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Smoking in top-grossing US movies: 2017

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Smoking in top-grossing US movies

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SUMMARY of FINDINGS

- If historical patterns are maintained, exposure to on-screen smoking will recruit 6.4 million smokers from among today's children. Two million of those recruited to smoke by films will die prematurely from tobacco-induced diseases.
- The number of youth-rated (G/PG/PG-13) films with smoking declined by 50 percent between 2002 (62 films) and 2017 (31 films). The number of such films in 2017 was 29 percent higher than 2016.
- The number of tobacco incidents in youth-rated films declined 31 percent from 2002 (1,296 incidents) to 2016 (893), but 2017 levels were substantially above their historic low (594) in 2010.
- Total in-theater tobacco impressions delivered by youth-rated films declined 75 percent from 2002 (18.2 billion) to 4.6 billion impressions in 2017. Youth-rated impressions in 2017 were 61 percent above their historic low in 2015 (2.9 billion).
- The share of in-theater tobacco impressions delivered by youth-rated films declined from their historic high of 68 percent in 2011 to 34 percent in 2017.
- Most decreases in the number of tobacco incidents in youth-rated movie smoking took place between 2002 and 2010, with no substantial change from 2011 to 2017. If the rate of change observed pre-2010 had persisted, youth-rated movies would have been entirely smokefree by early 2015.
- A greater share of youth-rated films released by independent companies (48%) than from MPAA-member companies (32%) featured tobacco imagery in 2017. Films with any smoking from MPAA-member companies averaged substantially more tobacco incidents than those from independent companies (34 incidents compared to 23 incidents) and delivered six times as many tobacco impressions.
- Films with at least one smoking character based on an actual person who actually smoked ("biographical" films) accounted for half of all tobacco incidents in 2017.
- Youth-rated biographical films averaged more than twice as many tobacco incidents (60) as all other youth-rated films with any smoking (24) between 2010 and 2017.
- Among biographical films from 2010 to 2017, 74 percent of the 526 characters who smoked in these films were fictional characters, not real people who actually smoked.
- Only the proposed R-rating covering all companies, including the independents, and all films, whether low- or high-budget, will protect children and adolescents from the promotional effects of onscreen smoking.

BACKGROUND

In the last two decades, health researchers in more than a dozen countries have repeatedly confirmed what US tobacco companies have known since the late 1920s: movies sell cigarettes.¹ In 2012, after reviewing the scientific evidence, the US Surgeon General concluded that exposure to smoking on screen *causes* kids to smoke.²

Harm from film smoking | Exposure to on-screen smoking is a major factor in smoking initiation. Based on large-scale US studies of exposure effects,³ the US CDC estimated that films will recruit 6.4 million new US smokers from among today's children.⁴ Almost 90 percent of those recruited to smoke by on-screen exposure will start smoking before age 18.⁵ Two million of them will ultimately die from tobacco-induced diseases, including heart disease, lung cancer, stroke, and emphysema.⁶ One million of these deaths will be from exposure to smoking in movies that the MPAA rates as appropriate for youth (G/PG/PG-13).

The encouraging news is that reducing kids' exposure to on-screen smoking will reduce kids' risk of smoking. In January 2014, the US Surgeon General reported that eliminating smoking from youth-rated films by R-rating future films with tobacco imagery would cut the impact on kids in half, reducing teen smoking rates by 18 percent.⁷ Doing so would avert one million of the 5.6 million projected future tobacco deaths among children alive today.⁸

Widely-endorsed policy solutions | A modernized R-rating would be based on the Surgeon General's conclusion that on-screen smoking causes youth smoking. The rating for a film is routinely determined as part of the marketing plan for a film before it is made, so film producers already calibrate screenplays, film direction, and editing to achieve the rating that is desired for marketing purposes.

An R-rating updated for smoking would supply the same market incentive as today's R-rating exerts on strong language, grisly violence, and sexualized nudity. With an R-rating for smoking, filmmakers would remain free to include smoking in any film they want, just as they are currently free to include strong language, grisly violence, and sexualized nudity, knowing that doing so will trigger an R-rating. All that the R-rating for smoking will do is to keep tobacco imagery *out* of films that media companies market to kids.

The proposed R-rating for tobacco would exempt films that portray tobacco use by actual people who actually used tobacco, such as the subject of a biographical drama or documentary.⁹ (This exception does not extend to tobacco use by composite or wholly invented characters, or by uncredited extras.) Any genre of film that realistically depicts the health consequences of tobacco use could also be exempted from the R-rating.

Evidence-based policy solutions complementary to the R-rating include:

- (1) strong anti-tobacco spots before films with smoking, in any medium;¹⁰
- (2) producers' certifying that no one associated with their film production entered into any agreement related to tobacco's on-screen presence;¹¹
- (3) ending all tobacco brand display on screen;¹²
- (4) making media productions with smoking ineligible for public subsidies.¹³

These policies have been endorsed by the US Centers for Disease Control and Prevention, the World Health Organization, the Los Angeles County Department of Public Health, and leading national health and medical organizations.

Hollywood's response | In December 2003, at a meeting convened by the major film studios' trade association, the Motion Picture Association of America, leading US film companies were put on notice that they needed to eliminate youth exposure to on-screen smoking.¹⁴ In 2007, in response to repeated requests from state attorneys general,¹⁵ the MPAA itself commissioned Harvard School of Public Health to recommend film industry measures to address this serious public health problem.¹⁶ Harvard recommended to the MPAA: "Take substantive and effective action to eliminate the depiction of tobacco smoking from films accessible to children and youths."¹⁷ Harvard continued, "What's needed is a movie ratings policy that creates an incentive for filmmakers to consider, and worry about, the depiction of smoking as a factor in determine a film's rating. ... [T]he goal should be the elimination (with rare exceptions) of smoking in youth-rated films."¹⁸

Despite mounting evidence of harm, the advice of its own invited expert consultants and public calls for action, the US film industry took modest steps:

- At their own expense, the six MPAA-member companies added State of California-produced anti-tobacco spots to their youth-rated DVDs with smoking between 2008 and 2014;*
- Between 2005 and 2007, three MPAA-member companies — Disney, Warner Bros. and Universal — published corporate policies related to tobacco depictions. In 2012 and 2013, the three other MPAA-member companies — Fox, Sony and Paramount — followed.
- Most of these policies prohibit tobacco product placement deals with the studios themselves; none extend that stipulation to, or require certification of no payoffs from, the production companies contracted to make the films that the studios develop, finance, promote and distribute.
- Subjective language in most company policies allows any youth-rated film to justify inclusion of tobacco imagery. Also, none of the policies prohibits tobacco brand display in the films these companies produce or distribute.

* Time Warner (Warner Bros.) suspended its agreement with California in 2011; the others soon lapsed.

- From 2007 through 2017, the MPAA has added small-print “smoking” labels to 11 percent of all top-grossing, youth-rated films with smoking.

What is the US film industry really doing? | Since 2002, the University of California, San Francisco has collaborated with Breathe California Sacramento Region to analyze onscreen smoking data in the Breathe California Onscreen Tobacco Database.* The database methodically records tobacco incidents in films (shots of tobacco use or implied use within each scene) along with tobacco brand appearances and who uses tobacco in films. Film production details, including production budgets and box office results, are obtained from entertainment industry publications and databases.

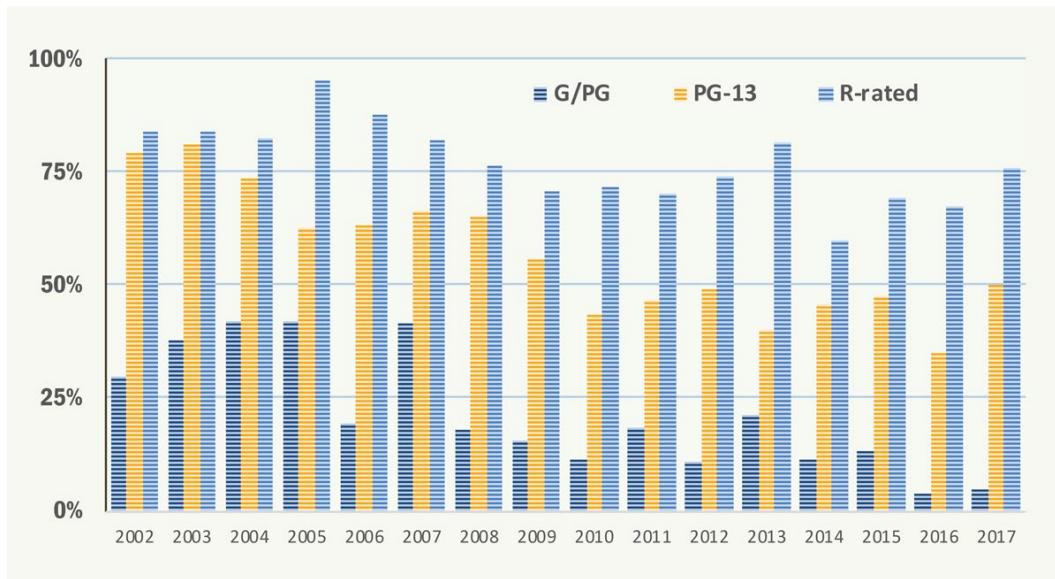
This report analyzes data from the 2,290 top-grossing films released in the domestic market (US and Canada) from 2002 to 2017. Top-grossing films are those that ranked among the top ten films in box office gross in any week of their first-run theatrical release. This analysis addresses five questions, by film rating and by the company responsible for producing and distributing these films:

- 1) What percentage of youth-rated films feature tobacco imagery? (Fig 1)
- 2) How many tobacco incidents are featured in youth-rated films? (Figs 2-4)
- 3) How much tobacco exposure do moviegoers receive? (Fig 5)
- 4) Does tobacco performance vary by company? (Fig 6, Tables 1-2)
- 5) Is all the smoking in biographical films for real? (Figs 7-8, Table 3)

* The Breathe California Onscreen Tobacco Database is publicly accessible at smokefreemovies.ucsf.edu/search/movies.

1 | What percentage of films feature tobacco imagery?

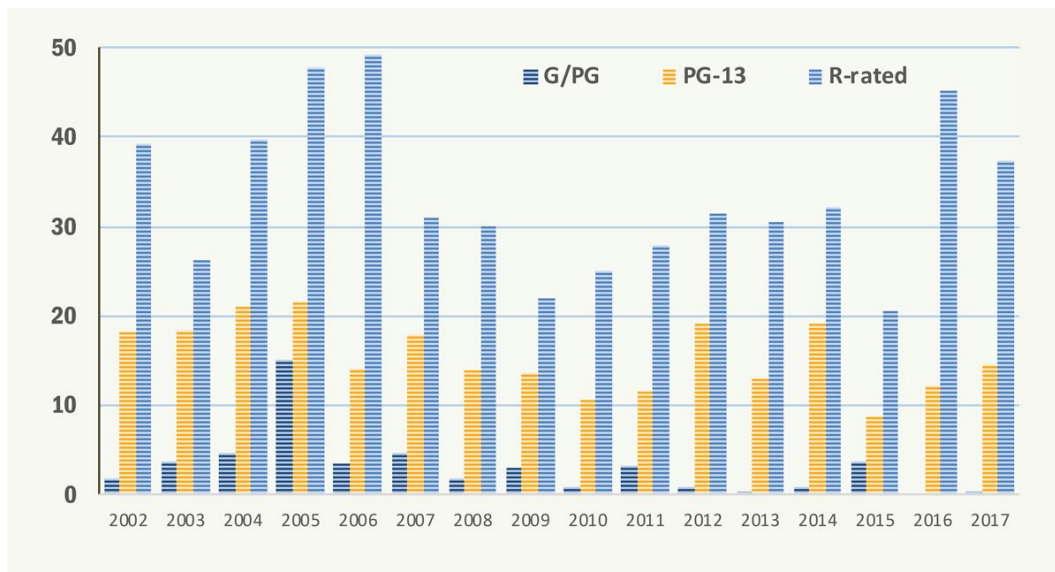
Fig 1 | Percentage of G/PG, PG-13 and R-rated films with tobacco (2002-2017)



Observation: From 2002 to 2017, the percentage of youth-rated (G/PG/PG-13) films depicting tobacco fell from 65 percent to 38 percent. Even so, in 2017, half of PG-13 films (30 of 60) still featured tobacco.

2 | How many tobacco incidents are included in films?

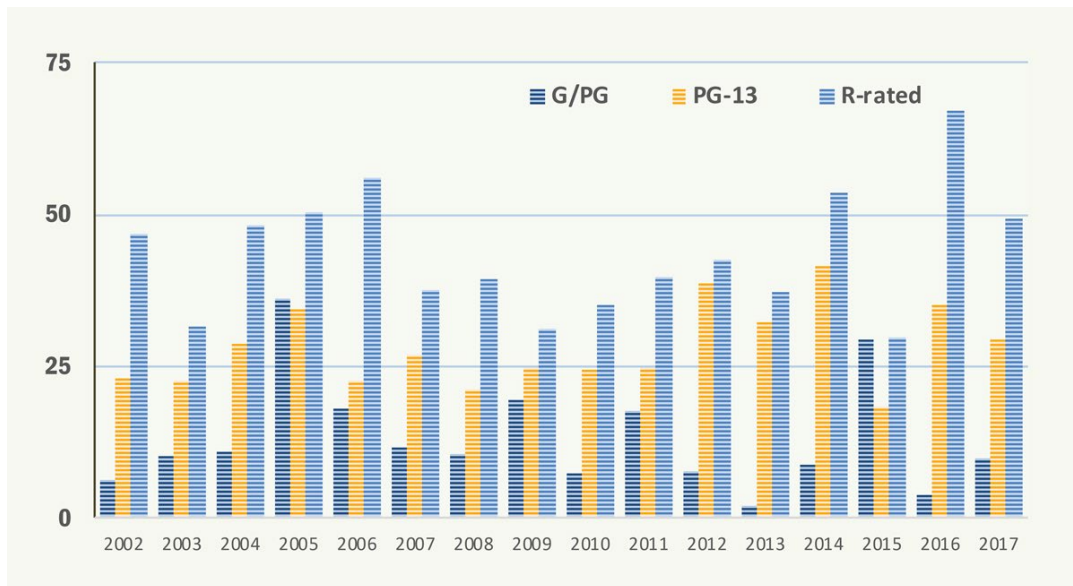
Fig 2 | Tobacco incidents per film (2002-2017)



Observation: To account for fluctuations in the number of films released annually, tobacco incidents are divided by the total number of films in each

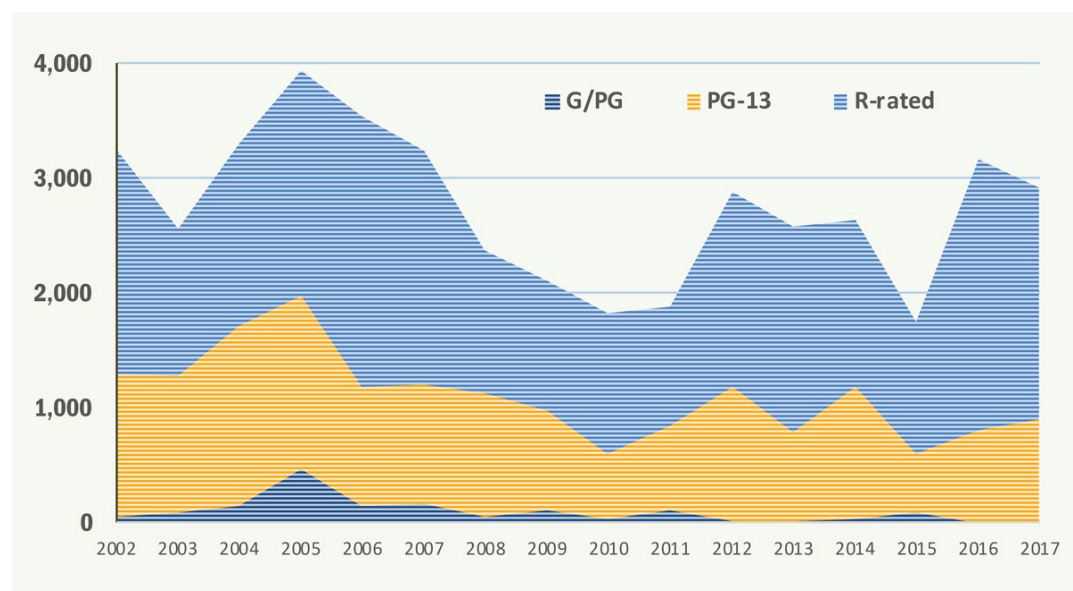
rating class. G/PG films averaged fewer than one incident per film in 2017, matching their historic low in 2013. PG-13 films averaged 15 incidents per film in 2017, compared to their historic low of 9 incidents per film in 2015. R-rated films averaged 37 incidents per film in 2017, 76 percent above their historic low of 21 incidents per film in 2015.

Fig 3 | Tobacco incidents per film with any smoking (2002-2017)



Observation: Tobacco incidents per G/PG film with any smoking in 2017 were five times their historic low of two incidents per film in 2013. PG-13 films with any smoking in 2017 averaged 29 incidents, compared to their historic low of 21 incidents in 2008. Tobacco incidents in R-rated films with any smoking averaged 49 incidents in 2016, substantially above their historic low of 30 incidents in 2015.

Fig 4 | Total tobacco incidents (2002-2017)

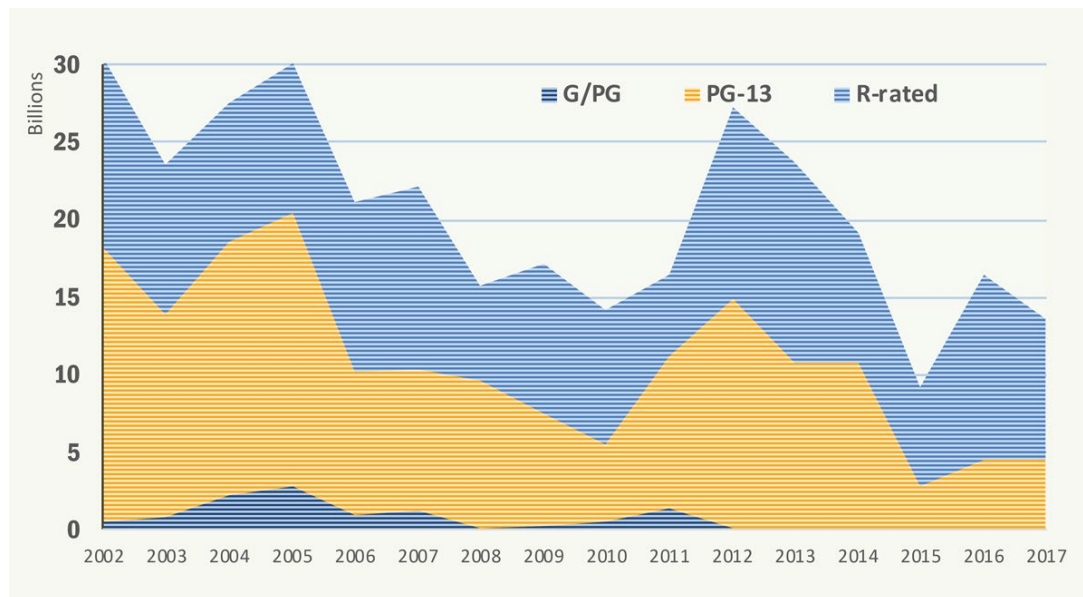


Observation: The total amount of smoking in top-grossing films reached an historic low in 2015 (1,743 incidents) but rebounded to 3,163 incidents in 2016 and were nearly as high in 2017 (2,914 incidents). The total number of tobacco incidents increased substantially in PG-13 films (from 519 in 2015 to 811 in 2016 and 883 in 2017) and doubled in R-rated films (from 1,136 in 2015 to 2,332 in 2016 and 2,021 in 2017).

Incident trends in youth-rated films: As Fig 4 suggests, there was a statistically significant downward trend in the number of tobacco incidents in youth-rated films between 2005 and 2010 ($p=.017$). However, tobacco incidents were essentially flat from 2010 through 2017 ($p=.238$). Had the average rate of decline in tobacco incidents per year observed between 2005 and 2010 been maintained, tobacco incidents would have been eliminated from all youth-rated films by early 2015.*

3 | How much exposure do moviegoers receive?

Fig 5 | Billions of in-theater tobacco impressions (2002-2017)



Observation: In-theater tobacco impressions measure audience exposure, obtained by multiplying tobacco incidents in a film by the number of viewings (paid admissions).[†] Total tobacco impressions from youth-rated films

* The statements about there being a significant decline between 2005 and 2010 but not between 2010 and 2017 is based on fitting linear regressions to the number of incidents in youth-rated films separately. The projection of reaching zero incidents in early 2015 (2015.3) is based on a regression model that allows for a linear decrease between 2005 and 2010 and then a constant value for 2010 and beyond.

[†] Only in-theater impressions can be calculated because in-home viewership data for individual films are not publicly available. In-theater impressions are an index of total exposure. The [British Film Institute](#) (2016) reports that (mainly US) films are viewed 17 times more often on terrestrial and cable/satellite video channels than in UK theaters and that video disc sales/rentals and digital streaming also exceed in-theater views.

climbed 61 percent to 4.6 billion in 2017 from their historic low of 2.9 billion in 2015. On average, a youth-rated film with smoking delivered 148 million tobacco impressions to domestic theater audiences in 2017, 61 percent more than the historically low 92 million impressions such films delivered in 2015.

Is audience size a factor? Tobacco impressions have two components: tobacco incidents in a film X paid admissions to the film. While a decline in total movie theater admissions is often reported, which might contribute to fewer tobacco impressions, the data indicate that the decline is confined to films from *independent* producer-distributors. Across MPAA ratings, admissions per independent film dropped 72 percent (11.8 million to 3.3 million) from 2002 to 2017. Over the same period, admissions per *major-studio* film rose by 19 percent (10 million to 11.9 million). The greatest contrast is among PG-13 films: admissions per independent film fell 82% (from 14.9 million to 2.6 million) but climbed by 30 percent for films from major studios (from 11.5 million to 15 million).

The substantial drop in youth-rated tobacco impressions after 2012 (Fig. 5) is mainly due to the major studios' reducing tobacco *incidents* in their larger-budget, larger-audience films.¹⁹ However, the decline in youth-rated tobacco impressions reversed in 2016.

4 | Tobacco performance varies by company

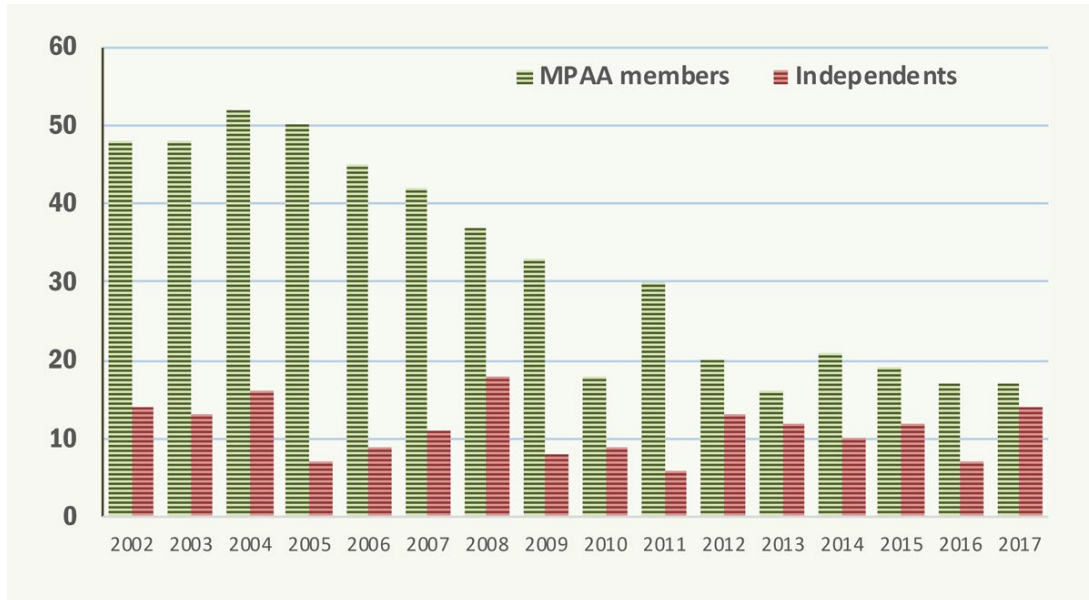
Major studios vs. independents: The *major studios* (MPAA-member companies) accounted for 74 percent (513 of 692) of all top-grossing, youth-rated films with tobacco and for 74 percent (13,040 of 17,680) of youth-rated tobacco incidents between 2002 and 2017. Major studio films also delivered 83 percent (145 billion of 174 billion) of youth-rated tobacco impressions in theaters.

The balance of films, incidents and exposures were delivered by films from *independent film companies* (non-MPAA members). Independents' youth-rated films average half the theater audience (6.1 million vs. 12 million paid admissions per film, 2002-2017) of major studio films, which typically have larger production and advertising budgets. However, a somewhat larger share of independent films than major studio films feature tobacco imagery: 55 percent of independent youth-rated films compared to 44 percent of major studio youth-rated films.

From 2002 to 2017, the number of youth-rated films with any smoking from MPAA member companies and from independent companies have converged (Fig 6). Because of reductions by some MPAA-member companies, in 2017 independents accounted for 45 percent (14 of 31 films) of top-grossing, youth-rated films with tobacco, nearly double their share in 2002 (23%, 14 of 62 films). The independents have reduced neither the number of their youth-rated films with smoking nor levels of tobacco incidents in their youth-rated films over the survey period.*

* With theater audiences declining for independent films and production financing scarce, film producers are striking deals with streaming services (Amazon, Netflix and Hulu) with large development budgets.

Fig 6 | No. of youth-rated films with smoking, by company type (2002-2017)



Tobacco content and exposure vary by company | A short list of companies account for all top-grossing films released each year. Table 1 lists the six major film companies that control the Motion Picture Association of America (MPAA-members) and, considered as a group, the independent film companies whose youth-rated films achieved top-grossing status from 2002 to 2017.

Table 1 | Youth-rated movies with smoking, by company (2016-2017)

	Films with smoking			Tobacco incidents			In-theater impressions (millions)		
	2016	2017	Change	2016	2017	Change	2016	2017	Change
Comcast	2	5	+150%	266	329	+24%	900	1,805	+101%
Disney	1	0	-100%	6	0	-100%	9	0	-100%
Fox	4	2	-50%	145	92	-37%	858	250	-71%
Sony	3	3	0%	144	28	-81%	1,490	415	-72%
Time Warner	2	3	+50%	40	26	-35%	562	746	+33%
Viacom	5	4	-20%	86	98	+14%	341	891	+161%
Independents	7	14	+100%	128	320	+150%	391	525	+34%
Total	24	31	+29%	815	893	+10%	4,551	4,632	+2%

Observation: MPAA-member companies accounted for 71 percent (17 of 24) of youth-rated films with tobacco in 2016 and 55 percent (17 of 31) in 2017. Comcast (5 films), Viacom (4 films) and independents (14 films) together

Migration to streaming by independents with large tobacco footprints coincides with anecdotal reports of more frequent smoking in original streaming series and TV movies easily accessible to young audiences.

accounted for three-quarters (74%, 23 of 31) of all 2017 youth-rated films with smoking. Disney and Fox showed the greatest decline in youth-rated films with smoking from 2016 to 2017, while Comcast and the independents showed the largest increases and Sony showed no change.

Tobacco incidents in youth-rated films released by independents more than doubled from 2016 to 2017 (from 128 incidents to 320). Incidents in Comcast's (Universal) films also increased substantially (from 266 incidents to 329). Sony showed the largest decline (from 144 incidents to 28).

Overall, tobacco impressions delivered by youth-rated films were essentially unchanged from 2016 to 2017 (4.6 billion). Impressions doubled from Comcast's youth-rated films (from 900 million to 1.8 billion). Comcast, Viacom (Paramount) and Time Warner's youth-rated films together accounted for the largest shares of audience exposure: 74 percent (3.4 billion of 4.6 billion impressions), with Viacom showing the second-largest absolute increase in impressions, after Comcast: more than half a billion.

Disney, for the second time since 2014, released no youth-rated films with tobacco imagery in 2017. The only other MPAA-member company to keep its youth-rated films smokefree was Time Warner in 2010. The low number of tobacco incidents for some companies, in some years from 2010 to 2017 (Table 3, highlighted in yellow), shows it is feasible for both MPAA-member companies and independents to eliminate nearly all tobacco imagery from their PG-13 films, as they have done from their other (G/PG) youth-rated films. At the same time, rebounds in the levels of smoking in films from other companies that have adopted tobacco depiction policies with the declared intention of reducing tobacco content in their youth-rated films demonstrates that these policies, in themselves, are inadequate to protect young audiences from exposure to tobacco on screen.

Table 2 | Tobacco incidents per PG-13 film, by company (2010-2017)

	2010	2011	2012	2013	2014	2015	2016	2017
Comcast Universal	3	8	7	8	19	1	24	37
Disney	0	30	34	11	0	31	1	0
Fox	12	29	41	1	14	14	24	18
Sony	17	14	18	4	26	3	16	5
Time Warner	0	9	29	28	2	4	4	4
Viacom Paramount	29	8	18	3	8	1	10	20
MPAA-members	10	14	23	12	13	8	14	16
Independents	12	2	12	16	33	11	8	13
TOTAL	11	12	19	13	19	9	12	15

5 | Tobacco use in “biographical” films

The biographical exception | The widely-endorsed proposal to R-rate future films with tobacco imagery, advocated since 2002, includes a possible exception for a “presentation of tobacco” that is “necessary to represent the smoking of a real historical figure.”⁹ While the R-rating for tobacco imagery is not yet implemented by the MPAA or endorsed by its members, half of the major studios that adopted their own tobacco depiction policies between 2007 and 2013 also specifically include *biographical* exceptions (Disney, Fox, Time Warner) while the others allow less specific rationales to suspend their policies. Examples:

Comcast (2007): “Smoking incidents may be permitted in a youth-rated film only when there is a substantial reason for doing so.”

Disney (2015 revision): “Disney has determined not to depict cigarette smoking in movies produced by it after 2015...that are rated G, PG or PG-13, except for scenes that...depict a historical figure who may have smoked at the time of his or her life...”

Fox (published 2013): “Where Fox is the lead or sole producer, we will seek to limit cigarette smoking and tobacco depiction in films that are not rated R or NC-17 to scenes in which smoking is part of the historical, *biographical* or cultural context of the scene or is important to the character or scene from a factual or creative standpoint...” [emphasis added]

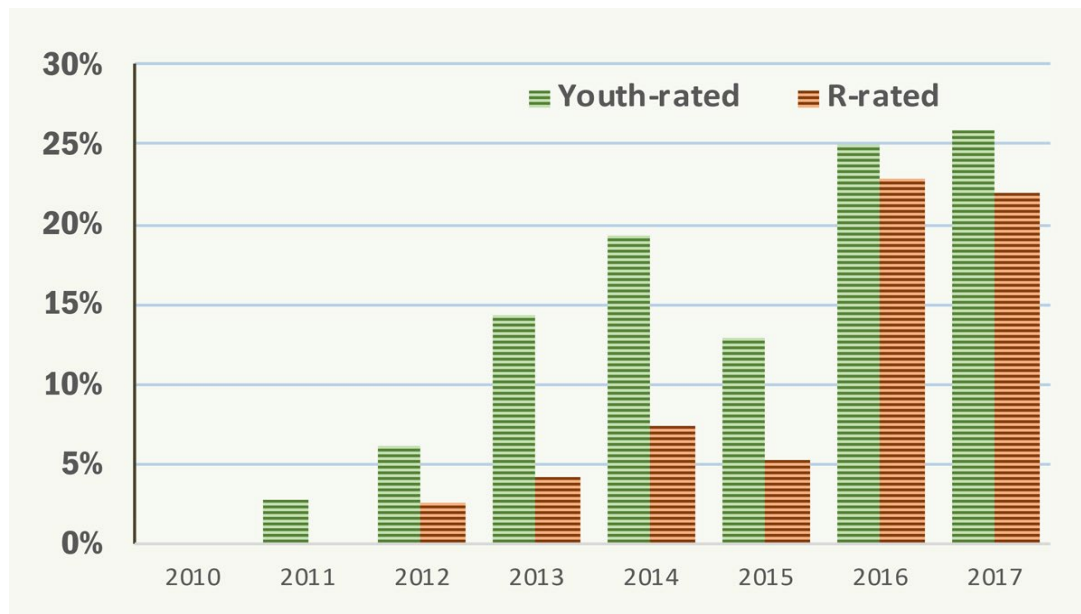
Sony (2012): “[T]here will be a working presumption that youth-rated films produced and distributed in the United States shall not feature depictions of tobacco use unless there is a compelling creative justification that may include, but is not limited to, factors such as historical accuracy or an important tie to the creative context of the project and vision of the filmmaker.”

Time Warner (2007 revision): “Time Warner filmed entertainment companies endeavor to reduce or eliminate depictions of smoking and tobacco products/brands from all English-language motion pictures it produces and/or distributes in the United States rated G, PG, and PG-13 through vigilant communications with the creative team on films in which such depictions are contemplated unless (a) the depiction involves a character who is an actual historical figure known to have used tobacco products...”

Viacom (2013): “Paramount discourages the depiction of smoking or tobacco in youth-rated films. Paramount will communicate this policy to its filmmakers, but also will take into account the creative vision of the filmmakers recognizing that there may be situations where a filmmaker believes that the depiction of smoking or tobacco is important to a film.”²⁰

Surge in biographical films | From 2002 to 2009, just one percent of top-grossing, *youth-rated* films with smoking included a biographically-based character who smoked (4 of 451 films). From 2010 to 2017, the share rose to 13 percent (31 of 241 films). By 2016 and 2017, more than one-quarter of all youth-rated smoking films included a bio-based character who smoked. The share of *R-rated* films with smoking and a bio-based smoker has also increased: from two percent in the years 2002-2009 (5 of 319 total films) to 8 percent from 2010 to 2017 (24 of 290 films). The surge in bio-based smoking films coincided with the last major studios' adopting tobacco depiction policies in 2010-2013* (Fig 7).

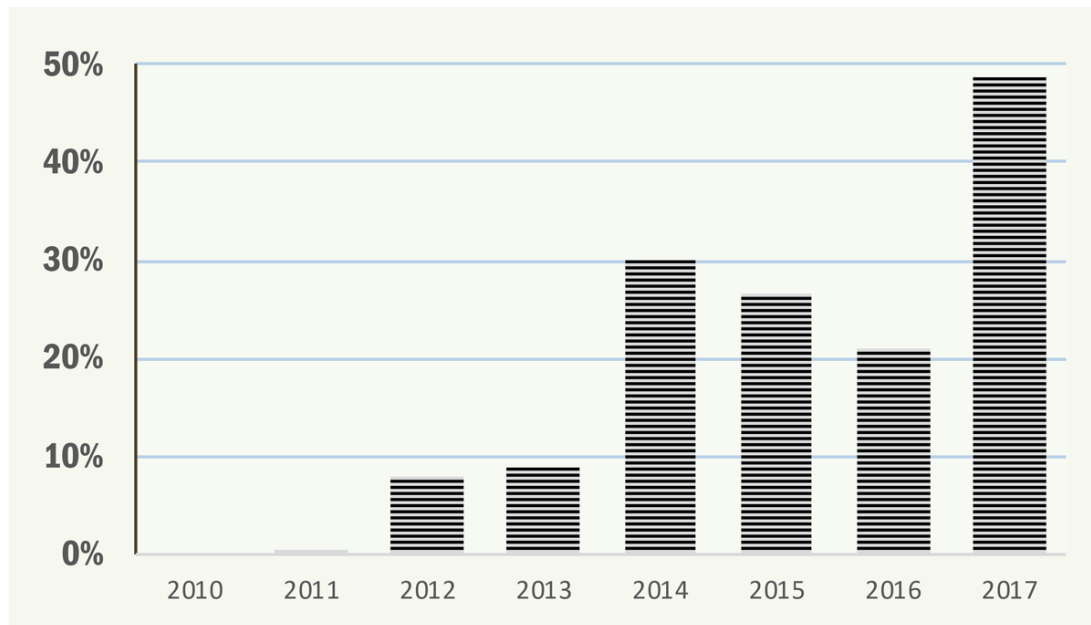
Fig 7 | Share of smoking films that are bio-based (2010-2017)



Across MPAA ratings, the share of smoking films that were biographically-based climbed from one percent in 2002 (1 of 104 films) to nearly one-quarter in 2017 (24%; 17 of 72 films). Six times as many biographically-based smoking films were released in the eight years after 2010 (55 films) than in the eight years before 2010 (9 films).

More tobacco incidents in bio films | As biographical films with smoking have become more common from 2010 to 2017, they have accounted for a larger share of all the tobacco incidents in top-grossing films. From zero tobacco incidents in 2010, bio films grew to feature nearly half of all tobacco incidents (49%, 1,390 of 2,859) in 2017 films (Fig 8).

* Other factors that might lead to a spate of biographical films include (1) relatively lower costs for acquisition of rights to biographical material, and (2) a film distributor turning a solid profit on a biographical film, inspiring competitors to greenlight more such projects.

Fig 8 | Bio films' share of tobacco incidents, all MPAA ratings (2010-2017)

Bio films with smoking average more tobacco incidents than the general run of top-grossing films. From 2010 to 2017, each youth-rated bio film with any smoking averaged 60 tobacco incidents, more than double the 24 incidents averaged by all other youth-rated films with smoking. Bio films with an R-rating (for non-tobacco reasons) featured twice as much smoking (79 incidents per bio film vs. 40 incidents for all other R-rated films with smoking).

Most smokers in bio films are invented | Each of the top-grossing bio films depict at least one real historical person who used tobacco. But what of the other characters who smoke? We consulted online sources to identify real and invented characters in cast lists of films with at least one smoker known to be based on an actual person (Table 3).*

* Data sources included IMDbPro.com, HistoryVsHollywood.com and legitimate news and history sites.

Table 3 | Tobacco incidents, impressions and characters in top-grossing films with at least one biographically-based character who smokes (2010-2017)

	MPAA-members		Independents				Total					
	Y-rated	R-rated	Y-rated	R-rated	Y-rated	R-rated	Y-rated	R-rated				
Films	19	12	9	11	28	23						
Incidents	1,430	977	497	967	1,927	1,944						
Impressions (billions)	10.83	6.40	2.47	2.50	13.30	8.90						
SMOKING CHARACTERS				SMOKING CHARACTERS				SMOKING CHARACTERS				
	Real	Invented	Real	Invented	Real	Invented	Real	Invented	Real	Invented	Real	Invented
Lead	18	9	12	1	9	0	12	0	27	9	24	1
Supporting	17	10	16	26	14	2	33	18	31	12	49	44
Background	0	83	0	90	0	52	0	104	0	135	0	194
TOTAL	35	102	28	117	23	54	45	122	58	146	73	239
% Invented	74%		81%		70%		73%		72%		77%	

Observation | The 51 top-grossing, bio-based films with any smoking released from 2010 to 2017 featured 3,870 tobacco incidents and delivered 22.2 billion in-theater audience impressions. The films included 526 characters using tobacco products, of whom 61 (12%) were leads, 136 (27%) were credited secondary characters and 329 (61%) were uncredited background characters (“extras”). Of the lead characters who smoked, 16 percent (10 of 61) were invented; of the supporting characters who smoked, 41 percent (56 of 136) were invented; and all 329 uncredited extras who smoked were, by definition, invented.

Overall, invented smokers outnumbered real smokers in these top-grossing bio films by 3 to 1. There was no substantial difference between major studio films (78%) and independent films (69%) in the percentage of smokers who were invented. However, the R-rated films averaged twice as many invented smokers as did youth-rated films (10.3 invented smokers per film compared to 5.2 invented characters).

CONCLUSION

The US film industry has known for fifteen years that their films with smoking put young audiences at substantial physical risk of addiction and early death from smoking.

While fewer larger-budget, youth-rated films now feature tobacco content than in the early 21st Century, the decline in tobacco incidents has stalled since 2010 and reductions in in-theater audience exposures from youth-rated films have reversed

in recent years. Major studio films still deliver the majority of tobacco exposures, despite these companies' having adopted individual tobacco depiction policies by 2013.

Media consumption is migrating to smaller screens, most quickly among adolescents, and the US film industry is pushing to adapt to over-the-top (streaming) services which are investing billions of dollars in original video series and feature films. Production companies associated with smoking films are now active in premium (paid) cable and streaming projects. Systematic monitoring of these new channels, on the scale now devoted to film, is needed to quantify the intensity and sources of young audiences' tobacco exposure and to inform effective policies to reduce that exposure.

Given the tobacco industry's nearly century-long history of exploiting film and television to promote smoking, and the major studios' demonstrated inability to deal responsibly with tobacco content individually, only the R-rating promises to permanently protect young audiences in the US and around the world who are at palpable risk of tobacco addiction, physical disability, and early death.

Updating the existing MPAA rating system to R-rate tobacco imagery is the only evidence-based method to set a transparent, enforceable, uniform standard covering films of all genres and budgets released by all film distributors. The R-rating will create a self-enforcing, voluntary market mechanism to reserve smoking for films not marketed to kids.

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- ⁴ 0.37 attributable risk applied to 17,371,900 projected smokers among Americans 0-17 today. Source for projected smokers: US Department of Health and Human Services. The health consequences of smoking — 50 years of progress: A report of the Surgeon General. Table 12.2.1 Prevalence of current smoking among adults, 18–30 years of age, and projected number of persons, 0–17 years of age, who will become smokers and die prematurely as adults because of a smoking-related illness, by state — United States, 2012. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. 2014. Available at www.surgeongeneral.gov/library/reports/50-years-of-progress/
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- ⁶ PSAM 0.32. Centers for Disease Control and Prevention. Projected smoking-related deaths among youth—United States. *Morbidity and Mortality Weekly Report* 1996;45(44): 971–4. Available at www.cdc.gov/mmwr/preview/mmwrhtml/00044348.htm
- ⁷ US Department of Health and Human Services (2014)
- ⁸ US Department of Health and Human Services (2014)
- ⁹ UCSF Center for Tobacco Control Research and Education. Policy solutions: R-rate films with tobacco. Accessible at <https://smokefreemovies-prod.ucsf.edu/policy-solutions/r-rate-films-tobacco>
- ¹⁰ UCSF. Policy solutions: Strong antismoking ads. Accessible at <https://smokefreemovies-prod.ucsf.edu/policy-solutions/strong-anti-smoking-ads>

- ¹¹ UCSF. Policy solutions: Certify no pay-offs. Accessible at <https://smokefreemovies-prod.ucsf.edu/policy-solutions/certify-no-pay-offs>
- ¹² UCSF. Policy solutions: No tobacco brand display. Accessible at <https://smokefreemovies-prod.ucsf.edu/policy-solutions/tobacco-brand-display>
- ¹³ UCSF. Policy solutions: End public subsidies. Accessible at <https://smokefreemovies-prod.ucsf.edu/policy-solutions/end-public-subsidies>
- ¹⁴ On 17 December 2003, in Los Angeles, Dartmouth researcher Madeline Dalton, PhD, presented results from the first large-scale population study of movie-smoking's impact on adolescents to production executives from each MPAA-member studio. The presentation discussed the value of an R-rating for smoking. Sources: Dalton M. Personal communication to the authors; letter from Maryland Attorney General J. Joseph Curran to MPAA president Jack Valenti, 2 January 2004.
- ¹⁵ UCSF. Policy solutions: State attorneys general and the US film industry: Timeline. Accessible at <https://smokefreemovies.ucsf.edu/policy-solutions/attorneys-general/film-industry>
- ¹⁶ Bloom BR, Samet JM, Winsten JA (2007). Presentations to the Motion Picture Association of America (MPAA) on smoking in the movies. Harvard T.H. Chan School of Public Health. Accessible at <https://www.hsph.harvard.edu/mpaa/>
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