



THE ONTARIO TOBACCO RESEARCH UNIT    UNITÉ DE RECHERCHE SUR LE TABAC DE L'ONTARIO

*Generating knowledge for public health*

# Exposure to Onscreen Tobacco in Movies among Ontario Youth, 2004-2013

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## Table of Contents

Acknowledgements.....	iii
List of Tables .....	v
List of Figures .....	v
Executive Summary.....	1
Introduction.....	3
Method.....	4
Sample of Movies .....	4
Movie Ratings .....	4
Tobacco Incidents.....	5
Tobacco Impressions .....	5
Impact of Onscreen Smoking in Movies on Youth.....	6
Analysis .....	7
Results .....	8
Movies with Onscreen Tobacco.....	8
Tobacco Incidents.....	9
Total Tobacco Incidents .....	9
Tobacco Incidents per Movie.....	10
Tobacco Impressions .....	11
Comparison of the OFRB Tobacco-Related Alerts with Independent Monitors’ Reports.....	13
Comparison of Tobacco Incidents and Tobacco Impressions in Ontario and US .....	18
OFRB vs. MPAA Rating .....	18
Tobacco Incidents .....	19
Tobacco Impressions.....	20
Adolescent Smoking and Premature Deaths Attributable to Onscreen Tobacco in Movies .....	21
Discussion.....	22
Appendix 1: Movie Rating Systems .....	24
Appendix 2: OFRB Tobacco Related Detailed Observations and Content Advisory.....	26
References .....	27

## List of Tables

Table 1: Number of Movies Released in the Domestic Market (Canada and US), by OFRB Rating, 2004-2013 .....	7
Table 2: Estimated Numbers of Ontarians Aged 12-17 Recruited to Smoking Because of Exposure to Onscreen Smoking and Projected Premature Deaths .....	21

## List of Figures

Figure 1: Percentage of Movies with Onscreen Tobacco, by OFRB Rating, 2004-2013.....	8
Figure 2: Total Tobacco Incidents in Top-Grossing Movies, by OFRB Rating, 2004-2013 .....	10
Figure 3: Average Number of Tobacco Incidents per Movie, by OFRB Rating, 2004-2013 .....	11
Figure 4: In-Theatre Tobacco Impressions, by OFRB Rating, Ontario, 2004-2013 .....	12
Figure 5: Movies with OFRB ‘Tobacco Use’ Detailed Observations vs. Movies with Independently-Reported Tobacco Incidents, among 749 Movies Released in 2008-2013 .....	14
Figure 6: Movies with OFRB ‘Tobacco Use’ Detailed Observations vs. Those Without, by Tobacco Incidents, among Movies Having Tobacco Incidents Reported by Independent Monitors.....	15
Figure 7: Movies with OFRB ‘Tobacco Use’ Detailed Observations vs. Those Without, by OFRB Rating, among Movies Having Tobacco Incidents Reported by Independent Monitors ..	15
Figure 8: Movies with OFRB ‘Illustrated or Verbal References to Drugs, Alcohol or Tobacco’ Detailed Observations vs. Movies Independently-Reported with Tobacco Incidents, 2008-2013 .....	16
Figure 9: Number of Movies with an OFRB ‘Tobacco Use’ Content Advisory vs. Movies Independently-Reported with Tobacco Incidents, among 237 Movies Released in 2012-2013.....	17
Figure 10: Percentage of Movies Youth-rated in Ontario and US, 2004-2013.....	18
Figure 11: Percentage of Tobacco Incidents in Youth-rated Movies in Ontario and US, 2004-2013 .....	19
Figure 12: Percentage of In-Theatre Tobacco Impressions Delivered by Youth-rated Movies, in Ontario and US, 2004-2013.....	20
Figure 13: OFRB & MPAA Rating Systems .....	24
Figure 14: OFRB Rating Classification Guideline .....	25
Figure 15: Example Extracted from the OFRB Online Database .....	26

## Executive Summary

Movies are a powerful vehicle for promoting tobacco and health; authorities all over the world have concluded that smoking in movies is a cause for smoking initiation and progression to regular smoking among youth. Higher exposure to onscreen tobacco increases the uptake of smoking among youth and undermines tobacco prevention efforts.

The Ontario Tobacco Research Unit collaborated with the Ontario Coalition for Smoke-Free Movies to conduct a study to examine the extent of onscreen tobacco exposure in movies among Ontario youth. The study aimed to examine data on the number of incidents of onscreen tobacco in movies released from 2004 to 2013 and estimate the impact of exposure to onscreen tobacco in movies on youth smoking.

Data on the level of onscreen tobacco in movies was obtained from a sample of 1434 top-grossing movies (i.e. movies whose box office ranked in the top 10 for at least one week) released to theatres in the “domestic” (Canada and US) market between January 2004 and December 2013. For these movies, tobacco incidents (i.e. the occurrences of tobacco use or implied use in a movie) and tobacco impressions (number of tobacco incidents multiplied by paid admissions per movie) were analyzed.

Key findings of the study include:

- Of 1434 top-grossing movies released in theatres from 2004 to 2013, 1289 (90%) were youth-rated in Ontario, with 633 rated PG (44%), 500 rated 14A (35%), 156 rated G (11%). Adult-rated movies accounted for 10% of the sample, with 144 movies rated 18A and a single movie rated R.
- A total of 818 movies (57%) featured onscreen tobacco. Eighty-six percent (701/818) of movies with tobacco were youth-rated in Ontario, much higher than in the US (54%, 440/818). As a result, Ontario youth had greater exposure to onscreen tobacco imagery than their US counterparts.
- The top grossing movies contained a total of 26,850 tobacco incidents. Eighty-five percent of tobacco incidents were depicted in movies that were youth-rated in Ontario, twice the percentage (42%) found in US youth-rated movies. Although the average number of tobacco incidents per movie decreased by 16% in the past 10 years (22.1 in 2004 to 18.5 in 2013), Ontario youth still had higher chances of exposure to onscreen tobacco than their

US counterparts because a greater share of tobacco incidents were depicted in Ontario youth-rated movies.

- The trend in tobacco impressions largely resembled that of the tobacco incidents, a decline between 2005 and 2010 followed by a rebound in 2011 and 2012 and a slight decrease in 2013. There was a 13% decrease (1024 million to 892 million) in annual tobacco impressions between 2004 and 2013. The top-grossing movies delivered an estimated 8.1 billion in-theatre tobacco impressions to moviegoers in Ontario from 2004 to 2013. Youth-rated movies delivered the vast majority of tobacco impressions (86%, overall) to Ontario audiences.
- Discrepancies exist between the number of movies that have tobacco related labels issued by the Ontario Film Review Board (OFRB) and the number of movies with tobacco incidents reported by independent monitors. In 2008 the OFRB included a “tobacco use” detailed observation for movies listed at <http://www.ofrb.gov.on.ca/>. Of 749 movies released between 2008 -2013, 51% (379/749) depicted tobacco, as reported by independent monitors, while just 34% (255/749) received a “tobacco use” detailed observation by the OFRB. In addition, the OFRB also assigned an “illustrated or verbal reference to drugs, alcohol or tobacco” detailed observation to 28% of these movies (206/749). The OFRB issued tobacco-related observations to 78% (296/379) of the movies that independent monitors had identified as depicting tobacco imagery.
- On March 2012, the OFRB included a ‘tobacco use’ content advisory when classifying movies. Between Mar 2012- 2013, 237 movies were released; 54% (127/237) depicted tobacco incidents as reported by independent monitors, while 6% (14/237) were given a ‘tobacco use’ content advisory by the OFRB.
- The Smoke-Free Ontario Scientific Advisory Committee notes that an effective way to reduce youth exposure to onscreen tobacco in Ontario is to require adult ratings (18A in Ontario) for movies with any tobacco imagery. This policy measure has been recommended by public health stakeholders and institutions provincially, nationally and internationally.
- Over the seven years (2005, 2007-2012) where data were available, it is estimated that, on average, 13,241 current smokers in Ontario aged 12-17 were recruited to smoking in a year because of watching smoking in movies. It is projected that, on average, 4,237 of these smokers will die prematurely as a result of tobacco imagery in movies.

### Introduction

While smoking rates among young people in Ontario have declined over the past decade, smoking among youth remains an important public health issue. In 2012, approximately 21,200 youth aged 12-17 years in Ontario were current smokers.<sup>1,2</sup>

Tobacco use in entertainment media, such as movies, is a powerful form of promotion that has long been exploited by tobacco industry.<sup>3</sup> Exposure to smoking in movies causes smoking initiation and progression to regular smoking.<sup>4,5,6,7</sup> A dose-response relationship between exposure to onscreen smoking and youth tobacco use has also been reported.<sup>7</sup> A recent meta-analysis estimated a population-attributable risk of 37% for adolescent smoking due to exposure to tobacco imagery in movies, meaning that 37% of youth smokers in the population are recruited to smoking due to seeing smoking in movies.<sup>i,8,9</sup>

Recognizing the negative impact of onscreen smoking on youth, the World Health Organization has recommended a set of specific measures to permanently and substantially reduce adolescent exposure to onscreen smoking. These include assigning adult ratings to new movies with tobacco imagery.<sup>10</sup> Similarly, the 2012 US Surgeon General's report, *Preventing Tobacco Use Among Youth and Young Adults*, endorses assigning adult ratings to movies that depict tobacco.<sup>11</sup> In Ontario, the Smoke-Free Ontario Scientific Advisory Committee has also recommended assigning adult ratings (18A) to movies with tobacco imagery as part of a comprehensive tobacco control strategy.<sup>12</sup>

A number of studies have been conducted in the US and UK to examine the level and trend of smoking appearances in movies.<sup>13,14,15</sup> A recent Canadian study explored the impact of smoking in movies and of film production subsidies on adolescent smoking.<sup>16</sup> To our knowledge, no study has been undertaken to examine the level and trend of tobacco appearances in movies in Ontario and their impact on youth smoking.

The Ontario Tobacco Research Unit collaborated with the Ontario Coalition for Smoke-Free Movies to conduct a study to examine the extent of exposure to movies with tobacco imagery among Ontario youth. The study examined data on the number of incidents of onscreen smoking in movies released from 2004 to 2013 and estimated the impact of exposure to onscreen tobacco on youth smoking. The sample of movies, movie ratings, key indicators of exposure to onscreen tobacco and data analysis are described in the Method section below.

<sup>i</sup> Most of these studies were done in US where there are few meaningful restrictions on cigarette advertising compared to Canada. Since Canada has all but banned conventional advertising, it is likely that the population attributable risk will be higher than in the US.

## Method

### Sample of Movies

The study focused on top-grossing movies. These are defined as having ranked among the top 10 movies in box office gross earnings for the US/Canadian market in any week of their first-run theatrical release. These top 10 movies account for more than 80% of all films released in the domestic (Canada and US) market and for more than 95% of tickets sold.<sup>13</sup> A total of 1434 top-grossing movies released to theatres in the “domestic” (US and Canadian) market between January 2004 and December 2013 were examined.

### Movie Ratings

The study examined youth-rated and adult-rated movies in Ontario as classified by the Ontario Film Review Board (OFRB). Movie ratings available through the Motion Picture Association of America (MPAA) were also used in this study to compare age classification of movies with smoking in Ontario and US. These rating systems are compared in Appendix 1.

The OFRB is a provincial arms-length agency to the Ministry of Consumer Services, mandated “to classify films and thereby provide the public with sufficient information to make informed viewing choices for themselves and their children.”<sup>17</sup> When assigning ratings to movies the agency considers language, nudity, violence, sexual activity, horror and psychological impact but does not consider smoking. The current OFRB ratings are: G (general - suits all ages), PG (parental guidance advised), 14A (persons younger than 14 must be accompanied by an adult), 18A (persons younger than 18 must be accompanied by an adult) and R (restricted to persons age 18 or older).<sup>ii</sup> The OFRB rating categories and classification guideline are presented in Appendix 1. In this study, movies with ratings G, PG and 14A were grouped as youth-rated while the remaining two ratings (18A and R) were considered as adult-rated. It should be noted that only one out of the 1434 movies in the sample was R rated by OFRB.

The OFRB also provides ‘detailed observations’ and ‘content advisories’ for rated movies to inform the public about specific details of a movie such as violence, coarse language and/or sexually suggestive scenes. While both ‘detailed observations’ and ‘content advisories’ assigned to a movie are accessible to the public in an online database maintained by the OFRB, only ‘content advisories’ are required to appear together with the rating of a movie on all advertising exhibits.

<sup>ii</sup>OFRB sometime re-classifies movies after release as a result of consumer complaints. In our analysis, the initial rating assigned by OFRB to each movie was considered.

In May 2008, the OFRB passed a motion to include ‘tobacco use’ within their list of ‘detailed observations’ (see Appendix 2). Since the exact implementation start date is unknown, we used August 15, 2008, the release date of the first movie for which the ‘tobacco use’ detailed observation was applied, to mark the beginning this OFRB practice. Within the list of the OFRB’s ‘detailed observations’, there is another observation of ‘illustrated or verbal references to drugs, alcohol or tobacco’ which seems to have been in effect since the beginning of 2008. In March 2012, the OFRB implemented a ‘tobacco use’ content advisory. It is unclear how OFRB decides to list a movie with a tobacco-related ‘detailed observations’ and ‘content advisory’.

### Tobacco Incidents

The level of smoking in movies is assessed by counting the number of tobacco incidents on screen. A tobacco incident is the use or implied use of a tobacco product (almost exclusively smoking) by an actor. Each screen appearance of tobacco within each scene is counted as one tobacco incident. The occurrence of tobacco is counted as a new incident each time 1) a tobacco product goes off screen and then back on screen, 2) a different actor is shown with a tobacco product, or 3) a scene changes, and the new scene contains the use of implied off-screen use of a tobacco product.

Tobacco incident data for top-grossing movies in 2004-2013 was provided by independent monitors - the *Thumbs Up! Thumbs Down!* (TUTD) project of Breathe California of Sacramento-Emigrant Trails. TUTD has used trained monitors to track tobacco incidents and their characteristics since 1991. Since 2002, it has expanded its sample to monitor all movies that are among the ten top-grossing movies in at least one calendar week.

### Tobacco Impressions

Tobacco impressions are estimated by multiplying the number of tobacco incidents in a movie by the paid admissions to that movie. Paid admissions are calculated by dividing the domestic (Canada and US) box office gross receipts per movie by the average US ticket price in the year of the movie’s release. This methodology was developed by the University of California, San Francisco, Center for Tobacco Control Research and Education. Because box office data specific to Canada and Ontario are not publicly available, domestic box office sales were estimated for Ontario and for the US on a population basis. Information on the annual population size of Ontario and the US was obtained from Statistics Canada and the US Census Bureau, respectively.

It should be noted that the estimated tobacco impressions are based on impressions seen in theatre viewings only. Theatre impressions substantially underestimate total exposure because they do not include impressions generated by viewing movies on in-home media: broadcast, cable, satellite, on-demand, DVD and Blu-ray, and on streaming media.

### Impact of Onscreen Smoking in Movies on Youth

Two estimates of the impact of onscreen smoking were produced: 1) the number of adolescents recruited to smoke due to their exposure to onscreen smoking in movies and 2) the number of premature deaths attributable to onscreen smoking in movies.

1. A meta-analysis of five US studies that controlled for a range of confounding factors yielded an overall attributable risk of adolescent smoking due to exposure to onscreen smoking in movies of 37% (95% CI 25%-52%).<sup>8,9</sup> In other words, 37% of youth smokers in the population are likely to have started smoking because of seeing onscreen smoking. We estimated the number of adolescents recruited to smoking because of their exposure to onscreen smoking by multiplying the attributable risk estimate with the number of Ontario adolescent smokers aged 12-17. The latter was obtained from the Canadian Community Health Survey (CCHS), an ongoing national health survey.<sup>2</sup> Smoking was defined as having smoked 100 cigarettes in one's lifetime and smoking in the last 30 days. Estimates of the number of adolescents recruited to smoking due to exposure onscreen smoking in movies were produced for seven years (2005 and 2007 to 2012) for which CCHS data on the number of adolescent smokers were available.
2. The future probability of smoking attributable mortality (PSAM) among adolescent smokers is an estimated 32%.<sup>18</sup> To calculate the number of premature deaths attributable to onscreen smoking in movies, we multiplied the PSAM estimate with the estimate of the number of adolescent smokers recruited to smoking due to their exposure to onscreen smoking in movies. Our estimates of adolescent smokers and deaths attributable to onscreen smoking in movies may not capture the full impact of onscreen smoking on Ontario youth because the actual population attributable risk for onscreen smoking is likely higher in Ontario than the 37% estimate based on US studies. This is due to two factors. First, a substantial number of movies with a high incidence of smoking are adult-rated in the US but are youth-rated in Ontario, so the number of smoking incidents easily accessible to youth in Ontario is higher than in the US. Second, because Canada has

much stronger restrictions on conventional cigarette advertising and promotion than the US, it is likely that the population attributable risk for onscreen smoking will be higher in Canada than in the US.

## Analysis

Descriptive statistical analysis was conducted using STATA software. We estimated the proportion of movies with tobacco imagery, total number of tobacco incidents in movies, and tobacco impressions delivered to theatre audiences in Ontario over a ten-year period (2004-2013). We compared tobacco related ‘detailed observations’ and ‘content advisories’ issued by the OFRB with the occurrence of onscreen tobacco in movies as identified by independent monitors. We also compared the distribution of tobacco incidents and tobacco impressions by youth-rated and adult-rated movies in Ontario and the US. Finally, we estimated the number of Ontario youth recruited to smoking and the associated future deaths caused by exposure to onscreen smoking in movies.

Table 1 summarizes the number of movies (per year and in total) included in the analysis. The actual list of all movies (n=1434) with detailed information about their rating, number of tobacco incidents and tobacco impressions, and presence of the OFRB tobacco-related ‘detailed observations’ and ‘content advisory’ can be found online in [PDF](#) or [Excel](#) format.

Table 1: Number of Movies Released in the Domestic Market (Canada and US), by OFRB Rating, 2004-2013

Year	G	PG	14A	18A/R*	Total
2004	14	74	46	10	144
2005	24	67	40	12	143
2006	26	75	43	17	161
2007	17	58	59	23	157
2008	12	58	55	20	145
2009	10	61	60	13	144
2010	11	65	43	16	135
2011	20	64	40	10	134
2012	11	56	55	14	136
2013	11	55	59	10	135
Total	156	633	500	145	1434
% of Total	11	44	35	10	

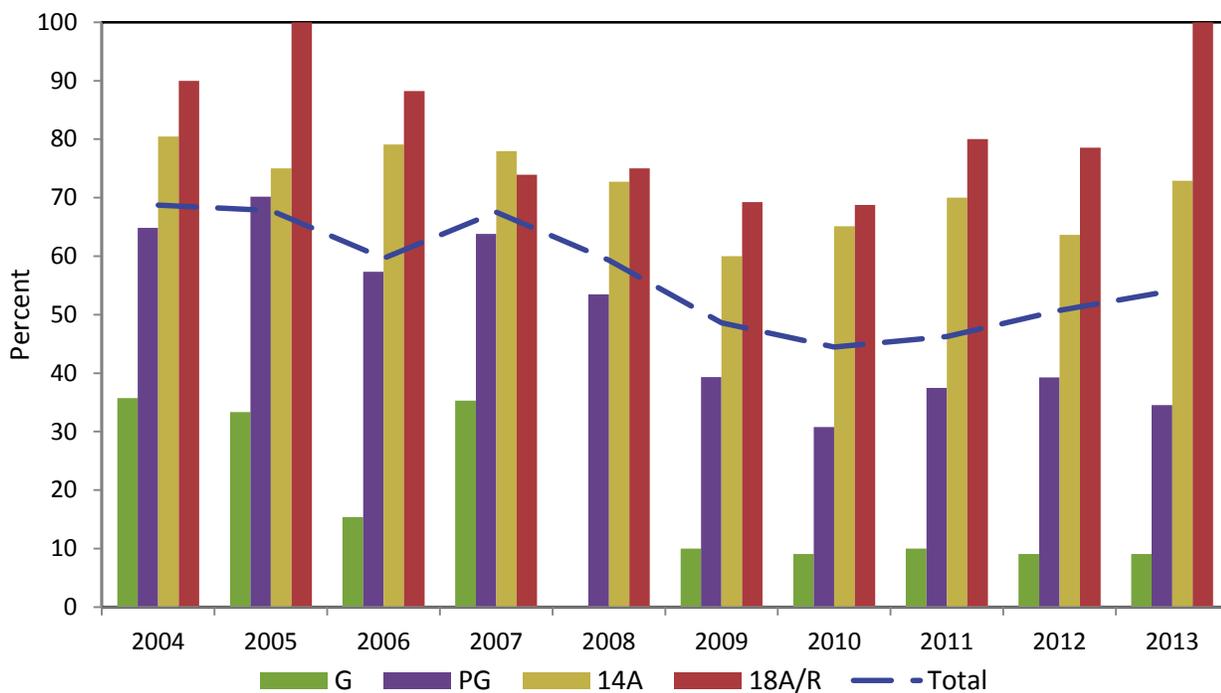
\* There is only one R rated movie released in 2006 in the sample

## Results

### Movies with Onscreen Tobacco

Between 2004 and 2013, 57% (818/1434) of top-grossing movies, including 54% (701/1289) of youth-rated movies, featured onscreen tobacco. Figure 1 reports the proportion of movies with onscreen tobacco, by movie ratings from 2004 to 2013.

Figure 1: Percentage of Movies with Onscreen Tobacco, by OFRB Rating, 2004-2013



The percentage of movies with tobacco imagery released annually stayed close to 70% from 2004 to 2007. The percentage declined gradually to 44% (60/135) in 2010 and then rebounded steadily through 2013. Although the percentage of movies with tobacco imagery in 2013 was less than that in 2004, more than half of the movies (54%, 73/135) still featured onscreen tobacco.

Forty-four percent of all movies in the sample were rated PG and 35% were rated 14A. Although these movies shared a similar pattern of change as movies with onscreen tobacco over time, the proportion of PG movies with onscreen tobacco dropped by nearly half (47%, from 65% to 35%) from 2004 to 2013, while the proportion of 14A movies with tobacco declined less than 10% (80% to 73%).

The percentage of G rated movies with onscreen tobacco dropped to zero in 2008 and stayed at around 10% thereafter. It is important to note that only 11% of movies in the sample of top-grossing movies were G rated.

Adult-rated movies accounted for 10% of the sample, with 144 movies rated 18A and one rated R. The percentage of adult-rated movies with onscreen tobacco fluctuated over time. It hovered near 90% between 2004 and 2006, decreased to near 70% in 2010, and then rebounded to above 80%.

In 2005 and 2013, all adult-rated movies in Ontario featured tobacco imagery. The percentage of 14A rated movies with onscreen tobacco approached or surpassed that of the adult-rated movies in 2007, 2008 and 2010.

## Tobacco Incidents

### Total Tobacco Incidents

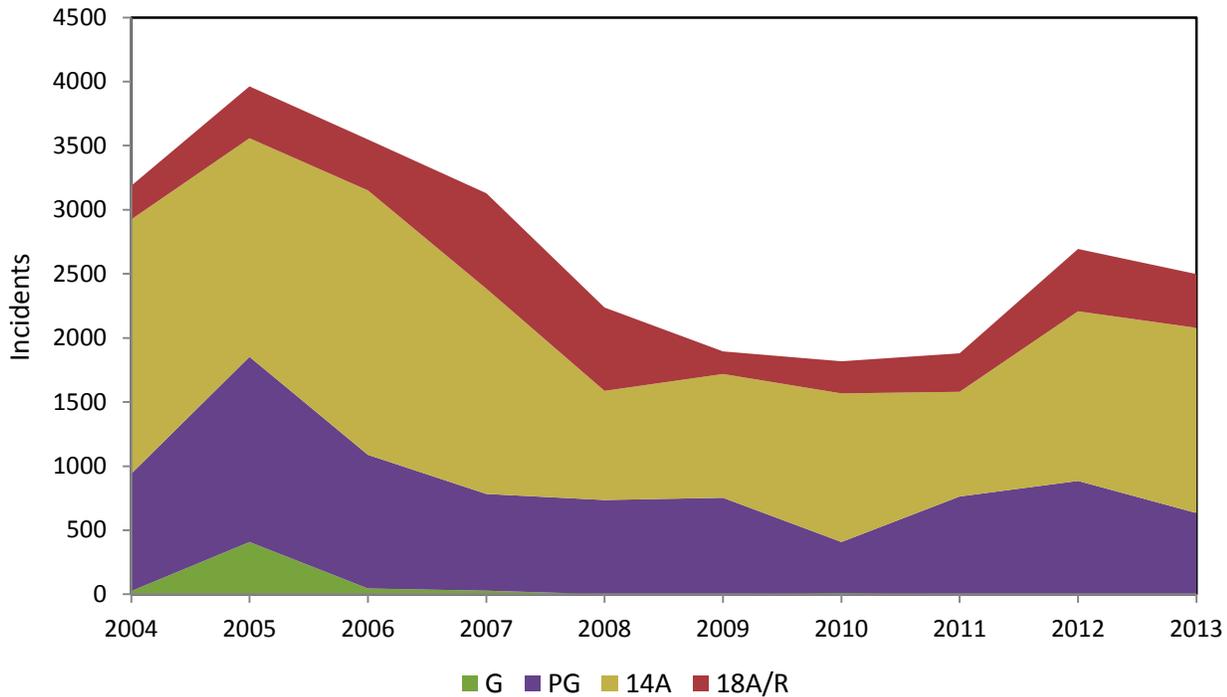
Between 2004 and 2013, the 1434 top grossing movies contained a total of 26,850 tobacco incidents. The number of tobacco incidents delivered annually decreased steadily between 2005 and 2010, then rebounded upward in 2012 (to 2694 incidents), and decreased slightly in 2013 (to 2498 incidents). Overall, there was a 22% decline in annual tobacco incidents on screen between 2004 and 2013. Trends in onscreen tobacco incidents by movie ratings are shown in Figure 2.

**G rated movies:** Total tobacco incidents featured in G rated movies reached zero in 2008. They have been negligible ever since. However, few movies in the sample (11%) are rated G.

**PG and 14A rated movies:** Between 2004 and 2013, annual tobacco incidents decreased by 31% (918 to 634) in PG movies and by 27% (1981 to 1444) in 14A movies. Despite these changes, the large majority of tobacco incidents were observed in youth-rated movies over this ten-year period. More than half (52%, 13906/26850) of all tobacco incidents were in movies rated 14A.

**18A/R rated movies:** The number of tobacco incidents in adult-rated movies increased by 59% (264 to 419) from 2004 to 2013. However, the number of tobacco incidents in Ontario adult rated movies were persistently outnumbered by the number of tobacco incidents in either PG or 14A movies.

Figure 2: Total Tobacco Incidents in Top-Grossing Movies, by OFRB Rating, 2004-2013



### Tobacco Incidents per Movie

The number of tobacco incidents per movie is a measure that controls for fluctuations in the number of top-grossing movies released each year and the number of movies in each age classification. Overall, the number of tobacco incidents per movie decreased by 16% from 2004 to 2013 (from 22.1 incidents to 18.5 incidents).

The number of incidents per movie peaked in 2005, declined through 2010, and then rebounded. Changes in the average number of tobacco incidents per movie by movie ratings are shown in Figure 3.

**G rated movies:** Tobacco incidents per G movie dropped to zero in 2008; overall, the number of tobacco incidents per G movie has remained low since 2006.

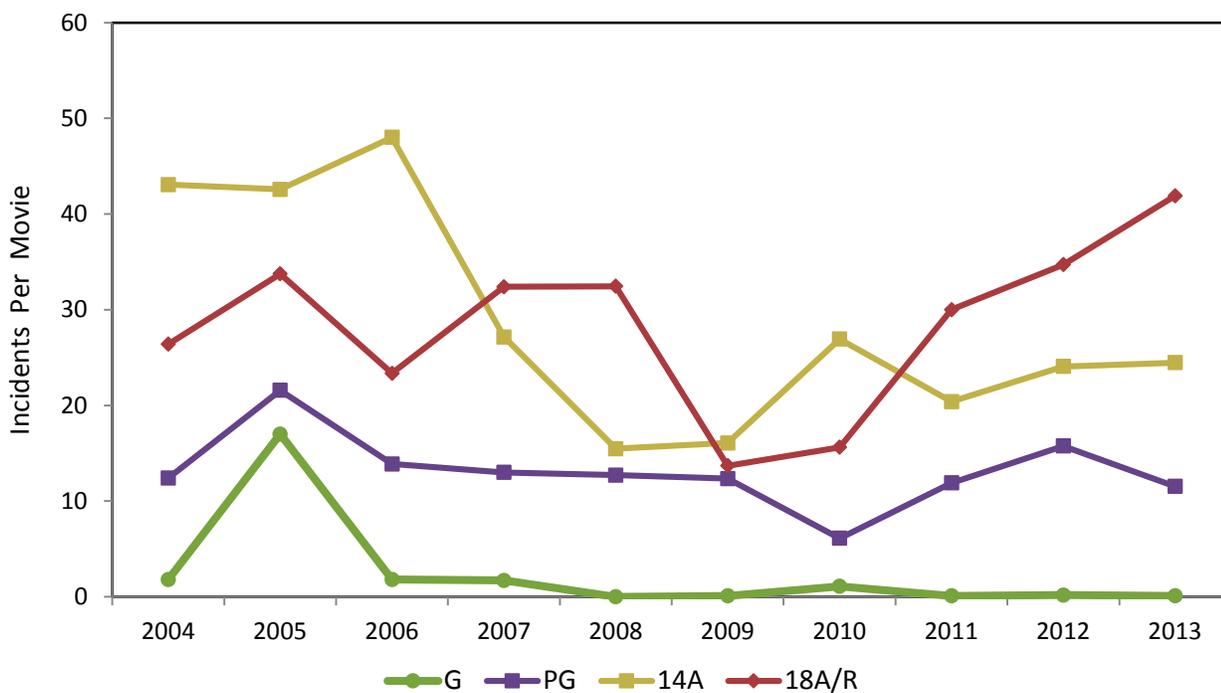
**PG rated movies:** Tobacco incidents per PG movie declined gradually after 2005 to the lowest level in 2010, increased in 2011-2012 but has since decreased in 2013. From 2004 to 2013, the number of incidents per PG movie fell from 12.4 (918/74) to 11.5 (634/55), a reduction of 7%.

**14A rated movies:** The number of tobacco incidents per 14A movie ranged from 43 to 48 in the

period from 2004 to 2006 then dropped to below 20 in 2008. Despite a bounce back in 2010, the average number of incidents per 14A movie has stayed under 25 since. Overall, from 2004 to 2013, the number of tobacco incidents per 14A movie fell 43% from 43.1 to 24.5. It is worth mentioning that there were more tobacco incidents in 14A movies, on average, than in 18A movies in five of the past ten years.

18A/R rated movies: Tobacco incidents among adult-rated movies hovered around 30 incidents per movie from 2004 to 2008. The number of incidents per movie dropped below 20 in 2009, but then climbed steadily to a ten-year high of 42 (419/10) in 2013.

Figure 3: Average Number of Tobacco Incidents per Movie, by OFRB Rating, 2004-2013



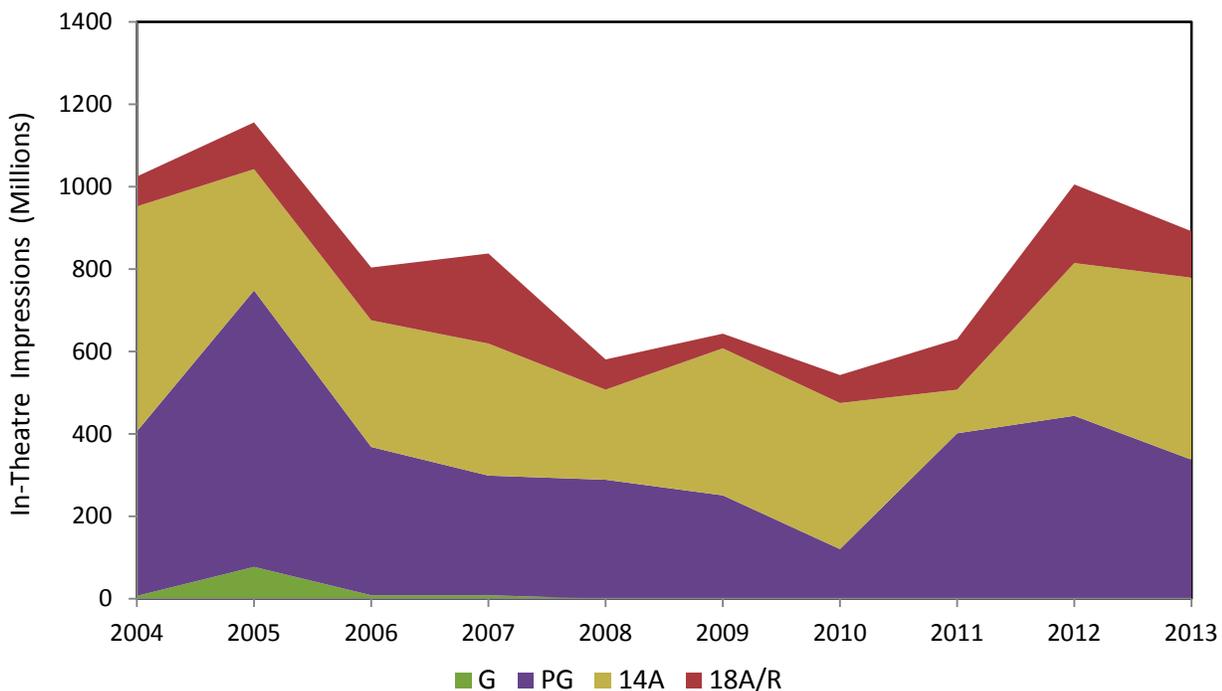
### Tobacco Impressions

From 2004 to 2013, the top-grossing movies delivered an estimated 8.1 billion in-theatre tobacco impressions to moviegoers in Ontario. Of this, an estimated 7 billion tobacco impressions (86%) were delivered by youth-rated movies, 1% by G rated movies, 44% by PG rated movies, and 41% by 14A rated movies.

In general, the trend in tobacco impressions largely resembled that of tobacco incidents: the amount of smoking in a movie (tobacco incidents) and the number of people who see that movie

(paid admissions) are both factors in estimating tobacco impressions. The number of in-theatre tobacco impressions delivered in Ontario decreased between 2005 and 2010. The trend reversed in 2011 and the number of impressions rose steeply in 2012. In 2013, in-theatre tobacco impressions fell to an estimated 892 million impressions, a decrease of 13% compared to 2004 (1024 million impressions). Trends in tobacco impressions by movie ratings are presented in Figure 4.

Figure 4: In-Theatre Tobacco Impressions, by OFRB Rating, Ontario, 2004-2013



**G rated movies:** Movies with G rating delivered almost no tobacco impressions.

**PG and 14A rated movies:** Between 2004 and 2013, annual tobacco impressions delivered by PG movies declined by 15% (399 to 337 million), while those delivered by 14A movies fell by 19% (546 to 442 million).

**18A/R movies;** In contrast to PG and 14A movies, annual tobacco impression delivered by adult-rated movies increased by 57% (72 to 113 millions) over the same time period.

Despite the decrease in tobacco impressions from youth-rated movies over time, the majority of tobacco impressions were consistently delivered by youth-rated movies (G/PG/14A) in Ontario.

In 2004, youth-rated movies delivered 93% (953/1024 million) of all tobacco impressions in Ontario; in 2013 they delivered 87% (779/892 million).

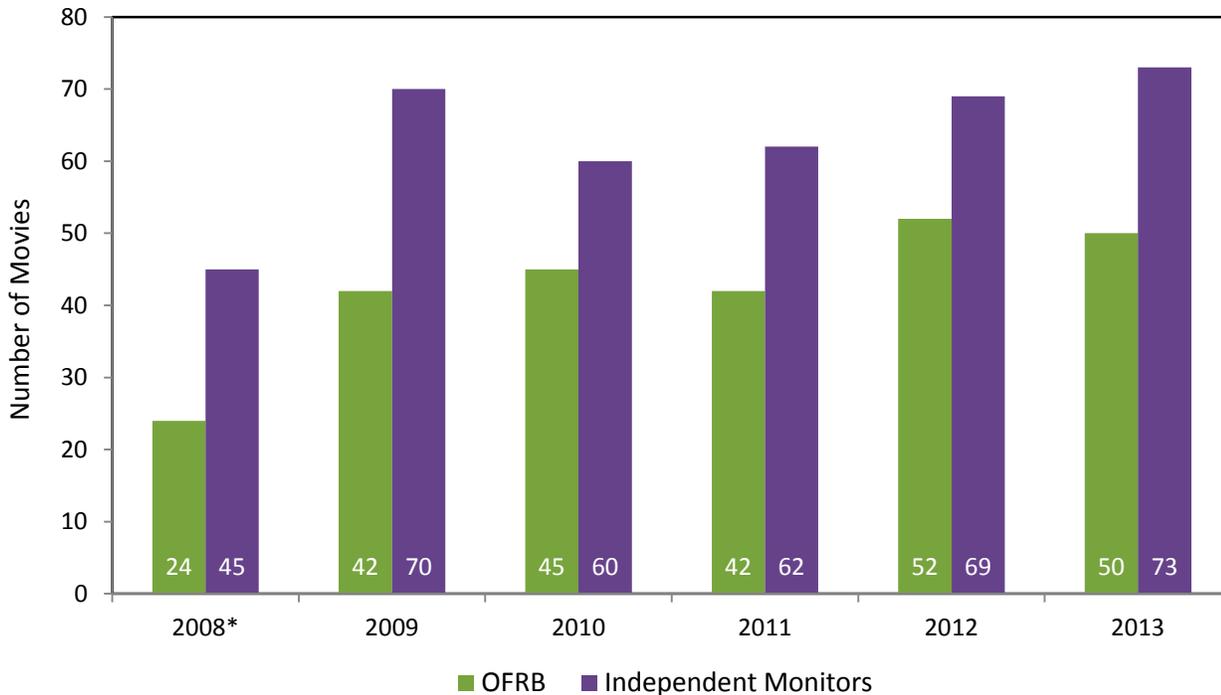
### Comparison of the OFRB Tobacco-Related Alerts with Independent Monitors' Reports

We compared the numbers of movies that received OFRB tobacco-related 'detail observations' and 'content advisories' with the number identified as having tobacco content by independent monitors of the *Thumbs Up! Thumbs Down!* (TUTD) project at the Breathe California of Sacramento-Emigrant Trails. Specifically, observations of 'tobacco use' and 'illustrated or verbal references to drugs, alcohol or tobacco' and advisories of 'tobacco use' issued by the OFRB were examined. The 749 top-grossing movies released between August 15, 2008 (the start date of 'tobacco use' observations) and December 31, 2013 were used to examine the use of the policy of 'detailed observations' and the 237 movies released from March 12, 2012 to December 31, 2013 were used to analyse the occurrence of the 'tobacco use' advisory.

The analysis found discrepancies between the number of movies with 'tobacco use' observations issued by the OFRB and the number of movies with tobacco imagery identified by independent monitors. The independent monitors found that half of the movie sample (51%, 379/749) contained tobacco incidents, while the OFRB tagged only one-third of the movies in the sample (34%, 255/749) with a 'tobacco use' observation. Figure 5 compares the number of movies that the OFRB tagged with 'tobacco use' observations and the number deemed to include tobacco incidents by independent monitors, from 2008 to 2013.

As seen in Figure 5, since the OFRB started including 'tobacco use' in the list of 'detailed observations' in August 2008, the number of movies receiving this alert from the OFRB has been consistently lower than the number of movies whose tobacco content was confirmed by independent monitors. The OFRB has tagged between 29% (42/144 in 2009) to 38% (52/136 in 2012) of movies with 'tobacco use' observations; independent content monitors have noted tobacco use in as many as 69% (45/65 in 2008) to as few as 44% (60/135 in 2010) of top-grossing movies over the same period.

Figure 5: Movies with OFRB ‘Tobacco Use’ Detailed Observations vs. Movies with Independently-Reported Tobacco Incidents, among 749 Movies Released in 2008-2013



\* From Aug 15, 2008

Of those 255 movies to which ‘tobacco use’ observations were issued by the OFRB, the independent monitors identified 249 as containing tobacco incidents. The independent monitors did not include six movies based on their monitoring methodology; in some, for example, the product being smoked was determined to represent marijuana, not tobacco. Therefore, OFRB only implemented ‘tobacco use’ observations in 66% (249/379) of movies that independent monitors identified as including tobacco incidents.

The higher the number of tobacco incidents identified by the independent monitors in a movie, the more likely it is that the OFRB has issued ‘tobacco use’ observations (Figure 6). While 37% (55/147) of movies with 1-9 tobacco incidents were tagged with ‘tobacco use’ observations, 79% of those with 10-29 tobacco incidents, 83% of those with 30-49 tobacco incidents and 89% of those with more than 50 tobacco incidents were tagged.

In addition, movies with tobacco incidents that were rated 14A and 18A were more likely (71% and 68% respectively) tagged with ‘tobacco use’ observations than those rated PG or G (59% and 17% respectively) (Figure 7).

Figure 6: Movies with OFRB 'Tobacco Use' Detailed Observations vs. Those Without, by Tobacco Incidents, among Movies Having Tobacco Incidents Reported by Independent Monitors

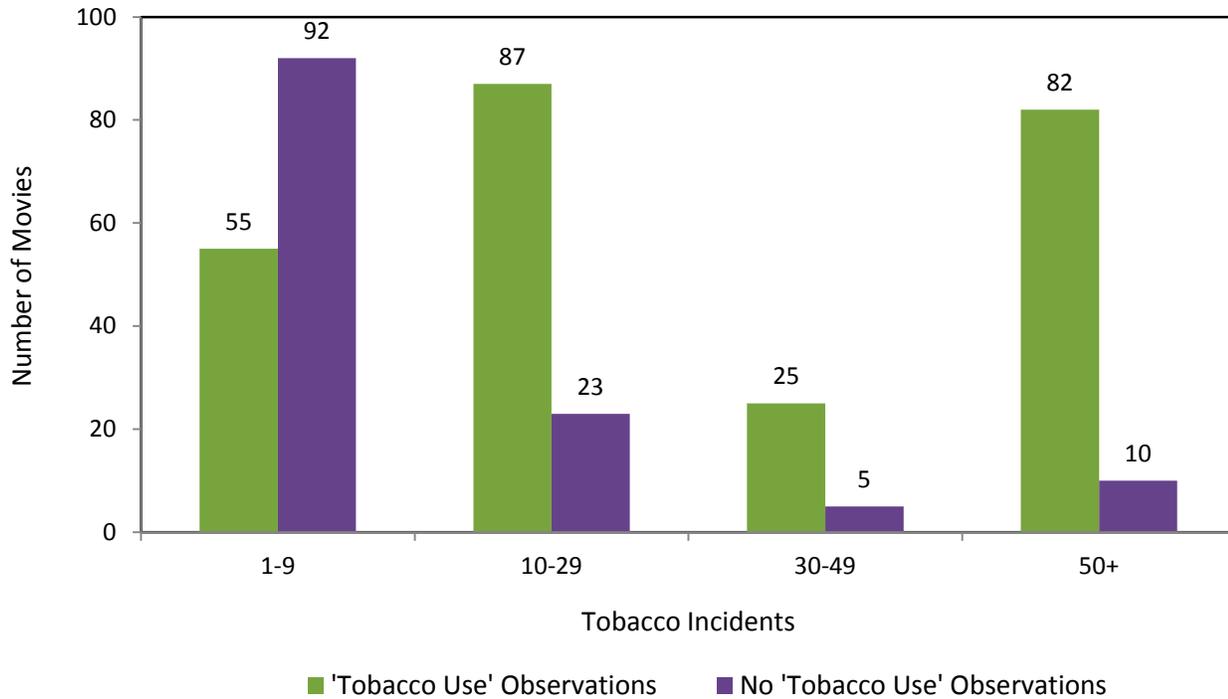
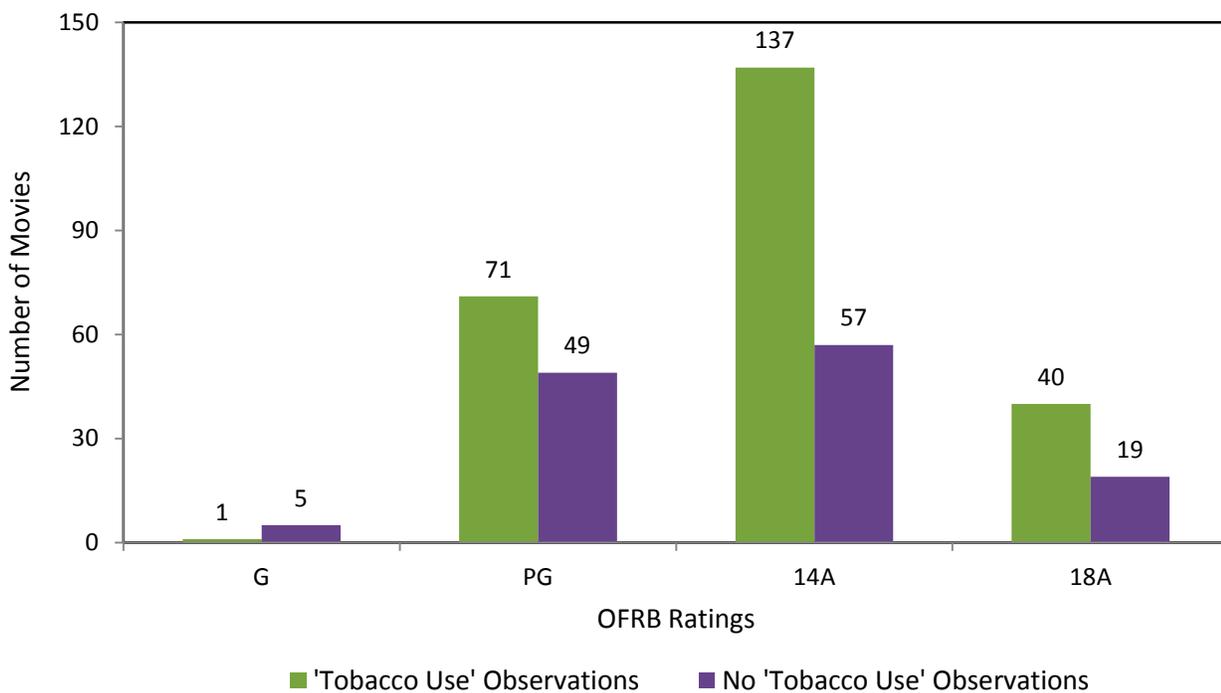
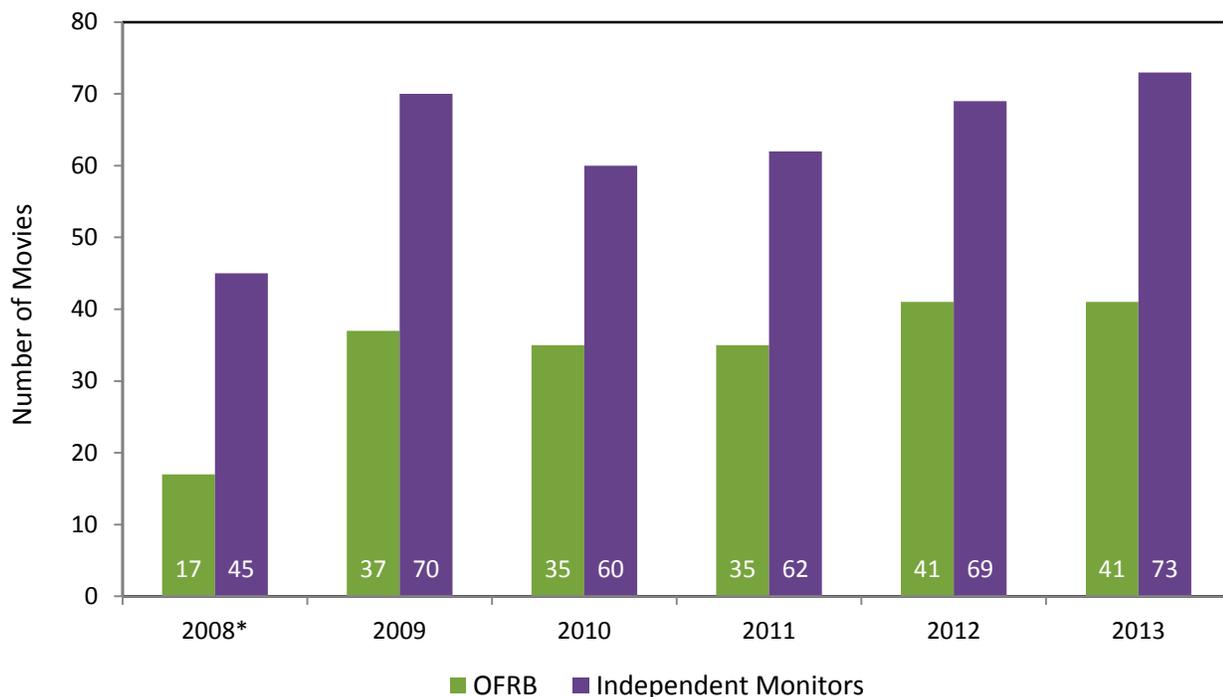


Figure 7: Movies with OFRB 'Tobacco Use' Detailed Observations vs. Those Without, by OFRB Rating, among Movies Having Tobacco Incidents Reported by Independent Monitors



Between August 15, 2008 and the end of 2013, the OFRB has issued detail observations of ‘illustrated or verbal references to drugs, alcohol or tobacco’ to 28% (206/749) of top-grossing movies released to Ontario theatres whereas independent monitors reported that many more movies (51%, 379/749) included tobacco incidents.<sup>iii</sup> For each year reviewed, fewer movies were tagged for drugs, alcohol or tobacco by the OFRB than were reported to contain tobacco incidents by independent monitors (Figure 8).

**Figure 8: Movies with OFRB ‘Illustrated or Verbal References to Drugs, Alcohol or Tobacco’ Detailed Observations vs. Movies Independently-Reported with Tobacco Incidents, 2008-2013**



\* From Aug 15, 2008

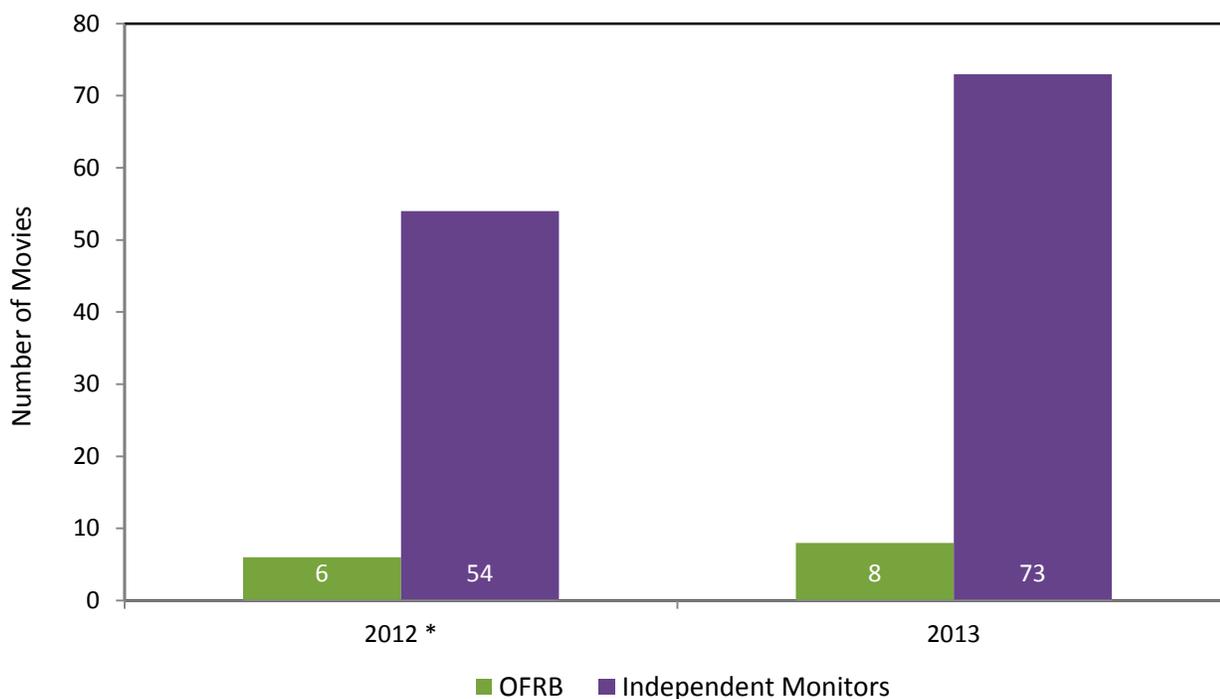
Of the 206 movies (shown in Figure 8) for which the OFRB implemented detail observations of ‘illustrated or verbal references to drugs, alcohol or drugs’, only 149 were classified as having tobacco incidents by independent monitors. The OFRB may have implemented detail observations to the remaining 57 movies because of the occurrence of drugs and alcohol and not because of tobacco. For the 149 movies reported having tobacco incidents, it is unclear if the OFRB issued observations because of drugs, alcohol or tobacco. Nevertheless, the OFRB implemented detail observations to 39% (149/379) of movies that the independent monitors identified as having tobacco incidents. Of those 149 movies, 102 were also tagged with observations of ‘tobacco use’. If both types of detail observations were taken into consideration,

<sup>iii</sup> From January 1 to August 14 in 2008, 80 movies were released. OFRB issued observations of ‘illustrated or verbal references to drugs, alcohol or tobacco’ to 16 (20%) of them whereas independent monitors reported 41 (51%) of them have tobacco incidents.

OFRB issued tobacco related observations to 78% (296/379) of the movies that independent monitors identified as depicting tobacco imagery.

Since the implementation of an OFRB ‘tobacco use’ content advisory in March 2012 to end of 2013, a total of 237 top grossing movies were released in Ontario. The OFRB issued ‘tobacco use’ advisories to 14 (or 6%) of these movies, while independent monitors reported that 127 (54%) of them contained tobacco incidents. In summary, OFRB issued ‘tobacco use’ content advisories for only 11% (14/127) of the movies that independent monitors identified as containing tobacco incidents (Figure 9).

Figure 9: Number of Movies with an OFRB ‘Tobacco Use’ Content Advisory vs. Movies Independently-Reported with Tobacco Incidents, among 237 Movies Released in 2012-2013



\* From Mar 12, 2012

From 2012 to 2013, the share of movies with the OFRB’s ‘tobacco use’ advisories remained unchanged at 6% (partial year 2012: 6/102; 2013: 8/135). Over the same period, independent monitors using the same sample of movies reported 53% (54/102) of the 2012 movies and 54% (73 /135) of 2013 movies included tobacco incidents.

For the 14 movies (6 in 2012 and 8 in 2013) that OFRB issued a ‘tobacco use’ advisory, the agency concurrently issued ‘tobacco use’ observations. Only five of the movies were issued observations of ‘illustrated or verbal references to drug, alcohol or tobacco.’

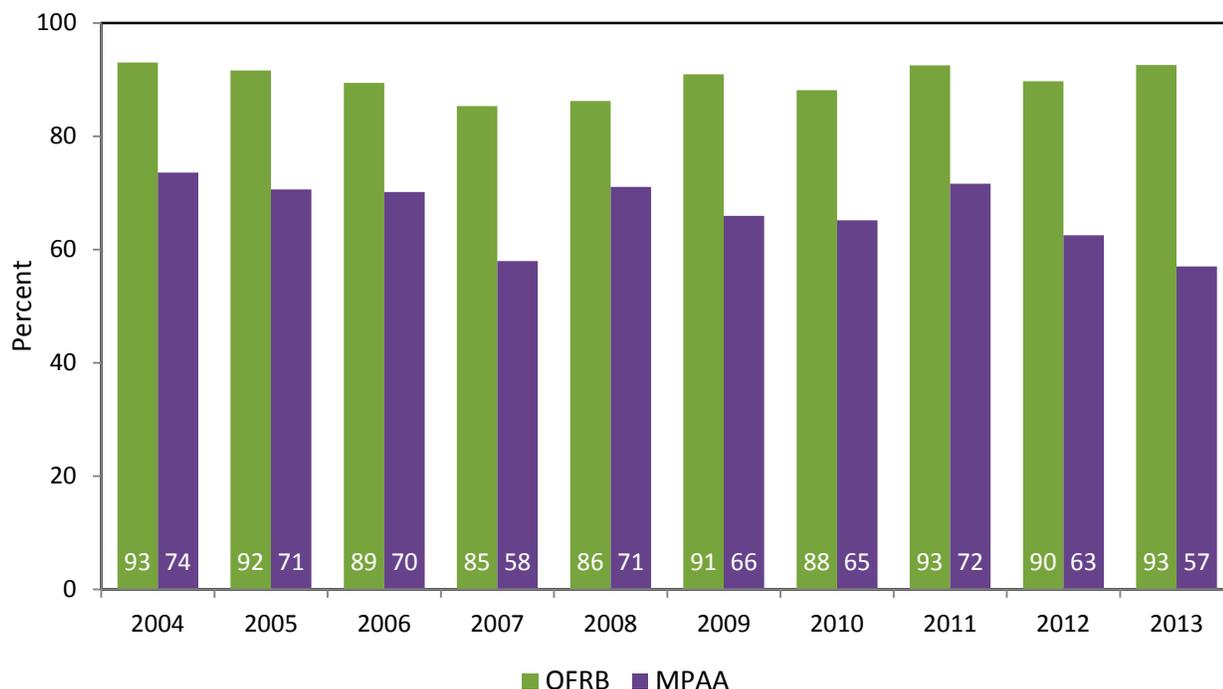
Movies with 50 tobacco incidents or more as reported by independent monitors were more likely to have OFRB issued ‘tobacco use’ content advisories (22%, 8/37) than those with 10-29 tobacco incidents (12%, 4/34) or movies with 1-9 incidents (4%, 2/48). None of the eight movies with 30-49 tobacco incidents were issued ‘tobacco use’ advisories. In addition, movies with tobacco incidents were more likely tagged with ‘tobacco use’ advisories among PG rated movies (21%, 7/34) than 18A (10%, 2/20) and 14A movies (7%, 5/71).

## Comparison of Tobacco Incidents and Tobacco Impressions in Ontario and US

### OFRB vs. MPAA Rating

Figure 10 shows the percentage of all movies in the sample from 2004 to 2013 that were youth-rated by the OFRB and by the Motion Picture Association of America (MPAA), the trade association for the major US movie studios, which runs the age-classification regime in the US.<sup>iv</sup>

Figure 10: Percentage of Movies Youth-rated in Ontario and US, 2004-2013



<sup>iv</sup> Four movies were not rated (NR) in the US but rated PG in Ontario. Since NR films are almost always of a mature/adult nature, we combined R and NR values when reporting “R-rated” movies in US. Two of these four movies have tobacco content for a total of 16 incidents with 5.8 million tobacco impressions for US and 249,000 tobacco impressions for Ontario.

From 2004 to 2013, the OFRB rated 90% (1289/1434) of the top-grossing movies shown in both Ontario and the United States as appropriate for youth; 44% of all movies were rated PG, 35% were rated 14A and 11% were rated G.

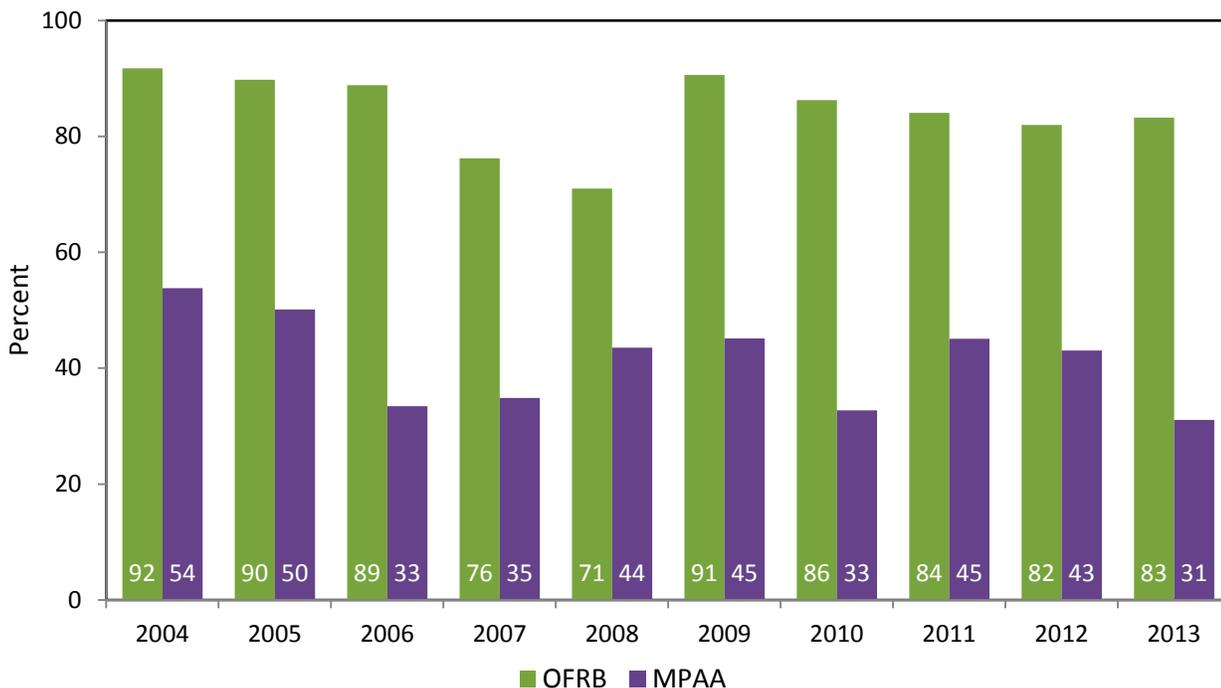
In comparison, the MPAA rated 67% (955/1434) of the same movie sample as appropriate for youth; 45% of all movies were rated PG-13, 18% rated PG, and 3% rated G (percentage may not add up due to rounding).

From 2004 to 2013, the percentage of youth rated movies in Ontario was greater than that in the US because 70% (334/479) of adult-rated (R rated) movies in US were given a youth rating in Ontario. Ninety-seven percent (324/334) of these “down rated” movies were classified as 14A in Ontario.

### Tobacco Incidents

The percentage of incidents in youth-rated movies in Ontario and in US over time is shown in Figure 11. In Ontario, 85% (22757/26850) of all tobacco incidents in top-grossing movies released to theatres from 2004 to 2013 were found in youth-rated movies, including 52% rated 14A, 31% rated PG and 2% of G rated movies. The percentage of incidents in the OFRB youth-rated movies slipped in 2007 and 2008 but soon bounced back to over 80%.

Figure 11: Percentage of Tobacco Incidents in Youth-rated Movies in Ontario and US, 2004-2013



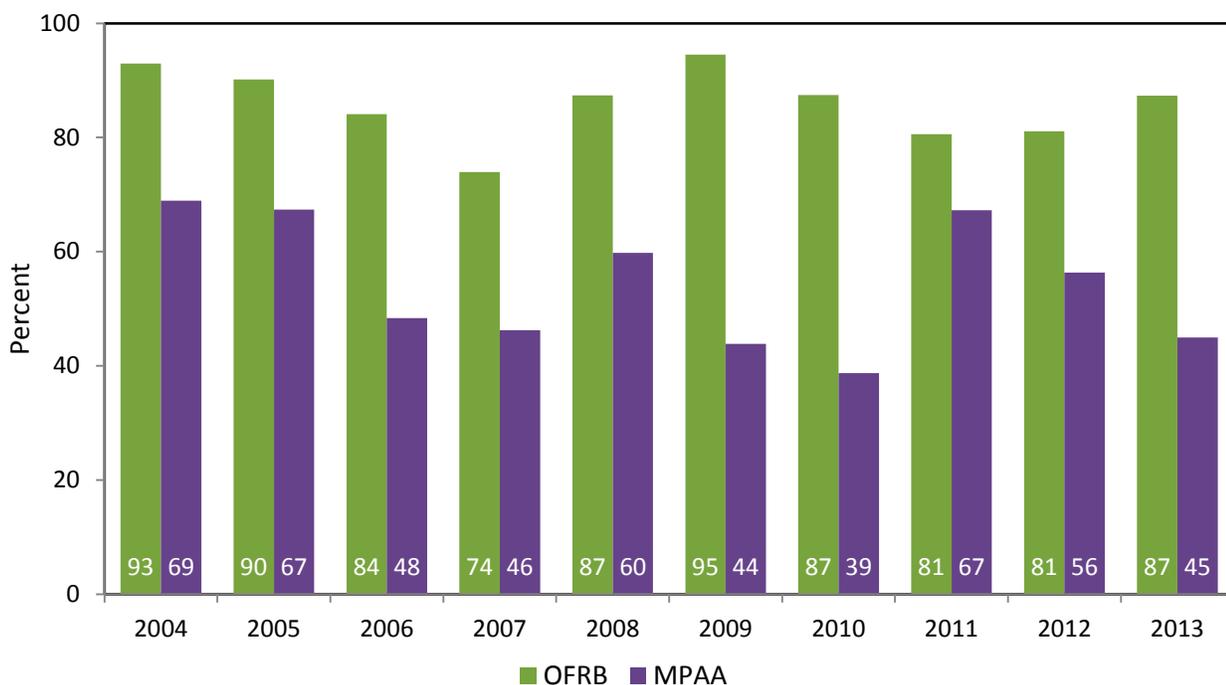
It is striking that for the sample of movies reviewed, tobacco incidents found in movies youth-rated in the US (11186 of 26850 incidents), were less than half of that in Ontario. In the US, youth-rated movies accounted for 42% of all tobacco incidents, with 37% in PG-13, and 5% in PG and G rated movies (more than 4% in PG movies). In comparison to Ontario, the percentage of incidents in MPAA youth-rate movies showed more variation over time.

Ontario's rating practices have made more than two-thirds of US R-rated movies more accessible to young Ontario audiences. Since these movies include more smoking than PG-13 movies on average,<sup>14</sup> this has potentially increased Ontario youth's exposure to onscreen tobacco imagery substantially compared to their US counterparts.

### Tobacco Impressions

Because of the OFRB's movie classification practices, youth-rated movies delivered 7 billion tobacco impressions to Ontario theatre audiences between 2004 and 2013; 86% (7.0/ 8.1 billion) of all in-theatre tobacco impressions delivered over the survey period. PG rated movies delivered 44% of tobacco impressions, 14A movies delivered 41% and G rated movies delivered 1% (Figure 12). In contrast, in the US, youth-rated movies delivered 55% (106/191 billion) of all in-theatre tobacco impressions.

Figure 12: Percentage of In-Theatre Tobacco Impressions Delivered by Youth-rated Movies, in Ontario and US, 2004-2013



## Adolescent Smoking and Premature Deaths Attributable to Onscreen Tobacco in Movies

We estimated the impact of tobacco imagery in movies based on the attributable risk fraction of 37% of youth smokers being recruited to smoking because of the exposure (Table 2). Over the seven years (2005 and 2007 to 2012) for which data were available from the Canadian Community Health Survey, the number of smokers age 12-17 in Ontario who were recruited to smoking because of exposure to onscreen smoking was on average 13,241 smokers for a year.

Tobacco use will eventually kill 32% of age 12-17 smokers, half before age 70 and half after. For the seven years under study, we projected that exposure to onscreen smoking will cause, on average, 4,237 premature deaths among Ontarians aged 12-17.

**Table 2: Estimated Numbers of Ontarians Aged 12-17 Recruited to Smoking Because of Exposure to Onscreen Smoking and Projected Premature Deaths**

	Year							Average over 7 years
	2005	2007	2008	2009	2010	2011	2012	
Number of smokers, <sup>a</sup> age 12-17	51,500	38,800	32,000	44,100	40,100	22,800	21,200	35,786
Number of smokers age 12-17 recruited to smoking <sup>b</sup>	19,055	14,356	11,840	16,317	14,837	8,436	7,844	13,241
Number of premature deaths attributed to smoking in movies <sup>c</sup>	6,098	4,594	3,789	5,221	4,748	2,700	2,510	4,237

<sup>a</sup> Someone who has smoked at least 100 cigarettes in his or her life and smoked within the last 30 days

<sup>b</sup> Multiplying the number of smokers by 0.37 (details in Method Section)

<sup>c</sup> Multiplying the number of smokers recruited to smoking by 0.32 (details in Method section)

## Discussion

The study results indicate that in the ten-year survey period from 2004 to 2013, more than half (57%) of top-grossing movies in Ontario featured onscreen tobacco – and that 86% of the movies with onscreen tobacco were youth-rated. Eighty-five percent of tobacco incidents and 86% of the tobacco impressions delivered to Ontario theatre audiences came from movies that were youth rated by the Ontario Film Review Board.

The study found discrepancies between the tobacco-related labels posted by the OFRB and the tobacco content reported by independent monitors. The OFRB tended to issue tobacco related detailed observations and content advisories for movies with a higher number of tobacco incidents. Further exploration is warranted to better understand the OFRB practice of applying tobacco alerts to movies.

Our estimates of the impact of onscreen tobacco in movies is substantial: on average, 13,241 adolescent smokers in a year and a subsequent 4,237 premature deaths could be prevented if there were no onscreen smoking exposure. Yet, other factors need consideration. There is a dose-response relationship between onscreen tobacco exposure and youth smoking. In Ontario where the rating system is less conservative than that in the US, the risk of youth smoking attributable to exposure to onscreen tobacco in movies is probably higher than the 37% derived from US studies. The UK, whose rating system is also less conservative than the US, has encountered a similar scenario.<sup>15</sup> In addition, the absence of conventional cigarette advertising in Ontario may increase the relative importance of movies as a promotion medium and thereby increase the attributable risk fraction.

The Smoke-Free Ontario Scientific Advisory Committee notes that an effective way to reduce youth exposure to onscreen tobacco in Ontario is to require adult ratings (18A in Ontario) for movies with any tobacco imagery. This policy measure has been recommended by public health stakeholders and institutions provincially, nationally and internationally.<sup>10,11,12</sup> The 2014 US Surgeon General Report has estimated 5.6 million youth (17 and younger) alive in the US now will die prematurely because of smoking and that a US R rating for movies with tobacco content in the United States would cut youth smoking by 18%. This means that in the US, an R rating for smoking would avert 1 million tobacco deaths in the nation's rising generation.<sup>4</sup>

In Ontario – based on the same projection and with greater potential exposure afforded by the OFRB rating practices – adult rating (18A) of future movies with smoking would have, proportionately, an even greater impact.

Moreover, the public appears to be supportive of this measure as 52% of adults in Ontario agreed that movies with tobacco should be rated as restricted (R).<sup>19</sup>

## Appendix 1: Movie Rating Systems

Figure 13: OFRB & MPAA Rating Systems

Ontario Film Review Board rating system		Motion Picture Association of America rating system	
 <b>G</b> Suitable for all	Suitable for viewers of all ages.	General Audiences 	Nothing that would offend parents for viewing by children.
 <b>PG</b> Parental guidance advised	Parental guidance is advised. Theme of content may not be suitable for all children.	Parental Guidance Suggested 	Parents urged to give "parental guidance." May contain some material parents might not like for their young children.
 <b>14<sup>A</sup></b> Persons younger than 14 must be accompanied by an adult	Suitable for viewing by persons 14 years of age and older. Persons under 14 must be accompanied by an adult. May contain: violence, coarse language and/or sexually suggestive scenes.	Parents Strongly Cautioned 	Parents are urged to be cautious. Some material may be inappropriate for pre-teenagers.
 <b>18<sup>A</sup></b> Persons younger than 18 must be accompanied by an adult	Suitable for viewing by persons 18 years of age and older. Persons under 18 may attend but must be accompanied by an adult. May contain: explicit violence, frequent coarse language, sexual activity and/or horror.	Restricted 	Contains some adult material. Parents are urged to learn about the film before taking their young children with them.
 <b>R</b> Restricted to persons 18 or older	Admittance restricted to persons 18 years of age and over. Content not suitable for minors. May contain: frequent use of sexual activity, brutal/graphic violence, intense horror and/or other disturbing content.	No One 17 And Under Admitted 	Patently adult. Children are not admitted.

Source: <http://smokefreemovies.ca/content/our-current-ratings-system>

Figure 14: OFRB Rating Classification Guideline

Quick Reference Guide To The Elements						
	 <b>General</b>	 <b>Parental Guidance</b>	 <b>14A</b>	 <b>18A</b>	 <b>Restricted</b>	POSSIBLE INFO PIECES
Age Suitability	Suitable for All	Parental Guidance Advised	Persons younger than 14 must be accompanied by an Adult.	Persons younger than 18 must be accompanied by an adult	Restricted to persons 18 years of age or over	<ul style="list-style-type: none"> <li>• Not Recommended for Children</li> </ul>
Language	Infrequent use of mild profanity such as damn, damn, hell, ass and god.	Use of expletives, such as bastard, shit, f***k (X3), and/or limited slurs, mild sexual references. Blasphemy. Derogatory portrayals, such as fatso and tubby.	Coarse language and/or slurs directed to specific segments of society; excessive use of expletives; sexual references. Infrequent strong, aggressive language. Derogatory portrayals such as lard ass and those.	Very intense and aggressive coarse language usually accompanied by violence directed towards the person(s). Aggressive/ frequent slurs/sexual references.	No restriction.	<ul style="list-style-type: none"> <li>• Not Recommended for Young Children</li> <li>• Some Scary Scenes</li> <li>• Cartoon/ Animation Action</li> <li>• Mature Theme</li> <li>• Language May Offend</li> <li>• Coarse Language</li> </ul>
Violence (see Note 3)	Restrained portrayals of limited violence which may result in extremely limited bloodletting.	Restrained portrayals of non-graphic violence. The portrayals are not prolonged; there are no close-ups; bloodletting and/or tissue damage is limited.	Portrayals of graphic violence resulting in blood-letting and/or tissue damage which may or may not be fatal. Violence should be within the context of the film.	Frequent and/or prolonged portrayals of graphic violence resulting in bloodletting and/or tissue damage. Limited instances of brief, visually explicit portrayals of violence. Graphic torture/brutality. Graphic sexual violence.	Visually explicit portrayals of violence which may be characterized by extreme brutality, extreme bloodletting and extreme tissue damage, torture, horror and sexual violence.	<ul style="list-style-type: none"> <li>• Language not evaluated</li> <li>• Subtitled</li> <li>• Crude Content</li> <li>• Violence</li> <li>• Graphic Violence</li> <li>• Brutal Violence</li> <li>• Sexual Violence</li> <li>• Nudity</li> <li>• Sexual Content</li> <li>• Explicit Sexual Content</li> <li>• Gory Scenes</li> <li>• Frightening Scenes</li> <li>• Disturbing Content</li> <li>• Substance Abuse</li> <li>• Tobacco Use</li> </ul>
Nudity	Non-sexual nudity with no close-ups (including still images.)	Nudity in a non-sexual context, non-exploitative close-up (including still images.)	Limited nudity in a brief sexual situation.	Limited instances of nudity in a sexual situation.	Nudity in a sexual situation.	
Sexual Activity	Limited embracing and kissing .	Embracing, kissing; mild sexual innuendo.	Fondling, implied sexual activity; sexual innuendo.	Limited instances of simulated sexual activity.	Simulated sexual activity; explicit sexual activity.	
Horror	Brief moments of mild horror in comedic, historic, or fantasy settings (i.e. dragons, giants, wicked witches.)	Scenes containing some grotesque images may be allowed in a fantasy or comedic context, but there will be no detailed and/or prolonged focus on gory images or suffering.	Occasional gory moments and some horrific/grotesque images, but these will not be detailed.	Gory or grotesque imagery may be more frequent or detailed, but will generally avoid prolonged focus.	Frequent detailed gory/ grotesque images will have a more prolonged or graphic focus and greater frequency.	
Psychological Impact (see Note 2)	Sensitive to scenes or situations related to a child's sense of security and well-being.  Tobacco use. (May be used with any classification.)	Scenes and situations that may cause adverse psychological impact on children. May include frightening or emotionally upsetting situations involving threats, injury, illness, family problems, or death to young people, family member, and animals (particularly pets.) Bullying. Substance referencing. Visual reference. Crude Content.	Occasional upsetting scenes that will tend to be more frightening, intense, disturbing - particularly to younger viewers. Substance abuse. Frequent substance referencing.	Frequent upsetting, disturbing, or frightening scenes that may cause adverse psychological impact on some mature viewers. Detailed/ graphic portrayals of substance abuse.	Scenes and situations may cause extreme adverse psychological impact. May involve intense and compelling terror, acts of degradation, threats of violence, and continuous acts of violence; situations could be accompanied by coarse, abusive, and degrading dialogue. Explicit substance abuse.	
<p><b>Note 1:</b> From time to time, guidelines may be set aside at the Panel's discretion (where social, historic and documentary significance warrants). The reason is to be identified on the Summary Report.</p> <p><b>Note 2:</b> Psychological impact may be a state of mind, mood or feeling and/or other effects on the viewer, resulting from the treatment of scenes and situations within the film. Treatment may include intensity, degree, pace, atmosphere, tone, visual effects, and dialogue.</p> <p><b>Note 3:</b> Portrayals of violence may include armed combat, natural disasters, accidents, hand-to-hand combat, weapons violence, and violent sports. The degree, frequency, and intensity of the acts of violence will be factors in the classification decision.</p>						

Source: [http://www.ofrb.gov.on.ca/english/classification\\_guideline\\_en.pdf](http://www.ofrb.gov.on.ca/english/classification_guideline_en.pdf)

## Appendix 2: OFRB Tobacco Related Detailed Observations and Content Advisory

Figure 15: Example Extracted from the OFRB Online Database

The screenshot displays the OFRB website interface. On the left is a search filter panel with the following sections:

- Search:** A text box containing "gangster squad" and a "Submit" button.
- By Type:** A dropdown menu set to "Feature".
- By Classification:** A list of checkboxes: General (checked), Parental Guidance (checked), 14A (checked), 18A (checked), Restricted (checked), and Adult (unchecked).
- By Format:** A dropdown menu set to "All Formats".
- By Date Range:** Two rows of dropdown menus for "From" (Jan 1 1920) and "To" (May 9 2014).

On the right, the title "GANGSTER SQUAD" is displayed above a table of details:

<b>Date Classified:</b>	Dec 20, 2012
<b>Film Number:</b>	2000105279
<b>Distributor / Submitter / Exhibitor:</b>	WARNER BROS. ENTERTAINMENT CANADA INC.
<b>Running Time (min):</b>	113
<b>Format:</b>	35MM
<b>Language:</b>	ENGLISH
<b>Classification:</b>	14A
<b>Content Advisories:</b>	- COARSE LANGUAGE - GRAPHIC VIOLENCE - TOBACCO USE
<b>Detailed Observations:</b>	- Occasional gory/grotesque images - Coarse language - Stuns - Sexual references - Illustrated or verbal references to drugs, alcohol or tobacco - Occasional upsetting or disturbing scenes - Embracing and kissing - Mild sexual innuendo - Tobacco use - Violent acts shown in clear, unequivocal and realistic detail with blood and tissue damage
<b>Classification Restrictions:</b>	
<b>Exhibition Limitation - Time / Premises:</b>	
<b>Reconsideration:</b>	

At the bottom of the page, contact information for the Ontario Film Review Board is provided: 4950 Yonge Street, Suite 101B, Toronto ON M2N 6K1. Phone: (416) 314-3626 Fax: (416) 314-3632 Toll-free: 1-800-268-6024.

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