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Tobacco Smoke Entering Homes in Multi-Unit Dwellings in Ontario

Exposure to secondhand smoke (SHS) is a long standing public health issue. Exposure in adults has been linked to cancer, respiratory problems, coronary heart disease, and stroke. In children and infants, SHS exposure is a cause of middle ear disease, respiratory symptoms and lower respiratory tract illness, low birth weight and sudden infant death syndrome.¹ There is no risk-free level of exposure to SHS.² The *Smoke-Free Ontario Act* protects many Ontarians from exposure to SHS in enclosed public places and workplaces including restaurants and bars, casinos, in vehicles, and in the common areas of multi-unit dwellings (MUDs),^{3,4} but exposure still occurs in MUDs through drifting smoke entering homes from neighbouring dwellings, shared indoor spaces, ventilation systems, and through windows and doors.^{5,6} This update reviews the extent of reported exposure to SHS in multi-unit dwellings in Ontario and notes regional differences among the province's seven Tobacco Control Area Networks (TCANs).

Key Finding: At least a third of MUDs residents report tobacco smoke entering their homes according to the CAMH Monitor

Data Sources and Methodology



The Centre for Addiction and Mental Health Monitor (CAMH Monitor) was used to provide data about exposure to secondhand smoke in multi-unit dwellings (MUDs). The CAMH Monitor is an Ontario-wide, ongoing monthly, random telephone survey, focusing on addiction and mental health issues. The survey sample represents non-institutionalized, Ontario residents aged 18 and older.

The CAMH Monitor asked survey questions about secondhand smoke in MUDs in 2011, and in 2012. Those living in an attached house or apartment building, a condominium apartment, or a duplex were defined as living in multi-unit dwellings. To estimate exposure to secondhand smoke, those living in MUDs were asked: "In the past 6 months, how often, if at all, have you noticed any tobacco smoke entering your home from a neighbouring unit or from outside the

building?” Based on respondents’ answers, exposure to SHS entering the home from external sources in the past 6 months was classified as:

- Any exposure in the past 6 months
- Monthly exposure
- Weekly exposure

Findings

Approximately one in four Ontarians (28% in 2011 and 23% in 2012) live in MUDs.

In 2011, among those living in MUDs:

- 38% (representing 1 million people) reported noticing tobacco smoke entering their home from a neighbouring unit or outside of the building at least once in the past 6 months (Table 1)
- 27% (representing 0.7 million people) reported tobacco smoke entering their home at least once a month (Table 1)
- 19% (representing 0.5 million people) reported tobacco smoke entering their home at least weekly (Table 1)

In 2012, among those living in MUDs:

- 33% (representing 0.8 million people) reported noticing tobacco smoke entering their home from a neighbouring unit or outside of the building at least once in the past 6 months (Table 1)
- 24% (representing 0.6 million people) reported tobacco smoke entering their home at least once a month (Table 1)
- 16% (representing 0.4 million people) reported tobacco smoke entering their home at least weekly (Table 1)

There was no statistically significant difference in reporting *any* exposure, *monthly* exposure, or *weekly* exposure, between 2011 and 2012.

Regional Differences

Regional differences in exposure to SHS in MUDs among the province’s seven Tobacco Control Area Networks (TCANs) were determined. Because of relatively small sample sizes, TCAN level analysis used the combined data of 2011 and 2012.

- The highest rate of tobacco entering homes of MUDs residents in the past 6 months was 40% (representing 140,300 people) in the Central West TCAN, followed by the Toronto TCAN at 38% (representing 385,300 people). The lowest rate of tobacco entering homes of MUDs residents was 31% (representing 18,900 people) in the North East TCAN (Table 1)
- The highest rate of monthly exposure was 32% (representing 112,100 people) in the Central West TCAN, and the lowest was 16% (representing 9,900 people) in the North East TCAN (Table 1)
- The highest rate of weekly exposure was 25% (representing 86,900 people) in the Central West TCAN, and the lowest was 14% (representing 76,900 people) in the Central East TCAN (Table 1)

There was no statistically significant difference in noticing tobacco smoke entering the home from a neighbouring unit or outside the building by TCAN on any measures (*any* exposure, *monthly* exposure, or *weekly* exposure). Please note that estimates of population exposed by TCAN were population counts averaged over two years (2011-2012).

Discussion

At least a third of residents of multi-unit dwellings reported some tobacco smoke from external sources entering their homes (38% in 2011, and 33% in 2012) according to data from the CAMH Monitor. Emerging evidence also points to hazards associated with exposure to third hand smoke, chemicals and compounds from residual secondhand smoke that settle on surfaces or in dust and can persist for long periods of time. This has implications for the health of tenants who move into units previously occupied by smokers.⁷

Some local jurisdictions are moving beyond measures in the provincial legislation to protect those living in MUDs from harmful exposure to tobacco smoke, particularly those residents of social/non-profit housing.⁸ Increased public awareness of the hazards of second and third hand smoke exposure and development and implementation of smoke-free housing policies will help to protect the health of Ontarians living in multi-unit dwellings.

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Table 1: Tobacco Smoke Entering the Home in the Past 6 Months among Ontario Adults (Aged 18+) Living in MUDs, 2011-2012

Year	Group	Any SHS Exposure		Monthly SHS Exposure		Weekly SHS Exposure	
		% (95% CI) ^a	Population Exposed	% (95% CI) ^a	Population Exposed	% (95% CI) ^a	Population Exposed
2011	All MUDs Residents	38.1% (33.9%-42.2%)	1,007,800	26.5% (22.7%-30.2%)	701,200	18.8% (15.5%-22.1%)	498,000
2012	All MUDs Residents	33.2% (30.6%-35.8%)	779,800	24.2% (17.9%-30.4%)	567,800	16.0% (7.6%-24.5%) ^d	376,100
2011-2012 ^b	Regional Difference ^c						
	North East TCAN	31.1% (23.9%-38.2%)	18,900	16.2% (7.3%-25.1%) ^d	9,900	14.1% (6.1%-22.1%) ^d	8,600
	Central East TCAN	31.7% (26.7%-36.8%)	176,100	20.0% (15.2%-24.9%)	111,300	13.8% (6.7%-21.0%) ^d	76,900
	East TCAN	33.0% (27.6%-38.4%)	111,200	21.3% (15.4%-27.2%)	71,800	15.9% (9.5%-22.4%) ^d	53,600
	South West TCAN	35.2% (27.8%-42.6%)	56,800	25.8% (19.4%-32.2%)	41,600	17.9% (12.3%-23.5%)	28,800
	North West TCAN	36.1% (19.7%-52.5%) ^d	5,100	30.3% (12.8%-47.8%) ^d	4,300	NR ^e	NR ^e
	Toronto TCAN	37.9% (32.4%-43.3%)	385,300	27.9% (24.1%-31.6%)	283,500	17.6% (14.0%-21.2%)	178,900
	Central West TCAN	39.8% (33.3%-46.2%)	140,300	31.8% (25.8%-37.8%)	112,100	24.6% (17.8%-31.5%)	86,900
	All TCANs	35.8% (33.3%-38.3%)	893,800	25.4% (22.6%-28.1%)	634,500	17.5% (14.2%-20.7%)	437,100

Source: CAMH Monitor

^a CI, confidence interval

^b Population exposed were population estimates averaged over two years of 2011-2012

^c Ordered by any SHS exposure (lowest to highest)

^d Estimates with moderate sampling variability and should be interpreted with caution

^e NR, not reportable because of high sampling variability

References

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- ⁵ Kernaghan A, Lambraki I, Pieters K, Garcia JM. *Smoke-Free Housing: A Review of the Evidence*. Toronto, Ontario: Program Training and Consultation Centre and the Propel Centre for Population Health Impact, University of Waterloo. 2014.
- ⁶ Bohac DL, Hewett MJ, Hammond SK, Grimsrud DT. Secondhand smoke transfer and reductions by air sealing and ventilation in multiunit buildings: PFT and nicotine verification. *Indoor Air* 2011;21(1):36-44.
- ⁷ Matt GE, Quintana PJ, Zakarian JM, et al. When smokers move out and non-smokers move in: residential thirdhand smoke pollution and exposure. *Tobacco Control* 2011;20(1):e1.
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