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Publication Date

2020-05-01

Smoking in top-grossing US movies

2019

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This publication is available at

<https://escholarship.org/uc/item/86q9w25v>

May 2020



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SUMMARY of FINDINGS

Movies with smoking, tobacco incidents and audience impressions

- In 2019, 51 percent of top-grossing US movies depicted tobacco, including 23 percent of G/PG movies, 43 percent of PG-13 movies and 76 percent of R-rated movies — all above their historic lows in 2016.
- The amount of smoking in top-grossing movies rose to 3,618 incidents in 2019, the most in more than a decade. G/PG-rated tobacco incidents increased from 2018 to 2019. PG-13 incidents declined in 2019 but remained substantially above their historic low. R-rated incidents reached their highest level since 2002, when this survey began.
- PG-13 impressions fell from 10.3 billion in 2018 to 3.6 billion in 2019. R-rated tobacco impressions tripled to 19.4 billion in 2019, the most since this survey began.
- In-theater tobacco impressions more than doubled over the past five years, from 9.3 billion in 2015 to 23.7 billion in 2019.

Movie company performance

- For the first year since this survey began, in 2019 independent movie companies accounted for more than half of youth-rated movies with smoking, youth-rated tobacco incidents, and youth-rated tobacco impressions. Independents also released a historically high number of R-rated movies with smoking.
- Major studios AT&T (Warner), Comcast (Universal), Disney and Sony reduced the number of their youth-rated movies with smoking from 2018 to 2019. ViacomCBS was unchanged. Major studios increased tobacco incidents in their R-rated movies to historically high levels.

Update: Biographical dramas

- In 2019, biographical dramas accounted for 60 percent all youth-rated tobacco incidents. Fewer than one in five characters shown smoking in 2019 biodramas had any biographical basis.

Update: E-cigarettes in movies

- Movies released in 2019 accounted for more than half of all e-cigarette incidents since e-cigarettes first appeared on screen in 2010 (116 of 204 incidents). Major studios' movies with e-cigarettes are mostly R-rated. Independent movies with e-cigarettes are mostly youth-rated.

Policies to reduce youth exposure

- In 2012, the US Surgeon General concluded that exposure to onscreen smoking caused youth to start smoking. Millions of young people recruited to smoke by movies will die prematurely from tobacco-induced diseases.
- As smoking increases in R-rated movies available to viewers of all ages on video-on-demand services, plain-language warnings, strong anti-tobacco spots and other policy measures should be extended to all media productions with smoking, in all media, in addition to the adult-rating previously proposed for new motion pictures with 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 movie smoking | Exposure to onscreen smoking is a major factor in smoking initiation. Based on large-scale US studies of exposure effects,³ the US CDC estimated in 2014 that movies will recruit 6.4 million new US smokers from among children.⁴ Almost 90 percent of those recruited to smoke by onscreen exposure 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

Reducing kids' exposure to onscreen smoking will reduce kids' risk of smoking. In January 2014, the US Surgeon General reported that eliminating smoking from youth-rated movies by R-rating future movies with tobacco imagery would cut the impact on kids in half, reducing teen smoking rates by 18 percent.⁷ At that time, the CDC projected that the R-rating would avert one million of the 5.6 million projected future tobacco deaths among children alive today.⁸

Widely-endorsed policy solutions | A movie's rating is routinely determined as part of the marketing plan before the movie is made, so movie producers already calibrate screenplays, movie direction and editing to achieve the rating desired for marketing purposes. The Motion Picture Association (MPA) rating system does not reflect the current scientific evidence that exposure to onscreen smoking is toxic to youth. A modernized movie rating system would award an R-rating for any smoking exposure, including e-cigarette imagery, based on the Surgeon General's conclusion that onscreen smoking causes youth smoking.

An updated R-rating that covers smoking, e-cigarettes, and other tobacco use would supply the same market incentive as today's R-rating exerts on strong language, grisly violence and sexualized nudity. Facing an R-rating for smoking, filmmakers would remain free to include smoking in any movie they want, just as they are currently able to include strong language, grisly violence and sexualized nudity, knowing that doing so will trigger an R-rating.

The modernized R-rating for tobacco would exempt movies that exclusively 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 movie that realistically depicts the health consequences of tobacco use could also be exempted from the R-rating, regardless of genre.

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

- (1) strong anti-tobacco spots before movies 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 onscreen 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 World Health Organization and embodied in the WHO Framework Convention on Tobacco Control,¹⁴ 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 movie studios' trade association, the Motion Picture Association of America (now the Motion Picture Association [MPA]), leading US movie companies were put on notice by researchers, state Attorneys General and policy makers that they needed to eliminate youth exposure to smoking on screen.¹⁵

In 2007, in response to repeated requests from state Attorneys General,¹⁶ the MPA commissioned Harvard School of Public Health to recommend film industry measures to address this serious public health problem.¹⁷ Harvard recommended to the MPA: "Take substantive and effective action to eliminate the depiction of tobacco smoking from movies accessible to children and youths."¹⁸ Harvard continued:

What's needed is a movie ratings policy that creates an incentive for movie-makers to consider, and worry about, the depiction of smoking as a factor in the determination of a film's rating ... [T]he goal should be the elimination (with rare exceptions) of smoking in youth-rated films.¹⁹

Despite growing scientific evidence of harm, the advice of its own invited expert consultants and public calls for action, the US movie industry took only modest steps and ignored the most important component of the solution: a modernized R-rating for smoking and other tobacco use.

- At their own expense, the six MPA-member companies added State of California-produced anti-tobacco spots to their youth-rated DVDs with smoking in 2008, then dropped the program without explanation by 2014;²⁰
- Between 2005 and 2007, three MPA-member companies — Disney, Warner Bros. and Universal — published corporate policies on tobacco depictions. The other three MPA-member companies — Fox, Sony and Paramount — followed in 2012 and 2013.
- While 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 the studios hire to make the movies that the studios develop, finance, promote and distribute.
- Subjective language in most company policies allows any youth-rated movie to justify inclusion of tobacco imagery. Also, no company policy prohibits tobacco brand display in the movies these companies produce or distribute.
- From 2007 through 2019, the MPA has added small-print "smoking" labels to 13 percent of all top-grossing, youth-rated movies with smoking. In early

2020, Disney and Netflix (which joined the MPA board in 2019) began to show “tobacco depictions” or “smoking” labels for a few seconds after an original film or TV episode starts to play.²¹

What is the US movie industry really doing? | Since 2002, University of California, San Francisco has collaborated with Breathe California Sacramento Region to analyze onscreen smoking data in the Breathe California Onscreen Tobacco Database.²² The database records tobacco incidents in movies (shots of tobacco use or implied use within each scene) along with tobacco brand appearances and who uses tobacco in movies. Film production details, including media companies, producers, directors, actors, production budgets and box office results, are obtained from entertainment industry publications and databases.

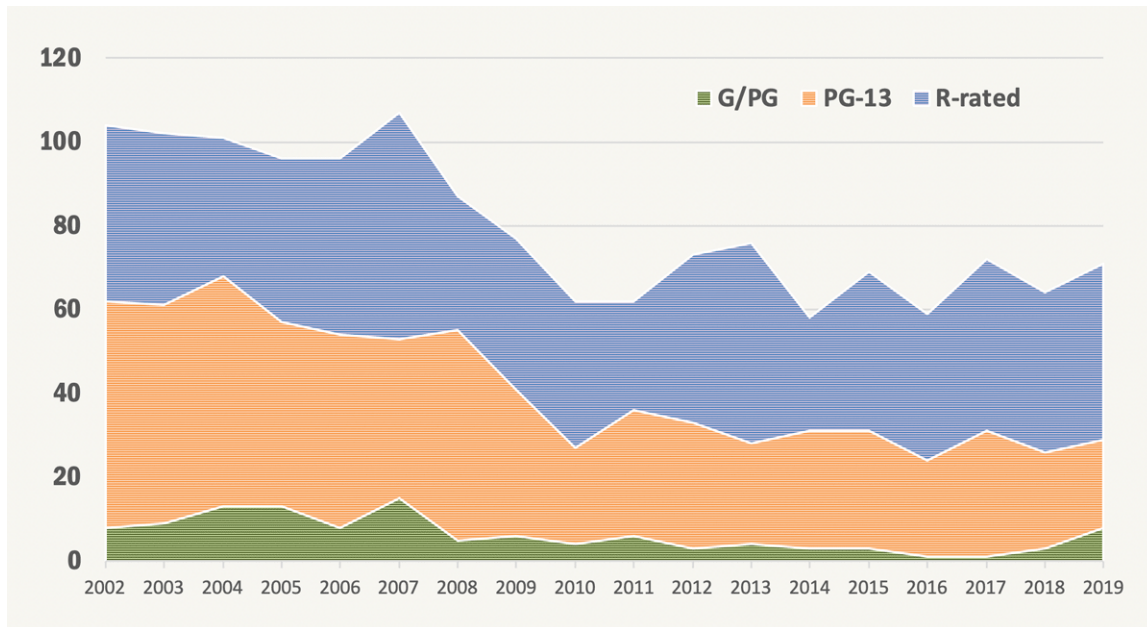
This report analyzes data from the 2,568 top-grossing movies released in the domestic market (US and Canada) from 2002 to 2019. Top-grossing movies are those that ranked among the top ten movies in box office gross in any week of their first-run theatrical release. This analysis addresses six questions, by rating and by the company responsible for producing and distributing these movies:

- 1) How many movies include tobacco imagery? (Fig 1)
- 2) How many tobacco incidents are included in movies? (Figs 2-4)
- 3) How much tobacco exposure do moviegoers receive? (Fig 5)
- 4) How does tobacco performance vary by company? (Figs 6-10, Tables 1-5)
- 5) What role do biographical dramas play in tobacco exposure? (Fig 11)
- 6) How many e-cigarettes are showing up in movies?

Because movies are now watched many times more often on digital services with no effective age-gates than they are watched in theaters, this report spotlights R-rated movies as well as youth-rated movies. The report’s appendices tabulate top-grossing movies with smoking, their tobacco incidents and in-theater audience tobacco impressions, 2002-2019, by company, MPAA rating and genre: purely fictional movies, biographical dramas and documentaries.

1 | How many movies include tobacco imagery?

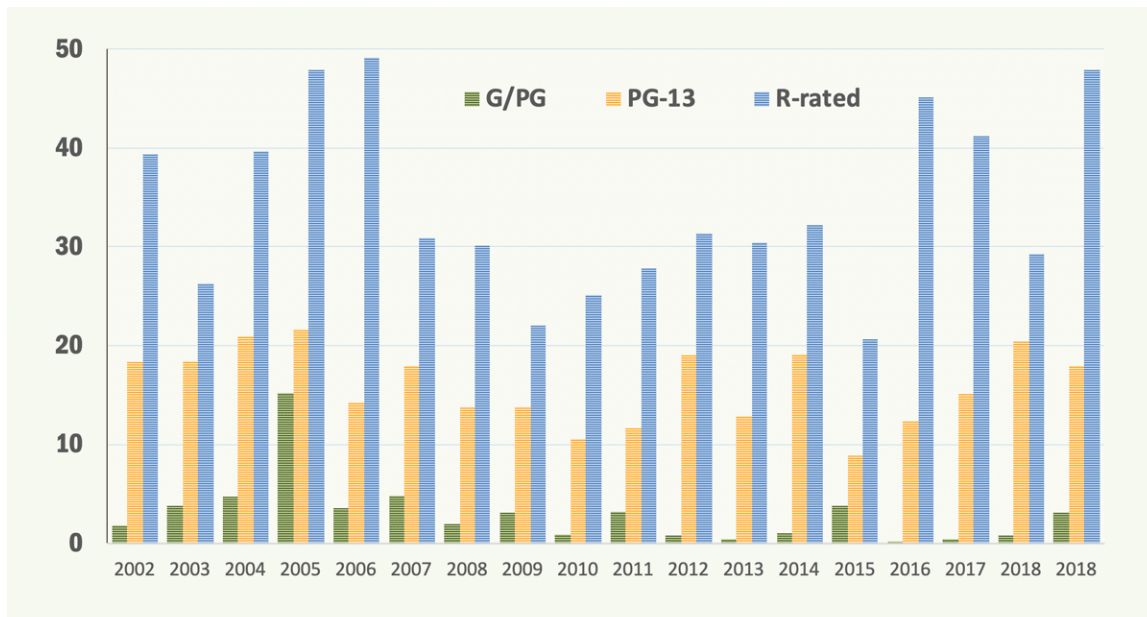
Fig 1 | Number of G/PG, PG-13 and R-rated movies with tobacco (2002-19)



Observation: Since this survey began in 2002, the yearly number of PG-13 movies with smoking has declined more than 60 percent from 54 to 21 movies. R-rated movies with smoking were unchanged (42 movies). Overall, there were 32 percent fewer movies with smoking in 2019 than in 2002 (71 vs. 104 movies). Despite this decrease, 41 percent of all movies with smoking in 2019 were still youth-rated.

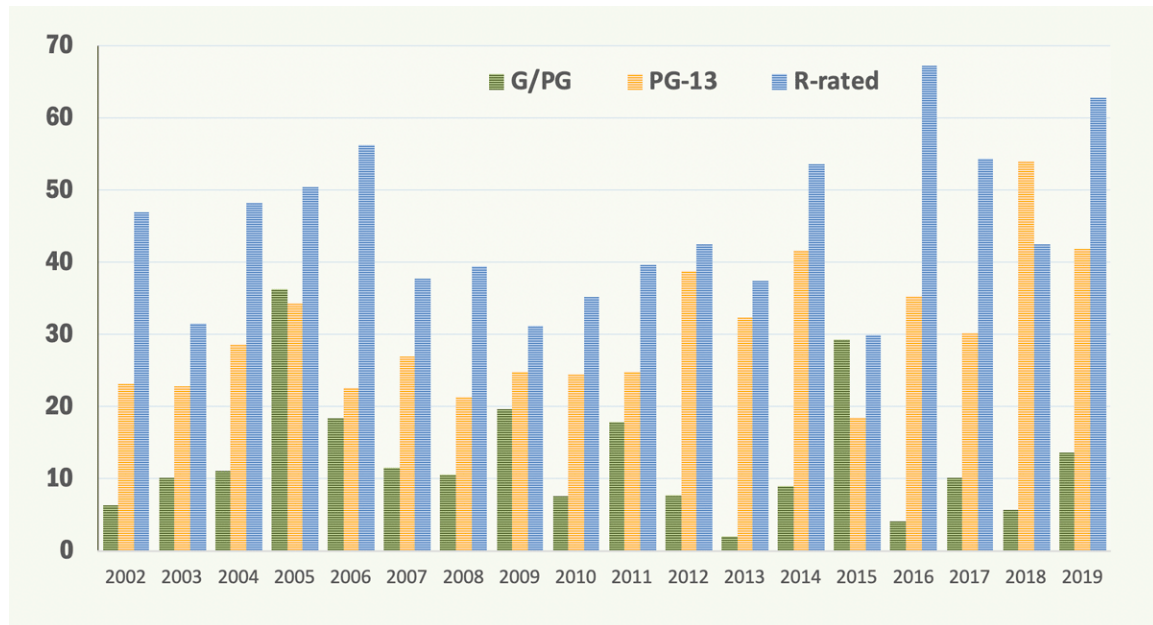
2 | How many tobacco incidents are included in movies?

Fig 2 | Tobacco incidents per movie (2002-19)



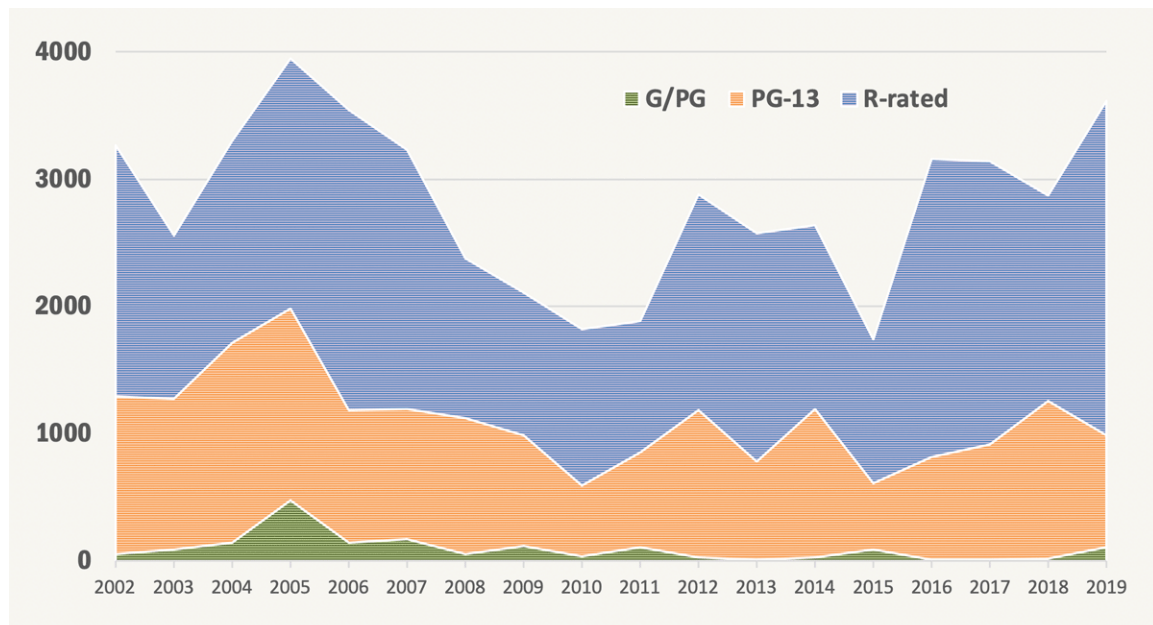
Observation: To account for fluctuations in the number of movies released annually, tobacco incidents are divided by the total number of movies in each rating class. From 2002 to 2019, G/PG movies averaged three tobacco incidents per movie, PG-13 movies averaged 16 incidents, and R-rated movies averaged 34 incidents. Tobacco incidents in PG-13 movies, in R-rated movies and in top-grossing movies overall have doubled over the past five years (2015-2019). Incidents per PG-13 movie increased from 9 to 18; incidents per R-rated movie, from 21 to 48 incidents; and, across all ratings, from 13 to 26 incidents, the highest level of tobacco content in nearly fifteen years.

Fig 3 | Tobacco incidents per movie with any smoking (2002-19)



Observation: Tobacco incidents divided by the number of movies with any smoking also show large increases. From 2002 to 2019, tobacco incidents per G/PG movie more than doubled, from 6 to 13 incidents. In 2019, tobacco incidents per movie with smoking were substantially above their historic averages in PG-13 movies (42 vs. 29 incidents) and in R-rated movies (63 vs. 45 incidents). In the past five years, tobacco incidents more than doubled in PG-13 and R-rated movies, and also in movies overall (from 25 to 51 incidents per movie with any smoking). Tobacco content in R-rated movies and in top-grossing movies overall with any smoking was near record levels in 2019.

Fig 4 | Total tobacco incidents (2002-19)



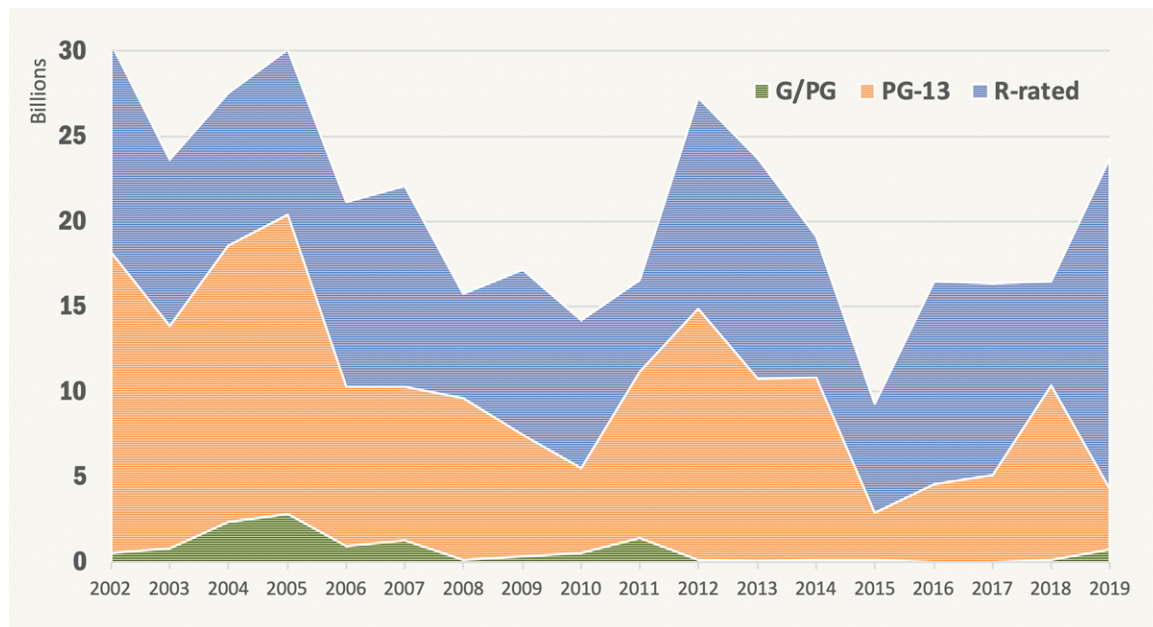
Observation: The total amount of smoking in top-grossing movies reached an historic low in 2015 (1,743 incidents) but has more than doubled over the past five years to 3,618 tobacco incidents, the highest level in fifteen years. G/PG films show a 23 percent increase in the past five years; PG-13 films show a 69 percent increase. R-rated films show a 132 percent increase — from 1,136 to 2,631 incidents, the highest annual level measured for any class of film since this survey began in 2002.

Tobacco incident trends | Figure 4 indicates a strong downward trend in the number of tobacco incidents in youth-rated movies between 2005 and 2010, with repeated rebounds to higher levels from 2010 through 2019. Had the average annual rate of decline in tobacco incidents observed 2005-2010 been maintained, tobacco incidents would have vanished from all youth-rated movies by early 2015.²³ Instead, youth-rated movies have fluctuated around 920 incidents per year since 2010.

R-rated incidents also declined between 2005 and 2010, but at a somewhat slower rate (20% per year for R-rated films vs. 23% for youth-rated films). Since 2010, R-rated incidents have *increased* at an annual rate of 18%.

3 | How much exposure do moviegoers receive?

Fig 5 | Billions of in-theater tobacco impressions (2002-19)



Observation: In-theater tobacco impressions measure audience exposure. Impressions are the product of a movie’s tobacco incidents and its paid admissions (number of views) in the domestic market: US and Canada.²⁴

Youth-rated (G/PG/PG-13) tobacco impressions have fluctuated but trended downward. Impressions delivered by PG-13 movies fell 80 percent from 2002 to 2019 (from 17.7 billion to 3.6 billion). In contrast, impressions delivered by R-rated movies grew 58% from 12.3 billion to 19.4 billion in 2019, the highest level for R-rated movies since the survey began.

A surge in G/PG tobacco impressions (to 716 million) accounted for 17 percent of youth-rated impressions in 2019, the highest proportion recorded.

Spikes in tobacco content counter drops in ticket sales | The long-term decline in PG-13 tobacco impressions is partly due to falling PG-13 ticket sales, down 15 percent per top-grossing movie since 2002 (from 12.1 million to 10.3 million). Ticket sales per R-rated movie fell by nearly the same amount (14%, from 6.1 million to 5.3 million), but R-rated audience impressions grew by nearly 60 percent. Part of the explanation is that, over the same period, tobacco incidents declined by 29 percent in PG-13 movies but grew by 34 percent in R-rated movies.

We have previously reported that tobacco content has dropped the most in larger-budget, larger audience PG-13 “franchise” movies, amplifying the decrease in PG-13 tobacco exposures.²⁵ However, the two-thirds drop in PG-13 tobacco impressions from 2018 to 2019 (from 10.3 billion to 3.6 billion) is due largely to weaker box office performance for PG-13 biographical dramas (see Section 5).²⁶

4 | How does tobacco performance vary by company?

Major studios vs. independents | The major studios (Motion Picture Association-member companies) accounted for 74 percent of all top-grossing, youth-rated movies with tobacco (552 of 747) and 73 percent of youth-rated tobacco incidents (14,631 of 19,944) between 2002 and 2019. MPA-member companies also delivered 83 percent of youth-rated tobacco impressions (158 billion of 189 billion) to theater audiences.

MPA-members also accounted for 65 percent of R-rated movies with tobacco (446 of 689); 66 percent of R-rated tobacco incidents (20,287 of 30,740); and 76 percent of R-rated, in-theater tobacco impressions (141 billion of 182 billion).

Independent movie companies (non-MPA members) account for the balance. Independent movies that achieve top-grossing status have substantially smaller audiences than major studios' movies, on average, mainly due to the independents' smaller production and advertising budgets (Table 1).

Table 1 | Paid admissions per major studio and independent movie (2002-2019)

	Major studios (MPA-member)		Independents (Non-member)	
	2002	2019	2002	2019
Youth-rated G/PG/PG-13	12.1 million	13.5 million	15.1 million	4.0 million
R-rated	5.6 million	7.1 million	7.5 million	3.4 million
All top-grossing films	10.0 million	11.5 million	11.8 million	3.7 million
Change 2002-2019		+14%		-69%

Independents' growing share of movies | From 2002 to 2019, independents have accounted for a growing share of top-grossing movies. Starting with a 21 percent share in 2002 (30 of 145 movies), by 2019 independents had acquired a 37 percent share (52 of 139 movies), more than any two major studios combined.

Independents released 73 percent more top-grossing movies in 2019 than in 2002 (52 vs. 30), while major studios released 24 percent fewer movies (87 vs. 115). The increased number of independent movies in the top-grossing roster is not easily explained, given the sector's long-time disadvantages and current difficulties.²⁷

Profile of the independents | Independent movies are more likely to be R-rated than major studio movies: 47 percent of independent movies (308 of 662 overall; 52% in 2019) compared to 31 percent for major studio movies (594 of 1,906 overall; 32% in 2019). Independent movies since 2002 have also been somewhat more likely to include tobacco at all ratings levels than have major studio movies. Specifically:

- Thirty-eight percent of independent G/PG movies have included tobacco compared with 18 percent of major studio movies (50% vs. 15% in 2019);
- Sixty percent of independent PG-13 movies have included tobacco compared to 54 percent of major studio movies (65% vs. 31% in 2019);

- Seventy-nine percent of independent R-rated movies have included tobacco compared to 75 percent of major studio movies (81% vs. 71% in 2019).

Historically, independent movies have had approximately as much tobacco content per movie as their major studio counterparts, but gaps widened 2019:

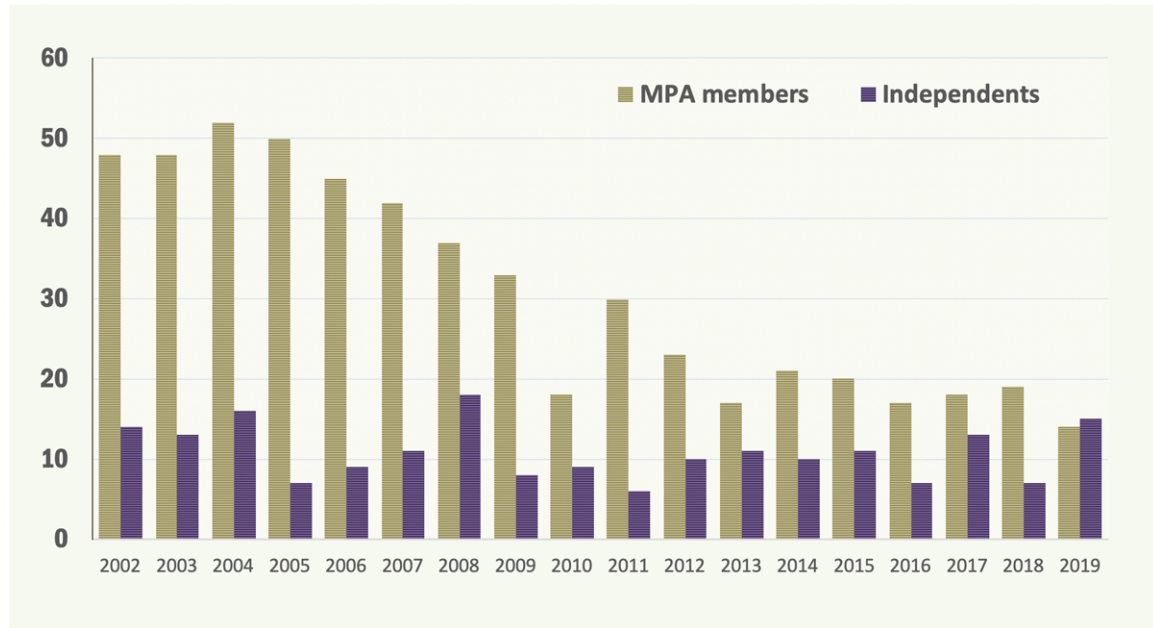
- From 2002 to 2018, independents had 14 tobacco incidents per youth-rated movie compared to 11 incidents per major studio movie — but 23 incidents vs. 7 incidents in 2019, three times more.
- From 2002 to 2018, independents had 34 tobacco incidents per R-rated movie, the same as the major studios — but 36 incidents vs. 60 incidents in 2019, 40 percent fewer.

Independents overtake majors in youth-rated smoking | Because of the shrinking number of major studio movies with tobacco and the increasing number of tobacco incidents in independent youth-rated movies, in 2019, for the first time in nearly two decades, *independents* dominated many measures of onscreen smoking:

- 52 percent of top-grossing movies with smoking (37 of 71 movies)
- 52 percent of youth-rated movies with smoking (15 of 29 movies)
- 58 percent of youth-rated tobacco incidents (572 of 987 incidents)
- 53 percent of youth-rated tobacco impressions (2.3 billion of 4.3 billion)
- 52 percent of R-rated movies with smoking (22 of 42 movies)

Major studios ramp up R-rated tobacco content and exposure | In 2019, major studios accounted for the most tobacco *incidents* overall (58%, 2,083 of 3,618) and most tobacco *impressions* overall (78%, 18.3 billion of 23.7 billion), along with the majority of R-rated tobacco incidents (63%, 1,668 of 2,631) and impressions (85%, 16.5 billion of 19.4 billion).

Independent studios now release about as many youth-rated movies with smoking as the major studios | From 2002 to 2019, the number of youth-rated movies with tobacco released annually by MPA companies declined while the number from independent companies stayed about the same (Figure 6). The number of *independent* youth-rated movies has fluctuated but was about the same in 2019 as in 2002 (15 vs. 14 movies). The number of *major studio* youth-rated movies with tobacco declined substantially from 2004 to 2013, from 52 to 17 movies, then flattened, averaging 18 movies per year from 2014 to 2019. As a result, independent companies now account for about half the smoking youth-rated films.

Fig 6 | Number of youth-rated movies with smoking, by company type (2002-19)

Tobacco content and exposure vary by company | A few companies account for all top-grossing movies released each year. Table 2 lists the five major movie companies that belong to the MPA and the independent companies, considered as a group, whose youth-rated movies achieved top-grossing status, while Table 3 covers R-rated movies.²⁸

Table 2 | Youth-rated movies with smoking, by company (2018-19)

	Films with smoking			Tobacco incidents			In-theater impressions (millions)		
	2018	2019	Change	2018	2019	Change	2018	2019	Change
AT&T (Warner)	3	1	-2	29	34	5	217	44	-173
Comcast	5	4	-1	573	201	-372	4,228	399	-3,829
Disney (w/ Fox)	6	4	-2	327	75	-252	4,982	941	-4,041
Sony	4	4	0	86	104	18	458	655	197
ViacomCBS	1	1	0	25	1	-24	69	5	-4
Independents	7	15	8	218	572	354	450	2,278	1,828
Total	26	29	3	1,258	987	-271	10,403	4,322	-6,081

Observation: MPA-member companies accounted for nearly three-quarters of youth-rated movies with smoking in 2018 (73%; 19 of 26), but for fewer than half in 2019 (48%; 14 of 29).

AT&T, Comcast and Disney each reduced the number of its youth-rated movies with smoking between 2018 and 2019. Sony and ViacomCBS did not. Independents more than doubled the number of youth-rated movies with smoking, led by Lionsgate, which itself released twice as many youth-rated movies with tobacco in 2019 as in 2018.

Comcast and Disney together reduced the number of youth-rated tobacco incidents by more than 600 from 2018 to 2019 and decreased their youth-rated tobacco impressions by nearly 7.9 billion. Still, Disney and Sony delivered the most major-studio tobacco impressions in 2019: 1.6 billion together. Independent companies amassed by far the largest increases in youth-rated tobacco incidents and tobacco impressions.

Table 3 | R-rated movies with smoking, by company (2018-19)

	Films with smoking			Tobacco incidents			In-theater impressions (millions)		
	2018	2019	Change	2018	2019	Change	2018	2019	Change
AT&T (Warner)	4	9	5	42	774	732	709	7,303	6,594
Comcast	3	3	0	135	91	-44	802	477	-325
Disney (w/ Fox)	7	2	-5	415	36	-379	1,614	89	-1,525
Sony	7	3	-4	360	616	256	1,308	7,073	5,765
ViacomCBS	3	3	0	86	151	-24	77	1,533	1,456
Independents	14	22	8	572	963	391	1,654	2,909	1,255
Total	38	42	4	1,610	2,631	1,021	6,164	19,384	13,220

Observation: From 2018 to 2019, AT&T added the most R-rated movies with tobacco, the most R-rated tobacco incidents and the most R-rated tobacco impressions (6.6 billion). Disney, as it absorbed Twentieth Century Fox, shed the most R-rated tobacco content. Sony shrank the number of its R-rated movies with tobacco, but also increased the amount of tobacco content in its remaining R-rated films and quintupled its domestic tobacco impressions to 5.8 billion. By all measures, independents' R-rated movies were also smokier.

What difference does a policy make? | Between 2005 and 2013, all MPA-member companies — but not the independent movie companies — published individual tobacco depiction policies that addressed smoking content in their future movies with varying degrees of rigor.²⁹ (Only Warner Bros., now AT&T, specifically refers to R-rated movies in its policy.) AT&T and Disney have not substantively revised their tobacco depiction policies since acquiring Warner Bros. and Fox, respectively. Table 4 shows the changes in each MPA-member company's onscreen tobacco practices while its policy has been in effect.

Table 4 | Onscreen smoking under company tobacco depiction policies (as of 2019)

At policy inception (vs. current year)	Movies & movies with smoking by MPA rating				Tobacco incidents		Impressions (millions)	
	Youth- rated	Smoking	R-rated	Smoking	Youth- rated	R-rated	Youth- rated	R-rated
AT&T 2005	18	9 (50%)	9	9 (100%)	462	575	1,490	1,233
2019	7	1 (14%)	11	9 (82%)	34	774	44	7,303
Comcast 2007	9	4 (44%)	11	11 (100%)	43	716	228	6,887
2019	17	4 (24%)	5	3 (60%)	201	91	399	477
Disney 2007	22	11 (50%)	9	5 (56%)	113	206	1,617	586
2019	20	4 (20%)	3	2 (67%)	55	36	941	89
Sony 2012	13	7 (54%)	8	6 (75%)	180	426	4,011	3,882
2019	11	4 (36%)	4	3 (75%)	104	616	655	7,073
ViacomCBS 2013	6	2 (33%)	4	4 (100%)	19	217	242	2,869
2019	4	1 (25%)	5	3 (60%)	1	151	5	1,533
Total since inception	68	33 (49%)	41	35 (85%)	817	2,140	7,588	15,457
2019	59	14 (24%)	28	20 (71%)	395	1,668	2,044	16,475
Change	-9	-19	-13	-15	-422	-472	-5,544	1,018
INDEPENDENTS 2009	15	8 (53%)	22	19 (86%)	390	555	1,551	4,300
[No policies] 2019	25	15 (60%)	27	22 (81%)	572	963	2,278	2,909
Change	10	7	5	3	182	408	47%	-32%

Note: For purposes of this comparison, the independent movie sample begins in 2009, the average of the years in which MPA-member companies adopted their tobacco depiction policies.

Observations | Major studios cut the share of their youth-rated movies with tobacco content in half — from 49 percent to 24 percent — while their tobacco depiction policies have been in effect. Independents, which lack these policies, moved in the opposite direction, increasing the share of their youth-rated movies with smoking from 53 percent to 60 percent.

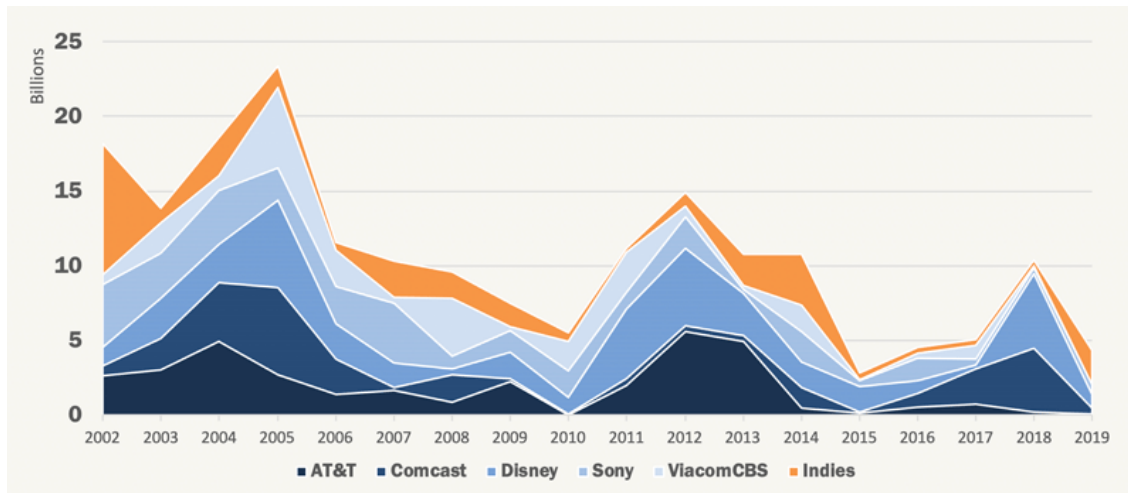
Most companies with depiction policies also made smoking reductions in their R-rated movies; AT&T and Sony were exceptions. Independents added more R-rated movies with smoking and packed more tobacco incidents into these movies, but a drop in their ticket sales caused R-rated tobacco impressions to decline.

Tobacco depiction policies are associated with less onscreen smoking yet, collectively, companies with policies still included smoking in one-quarter of their 2019 youth rated movies (and nearly one-third of their PG-13 movies), years after adopting such policies. Meanwhile, these major studios packed even more smoking to 71 percent of their R-rated movies in 2019 — movies offered to audiences of all ages on video-on-demand services.

Observation: With fluctuations, annual numbers of tobacco incidents in R-rated, top-grossing movies increased among three MPA-member companies and independents. Sony's R-rated incidents grew by more than 1700 percent, from 34 in 2002 to 616 in 2019. ViacomCBS' R-rated incidents climbed 586 percent, from 22 incidents in 2002 to 151 in 2019. At AT&T, R-rated incidents increased 27 percent, from 610 to 774, the highest level of any MPA-member company in 2019. Independents' R-rated incidents also increased (26%; from 763 to 963 incidents).

Disney saw the largest 2018-2019 decline in R-rated incidents : 88 percent, from 415 to 36 incidents. (Disney acquired Fox's tobacco-heavy movie catalog in 2019, but also canceled a number of movie projects developed under Fox's previous owners.) Altogether, the number of top-grossing R-rated tobacco incidents grew by one-third from 2002 to 2019 (34%, from 1,968 to 2,631), reaching the highest level observed since 2002.

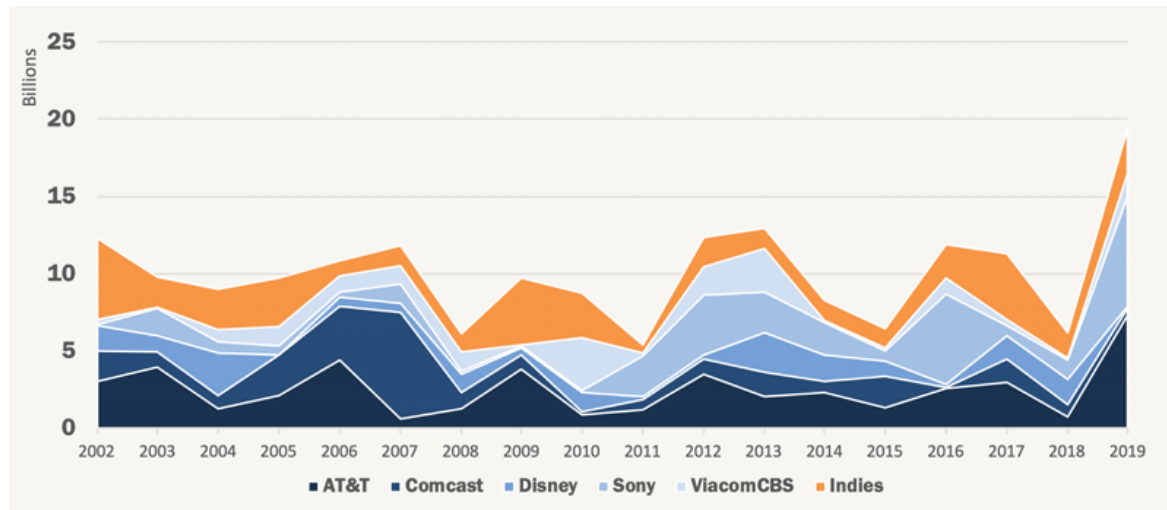
Fig 9 | Youth-rated tobacco impressions, by company (2002-2019, billions)



Observation: With fluctuations, the number of in-theater tobacco impressions delivered annually by youth-rated movies declined among independent movie companies and each of the five MPA-member companies covered in this report.

Overall, youth-rated tobacco impressions declined 78 percent from 2002 to 2019, from 18.2 billion to 4.3 billion, the second-lowest level observed since 2002. Decreases were greatest for AT&T (88% from 2.7 billion to 44 million impressions) and ViacomCBS (99% from 677 million to 5 million). Comcast (39%) and Disney (24%) showed smaller declines.

The historic low in youth-rated tobacco impressions, 2.9 billion, was achieved in 2015. Since then, increases in impressions delivered by Sony (up 73%), Comcast (up 358%) and the independents (up 363%) drove total youth-rated impressions up 51 percent to 4.3 billion in 2019.

Fig 10 | R-rated tobacco impressions, by company (2002-2019, billions)

Observation: With fluctuations, annual numbers of tobacco impressions in R-rated movies decreased 45 percent over the survey period among independent companies (5.3 billion to 2.9 billion). R-rated impressions also fell at two MPA-member companies: Comcast (down 76%, from 2.0 billion to 477 million) and Disney (down 94%, from 1.6 billion to 89 million). Overall, however, R-rated tobacco impressions increased 58 percent between 2002 and 2019, from 12.3 billion to 19.4 billion, the highest level since 2002.

Increases were largest at Sony (up eighty-fold, from 88 million in 2002 to 7.1 billion in 2019), ViacomCBS (up five-fold, from 296 million to 1.5 billion) and AT&T (more than doubled, from 3.0 billion to 7.3 billion). These same three companies saw sharp rises from 2015 to 2019: up 1,013 percent at Sony, 530 percent at ViacomCBS and 442 percent at AT&T.

Over these five years, the R-rated tobacco impressions delivered by all companies tripled from 6.4 billion to 19.4 billion.

Companies can reduce youth-rated tobacco content to zero or near-zero | Building on an analysis made in previous annual reports, Table 5 highlights in yellow the years in which individual companies eliminated all or nearly all tobacco imagery from their youth-rated movies — defined for this analysis as three or fewer tobacco incidents per movie, smoking and smokefree.

The companies succeeded in doing so in 23 percent (14 of 60) of the company-years in the table. However, repeated rebounds among MPA-member companies with tobacco depiction policies indicate that while individual companies are capable of substantially reducing tobacco content, they consistently fail to maintain these reductions.

Table 5 | Tobacco incidents per youth-rated movie, by company (2010-19)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
AT&T	1	8	26	26	2	3	4	3	2	5
Comcast	2	6	4	7	17	1	18	37	36	12
Disney	4	12	13	3	4	11	7	5	18	4
Sony	14	10	14	3	18	9	13	3	9	9
Viacom	13	12	13	3	8	1	9	16	4	1
MPAA-members	6	10	14	8	9	7	10	12	16	7
Independents	10	1	13	16	27	10	6	9	11	23
TOTAL	7	9	13	10	14	7	9	11	15	12

5 | Updates

5.1 | Biographical dramas

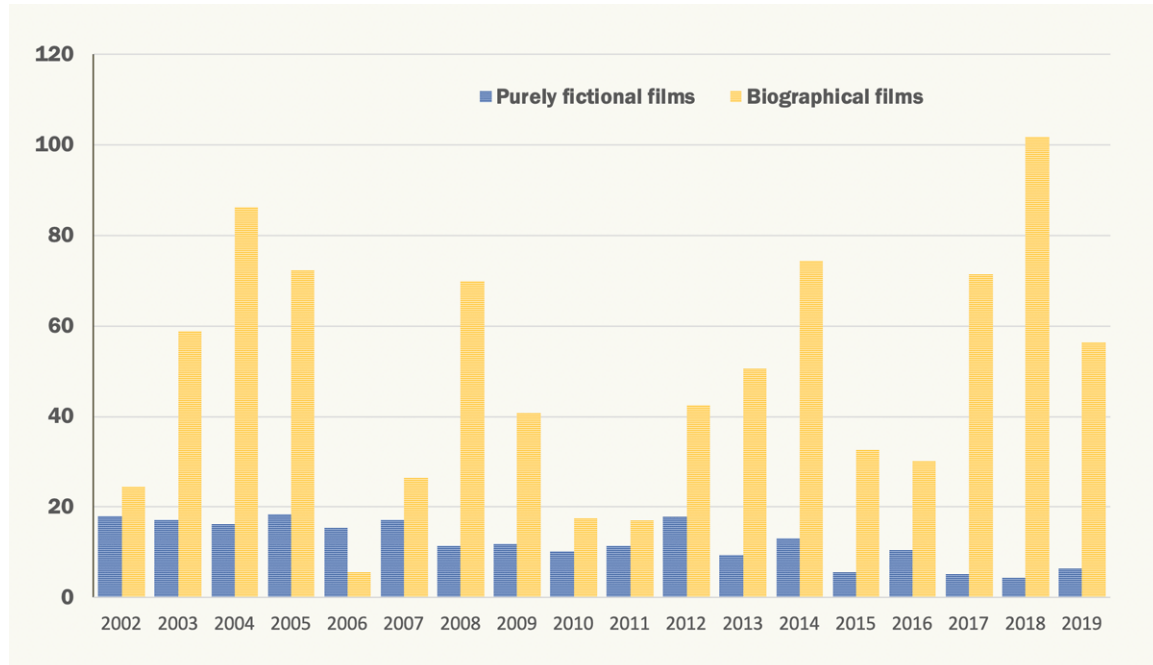
In 2018, we reported that, beginning in 2012-13, US movie companies had increased the number of PG-13 movies billed as biographical dramas (biodramas) and that they exaggerated smoking in this movie genre by frequently inserting invented smoking characters lacking an authentic biographical basis. Our analysis showed these practices had effectively halted progress in reducing onscreen tobacco content and audience exposure.³⁰ The following section updates these observations.

- In 2019, 13 percent of all top-grossing movies released in the US were biodramas (18 of 139 movies). Fourteen of these biodramas (78%) include smoking. Ten biodramas with smoking (77%) are youth-rated PG or PG-13.
- The ten youth-rated biodramas account for 34 percent of all top-grossing youth-rated movies with smoking in 2019 (10 of 29) but for nearly 60 percent of all youth-rated tobacco incidents (57%; 567 of 987) and 44 percent of all youth-rated tobacco impressions in 2019 (1.9 billion of 4.3 billion).
- Six of the biodramas in 2019 are R-rated. Four of these movies (67%) include smoking. R-rated biodramas account for 10 percent of all R-rated movies with smoking (4 of 42) but for 21 percent of all R-rated tobacco incidents (540 of 2,631) and 32 percent of all R-rated tobacco impressions in 2019 (7.6 billion of 19.4 billion).
- Overall, fewer than one in five of all characters posed as smokers in 2019 biodramas existed in real life (18%, 33 of 182 smoking characters). In youth-rated biodramas, 23 percent of smokers are authentic (23 of 98); in R-rated biodramas, 12 percent of smokers in 2019 are authentic (10 of 84).

Overall, biodramas delivered a total of 9.5 billion tobacco impressions to domestic moviegoers in 2019, only eight percent fewer than the historic high of 10.3 billion delivered in 2018. However, the rating balance changed abruptly. Youth-rated biodramas delivered 89 percent of this genre's tobacco impressions in 2018 but only 20 percent in 2019 (Appendix B).

Tobacco incidents in PG-13 biodramas | Since 2002, PG-13 biodramas have averaged more than four times as many tobacco incidents per movie as purely fictional movies (54 incidents vs. 13 incidents). In the most recent five-year period, 2015-2019, the gap between PG-13 biodramas and purely fictional movies was wider than at any time since 2002. Over this time period, tobacco incidents reached historic highs in PG-13 biodramas while sinking to historic lows in purely fictional PG-13 films: 63 incidents per biodrama vs. 7 incidents per purely fictional film (Figure 11).

Fig 11 | Tobacco incidents per PG-13 movie, fictional and biographical (2002-2019)



5.1 | E-cigarettes on screen

We identified 34 movies from 2010 to 2019 that showed e-cigarette use. More than one-quarter of these movies are youth-rated (27%, 9 of 34) with all but one of these rated PG-13. Of the 28 *top-grossing* movies with e-cigarettes — movies that generate the bulk of audience exposure — 29 percent are youth-rated (8 of 28). No movie with e-cigarettes was released widely in the United States in 2011, 2012 or 2018.

Of the top-grossing films with e-cigarettes, one-fifth showed e-cigarettes exclusively (21%, 6 of 28). Overall, one-quarter of the tobacco incidents in movies with any e-cigarettes involved an e-cigarette (24%; 204 of 862 tobacco incidents). Combustibles made up the majority of tobacco incidents in these movies: regular cigarettes (57%), cigars (16%) and pipes (3%). No top-grossing film in our sample showed an e-cigarette brand; however, the distinctive style of some products may identify them to viewers.

Of the 204 specifically e-cigarette incidents in top-grossing films since 2010, 116 (57%) appeared in the eight films with e-cigarettes released in 2019, half of which are rated PG-13. This burst of onscreen visibility came after many US states and localities launched efforts to restrict e-cigarette marketing to young people.

Companies accountable | MPA-member companies distributed more than half of the top-grossing movies with e-cigarettes (57%; 16 of 28 films). Comcast, Sony and Warner Bros. (now AT&T) released four films each. Fox (now Disney) and ViacomCBS released two films each. Almost all MPA-members' movies with e-cigarettes have been R-rated (94%; 15 of 16 films).

Independent movie companies released the balance of top-grossing movies with e-cigarettes: Lionsgate distributed four films, followed by Neon and Relativity with two films each. Producer Jason Blum (Blumhouse) has made three films with e-cigarettes since 2020 — more than any other credited producer — for Comcast and Relativity, one movie rated PG-13. Most of the independents' top-grossing movies with e-cigarettes were youth-rated PG-13 (58%; 7 of 12).

In all, top-grossing movies with any e-cigarettes have delivered a total of 4.8 billion tobacco impressions to moviegoers in the domestic market since 2010, including 1.2 billion impressions specifically from e-cigarettes. In 2019 alone, top-grossing movies delivered 338 million e-cigarette impressions, the most moviegoer exposures since e-cigarettes first appeared on screen in 2010.

E-cigarettes accounted for 1.4 percent of the 23.7 billion tobacco impressions delivered to domestic moviegoers of all ages in 2019. However, e-cigarettes' relative novelty and their saliency in youth commercial culture could give them disproportionate impact on screen. Of the eight top-grossing movies with e-cigarettes youth-rated PG-13 since 2010, four of them appearing in 2019, the MPA labeled none for smoking.

CONCLUSION

Since this survey of tobacco content in top-grossing US movies began in 2002, more than half (56%) of the movies, featuring 50,684 tobacco incidents, have delivered 371 billion in-theater tobacco impressions to domestic audiences of all ages.

Encouraging changes in this tobacco promotion channel over the survey period include a 61 percent decrease in the annual number of PG-13 movies with smoking (from 54 to 21). However, tobacco incidents in these movies declined only as half as much (29%, from 1,246 to 879).

MPA-member movie companies have performed better than independents in getting smoking out of their youth-rated movies. Since 2002, the major studios have reduced the number of PG-13 movies with any smoking by 76% (from 42 in 2002 to 10 in 2019); independents by only 8 percent (from 12 to 11). The majors reduced tobacco incidents in their PG-13 movies by more than half (55%, 839 to 379 incidents) while independents substantially increased them (23%, from 407 to 500 incidents).

In 2019, for the first time, independents accounted for the majority of youth-rated movies with smoking, tobacco incidents and tobacco impressions, all at levels substantially above previous historic lows for the industry.

Both sectors' PG-13 movies are delivering many fewer in-theater tobacco impressions than before — major studios' in-theater audience exposures are down

by 84 percent from 2002, independents' by 75% — but this valuable (if fluctuating) progress is challenged by two other developments: the explosion in smoking in R-rated movies and the worldwide shift toward digital media lacking effective age-gates, content notices or parental controls.³¹

In 2019, the 19.4 billion tobacco impressions delivered by R-rated movies accounted for 82 percent of domestic in-theater impressions, the highest levels since this survey began, both in absolute terms and as share. Major studios' R-rated impressions soared 265 percent from 2018 to 2019 to reach levels twice as high as in 2002. Independents' R-rated tobacco impressions nearly doubled from 2018 to 2019, to levels 45 percent higher than 2002.

The decline in youth-rated tobacco impressions delivered by top-grossing movies is only partial and continues to fluctuate, denying the public assurance that these movies are safe for children and teens to watch. Added to this, the dramatic growth of tobacco content in top-grossing R-rated movies and their unbounded availability on digital media suggest that tobacco risks for young viewers are being repackaged but not reduced. The reasonable assumption that catastrophic physical harm to children and adolescents continues to accumulate justifies stronger and expanded smokefree media policy recommendations.

Policies supported by shareholders, health organizations and policy makers include: modernize the US movie and TV ratings to adult-rate (R/TV-MA) future productions with smoking (that is, the display or use of any tobacco-related product); end display or mention of tobacco brands; require credited producers of movies or shows with smoking to submit affidavits of no tobacco payoffs from; add a plain-language warning (such as "Smoking on screen harms young viewers") before users of streaming services make a selection or transaction with smoking; run 30-second (minimum) anti-tobacco spots produced by competent health authorities (not the media companies or their allied organizations) immediately before movies or shows with smoking, on any media platform; end public subsidies and favorable tax treatment for media productions with smoking; adopt uniform parental controls allowing users to opt-out of tobacco content specifically; and require annual reports from distributors including their media titles with tobacco content, where these movies or TV shows appear, and anonymized data on the works' audience size and age-components, and on usage of parental controls.

Policy development should also take into account 2019 observations that e-cigarettes appear in youth-rated movies; abuse continues of the biographical smoker exception to the proposed adult-rating; and that independent companies account for a larger share of smoking on screen, by every metric.

All these findings reinforce the need for an industry-wide solution, grounded in R-rating films with smoking, to ensure that films marketed to youth are not promoting a lifetime of nicotine addiction and premature death.

APPENDIX A-1 | Tobacco content in top-grossing G/PG/PG-13 movies, by company

MOVIES WITH TOBACCO IMAGERY																			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	TOTAL
AT&T	9	11	10	9	8	13	9	5	2	4	4	4	2	4	2	3	3	1	103
Comcast	6	6	9	10	7	4	8	5	1	4	3	2	6	3	2	6	5	4	91
Disney	17	16	15	13	10	11	7	12	4	8	4	4	4	6	5	2	6	4	148
Sony	9	8	12	12	14	8	7	10	8	8	7	5	7	4	3	3	4	4	133
Viacom	7	7	6	6	6	6	6	1	3	6	5	2	2	3	5	4	1	1	77
MPA Subtotal	48	48	52	50	45	42	37	33	18	30	23	17	21	20	17	18	19	14	552
Independents	14	13	16	7	9	11	18	8	9	6	10	11	10	11	7	13	7	15	195
TOTALS	62	61	68	57	54	53	55	41	27	36	33	28	31	31	24	31	26	29	747

TOBACCO INCIDENTS																			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	TOTAL
AT&T	212	291	358	462	199	254	63	98	4	106	265	314	16	30	40	26	29	34	2,801
Comcast	83	126	348	341	232	43	275	38	19	78	39	53	173	11	266	408	573	201	3,307
Disney	288	262	210	300	173	113	81	155	106	325	309	60	101	273	151	90	327	75	3,399
Sony	224	211	287	371	299	322	69	234	198	175	180	27	196	98	144	28	86	104	3,253
Viacom	78	213	118	308	162	55	168	70	115	145	140	19	66	4	86	98	25	1	1,871
MPA Subtotal	885	1,103	1,321	1,782	1,065	787	656	595	442	829	933	473	552	416	687	650	1,040	415	14,631
Independents	411	170	395	203	122	408	463	390	152	22	253	310	640	191	128	266	218	572	5,314
TOTALS	1,296	1,273	1,716	1,985	1,187	1,195	1,119	985	594	851	1,186	783	1,192	607	815	916	1,258	987	19,945

IN-THEATER TOBACCO IMPRESSIONS (DOMESTIC)																			
(millions)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	TOTAL
AT&T	2,657	3,027	4,906	2,723	1,360	1,624	842	2,251	15	1,975	5,613	4,957	470	148	562	746	217	44	34,137
Comcast	656	2,094	3,992	5,834	2,359	228	1,872	210	51	488	373	335	1,376	87	900	2,352	4,228	399	27,834
Disney	1,233	2,719	2,543	2,860	1,042	1,617	392	1,746	1,114	4,603	5,208	2,853	1,733	1,685	867	247	4,982	941	38,385
Sony	4,199	3,013	3,618	2,166	2,557	4,011	856	1,412	1,803	1,167	2,064	294	2,002	379	1,490	431	458	655	32,575
Viacom	677	2,006	984	5,349	2,405	429	3,878	296	1,927	2,693	753	242	1,793	67	341	891	69	5	24,805
MPA Subtotal	9,422	12,860	16,042	18,932	9,724	7,909	7,839	5,914	4,911	10,926	14,011	8,681	7,374	2,366	4,160	4,666	9,953	2,044	157,736
Independents	8,767	1,002	2,518	1,462	536	2,386	1,763	1,551	579	234	871	2,112	3,429	492	391	421	450	2,278	31,242
TOTALS	18,189	13,862	18,560	20,394	10,260	10,296	9,602	7,465	5,490	11,159	14,882	10,793	10,804	2,858	4,551	5,088	10,403	4,322	188,978

APPENDIX A-2 | Tobacco content in top-grossing R-rated movies, by company

MOVIES WITH TOBACCO IMAGERY																			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	TOTAL
AT&T	15	9	5	9	7	9	6	6	4	3	5	3	3	6	4	5	4	9	112
Comcast	4	5	5	9	9	11	4	3	6	6	8	13	5	6	2	7	3	3	109
Disney	7	6	7	1	6	5	4	3	5	3	3	7	5	5	4	6	7	2	86
Sony	3	6	2	3	5	7	1	3	2	7	6	5	5	4	5	3	7	3	77
Viacom	1	2	5	5	4	7	3	2	4	2	4	4	2	2	5	4	3	3	62
MPA Subtotal	30	28	24	27	31	39	18	17	21	21	26	32	20	23	20	25	24	20	446
Independents	12	13	9	12	11	15	14	19	14	5	14	16	7	15	15	16	14	22	243
TOTALS	42	41	33	39	42	54	32	36	35	26	40	48	27	38	35	41	38	42	689

TOBACCO INCIDENTS																			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	TOTAL
AT&T	610	333	185	575	436	159	217	226	80	62	267	233	343	322	539	123	42	774	5,526
Comcast	239	168	143	406	1,002	716	212	132	35	154	251	482	76	157	50	333	135	91	4,782
Disney	300	161	468	15	78	206	163	148	274	56	47	282	210	59	47	150	415	36	3,115
Sony	34	145	120	193	210	232	219	19	33	537	246	155	225	156	579	172	360	616	4,251
Viacom	22	28	255	177	194	330	98	41	276	47	179	217	34	30	271	177	86	151	2,613
MPA Subtotal	1,205	835	1,171	1,366	1,920	1,643	909	566	698	856	990	1,369	888	724	1,486	955	1,038	1,668	20,287
Independents	763	453	417	596	442	395	354	555	532	173	707	427	559	412	862	1,271	572	963	10,453
TOTALS	1,968	1,288	1,588	1,962	2,362	2,038	1,263	1,121	1,230	1,029	1,697	1,796	1,447	1,136	2,348	2,226	1,610	2,631	30,740

IN-THEATER TOBACCO IMPRESSIONS (DOMESTIC)																			
(millions)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	TOTAL
AT&T	3,004	3,937	1,248	2,114	4,374	607	1,225	3,831	881	1,185	3,462	2,070	2,301	1,349	2,582	2,956	709	7,303	45,138
Comcast	2,020	973	828	2,590	3,530	6,887	1,109	906	146	678	1,002	1,533	728	1,984	77	1,506	802	477	27,776
Disney	1,589	1,046	2,795	24	560	586	1,124	462	1,265	182	282	2,555	1,687	995	199	1,497	1,614	89	18,551
Sony	88	1,795	695	591	311	1,226	248	105	172	2,608	3,882	2,619	2,111	636	5,784	702	1,308	7,073	31,954
Viacom	296	45	825	1,232	1,077	1,178	1,233	102	3,386	193	1,842	2,869	139	243	1,107	378	77	1,533	17,755
MPA Subtotal	6,997	7,796	6,391	6,551	9,852	10,484	4,939	5,406	5,850	4,846	10,470	11,646	6,966	5,207	9,749	7,039	4,510	16,475	141,174
Independents	5,264	1,970	2,575	3,146	1,000	1,319	1,173	4,300	2,865	525	1,882	1,279	1,333	1,218	2,168	4,240	1,654	2,909	40,820
TOTALS	12,261	9,766	8,966	9,697	10,852	11,803	6,112	9,706	8,715	5,371	12,352	12,925	8,299	6,425	11,917	11,279	6,164	19,384	181,994

APPENDIX A-3 | Tobacco content in top-grossing movies of all ratings, by company (sum totals)

FILMS WITH TOBACCO IMAGERY																			
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	TOTAL
AT&T	24	20	15	18	15	22	15	11	6	7	9	7	5	10	6	8	7	10	215
Comcast	10	11	14	19	16	15	12	8	7	10	11	15	11	9	4	13	8	7	200
Disney	24	22	22	14	16	16	11	15	9	11	7	11	9	11	9	8	13	6	234
Sony	12	14	14	15	19	15	8	13	10	15	13	10	12	8	8	6	11	7	210
Viacom	8	9	11	11	10	13	9	3	7	8	9	6	4	5	10	8	4	4	139
MPA Subtotal	78	76	76	77	76	81	55	50	39	51	49	49	41	43	37	43	43	34	998
Indies	26	26	25	19	20	26	32	27	23	11	24	27	17	26	22	29	21	37	438
TOTALS	104	102	101	96	96	107	87	77	62	62	73	76	58	69	59	72	64	71	1,436

TOBACCO INCIDENTS

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	TOTAL
AT&T	822	624	543	1,037	635	413	280	324	84	168	532	547	359	352	579	149	71	808	8,327
Comcast	322	294	491	747	1,234	759	487	170	54	232	290	535	249	168	316	741	708	292	8,089
Disney	588	423	678	315	251	319	244	303	380	381	356	342	311	332	198	240	742	111	6,514
Sony	258	356	407	564	509	554	288	253	231	712	426	182	421	254	723	200	446	720	7,504
Viacom	100	241	373	485	356	385	266	111	391	192	319	236	100	34	357	275	111	152	4,484
MPA Subtotal	2,090	1,938	2,492	3,148	2,985	2,430	1,565	1,161	1,140	1,685	1,923	1,842	1,440	1,140	2,173	1,605	2,078	2,083	34,918
Indies	1,174	623	812	799	564	803	817	945	684	195	960	737	1,199	603	990	1,537	790	1,535	15,767
TOTALS	3,264	2,561	3,304	3,947	3,549	3,233	2,382	2,106	1,824	1,880	2,883	2,579	2,639	1,743	3,163	3,142	2,868	3,618	50,685

IN-THEATER TOBACCO IMPRESSIONS (DOMESTIC)

(millions)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	TOTAL
AT&T	5,661	6,964	6,154	4,837	5,734	2,231	2,067	6,082	896	3,160	9,075	7,027	2,771	1,497	3,144	3,702	926	7,347	79,275
Comcast	2,676	3,067	4,820	8,424	5,889	7,115	2,981	1,116	197	1,166	1,375	1,868	2,104	2,071	977	3,858	5,030	876	55,610
Disney	2,822	3,765	5,338	2,884	1,602	2,203	1,516	2,208	2,379	4,785	5,490	5,408	3,420	2,680	1,066	1,744	6,596	1,030	56,936
Sony	4,287	4,808	4,313	2,757	2,868	5,237	1,104	1,517	1,975	3,775	5,946	2,913	4,113	1,015	7,274	1,133	1,766	7,728	64,529
Viacom	973	2,051	1,809	6,581	3,482	1,607	5,111	398	5,313	2,886	2,595	3,111	1,932	310	1,448	1,269	146	1,538	42,560
MPA Subtotal	16,419	20,656	22,433	25,483	19,576	18,393	12,778	11,320	10,761	15,772	24,481	20,327	14,340	7,573	13,909	11,705	14,463	18,519	298,910
Indies	14,031	2,972	5,093	4,608	1,536	3,705	2,936	5,851	3,444	759	2,753	3,391	4,762	1,710	2,559	4,661	2,104	5,187	72,062
TOTALS	30,450	23,628	27,526	30,091	21,112	22,099	15,714	17,171	14,205	16,530	27,234	23,718	19,103	9,283	16,468	16,367	16,567	23,706	370,972

APPENDIX B | Summary data by movie genre and MPA rating

Documentary

	G/PG				PG-13				R-rated			
	Films	Smoking	Incidents	Impressions (millions)	Films	Smoking	Incidents	Impressions (millions)	Films	Smoking	Incidents	Impressions (millions)
2002	0	0	0	0	0	0	0	0	3	1	9	33
2003	0	0	0	0	0	0	0	0	1	1	26	33
2004	1	1	3	6	0	0	0	0	1	1	6	115
2005	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	1	1	5	18	0	0	0	0
2008	2	1	9	9	0	0	0	0	1	1	5	9
2009	3	1	1	10	0	0	0	0	1	1	3	6
2010	1	0	0	0	0	0	0	0	0	0	0	0
2011	2	1	1	9	0	0	0	0	0	0	0	0
2012	2	1	19	80	0	0	0	0	0	0	0	0
2013	1	1	1	4	1	1	2	9	1	1	1	4
2014	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	1	1	67	101	1	0	0	0
2017	1	0	0	0	0	0	0	0	0	0	0	0
2018	1	1	9	14	1	1	1	2	2	0	0	0
2019	2	1	29	28	0	0	0	0	2	1	342	664
Total	17	8	72	159	4	4	75	131	13	7	392	864

Biographical drama

	G/PG				PG-13				R-rated			
	Films	Smoking	Incidents	Impressions (millions)	Films	Smoking	Incidents	Impressions (millions)	Films	Smoking	Incidents	Impressions (millions)
2002	1	0	0	0	2	2	49	1,340	3	3	159	867
2003	1	1	20	173	2	2	118	1,444	2	2	126	515
2004	2	1	13	108	5	5	432	5,295	2	2	146	736
2005	2	2	329	1,410	4	4	290	2,715	4	4	422	1,569
2006	3	0	0	0	8	3	45	534	5	4	738	2,197
2007	2	2	68	150	4	2	106	160	5	5	596	6,070
2008	2	1	3	4	3	3	210	1,219	2	2	298	598
2009	2	2	55	90	4	3	163	1,679	5	4	194	1,131
2010	2	0	0	0	3	3	53	339	3	3	206	1,443
2011	2	0	0	0	1	1	17	159	1	1	14	66
2012	1	0	0	0	3	2	128	2,433	3	3	367	3,301
2013	0	0	0	0	5	5	253	3,056	8	7	513	3,856
2014	3	1	10	37	6	6	447	4,174	3	3	377	2,461
2015	2	1	83	100	7	5	229	1,231	5	3	194	2,495
2016	3	0	0	0	6	5	180	489	10	10	477	1,788
2017	2	1	10	16	9	9	643	2,633	10	10	872	2,724
2018	1	0	0	0	10	10	1019	9,199	5	4	198	1,099
2019	2	1	2	13	10	9	565	1,886	6	4	540	7,622
Total	33	13	593	2,102	92	79	4,947	39,983	82	74	6,437	40,537

Purely fictional

	G/PG				PG-13				R-rated			
	Films	Smoking	Incidents	Impressions (millions)	Films	Smoking	Incidents	Impressions (millions)	Films	Smoking	Incidents	Impressions (millions)
2002	26	8	50	503	66	52	1,197	16,347	44	38	1,800	11,361
2003	23	8	71	649	62	50	1,064	11,595	46	38	1,136	9,217
2004	28	11	128	2,206	70	50	1,140	10,946	37	30	1,436	8,115
2005	29	11	143	1,376	66	40	1,223	14,891	37	35	1,540	8,129
2006	37	8	146	937	65	43	996	8,790	43	38	1,624	8,656
2007	34	13	105	1,107	52	35	911	8,861	61	49	1,442	5,733
2008	24	3	41	143	74	47	856	8,226	39	29	960	5,505
2009	33	3	62	204	59	32	704	5,483	45	31	924	8,569
2010	32	4	30	500	50	20	511	4,650	45	31	1,020	7,272
2011	29	5	106	1,365	63	29	727	9,625	36	25	1,015	5,306
2012	25	2	4	26	58	28	1,035	12,345	50	37	1,330	9,051
2013	18	3	7	21	54	18	520	7,704	48	39	1,270	9,065
2014	23	2	17	114	55	22	718	6,479	41	24	1,070	5,838
2015	21	2	5	24	52	23	290	1,504	45	34	935	3,929
2016	22	1	4	6	59	17	564	3,954	39	23	1,851	10,128
2017	19	0	0	0	51	21	262	2,439	43	31	1,354	8,555
2018	21	2	8	101	50	12	221	1,029	47	33	1,347	5,065
2019	31	6	77	675	39	12	314	1,720	46	36	1,731	11,097
Total	475	92	1,004	9,958	1,045	551	13,253	136,587	792	601	23,785	140,593

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²⁰ Time Warner (Warner Bros.) suspended its agreement with California in 2011; the others soon lapsed.

²¹ For UCSF’s 2020 survey of video-on-demand rating, tobacco notification and parental control features, see: What is Hollywood Hiding (2020), accessible at <https://escholarship.org/uc/item/3pw661mg>.

²² The Breathe California-UCSF Onscreen Tobacco Database is accessible at smokefreemovies.ucsf.edu/search/movies.

²³ The statements about there being a significant decline between 2005 and 2010 but not between 2010 and 2019 are 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.

²⁴ 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 [Motion Picture Association](#) (2020) reports data indicating that, per capita, US films were seen fourteen times more often on digital media than in theaters in 2019.

Note that tobacco impressions are calculated on 2019 films’ box office reports through March 19, 2020. Eight 2019 films (out of 139 films) were still playing in some US theaters when shutdowns occurred due to COVID-19. Four films had tobacco content (out of the 71 films in 2019 with tobacco content). Admissions data for these films is not complete, as it is for other 2019 films but, because these few films were in theaters for at least ten weeks and ticket sales decline dramatically over time, it can be assumed that the spring 2020 shutdown made no substantial difference to 2019 impressions calculations and none to other 2019 metrics.

²⁵ Polansky JR, Titus K, Atayeva R, Glantz SA (2017) Smoking in top-grossing US movies, 2016. UCSF Center for Tobacco Control Research and Education. Available at <http://escholarship.org/uc/item/3wm5r5gx>.

²⁶ See also: Polansky JR, Modisette D, Garcia C, Glantz SA (2018) Smoking in top-grossing US movies, 2017. UCSF Center for Tobacco Control Research and Education. Accessible at <http://escholarship.org/uc/item/5939j0kd>.

²⁷ Top-grossing independent movies are a small fraction of independent movie productions. For four views of independents’ perennial difficulties, see: (1) Hope T (1995). Indie film is dead. *Filmmakers Magazine*. Available at <https://filmmakermagazine.com/108802-indie-film-is-dead-producer-ted-hope-diagnoses-the-business-climate-of-independent-film>. (2) McCauley S (2017). Indie film is alive: Interview with Ted Hope. *Filmmaker Magazine*. Available at <https://filmmakermagazine.com/103278-indie-film-is-alive>; (3) Fellows S (2019). What percentage of independent films are profitable. Stephen Fellows (blog). Available at <https://stephenfollows.com/what-percentage-of-independent-films-are-profitable/>; (4) Dams T (2020). Why the U.K.’s struggling indie film business is only getting tougher. *Variety*. Available at <https://variety.com/2020/biz/news/uk-independent-film-production-1203506754/>.

²⁸ Netflix replaced Fox on the MPA board in January 2019, when Disney acquired Fox’s film operations; however, Netflix does not consistently report box office data for occasional feature films it releases in theaters, so it is not included in this report. Due to 2019 corporate acquisitions, Warner Bros. is now reported under AT&T and Fox is reported under Disney. Independent producer-distributors with multiple top-grossing movies in 2019 include A24, Annapurna, Aviron, Entertainment Studios, Lionsgate (the leader, with 20 movies), MGM, Neon and STX.

²⁹ See tobacco depiction policies for MPA-member companies, as of May 2019, at https://smokefreemovies.ucsf.edu/sites/smokefreemovies.ucsf.edu/files//All_company_policies_0619.pdf.

³⁰ For this analysis of tobacco content in biodrama movies 2002-2018, see Polansky JR, Driscoll D et al. (2019) Smoking in top-grossing US movies, 2018. UCSF Center for Tobacco Control Research and Education. Accessible at <https://escholarship.org/uc/item/55x9b9c1>.

³¹ See Polansky JR, Glantz SA. (2020) What is Hollywood hiding? How the entertainment industry downplays the danger to kids from smoking on screen. UCSF Center for Tobacco Control Research and Education. Accessible at <https://escholarship.org/uc/item/3pw661mg>.