WHO recommendations on prevention and management

of tobacco use and second-hand smoke exposure in pregnancy

The short version

In 2013, the World Health Organization (WHO) published a set of "Recommendations on prevention and management of tobacco use and second-hand smoke exposure in pregnancy". This short version of the full document focuses on the recommendations and associated contextual remarks, as well as some measures to take to implement these recommendations. The WHO Department of Prevention of Noncommunicable diseases (Tobacco Free Initiative) developed these guidelines in collaboration with a large number of international agencies and organizations active in the field of tobacco and reproductive health. Supplementary funding and technical support for this project was provided by the Government of the United States of America through the US Centers for Disease Control and Prevention (CDC), and the U.S. National Cancer Institute (NCI). The WHO Guideline development method requires systematic review of the evidence, transparent appraisal of the quality of the evidence and unbiased decisions by a guideline development panel made up of experts drawn from relevant disciplines and from all regions of the world. A detailed description of the evidence base (including references) and its appraisal, methodology and all individuals and institutions involved in development of these recommendations can be found in the full guideline document available at: http://www.who.int/tobacco/publications/pregnancy/guidelinestobaccosmokeexposure/en/

INTRODUCTION

Tobacco is the only legal product that kills a large proportion of its consumers when used as intended by the manufacturers. The World Health Organization (WHO) estimates that tobacco use is currently responsible for almost six million deaths each year – one death every six seconds. Unless strong action is taken to curb the tobacco epidemic, this number is projected to rise to eight million deaths per year by 2030.

Tobacco comes in smoked and smokeless forms, both of which have been shown to cause harm to pregnant women and their babies. Smoked forms of tobacco include various kinds of cigarettes (manufactured or hand-rolled), cigars, pipes and waterpipes (also known as hookah, shisha or narghile) and many others. Although cigarettes – particularly manufactured cigarettes – are the major form of smoked tobacco product globally, other forms of smoked tobacco, such as bidis and waterpipes, are common in some countries. Smokeless tobacco is a tobacco product that is not burned when used. It may be sucked, chewed (dipped), gargled or applied to the gums or teeth, while fine tobacco mixtures are inhaled into the nostrils.

Second-hand tobacco smoke (SHS) comprises the smoke released from the burning tip of a cigarette (or other smoked tobacco product) between puffs (called sidestream smoke) and the smoke exhaled by the smoke (exhaled mainstream smoke).

Harms of tobacco use and second-hand smoke exposure in pregnancy

Exposure to tobacco smoke has a negative effect on all stages of human reproduction. Tobacco smoking impairs both male and female fertility. Tobacco use, including use of smokeless tobacco, during pregnancy, increases the risk of serious complications such as miscarriage, stillbirth, ectopic pregnancy, and premature labour. Babies born to women who smoke during pregnancy are more likely to be born prematurely, to have low birth weights and to have birth defects such as cleft lip. Babies born to women exposed to secondhand smoke are more likely to be born underweight (<2500 g). Being born premature and of low birth weight may have lifelong consequences, these chil-

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dren are more likely to develop chronic diseases in adulthood. Infants of mothers who smoke during and/or after pregnancy are also at greater risk of death from sudden infant death syndrome (SIDS).

Household spending on tobacco products also reduces the family's funds for basic necessities, such as food, transportation, housing, and health care, thus increasing the risk of adverse health outcomes for pregnant women and their babies.

Pregnancy as an opportunity for tobacco cessation

Pregnancy is a 'teachable moment', a time for preparing for the new baby and for focusing on the mother's health. Equally, it may be a time when partners and other people living in their households may be more amenable to quitting tobacco.

It is estimated that 80% of pregnant women have at least one antenatal contact with skilled health personnel (doctors, nurses, or midwives) and that partners often attend such visits. In 2010 there were an estimated 137million births globally, thus this is an excellent opportunity to identify and address tobacco use and exposure to secondhand smoke in over 100 million pregnant women. It is also an opportunity to directly engage the woman's partner and explain the need to protect the child from the harms of tobacco use and second hand smoke. It is also an opportunity to encourage women to quit tobacco use while they are still relatively young and healthy, and to explain that the earlier one quits, the greater the health benefits.

Overarching principles

The following overarching principles, based on human rights and ethics outlined in the WHO Framework Convention on Tobacco Control, Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), and the Programme of Action of the International Conference on Population and Development (ICPD) should govern use of these recommendations (**see box 1**)

Box 1: Overarching principles

It is a basic right of every pregnant woman to be informed about the harms of tobacco use in any form, as well as the harms of SHS exposure.

Every pregnant woman has the right to a smoke-free environment at the home, and at work and in public places.

All interventions addressing the prevention of tobacco use and SHS exposure in pregnancy should be:

- woman-centred and gender-sensitive;
- culturally appropriate and socially acceptable; and
- delivered in a non-judgemental and non-stigmatizing manner.

Health centres, hospitals and clinics need to 'practice what their providers preach' by providing tobacco-free health-care facilities, and having the health-care providers as 'tobacco-free role models'.

Recommendations

Assessment of tobacco use and second-hand smoke exposure in pregnancy

Health-care providers should ask all pregnant women about their tobacco use (past and present) and exposure to second-hand smoke as early as possible in the pregnancy and at every antenatal care visit.

Remarks:

- Tobacco use includes all forms of smoking and use of smokeless tobacco.
- Second-hand smoke (SHS) exposure includes exposure to smoke from combustible tobacco products at home, work and in public places.
- Tobacco use (smoking and smokeless) status of husbands/partners and other household members should also be assessed.
- At the first prenatal visit, health-care providers should ask all pregnant women about their tobacco use (past and present). Pregnant women with prior history of tobacco use should be asked about their present tobacco use at every ante- natal care visit. Providers should ask women about their SHS exposure at the first prenatal visit, and whenever there is a change in living or work status and when SHS intervention has been initiated.
- Before assessment is initiated in a clinic setting:
  I. training and resource materials should be provided to clinicians and other health-care workers to enable effective and non-judgemental assessment of tobacco use; and
  II. clinicians and other health-care workers should be trained to refer or intervene with all pregnant women who are identified as tobacco users (past and present) or exposed to SHS.

Psychosocial interventions for tobacco-use cessation in pregnancy

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.

Remarks:

- Psychosocial interventions involve behavioural support that may include one or more of the following: counselling, health education, incentives and peer or social support.
- Psychosocial interventions should be offered to pregnant women who are current or former tobacco users as early in pregnancy as possible.
- The recommendation for recent tobacco quitters is based on population-based studies in non-pregnant populations. Recent tobacco quitters may include women who used tobacco before the pregnancy, and who have either spontaneously quit or stopped tobacco use in the pre-conception period or in early pregnancy, before their first antenatal visit.
- There is emerging evidence from some countries that the use of financial incentives may be more effective than other interventions. However, it is difficult to generalize the reported effectiveness to the global population as the evidence is limited and is derived from select small populations.
- More heavily dependent tobacco users may require high intensity interventions.
- Interventions should address concerns of the pregnant smokers about gaining weight as a result of tobacco cessation.
- Recognizing that there is no safe level of tobacco use, there is evidence of some benefit from reduction in smoking if quitting is not achieved.
- Almost all existing evidence for interventions is for smokers of manufactured cigarettes, but emerging evidence suggests that similar psychosocial strategies could be applied to users of other forms of tobacco (smokeless tobacco, water- pipes, etc.). There is limited evidence that stopping use of smokeless and other forms of tobacco may improve some birth outcomes.
- Given the cost-effectiveness of these interventions, programme costs should not be a deterrent to immediate implementation.

Use of pharmacotherapy for tobacco-use cessation in pregnancy

The panel cannot make a recommendation on use or non-use of nicotine replacement therapy (NRT) to support cessation of tobacco use in pregnancy.

The panel does not recommend use of bupropion or varenicline to support cessation of tobacco use in pregnancy.

The panel recommends that further research be carried out in pregnant women on safety, efficacy and factors affecting adherence to pharmacotherapeutic agents for tobacco-use cessation.

Remarks:

- The evidence search found no quality evidence on the use of pharmacotherapy with bupropion or varenicline for tobacco-use cessation in pregnancy.
- There is currently insufficient evidence to determine whether or not pharmacotherapy (NRT, bupropion, varenicline) is effective when used in pregnancy for tobacco-use cessation.
- There is currently insufficient evidence to determine whether or not pharmacotherapy (NRT, bupropion, varenicline) is safe when used in pregnancy for tobacco- use cessation.
- Given the known considerable harms caused by tobacco smoking in pregnancy and the known benefits of using NRT from studies in the general population, it is acknowledged that various national guidelines have recommended use of NRT in pregnancy under medical supervision.

Protection from second-hand smoke in pregnancy (smoke-free public places)

All health-care facilities should be smoke-free to protect the health of all staff, patients and visitors including pregnant women.

All work and public places should be smoke-free for the protection of everyone including pregnant women.

Remark:

- Health facility staff who use tobacco should be offered cessation services.

Protection from second-hand smoke in pregnancy (smoke-free homes)

Health-care providers should provide pregnant women, their partners and other house- hold members with advice and information about the risks of second-hand smoke (SHS) exposure as well as strategies to reduce SHS in the home.

Health-care providers should, wherever possible, engage directly with partners and other household members to inform them of the risks of SHS exposure to pregnant women and to promote reduction of exposure and offer smoking cessation support.

Remarks

- The overall goal of the intervention should be to eliminate SHS exposure at home.
- Efforts to reduce SHS exposure can also help to reduce active tobacco use in pregnant women.

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Who developed these guidelines

To develop these recommendations, WHO assembled panels of guideline developers and reviewers with expertise in reproductive health, tobacco cessation, tobacco control policy, human rights, drawn from all the WHO regions. Partners providing technical support included national and international organisations with an interest and expertise in the subject matter, including the US Centers for Disease Control and Prevention (CDC), and the U.S. National Cancer Institute (NCI), the International Red Cross, the United Nations Population Fund (UNFPA) and United Nations International Children's Emergency Fund (UNICEF). End-users- health professionals, people drawn from communities affected by the recommendations, including an expert in indigenous health- were represented on both formulating and reviewing panels.

Who should use these guidelines?

The recommendations in these guidelines have been developed for:

- Health-care professionals caring for pregnant women in a health facility such as general medical practitioners, family physicians, obstetricians, physicians, midwives, nurses, and other health-care workers.
- Traditional birth attendants and community health workers who provide antenatal care to pregnant women in their homes.
- Public health policy-makers, health-care programme managers, health-facility managers

How to use these guidelines

These recommendations will be more effective where health systems provide an enabling tobacco control environment for health-care workers. This includes making health facilities tobacco-free, provision of smoking cessation services for health-care providers who use tobacco, providing tailored training and materials to diverse levels of health-care providers (physicians, mid-level health workers, first-level, community and lay health workers), and modifying antenatal care forms or other recording instruments of the health system to include a check-box and space for provider notes to document tobacco use and SHS exposure and record relevant actions taken.

Specific ways to apply these guidelines:

Health providers

- **Ask, Ask and Ask again:**

  - Ask the woman about her tobacco use and whether she is exposed to smoke at home or at work at every contact during the pregnancy.
  - Ask partners whether they smoke in the home.

- **Teach:** Explain to both the woman and wherever possible, her partner, why tobacco smoking and secondhand smoke will harm their unborn child.
- **Record:** Note whether or not mother is using tobacco and/or exposed to secondhand smoke on her medical record
- **Act:** Provide advice, educational materials and aids and referral to

  - help pregnant women quit
  - help partners to ensure a smoke free house

Health service managers

- **Train:** Provide training in smoking cessation for physicians, midwives, nurses, and other health workers.
- **Enable:** Enforce no-smoking policies in health-care facilities, and provide staff with tobacco-cessation support
- **Support:** Provide appropriate protocols, tools, educational materials and aids to help pregnant women and their partners quit tobacco
- **Promote:** Provide partner-friendly antenatal care clinics and develop resource materials for household members who smoke.

Policymakers

- Develop, enact and enforce legislation banning smoking in public spaces.
- **Devote resources to addressing tobacco use in pregnancy**
- Devote resources to ensuring all health facilities are smoke free

Research Priorities

Important gaps were identified in research and knowledge that need to be addressed through primary research and support for development of randomized controlled trials of interventions in pregnancy and the postpartum period. Very few studies were conducted in low- to middle-income countries (LMICs). Additionally, there was a dearth of studies on effective interventions for alternative types of smoked tobacco use or smokeless tobacco use in pregnancy and for creating smoke-free homes for pregnant women.

Identification of tobacco use and SHS exposure in pregnancy

Implementation research on effective ways to assess tobacco use is needed, with concentration on major elements such as:

- How to maximize the identification of tobacco use and SHS exposure in pregnant women? (How to ask, what to ask, who to ask, how to document.)
- Self-reported versus biochemically validated assessment.
- How to conduct objective assessment of smokeless tobacco use and exposure to SHS in pregnant women?
- Does biochemical validation of tobacco use affect smoking reduction and quit rates in pregnancy?
- Accurate and cost-effective means for biochemically-validating smokeless tobacco use
- Appropriate pregnancy specific cut-off points for validating abstinence
- Cost-effective ways to assess tobacco use and SHS exposure

Psychosocial Interventions for tobacco-use cessation in pregnancy

Efficacy and effectiveness studies and implementation research need to be conducted in LMICs for various psychosocial interventions such as noted below:

- Brief intervention using '5As' (Ask, Assess, Advise, Assist, and Arrange)
- Feedback to the pregnant woman on fetal health status or measurement of by-products of tobacco smoke biomarkers
- Motivational interviewing
- Financial incentives (contingency management) to promote cessation
- Effective interventions to prevent late pregnancy or postpartum relapse in women who spontaneously quit in early pregnancy.
- Evaluation of effectiveness of specific psychosocial interventions for different types of tobacco product used and for different types of health-care providers implementing the intervention.

Pharmacological interventions for tobacco-use cessation in pregnancy

- Studies of factors improving or impeding adherence to pharmacotherapeutic agents
- A review of the effects (safety profiles, effectiveness) of NRT use in pregnant women, particularly in the United Kingdom where a historical cohort exists for use of NRT in pregnancy
- Studies comparing the use of lower and higher dose of NRT for tobacco cessation in pregnancy
- Client preference trials (client's selection of type of NRT)
- Surveillance of current use of pharmacotherapy in pregnancy (focused on determining whether women use pharmacotherapy when recommended or prescribed by health-care providers, as well as in the absence of provider advice)
- Use of pharmacotherapy by pregnant women who have a high level of nicotine dependence

Protection from SHS in pregnancy (smoke-free public places)

- Assessment of the impact of smoke-free public policies on pregnant women's tobacco-use cessation, SHS exposure and pregnancy outcomes.

- Assessment of public's compliance with smoke-free legislation, specifically in LMICs, by studying individual SHS exposure (through self-reported or biochemically-validated means) in public places and workplaces as well as in the home.
- Assessment of the impact of smoke-free legislation on the prevalence of smoke-free homes or homes with smoking bans.

Protection from SHS in pregnancy (smoke-free homes)

- How best to approach and engage the partners of pregnant women, and other household members to decrease tobacco use among family members and subsequently reduce SHS exposure in homes for pregnant women.
- How best to biochemically verify SHS exposure reduction in pregnant women and smoking cessation among partners.
- Identifying inexpensive and simple air quality monitors and their effectiveness as an intervention tool to encourage reduction of smoking in homes.
- Determining the level of intensity that is required for interventions to be effective in preventing SHS exposure in homes.
- How to increase awareness of health-care providers regarding the importance of screening pregnant woman for SHS exposure.

Evaluation

Measuring success: selected indicators for evaluating the impact of these guidelines*

Global level

- Numbers of countries that routinely document tobacco use and SHS in their ANC forms
- Availability of resource materials in local languages, by country and by health-care facilities
- Number of national guidelines which modify their recommendations based on research on this issue
- Number of randomized clinical trials funded and implemented on this issue
- Number of publications on use of pharmacotherapy in pregnancy

Country level

- Proportion of health-care providers trained to assess tobacco use and SHS exposure
- Identification of frequency of tobacco use among pregnant women (number of times used per day/ week) over time
- Proportion of antenatal clinic (ANC) forms with designated place to document tobacco use and SHS exposure and action taken
- Percentage of women assessed for tobacco use and SHS exposure at ANC visits at appropriate intervals
- Proportion of pregnant women (using tobacco), who, after being given advice to quit, do actually quit
- Proportion of pregnant women who are identified as exposed to SHS
- Proportion of pregnant women (exposed to SHS), given advice who report reduced SHS exposure
- Number of training sessions organized for health-care providers on intervention delivery
- Availability of protocols and job aids in local languages at ANC facilities
- Presence of smoke-free legislation at national, sub-national and local levels
- Incidence of observed compliance with smoke-free legislation
- Percentage of smoke-free health facilities (public and private)
- Prevalence of tobacco use and quit rates among health-facility workers

* A longer list of indicators is available in the full guidelines

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