is concerning as it has consistently been over 3x the Ontario rate over the past 4 years (2). Currently, there are no specific interventions or programs in place in the district to address this issue. By reviewing current evidence and best practice documents, it is hoped that a strategy can be put into place to help decrease local rates of smoking during pregnancy.

2 Context

In Canada, tobacco is the only legal product that kills a large proportion of its consumers when used as intended by manufacturers. It has been shown that tobacco causes adverse outcomes in pregnant women and their fetuses. As such, cigarette smoking is one of the most potentially modifiable causes of adverse pregnancy outcomes (3). Maternal cigarette smoking is associated with increased risks for: ectopic pregnancy, premature rupture of membranes, abruption placentae, placenta previa, miscarriage, stillbirth, preterm birth, low birth weight, small for gestational age, and congenital anomalies such as cleft lip (3-7). Cigarette smoking can also cause intrauterine growth restriction, due to the reduction of the supply of oxygen and other essential fetal nutrients (5). The impact of low birth weight and preterm births also has an enormous economic cost, causing up to 40% of socioeconomic inequalities in stillbirths and infant deaths (6).

Smoking during pregnancy is a public health issue of great importance in Timiskaming District, as the rates of smoking have been historically higher than that of Ontario and are presently triple the Ontario rate (Figure 1) (2). Moreover, in 2015, 23% of mothers were smoking at the time of delivery (Figure 1) (2). As shown in Figure 2, the amount of

cigarettes smoked daily by pregnant women in Timiskaming is consistently and significantly higher than the provincial average (2). The rate of cigarette smoking in the general population of Timiskaming (which also includes men and non-pregnant women) remains statistically significantly higher than the province as well (8). Moreover, the rate of smoking in Northeastern Ontario is much higher than that of the provincial average (26% compared to 19%, respectively) (8).

The literature has demonstrated that rates of smoking during pregnancy seem to be influenced by socioeconomic status (1). For example, women who are living with lower incomes and lower education levels demonstrate higher rates of smoking during pregnancy compared to women in higher income brackets and higher levels of education (9). In Timiskaming, 19.6% of residents report having no high school diploma as compared to 11% of Ontario residents (9). Furthermore, in Ontario, 28.9% of residents had a university degree compared to approximately 9% of Timiskaming residents. In Timiskaming, females tend to earn less than women in Ontario, making \$20,390 vs. \$23,882 (9).

In Ontario, all income categories (low, mid, and high) were statistically different from each other showing that as income increased, smoking decreased. There were no statistical differences between categories for Timiskaming and the reader is cautioned that Timiskaming's data were based on a small sample size (10). Additionally, in Timiskaming, females tend to earn less than women in Ontario, making \$20,390 vs. \$23,882 (9).

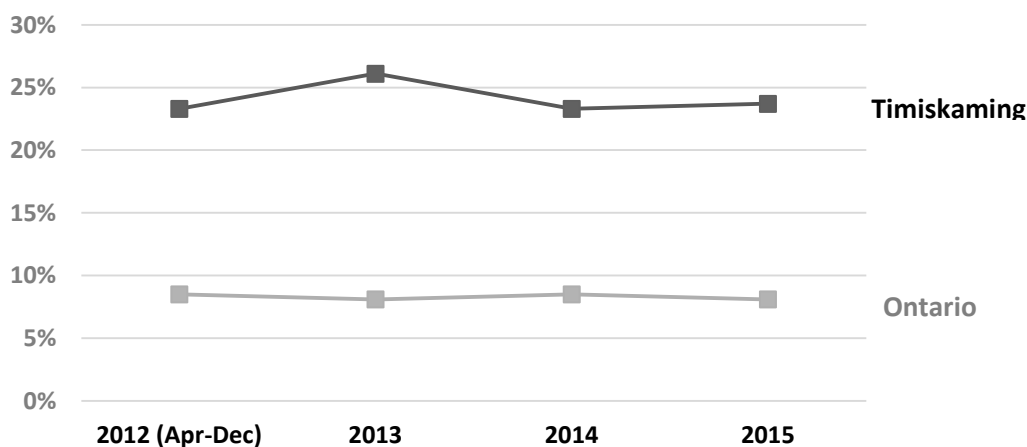


Figure 1. The percentage of mothers who smoked at the time of the newborn's birth. (2)

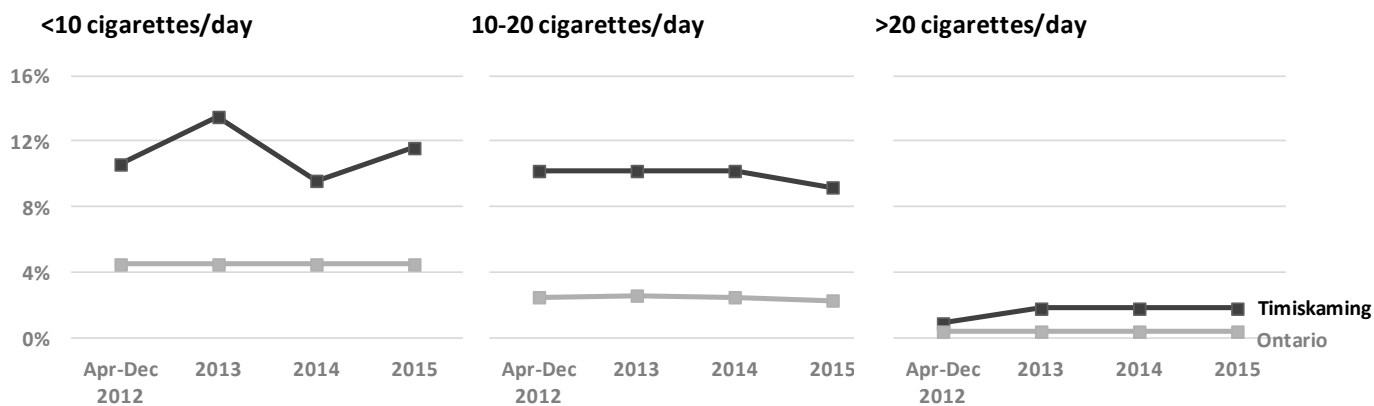


Figure 2. Percentage of women who smoked upon admission for birth (2).

Currently, little is known about strategies or interventions in the district that specifically target smoking cessation during pregnancy.

3 Literature Review Question

The question addressed in this rapid review is: Are interventions effective in promoting smoking cessation and if yes, which ones? The PICO format was used to create the literature review question.

The research question in the PICO format is as follows:

Population: Pregnant women

Intervention: Perinatal smoking cessation

Comparison: Usual prenatal care

Outcome: Smoking cessation

4 Literature Search

A search for published literature was conducted in January 2016 by Thunder Bay Health Unit's Librarian through the Shared Library Services Partnership. The search was for guidelines and systematic reviews (SR) published from 2008 onwards, using the following

databases: NICE, National Guideline Clearinghouse, Medline, Embase, CINAHL and PsychInfo. Refer to Appendix A for the complete search strategy.

5 Relevance Assessment

Five reviewers split into two teams to independently assess titles and abstracts of the articles to determine relevance. Within each team, discrepancies about inclusion or exclusion of an article were resolved by consensus between the reviewers. The studies were assessed using the following criteria:

- Inclusion criteria: English language; published in the last five years; smoking cessation during pregnancy included as an outcome; public health relevant smoking cessation interventions; biochemical verification of quit; SR or guideline study design
- Exclusion criteria: women who smoke during pre-conception and post-partum; anti-depressant medication as intervention; quit attempt only during pregnancy; self-reported quit; single study design

6 Results of the Search

The search identified 357 potentially relevant articles. Fifteen studies were removed as duplicates, leaving 342 for title and abstract relevance assessment. After the title and abstract review, 296 studies were not relevant leaving 46 documents for full text review. After the full text review 14 articles were relevant and selected for critical appraisal. Refer to Appendix B to view the literature search flow chart.

7 Critical Appraisal

After the full text review, there remained 10 SRs and 4 guidelines to critically appraise. The review authors found that critical appraisal had already been conducted on six of the SRs

by healthevidence.org, using the *Health Evidence Quality Assessment Tool: Review Articles*, which the authors of this rapid review chose to use for the remaining SRs. This tool rates SRs with a score of 8 or more (out of 10) as strong, between 5-7 as moderate, and scores of 4 or less are rated as weak. These scores are meant to be an overall reflection of usability by public health decision makers. The remaining 4 SRs were independently appraised by two authors of this rapid review. Of the 10 total SRs, 6 were rated as strong, 3 were rated as moderate and 1 was rated as low.

The assessment of the methodological quality of guidelines was completed by two independent reviewers using the *Appraisal of Guidelines for Research & Evaluation II (Agree II) Instrument* for critical appraisal of guidelines; 3 guidelines were rated as strong and 1 was rated as moderate. This instrument helps assess the methodological quality of guidelines through 23 different domains, which results in the assessor making a judgement about the quality of the guideline, and also whether not to recommend the use of the guideline. Any discrepancies in critical appraisal outcomes were resolved by consensus. Based on the number of strong quality guidelines and systematic reviews, the authors included the 6 SRs and 3 strong guidelines for data synthesis; the other 5 studies rated as moderate or low quality were excluded from the data synthesis.

8 Description of Included Studies

Cahill, K., et al. (2015). "Incentives for smoking cessation." (13)

This SR, rated as strong, examined the efficacy of incentives and contingency management programmes on higher long-term quit rates. The review includes 8 RCTs assessing smoking cessation during pregnancy in 1295 women over the age of fifteen who smoked. The authors of the synthesis rated the RCTs as moderate in quality (further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate) using the GRADE tool. The programs ranged from ten to twelve weeks and compared incentives to standard care. The incentives included: contingent rewards,

monthly vouchers to confirmed quitters, metered rewards based on percentage of smoking reduction, and non-contingent fixed payment rewards. Abstinence was measured at the longest follow-up (up to 24 weeks) and at least to the end of the pregnancy by biochemical validation (saliva cotinine, urine cotinine, or breath carbon monoxide).

Chamberlain, C. (2013). "Psychosocial interventions for supporting women to stop smoking in pregnancy."(7)

This SR, rated as strong, assessed the effects of psychosocial smoking cessation interventions during pregnancy on smoking behaviour and perinatal health outcomes, as discussed in Appendix D. The authors of this study examined 77 RCTs with nearly 30,000 participants. They used the Cochrane Risk of Bias tool to assess the included studies, with overall quality appraised as high to moderate risk of bias. Biochemical validation (saliva cotinine, urine cotinine, or breath carbon monoxide) was measured from late pregnancy to 18 months postpartum. The interventions include: individual counselling sessions, which are those which provide motivation to quit and support problem solving and coping skills while integrating transtheoretical models of change; health education interventions, which are interventions that inform clients of the risks of smoking and offer advice on quitting but do not provide any further support; feedback interventions, in which the mother is provided with feedback regarding fetal health status or measurements of tobacco smoking by-products in the mother such as ultrasound monitoring or urine cotinine measurements; incentive-based interventions, where women receive a financial incentive such as a gift voucher that is contingent on smoking cessation; social support, in which the support of peers or trained laypersons provide support to the mother. All interventions were compared to either usual care, less intensive interventions, or alternative interventions. Most participants were recruited at one of their first antenatal appointments, receiving an intervention that ranged in duration from mid-pregnancy to delivery.

Coleman, T., et al. (2015). "Pharmacological interventions for promoting smoking cessation during pregnancy." (4)

This SR, rated as strong, aimed to assess the efficacy and safety of smoking cessation pharmacotherapies when used to support smoking cessation in pregnancy. The synthesis includes 9 RCTs, but for the purpose of this rapid review, data were extracted from 8 relevant studies, with a total of 1299 pregnant women. One study was excluded because it examined the use of Bupropion as a smoking cessation intervention during pregnancy. The authors assessed the quality of their included studies with the Cochrane Risk of Bias tool, with all studies being rated with a low risk of bias. The interventions in this synthesis were placebo-RCTs assessing the use of NRT in the form of patches, lozenges, or gum or were assessing NRT with behavioural support compared to behavioural support alone. In this synthesis, behavioural support is the delivery of one-on-one counselling services in person or over the telephone by a health care provider. Abstinence from smoking was the primary outcome, assessed by biochemical verification during late pregnancy and in some studies, up to two years. Details related to the secondary outcome, safety, can be found in Appendix D.

Coleman, T., et al. (2011). "Efficacy and safety of nicotine replacement therapy for smoking cessation in pregnancy: systematic review and meta-analysis." (6)

The objective of this SR, rated as strong, was to determine the efficacy and safety of nicotine replacement therapy (NRT) with or without behavioural support for smoking cessation in pregnancy. The review also includes RCTs that did and did not use placebos. Five RCTs were included in the synthesis, totalling 695 participants. The follow-up schedules ranged from the last prenatal visit up until one-year post partum where participants were assessed for abstinence via biochemical verification. The RCTs that were included in the study were appraised using the Cochrane Risk of Bias tool and ranged from low risk of bias to high risk of bias. The authors assessed smoking cessation in later pregnancy by self-reports validated by biochemical measurements. The authors also measured any effects of the interventions on the infant (see Appendix D). The NRT and placebo were in the form of a patch, lozenge, or gum, used for an average of twelve weeks. The studies assessing behavioural therapy offered a variety of counselling sessions compared with either a placebo or brief counselling sessions lasting 2-5 minutes.

Morgan, H., et al. (2015). "Benefits of Incentives for Breastfeeding and Smoking cessation in pregnancy (BIBS): a mixed-methods study to inform trial design." (3)

The objectives of this SR, rated as strong, were to understand the efficacy of incentives on smoking cessation in pregnancy. The synthesis arranged its meta-analyses into different categories depending on the type of study design. As per the inclusion criteria, only Category A, which included four RCTs, was extracted for the purposes of this rapid review. Category A was the only category that examined RCTs; the other categories looked at other methods such as cross-sectional and qualitative designs that do not meet the inclusion criteria of this rapid review. Category A had a total of 396 pregnant women who smoke and its four RCTs rated as moderate to low risk of bias with the Cochrane Risk of Bias tool. Women were recruited between 20 and 32 weeks of pregnancy and remained in the program until 12 months postpartum. The interventions were delivered by health care practitioners to women partaking in a smoking cessation program that provided incentives (vouchers ranging from \$5 - \$50 CAD) that were contingent on biochemical validation of smoking abstinence. In the comparison group, women received the same vouchers on a non-contingent basis. Biochemical verification took place up to 36 times during the studies, including at the end of pregnancy and during the postpartum period.

Myung, S. K., et al. (2012). "Efficacy and safety of pharmacotherapy for smoking cessation among pregnant smokers: a meta-analysis." (14)

This SR, rated as strong, examined the efficacy and safety of pharmacotherapy for smoking cessation among pregnant smokers. The review includes seven RCTs, quasi-RCTs and a prospective controlled study with a total of 1396 pregnant women of any age. The RCTs were appraised with the Jadad Score with quality ratings from low to high. Women were recruited in early pregnancy, treated for 6-12 weeks, and finally assessed for biochemical verification at the latest point in pregnancy. Some studies followed the women into the postpartum period for as long as 26 weeks. The pharmacotherapy interventions delivered were: daily nicotine patches or gum or lozenges consumed in place for each cigarette smoked. The pharmacotherapy treatment was compared to standard care and the primary

outcome was abstinence on longest follow-up validated by salivary cotinine and/or breath carbon monoxide.

World Health Organization (2013). "WHO: Recommendations for Prevention and Management of Tobacco Use and Second Hand Smoke Exposure During Pregnancy." (5)

This guideline, rated as strong, synthesizes the findings from 25 high quality SRs appraised by the GRADE tool. The objective of this guideline was to synthesis the efficacy of strategies to reduce tobacco use and second hand smoke exposure in pregnant women. The authors studied health care providers' delivery of multiple tobacco cessation interventions. The interventions included in this guideline are: active screening for current and past tobacco use and assessment of tobacco dependence; psychosocial interventions such as counselling, health education, incentives, and peer support; NRT. Outcomes included: identification of current or past tobacco-use and/or dependence; tobacco cessation in pregnancy, postpartum and/or a reduction from first antenatal visit to late pregnancy; adherence or compliance with treatment and the efficacy of prescribed NRT. The outcome indicators were identified as: individual smoking status, uptake of interventions, and 4-week quit rates. The guideline compared the outcomes to either standard care or not being exposed to community interventions.

NICE (2015). "Smoking: stopping in pregnancy and after childbirth."(15)

The intention of this guideline, rated as strong, is to produce public health information on effective interventions to quit smoking during and after childbirth. The guideline was informed by a combination of qualitative research, surveys, systematic reviews, and field work findings (n=65). The quality of the evidence, appraised with the NICE methodology checklist, ranged from low to high. The intended audience for implementing the recommendations were health care providers, specifically maternal health care providers and those who provide tobacco cessation services. The recommendations include: identifying pregnant women who smoke and referring them to stop smoking services, for service providers to contact and follow-up with referrals, for tobacco cessation support

services to provide initial and ongoing support, to employ the use of NRT and pharmacological support, to ensure that the needs are met for disadvantaged pregnant women who smoke, and to provide training to deliver interventions. Service providers must assess the woman's smoking status as well as the smoking status of anyone living in the same home and provide information on the health benefits of stopping smoking; offer local support and referrals to women who are considering smoking cessation and reiterate the health benefits of stopping smoking for both the mother and the infant; telephone or visit any woman who has been referred for help and ensure that any barriers that exist to accessing services are mitigated and when possible, provide NRT or counselling services after taking a baseline breath carbon monoxide or salivary cotinine test; provide NRT to women who have agreed to stop smoking and do not administer bupropion or varenicline to pregnant women; ensure services are impartial and flexible to meeting the needs of disadvantaged women. Lastly, the provision of training and group support for health care providers delivering tobacco cessation services should ensure that all providers meet a standard and are able to care for pregnant women safely and adequately. This guideline did not provide a comparison, defined outcomes, or defined interventions.

NICE (2013). "Smoking: acute, maternity and mental health services." (16)

The objective of this guideline, rated as strong, is to support smoking cessation, temporary abstinence from smoking, and smoke free policies in all secondary care settings. The guideline used 17 articles which were reviews, an economic analysis, or expert papers. The guideline included reviews assessed with the NICE methodology checklist. The target population of the recommendations include: pregnant women, health care providers, health care facility staff, and partners of pregnant women. The recommendations in this guideline are for providers to: identify people who smoke and offer support; provide information and advice for carers, family, or other household members or visitors; and advise on and provide stop smoking pharmacotherapies. Furthermore, it is suggested that health care providers applying the recommendations should present clear information and advice about the risks of smoking and the benefits of stopping smoking, ensure smoke free policies are used, and offer stop smoking services. Finally, it is recommended that

providers do not offer varenicline or bupropion to pregnant or breastfeeding women. This guideline did not offer a comparison, an outcome definition, or defined interventions.

9 Synthesis of Findings

The effectiveness of smoking cessation interventions to reduce the prevalence of smoking during pregnancy is summarized in Table 1.

Three studies also reported on secondary outcomes of safety, infant outcomes such as perinatal deaths, stillbirths, low birthweight infants, preterm births, neonatal deaths or miscarriage. One of these examined psychosocial interventions and two examined NRT. None indicated an effect on the secondary outcomes examined (Appendix D).

Intervention	Findings (Evidence)
Health care provider asks if the patient smokes and makes referral to tobacco cessation services	It is advised to ask and identify pregnant women who smoke tobacco during prenatal care (5, 15, 16) It is advised to refer pregnant women who smoke to smoking cessation services (15)
Health care provider offers advice to support tobacco cessation during pregnancy	It is advised that health-care providers should routinely offer advice and psychosocial interventions for tobacco cessation to all pregnant women, who are either current tobacco users or recent tobacco quitters (5)
Pharmacotherapy for smoking cessation during pregnancy	Do not offer varenicline or bupropion to pregnant or breastfeeding women (5, 15, 16) There are conflicting recommendations about the evidence related to using NRT during pregnancy (5, 15, 16) If an individual wants to use NRT, it is recommended that health care providers advise on the risks and benefits of using NRT during pregnancy (15, 16) Using NRT (patch or gum) was found to have an effect on smoking cessation, when used for 6 – 12 weeks, with a few adverse effects reported. Patch: [1.6 (1.05, 2.43)], Gum: [1.21 (0.64, 2.29)] (14)
Establishment of smoke free facilities	It is advised that all health-care facilities should be smoke-free to protect the health of all staff, patients and visitors, including pregnant women (5) It is advised that all work and public places should be smoke-free for the protection of everyone, including pregnant women (5)
Tobacco cessation support	It is advised that tobacco cessation support services: (15)

<p>services should provide stop smoking services with continued support during pregnancy</p>	<ul style="list-style-type: none"> • provide ongoing support throughout the pregnancy with regular monitoring • ensure that connections are made with other agencies to ensure all providers understand what services are available and how they are accessed • telephone all women who have been referred to invite them to access smoking cessation services
<p>Tobacco cessation support services must ensure that the needs of disadvantaged pregnant women are met</p>	<p>It is advised that: (15)</p> <ul style="list-style-type: none"> • services are delivered in an impartial, client-centered manner • translation services are provided if needed and culturally sensitive services are available • services are flexible, coordinated, and take place at accessible times and locations • providers work in partnership with agencies that support women who have complex social and emotional needs
<p>Tobacco cessation service providers should have relevant and standardized training and credentials</p>	<p>It is advised that: (15)</p> <ul style="list-style-type: none"> • all clinicians who deliver stop-smoking interventions are trained to the same standard • health care providers who work with pregnant women know how to assess smoking status and always recommend quitting rather than cutting down
<p>Pharmacological and psychosocial smoking cessation interventions for pregnant women</p>	<p>Use of NRT and behaviour change therapy compared to placebo and behaviour change showed that using NRT with behavioural support for smoking cessation in pregnancy is effective [1.41 (1.03, 1.93)]. There is no evidence that NRT has a positive or negative impact on pregnancy and infant outcomes. (4)</p> <p>NRT and behavioural change therapy/motivational interviewing compared to usual care showed that using NRT with psychosocial support for smoking cessation in pregnancy is effective [1.63 (0.85, 3.14)] (6)</p> <p>One trial suggested that NRT used in pregnancy for smoking cessation results in improved child development (4)</p>
<p>Psychosocial smoking cessation interventions for pregnant women</p>	<p>Contingent incentives</p> <p>In one systematic review (SR), it was found that 48% of participants in a contingent behavioural incentive group had a 75% reduction in smoking and 31% were abstinent. In another review, contingent incentives were found to boost cessation rates in pregnancy [3.79(2.74, 5.25)] (13)</p> <p>In another SR, it was found that incentives are effective [incentives vs. usual care (3.59(0.10, 130.49)] (7)</p> <p>In a final review, incentives were found to be effective compared to standard care [2.58 (1.63, 4.07)] (3)</p> <p>Non-contingent incentives</p> <p>One review concluded that there was insufficient argument to support</p>

	<p>that non-contingent incentives are effective (3)</p> <p>Counselling</p> <p>There is some evidence to conclude that counselling is effective when compared to usual care [1.25 (1.03, 1.5)] (7)</p> <p>Health Education</p> <p>There is some evidence to support health education as an intervention to pregnant women who smoke [compared to usual care 1.29 (0.49, 3.42)] (7)</p> <p>Feedback</p> <p>There is some evidence to support feedback as an effective intervention for pregnant women who smoke (7)</p>
--	--

10 Key Messages

The evidence described in this rapid review suggests the following implications for public health practice:

1. All pregnant women should be screened for smoking status, encouraged to stop smoking, and referred to or provided smoking cessation support, while taking into account the needs of disadvantaged patients.
2. Those providing smoking cessation services should have specialized training and credentials.
3. Contingent incentives are the most effective intervention for smoking cessation among pregnant women, while counselling and health education may be effective for some pregnant women.
4. If NRT is the preferred treatment, once information on the risks and benefits is provided, it should be offered in combination with behavioural counselling.
5. Pregnant women should not take Varenicline (Champix, Chantix) or Bupropion (Wellbutrin, Zyban).
6. All work and public places should be smoke-free.

11 Next Steps

Following the synthesis of research findings, THU's management team can consider adaptability and transferability of the evidence (17).

Steps include determining who will be involved in the decision, selecting and weighting criteria and determining any scoring/weighting, and documenting the scoring process used. A worksheet for this step is included in Appendix E.

Considerations may include:

Applicability: political and social acceptability, available human and financial resources, organizational capacity and expertise

Transferability: magnitude of health issue, magnitude of the "reach" and cost effectiveness of the intervention, characteristics of target population

Once practice decisions have been made, implementation and evaluation of the selected intervention(s) will help bring the EIDM cycle back to its starting point.

References

- 1- Public Health Agency of Canada. Canadian Perinatal Health Report. 2008.
- 2- Timiskaming Health Unit. BORN. 2016.
- 3- Morgan H, Hoddinott P, Thomson G, Crossland N, Farrar S, Yi D, et al. Benefits of Incentives for Breastfeeding and Smoking cessation in pregnancy (BIBS): a mixed-methods study to inform trial design. *Health Technol Assess* 2015;19(30).
- 4- Coleman T, Chamberlain C, Davey MA, Cooper SE, Leonardi-Bee J. Pharmacological interventions for promoting smoking cessation during pregnancy. *Cochrane Database Syst Rev.* 2015;12.
- 5- World Health Organization. WHO recommendations for the prevention and management of tobacco use and second hand smoke exposure in pregnancy. 2013.
- 6- Coleman T, Chamberlain C, Cooper S, Leonardi-Bee J. Efficacy and safety of nicotine replacement therapy for smoking cessation in pregnancy: systematic review and meta-analysis. *Addiction.* 2011;106(52-61).
- 7- Chamberlain C, O'Mara-Eves A, Oliver S, Caird JR, Perlen SM, Eades SJ, Thomas J. Psychosocial interventions for supporting women to stop smoking in pregnancy. *Cochrane Database Syst Rev.* 2013;10.
- 8- Canadian Community Health Survey 2011-12. Statistics Canada, Share Files, Ontario Ministry of Health and Long-Term Care.
- 9- Ontario Ministry of Health and Long-Term Care. Population Estimates 2002-2011, IntelliHEALTH Ontario. 2015.
- 10- Timiskaming health Unit. Tobacco Use, Exposure and Access in Timiskaming. 2013.
- 11- Cahill K, Hartmann-Boyce J, Perera R. Incentives for smoking cessation. *Cochrane Database of Syst Rev.* 2015;5.
- 12- Myung SK, Ju W, Park CH, Oh SW, Seo HG, Kim HS. Efficacy and safety of pharmacotherapy for smoking cessation among pregnant smokers: a meta-analysis. *BJOR.* 2012;119(9):1029-39.
- 13- National Institute for Health and Care Excellence. Smoking: acute, maternity and mental health services. 2015.
- 14- National Institute for Health and Care Excellence. Smoking: stopping in pregnancy and after child birth. 2013.
- 15- Buffet C, Ciliska D, Thomas H. *It worked there. Will it work here? Tool for Assessing Applicability and Transferability of Evidence (A: When considering starting a new program).* 2011.

Appendices

Appendix A: Search Strategy

Interventions for Smoking Cessation in Pregnancy

Resources Searched: NICE, National guideline Clearinghouse, Medline, Embase, CINAHL, PsycInfo.

Findings:

- Guidelines searched online via NICE, National guideline clearinghouse 5 referenced below and forwarded via email
- Over 220 systematic review results were, de-duplicated and included in a bibliography
- An additional 35 guidelines were found from database searches and included in a bibliography.

IMPORTANT NOTE – filters for systematic reviews applied to medline embase and CINAHL were exhaustive in order to maximize retrieval of relevant results. Some articles cited in the bibliography are not explicitly systematic reviews. Please assess the validity of the methodology to ensure the review is systematic prior to including it in your review process.

Guideline Searching (full text pdfs will be forwarded in separate emails)

NICE - Search pregnancy smoking

Relevant results

- Smoking: stopping in pregnancy and after childbirth NICE guidelines [PH26] Published date: June 2010
<https://www.nice.org.uk/guidance/ph26/chapter/7-Related-NICE-guidance>

National Guideline Clearinghouse

Search

pregnancy or prenatal or maternal or postnatal or antinatal or perinatal'
and 'smoking or tobacco' within the above set.

Results (all years)

195

<https://www.guideline.gov/search/search.aspx?term=pregnancy%20or%20prenatal%20or%20maternal%20or%20postnatal%20or%20antinatal%20or%20perinatal&subterm=smoking%20or%20tobacco>

Relevant results

- Result # 5 - Substance use in Pregnancy – Society of obstetricians and gynaecologists of Canada NGC:008510
- Result #15 - Guidelines for the identification and management of substance use and substance use disorders in pregnancy 2014 – WHO NGC:010619
- Result #17 - Tobacco Treatment 1998 University of Michigan Health System. Revised March 2012 NGC:009056
(FDA warning related to meds discussed)

College of family physicians of Canada Clinical practice guideline search

Canadian Smoking Cessation Clinical practice guidelines 2012 Canadian Action network for the advancement, dissemination and adoption of practice-informed tobacco treatment

https://www.nicotinedependenceclinic.com/English/CANADAPTT/Documents/CAN-ADAPTT%20Canadian%20Smoking%20Cessation%20Guideline_website.pdf

7 Related NICE guidance

<https://www.nice.org.uk/guidance/ph26/chapter/7-Related-NICE-guidance>

- School-based interventions to prevent smoking. NICE public health guidance 23 (2010).

- Antenatal care: routine care for the healthy pregnant woman. NICE clinical guideline 62 (2008).
- Identifying and supporting people most at risk of dying prematurely. NICE public health guidance 15 (2008).
- Smoking cessation services. NICE public health guidance 10 (2008).
- Community engagement. NICE public health guidance 9 (2008).
- Behaviour change: the principles for effective interventions. NICE public health guidance 6 (2007).
- Workplace interventions to promote smoking cessation. NICE public health guidance 5 (2007).
- Brief interventions and referral for smoking cessation in primary care and other settings. NICE public health guidance 1 (2006).
- Postnatal care: routine postnatal care of women and their babies. NICE clinical guideline 37 (2006).
- Weight management before, during and after pregnancy. NICE public health guidance 27 (2010)
- Pregnancy and complex social factors. NICE clinical guideline 110 (2010)

NOTE: Guidelines were also extracted from the following databases using filters MEDLINE, EMBASE, CINAH. These and included in a separate bibliography.

DATABASE SEARCHES

Ovid MEDLINE(R) 1946 to Present Search Strategy:

1 Pregnancy/ or Pregnancy, High-Risk/ or Maternal Behavior/ or Maternal-Fetal Exchange/ or Maternal Welfare/ or Maternal Health Services/ or Maternal Health/ or Pregnant Women/ or Prenatal Care/		
	776262	
2 (pregnan* or antinatal or perinatal or mother* or maternal or postnatal).ti,kw,kf. or (pregnan* or antinatal or perinatal or mother* or maternal or postnatal).ab. /freq=2	499095	
3 or/1-2 - all pregnancy related articles		921531
4 "Tobacco Use Disorder"/ or "Tobacco Use"/ or Smoking/		131087
5 (smok* or nicotine or tobacco).ti,kw,kf. or (smok* or nicotine or tobacco).ab. /freq=2		164063
6 or/4-5		207810
7 (cessation or quit or quitting or stop* or give up or cut out or rehab* or "break the habit").ti,kw,kf. or (cessation or quit or quitting or stop* or give up or cut out or rehab*).ab. /freq=2		121374
8 6 and 7		18752
9 "tobacco use cessation"/ or smoking cessation/		22768
10 8 or 9 all articles on quitting		28512

INTERVENTIONS

11 cut down to quit .ti,kw,kf,ab.		18
12 ((cut down or reduc* or limit* or less* or lower or wean) adj3 (intake or gradual or smok* or tobacco or nicotine or consum* or use* or cigarette*)).ti.		7964
13 ((cut down or reduc* or limit* or less* or lower or wean) adj3 (intake or gradual or smok* or tobacco or nicotine or consum* or use* or cigarette*)).ab. /freq=2		17156
14 11 or 12 or 13		23865
3 and 10		169)
15 Therapy, Computer-Assisted/		5459
16 (mobile phone or cellular or cell phone or text messag* or internet or web or web-based or web based or online or on-line).ti,kw,kf.		124342
17 (mobile phone or cellular or cell phone or text messag* or internet or web or web-based or web based or online or on-line).ab. /freq=2		161601
18 (app or apps).ti,kw,kf. or (app or apps).ab. /freq=2		10968

19 or/15-18			260132
	19 and 3 and 10	22	
20 counseling/ or directive counseling/ or motivational interviewing/		32162	
21 behavior therapy/ or cognitive therapy/			41194
22 Self-Help Groups/ or Group Processes/			20129
23 "acceptance and commitment therapy"/ or mindfulness/ or "acceptance and commitment therapy".ti,ab,kw,kf.		983	
24 Psychological Techniques/			282
25 nicotine anonymous.ti,ab,kw,kf.			2
26 (group counsel* or group therap* or cognitive behaviour therapy or cognitive behavior therapy).mp.		7125	
27 or/20-26 all psychological or behavioral therapies		95808	
	27 and 3 and 10		268
28 " tobacco use cessation products "/ or electronic cigarettes/			1398
29 nicotine replacement.mp.			2495
30 NRT.ti,kw,kf.			83
31 Smoking/th or "Tobacco Use Disorder"/th			2353
32 (vaping or e-cig* or e cigarette* or electronic cigarette* or e-cigarette* or cigalike).ti,kw,kf.		1010	
33 (vaping or e-cig* or e cigarette* or electronic cigarette* or e-cigarette* or cigalike).ab. /freq=2			524
34. 28 or 29 or 30 or 31 or 32 or 33			6037
	34 and 3 and 10	227	
35 (prescri* or medication* or pharmaceutical* or drug therapy).ti,kw,kf.		111241	
	35 and 3 and 10		11
36 patient education as topic/ or prenatal education/ or health education/ or consumer health information/ or teaching materials/		132275	
37 (curricul* or teach* or educat*).ti,kw,kf. or (curricul* or teach* or educat*).ab. /freq=2			301923
38 or/36-37			393397
	38 and 3 and 10	317	
Media campaigns or policy interventions			
39 (anti-tobacco or anti-smoking or antitobacco or antismoking or smoke free or tobacco free or tobacco control or smoking or nicotine or quit or quitting).ti,kw,kf. or (anti-tobacco or anti-smoking or antitobacco or antismoking or smoke free or tobacco free or tobacco control or smoking or nicotine or quit or quitting).ab. /freq=2		107013	
40 (campaign* or program* or initiative* or project or policies or policy or regulat* or push or drive or movement or strategy or strategies or approach or action or plan*).ti,kw,kf. or (campaign* or program* or initiative* or project or policies or policy or regulat* or push or drive or movement or strategy or strategies or approach or action or plan*).ab. /freq=2			2508403
41 communications media/ or mass media/ or Social Media/ or Public Policy/	41037		
42 or/40-41			2528591
43 39 and 42			15743
44 Smoke-Free Policy/		305	
45 or/43-44 1			5882
	45 and 3 and 10	427	
Other prevention control or therapeutic interventions. - generic			
46 Smoking/pc, th or "Tobacco Use"/pc, th or "Tobacco Use Disorder"/pc, th	18880		
	46 and 3 and 10		580
47 14 or 19 or 27 or 34 or 35 or 38 or 45 or 46 all interventions			874521

48 3 and 10 and 48 all interventions with population/outcome 1174

Systematic review filters.

51. (((comprehensive* or integrative or systematic*) adj3 (bibliographic* or review* or literature)) or (meta-analy* or metaanaly* or "research synthesis" or ((information or data) adj3 synthesis) or (data adj2 extract*))).ti,ab. or (cinahl or (cochrane adj3 trial*) or embase or medline or psyclit or (psycinfo not "psycinfo database") or pubmed or scopus or "sociological abstracts" or "web of science").ab. or ("cochrane database of systematic reviews" or evidence report technology assessment or evidence report technology assessment summary).jn. or Evidence Report: Technology Assessment*.jn. or ((review adj5 (rationale or evidence)).ti,ab. and review.pt.) or meta-analysis as topic/ or Meta-Analysis.pt.

252038

52. meta-analysis/

60194

53. (systematic review* or meta analys* or metanalys* or meta-analys* or "review of reviews").mp.

149657

54. ((pooled or combined or combining) adj (review* or data or studies or results or trials or information)).mp.

16119

55. ((research or data) adj synthesis).mp.

8304

56. 52 or 53 or 54 or 55

167196

57. 48 and 56

62

58. 48 and 51

86

59. 67 or 68

88

60. limit 59 to (english language and yr="2008 -Current")

52

Guidelines or consensus development

limit 48 to (english language and humans and (consensus development conference or consensus development conference, nih or guideline or practice guideline))

10

EMBASE

1 pregnancy/ 266952

2 exp maternal behavior/ 8161

3 maternal welfare/ 8773

4 maternal care/ 12389

5 pregnant woman/ 40991

6 prenatal care/ 22118

7 (pregnan* or antinatal or perinatal or postnatal or prenatal or mother* or maternal).ab. /freq=2 342470

8 (pregnan* or antinatal or perinatal or postnatal or prenatal or mother* or maternal).mp. 734191 **9 or/1-8**

734191

10 maternal smoking/ 4168

11 "tobacco use"/ or smoking/ 179638

12 (smok* or nicotine or tobacco).mp. 355238

13 (smok* or nicotine or tobacco).ab. /freq=2 135196

14 or/10-13 355238

15 (cessation or quit or quitting or stop* or "give up" or "giving up" or "cut out" or rehab* or "break the habit").mp. 349837

16 (cessation or quit or quitting or stop* or "give up" or "giving up" or "cut out" or rehab* or "break the habit").ab. /freq=2 87101

17 15 or 16 349837

18 14 and 17 53335

19 smoking cessation/ 39476

20 18 or 19 53335

INTERVENTIONS

21 "cut down to quit".mp. 23

22 ((cut down or reduc* or limit* or less* or lower or wean) adj3 (intake or gradual or smok* or tobacco or nicotine or consum* or use* or cigarette*)).ti. 7320

23 ((cut down or reduc* or limit* or less* or lower or wean) adj3 (intake or gradual or smok* or tobacco or nicotine or consum* or use* or cigarette*)).ab. /freq=2 18618

24. 21 or 22 or 23 **24571**

25 **computer assisted therapy**/ 3293

26 (mobile phone or cellular or cell phone or text messag* or texting or internet or web or web-based or web based or online or on-line).mp. 906988

27 (mobile phone or cellular or cell phone or text messag* or texting or internet or web or web-based or web based or online or on-line).ab. /freq=2 172677

28 social media/ 5135

29 mobile application/ 1696

30 (app or apps).ti. 3466

31 (app or apps).ab. /freq=2 10625

32 25 or 26 or 27 or 28 or 29 or 30 or 31 **922234**

33 **counseling**/ or directive counseling/ or motivational interviewing/ or peer counseling/ 37196

34 **behavior therapy**/ 28231

35 cognitive therapy/ or "acceptance and commitment therapy"/ 37675

36 (acceptance and commitment therapy).mp. 752

37 **group therapy**/ 9520

38 self help/ 7828

39 nicotine anonymous.ti. 2

40 nicotine anonymous.ab. /freq=2 1

41 (group counsel* or group therapy or cognitive behaviour therapy or cognitive behavior therapy).mp. 14740

42 or/33-41 104900

43 nicotine gum/ 2108

44 nicotine patch/ 1560

45 nicotine lozenge/ 170

46 smoking cessation program/ 2237

47 (NRT or **nicotine replacement**).ti. 760

48 smoking/th [Therapy] 206

49 "tobacco use"/th [Therapy] 3

50 (vaping or e-cig* or e cigarette* or electronic cigarette* or cigalike).mp. 1575

51 (vaping or e-cig* or e cigarette* or electronic cigarette* or cigalike).ab. /freq=2 623

52 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 7087

53 (prescri* or medication or pharmaceutical or drug therapy).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword] 608389

54 smoking/dt [**Drug Therapy**] 120

55 tobacco/dt [Drug Therapy] 3

56 53 or 54 or 55 **608479**

57 **patient education**/ or health education/ 126846

58 childbirth education/ 213

59 consumer health information/ 2684

60 (curricul* or teach* or educat*).mp. 822935

61 (curricul* or teach* or educat*).ab. /freq=2 178645

62 57 or 58 or 59 or 60 or 61 **824755**

Policies and media campaigns

63 smoking regulation/ 314

64 smoking ban/ 952

65 smoking regulation/ 314

66 (anti-tobacco or anti-smoking or antitobacco or antismoking or smoke free or tobacco free or tobacco control or quit or quitting or smok* or nicotine or tobacco).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword] 356864

67 ((anti-tobacco or anti-smoking or antitobacco or antismoking or smoke free or tobacco free or tobacco control or quit or quitting or smok* or nicotine or tobacco) adj2 (campaign* or program* or initiative* or project or policy or policies or regulat* or ban or prohibit* or push or drive or movement or strategy or strategies or approach or action or plan*)).mp. 16394

68 mass communication/ 10968

69 policy/ 62405

70 68 or 69 73184

71 66 and 70 2585

72 63 or 64 or 65 or 67 or 71 **18057**

Generic therapy and prevention..

73 smoking/pc, th [Prevention, Therapy] 4909

74 "tobacco use"/pc, th [Prevention, Therapy] 13

75 73 or 74 **4920**

All interventions

76. 24 or 32 or 42 or 52 or 56 or 62 or 72 or 75 **2329918**

77. 9 and 20 and 76 **2017 all interventions for pregnant users**

Systematic Review Filters

78 (((comprehensive* or integrative or systematic*) adj3 (bibliographic* or review* or literature)) or (meta-analy* or metaanaly* or "research synthesis" or ((information or data) adj3 synthesis) or (data adj2 extract*))).ti,ab. or (cinahl or (cochrane adj3 trial*) or embase or medline or psyclit or (psycinfo not "psycinfo database") or pubmed or scopus or "sociological abstracts" or "web of science").ab. or ("cochrane database of systematic reviews" or evidence report technology assessment or evidence report technology assessment summary).jn. or Evidence Report: Technology Assessment*.jn. or ((review adj5 (rationale or evidence)).ti,ab. and review.pt.) or meta-analysis as topic/ or Meta-Analysis.pt. 297721

79 meta-analysis/ or systematic review/ 159998

80 (systematic review* or meta analys* or metanalys* or meta-analys* or "review of reviews").mp. 233341

81 ((pooled or combined or combining) adj (review* or data or studies or results or trials or information)).mp. 18103

82 ((research or information or data) adj synthesis).mp. 10693

83 78 or 79 or 80 or 81 or 82 359014

84 77 and 83 173

85 **limit 84 to (human and english language and yr="2008 - 2016") 110**

Limiter for guidelines.

86. limit 77 to (english language and humans and (consensus development conference or consensus development conference, nih or guideline or practice guideline)) 17

CINAHL64. 58 and Limiters English Language; Publication Type: **Practice Guidelines** 8

63 Limiters - Published Date: 20080101-20161231; English Language 41

62. 58 and 61 62

61. (TI (systematic* n3 review*)) or (AB (systematic* n3 review*)) or (TI (systematic* n3 bibliographic*)) or (AB (systematic* n3 bibliographic*)) or (TI (systematic* n3 literature)) or (AB (systematic* n3 literature)) or (TI (comprehensive* n3 literature)) or (AB (comprehensive* n3 literature)) or (TI (comprehensive* n3 bibliographic*)) or (AB (comprehensive* n3 bibliographic*)) or (TI (integrative n3 review)) or (AB (integrative n3 review)) or (JN "Cochrane Database of Systematic Reviews") or (TI (information n2 synthesis)) or (TI (data n2 synthesis)) or (AB (information n2 synthesis)) or (AB (data n2 synthesis)) or (TI (data n2 extract*)) or (AB (data n2 extract*)) or (TI (medline or pubmed or psyclit or cinahl or (psycinfo not "psycinfo database") or "web of science" or scopus or embase)) or (AB (medline or pubmed or psyclit or cinahl or (psycinfo not "psycinfo database") or "web of science" or scopus or embase)) or (MH "Systematic Review") or (MH "Meta Analysis") or (TI (meta-analy* or metaanaly*)) or (AB (meta-analy* or metaanaly*))

S60 S58 AND S59 28

S59 Limiters - Published Date: 20100101-20161231; Publication Type: Meta Analysis, Meta Synthesis, Systematic Review 25,420

S58 (S18 OR S26 OR S35 OR S42 OR S43 OR S49 OR S56) AND (S7 AND S15 AND S57) 817**S57 S18 OR S26 OR S35 OR S42 OR S43 OR S49 OR S56** 713,485
S56 S50 AND S55 12,493

S55 S51 OR S52 OR S53 OR S54 603,579

S54 (MH "Public Policy") OR (MH "Policy Making") OR (MH "Health Policy") OR (MH "Policy Studies") OR (MH "Health Policy Studies") 45,432

S53 (MH "Social Media") 2,974

S52 (MH "Communications Media") OR (MH "Telecommunications+") 71,771

S51 TI (campaign* or program* or initiative* or project* or policies or policy or regulation or push or drive or movement or strategy or strategies or approach or plan or action) OR AB (campaign* or program* or initiative* or project* or policies or policy or regulation or push or drive or movement or strategy or strategies or approach or plan or action) 523,066

S50 TI (anti tobacco or anti smoking or anti-tobacco or anti-smoking or smoke free or tobacco free or tobacco control or smok* or nicotine or quit or quitting) OR AB (anti tobacco or anti smoking or anti-tobacco or anti-smoking or smoke free or tobacco free or tobacco control or smok* or nicotine or quit or quitting) 41,236

S49 S44 OR S45 OR S46 OR S47 OR S48 253,062

S48 TI (curricul* or teach* or educat*) OR AB (curricul* or teach* or educat*) 206,441

S47 (MH "Teaching Materials" 7,401

S46 (MH "Consumer Health Information") 8,558

S45 (MH "Health Education") 14,514

S44 (MH "Patient Education") 41,035

S43 TI (prescri* or medication* or pharmaceutical* or drug therapy) OR AB (prescri* or medication* or pharmaceutical* or drug therapy) OR SU (prescri* or medication* or pharmaceutical* or drug therapy) 326,188

S42 S36 OR S37 OR S38 OR S39 OR S40 OR S41 2,609

S41 (MH "Tobacco Use Cessation Products" 633

S40 TI (nicotine replacement or NRT) OR AB (nicotine replacement) 832

S39 TI ((vaping or e-cig* or e cigarette or electronic cigarette* or cigalike) OR AB ((vaping or e-cig* or e cigarette or electronic cigarette* or cigalike) 589

S38 (MH "Smoking/TH") 309

S37 (MH "Nicotine Replacement Therapy") 1,098

S36 (MH "Electronic Cigarettes")	258
S35 S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34	36,217
S34 TI nicotine anonymous OR AB nicotine anonymous OR SU nicotine anonymous OR TI (group counsel* or group therap* or cognitive behaviour therapy or cognitive behavior therapy) OR AB (group counsel* or group therap* or cognitive behaviour therapy or cognitive behavior therapy) OR MJ (group counsel* or group therap* or cognitive behaviour therapy or cognitive behavior therapy)	1,960
S33 (MH "Cognitive Therapy") OR (MH "Acceptance and Commitment Therapy") OR (MH "Mindfulness")	8,991
S32 TI directive counseling OR SU directive counseling OR AB directive counseling	18
S31 (MH "Psychological Techniques")	256
S30 (MH "Support Groups")	6,710
S29 (MH "Behavior Therapy") OR (MH "Cognitive Therapy")	12,922
S28 (MH "Motivational Interviewing")	1,315
S27 (MH "Counseling")	14,703
S26 S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25	148,058
S25 TI ((moble phone or cellular or cell phone or text messag* or internet or web or web-based or web based or online or on-line)) OR AB ((moble phone or cellular or cell phone or text messag* or internet or web or web-based or web based or online or on-line)) OR TI ((app or apps)) OR AB ((app or apps))	87,464
S24 (MH "Mobile Applications")	478
S23 (MH "Internet") OR (MH "World Wide Web")	78,494
S22 (MH "Social Media")	2,974
S21 (MH "Text Messaging") OR (MH "Instant Messaging")	483
S20 (MH "Cellular Phone") OR (MH "Smartphone")	461
S19 (MH "Therapy, Computer Assisted")	2,295
S18 S16 OR S17	14,404
S17 TI ((cut down or reduc* or limit* or lower or wean) N2 (intake or gradual or smok* or tobacco or nicotine or consum* or use or cigarette*)) OR AB ((cut down or reduc* or limit* or lower or wean) N2 (intake or gradual or smok* or tobacco or nicotine or consum* or use or cigarette*))	14,403
S16 TI "cut down to quit" OR AB "cut down to quit" OR SU "cut down to quit" OR MW "cut down to quit"	11
S15 S13 OR S14	15,811
S14 (MH "Smoking Cessation")	13,822
S13 S11 AND S12	
S12 S8 OR S9 OR S10	54,676
S11 cessation or quit or quitting or stop* or give up or cut out or rehab* or (break N/2 habit) Search modes -	134,453
S10 TI (smok* or nicotine or tobacco or cigarette*) OR AB (smok* or nicotine or tobacco or cigarette*)	46,055
S9 (MH "Smoking")	30,066
S8 (MH "Tobacco Products")	265
S7 S1 OR S2 OR S3 OR S4 OR S5 OR S6	146,125
S6 TI (pregnan* or antinatal or perinatal or mother* or maternal or postnatal or prenatal) OR AB (pregnan* or antinatal or perinatal or mother* or maternal or postnatal or prenatal)	94,802
S5 (MH "Maternal-Child Health")	1,853
S4 (MH "Prenatal Care")	8,584
S3 (MH "Maternal Behavior") OR (MH "Maternal Health Services") OR (MH "Maternal Welfare") OR (MH "Maternal-Fetal Exchange")	7,328
S2 (MH "Pregnancy")	100,106

S1 (MH "Expectant Mothers") 2,159

Cochrane Database Search Strategy

Results in the Systematic Reviews Database

17

S41	S3 AND S8 AND S40		17
S40	S9 OR S10 OR S14 OR S21 OR S24 OR S27 OR S36 OR S38 OR S39	4,277	
S39	S28 OR S29 OR S30		702
S38	S35 OR S37		6
S37	(ZE "tobacco industry legislation & jurisprudence") or (ZE "tobacco smoke pollution legislation & jurisprudence") or (ZE "tobacco smoke pollution prevention & control")	3	
S36	((ZE "smoking cessation psychology") or (ZE "smoking prevention & control") or (ZE "smoking therapy")) or ((ZE "tobacco use disorder prevention & control"))	45	
S35	(S31 AND S32) AND (S30 OR S33 OR S34)	3	
S34	S31 AND S32		3
S33	(anti-tobacco or antitobacco or anti tobacco or anti-smok* or anti smok* or antismok* or smoke free or tobacco free or tobacco control or quit or quitting or smoke or nicotine or tobacco) N3 (campaign* or program* or initiative* or project or policy or policies or regulat* or ban or prohibit* or push or drive or movement or strategy or strategies or approach or action or plan)		
	11		
S32	((ZE "policy making")) or ((ZE "mass media") or (ZE "communication"))	17	
S31	TI (anti-tobacco or antitobacco or anti tobacco or anti-smok* or anti smok* or antismok* or smoke free or tobacco free or tobacco control or quit or quitting or smoke or nicotine or tobacco) OR AB (anti-tobacco or antitobacco or anti tobacco or anti-smok* or anti smok* or antismok* or smoke free or tobacco free or tobacco control or quit or quitting or smoke or nicotine or tobacco) OR SU (anti-tobacco or antitobacco or anti tobacco or anti-smok* or anti smok* or antismok* or smoke free or tobacco free or tobacco control or quit or quitting or smoke or nicotine or tobacco)		172
S30	(ZE "smoking legislation & jurisprudence")	2	
S29	TI (curricul* or teach* or educat*) OR AB (curricul* or teach* or educat*) OR SU (curricul* or teach* or educat*)	699	
S28	((ZE "patient education as topic") or (ZE "patient education as topic methods")) or ((ZE "health education") or (ZE "health education methods")) or ((ZE "consumer health information methods"))	69	
S27	S25 OR S26		3,100
S26	TI (prescri* or medication or phamaceutical* or drug therapy) OR SU (prescri* or medication or phamaceutical* or drug therapy) OR AB (prescri* or medication or phamaceutical* or drug therapy)		
	3,100		
S25	(ZE "smoking drug therapy")		5
S24	(TI (nicotine replacement or vaping or e-cig* or e cigarette* or electronic cigarette* or cigalike or NRT) OR AB (nicotine replacement or vaping or e-cig* or e cigarette* or electronic cigarette* or cigalike or NRT) OR SU (nicotine replacement or vaping or e-cig* or e cigarette* or electronic cigarette* or cigalike or NRT)) AND (S22 OR S23)	36	
S23	TI (nicotine replacement or vaping or e-cig* or e cigarette* or electronic cigarette* or cigalike or NRT) OR AB (nicotine replacement or vaping or e-cig* or e cigarette* or electronic cigarette* or cigalike or NRT) OR SU (nicotine replacement or vaping or e-cig* or e cigarette* or electronic cigarette* or cigalike or NRT)	36	
S22	((((ZE "nicotine therapeutic use")) or ((ZE "smoking cessation methods") or (ZE "smoking cessation statistics & numerical data")))) or ((ZE "smoking therapy")) or ((ZE "tobacco use cessation methods") or (ZE "tobacco use cessation products"))	44	
S21	S15 OR S16 OR S17 OR S18 OR S19 OR S20	135	

S20	TI (cognitive behaviour therapy or cognitive behavior therapy) OR AB (cognitive behaviour therapy or cognitive behavior therapy) OR SU (cognitive behaviour therapy or cognitive behavior therapy)		
		27	
S19	TI (group therap* or self help or nicotine anonymous) OR AB (group therap* or self help or nicotine anonymous) AND SU (group therap* or self help or nicotine anonymous)		
		9	
S18	TI (acceptance and commitment therapy) OR AB (acceptance and commitment therapy) OR SU (acceptance and commitment therapy)		
		6	
S17	TI motivational interview* OR AB motivational interview* OR SU motivational interview*		
		22	
S16	TI ((directive or peer) N2 (counseling or therapy)) OR AB ((directive or peer) N2 (counseling or therapy))		
		4	
S15	((((ZE "self-help groups")) or ((ZE "counseling") or (ZE "counseling methods")))) or ((ZE "motivational interviewing methods")) or ((ZE "behavior therapy") or (ZE "behavior therapy methods")) or ((ZE "cognitive therapy") or (ZE "cognitive therapy methods"))	87	
S14	S11 OR S12 OR S13		720
S13	TI social media OR AB social media	1	
S12	TI app or apps		2
S11	TI ((mobile phone or cellular or cell phone or text messag* or texting or internet or web or web-based ovr web based or online or on-line)) OR AB ((mobile phone or cellular or cell phone or text messag* or texting or internet or web or web-based ovr web based or online or on-line)) OR SU ((mobile phone or cellular or cell phone or text messag* or texting or internet or web or web-based ovr web based or online or on-line))		
		719	
S10	TI ((cut down or reduc* or limit* or less* or wean) N3 (intake or gradual or smok* or tobacco or nicotine or consum* or use* or cigarette*)) OR AB ((cut down or reduc* or limit* or less* or wean) N3 (intake or gradual or smok* or tobacco or nicotine or consum* or use* or cigarette*))		
		699	
S9	"cut down to quit"		0
S8	S6 OR S7	138	
S7	S4 AND S5		138
S6	(ZE "smoking cessation")	11	
S5	TI (cessation or quit or quitting or stop* or "give up" or "giving up" or "cut out" or rehab* or "break the habit") OR AB (cessation or quit or quitting or stop* or "give up" or "giving up" or "cut out" or rehab* or "break the habit") OR SU (cessation or quit or quitting or stop* or "give up" or "giving up" or "cut out" or rehab* or "break the habit")	1,088	
S4	TI (smok* or nicotine or tobacco or cigarette*) OR AB (smok* or nicotine or tobacco or cigarette*) OR SU (smok* or nicotine or tobacco or cigarette*)	254	
S3	S1 OR S2		1,146
S2	(((ZE "pregnancy")) or ((ZE "maternal health services") or (ZE "maternal welfare")))) or ((ZE "pregnant women psychology")) or ((ZE "prenatal care"))	18	
S1	TI ((pregnan* or maternal or antinatal or perinatal or postatal or prenatal or mother*)) OR AB ((pregnan* or maternal or antinatal or perinatal or postatal or prenatal or mother*)) OR SU ((pregnan* or maternal or antinatal or perinatal or postatal or prenatal or mother*))		
			1,146

psychinfo

1 exp Pregnancy/ or exp Adolescent Pregnancy/ 17670

2 exp Prenatal Care/ 1547

3 (pregnan* or antinatal or prenatal or perinatal or postnatal or mother* or maternal or maternity).mp. 140762

4 or/1-3 140777

5 exp Tobacco Smoking/ 23491

6 (smok* or nicotine or tobacco or cigarette*).mp. 52819

7 5 or 6 52819

8 (cessation or quit or quitting or stop* or "give up" or "giving up" or "cut out" or rehab* or "break the habit").mp. 99091

9 Smoking cessation/ 10411

10 7 and 8 15894

11 9 or 10 15894

12 "cut down to quit".mp. 13

13 ((cut or reduc* or limit* or less* or lower or wean) adj3 (intake or gradual* or smok* or tobacco or nicotine or consum* or use* or cigarette*)).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures] 36215

14 12 or 13 36222

15 computer assisted therapy/ or online therapy/ 2412

16 social media/ 2251

17 (mobile phone or cellular or cell phone or text messag* or texting or internet or web or we-based or online or on-line).mp. 109963

18 (app or apps).ti. 802

19 15 or 16 or 17 or 18 111801

20 counseling/ or peer counseling/ or rehabilitation counseling/ or support groups/ 20297

21 exp cognitive therapy/ or exp motivational therapy/ or exp cognitive behavior therapy/ 25172 22 (acceptance and commitment therapy).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures] 1316

23 group therapy.mp. or exp Group Psychotherapy/ 16310

24 exp self help techniques/ or exp support groups/ 12759

25 nicotine anonymous.mp. 0

26 (group counsel* or self help or directive counsel* or cognitive behaviour therapy or cognitive behavior therapy).mp. 26476

27 20 or 21 or 22 or 23 or 24 or 25 or 26 74414

28 (nicotine adj (gum or lozenge or patch or replacement)).mp. 1923

29 (smoking cessation program or tobacco cessation program).mp. 668

30 NRT.ti. 28

31 (vaping* or e-cig* or e cigarette* or electronic cigarette* or cigalike or smokeless tobacco).mp. 1333

32 28 or 29 or 30 or 31 3743

33 (prescri* or medicat* or pharmaceutial or drug therapy).mp. 161582

34 health education/ or client education/ or health literacy/ or health promotion/ or prenatal care/ 31907

35 (curricul* or teach* or educat*).mp. 477817

36 consumer health information.mp. 65

37 34 or 35 or 36 492335

38 (anti-tobacco or anti-smoking or antitobacco or antismoking or smoke free or tobacco free or tobacco control or smoking or nicotine or quit or quitting).mp. 47294

39 exp Printed Communications Media/ or exp Telecommunications Media/ or exp Communications Media/ or exp Audiovisual Communications Media/ or exp Mass Media/ or exp Social Media/ or exp News Media/ 49060

40 government policy making/ 16133

41 39 or 40 64807
 42 38 and 41 1389
 43 (campaign* or program* or initiative* or project or policies or policy or regulat* or push or drive or movement or strategy or strategies or approach* or action or plan).mp. 1077235
 44 38 and 43 17733
 45 42 or 44 18077
 46 14 or 19 or 27 or 32 or 33 or 37 or 45 809024
 47 4 and 11 and 46 861
 48 meta-analysis/ 3507
 49 (systematic review* or meta analys* or metanalys* or meta-analys* or "review of reviews").mp. 32238
 50 ((pooled or combined or combining) adj (review* or data or studies or results or trials or information)).mp. 2343
 51 ((research or data) adj synthesis).mp. 1161
 52 48 or 49 or 50 or 51 34802
 53 47 and 52

32

Guideline Searching (full text pdfs will be forwarded in separate emails)

NICE - Search pregnancy smoking

National Guideline Clearinghouse

Search

pregnancy or prenatal or maternal or postnatal or antinatal or perinatal' and 'smoking or tobacco' within the above set.

DATABASE SEARCHES

Ovid MEDLINE(R) 1946 to Present Search Strategy:

1 **Pregnancy/** or Pregnancy, High-Risk/ or Maternal Behavior/ or Maternal-Fetal Exchange/ or Maternal Welfare/ or Maternal Health Services/ or Maternal Health/ or Pregnant Women/ or Prenatal Care/

776262

2 (pregnan* or antinatal or perinatal or mother* or maternal or postnatal).ti,kw,kf. or (pregnan* or antinatal or perinatal or mother* or maternal or postnatal).ab. /freq=2

499095

3 or/1-2 - **all pregnancy related articles**

921531

4 "Tobacco Use Disorder"/ or "Tobacco Use"/ or Smoking/

131087

5 (smok* or nicotine or tobacco).ti,kw,kf. or (smok* or nicotine or tobacco).ab. /freq=2

164063

6 or/4-5

207810

7 (**cessation or quit** or quitting or stop* or give up or cut out or rehab* or "break the habit").ti,kw,kf. or (cessation or quit or quitting or stop* or give up or cut out or rehab*).ab. /freq=2

121374

8 6 and 7

18752

9 "tobacco use cessation"/ or smoking cessation/

22768

10 8 or 9 **all articles on quitting**

28512

INTERVENTIONS

11 **cut down to quit**.ti,kw,kf,ab.

18

12 ((cut down or reduc* or limit* or less* or lower or wean) adj3 (intake or gradual or smok* or tobacco or nicotine or consum* or use* or cigarette*)).ti.

7964

13 ((cut down or reduc* or limit* or less* or lower or wean) adj3 (intake or gradual or smok* or tobacco or nicotine or consum* or use* or cigarette*)).ab. /freq=2

17156

14 11 or 12 or 13

23865

(14 and

3 and 10

169)

15 Therapy, Computer-Assisted/		5459	
16 (mobile phone or cellular or cell phone or text messag* or internet or web or web-based or web based or online or on-line).ti,kw,kf.		124342	
17 (mobile phone or cellular or cell phone or text messag* or internet or web or web-based or web based or online or on-line).ab. /freq=2		161601	
18 (app or apps).ti,kw,kf. or (app or apps).ab. /freq=2			10968
19 or/15-18			260132
	19 and 3 and 10	22	
20 counseling/ or directive counseling/ or motivational interviewing/		32162	
21 behavior therapy/ or cognitive therapy/			41194
22 Self-Help Groups/ or Group Processes/			20129
23 "acceptance and commitment therapy"/ or mindfulness/ or "acceptance and commitment therapy".ti,ab,kw,kf.			
		983	
24 Psychological Techniques/			282
25 nicotine anonymous.ti,ab,kw,kf.			2
26 (group counsel* or group therap* or cognitive behaviour therapy or cognitive behavior therapy).mp.			
		7125	
27 or/20-26 all psychological or behavioral therapies		95808	
	27 and 3 and 10		268
28 " tobacco use cessation products "/ or electronic cigarettes/			1398
29 nicotine replacement.mp.			2495
30 NRT.ti,kw,kf.			83
31 Smoking/th or "Tobacco Use Disorder"/th			2353
32 (vaping or e-cig* or e cigarette* or electronic cigarette* or e-cigarette* or cigalike).ti,kw,kf.			
		1010	
33 (vaping or e-cig* or e cigarette* or electronic cigarette* or e-cigarette* or cigalike).ab. /freq=2			524
34. 28 or 29 or 30 or 31 or 32 or 33			6037
	34 and 3 and 10	227	
35 (prescri* or medication* or pharmaceutical* or drug therapy).ti,kw,kf.			111241
	35 and 3 and 10		11
36 patient education as topic/ or prenatal education/ or health education/ or consumer health information/ or teaching materials/			132275
37 (curricul* or teach* or educat*).ti,kw,kf. or (curricul* or teach* or educat*).ab. /freq=2			
			301923
38 or/36-37			393397
	38 and 3 and 10		317
Media campaigns or policy interventions			
39 (anti-tobacco or anti-smoking or antitobacco or antismoking or smoke free or tobacco free or tobacco control or smoking or nicotine or quit or quitting).ti,kw,kf. or (anti-tobacco or anti-smoking or antitobacco or antismoking or smoke free or tobacco free or tobacco control or smoking or nicotine or quit or quitting).ab. /freq=2			
		107013	
40 (campaign* or program* or initiative* or project or policies or policy or regulat* or push or drive or movement or strategy or strategies or approach or action or plan*).ti,kw,kf. or (campaign* or program* or initiative* or project or policies or policy or regulat* or push or drive or movement or strategy or strategies or approach or action or plan*).ab. /freq=2			
			2508403
41 communications media/ or mass media/ or Social Media/ or Public Policy/		41037	
42 or/40-41			2528591

43 39 and 42		15743
44 Smoke-Free Policy/ 45 or/43-44 1	305	5882
45 and 3 and 10	427	
Other prevention control or therapeutic interventions. - generic		
46 Smoking/pc, th or "Tobacco Use"/pc, th or "Tobacco Use Disorder"/pc, th 46 and 3 and 10	18880	580
47 14 or 19 or 27 or 34 or 35 or 38 or 45 or 46 all interventions		874521
48 3 and 10 and 48 all interventions with population/outcome	1174	

Systematic review filters.

51. (((comprehensive* or integrative or systematic*) adj3 (bibliographic* or review* or literature)) or (meta-analy* or metaanaly* or "research synthesis" or ((information or data) adj3 synthesis) or (data adj2 extract*))).ti,ab. or (cinahl or (cochrane adj3 trial*) or embase or medline or psyclit or (psycinfo not "psycinfo database") or pubmed or scopus or "sociological abstracts" or "web of science").ab. or ("cochrane database of systematic reviews" or evidence report technology assessment or evidence report technology assessment summary).jn. or Evidence Report: Technology Assessment*.jn. or ((review adj5 (rationale or evidence)).ti,ab. and review.pt.) or meta-analysis as topic/ or Meta-Analysis.pt.

252038

52. meta-analysis/

60194

53. (systematic review* or meta analy* or metanaly* or meta-analys* or "review of reviews").mp.

149657

54. ((pooled or combined or combining) adj (review* or data or studies or results or trials or information)).mp.

16119

55. ((research or data) adj synthesis).mp.

8304

56. 52 or 53 or 54 or 55

167196

57. 48 and 56

62

58. 48 and 51

86

59. 67 or 68

88

60. limit 59 to (english language and yr="2008 -Current")

52

Guidelines or consensus development

limit 48 to (english language and humans and (consensus development conference or consensus development conference, nih or guideline or practice guideline))

10

EMBASE

1 pregnancy/ 266952

2 exp maternal behavior/ 8161

3 maternal welfare/ 8773

4 maternal care/ 12389

5 pregnant woman/ 40991

6 prenatal care/ 22118

7 (pregnan* or antinatal or perinatal or postnatal or prenatal or mother* or maternal).ab. /freq=2 342470

8 (pregnan* or antinatal or perinatal or postnatal or prenatal or mother* or maternal).mp. 734191 **9 or/1-8**

734191

10 maternal smoking/ 4168

11 "tobacco use"/ or smoking/ 179638

12 (smok* or nicotine or tobacco).mp. 355238

13 (smok* or nicotine or tobacco).ab. /freq=2 135196

14 or/10-13 355238
15 (cessation or quit or quitting or stop* or "give up" or "giving up" or "cut out" or rehab* or "break the habit").mp. 349837
16 (cessation or quit or quitting or stop* or "give up" or "giving up" or "cut out" or rehab* or "break the habit").ab. /freq=2 87101
17 15 or 16 349837
18 14 and 17 53335
19 smoking cessation/ 39476
20 18 or 19 53335

INTERVENTIONS

21 "cut down to quit".mp. 23
22 ((cut down or reduc* or limit* or less* or lower or wean) adj3 (intake or gradual or smok* or tobacco or nicotine or consum* or use* or cigarette*)).ti. 7320
23 ((cut down or reduc* or limit* or less* or lower or wean) adj3 (intake or gradual or smok* or tobacco or nicotine or consum* or use* or cigarette*)).ab. /freq=2 18618
24. 21 or 22 or 23 **24571**
25 **computer assisted therapy/** 3293
26 (mobile phone or cellular or cell phone or text messag* or texting or internet or web or web-based or web based or online or on-line).mp. 906988
27 (mobile phone or cellular or cell phone or text messag* or texting or internet or web or web-based or web based or online or on-line).ab. /freq=2 172677
28 social media/ 5135
29 mobile application/ 1696
30 (app or apps).ti. 3466
31 (app or apps).ab. /freq=2 10625
32 25 or 26 or 27 or 28 or 29 or 30 or 31 **922234**
33 **counseling/** or directive counseling/ or motivational interviewing/ or peer counseling/ 37196
34 **behavior therapy/** 28231
35 cognitive therapy/ or "acceptance and commitment therapy"/ 37675
36 (acceptance and commitment therapy).mp. 752
37 **group therapy/** 9520
38 self help/ 7828
39 nicotine anonymous.ti. 2
40 nicotine anonymous.ab. /freq=2 1
41 (group counsel* or group therapy or cognitive behaviour therapy or cognitive behavior therapy).mp. 14740
42 or/33-41 104900
43 nicotine gum/ 2108
44 nicotine patch/ 1560
45 nicotine lozenge/ 170
46 smoking cessation program/ 2237
47 (NRT or **nicotine replacement**).ti. 760
48 smoking/th [Therapy] 206
49 "tobacco use"/th [Therapy] 3
50 (vaping or e-cig* or e cigarette* or electronic cigarette* or cigalike).mp. 1575
51 (vaping or e-cig* or e cigarette* or electronic cigarette* or cigalike).ab. /freq=2 623
52 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 7087
53 (prescri* or medication or pharmaceutical or drug therapy).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword] 608389
54 smoking/dt [**Drug Therapy**] 120

55 tobacco/dt [Drug Therapy] 3
56 53 or 54 or 55 **608479**
57 **patient education/** or health education/ 126846
58 childbirth education/ 213
59 consumer health information/ 2684
60 (curricul* or teach* or educat*).mp. 822935
61 (curricul* or teach* or educat*).ab. /freq=2 178645
62 57 or 58 or 59 or 60 or 61 **824755**
Policies and media campaigns
63 smoking regulation/ 314
64 smoking ban/ 952
65 smoking regulation/ 314
66 (anti-tobacco or anti-smoking or antitobacco or antismoking or smoke free or tobacco free or tobacco control or quit or quitting or smok* or nicotine or tobacco).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword] 356864
67 ((anti-tobacco or anti-smoking or antitobacco or antismoking or smoke free or tobacco free or tobacco control or quit or quitting or smok* or nicotine or tobacco) adj2 (campaign* or program* or initiative* or project or policy or policies or regulat* or ban or prohibit* or push or drive or movement or strategy or strategies or approach or action or plan*)).mp. 16394
68 mass communication/ 10968
69 policy/ 62405
70 68 or 69 73184
71 66 and 70 2585
72 63 or 64 or 65 or 67 or 71 **18057**
Generic therapy and prevention..
73 smoking/pc, th [Prevention, Therapy] 4909
74 "tobacco use"/pc, th [Prevention, Therapy] 13
75 73 or 74 **4920**
All interventions
76. 24 or 32 or 42 or 52 or 56 or 62 or 72 or 75 **2329918**
77. 9 and 20 and 76 **2017 all interventions for pregnant users**
Systematic Review Filters
78 (((comprehensive* or integrative or systematic*) adj3 (bibliographic* or review* or literature)) or (meta-analy* or metaanaly* or "research synthesis" or ((information or data) adj3 synthesis) or (data adj2 extract*))).ti,ab. or (cinahl or (cochrane adj3 trial*) or embase or medline or psyclit or (psycinfo not "psycinfo database") or pubmed or scopus or "sociological abstracts" or "web of science").ab. or ("cochrane database of systematic reviews" or evidence report technology assessment or evidence report technology assessment summary).jn. or Evidence Report: Technology Assessment*.jn. or ((review adj5 (rationale or evidence)).ti,ab. and review.pt.) or meta-analysis as topic/ or Meta-Analysis.pt. 297721
79 meta-analysis/ or systematic review/ 159998
80 (systematic review* or meta analy* or metanaly* or meta-analys* or "review of reviews").mp. 233341
81 ((pooled or combined or combining) adj (review* or data or studies or results or trials or information)).mp. 18103
82 ((research or information or data) adj synthesis).mp. 10693
83 78 or 79 or 80 or 81 or 82 359014
84 77 and 83 173
85 **limit 84 to (human and english language and yr="2008 - 2016") 110**
Limiter for guidelines.
86. limit 77 to (english language and humans and (consensus development conference or consensus development conference, nih or guideline or practice guideline)) 17

CINAHL64. 58 and Limiters English Language; Publication Type: **Practice Guidelines** 8

63 Limiters - Published Date: 20080101-20161231; English Language 41

62. 58 and 61 62

61. (TI (systematic* n3 review*)) or (AB (systematic* n3 review*)) or (TI (systematic* n3 bibliographic*)) or (AB (systematic* n3 bibliographic*)) or (TI (systematic* n3 literature)) or (AB (systematic* n3 literature)) or (TI (comprehensive* n3 literature)) or (AB (comprehensive* n3 literature)) or (TI (comprehensive* n3 bibliographic*)) or (AB (comprehensive* n3 bibliographic*)) or (TI (integrative n3 review)) or (AB (integrative n3 review)) or (JN "Cochrane Database of Systematic Reviews") or (TI (information n2 synthesis)) or (TI (data n2 synthesis)) or (AB (information n2 synthesis)) or (AB (data n2 synthesis)) or (TI (data n2 extract*)) or (AB (data n2 extract*)) or (TI (medline or pubmed or psyclit or cinahl or (psycinfo not "psycinfo database") or "web of science" or scopus or embase)) or (AB (medline or pubmed or psyclit or cinahl or (psycinfo not "psycinfo database") or "web of science" or scopus or embase)) or (MH "Systematic Review") or (MH "Meta Analysis") or (TI (meta-analy* or metaanaly*)) or (AB (meta-analy* or metaanaly*))

S60 S58 AND S59 28

S59 Limiters - Published Date: 20100101-20161231; Publication Type: Meta Analysis, Meta Synthesis, Systematic Review 25,420

S58 (S18 OR S26 OR S35 OR S42 OR S43 OR S49 OR S56) AND (S7 AND S15 AND S57) 817**S57 S18 OR S26 OR S35 OR S42 OR S43 OR S49 OR S56** 713,485
S56 S50 AND S55 12,493

S55 S51 OR S52 OR S53 OR S54 603,579

S54 (MH "Public Policy") OR (MH "Policy Making") OR (MH "Health Policy") OR (MH "Policy Studies") OR (MH "Health Policy Studies") 45,432

S53 (MH "Social Media") 2,974

S52 (MH "Communications Media") OR (MH "Telecommunications+") 71,771

S51 TI (campaign* or program* or initiative* or project* or policies or policy or regulation or push or drive or movement or strategy or strategies or approach or plan or action) OR AB (campaign* or program* or initiative* or project* or policies or policy or regulation or push or drive or movement or strategy or strategies or approach or plan or action) 523,066

S50 TI (anti tobacco or anti smoking or anti-tobacco or anti-smoking or smoke free or tobacco free or tobacco control or smok* or nicotine or quit or quitting) OR AB (anti tobacco or anti smoking or anti-tobacco or anti-smoking or smoke free or tobacco free or tobacco control or smok* or nicotine or quit or quitting) 41,236

S49 S44 OR S45 OR S46 OR S47 OR S48 253,062

S48 TI (curricul* or teach* or educat*) OR AB (curricul* or teach* or educat*) 206,441

S47 (MH "Teaching Materials" 7,401

S46 (MH "Consumer Health Information") 8,558

S45 (MH "Health Education") 14,514

S44 (MH "Patient Education") 41,035

S43 TI (prescri* or medication* or pharmaceutical* or drug therapy) OR AB (prescri* or medication* or pharmaceutical* or drug therapy) OR SU (prescri* or medication* or pharmaceutical* or drug therapy) 326,188

S42 S36 OR S37 OR S38 OR S39 OR S40 OR S41 2,609

S41 (MH "Tobacco Use Cessation Products" 633

S40 TI (nicotine replacement or NRT) OR AB (nicotine replacement) 832

S39 TI ((vaping or e-cig* or e cigarette or electronic cigarette* or cigalike) OR AB ((vaping or e-cig* or e cigarette or electronic cigarette* or cigalike) 589

S38 (MH "Smoking/TH") 309

S37 (MH "Nicotine Replacement Therapy") 1,098

S36 (MH "Electronic Cigarettes")	258
S35 S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34	36,217
S34 TI nicotine anonymous OR AB nicotine anonymous OR SU nicotine anonymous OR TI (group counsel* or group therap* or cognitive behaviour therapy or cognitive behavior therapy) OR AB (group counsel* or group therap* or cognitive behaviour therapy or cognitive behavior therapy) OR MJ (group counsel* or group therap* or cognitive behaviour therapy or cognitive behavior therapy)	1,960
S33 (MH "Cognitive Therapy") OR (MH "Acceptance and Commitment Therapy") OR (MH "Mindfulness")	8,991
S32 TI directive counseling OR SU directive counseling OR AB directive counseling	18
S31 (MH "Psychological Techniques")	256
S30 (MH "Support Groups")	6,710
S29 (MH "Behavior Therapy") OR (MH "Cognitive Therapy")	12,922
S28 (MH "Motivational Interviewing")	1,315
S27 (MH "Counseling")	14,703
S26 S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25	148,058
S25 TI ((moble phone or cellular or cell phone or text messag* or internet or web or web-based or web based or online or on-line)) OR AB ((moble phone or cellular or cell phone or text messag* or internet or web or web-based or web based or online or on-line)) OR TI ((app or apps)) OR AB ((app or apps))	87,464
S24 (MH "Mobile Applications")	478
S23 (MH "Internet") OR (MH "World Wide Web")	78,494
S22 (MH "Social Media")	2,974
S21 (MH "Text Messaging") OR (MH "Instant Messaging")	483
S20 (MH "Cellular Phone") OR (MH "Smartphone")	461
S19 (MH "Therapy, Computer Assisted")	2,295
S18 S16 OR S17	14,404
S17 TI ((cut down or reduc* or limit* or lower or wean) N2 (intake or gradual or smok* or tobacco or nicotine or consum* or use or cigarette*)) OR AB ((cut down or reduc* or limit* or lower or wean) N2 (intake or gradual or smok* or tobacco or nicotine or consum* or use or cigarette*))	14,403
S16 TI "cut down to quit" OR AB "cut down to quit" OR SU "cut down to quit" OR MW "cut down to quit"	11
S15 S13 OR S14	15,811
S14 (MH "Smoking Cessation")	13,822
S13 S11 AND S12	
S12 S8 OR S9 OR S10	54,676
S11 cessation or quit or quitting or stop* or give up or cut out or rehab* or (break N/2 habit) Search modes -	134,453
S10 TI (smok* or nicotine or tobacco or cigarette*) OR AB (smok* or nicotine or tobacco or cigarette*)	46,055
S9 (MH "Smoking")	30,066
S8 (MH "Tobacco Products")	265
S7 S1 OR S2 OR S3 OR S4 OR S5 OR S6	146,125
S6 TI (pregnan* or antinatal or perinatal or mother* or maternal or postnatal or prenatal) OR AB (pregnan* or antinatal or perinatal or mother* or maternal or postnatal or prenatal)	94,802
S5 (MH "Maternal-Child Health")	1,853
S4 (MH "Prenatal Care")	8,584
S3 (MH "Maternal Behavior") OR (MH "Maternal Health Services") OR (MH "Maternal Welfare") OR (MH "Maternal-Fetal Exchange")	7,328
S2 (MH "Pregnancy")	100,106
S1 (MH "Expectant Mothers")	2,159

Cochrane Database Search Strategy

Results in the Systematic Reviews Database

17

S41	S3 AND S8 AND S40		17
S40	S9 OR S10 OR S14 OR S21 OR S24 OR S27 OR S36 OR S38 OR S39	4,277	
S39	S28 OR S29 OR S30		702
S38	S35 OR S37		6
S37	(ZE "tobacco industry legislation & jurisprudence") or (ZE "tobacco smoke pollution legislation & jurisprudence") or (ZE "tobacco smoke pollution prevention & control")	3	
S36	((ZE "smoking cessation psychology") or (ZE "smoking prevention & control") or (ZE "smoking therapy")) or ((ZE "tobacco use disorder prevention & control"))	45	
S35	(S31 AND S32) AND (S30 OR S33 OR S34)	3	
S34	S31 AND S32		3
S33	(anti-tobacco or antitobacco or anti tobacco or anti-smok* or anti smok* or antismok* or smoke free or tobacco free or tobacco control or quit or quitting or smoke or nicotine or tobacco) N3 (campaign* or program* or initiative* or project or policy or policies or regulat* or ban or prohibit* or push or drive or movement or strategy or strategies or approach or action or plan)		
	11		
S32	((ZE "policy making") or ((ZE "mass media") or (ZE "communication"))) 17		
S31	TI (anti-tobacco or antitobacco or anti tobacco or anti-smok* or anti smok* or antismok* or smoke free or tobacco free or tobacco control or quit or quitting or smoke or nicotine or tobacco) OR AB (anti-tobacco or antitobacco or anti tobacco or anti-smok* or anti smok* or antismok* or smoke free or tobacco free or tobacco control or quit or quitting or smoke or nicotine or tobacco) OR SU (anti-tobacco or antitobacco or anti tobacco or anti-smok* or anti smok* or antismok* or smoke free or tobacco free or tobacco control or quit or quitting or smoke or nicotine or tobacco)		172
S30	(ZE "smoking legislation & jurisprudence")	2	
S29	TI (curricular* or teach* or educat*) OR AB (curricular* or teach* or educat*) OR SU (curricular* or teach* or educat*)	699	
S28	((ZE "patient education as topic") or (ZE "patient education as topic methods")) or ((ZE "health education") or (ZE "health education methods")) or ((ZE "consumer health information methods"))	69	
S27	S25 OR S26		3,100
S26	TI (prescri* or medication or phamaceutical* or drug therapy) OR SU (prescri* or medication or phamaceutical* or drug therapy) OR AB (prescri* or medication or phamaceutical* or drug therapy)	3,100	
S25	(ZE "smoking drug therapy")		5
S24	(TI (nicotine replacement or vaping or e-cig* or e cigarette* or electronic cigarette* or cigalike or NRT) OR AB (nicotine replacement or vaping or e-cig* or e cigarette* or electronic cigarette* or cigalike or NRT) OR SU (nicotine replacement or vaping or e-cig* or e cigarette* or electronic cigarette* or cigalike or NRT)) AND (S22 OR S23)	36	
S23	TI (nicotine replacement or vaping or e-cig* or e cigarette* or electronic cigarette* or cigalike or NRT) OR AB (nicotine replacement or vaping or e-cig* or e cigarette* or electronic cigarette* or cigalike or NRT) OR SU (nicotine replacement or vaping or e-cig* or e cigarette* or electronic cigarette* or cigalike or NRT)	36	
S22	((((ZE "nicotine therapeutic use")) or ((ZE "smoking cessation methods") or (ZE "smoking cessation statistics & numerical data")))) or ((ZE "smoking therapy")) or ((ZE "tobacco use cessation methods") or (ZE "tobacco use cessation products"))	44	
S21	S15 OR S16 OR S17 OR S18 OR S19 OR S20	135	
S20	TI (cognitive behaviour therapy or cognitive behavior therapy) OR AB (cognitive behaviour therapy or cognitive behavior therapy) OR SU (cognitive behaviour therapy or cognitive behavior therapy)		
	27		

S19 TI (group therap* or self help or nicotine anonymous) OR AB (group therap* or self help or nicotine anonymous) AND SU (group therap* or self help or nicotine anonymous)
9

S18 TI (acceptance and commitment therapy) OR AB (acceptance and commitment therapy) OR SU (acceptance and commitment therapy)
6

S17 TI motivational interview* OR AB motivational interview* OR SU motivational interview*
22

S16 TI ((directive or peer) N2 (counseling or therapy)) OR AB ((directive or peer) N2 (counseling or therapy))
4

S15 (((((ZE "self-help groups"))) or ((ZE "counseling") or (ZE "counseling methods")))) or ((ZE "motivational interviewing methods")) or ((ZE "behavior therapy") or (ZE "behavior therapy methods")) or ((ZE "cognitive therapy") or (ZE "cognitive therapy methods"))
87

S14 S11 OR S12 OR S13
720

S13 TI social media OR AB social media
1

S12 TI app or apps
2

S11 TI ((mobile phone or cellular or cell phone or text messag* or texting or internet or web or web-based ovr web based or online or on-line)) OR AB ((mobile phone or cellular or cell phone or text messag* or texting or internet or web or web-based ovr web based or online or on-line)) OR SU ((mobile phone or cellular or cell phone or text messag* or texting or internet or web or web-based ovr web based or online or on-line))
719

S10 TI ((cut down or reduc* or limit* or less* or wean) N3 (intake or gradual or smok* or tobacco or nicotine or consum* or use* or cigarette*)) OR AB ((cut down or reduc* or limit* or less* or wean) N3 (intake or gradual or smok* or tobacco or nicotine or consum* or use* or cigarette*))
699

S9 "cut down to quit"
0

S8 S6 OR S7
138

S7 S4 AND S5
138

S6 (ZE "smoking cessation")
11

S5 TI (cessation or quit or quitting or stop* or "give up" or "giving up" or "cut out" or rehab* or "break the habit") OR AB (cessation or quit or quitting or stop* or "give up" or "giving up" or "cut out" or rehab* or "break the habit") OR SU (cessation or quit or quitting or stop* or "give up" or "giving up" or "cut out" or rehab* or "break the habit")
1,088

S4 TI (smok* or nicotine or tobacco or cigarette*) OR AB (smok* or nicotine or tobacco or cigarette*) OR SU (smok* or nicotine or tobacco or cigarette*)
254

S3 S1 OR S2
1,146

S2 (((((ZE "pregnancy")) or ((ZE "maternal health services") or (ZE "maternal welfare")))) or ((ZE "pregnant women psychology")) or ((ZE "prenatal care"))
18

S1 TI ((pregnan* or maternal or antinatal or perinatal or postatal or prenatal or mother*)) OR AB ((pregnan* or maternal or antinatal or perinatal or postatal or prenatal or mother*)) OR SU ((pregnan* or maternal or antinatal or perinatal or postatal or prenatal or mother*))

1,146

psychinfo

1 exp Pregnancy/ or exp Adolescent Pregnancy/ 17670

2 exp Prenatal Care/ 1547

3 (pregnan* or antinatal or prenatal or perinatal or postnatal or mother* or maternal or maternity).mp. 140762

4 or/1-3 140777

5 exp Tobacco Smoking/ 23491

6 (smok* or nicotine or tobacco or cigarette*).mp. 52819

7 5 or 6 52819

8 (cessation or quit or quitting or stop* or "give up" or "giving up" or "cut out" or rehab* or "break the habit").mp. 99091

9 Smoking cessation/ 10411

10 7 and 8 15894

11 9 or 10 15894

12 "cut down to quit".mp. 13

13 ((cut or reduc* or limit* or less* or lower or wean) adj3 (intake or gradual* or smok* or tobacco or nicotine or consum* or use* or cigarette*)).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures] 36215

14 12 or 13 36222

15 computer assisted therapy/ or online therapy/ 2412

16 social media/ 2251

17 (mobile phone or cellular or cell phone or text messag* or texting or internet or web or we-based or online or on-line).mp. 109963

18 (app or apps).ti. 802

19 15 or 16 or 17 or 18 111801

20 counseling/ or peer counseling/ or rehabilitation counseling/ or support groups/ 20297

21 exp cognitive therapy/ or exp motivational therapy/ or exp cognitive behavior therapy/ 25172 22 (acceptance and commitment therapy).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures] 1316

23 group therapy.mp. or exp Group Psychotherapy/ 16310

24 exp self help techniques/ or exp support groups/ 12759

25 nicotine anonymous.mp. 0

26 (group counsel* or self help or directive counsel* or cognitive behaviour therapy or cognitive behavior therapy).mp. 26476

27 20 or 21 or 22 or 23 or 24 or 25 or 26 74414

28 (nicotine adj (gum or lozenge or patch or replacement)).mp. 1923

29 (smoking cessation program or tobacco cessation program).mp. 668

30 NRT.ti. 28

31 (vaping* or e-cig* or e cigarette* or electronic cigarette* or cigalike or smokeless tobacco).mp. 1333

32 28 or 29 or 30 or 31 3743

33 (prescri* or medicat* or pharmaceutial or drug therapy).mp. 161582

34 health education/ or client education/ or health literacy/ or health promotion/ or prenatal care/ 31907

35 (curricul* or teach* or educat*).mp. 477817

36 consumer health information.mp. 65

37 34 or 35 or 36 492335

38 (anti-tobacco or anti-smoking or antitobacco or antismoking or smoke free or tobacco free or tobacco control or smoking or nicotine or quit or quitting).mp. 47294

39 exp Printed Communications Media/ or exp Telecommunications Media/ or exp Communications Media/ or exp Audiovisual Communications Media/ or exp Mass Media/ or exp Social Media/ or exp News Media/ 49060

40 government policy making/ 16133

41 39 or 40 64807

42 38 and 41 1389

43 (campaign* or program* or initiative* or project or policies or policy or regulat* or push or drive or movement or strategy or strategies or approach* or action or plan).mp. 1077235

44 38 and 43 17733

45 42 or 44 18077

46 14 or 19 or 27 or 32 or 33 or 37 or 45 809024

47 4 and 11 and 46 861

48 meta-analysis/ 3507

49 (systematic review* or meta analys* or metanalys* or meta-analys* or "review of reviews").mp. 32238

50 ((pooled or combined or combining) adj (review* or data or studies or results or trials or information)).mp. 2343

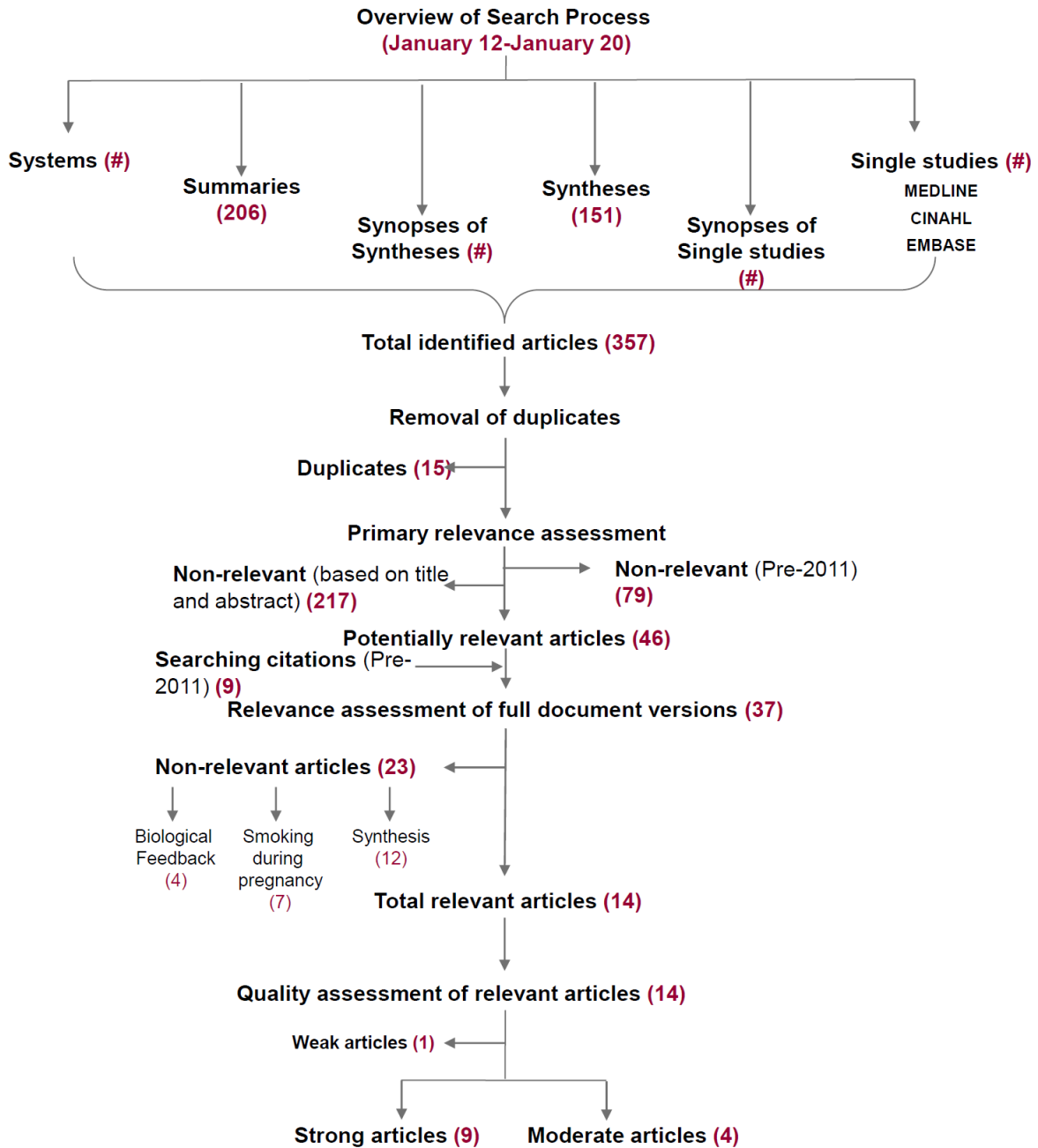
51 ((research or data) adj synthesis).mp. 1161

52 48 or 49 or 50 or 51 34802

53 47 and 52

32

Appendix B: Literature Search Flowchart



Appendix C: Data Extraction Tables

Title: Incentives for smoking cessation. Cahill, K., et al.	
<i>Study design</i>	Systematic Review
<i>Date</i>	2015
<i>Organization/Country</i>	Great Britain, USA
<i>Quality rating</i>	<ul style="list-style-type: none"> • Studies included in the systematic review were critically appraised using the GRADE tool • The systematic review was rated using the Health Evidence Quality Assessment Tool: Review Articles <p>Overall rating: 9/10, systematic review recommended for use</p>
<i>Types of evidence used to inform systematic review</i>	Randomized Control Trials
<i>Intervention and results</i>	<p>Ten to twelve week programs comparing incentives to standard care. The incentives included: contingent rewards, monthly vouchers to confirmed quitters, metered rewards based on percentage of smoking reduction, and non-contingent fixed payment rewards.</p> <p>OR 3.79 (95% CI 2.74 to 5.25)</p>
Title: Psychosocial interventions for supporting women to stop smoking in pregnancy. Chamberlain, C., et al.	
<i>Study design</i>	Systematic Review
<i>Date</i>	2013
<i>Organization/Country</i>	USA, Canada, UK Norway, Sweden, Holland, Spain, Australia, New Zealand, Latin America, Poland
<i>Quality rating</i>	<ul style="list-style-type: none"> • Studies included in the systematic review were critically appraised using the Cochrane Risk of Bias Tool. • The systematic review was rated using the Health Evidence Quality Assessment Tool: Review Articles <p>Overall rating: 9/10, systematic review recommended for use</p>
<i>Types of evidence used to inform systematic review</i>	Randomized Control Trials

<p><i>Intervention and results</i></p>	<p>The interventions include: individual counselling sessions, health education interventions, feedback interventions, incentive-based interventions, and social support. All interventions were compared to either usual care, less intensive interventions, or alternative interventions.</p> <p>abstinence in late pregnancy 1.25 (1.03, 1.50) (RR)</p> <p>continued abstinence in late pregnancy 1.06 (0.93, 1.21) (RR)</p> <p>for spontaneous quitters</p> <p>biochemical measures in late pregnancy: (-0.05 (-0.14, 0.05) (SMD)</p> <p>mean cotinine</p> <p>abstinence in late pregnancy 1.46 (1.15, 1.85) (RR)</p> <p>abstinence in late pregnancy 1.29 (0.49, 3.42) (RR)</p> <p>abstinence in late pregnancy 1.50 (0.97, 2.31) (RR)</p> <p>abstinence in late pregnancy 1.19 (0.45, 3.12) (RR)</p> <p>abstinence in late pregnancy 3.59 (0.10, 130.49) (RR)</p> <p>abstinence in late pregnancy 1.49 (1.01, 2.19) (RR)</p> <p>abstinence in late pregnancy 0.86 (0.48, 1.57) (RR)</p> <p>abstinence in late pregnancy 1.27 (1.11, 1.47) (RR)</p> <p>1.43 (0.98, 2.08) (RR)</p> <p>1.70 (0.71, 4.08) (RR)</p> <p>3.09 (1.34, 7.15) (RR)</p> <p>1.31 (0.90, 1.91) (RR)</p> <p>1.63 (0.62, 4.32) (RR)</p>
<p>Title: Pharmacological interventions for promoting smoking cessation during pregnancy Coleman et al.</p>	
<p><i>Study Design</i></p>	<p>Systematic Review</p>
<p><i>Date</i></p>	<p>2015</p>
<p><i>Organization/Country</i></p>	<p>Developed countries</p>
<p><i>Quality Rating</i></p>	<ul style="list-style-type: none"> • Studies included in the systematic review were critically appraised using the Cochrane Risk of Bias Tool • The systematic review was rated using the Health Evidence Quality Assessment Tool: Review Articles Overall Rating: 10/10, systematic review recommended for use
<p><i>Types of evidence used to inform</i></p>	<p>Randomized controlled trials</p>

<i>systematic review</i>	
<i>Intervention and results</i>	NRT (patches, lozenges, or gum) administered to pregnant women at less than 30 weeks gestation. RR: 1.41 [1.03, 1.93]
Title: Efficacy and safety of nicotine replacement therapy for smoking cessation in pregnancy: Systematic review and meta-analysis. Coleman, T., et al.	
<i>Study design</i>	Systematic Review
<i>Date</i>	2012
<i>Organization/Country</i>	Canada, United States, Denmark, Australia
<i>Quality rating</i>	<ul style="list-style-type: none"> • Studies included in the systematic review were critically appraised using the Cochrane Risk of Bias Tool. • The systematic review was rated using the Health Evidence Quality Assessment Tool: Review Articles <p>Overall rating: 9/10, systematic review recommended for use</p>
<i>Types of evidence used to inform systematic review</i>	Randomized Control Trials
<i>Intervention and results</i>	Participants received NRT or placebo in the form of a patch, lozenge, or gum, for an average of twelve weeks. The studies assessing behavioural therapy offered a variety of counselling sessions compared with either a placebo or brief counselling sessions lasting 2-5 minutes. 1.63 (0.85, 3.14)
Title: Benefits of Incentives for Breastfeeding and Smoking cessation in pregnancy (BIBS): a mixed methods study to inform trial design Morgan H., et al.	
<i>Study design</i>	Systematic Review
<i>Date</i>	2015
<i>Organization/Country</i>	USA, United Kingdom
<i>Quality rating</i>	<ul style="list-style-type: none"> • Studies included in the systematic review were critically appraised using the Cochrane Risk of Bias Tool. Qualitative studies were critically appraised using the Critical Appraisal Skills Programme (CASP) Qualitative Checklist • The systematic review was rated using the Health Evidence Quality

	<p>Assessment Tool: Review Articles</p> <p>Overall rating: 10/10, systematic review recommended for use</p>
<i>Types of evidence used to inform systematic review</i>	<p>Randomized Controlled Trial</p> <p>Quasi Randomized Controlled Trial</p> <p>Non-randomised controlled trial</p> <p>Mixed-methods</p>
<i>Intervention and results</i>	<p>Incentives (vouchers, cash, prizes, lottery, gifts) were given, contingent on validated smoking cessation outcomes with non-contingent incentives for participation in a smoking cessation programme.</p> <p>RR: 2.58 (1.63 to 4.07)</p>
<p>Title: Efficacy and safety of pharmacotherapy for smoking cessation among pregnant smokers: a meta-analysis. Myung, S. K., et al.</p>	
<i>Study design</i>	Systematic Review
<i>Date</i>	2012
<i>Organization/Country</i>	Canada, United States, Denmark, Australia
<i>Quality rating</i>	<ul style="list-style-type: none"> Studies included in the systematic review were critically appraised using the Jadad Score. The systematic review was rated using the Health Evidence Quality Assessment Tool: Review Articles <p>Overall rating: 10/10, systematic review recommended for use</p>
<i>Types of evidence used to inform systematic review</i>	Meta-analysis of randomized control trials, quasi-randomized control trials and retrospective/prospective studies
<i>Intervention and results</i>	<p>For 6-12 weeks, pregnant women were given daily nicotine patches or gum/lozenges consumed in place for each cigarette smoked.</p> <p>Abstinence on longest follow-up 1.80(1.32, 2.44) p=0.114 Nicotine Patch (4) 1.60(1.05,2.43) Nicotine Gum (1) 1.21 (0.64,2.29)</p>
<p>Title: Recommendations for the prevention and management of tobacco use and second hand smoke exposure in pregnancy</p>	
<i>Date</i>	2013
<i>Organization/Country</i>	World Health Organization
<i>Quality rating</i>	<p>Rated using the Agree II tool</p> <p>Overall Rating: 6/7, guideline recommended for use</p>
<i>Types of evidence</i>	Systematic Reviews

<i>used to inform guideline</i>	
<i>Focus and objectives</i>	Reduce tobacco use in pregnant women (identification, management and prevention of tobacco use in pregnant women.)
<i>Overall relevant recommendations</i>	<ol style="list-style-type: none"> 1. Health-care providers should ask all pregnant women about their tobacco use (past and present) and exposure to SHS, as early as possible in the pregnancy, and at every antenatal care visit. 2. Health-care providers should routinely offer advice and psychosocial interventions for tobacco cessation to all pregnant women, who are either current tobacco users or recent tobacco quitters (e.g. Used tobacco before the pregnancy and who have either spontaneously quit or stopped using tobacco in the pre-conception period or in early pregnancy, before their first antenatal visit). 3. The panel cannot make a recommendation on use or non-use of NRT to support cessation of tobacco use in pregnancy. 4. The panel does not recommend use of bupropion or varenicline to support cessation of tobacco use in pregnancy. 5. The panel recommends that further research be carried out in pregnancy women on safety, efficacy and factors affecting adherence to pharmacotherapeutic cessation agents. 6. All health-care facilities should be smoke-free to protect the health of all staff, patients and visitors, including pregnant women. 7. All work and public places should be smoke-free for the protection of everyone, including pregnant women. 8. Health-care providers should provide pregnant women, their partners and other household members with advice and information about the risks of SHS exposure from all forms of smoked tobacco as well as strategies to reduce SHS in the home.
<i>Intervention and results</i>	N/A for guidelines
Title: Smoking: Stopping in pregnancy and after child birth	
<i>Study Design</i>	Guideline
<i>Date</i>	2015
<i>Organization/Country</i>	National Institute for Health and Care Excellence (NICE)
<i>Quality rating</i>	Rated using the Agree II tool Overall Rating: 6/7, guideline recommended for use
<i>Types of evidence used to inform guideline</i>	Systematic reviews Qualitative research Surveys Field work findings
<i>Focus and objectives</i>	Produce public health information on effective interventions to quit smoking during and after childbirth

<i>Overall relevant recommendations</i>	<ol style="list-style-type: none"> 1. Identifying pregnant women who smoke and referring them to NHS stop smoking services 2. Identifying pregnant women who smoke and referring them to NHS stop smoking services 3. NHS stop smoking services - contacting referrals 4. NHS stop smoking services - initial and ongoing support 5. Use of NRT and other pharmacological support 6. NHS stop smoking services - meeting the needs of disadvantaged pregnant women who smoke 7. Training to deliver interventions
<i>Intervention and results</i>	N/A for guidelines
Title: Smoking: acute, maternity and mental health services	
<i>Study Design</i>	Guideline
<i>Date</i>	2013
<i>Organization/Country</i>	National Institute for Health and Care Excellence (NICE)
<i>Quality Rating</i>	Rated using the Agree II tool Overall Rating: 6/7, guideline recommended for use
<i>Types of evidence used to inform guideline</i>	Systematic Reviews
<i>Focus and objectives</i>	Support smoking cessation, temporary abstinence from smoking and smoke free policies in all secondary care settings.
<i>Overall relevant recommendations</i>	<ol style="list-style-type: none"> 1. Identify people who smoke and offer to help stop 2. Provide information and advice for carers, family, other household members and hospital visitors 3. Advise on and provide stop smoking pharmacotherapies
<i>Intervention and results</i>	N/A for guidelines

Appendix D: Data extraction of secondary outcomes

Author	Intervention	Secondary outcome results
Chamberlain, C. (2013).	Counselling	Perinatal deaths: 1.10 (0.52, 2.31) (RR)
		Stillbirths: 1.08 (0.51, 2.30) (RR)
		Low birthweight infants: 0.87 (0.70, 1.08) (RR)
		Preterm births: 0.90 (0.64, 1.27) (RR)
		Neonatal deaths: 2.06 (0.61, 6.92) (RR)
	Feedback	Preterm Births: 0.60 (0.28, 1.29) (RR)
		Stillbirths: 1.28 (0.69, 2.39) (RR)
	All	Perinatal deaths: 1.13 (0.72, 1.77) (RR)
		Stillbirths: 1.22 (0.76, 1.95) (RR)
		Low birthweight: 0.82 (0.71, 0.94) (RR)
		Preterm births: 0.82 (0.70, 0.96) (RR)
		Neonatal deaths: 1.15 (0.44, 3.06) (RR)
	Coleman, T., et al. (2011).	NRT or placebo, varying durations. Most in tandem with some behavioural counselling/motivational interviewing at baseline or throughout.
Safety (perinatal mortality): 0.70 (0.14, 3.60)		
Safety (preterm birth): 0.78 (0.39, 1.56)		
Safety (post-randomisation fetal deaths): 0.88 (0.30, 2.56)		
Coleman et al, 2015	NRT (patches, lozenges, or gum) <30 weeks + behavioural counselling	Miscarriage and spontaneous abortion: 1.47 (0.45, 4.77)
		Stillbirth: 1.24 (0.54, 2.84)
		Low birthweight (2500 g): 0.74 (0.41, 1.34)
		Preterm birth: 0.87 (0.67, 1.14)
		Neonatal death: 0.66 (0.17, 2.62)

Appendix E: Applicability & Transferability Worksheet

Starting a New Program Applicability and Transferability Worksheet

Factors	Questions	Notes
Applicability (feasibility)		
Political acceptability or leverage	<ul style="list-style-type: none"> • Will the intervention be allowed or supported in current political climate? • What will the public relations impact be for local government? • Will this program enhance the stature of the organization? <ul style="list-style-type: none"> ○ <i>For example, are there reasons to do the program that relate to increasing the profile and/or creative a positive image of public health?</i> • Will the public and target groups accept and support the intervention in its current format? 	
Social acceptability	<ul style="list-style-type: none"> • Will the target population find the intervention socially acceptable? Is it ethical? <ul style="list-style-type: none"> ○ <i>Consider how the program would be perceived by the population.</i> ○ <i>Consider the language and tone of the key messages.</i> ○ <i>Consider any assumptions you might have made about the population. Are they supported by the literature?</i> ○ <i>Consider the impact of your program and key messages on non-target groups.</i> 	
Available essential resources (personnel and financial)	<ul style="list-style-type: none"> • Who/what is available/essential for the local implementation? • Are they adequately trained? If not, is training available and affordable? • What is needed to tailor the intervention locally? • What are the full costs? <ul style="list-style-type: none"> ○ <i>Consider: in-kind staffing, supplies, systems, space requirements for staff, training, and technology/administrative supports.</i> • Are the incremental health benefits worth the costs of the intervention? <ul style="list-style-type: none"> ○ <i>Consider any available cost-benefit analyses that could help gauge the health benefits of the intervention.</i> ○ <i>Consider the cost of the program relative to the number of people that benefit/receive the intervention.</i> 	
Organizational expertise and capacity	<ul style="list-style-type: none"> • Is the intervention to be offered in line with Peel Public Health's 10-Year Strategic Plan (i.e., 2009-2019, 'Staying Ahead of the Curve')? • Does the intervention conform to existing legislation or regulations (either local or provincial)? 	

	<ul style="list-style-type: none"> • Does the intervention overlap with existing programs or is it symbiotic (i.e., both internally and externally)? • Does the intervention lend itself to cross-departmental/divisional collaboration? • Any organizational barriers/structural issues or approval processes to be addressed? • Is the organization motivated (learning organization)? <ul style="list-style-type: none"> ○ <i>Consider organizational capacity/readiness and internal supports for staff learning.</i> 	
Transferability (generalizability)		
Magnitude of health issue in local setting	<ul style="list-style-type: none"> • What is the baseline prevalence of the health issue locally? • What is the difference in prevalence of the health issue (risk status) between study and local settings? <ul style="list-style-type: none"> ○ <i>Consider the Comprehensive Health Status Report, and related epidemiological reports.</i> 	
Magnitude of the “reach” and cost effectiveness of the intervention above	<ul style="list-style-type: none"> • Will the intervention appropriately reach the priority population(s)? <ul style="list-style-type: none"> ○ What will be the coverage of the priority population(s)? 	
Target population characteristics	<ul style="list-style-type: none"> • Are they comparable to the study population? • Will any difference in characteristics (e.g., ethnicity, socio-demographic variables, number of persons affected) impact intervention effectiveness locally? <ul style="list-style-type: none"> ○ <i>Consider if there are any important differences between the studies and the population in Peel (i.e., consider demographic, behavioural and other contextual factors).</i> 	
Proposed Direction (after considering the above factors):		

Form Completed by: _____

Worksheet adapted from: Buffet C., Ciliska D., and Thomas H. National Collaborating Centre for Methods and Tools. November 2007. *Can I Use this Evidence in my Program Decision? - Assessing Applicability and Transferability of Evidence.*