Integrating Tobacco

Cessation into Daily

Nursing Practice

RPN/RN/LPN LEARNING MANUAL

Nurses will be able to integrate tobacco cessation into their daily nursing practice


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# Acknowledgements

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General Statement

This learning package is intended to provide direction to practicing nurses on tobacco* cessation assessment and intervention for patients** admitted for care *** in Saskatoon Health Region owned and operated facilities.

* includes all forms of tobacco: cigarettes, pipe, cigar, snuff and chewing tobacco
** includes patients, clients and residents
*** includes acute and residential care, long-term/special care

The 5A’s Model of Tobacco Cessation Intervention

Effective tobacco prevention interventions, based on the National Cancer Institute’s “5A's” model, the Agency for Healthcare Research and Quality guidelines, and the Transtheoretical Model (TTM) of behavioral change, have been demonstrated to be effective in identifying and treating tobacco use and dependence. The 5A’s model is supported by the World Health Organization and consists of:

<table>
<thead>
<tr>
<th>ASK</th>
<th>about tobacco use</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADVISE</td>
<td>about quitting</td>
</tr>
<tr>
<td>ASSESS</td>
<td>readiness to quit</td>
</tr>
<tr>
<td>ASSIST</td>
<td>with quitting</td>
</tr>
<tr>
<td>ARRANGE</td>
<td>for quitting support and follow-up</td>
</tr>
</tbody>
</table>

The 5A’s best practice approach to tobacco cessation provides nurses with opportunities to:
- identify tobacco status of their patients
- intervene in a sensitive, non-judgmental manner about the importance of tobacco cessation
- assist patients to quit tobacco through minimal intervention.

Benefits of Using the 5A’s Approach:

With an increase in tobacco cessation intervention, there will be:
- a significant reduction in the number of tobacco users
- a significant reduction in exposure to secondhand and third hand tobacco smoke
- a decrease in tobacco related death, disease and disability
- a lowering of healthcare costs
Rationale for Tobacco Assessment and Cessation Intervention

- Hospitalization provides for a “teachable moment”, an event that motivates individuals to adopt health behaviors that reduce risk. Many patients look at this as the ideal time to try to quit and will look to their nurse for support. 80 to 90% of smokers indicate they would like to quit at some point in their lives.
- Research shows that only asking patients if they use tobacco is not enough to motivate them to quit. All health professionals have a responsibility to advise and assist their patients with quitting tobacco.

Nurses play a significant role because:
- they are trusted sources of information and advice
- they constitute a high percentage of the healthcare workforce and are able to provide tobacco cessation intervention with a large proportion of the population
- interventions for tobacco cessation led by nurses have shown to increase the success rate for quitting by 50% or more (source: WHO)

Talking About Tobacco Use

Nurses who smoke may feel uncomfortable raising the issue of quitting smoking with a patient. Non-smoking nurses may fear they cannot truly empathize with a smoker’s needs. Ex-smokers may let their personal experience of stopping get in the way of providing intervention for their patient. If quitting was difficult for them, they may not encourage a patient to take the challenge. Or, if it was easy they may not understand the patient’s need for assistance.

Whatever experience a nurse has with smoking or tobacco use, the nurse’s professional advice is essential. Nurses will not appear hypocritical or judgmental if they follow the recommended “5A’s” guidelines. If the subject of addressing tobacco cessation is not mentioned, the patient may mistakenly perceive that quitting is not important.

It is always worth the time and effort through minimal tobacco intervention, to talk to and assist patients with quitting tobacco. Nurses who raise the subject and provide information with each patient contact are helping their patients move through the cycle of change and are saving lives.

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Tobacco Tidbit

If each working nurse helped one person per year to quit smoking, nurses would triple the national quit rate.

Source: U.S. Department of Health and Human Services, Public Health Service, Tobacco Free Nurses 2005
Learning Objectives

Upon completion of this learning package, nurses will be able to implement minimal tobacco cessation intervention using the “5A’s” protocol with all patients.

Nurses will be able to:
- name two purposes of the Saskatoon Health Region Tobacco and Smoke-free Policy
- name at least three health risks associated with tobacco use
- name at least three health risks associated with secondhand tobacco smoke
- name the “5A’s” of tobacco cessation intervention: Ask, Advise, Assess, Assist, Arrange
- identify stages of behavioral change in relation to smoking behavior
- name one community tobacco cessation resource for referral
- describe the three types of nicotine replacement therapy (NRT), their usage specifications, contraindications and dosages
- list five precautions for nicotine replacement therapy use

Time Frame: 2 hours

For enhanced learning on minimal and intensive tobacco cessation intervention, refer to “Helping People Quit Smoking: Nursing Best Practice Guidelines”:

http://rnao.ca/bpg/guidelines/integrating-smoking-cessation-daily-nursing-practice

PACT (Partnership to Assist With Cessation of Tobacco) and its subsidiary program TAR (Tobacco Addiction Recovery) are tobacco cessation programs available in Saskatchewan. TAR was developed for use in Aboriginal communities and it stresses the importance of sacred tobacco use while providing culturally sensitive strategies for those wanting to release their addiction to tobacco. For more information about these programs, to access a list of PACT providers or to find out how to become trained through PACT visit:

www.makeapact.ca

In the Saskatchewan Provincial Tobacco Reduction Strategy 2012, the Government of Saskatchewan has outlined three key goals:
- Prevention - to encourage communities to create environments where it is easier to make healthy choices.
- Protection - to eliminate exposure to environmental smoke and prevent young people from accessing tobacco products.
- Cessation - to encourage and assist current tobacco users to stop or reduce their tobacco use.

www.health.gov.sk.ca/tobacco-reduction

Canadian Nurses Association Position Statement:

"It is important for nurses to integrate tobacco use assessment, counseling and interventions into their practices"

January 2001
Purpose:

- to protect others from the harmful effects of second and third hand tobacco smoke
- to denormalize tobacco use
- to reduce tobacco use

What does this mean for staff, patients/residents and visitors?

- No use of tobacco products permitted in any health service organization operated/funded by SHR or on the grounds surrounding these facilities.
- No use of electronic cigarettes and equivalents (electronic nicotine delivery systems ENDS including e-cigarettes, personal vaporizers and e-hookahs) permitted in any SHR health service organization.
- No use of tobacco products permitted in vehicles operated/funded by SHR or in vehicles parked in underground parkades.
- Smoking is actively discouraged in homes of clients while receiving in-home SHR services.
- No sale of tobacco permitted in all health care facilities as per the Saskatchewan Tobacco Control Act 2001.
- Existing indoor, separately ventilated rooms may remain in special care facilities as per Saskatchewan Tobacco Control Act 2004 (TCA). Ceremonial use of tobacco is permitted as per the TCA.

What will happen when patients/clients/residents receive SHR services?

Upon admission to any hospital or residential care facility:

- Patients/clients/residents will be asked about tobacco use and will receive brief tobacco cessation counselling.
- Patients admitted to hospital or a short-term residential facility will have access to nicotine replacement therapy, at no cost, for the duration of their stay.
- Long-term care/special care residents will have a one-time access to nicotine replacement therapy, at no cost, for up to a 10-week program.

Are there exemptions?

- Residents in long-term care/special care facilities are permitted to smoke in a designated outdoor location.

Refer to SHR Administrative Manual # 7311–20–001 for procedures associated with the policy.
2.1 Health Risks of Tobacco Use

Tobacco use is the leading cause of preventable and premature death, disease and disability. More than 45,000 Canadians die annually as a result of tobacco use. Every year, 1,600 Saskatchewan people die as a result of tobacco related illness and disease. There is no safe level of tobacco use or secondhand smoke. Some of the health risks associated with tobacco use are: cardiovascular disease, cancers, respiratory diseases, adverse effects in pregnancy, gastrointestinal problems, blindness, tooth and gum problems. On average, smokers shorten their life span by approximately 15 years.

Spit tobacco, known as snuff and chewing tobacco, is not a safe alternative to smoking as some may perceive. The products are highly addictive and contain nicotine as well as toxins and chemicals, 28 of which are known carcinogens. The users increase their risk for developing mouth cancer by as much as 50%. (See Appendix E).

2.2 Environmental Tobacco Smoke (ETS) – Secondhand Smoke (SHS)

Thousands of Canadians die annually as a result of exposure to environmental tobacco smoke, many of whom have never been smokers themselves. ETS releases over 4000 chemicals into the air, such as tar and ammonia. Some of the health risks associated with secondhand tobacco smoke include lung cancer, heart disease and stroke. Eye irritation, headache, nasal discomfort, cough, sore throat, nausea, dizziness, increased heart rate and blood pressure and the reduced ability to take in and use oxygen are other symptoms of unnecessary exposure to ETS. Infants subjected to an environment of secondhand tobacco smoke are exposed to an increased risk of Sudden Infant Death Syndrome (SIDS).


2.3 Environmental Tobacco Smoke (ETS) – Third-hand Smoke (THS)

"Third-hand" smoke refers to the cigarette byproducts that cling to smokers’ hair and clothing as well as to household fabrics, carpets and surfaces — even after secondhand smoke has cleared. Health professionals coined the term to raise awareness about the danger these invisible tobacco toxins pose to children, who are especially susceptible because they breathe near, crawl on, play on, touch and mouth contaminated surfaces. The important thing to know is that you can’t eliminate smoke exposure in your home by opening a window, using air conditioning or a fan, or allowing smoking in some rooms but not others. If you can smell tobacco smoke — even if you can’t see it — you’re breathing in toxins, including more than 60 known carcinogens. The only way to fully protect your children — and nonsmoking adults in your family — is to make your home and car smoke-free. Consider this added bonus: Enforcing these smoke-free zones may help smokers quit and reduce the risk of teens becoming smokers.

Tobacco Tidbit

Given that about 1 billion people smoke worldwide, WHO estimates that around 700 million, or almost half of the world’s children, breathe air polluted by tobacco smoke, particularly at home.

(1. WHO 2010; 2. WHO May, 2012)
2.4 Tobacco Addiction

Tobacco contains nicotine, which is a powerful and highly addictive substance. Tobacco delivers nicotine to the brain rapidly and effectively, bringing on the rapid onset and maintenance of addiction. The resulting physiological need for tobacco, as well as the accompanying psychological need, explains the continuing use of tobacco in spite of all known health risks.

Studies have shown that for some, tobacco is as addictive as heroin components. Tobacco use triggers the release of dopamine, a chemical in the brain that is associated with feelings of pleasure (relief of withdrawal symptoms). Smokers need greater amounts of nicotine to achieve the same levels of satisfaction. Further smoking alleviates the withdrawal symptoms that set in as soon as the effect of nicotine wears off. Research supports that individual smokers differ in their degree of dependency.

Those who reduce or stop nicotine intake may experience, in varying degrees, any of the following symptoms within 24 hours: depressed mood, insomnia, irritability, frustration or anger, anxiety, difficulty with concentration, restlessness, decreased heart rate, dizziness and increased appetite.

The withdrawal period of 72 hours is the same for many chemical addictions. Coincidentally, an average hospital stay is approximately 72 hours. After just three days, the physical withdrawal is completed and only the dependency or habit remains. Some psychological symptoms such as cravings, depression or anxiety may last longer so there may be a need for pharmacotherapy. A person who smokes 1 package of cigarettes per day makes the hand to mouth motion approximately 90,000 times/year. This can present as the most challenging habit. Therefore, reinforcement may be required such as chewing sugar free gum or candy, holding a toothpick in the mouth or a pen between the fingers.

For some, the fear of discomfort of withdrawal can be a major barrier to quitting. Patients need to understand that not everyone experiences withdrawal, so reassurance is important. Withdrawal symptoms can be managed through behavioral counseling and with the assistance of nicotine replacement therapy (NRT) and/or pharmacotherapy.

When individuals access tobacco cessation counseling, their chance of quitting successfully are doubled.

2.5 Quitting Tobacco

There are several reasons or motivators for quitting. The primary reason is often for their own health or the health of others. Other reasons may be a crisis, cost, a new baby, a new home or vehicle.

Quitting successfully may take anywhere from 4 to 11 attempts. Each attempt offers new opportunities so should not be viewed as a failure. Tobacco cessation is not a single event, but a process that involves a change in lifestyle, values, social circles, thinking and feeling patterns as well as coping skills.

Quitting tobacco can be easy for some and an enormous task for others. The smoker is the expert on themselves, their lifestyle and smoking routine. The role of the nurse is to ask questions to enable the patient to reflect and plan ahead and to support them as they implement the changes.
Strategies for quitting and staying quit include FIVE IMPORTANT STEPS:

1. **Get Ready**
   - Set a quit date that's not too far off in the future, usually within 30 days.
   - Have a “Quit Plan”. A quit plan will include removing cigarettes and ashtrays from the home and car and not permitting anyone to smoke in these locations.
   - Plan an exercise program.
   - Plan for healthy eating.

2. **Get Support**
   - A person is more successful in quitting when support is provided by family, friends and co-workers.
   - Arrange for tobacco cessation counseling since this can double a person’s success for quitting.

3. **Learn New Skills and Behaviours**
   - Recognize personal “triggers” for using tobacco. Coffee, alcohol, stress, anger, frustration and boredom are some of the most common. A smoker needs to identify personal triggers and avoid them especially in the first 3 months. They need to remove themselves from a trigger situation, distract the mind when confronted with a trigger situation and delay smoking if the cravings become too strong. Cravings last only a few minutes, less time than what it takes to smoke a cigarette. Cravings will come fewer and farther apart if distraction strategies are used such as going for a walk or brushing teeth.
   - Hunger, anger, loneliness and tiredness (H.A.L.T,) can weaken defenses when quitting tobacco.

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**Tobacco Tidbit**

Just 5 minutes of moderate physical activity reduces symptoms of withdrawal and cravings when quitting tobacco.

Source: Psychopharmacology, 2004
4. **Get Medication and Use It Correctly**
   - It is advisable to consult a physician or pharmacist before using nicotine replacement therapy products.
   - Nicotine replacement therapy helps with cravings and withdrawal while adjusting to quitting and should be used with a “Quit Plan” for better results.

5. **Be Prepared for Relapse**
   - Most relapses occur within 3 months of quitting. It may take up to 4 to 11 quit attempts before quitting successfully.
   - Relapse is a normal part of the quit process and should not be viewed as a failure.
   - It is important to self-evaluate the recurrence, choose a new quit date and start over.

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**Tobacco Tidbit**

Celebrate your success:
- Believe in yourself and your plan.
- Understand that it takes time to relearn a tobacco free lifestyle.
- Don’t be discouraged if you slip. It’s part of the process.
- You are not a failure. Review your plan and ask yourself how you can do it better next time.
- Reward yourself.

Source: Canadian Lung Association, 2007
Benefits of Quitting Tobacco

Health Benefits:

Tobacco cessation decreases the health risks associated with tobacco use, benefiting both the individual and public health by decreasing the burden of disease. Tobacco affects almost every organ and system in the body. The good news is the minute tobacco use is stopped, the body begins to heal and get stronger.

- Immediately, the air around the smoker is no longer dangerous to children, other adults and pets.
- Within 20 minutes of the last cigarette, blood pressure may drop to normal; pulse rate drops to normal and temperature of hands and feet returns to normal.
- Within 8 hours carbon monoxide level drops and oxygen level increases.
- Within 72 hours bronchial tubes relax if undamaged, breathing becomes easier and lung capacity increases.
- Within 2 weeks to 3 months circulation improves and walking becomes easier.
- In 1 year risk of heart disease is reduced by half.
- In 2 years cervical cancer risk reduced compared to continuing smokers.
- In 5 years lung cancer death rate for the average package a day smoker decreases.
- In 10 years and longer precancerous cells are replaced, risk of mouth, larynx, esophagus, bladder, kidney and pancreas cancer decreases; death from Chronic Obstructive Pulmonary Disease is reduced.
- In 5 to 15 years after quitting, stroke risk is reduced to that of someone who has never smoked.

Personal Benefits:

Individual benefits gained from quitting tobacco include improved health, enhanced taste of food, improved sense of smell, money savings, better self-esteem, and cleaner smelling breath, home and car. Within weeks of quitting, people experience lower levels of perceived stress. Those who quit smoking can set a good example for their children, have healthier babies, not worry about exposing others to second and third hand tobacco smoke, feel better physically and attain freedom from addiction.

Financial Benefits:

Total direct health care costs linked to tobacco use are over $4.4 billion a year, including hospital, doctor and drug costs, for tobacco-related illnesses. If non-medical costs like lost productivity due to illness and premature death are included in these costs, the economic burden to Canadian society from tobacco use rises to at least $17 billion each year.

Source: Health Canada, 2011

The tobacco free individual will also have extra money to spend. For example, based on a $12.00 per day package of cigarettes smoked:

- In 8 hours $6 would be saved
- In 1 week $84
- In 1 month $360
- In 1 year $4320
- In 5 years $21,600
- In 15 years $64,800 savings
2.6 Weight Gain

*Does smoking increase your body's metabolism?* The low level of metabolic stimulation produced by nicotine pales in comparison to the amount of damage the substance does to the body.

Two-thirds of ex-smokers do experience a weight gain, usually less than 10 pounds. Lack of exercise and consumption of high fat, high calorie foods, rather than healthy choices is the true cause of weight gain. In addition, enhanced taste and smell produces a tendency to eat more. It is important to eat right by following "Eating Well with Canada's Food Guide" and staying active. Remember, the health risks of continued smoking are far greater than the health risks of a small weight gain. Weight can always be lost, lungs cannot be easily replaced.

**Tobacco Tidbit**

An average smoker would have to gain 125 pounds above his/her recommended weight to have the same health risk as smoking one pack of cigarettes per day.

Source: Weight Gain and Smoking Cessation, Obstetrics and Gynecology Clinic, 2000

2.7 Tobacco and Surgery *

Tobacco use increases the risk of some postoperative complications, including pulmonary, cardiovascular and wound-related complications and infections with an extended recovery period. Studies show that patients who continued to smoke after coronary bypass surgery had a greater risk of death than patients who stopped smoking. They also underwent repeat revascularization procedures more frequently.

Smokers heal more slowly after surgery. They are also more likely to have breathing problems during surgery. Quitting smoking will improve lung function and circulation which will help the patient heal more quickly.

3.1 Tobacco Cessation Guiding Principles

- Tobacco use is an addiction that requires support and repeated interventions.
- The offer of assistance to quit tobacco will benefit every smoker.
- The patient has the right to accept or refuse tobacco cessation intervention.
- Patients deserve to be treated with respect, dignity and sensitivity while receiving tobacco cessation intervention.
- The public values and trusts specific advice provided by nurses in the practice of their profession.
- Nurses are key members of the healthcare team and have a unique, credible and powerful position with the team.
- Nurses are involved with clients at multiple entry points to care. This provides many opportunities to identify tobacco users and implement interventions.
- Actively implementing tobacco cessation interventions will increase successful quitting.
- Nurses who are currently active smokers have a professional responsibility and can effectively provide tobacco cessation intervention.

3.2 Benefits of Minimal Tobacco Intervention

- It takes only 3-5 minutes or less and works with all tobacco users.
- It has significant effects on tobacco cessation rates.
- It encourages committed smokers to think about their smoking, has smokers considering the disadvantages of their smoking and has smokers considering the benefits of quitting.
- It will increase awareness and motivation to quit for those who are not yet ready.
- Smokers who reported receiving the best practice 5A's tobacco intervention demonstrated a higher degree of satisfaction with their provider's overall care.
- Even smokers not interested in quitting regard a provider addressing smoking as evidence of concern for their well-being.
Individual tobacco users are at different stages of readiness to quit. Knowledge of the “Stages of Change Model” can assist nurses in tobacco cessation intervention by understanding the various stages of willingness to change. Progress is accomplished when a smoker moves onto the next stage progressing closer to the stage of quitting.

In the Behavioural Change Model, most smokers will cycle through the stages 4 to 11 times before quitting for good. Each attempt offers new opportunities to learn new skills and new techniques that will help in the next attempt. Relapse is a normal event in the process of making behavioral change. Common factors associated with relapse are alcohol use, caffeine, stress, others who smoke, anger, frustration, boredom and entertainment. Patients should be encouraged to identify tempting situations and develop a quit plan on how to handle them.

### Stages of Change Model

![Stages of Change Model Diagram]

**Tobacco Tidbit**

Helping an individual smoker progress just one stage can double his chance of being tobacco free 6 months later.

*Source: Unity Health Insurance, Adult and Adolescent Tobacco Cessation Clinical Practice Guidelines*
### Stages of Behavioural Change

<table>
<thead>
<tr>
<th>Stages</th>
<th>Description</th>
<th>Nurse's Role:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRECONTEMPLATION</strong></td>
<td>Unaware of problem with tobacco use or unwilling to change. Not thinking of quitting in the next 6 months.</td>
<td>To help the patient begin to think seriously about quitting.</td>
</tr>
<tr>
<td><strong>CONTEMPLATION</strong></td>
<td>Ambivalent but thinking of quitting within 6 months.</td>
<td>To help a smoker move towards a decision to stop smoking.</td>
</tr>
<tr>
<td><strong>PREPARATION</strong></td>
<td>Getting ready to stop within the next 30 days, set quit date.</td>
<td>To help a smoker positively prepare for quit date.</td>
</tr>
</tbody>
</table>

### WHAT TO DO:

**Use the 5R’s of Motivational Intervention**

- **Relevance**
  - Ask why quitting would be important or personally relevant (health, children).

- **Risks**
  - Ask about risks of continued tobacco use.

- **Rewards**
  - Ask about benefits of quitting.

- **Roadblocks**
  - Ask about barriers to quitting, discuss strategies to address barriers, offer cessation resources.

- **Repetition**
  - Repeat 5R’s at every encounter.
Stages of Behavioural Change (con’t)

<table>
<thead>
<tr>
<th>ACTION</th>
<th>MAINTENANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Patient is actively applying cessation skills.</td>
<td>• Patient has quit for more than 6 months.</td>
</tr>
<tr>
<td></td>
<td>• Patient is still utilizing quitting skills.</td>
</tr>
</tbody>
</table>

**Nurse’s Role:**

To assist and support the patient to remain tobacco free.

**Nurse’s Role:**

To assist and support patient to remain free from tobacco for a lifetime.

What to Do:

**ACTION**

- Ask how patient is doing with temptations, successes, NRT use.
- Advise about relapse prevention.
- Encourage and support.

**MAINTENANCE**

- Ask how patient is doing.
- Offer suggestions for difficult times.
- Support, encourage and congratulate patient.

RELAPSE

- This is a normal event in the process of making behavioral change and is not to be viewed as a failure. Many smokers who have made an initial attempt to quit but have started smoking again are often reluctant to try another quit attempt for “fear of failing” again. Once they examine the issues surrounding why they started to smoke again, they will have learned from the process.
- Most smokers will cycle through the stages several times before quitting for good.
- Each attempt offers new opportunities to learn new skills and new techniques that will help with the next quit attempt. All smokers should be encouraged to keep trying.
- Rushing unprepared into a quit attempt is a major reason for relapse. **A “Quit Plan” is important.**
Some reasons that are given for returning to smoking

- They were not aware of their triggers for smoking.
- They did not plan a program to help them quit.
- They had a stressful day.
- They found it difficult to cope with an unexpected situation.
- They thought of themselves as smokers rather than non-smokers.

“I thought I could have just one!”

Advice for smokers trying again

- Review reasons for wanting to be a non-smoker.
- Review past experiences - what worked and what didn’t.
- Choose a new quit date - one that is stress free.
- Think positively and concentrate on the benefits of living free of tobacco.
- Practice plans for coping.

Tobacco Tidbit

Somewhere in the world, every 6.5 seconds someone dies from a tobacco related illness.

Source: WHO 2005
Upon patient admission, the nurse:

- Completes "5A's Tobacco Cessation Intervention Flow Chart" (SHR Form #102848)

- Signs and dates form. If patient requests ongoing support provide patient with Tobacco Cessation Services at 306-655-4100.

**Tobacco Tidbit**

Tobacco use is now considered a chronic, progressive relapsing condition requiring support and assistance.

Source: First European Workshop on Tobacco Prevention and Cessation for Oral Health Professionals, 2005
5a’s Tobacco Cessation Intervention Flow Chart

**Refer to Appendix A. Review this section from left side to right**

1. **ASK** every patient about tobacco use
   
   *Do you currently smoke or use tobacco?*

   When response is “YES”, inquire about what form of tobacco is used. No matter how tobacco is used, whether smoked, chewed or dipped, it all has immediate and long-term health risks.

   - When response is “NO”: Congratulate patient for not using tobacco.
   - Inform about the SHR Tobacco and Smoke-free Policy: Smoking or tobacco use is not permitted in buildings and grounds.
   - Ask patient to educate their visitors about the policy; should result in fewer enforcement issues.

2. **ADVISE**
   - Every tobacco user, in a clear, strong and personalized manner about the importance of quitting. For example: “The most important advice I can give you is to quit and I can help.”
   - It can be pointed out with confidence that smoking may have contributed significantly to their current health problem and may increase the risk of recurrence.
   - Personalize the message, for example: “When you quit smoking, your asthma will improve”.
   - Inform patient of the SHR Tobacco and Smoke-free Policy.

3. **ASSESS**
   - Willingness to quit by asking “Are you thinking about quitting?”
     
     The response received will depend on the patient’s Stage of Behavioral Change.

   **Yes**
   - Want to quit now (ACTION)
     - Patient is actively applying cessation skills.
   
   **Yes**
   - In next 6 months (CONTEMPLATION)
     - Patient is ambivalent but thinking of quitting within 6 months.
   - In next 30 days and has set a Quit date. (PREPARATION)
     - Patient is getting ready to stop.

   Continue to ASSESS (on p. 3)
   Continue to p. 4
   Continue to ASSIST (on p. 5)

   **No**
   - Not ready (PRECONTEMPLATION)
     - Patient is unaware of problem with tobacco use or unwilling to change.
3. ASSESS (con’t)

- **Tobacco Use and Dependence**
  Assess patient’s tobacco use and dependence by asking:

<table>
<thead>
<tr>
<th>How many cigarettes do you smoke?</th>
<th>_______cigarettes per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1 pkg = 25 cig)</td>
<td></td>
</tr>
<tr>
<td>When do you have your first cigarette after waking?</td>
<td>□ within 30 minutes □ more than 30 minutes</td>
</tr>
</tbody>
</table>

These two questions assist in determining the NRT dose.

Additional assessment questions:

- **How long have you been smoking?** □ less than 10 yrs □ 10 yrs or more
- **Have you quit in the past?** □ yes □ no
- **How many times?** □ 1-3 □ more than 4
- **How did you quit?** □ cold turkey □ NRT ______ □ other ______

With the additional assessment questions, the nurse will be able to assist the patient further. For example, if the patient has attempted to quit “cold turkey” unsuccessfully in the past, this time he/she may be ready to attempt NRT. If they tried NRT in the past with unsuccessful results, it may mean they did not use the products correctly or perhaps did not have a quit plan in place. If the patient has responded he/she has quit twice in the past, there may be hesitation to try again for fear of not succeeding. This patient will require further reassurance that for many it takes 4-11 quit attempts to successfully quit and the nurse is there to assist.

**NOTE:**

When patients are hospitalized, they may be under reporting their tobacco use, especially if they have recently cut down or are temporarily smoking less due to illness.

All smokers should be reassessed at 24 hours after their last cigarette for signs or symptoms of withdrawal such as cravings, restlessness or agitation. This may indicate a need to initiate NRT or adjust the current NRT dose.

4. ASSIST

- **Discuss NRT options.** Detailed information is provided in Section 6.0 of this document.
- **Provide SHR Tobacco Cessation booklet Are You Thinking About Quitting Smoking or Other Tobacco Products?**

Additional booklets for patients are available by ordering #102389 from SHR printing services.

5. ARRANGE

- **For NRT by alerting the physician to write the NRT order.**
- **For ongoing support by calling Community Addiction Services at 306-655-4100, at the patient’s request.**
- To follow-up for NRT in 24 hours. There are 2 factors to consider with the 24 hour assessment:
  - A patient may not have smoked for 24 hours wasn’t initially interested in NRT but may be now due to withdrawal so nurse may need to order NRT.
  - A patient may have been placed on NRT, but is experiencing difficulty (too much, too little) so nurse needs to reassess for adjusting the dose to more, less or a different product.
The ‘Cigarette Holiday’

- Some smokers may not be able to imagine being without cigarettes for a day or even a few hours. NRT may be useful for these individuals who are not yet ready or able to quit and can be used in situations where they temporarily refrain from smoking such as when hospitalized, at work or during a long plane trip. This would apply to patients in all stages except ACTION stage while they are hospitalized. The patient may be introduced to the option of eventually becoming tobacco-free.

- The ‘cigarette holiday’ offers being tobacco free even for a short period of time with benefits in the body’s healing and recovery. Those who use this strategy should gradually attempt to extend the duration of their cigarette-free periods.
4. ASSIST

- Provide the SHR Tobacco and Smoke-free Policy pamphlet.
- Offer the self-help booklet “For Smokers Who Don’t Want to Quit”. This booklet will enable further dialogue between the nurse and patient.

- If the patient plans to continue to smoke while in SHR care, have patient sign waiver to smoke off property (Appendix B).
- If the patient plans to abstain from smoking or is unable to leave property to smoke while in SHR care, explore the idea of a ‘cigarette holiday’ and continue to ASSESS/ASSIST/ARRANGE for NRT as described for patient in Action Stage (on page 3).

At subsequent contacts with the patient, use the 5R's of Motivational Intervention (Appendix D). You will be helping the patient consider a quit attempt at a later date.

1. Relevance
   - Do you feel quitting smoking is an important thing to do for yourself and others around you?
2. Risks
   - What effect do you think your continued smoking will have on you and others around you?
3. Rewards
   - Can you identify the benefits of quitting for yourself and not smoking around others?
4. Roadblocks
   - What is stopping you from quitting?
5. Repetition
   - When opportunity presents, repeat the 5R's

---

**Tobacco Tidbit**

One quarter of the children who have caries in deciduous teeth could be caries-free if ETS exposure were eliminated.

Source: Association of Pediatric Dental Caries with Passive Smoking. JAMA. March 2003
6.1 NRT Delivery Options – Refer to www.rxfiles.ca for current information

NRT assists in quitting tobacco by delivery of ‘clean nicotine’ at gradual doses in a safe and effective manner without the harmful constituents contained in tobacco. Systematic reviews show that all forms of NRT increase quit rates at 12 months and with cessation counseling, the quit rate doubles again. NRT helps with cravings and withdrawal symptoms. Any NRT can be used alone or the patch may be combined with either the gum or the inhaler.

The choice of NRT is usually based on patient preference. NRT products are available for purchase over the counter in pharmacies and supermarkets. A prescription is unnecessary unless the patient has a health plan that requires a prescription for reimbursement. It is advisable not to use tobacco products while using NRT and to consult a physician/pharmacist regarding a person’s medical history and other medications he/she may be taking.

6.2 Cost of Smoking Versus NRT

Some perceive the cost of NRT to be more expensive than continuing to smoke. For example:

- 1 package of cigarettes/day for 10 weeks @ $12.00/pack
  Cost: $840.00 + cost to health versus
- 10 week protocol for nicotine patch @ $45.00/week
  Cost: $450.00 + improved health

6.3 What Can You Expect from Patients?

A study showed that 69% of smokers are concerned that NRT products are as harmful as cigarettes. NRT offers ‘clean nicotine’ delivery at gradual doses to assist in quitting, as opposed to the nicotine plus the thousands of harmful toxins that are constituents of a cigarette. There will be an increasing number of patients seeking advice on tobacco cessation due to increased awareness of the NRT products among the general population. There may be patients who may have never considered NRT products in their quitting process. It is very important for patients to receive accurate advice on using NRT with clear reassurance on safety of NRT products when used as advised. (Source: British Thoracic Society, 2004)
6.4 Types of NRT

**Nicotine Patch**

- provides a lower level of nicotine in blood than cigarettes
- allows stable nicotine levels to be maintained
- gradually does away with the body's need for nicotine
- reduces cravings and protects against withdrawal, especially in the early morning which may be the most difficult time
- recommended not to use continuously for more than 3 months
- 3 step program: 21 mg, 14 mg, 7 mg

**Patch side effects:**

- irritability, trouble sleeping, increased appetite – should disappear after the first few days of use
- minor skin irritations, headache, insomnia, stomach upset and vivid dreams - may be eliminated by stepping down to a lower strength patch.
- heavy exercise may increase the absorption of nicotine (your pharmacist can help you find a solution that works best for you).

**Using the patch:**

- fresh patch applied to clean, dry, hair-free skin on upper body or outer upper arm
- rotate patch site daily allowing previous site to rest for at least 1 week; helps prevent most common side effect, skin irritation.

**Patch disposal:**

- used patches contain 60-70% nicotine
- fold patch to stick together and return to original package or package from next patch
- all used NRT Systems should be stored and disposed of out of reach of children and pets.
The following Oral Nicotine Replacement Therapies:

- gradually do away with body’s need for nicotine
- help with cravings
- may be used whenever desire to smoke
- can be used when temporarily refraining from smoking eg: in smoke free areas, airplanes
- are recommended not to be used with alcohol, caffeine and acidic beverages – alters the medications action
- are recommended not to exceed use over 6 months without consulting physician.
- double the chance of quitting according to research.

**Nicotine Gum** – Dosage 2mg and 4mg

*Using the gum: Bite, Bite, Park*
- do not chew like ordinary gum – just enough to soften gum and allow release of nicotine: **take it slow**
- as soon as tingling, peppery taste occurs, stop chewing and place between gum and cheek
- repeat process when tingling disappears; lasts about 30 minutes.

**Side effects of gum:**
- aching jaw muscles, mouth soreness, hiccups, headache
- stomach upset if chewed too quickly
- usually transient side effects.

**Nicotine Lozenge** – Dosage 1 mg, 2mg and 4mg

*Using the lozenge:*
- slowly suck lozenge until a strong taste is noticeable
- as soon as tingling, peppery taste occurs, stop sucking lozenge and place between gum and cheek
- repeat process when taste disappears; lasts about 30 minutes.

**Side effects of lozenge:**
- sleep disturbance, mouth soreness, hiccups, heartburn, indigestion, and/or upset stomach.

**Nicorette QuickMist® Spray**

*Using the mist spray:*
- Spray once into mouth, avoid spraying lips or swallowing/inhaling spray.
- If after 60 seconds craving persists, spray a second time.
- repeat process when taste disappears; lasts about 30 minutes.
- Maximum dose – 2 sprays at a time, 4 sprays per hour, 64 sprays per day

**Side effects of mist spray:**
- Tingling lips, hiccups, heartburn, indigestion, and/or strong taste in mouth

* Not available in hospital or in-patient settings.
**Nicotine Inhaler**

- can reduce craving to smoke while providing comfort of the hand-to-mouth ritual
- has a flexible dosing system to be used whenever urge to smoke
- dose of nicotine from 1 puff of inhaler is much less than from one puff of cigarette.

![Nicotine Inhaler Image]

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**Inserting nicotine cartridge**

- Press cartridge firmly into bottom of mouthpiece until seal breaks
- Replace top of mouthpiece
- Align marks to close
- Press down to break top foil seal of cartridge
- Twist to misalign marks and secure

Courtesy: Pfizer

---

**Using the nicotine inhaler:**

- user will eventually develop a technique of when and how they will use it to achieve the best results for them
- after 3 months, reduce dose
- not to be used more than 6 months
- not recommended to use with alcohol, caffeine and acidic beverages – alters the medications action.

**Side effects of inhaler:**

- mild irritation of throat or mouth
- cough
- stomach upset.
6.5 NRT Precautions

Cardiovascular Disease

One of the main reasons for helping patients quit smoking is to reduce their risk of heart attacks and stroke. If someone has cardiovascular disease or is at high risk of developing it, it is even more important for them to give up smoking. Most NRT advises caution in patients who have had a heart attack and for a physician to review if the event is recent or the disease is unstable. Treatment with nicotine patches seems well tolerated in people with coronary heart disease.


Diabetes

Smoking influences several factors that may increase insulin resistance and interfere with insulin action. Smoking may also be associated with development of type 2 diabetes. It is particularly important for diabetics to quit smoking since smoking is associated with insulin resistance. Cigarette smoking was shown to be a significant risk factor for death by coronary heart disease in type 2 diabetes. Type 1 or type 2 diabetics exhibit excess morbidity and mortality due to circulatory and cardiovascular disease. Nicotine from smoking and from NRT affect blood sugar levels so when a person stops smoking, these may vary more than usual. Weight gain associated with smoking cessation would need to be addressed as it may affect glycemic control.


Pregnancy

Continuing smoking poses a threat to the health of both mother and fetus. Ideally, the mother should try to give up smoking with behavioral support. If the patient is unable to quit, advise a medical assessment of risk/benefit in pregnant smokers and suggest using NRT if the woman is unable to attempt cessation without it. The risks to the unborn baby are far less than from continued smoking.

Source: Behavioral and Pharmacological Treatment Methods for Pregnant Smokers: Issues for Clinical Practice JAMWA Vol 55.No. 5; Fall/2000

Breastfeeding

The ideal is for the breastfeeding mother to stop smoking before breastfeeding and preferably by non-pharmacological means. Breastfeeding mothers may be highly motivated to stop smoking and may receive additional physiological help since prolactin and endogenous opioids released during suckling may blunt the withdrawal symptoms. If not possible, use of NRT patches or gums greatly reduces the infant exposure to nicotine. Levels of nicotine in breastmilk are lower after NRT than after smoking. NRT products are devoid of tars, carbon monoxide and respiratory irritants found in cigarettes. With nicotine gum, nicotine blood levels are 30-60% of those seen in cigarette smokers. Use of nicotine gum should ideally be avoided 2-3 hours before breastfeeding. When a nicotine patch is used, consideration should be given in removing it at bedtime to decrease nocturnal nicotine exposure.

Adolescents

It seems reasonable to use NRT in adolescent smokers who are motivated to quit and show evidence of nicotine dependence. NRT may be considered for adolescents addicted to nicotine especially those who smoke more than 10 cigarettes per day or who have a history of failed prior cessation attempts without NRT. A study of the patch therapy concluded it to be safe and well tolerated. There are no published reports concerning use of other NRTs. Therefore a combination of counseling, peer and family support and for some, NRT is the best approach to tobacco cessation for the adolescent and should be discussed with a physician.

Source: *ABC of Smoking Cessation; BMJ Vol 328, Feb 2004*
Michael P. Kieman MD, Clinical Pediatrics, Tulane University School of Medicine New Orleans, Adolescent Tobacco Use: Prevention and Cessation. The Ochsner Journal Vol 4, No.2

6.6 Electronic Cigarettes

Electronic nicotine delivery systems (ENDS) include a broad range of small devices that work as nicotine delivery systems. ENDS include electronic cigarettes (e-cigarettes), personal vaporizers and e-hookahs. These produce an aerosol, often referred to as vapour, which is inhaled. Each cartridge generally contains a blend of propylene glycol (PG), vegetable glycerine, nicotine and occasionally flavourings and other chemicals (although some ENDS claim to be nicotine free).

CMHO and Population and Public Health Joint Statement

Electronic cigarettes and equivalents (ENDS) fall under the same provision of the Saskatoon Health Region Tobacco and Smoke Free Workplace Policy whereby there is no use of ENDS permitted in any SHR health service organization.

Based on the current scientific evidence and recommendations from the World Health Organization, Health Canada, the U.S. Food and Drug Administration, electronic cigarettes (e-cigarettes) are NOT an approved smoking cessation product aid. There are many Health Canada approved therapies to help someone quit smoking; the e-cigarette is NOT one of them.

Refer to Appendix F.

Tobacco Tidbit

Secondhand smoke increases the risk of cancers in dogs and cats. A strong correlation was found between ETS and an oral cancer in cats. Why oral cancer? Since cats groom themselves quite diligently, cats in smoking households can lick up carcinogens that have been deposited on their fur. Another study found longer nosed dogs have a higher incidence of ETS induced tumors of the nasal cavity; while short to medium nosed dogs exposed to ETS have a higher incidence of lung cancer.

Source: University of Illinois, College of Veterinary Medicine, Sept 2005
Zyban® (bupropion hydrochloride)

- available by prescription only
- an antidepressant
- enhances ability of patients to abstain from tobacco use
- has an effect on the chemicals in the brain that are associated with nicotine addiction
- start 7-14 days before quit date – required to achieve steady state of blood levels of the drug
- contraindications include those treated with AO inhibitors or Wellbutrin SR; seizure disorders and current or prior diagnosis of eating disorders
- may be used with the nicotine patch.

Champix® (varenicline)

- available by prescription only
- works by stimulating dopamine in the brain resulting in reduction of cravings and withdrawal symptoms as well as preventing the dopamine release that occurs from tobacco use
- enhances ability of patients to abstain from tobacco use
- start 7-14 days before quit date – required to achieve steady state of blood levels of the drug
- not recommended with use of NRTs
- call your health care provider if you experience any signs of depressed mood or behavior change that is not typical to you
- take Champix® with food and lots of water

Refer to [http://www.rxfiles.ca](http://www.rxfiles.ca) for current information.

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**Tobacco Tidbit**

Bad breath, yellow teeth and smelly clothes are just a few of the personal side effects of smoking and all cost money to correct. An extra pack of mints or gum a week adds up to over $52/year. Need your teeth whitened? Cost, approximately $600. Dry cleaning costs? Clean that suit one extra time each month at a cost of another $144/year.

Source: MSN Money, The High Cost of Smoking, 2005
**Instructions:**

Answer the review questions and submit to your CNE or administrative supervisor/manager. Keep learning package with Appendices for future reference.

1. **List the 5 A’s of Tobacco Cessation Intervention:**

   __________________________
   __________________________
   __________________________
   __________________________
   __________________________

2. **At what Stage of Change is your patient if they:**
   
a) intend to quit in the next 6 months __________________________ stage
   
b) do not see a problem with their smoking __________________________ stage
   
c) would like to quit while in hospital __________________________ stage
   
d) are interested to quit smoking now, but wish to continue with snuff use __________________________ stage
   
e) have set a quit date in 30 days __________________________ stage

3. **Patient is interested in seeking tobacco cessation counseling services. Name one community resource:**

   __________________________

4. **List three nicotine replacement products available for purchase over the counter:**

   __________________________
   __________________________
   __________________________

5. **When a patient is not ready to quit (Precontemplation), the nurse can use the 5 R’s of Motivational Intervention. What do the 5 R’s represent?**

   __________________________
   __________________________
   __________________________
   __________________________
   __________________________
6. **Circle True or False for each statement:**

- Spit tobacco is a safe alternative to smoking.  
  True  False
- Every tobacco user experiences some withdrawal symptoms.  
  True  False
- A small weight gain when quitting smoking is acceptable.  
  True  False
- Tobacco use is not a social issue, but a health issue.  
  True  False
- ETS contains over 4,000 chemicals.  
  True  False
- Coffee, alcohol and stress are triggers for smoking.  
  True  False
- The SHR Tobacco and Smoke-free Policy permits ceremonial use of tobacco.  
  True  False
- Majority of relapses when quitting smoking usually occur within the first 2 days.  
  True  False
- The physical withdrawal period for many chemical addictions is 72 hours.  
  True  False
- Smokers not interested in quitting will not benefit from tobacco intervention.  
  True  False
- The purpose of the SHR Tobacco and Smoke-free Policy is to protect others from harmful effects of second and third hand smoke and denormalizes tobacco use.  
  True  False

7. **List 3 health risks of smoking:**

   
   ______________________________________________________
   ______________________________________________________
   ______________________________________________________

8. **List 3 health risks associated with exposure to ETS:**

   ______________________________________________________
   ______________________________________________________
   ______________________________________________________

9. **List 5 patient precautions for NRT:**

   ______________________________________________________
   ______________________________________________________
   ______________________________________________________
   ______________________________________________________
   ______________________________________________________

Thank you
5A’s Tobacco Cessation Intervention Flow Chart

Appendix A
Integrating Tobacco Cessation into Daily Nursing Practice

SAKATOON HEALTH REGION
Saskatoon, Saskatchewan

O RUH  O SCH  O SPH  Other

5 A’S TOBACCO CESATION INTERVENTION FLOW CHART

1. ASK
D Do you currently smoke or use tobacco?

D Yes
D cigarette D cigar D pipe
D snuff D chewing tobacco

D No

Congratulations! (for not using tobacco)
D Inform about the SHR Tobacco and Smoke-free Policy: Patients and visitors are not permitted to smoke or use tobacco in buildings and grounds. Please tell your visitors.

2. ADVISE
D About the SHR Tobacco and Smoke-free Policy: Patients and visitors are not permitted to smoke or use tobacco in buildings and grounds. Please tell your visitors.
D About importance of quitting: The most important advice I can give you is to quit and I can help.

3. ASSESS
D Willingness to quit: Are you thinking about quitting?

D Yes
D Want to quit now (Preparation)

D No
D Not ready (Precontemplation)

4. ASSIST
D Provide pamphlet “What Patients, Clients, Residents & Visitors Need to Know about the SHR Tobacco & Smoke-free Policy”.
D Offer “For Smokers Who Don’t Want to Quit” self-help booklet.

Provide Motivational Interviewing using the 5 R’s as opportunity presents:
1. Relevance
D Do you feel quitting smoking is an important thing to do for yourself and others around you?

2. Risk
D What effect do you think your continued smoking will have on you and others around you?

3. Rewards
D Can you identify the benefits of quitting for yourself and your smoking around others?

4. Roadblocks
D What is stopping you from quitting?

5. Repetition
D When opportunity presents, repeat the 5 R’s

5. ARRANGE
D Alert physician to write NRT Order
D Refer to Community Addiction Services, Fax: 655-4115
D Follow-up for NRT in 24 hours

Word Form # 102848 08/11 Category: Flow Sheets

_________________________  ____________________
(Signature of Nurse)  Date
Saskatoon Health Region

& St. Paul’s Hospital

RELEASE FROM RESPONSIBILITY

I, the undersigned, being a patient in a hospital operated by Saskatoon District Health/St. Paul’s Hospital (check one):

☐ desire to leave the Hospital against the advice of the medical staff, or

☐ refuse to give my consent to the following treatment or procedure:

_________________________________________________________________________

☐ desire to leave the premises to smoke a tobacco product while a patient/resident

I acknowledge that I have been informed of the risk(s) involved in my decisions and hereby agree that neither Saskatoon District Health/St. Paul’s Hospital, nor the medical or other staff of the Hospital, will be liable in any way, to me or my agents, for any ill effects I may suffer directly or indirectly as a result of my desire to leave the Hospital against medical advice, or refusal of treatment, and I hereby release Saskatoon District Health/St. Paul’s Hospital from any and all liability that may arise as a result of my decision.

_________________________________________________________________________

(Date) (To be signed by the legal representative in the case of a minor or of a patient who is not competent mentally)

Signature of Patient

Read over and explained to the signatory who stated that he/she understood same and offered his/her signature in my presence.

SDH/SPH Personnel - witness or ________________________________ M.D.

Signature of Physician - witness
Appendix C: NRT Physician’s Order

SASKATOON HEALTH REGION
Saskatoon, Saskatchewan

<table>
<thead>
<tr>
<th>PHYSICIAN’S ORDER</th>
<th>ALLERGIES</th>
<th>ORDERED</th>
<th>NRT</th>
<th>DURATION</th>
<th>SIGNATURE</th>
</tr>
</thead>
</table>

**NICOTINE REPLACEMENT THERAPY**

Refer to reverse for more detailed prescribing and administration information. *Any dosage form may be used alone or the patch may be combined with gum or the inhaler (see prescribing restrictions on reverse) to manage breakthrough withdrawal symptoms.*

**NICOTINE PATCH** (check one box)

- 1 mg/day patch applied topically daily x 6 weeks, then
- 14 mg/day patch applied topically daily x 2 weeks, then
- 7 mg/day patch applied topically daily x 2 weeks, then reassess.

**NICOTINE GUM** (check one box) (see reverse for technique)

- 4 mg gum chew and park q1–3h pm, maximum 20 pieces/day (initial average 10–16/day)

**NICOTINE ORAL INHALER** (see reverse for prescribing restrictions)

**PHYSICIAN’S SIGNATURE:**
# Nicotine Replacement Therapy (NRT)

## General Information
- Choice of formulation is based upon side-effects, contra-indications and patient preference. The gum is the least costly option whereas the inhaler is the most costly.
- Dose needs to be individualized, increasing if withdrawal symptoms occur and decreasing if side-effects occur.
- The nicotine patch provides a constant role of nicotine. Nicotine gum or inhaler may be added to the patch to help manage breakthrough cravings or withdrawal symptoms.
- **Cardiovascular Disease:** Current evidence suggests NRT does not lead to an increased risk of cardiovascular events in smokers with a history of cardiovascular disease. Use with caution immediately post-myocardial infarction, in serious cardiac arrhythmia and in severe or worsening angina pectoris. Avoid in Prinzmetal (variant) angina.
- **Pregnancy/Breastfeeding:** If NRT is used, reserve for those with moderate (16-19 cigarettes/day) to high (20+ cigarettes/day or 1st cigarette within 30min of waking) nicotine dependence and use the as needed formulations (gum or inhaler). Avoid breastfeeding immediately after use to reduce nicotine exposure to the baby. If the patch is used, remove at bedtime to reduce exposure to the baby during night feedings.
- **Diabetes:** Nicotine from both smoking and NRT affects carbohydrate metabolism and insulin absorption. Routinely monitor blood glucose to determine whether diabetes medication adjustments are required.
- **Adolescence:** Offer NRT if there is evidence of nicotine dependence or symptoms of nicotine withdrawal during previous quit attempts.

## Transdermal Patch
- Remove old patch and apply new patch once daily in the morning. Apply to a clean, dry, non-hairy area on the upper body or outer arm. Alternate sites daily avoiding using the same site within the same week.
- Remove at bedtime if insomnia and/or bad dreams occur and consider prescribing gum to be used as needed upon waking. Contact pharmacy if require bedtime removal.
- May cause redness and itching at the patch site, headache, dizziness, fatigue, sleep disturbances and GI upset. Use with caution in generalized skin conditions.

## Gum
- When urge to smoke is present, chew gum slowly once or twice then hold in side of mouth for about 1 minute (BITE, BIKE, PARK technique), repeat for up to 30 minutes per piece. Use no more frequently than 1 piece/hour.
- May cause mouth and throat irritation, GI upset, jaw ache and headache. May stick to fillings and dentures.
- Avoid coffee and acidic beverages (pop, juice) within 15 minutes of gum due to impaired nicotine absorption.
- The number of pieces of gum chewed/day is gradually tapered as tolerated by the patient.

## Inhaler
- If the inhaler is the only option for a particular patient, it may be ordered (at no cost to the patient) in the Psychiatry unit at RH and SCH, the Palliative Care unit at SPH, the Behavioural Care unit at Parkridge, and Social & Brief Detox. Inhaler cartridges ordered and used by patients in other areas will result in a patient charge.
- Order on a regular Physician’s Orders form: Nicotine 10mg oral inhaler lightly puff pm maximum 16 cartridges/day.
- Insert cartridge into inhaler and lightly puff several times/minute as needed. Replace cartridge when empty OR after 24 hours.
- May cause mouth and throat irritation, GI upset and cough.
- The number of cartridges used/day is gradually tapered as tolerated by the patient.
Patients not ready to make a quit attempt may respond to a motivational intervention. The nurse can motivate patients to consider a quit attempt with the "5Rs":

**RELEVANCE**

- Encourage the patient to indicate why quitting is personally relevant.
  
  "Do you feel quitting smoking is an important thing to do for yourself and others around you?"

**RISKS**

- Ask the patient to identify potential negative consequences of tobacco use.
  
  "What effect do you think your continued smoking will have on you and others around you?"

**REWARDS**

- Ask the patient to identify potential benefits of stopping tobacco use.
  
  "Can you identify the benefits of quitting for yourself not smoking around others?"

**ROADBLOCKS**

- Ask the patient to identify barriers to quitting.
  
  "What is stopping you from quitting?"

**REPETITION**

- The motivational intervention should be repeated whenever there is an opportunity for the nurse to do so. Tobacco users who have failed in previous quit attempts should be reminded that most people make several repeated quit attempts before they are successful.

Approximately 46 percent try to quit each year. Most try to quit "cold turkey." Of those, only about 5 percent succeed. Most smokers make several quit attempts before they successfully quit for good.

Source: U.S. Department of Human Health and Services Public Health Service
June 2000
Demographics of ST Use

Spit tobacco (ST) includes both chewing tobacco and moist ground tobacco, known as snuff. In the United States, revenue from the sale of ST has increased steadily since 1985. In 1999, sales exceeded $1.94 billion. ST use is more prevalent in rural areas than in urban areas. The highest prevalence of ST use is found among white males between the ages of 18 and 25.

Health Risks of ST Use

The nicotine derived from ST acts as a powerful reinforcer with significant abuse potential. Long-term ST use is known to increase the risk of oral leukoplakia (white precancerous changes), oropharyngeal cancer, and periodontal disease. ST use may increase the risk for cancer of the esophagus, larynx, stomach, and pancreas. ST use is associated with risk factors for cardiovascular disease, such as high blood pressure and elevated serum cholesterol concentrations. In laboratory rat models, extract from ST has been shown to have adverse effects on fetal viability and development.

ST Abstinence and Nicotine Withdrawal

Signs and symptoms of nicotine withdrawal have been reported to occur in ST users. In a population-based sample of daily ST users aged 10 to 22 years who attempted to stop using, 41% reported difficulty concentrating, 39% hunger, 63% irritability, 85% urges to use, 55% restlessness, and 9% symptoms of depression. In a clinical trial evaluating the efficacy of nicotine gum for the treatment of ST users, subjects in the placebo group had withdrawal symptoms that were equal in number and severity to a similar population of abstaining cigarette smokers. Understanding and addressing withdrawal symptoms in ST users is an important component of ST dependence treatment.

Assessing ST Dependence

ST dependence can be assessed clinically by the amount of snuff (cans) or chewing tobacco (pouches) used per week as follows:

<table>
<thead>
<tr>
<th>Cans/pouches per week</th>
<th>Level of dependence</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1</td>
<td>low</td>
</tr>
<tr>
<td>1-2</td>
<td>moderate</td>
</tr>
<tr>
<td>≥ 3</td>
<td>severe</td>
</tr>
</tbody>
</table>

Other signs of significant tobacco dependence are:
1) dipping within 30 minutes of awakening;
2) waking up at night to place a dip or leaving the dip in overnight;
3) swallowing the tobacco juice most of the time rather than spitting.
Clinical Trials of Treatment for ST Use

Sixty-four percent of ST users report the desire to quit. Published studies of treatments for ST use have included behavioral interventions, nicotine replacement therapy (NRT), and bupropion SR.

Three published randomized, double-blinded, placebo-controlled trials of NRT in ST users (2 nicotine patch and 1 nicotine gum) have not demonstrated increased abstinence rates compared to placebo at 6 months or 12 months. In the third study, 402 ST users were randomized to an active nicotine patch dose of 21 mg/d versus placebo. ST abstinence rates in the active patch versus placebo group were significantly different only at week 10 ($P = .006$). However, compared to placebo, nicotine patch therapy was associated with a significant reduction in symptoms of nicotine withdrawal, including craving, irritability, frustration, anger, difficulty concentrating, restlessness, impatience, increased appetite, and depressed mood.

Two recent pilot studies have been published assessing the efficacy of bupropion for ST use. Combining the results of both studies suggests that bupropion doubles the odds of ST abstinence at 3 months. Larger randomized trials are required to establish the efficacy of bupropion for increasing ST long-term abstinence.

Recommendations

The FDA has not approved any medications specifically for the treatment of ST use. It is recommended treating ST users with many of the same behavioral and pharmacologic approaches used for cigarette smokers. Use the following approach:

1. Setting a stop day: ST users should establish a stop day just like smokers and plan to stop all tobacco products on that day. In preparation for their stop day, they may taper the amount they use or switch to a brand that delivers less nicotine.

2. NRT: One of the explanations for the poor outcomes from NRT trials to date may be that most ST users require higher doses of nicotine replacement. In order to improve efficacy and withdrawal symptom relief, NRT should be dosed at levels that achieve 100% replacement of nicotine levels achieved during ST ad lib use. Initial dosing can be based on the amount of ST used/week as follows:

<table>
<thead>
<tr>
<th>Cans/pouches used per week</th>
<th>Nicotine patch dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1</td>
<td>11-22 mg</td>
</tr>
<tr>
<td>1-2</td>
<td>21-33 mg</td>
</tr>
<tr>
<td>2-3</td>
<td>33-44 mg</td>
</tr>
<tr>
<td>≥3</td>
<td>42-44 mg + daily nicotine gum</td>
</tr>
</tbody>
</table>

Signs of too much nicotine replacement are nausea and dizziness, which usually occur within 1-2 hours of patch application. We have found these side effects to occur infrequently, even at the higher doses. If more than 44 mg/day is prescribed, the third patch should be placed several hours after the first two to avoid potential toxicity.
3. **Bupropion SR:** Bupropion SR may be used in the same dosages used for cigarette smokers, either in combination with NRT products or as monotherapy. It is recommended starting bupropion SR 150 mg po qd for three days and increasing to 150 mg po bid thereafter. The target stop day should be one week after starting bupropion SR therapy. Continue bupropion SR for three months, or indefinitely, if necessary.

4. **Adjunctive therapy:** Nicotine gum (2 mg or 4 mg) or then nicotine lozenge (2 to 4 mg) can be used as needed in combination with the patch to provide additional control of withdrawal symptoms and cravings. To assist patients in coping with the behavioral aspects of ST use, products with a similar taste and texture (known as snuff substitutes) can be recommended.

5. **Behavioral therapy:** As with cigarette smokers, it is important to encourage behavioral counseling in addition to pharmacologic therapy. This typically includes identifying use triggers and modifying behaviors that increase the risk for relapse. An important aspect of the intervention is an oral examination. Identification and discussion of oral lesions associated with ST use can be a powerful motivator to quit. Physicians should make the oral examination part of their assessment and treatment of all ST users.
Bibliography


13. CDC. Reasons for tobacco use and symptoms of nicotine withdrawal among adolescent and young adult tobacco users. MMWR 1994;43:475-750.


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The Buzz on E-Cigarettes

Introduction

WHAT IS AN ELECTRONIC CIGARETTE?

An electronic cigarette, or e-cigarette, is a cylindrical device made of stainless steel or plastic that mimics a cigarette in terms of its appearance and use and sometimes taste, but with a critical distinction—it does not contain tobacco. It is designed to deliver nicotine without subjecting the user to the toxic chemicals in tobacco and tobacco smoke. A typical electronic cigarette consists of three components:

- a cartridge containing nicotine, water, and flavouring in a base of propylene glycol (PG), vegetable glycerine (VG), or polyethylene glycol 400. Both refillable and pre-filled disposable cartridges are available. Note that not all cartridges (nor e-liquid/e-juice solutions) contain nicotine;
- an atomizer containing a heating element which turns the liquid nicotine into a vapour; and
- a battery (usually rechargeable) to power the atomizer and the indicator light that glows (usually red) like a lit cigarette when the user inhales on it.

Some versions of the device include only two parts: a battery and a cartomizer, which combines the cartridge and the atomizer in one unit.

Users, called vapers, draw on the end as they would a cigarette, which heats the liquid nicotine and turns it into an aerosol that is inhaled, leaving a visible mist resembling smoke that is exhaled.

The Chinese company Ruyan claims to have invented the e-cigarette, which was first marketed in China in the mid 2000s. Since then there has been a proliferation of companies manufacturing electronic cigarettes and selling them worldwide through the internet.
What’s All the Fuss About?

The e-cigarette controversy comes down to two opposing views. Proponents believe that the e-cigarette represents a clean drug delivery device that can satisfy smokers’ addiction to both nicotine and smoking behaviours (the physical sensations of handling the cigarette and inhaling smoke) and thus greatly reduce their risk of disease and death. Proponents also emphasize that even though e-cigarettes may not have undergone rigorous scientific testing, they cannot be as harmful as cigarettes, since with cigarettes, it is the mode of nicotine delivery—the tobacco smoke—that is responsible for most of the disease not the tobacco itself or the nicotine in it.

Those opposed believe that e-cigarettes should be treated like other therapeutic products containing nicotine; that is, their sale should not be permitted until they have undergone clinical trials to prove their safety and their efficacy in helping smokers quit. Opponents fear that the widespread promotion and use of e-cigarettes will result in dual use (of electronic and real cigarettes)—rather than increased quitting—and will undermine efforts to denormalize smoking. Opponents are also concerned that as novelty gadgets with perceived low risk, e-cigarettes may be attractive to youth and may lead to nicotine addiction and subsequent tobacco use.

Health Canada’s Position

In March 2009, Health Canada issued an Advisory to Canadians not to use e-cigarettes and a Notice to stakeholders indicating that all electronic products intended to administer inhaled doses of nicotine are considered new drugs and as such fall under the Food and Drugs Act. Under the Act, before any new drug can be imported, marketed, or sold in Canada, Health Canada must grant market authorization following a review of scientific evidence demonstrating the safety, quality, and efficacy of the product. In addition, the delivery system in an e-cigarette containing nicotine must comply with the Medical Devices Regulations. Anyone aware of a violation under the Act is asked to submit a complaint to Health Canada.

The Notice applies only to e-cigarettes “intended” to deliver nicotine, which has created a regulatory grey zone that has been widely exploited. E-cigarettes that do not make any health claim and do not contain nicotine may legally be sold in Canada. Thus, many vendors are openly selling the device with nicotine-free cartridges or with cartridges claiming to be nicotine-free and then are selling cartridges and e-liquid containing nicotine under the table or are referring customers elsewhere to obtain nicotine. Some smokers reportedly find it helpful to use these devices without nicotine, but they represent a small proportion of e-cigarette users.
Under the Food and Drugs Act, the sale of nicotine is illegal without a prescription (except for specified nicotine replacement therapies), and there are strict conditions on the manufacture, importation, and advertising of prescription drugs, including nicotine. It is clear that the sale of nicotine cartridges and liquid is being carried out in violation of the federal Act.

Under the Medical Devices Regulations, manufacturers of all classes of medical devices must provide objective evidence that their products meet the safety and efficacy requirements of the law and are effective for the uses for which they are sold and represented. In other words, it is illegal for an e-cigarette manufacturer to make a health claim, including that the product is effective in helping smokers quit, unless it has substantiated this claim with scientific evidence.

Three years after the Notice was issued, no e-cigarette manufacturer has applied for market authorization. Health Canada has received only a few complaints about sales of the product, and anecdotal reports indicate that very few of these complaints have been acted upon. More complaints have come from individuals wanting to import and/or sell electronic tobacco products.6

What Other Countries Are Doing

In the US, the Food and Drug Administration (FDA) had sought to regulate e-cigarettes as drugs and devices under the Food, Drug and Cosmetic Act, requiring clinical trials for safety and efficacy. However, a legal challenge by several distributors led to an Appeals Court ruling that e-cigarettes are not drugs or devices unless they are marketed for therapeutic purposes. Rather than appeal the decision, the FDA announced that it will regulate products “made or derived from tobacco” including e-cigarettes as “tobacco products” under the Family Smoking Prevention and Tobacco Control Act.8 Various countries do not permit the sale of electronic tobacco products, including Australia, New Zealand, Singapore, Thailand, and Brazil.7 The sale of e-cigarettes is legal in a few countries, including Latvia and the Netherlands.

Promotion & Sales

Many vendors in various provinces across Canada, including convenience stores, gas stations, tobaccoists, and mall kiosks, are openly selling e-cigarettes. Other retailers only proffer an e-cigarette when a customer asks for one or indicate that they can obtain one quickly.

In recent years, e-cigarette manufacturers and distributors have increased their promotional efforts. Electronic cigarettes are being promoted to
retailers through retail trade journals, such as Specialty Retail, and to the public through advertisements in the in-flight magazines of various discount airlines. Marketing efforts, however, focus on less traditional marketing vehicles. In March 2011 several Ontario public health units received a “fax blast” from a company selling e-cigarettes—an easy and inexpensive way to promote the product to many people.

The greatest source of e-cigarette promotion is the internet. Numerous websites, forums, and blogs of advocacy organizations and user groups feature information, product reviews, and testimonials trumpeting the many benefits of electronic cigarettes versus their tobacco counterpart. Many e-cigarette companies market their products through YouTube videos, Facebook pages, websites, and paid ads on popular search engine sites.

That e-cigarettes can be smoked in defiance of smoking bans is a common theme in many promotions, as shown in the advertisement at top.

Other promotions focus on the novelty aspects of the product: unique or varied flavourings, many of which have obvious appeal to youth, such as Bubblegum, Snickerdoodle, and Sweet Tarts; adjustable smoke volume (LoongTotem E-cigarette Industrial Co. Ltd); and technology that lets users find and communicate with each other (blu).
Some brands emphasize the value of e-cigarettes as smoking cessation aids, through advertising, the packaging itself, or frequently, through testimonials on their websites from users who claim to have quit smoking by switching to an electronic cigarette. For example, one website claims, “Stay healthy, live longer: Make the switch to e-cigarettes.” Other brands come close to making a health claim without overtly doing so: “V2 Cigs gives you the power to smoke on your terms…. Begin your new life today.” Some companies, however, are careful to include a disclaimer, such as “This product is sold purely for recreational purposes—it is not a smoking cessation product and has not been tested as such.”

Numerous e-cigarette distributors are exploiting endorsements of their products—whether paid or spontaneous—by Hollywood celebrities. Photos of celebrities using e-cigarettes, including Katherine Heigl, Lindsay Lohan, Paris Hilton, Leonardo DiCaprio, and Johnny Depp, appear on websites promoting electronic tobacco products. Given the massive and growing public interest in and influence of the celebrity culture, endorsements of e-cigarettes by Hollywood A-list stars can only mean a boon to sales.
Nature of the Problem

Tobacco Control Policies Undermined

There are many reasons why health groups are concerned about the burgeoning use of e-cigarettes. The primary concern is that e-cigarettes will undermine tobacco control policies, in particular workplace and public place smoking bans that protect people from second-hand smoke and promote quitting. In the past year, health units across Ontario have reported a growing number of incidents in which the alleged use of an e-cigarette served to complicate enforcement of the Smoke-Free Ontario Act.

In several cases, a person charged with smoking where prohibited under the Smoke-Free Ontario Act claimed that he was using an e-cigarette. As a result, enforcement officers now face the additional challenge of trying to obtain the cigarette butt as evidence in case their testimony is not sufficient to convince a Justice of the Peace that an offence took place.

Several schools have reported that students are flaunting their use of e-cigarettes on school property. Authorities suspect that in some cases students are rejigging the devices to ‘smoke’ illegal substances.

In addition to thwarting smoking bans, the use of e-cigarettes in places where smoking is not permitted increases social exposure to smoking and may contribute to the ‘renormalization’ of cigarette use, important factors in youth smoking uptake. Public use of e-cigarettes also provides visual cues to smoke, which undermines quit attempts and promotes relapse. As well, e-cigarettes are often promoted in the same ways that cigarettes were before most tobacco marketing was banned, giving rise to fears that these promotions may serve to make smoking ‘cool’ again. Attractive young women (and sometimes men) exuding sex appeal are often featured in e-cigarette ads. And e-cigarette companies have begun sponsoring popular events such as car racing, long a favourite sponsorship activity of Big Tobacco.

Unproven Cessation Aid

Health groups are likewise concerned that some brands of e-cigarettes are making unsubstantiated health
claims. The “Health E-Cigarette,” for example, claims that “Smoking is harmful for health E-Cigarette is good for health.” A package leaflet states that e-cigarettes reduce smoking frequency, “smoking kill,” and produce no harm from second-hand smoke. Health claims also include promoting the devices as cessation aids, when they have not undergone rigorous testing to establish their effectiveness in helping smokers quit. A small study of two e-cigarette brands with 16 mg and 18 mg nicotine cartridges found very little increase in nicotine levels in the blood of participants and little impact on craving reduction. As well, the variability in design among e-cigarette brands and the lack of manufacturing standards mean that nicotine delivery varies significantly both among brands and within a brand. Nicotine delivery has also been found to diminish throughout the life of a cartridge. The fact that nicotine dosing is not uniform calls into question the usefulness of the e-cigarette as a nicotine replacement therapy and could lead to compensatory smoking, as has been found with some other products intended to reduce harm.

**UNCERTAIN HEALTH & SAFETY RISKS**

At present there is insufficient data to evaluate the health risks to users from short- or long-term use of e-cigarettes, leading many researchers to call for further research to be done on an urgent basis. E-cigarette manufacturers have failed to provide full disclosure.

In addition to thwarting smoking bans, the use of e-cigarettes in places where smoking is not permitted increases social exposure to smoking and may contribute to the ‘renormalization’ of cigarette use.
Lack of quality controls

Uncertainties over the health risks of e-cigarettes are compounded by the lack of quality controls in manufacturing the product. Testing by the FDA on a sample of 18 different cartridges from two major brands found that the information on the labels often did not reflect the actual nicotine in the product. Almost all products labelled as being nicotine-free were found to contain nicotine. FDA analysis also found a significant variation in nicotine delivery among products with the same label. As well, many brands simply label the product as “no,” “low,” “medium,” and “high”—at best an imprecise indication of the level of nicotine the user will be inhaling. One study found that even where the product was labelled with the number of milligrams of nicotine, “It was not clear if this was mg/cartridge or mg/ml.” A related issue is the lack of regulation of the e-liquid. While some is made in laboratories, much of it is produced in basements by people without qualifications and proper equipment.

As well, tobacco-specific impurities which are suspected of being harmful to humans were found in a majority of the samples, and diethylene glycol—a toxic ingredient in antifreeze—was detected in one cartridge. The fact that e-cigarettes generally require stronger suction to smoke than cigarettes also raises concerns, as it is not known whether more intense inhalation has any adverse effects on health. One study also found that the amount of vapour produced by an e-cigarette decreases during smoking, necessitating increasing puff strength to produce the vapour. And, unlike pharmaceutical nicotine replacement products or cigarettes themselves, e-cigarettes are sold without government-mandated health warning labels and in many cases with no warning of any kind.

The storage and handling of the nicotine used in e-cigarettes is likewise cause for concern. One distributor in London, Ontario, for example, mixes the e-liquid in his basement and even asks customers to return the vials for refilling or recycling. Refill bottles of e-liquid can be purchased that contain over 1,000 mg of nicotine, when a lethal dose of nicotine for adults (30-60 mg) and children (10 mg) is a fraction of that.

A growing trend is the use of Whole Tobacco Alkaloids (WTA) in e-liquids rather than pharmaceutical grade nicotine alone, which users claim gives a more satisfying experience that more closely approximates smoking ciga-
rettes. In contrast to pharmaceutical-grade nicotine which is manufactured to a very high standard, e-liquid containing WTA is not produced to any known standard. In the absence of a standard or regular laboratory testing, the chemical constituents of WTA, including the presence of carcinogens, and the long-term health consequences of its use remain unknown.33

Questions have likewise been raised about the health risks to others from the second-hand vapour. Propylene glycol, the primary chemical in most e-cigarette vapour, is also the main constituent of a common type of theatrical fog. The few studies that have been conducted on this fog have observed increased headaches and respiratory symptoms (dry throat, dry cough) and decreased lung function at higher levels of exposure and chronic wheezing and chest tightness with increased cumulative exposure.34

There is one reported case of an e-cigarette exploding in a user’s mouth, causing serious harm, including the loss of his teeth and part of his tongue as well as facial burns. A faulty battery is the suspected cause.35

E-Cigarettes as a Harm Reduction Device

LIKELY SUBSTANTIALLY LOWER HEALTH RISKS THAN CIGARETTES

Proponents of e-cigarettes underscore the fact that electronic cigarettes contain no tobacco and involve no combustion and therefore pose substantially less risk to health than traditional cigarettes. Dr. Murray Laugesen, former Chief Medical Officer in the New Zealand Ministry of Health and now a consultant, contends that an e-cigarette is “100 to 1000 times safer than a tobacco cigarette.”39 Authors of a study of one brand of e-cigarette state that “to our knowledge, no deaths or hospitalisations from ENDD [electronic nicotine delivery device] use have been reported.”40

There are very few ingredients in e-cigarettes, namely flavouring, a liquid base that turns into a vapour, and in most cases, nicotine. All three liquids used in e-cigarette cartridges are popular food additives, serving as humectants and preservatives. The most
An e-cigarette is “100 to 1000 times safer than a tobacco cigarette.”
— Dr. Murray Laugesen, consultant

common, propylene glycol, has been used in asthma inhalers and nebulizers since the 1950s, and is often found in atomized medication. Propylene glycol also produces the fog in theatrical stage productions. It is included on the FDA’s list of substances that are Generally Recognized as Safe (GRAS).41 Many e-liquids contain a blend of PG and VG in order to control the viscosity of the liquid, the amount of vapour produced, and its sweetness.42 A report by Laugesen on the safety of Ruyan e-cigarettes, which was funded by the manufacturer, concluded that “it is very safe relative to cigarettes, and also safe in absolute terms on all measurements we have applied.”43 It should be noted that in several cases, the conclusion that the e-cigarette vapour contained safe levels of a chemical was based on a single study. Trace levels of tobacco-specific nitrosamines (TSNAs) were found, with the highest levels of TSNAs in the cartridges with the highest nicotine concentration (16 mg); however, Laugesen contends that the level of 8 nanograms per gram is extremely small and equals the amount in a nicotine patch.

POTENTIALLY EFFECTIVE IN GETTING SMOKERS OFF CIGARETTES

There are thousands of anecdotal reports on the internet that e-cigarettes have helped smokers to stop smoking cigarettes, but no scientifically rigorous evidence. A small, single blind study of one brand involving 40 smokers not intending to quit found that the 16 mg e-cigarette scored highest for enabling participants to refrain from smoking and for serving as a potential aid in quitting. The 16 mg e-cigarette delivered approximately 10% of the nicotine per puff of a regular cigarette, indicating that the e-cigarette works more like a nicotine replacement therapy than a cigarette. The 16 mg e-cigarette and the nicotine inhaler received similar ratings for satisfaction and ease of use. One-third of participants who underwent additional testing showed no increase in blood nicotine when using the e-cigarette.44

Recommendations and Conclusions

There is a disturbing lack of research on e-cigarettes on both sides of the debate. The studies conducted to date, both research demonstrating safety and benefits of use and research showing potential risks to health, have all involved very small samples and have not been randomized controlled trials. The problem is exacerbated by the lack of quality controls in the industry.
The WHO Study Group on Tobacco Product Regulation has called for research at both the individual and population levels, including clinical trials, behavioural and psychological studies, and post-marketing studies, and for a prohibition on claims imputing health benefits, reduced harm, or effectiveness as a cessation aid until the claims have been scientifically proven.\textsuperscript{45} The group recommends that electronic smoking products be regulated as nicotine delivery devices (i.e. drugs). While this approach theoretically provides the greatest level of protection to consumers, in reality, e-cigarettes are widely available and largely unregulated. Moreover, the high costs and time required to seek regulatory approval mean that most manufacturers are unlikely to do so.

An alternative, endorsed by the UK Royal College of Physicians and some prominent researchers is the creation of a nicotine regulatory framework that would facilitate the development of alternative nicotine products and control their marketing and sale according to their risk profile.\textsuperscript{46} This regime recognizes that many smokers are either unable or unwilling to quit and that safer nicotine delivery systems are needed to satisfy their cravings without subjecting them to the toxins in tobacco smoke.

A third approach would be to regulate electronic smoking devices as tobacco products, a much less restrictive regime than that for drugs. As tobacco products, e-cigarettes would be covered by smoking bans and thus could neither promote dual use nor thwart the progress in denormalizing tobacco use. They would also be subject to youth access laws and prohibitions on advertising, sponsorship, and retail display, measures that would help reduce the risk of experimentation and subsequent nicotine addiction by youth. In addition, regulations could require that they meet specified manufacturing standards.

Under the current regulatory situation in Canada, the perfect has become the enemy of the good. By regulating e-cigarettes and nicotine cartridges/liquid under the \textit{Food and Drugs Act} but not actively enforcing the provisions, Health Canada is protecting consumers \textit{in theory only} from the potential risks of using e-cigarettes and is allowing promotion and sales to go unchecked. A realistic regulatory regime is needed, with meaningful enforcement. As a minimum, Health Canada should ensure that the product meets consumer safety standards and that the information provided to Canadians is accurate. Health Canada should also ensure that the marketing, sales, and use of e-cigarettes are controlled to protect valuable gains in tobacco control that have reduced tobacco use and related harms.
References

5. Personal communication with Yves Fortin, Health Products and Food Branch, Health Canada, March 2012.
8. Specially Retail!, front cover, fall 2006.
17. Katharine Heigl’s appearance on The Late Show with David Letterman in September 2010 can be found on YouTube and on various e-cigarette websites.
19. Ibid.
41. Wikipedia: “Propylene glycol.”
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