The following discussion of the health care sector covers interventions in inpatient and outpatient settings, followed by interventions for health care providers to enhance their capacity in cessation intervention, including electronic record-keeping as an aid.

Hospital-Based Cessation Interventions

In Ontario, most hospitals provide at least a brief cessation intervention often with post-discharge referral to ongoing support, and some provide more intensive evidence-based inpatient programs (e.g., the OMSC program and Moving On to Being Free™). Based on the summary of evidence, higher intensity counselling interventions with a minimum of one month post-discharge support, with or without NRT, are effective at increasing smoking cessation. Inpatient interventions have the potential to increase quit attempts since hospitalization provides an opportunity to intervene with smokers who might not otherwise seek smoking cessation interventions. There is an opportunity to continue to expand brief interventions with post-discharge referrals and intensive interventions into all hospitals in Ontario to provide smoking cessation services.

SFO-SAC 2016 Scientific Consensus Statement

Background

Hospitals are institutions for treating the sick and injured (see the Glossary for full definition). Since smoking causes many types of health problems,[69] hospitals are a setting where it is possible to reach smokers who are experiencing the negative health effects of smoking and who may be more motivated to quit smoking.[12] Clinical smoking cessation interventions for patients include brief to intensive behavioural interventions and/or pharmacotherapy, with or without continued contact after hospital discharge. Smoke-free policies in hospitals support cessation, and as of 2018, all hospitals will be required to have smoke-free campuses (*SFOA* Hospitals), which is a contributing factor to the intensity of the interventions delivered.

The Ontario/Canadian Context

In 2011, the Ontario Tobacco Research Unit (OTRU) in partnership with the former Ministry of Health Promotion and Sport (MHPS) and the Ministry of Health and Long-Term Care (MOHLTC) conducted a web survey of Ontario hospitals to identify the status of hospital-based smoking cessation services, practices and polices.[70] The survey was a first step in a larger collaborative initiative to enhance cessation support to hospital patients with chronic disease.[70] A total of 165 out of 224 (74%) hospital sites in Ontario identified by MOHTLC completed the survey. Key findings from the report included:

- A majority of hospital sites (86%) reported offering cessation services to patients.
- Nicotine replacement therapy (73%), self-help materials (65%) and patient referrals to external sources (50%) were the three most common cessation services provided for inpatients.
- Nurses (89%) and physicians (79%) were the most commonly cited health professionals within the hospital who provided smoking cessation services to patients.

- The most commonly reported policies and practices to support smoking cessation were:
    - Documenting patient smoking status upon admission (79%)
    - Making smoking cessation pharmacotherapies available in the hospital formulary (73%)
    - Having standard methodology to identify smoking status (69%)
    - Having smoking cessation support for hospital staff (62%).[70]

The Ottawa Model for Smoking Cessation (OMSC), developed at the University of Ottawa Heart Institute, uses outreach facilitation (implementation support) and principles of organizational change and knowledge translation to embed and systematize evidence-based tobacco cessation interventions within hospitals and other health care organizations.[71] Once implemented, the model leads to the following five components: systematic identification of patient smoking status, documentation of smoking status on patient record, strategic advice for withdrawal management and quit attempts, offer of pharmacotherapy, and follow-up support for six-months post-discharge.[72] As of 2014, the OMSC has been implemented in 100 hospitals in Canada,[73] and evaluations show that Ontario hospitals reached 14,675 smokers in 2014/2015.[9]

The intensive case-managed smoking cessation intervention, Moving On to Being Free™, developed at Stanford University,[74] has been available for implementation into North Western (NW) Ontario hospitals since 2012. The intervention, which has consistently achieved the highest cessation outcomes in the published literature, involves an initial face-to-face session, followed by seven telephone counselling sessions over the first two months post-discharge, additional sessions as requested and follow-up at three, six and 12 months post-discharge.[12] The outcomes in NW Ontario (not yet published) are identical to the outcomes in the randomized clinical trials, and are among the highest quit rates reported in the literature.

From 2013-15, the MOHLTC provided funding to fourteen hospitals across Ontario to develop and implement an evidence-based smoking cessation intervention that targets inpatients and outpatients with chronic diseases (asthma, cardiovascular disease, COPD, diabetes and lung cancer). The project was known as the Hospital Demonstration Project Initiatives.[9] The 14 demonstration project sites represented a geographic spread across 10 of the 14 Local Health Integration Networks (LHIN) regions and a mix of hospital types (seven community hospitals, one academic ambulatory care hospital, three teaching hospitals, one chronic rehabilitation hospital and two mental health hospitals).[9] There is no evaluation information available at this time.

Evaluation Highlight

In 2010, an evaluation was conducted using the RE-AIM framework (Reach, Efficacy, Adoption, Implementation and Maintenance) to determine the impact of the OMSC in nine hospitals in the Champlain Local Health Integration Network.[71] The evaluation found that the six-month continuous abstinence rate was significantly higher post-OMSC than pre-OMSC (OR: 1.71, 95% CI: 1.11-2.64).[71] Similar results were found in a larger evaluation that included an additional four hospitals in New Brunswick and three in British Columbia (OR: 1.78, 95% CI: 1.30-2.45).[72] The OMSC has also been shown to be a cost-effective strategy for treating smokers with chronic diseases, such as acute myocardial infarction, unstable angina, heart failure and chronic obstructive pulmonary disease (COPD) (Mullen

2015).[73] A recent before-and-after study, completed in partnership with the Institute for Clinical Evaluative Sciences (ICES), examined the effectiveness of implementation of the OMSC in 14 Ontario hospitals on health and health care outcomes (n=1367 patient smokers).[75] Main findings were:

- 35% of the patients who received the OMSC were smoke-free at six-months, compared to only 20% of the usual care participants
- Within 30 days of discharge, patients who received the OMSC were 50% less likely to be re-admitted to the hospital for any cause, and 30% less likely to visit an emergency department
- Two years after discharge, smokers who received the OMSC were 21% less likely to be re-hospitalized and 9% less likely to visit an emergency department
- Smokers who received the OMSC had a 40% reduction in risk of death over two years.

As of March 2015, OMSC hospital partners more than doubled the number of smokers who receive cessation support each year, from just over 7,000 in 2009-10 to 14,675 in 2014-15.[9] Partners included 75 hospital sites in Ontario, representing 56 hospital organizations.[9] An analysis of a large sample of OMSC participants found that 55.3% of participants were male, and that the average age of participants was 55.7 years.[9]

Evidence

One Cochrane meta-analysis[12] was retrieved from the pre-appraised literature search. It was appraised as Level I. Most studies in this meta-analysis were conducted in the U.S., with some in Europe, Canada and Australia and one each in Japan and Israel.

Evidence of Effectiveness

The Cochrane meta-analysis included fifty trials that investigated the effects of various cessation interventions on hospitalized patients.[12] The authors grouped the interventions into four categories based on intervention intensity: single in-hospital contact lasting 15 minutes or less with no post-discharge follow-up support (level 1); one or more in-hospital contacts lasting more than 15 minutes in total with no post-discharge follow-up support (level 2); any in-hospital contact with post-discharge follow-up support for one month or less (level 3); and, any in-hospital contact with post-discharge follow-up support continuing for longer than one month (level 4).[12] The authors found that the most intensive (level 4) significantly increased quit rates (RR: 1.37, 95% CI: 1.27-1.48) one-year after discharge compared to usual care.[12] The less intensive interventions (levels 1-3) were not effective. NRT along with the most intensive intervention significantly increased quit rates (RR: 1.54, 95% CI: 1.34-1.79) compared to the intensive intervention alone.[12] Significant effects were not found for varenicline or bupropion.[12]

Intervention Characteristics/Implementation Considerations

No information on intervention characteristics and/or implementation considerations was identified from the included literature of this report.

Specific Populations/Equity Considerations

No information on specific populations and/or equity was identified from the included literature of this report.

Intervention Summary

Evidence Summary - Hospital-based Cessation Interventions- Well supported

The body of evidence for the effectiveness of smoking cessation interventions in hospital-based cessation interventions included one systematic review appraised as Level I. Highly-intensive behavioural interventions, defined as any in-hospital contact with >one month follow-up post-discharge, with or without NRT, are effective for smoking cessation (at ≥six months of follow-up). There is no evidence for lower intensity interventions (i.e., no follow-up or follow-up less than one month post-discharge) or for varenicline or bupropion. The interventions in hospital settings examined in the review varied in type and intensity, and were delivered by various health professionals (mostly nurses and counsellors) in staff positions dedicated to cessation and not added to all clinicians' workloads.

SFO-SAC 2016 Scientific Consensus Statement - High (Intensify)

In Ontario, most hospitals provide at least a brief cessation intervention often with post-discharge referral to ongoing support, and some provide more intensive evidence-based inpatient programs (e.g., the OMSC program and Moving On to Being Free™). Based on the summary of evidence, higher intensity counselling interventions with a minimum of one month post-discharge support, with or without NRT, are effective at increasing smoking cessation. Inpatient interventions have the potential to increase quit attempts since hospitalization provides an opportunity to intervene with smokers who might not otherwise seek smoking cessation interventions. There is an opportunity to continue to expand brief interventions with post-discharge referrals and intensive interventions into all hospitals in Ontario to provide smoking cessation services.

The scientific consensus regarding the potential contribution for Ontario is: High (Intensify).

Key Message

Intensive behavioural interventions with or without NRT, which are effective for smoking cessation in hospital-based cessation interventions, are currently in many Ontario hospitals, and should be available in all hospitals. Follow-up is an essential component for success and access to post-discharge NRT would be beneficial.