

SMOKE-FREE HOUSING: A REVIEW OF THE EVIDENCE

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ISSUE AND CONTEXT

Second-hand smoke (SHS) contains more than 7000 chemicals of which 69 are known human carcinogens that can cause negative health effects even at low levels of exposure (U.S. Department of Health and Human Services, 2010). SHS includes the smoke that is blown into the air by someone who is smoking as well as the smoke that is emitted from the burning end of a cigarette or pipe (Canadian Lung Association, 2012). Exposure to SHS can cause lung cancer, coronary heart disease, sudden infant death syndrome, asthma, and other diseases (U.S. Department of Health and Human Services, 2010), and has been linked to anxiety disorders, high stress, and poor mental health (Asbridge, Ralph, & Stewart, 2013).

Additionally, toxic chemicals in smoke collect and get trapped in dust, hair, skin, and on indoor surfaces including flooring, furniture, and walls (Matt et al., 2011). These residual chemicals can later be re-emitted and get into people's lungs and bodies causing further exposure (Matt et al., 2011).

This more recently studied contamination is called third hand smoke (THS) and it can persist for weeks and months even after being thoroughly cleaned (Matt et al., 2011), becoming more toxic over time (Schick & Glantz, 2006).

This paper explores the issue of SHS and THS exposure in homes, particularly multi-unit housing and considers the contribution of smoke-free home policies to greater health equity. A review of the research is presented to show the impact of smoke-free home policies on protection, fire risk reduction, cessation, and prevention. The adoption of smoke-free home policies is suggested as an important component in a comprehensive tobacco control strategy. As such, public health practitioners are encouraged to incorporate these policies into their ongoing efforts to help Ontarians achieve the lowest smoking rate in the country.

EXPOSURE TO SMOKE IN THE HOME

As an increasing number of outdoor spaces become smoke-free, the issue of second hand smoke (SHS) exposure is gaining prominence. More recently the attention has shifted to protecting those residents who are being exposed within their private homes, apartments and condominiums as people spend a significant amount of time at home. Air pollution rates in homes where residents smoke are ten times

higher than in smoke-free homes (Van Deusen et al., 2009). Despite declining smoking rates over the last decade, results from the 2012 Canadian Community Health Survey indicate that 9.1% of the population live with someone who smokes inside the home (Statistics Canada, 2013). In Ontario, the proportion of non-smokers exposed to SHS at home is 5%, however for young Ontario non-smokers aged 12 to 19 the figure jumps to 11% (Ontario Tobacco Research Unit, 2012). This is likely due in part to differences in smoke-free home policies as parents of younger children are more likely to enforce home smoking bans than parents of older children (Hawkins & Berkman, 2011). However, these figures are only representative of SHS exposure that occurs from within the home. Rates are actually higher if exposure from smoke infiltration that originates outside of the home is also included. In-home exposure to SHS becomes increasingly problematic and challenging when multi-unit housing is considered.

Multi-unit housing refers to buildings that contain more than one residential unit such as: multi-storey apartment buildings, condominiums, townhouses or row houses, duplexes, semi-detached homes, houses divided into separate apartments, or basement suites. In these residential settings smoke infiltration has been demonstrated to move from smoking units to smoke-free units and shared hallways through the building ventilation system, electrical outlets, open doors or windows, and cracks and gaps in doors, ceilings, and walls (Bohac, Hewett, Hammond, & Grimsrud, 2011; King, Travers, Cummings, Mahoney, & Hyland, 2010). Modifying buildings through air sealing and ventilation improvements can only reduce SHS exposure in multi-unit housing but it is not a practical or sufficient way to eliminate exposure (Bohac et al., 2011). The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) (2010), identified experts from the field, have clearly stated that the only way to eliminate the health risks associated with indoor exposure to SHS is to ban smoking activity.

In Ontario, 38% of the population lives in multi-unit housing (Statistics Canada, 2011a) and much research has been done within the province to quantify SHS exposure in this setting. The Ontario Tobacco Research Unit (OTRU) studied 2007-2008 data from the Ontario Tobacco Survey and found 28% of all multi-unit housing residents report smoke entering their homes compared with 18% of residents who live in single family dwellings (Ontario

Tobacco Research Unit, 2009). In a 2006 Ipsos Reid survey, 46% of Ontarians living in multi-unit housing reported exposure to smoke infiltration from outside their unit (Ipsos Reid, 2007). Of those who were exposed, 70% said it bothered them with 14% saying they either moved or considered moving because of the smoke intrusion (Ipsos Reid, 2007). Rates of exposures in social housing have been even higher. A study of multi-unit social housing residents in the Region of Waterloo found 50% of respondents reported being exposed to SHS in their home 'sometimes' or 'often' (Kennedy, Ellens-Clark, Kaufman, & Douglas, 2013).

Additional findings from American studies reveal that nearly half of residents in multi-unit housing report that SHS enters their unit (Ballor, Henson, & MacGuire, 2013; Hennrikus, Pentel, & Sandell, 2003; King, Cummings, Mahoney, Juster, & Hyland, 2010; Licht, King, Travers, Rivard, & Hyland, 2012) and further exposure is occurring in shared spaces such as hallways, lobbies, patios and balconies (King et al., 2010). Daily exposure to SHS was reported by 10% of respondents in one study (King et al., 2010) and 32% in a second study (Kraev, Adamkiewicz, Hammond, & Spengler, 2009). Two additional studies reported regular exposures from 40% and 31% of respondents respectively (Ballor et al., 2013; Licht et al., 2012). Research shows the clear majority of respondents (59% and 77% respectively) who are exposed to SHS are bothered by it (Hewett, Ortland, Brock, & Heim, 2012; King et al., 2010).

Researchers have also quantitatively measured air nicotine concentrations in homes providing further depth to the growing body of research on this topic. Kraev et al. (2009) found evidence of SHS exposure in both smoking and non-smoking units of low income multi-unit housing. Detectable air nicotine concentrations were found in 89% of the apartments with non-smokers. More frequent reports of tobacco smoke odour coming from hallways or other units was associated with increased nicotine concentrations in these non-smoking units with some individuals in these units exposed to the equivalent of one cigarette smoked per day (Kraev et al., 2009).

A 2011 study by Matt et al. investigated the presence of THS in smokers' homes after they move out and non-smokers move in. Greater contamination was found in homes formerly owned by smokers compared with homes formerly owned by non-

smokers for all samples taken (Matt et al., 2011). Specifically, nicotine contamination was five times higher in living room dust and seven times higher on living room surfaces (Matt et al., 2011). The index finger of participants was also wiped and analyzed. Nicotine levels were 7-8 times higher on the index finger of non-smokers living in homes formerly owned by smokers compared with those in homes formerly owned by non-smokers (Matt et al., 2011). Urinary cotinine levels of children who were living in the homes of former smokers were 3-5 times higher compared with children who were living in the homes of former non-smokers (Matt et al., 2011). These increased finger nicotine levels and higher urinary cotinine levels show that non-smokers are being exposed to THS left on surfaces and in the dust of homes previously owned by smokers (Matt et al., 2011).

This evidence clearly supports the need for smoke-free multi-unit housing. Many residents are being involuntarily exposed to SHS from other units even when they have made their homes smoke-free. In addition, residents who move into units formerly inhabited by smokers are being exposed to THS. Smoke-free home policies protect all residents, despite their smoking status.

HEALTH CONSEQUENCES OF EXPOSURE AND POTENTIAL BENEFITS OF PROTECTION

The health consequences of SHS exposure are well documented and include an increased risk of lung cancer, coronary heart disease, and emphysema in exposed adults (U.S. Department of Health and Human Services, 2010). Some of the risks of SHS exposure are of particular concern for women. SHS exposure has been causally linked to breast cancer in pre-menopausal women (Collishaw et al., 2009) and pregnant women have an increased incidence of miscarriage, ectopic pregnancy and low birth weight babies when exposed to SHS (U.S. Department of Health and Human Services, 2010).

Recently, studies focusing on the mental health effects of exposure in both smokers and non-smokers have received increasing attention. In a study by Hamer, Stamatakis & Batty (2010), cotinine

levels were used as a measure of SHS exposure in adult non-smokers. High levels of SHS exposure were found to be associated with higher levels of psychological distress and risk of future psychiatric illness (Hamer et al., 2010). A Japanese study found non-smokers exposed to SHS at work showed an increased risk of depressive symptoms (Nakata et al., 2008) and Canadian studies have found similar effects. In 2013, Asbridge et al. studied the effects of SHS exposure in private spaces including vehicles and homes. Researchers found that SHS exposure in non-smokers was associated with anxiety, poor mental health, and high stress. Finally, Asbridge & Cartwright (2011) found that smokers living in smoke-free homes report better mental health compared with those living in homes without smoking bans. Smoke-free home policies have the potential to play an important role in protecting the physical and mental health of the population by decreasing SHS exposure.

PROTECTION OF INFANT AND CHILD HEALTH

Many of the health effects of SHS exposure are particularly problematic for infants and children including respiratory disorders, middle ear infections, increased blood pressure, low birth weight, and sudden infant death syndrome (SIDS) (Alpert, Behm, Connolly, & Kabir, 2011; Anderson & Cook, 1997; Behm, Kabir, Connolly, & Alpert, 2011; Pogodina, Brunner Huber, Racine, & Platonova, 2009; Simonetti et al., 2011; U.S. Department of Health and Human Services, 2006; Zubair, Connolly, & Alpert, 2011).

Links have also been made between SHS exposure and mental health outcomes in children. A dose-response relationship exists between higher levels of SHS exposure and deficits in reading, math, and reasoning skills, even at very low levels of exposure (Yolton, Dietrich, Auinger, Lanphear, & Hornung, 2005). Children exposed to SHS show an increased need for counseling and treatment for emotional, developmental, or behavioural problems (Zubair et al., 2011). A 2011 study of American children found that those exposed to SHS at home were twice as likely to have parent-reported neurobehavioural disorders including attention-deficit/hyperactivity disorder, learning disabilities, and conduct disorders compared with children who were not exposed to SHS at home (Zubair et al., 2011). This risk was greatest for older children (especially boys from 9-11 years of age) and those from households with the highest levels of poverty (Zubair et al., 2011).

The response of children's bodies may differ from adults' bodies in the nature and severity of the effect following SHS exposures, making them more susceptible to harm (Bearer, 1995). Children and infants cannot always physically remove themselves from situations where they are being exposed to SHS and they breathe at a faster rate further increasing their exposure (Bearer, 1995). Infants in particular spend much of their first year indoors where they may be close to contaminated products and in close contact with their parents who smoke (Matt et al., 2004). As they grow, infants learn by placing their hands and other objects in their mouth, putting them at greater risk of contamination from SHS and THS (Matt et al., 2004).

Researchers are continually employing various methods to investigate children's level of exposure to SHS within their homes. In 2004 Matt et al. found SHS exposures and contamination was 5-7 times higher in households where smokers went outside to smoke compared with non-smoking households. In 2012, urinary unmodified benzene (u-UB), a potent tobacco-related carcinogen, was found in concentrations over four times greater among children exposed to SHS compared with unexposed children (Protano, Andreoli, Manini, Guidotti, & Vitali, 2012). In 2011, Wison et al. compared exposures of children living in detached homes and children living in multi-unit housing by measuring levels of a tobacco-specific metabolite called cotinine. They found that even in homes where no one smokes inside, the majority of children show biochemical evidence of exposure to tobacco smoke. Cotinine was found at levels 45% higher in children who live in apartments compared with children who live in detached homes suggesting that living in multi-unit housing may be a clear source of SHS exposure (Wison et al., 2011).

Hawkins and Berkman (2011) studied the 2006-2007 Tobacco Use Supplement of the U.S. Current Population Survey and found that children who live in lower SES homes are more likely to live with a smoker, and are at a greater risk for exposure to SHS. Additionally, children over six years of age are less likely to be benefit from a smoke-free home policy than younger children (Hawkins & Berkman, 2011). Smoke-free homes policies have the potential to greatly improve the health and well-being of children reducing their SHS exposure by 20-50% (Kabir et al., 2010). Policies that are established early in an infant's life are the most effective and are important

for ensuring sustained protection from SHS over time (Sockrider, Suchanek Hudmon, Addy, & Dolan Mullen, 2003).

HEALTH EQUITY CONSIDERATIONS

Health equity is the achievement of the highest level of health for all people despite their social position or other socially determined circumstances (U.S. Department of Health and Human Services, 2010). Health equity involves reducing barriers and addressing the specific health needs of everyone in society thereby ensuring high quality health care is available across the social gradient (Ontario Ministry of Health and Long-term Care, 2012). Research indicates that health inequalities are socially and economically rooted and those with lower levels of income, education and overall privilege tend to have poorer health (Ontario Ministry of Health and Long-term Care, 2012). This is supported by data from Statistics Canada showing those with low incomes have more chronic health conditions than those with higher incomes (Hou & Chen, 2003). Income levels are also associated with differences in mortality and these inequalities are greatest for diseases that are more closely related to health risk behaviours such as smoking (Tjepkema, Wilkins, & Long, 2013). As such, it is important that policies and programs are designed to reduce these overall health disparities.

Cigarette smoking is most prevalent among those with lower socioeconomic status (SES) (Hiscock, Bauld, Amos, Fidler, & Munafo, 2012; Reid, Hammond, Boudreau, Fong, & Siahpush, 2010). Research shows that this population is less likely to quit and receive social support for quitting, more likely to die prematurely, and there is a greater chance their children will begin smoking (Healton, 2001). The cost of using tobacco is an additional financial strain and may result in less money being available for basic needs leading to poorer health outcomes and ultimately less overall income.

A large percentage of low income residents reside in multi-unit housing, some of which are subsidized and subsequently referred to as social housing units. Residents of social housing may be exposed to higher SHS levels for several reasons including higher smoking rates, factors related to building design, limited mobility, and poorer health status

(Digenis-Bury, Brooks, Chen, Ostrem, & Horsburgh, 2008; Kraev et al., 2009; Pizacani, Maher, Rohde, Drach, & Stark, 2012). An American study found social housing residents have a 14% higher smoking rate than other city residents and generally spend more time at home (Digenis-Bury et al., 2008). Higher exposures in social housing units may also arise because of unique factors associated with the buildings such as smaller units, poor or no ventilation systems, and SHS infiltration from neighbouring units or hallways (Kraev et al., 2009). Residents often have less choice in their housing options and are less able to move if they are not satisfied with the conditions. With long wait times for affordable housing in most Ontario municipalities, residents are less likely to simply move if they are unhappy with the environment in their building. They may also be less likely to advocate for themselves due to the fear of eviction or not knowing or understanding the laws. Finally, social housing units have a greater number of children, elderly, and disabled residents (Pizacani et al., 2012) who are more likely to suffer from hypertension, asthma and diabetes, and report overall poorer health status (Digenis-Bury et al., 2008).

Policies that restrict smoking in multi-unit housing ultimately contribute to overall health equity by ensuring that more disadvantaged residents are being exposed to reduced levels of SHS and by increasing the chance that smokers can successfully quit or reduce their cigarette consumption. Smokers of lower socioeconomic status (SES) are equally motivated to be smoke-free but may require greater support to be successful (Borland et al., 2006). Strategies to support smokers can include cessation services as well as greater tobacco control policies (Borland et al., 2006) including policies that prohibit smoking in multi-unit housing.

FIRE RISK REDUCTION

In addition to the harm of SHS exposure, smoking in the home greatly increases the risk of fire through common risk behaviours such as leaving cigarettes unattended or falling asleep while smoking in bed (O'Connor et al., 2007). Figures from the Council of Canadian Fire Marshals and Fire Commissioners (CCFMFC) Report indicate tobacco products accounted for 9414 fires, 688 injuries, 94 deaths and

more than \$231 million in losses from 1993-2002 in Canada (Council of Canadian Fire Marshals and Fire Commissioners, 2002). Smoking materials have been the ignition source in approximately 550 fires per year in Ontario over the last decade and are the primary ignition source of fatal residential fires accounting for 24% of all fatal fires (Wijayasinghe, 2011). Close to one third (29%) of fire deaths in Ontario occur in multi-unit dwellings (Wijayasinghe, 2011).

Similar findings have emerged from the Housing Services Corporation (HSC) that provides group insurance coverage to virtually all Ontario social housing providers. HSC reports that 21% of fires covered through their insurance program in 2013 were caused by careless smoking, resulting in \$2 million in damages and suspected in one fatality (Housing Services Corporation, 2014). HSC recently changed their policy and added non-smoking as a factor in their premium allocations highlighting the importance of this risk factor (Housing Services Corporation, 2014).

It is likely that the number of fires caused by smoking is underrepresented by the CCFMFC as their data includes only those fires that involved calls to the fire department. Many additional, smaller fires occur as a result of smoking every year and go unreported. Fires ignited by smoking materials result in, not only loss of life and injury, but also expensive water and smoke damage to affected and adjoining units. Smoking in multi-unit housing poses a risk to the smoker, their family members or roommates, and other tenants in the building. Eliminating smoking in multi-unit housing can effectively reduce the risks from exposure to SHS and THS as well as fire-related risks and damage.

SMOKING CESSATION

Home smoking bans have been associated with positive behaviour change in smokers including an increased number of quit attempts (Borland et al., 2006; Mills, Messer, Gilpin, & Pierce, 2009; Pizacani et al., 2004), a longer duration of quit attempts (Pizacani et al., 2004), greater use of smoking cessation medications (Hyland et al., 2009), reduced cigarette consumption (Messer, Mills, White, & Pierce, 2008; Mills et al., 2009; Vijayaraghavan, Messer, White, & Pierce, 2013), increased quit rates (Borland et al., 2006; Hyland et al., 2009; Mills et al., 2009;

Vijayaraghavan et al., 2013), and reduced relapse rates (Borland et al., 2006; Hyland et al., 2009).

A review of home smoking bans and adult smoking behaviour looked at research from 1990-2008. Three longitudinal studies completed during that time found that having a smoke-free home at baseline was associated with future quit attempts and greater abstinence at follow-up (Mills et al., 2009). Additionally, those who continued to smoke decreased their consumption by two cigarettes per day (Mills et al., 2009). These benefits were consistently found in homes with complete smoking bans but homes with partial bans showed very little or no effect at all (Mills et al., 2009). Smoke-free homes lead to an increased interest in quitting as well as a reduction in behavioural dependence (Borland et al., 2006). Smoke-free homes make it more difficult and less convenient to smoke as smokers are required to go outdoors which disrupts their previous smoking behaviour patterns. For example, smokers living in smoke-free homes delay the time between waking and having their first cigarette by 30 minutes (Borland et al., 2006). They may also change their pattern of smoking after a meal which can disrupt their cues to smoke and ultimately increase the probability that they will quit. A total smoking ban may also result in smokers being exposed to fewer visual cues, such as other people smoking in the home, which can trigger relapse (Mills et al., 2009). Pierce, White & Messer (2009) studied population level data and similarly found that as the number of smoke-free homes in the population increased, there was a corresponding reduction in smoking levels, both over time and across states.

A recent study by Vijayaraghavan et al. (2013) highlights the importance of smoke-free homes among low-income populations to increase cessation rates and prevent relapse. They found that low-income individuals were least likely to adopt smoke-free homes (Vijayaraghavan et al., 2013). However, those who did adopt smoke-free homes smoked six fewer cigarettes per day and had a higher rate of successful quitting compared with low-income individuals who did not live in smoke-free homes and these rates were similar to higher-income individuals (Vijayaraghavan et al., 2013).

Smoke-free home policies have the potential to positively influence smoking cessation by both facilitating quit attempts and reducing relapse

(Borland et al., 2006). This may be particularly important for low income households where there is a higher smoking prevalence and a lower prevalence of smoke-free homes (Vijayaraghavan et al., 2013). There is great benefit and value in smoke-free home policies as a cessation and relapse prevention strategy. These policies can serve to protect individuals and families from SHS and increase the chance that smokers will become non-smokers and remain smoke-free.

PREVENTION OF SMOKING

Research is emerging that supports the use of smoke-free housing policies in the prevention of tobacco use among youth and young adults. Parental smoking in the home can affect children, not only through exposure to SHS, but also through role modelling which can lead adolescents to believe that smoking is a normal adult behaviour. Smoke-free home rules can positively influence youths' perception of smoking prevalence and attitudes about the social acceptability of smoking, and may ultimately reduce smoking experimentation (Albers, Biener, Siegel, Cheng, & Rigotti, 2008). By adopting smoke-free home policies adults send the message that smoking is not accepted or allowed. Alternatively, not adopting smoke-free home policies may unintentionally send the opposite message. The uptake of smoking in youth progresses along a continuum from never smoking, to being open to smoking, to experimentation with cigarettes, and eventually to becoming a regular smoker (Christiansen, Commons, Olen, & Remington, 2003). The influence of smoke-free homes on the prevention of youth smoking may be more important in the earlier stages, rather than the later stages of smoking uptake (Emory, Saquib, Gilpin, & Pierce, 2010).

Research in this area shows that smoke-free homes are consistently associated with lower rates of adolescent smoking and an increased likelihood of cessation in youth who smoke (Clark, Schooley, Pierce, Schulman, Hartman, & Schmitt, 2006). This protective effect extends into young adulthood for those adolescents who continue to live with their parents or guardians (Clark, Schooley, Pierce, Schulman, Hartman, & Schmitt, 2006). The same is true for young adults who leave home and move into a smoke-free dormitory. They are less likely to initiate smoking if they were not regular smokers before

college (Wechsler, Lee, & Rigotti, 2001). A 2009 study found that youth from homes with parental smoking bans were more likely to move into smoke-free living quarters after leaving the parental home (Albers, Biener, Siegel, Cheng, & Rigotti, 2009). This finding suggests that home smoking bans may be an effective way to promote non-smoking attitudes and norms throughout the life of youth and future generations (Albers et al., 2009).

Living in a smoke-free home appears to have a protective effect for this population, which is significant given they represent the population with the highest percentage of smokers; 22% of 20-24 year old young adults smoke (Statistics Canada, 2011b). Increasing the number of smoke-free homes can effectively prevent more youth and young adults from starting to smoke.

Parents' smoking status appears to have a less defined influence on youth compared with the influence of smoke-free home policies. A study by Wakefield et al. (2000) showed home smoking bans have a protective effect on youth smoking behaviour despite the parents' smoking status. These findings suggest that home smoking bans can effectively reduce youth smoking initiation even if their parents are smokers and unable to quit themselves (Wakefield et al., 2000). However, Albers et al. (2008) found home smoking bans may ultimately decrease smoking experimentation in youth but only for those who live with non-smokers. A 2010 review by Emory et al. indicates that the smoking status of parents may interact with home smoking restrictions to impact smoking behaviour of young people suggesting that non-smoking parents reinforce anti-smoking values (Emory et al., 2010). Smoke-free home policies have proven to be effective in the prevention of smoking uptake among youth and young adults. Consistent with findings from other age groups, results show that total home smoking bans are much more effective than partial bans (Emory et al., 2010; Farkas, Gilpin, White, & Pierce, 2000). This population can be reached through many avenues including: personal home smoking bans, social or multi-unit housing restrictions on home smoking, and through school dormitory smoke-free policies.

SMOKE-FREE HOMES AND COMPREHENSIVE TOBACCO CONTROL

Research that looks at the impact of implementing comprehensive smoke-free policies in multi-unit social housing shows these policies effectively increase quit rates, decrease cigarette consumption, and decrease SHS exposure in non-smokers (Pizacani et al., 2012). An American study found that one year after a smoke-free policy was implemented, tenants reported a 12% increase in quit rates, a 42% decrease in indoor cigarette smoking and non-smokers reported a 24% decrease in SHS exposure (Pizacani et al., 2012). A recent survey of Waterloo Region Housing tenants showed several changes in smoking patterns among residents since a smoke-free policy was implemented in 2010 (Kennedy et al., 2013). Of those smokers who have grandfathered leases, and thus can continue to smoke in their units, 28% reported they smoke less and 8% have quit since the policy was implemented (Kennedy et al., 2013). Of those smokers who have moved into smoke-free units since the policy was implemented, 37% report they smoke less and 17% have quit smoking (Kennedy et al., 2013).

Smoke-free homes are the norm in Canada, amongst smokers and non-smokers, with 93% of the population prohibiting smoking in their homes (Statistics Canada, 2011b). There is an increasing demand for smoke-free multi-unit housing as more people become aware of, and concerned about, the health hazards of smoke infiltration from outside their unit (Ipsos Reid, 2007). There is also a high level of support amongst the youth population. In one study, 84% of responding students supported a suggestion to 'never allow smoking' in homes (Kandra, McCullough, Ranney, & Goldstein, 2013). A 2011 poll shows eight in ten residents living in multi-unit housing indicated they would be 'very likely' or 'somewhat likely' to choose a smoke-free building (Ipsos Reid, 2011) and 84% of Ontario adults feel that smoking should be banned in multi-unit housing (Ontario Tobacco Research Unit, 2010).

CONCLUSION

To reach its goal of having the lowest smoking rate in Canada, the Government of Ontario has called for a 'fully integrated, multi-level, comprehensive, coordinated and intense' tobacco control strategy (Public Health Ontario, 2010). Due to the significant impact of smoke-free homes on health equity as well as protection, fire risk reduction, cessation, and prevention strategies to eliminate smoking in multi-unit housing have the potential to significantly impact public health.

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