

of people with AIDS between 1982 and 1985 in Ireland.

Given Church teaching and the illegality of homosexual acts, the gay struggle to maintain its values, community, and sexuality was largely irrelevant to mainstream Irish society, apart from moments of scaremongering. A 2017 article commemorating World AIDS Day by Ireland's national public media organization, RTÉ, stressed that the history of AIDS in Éire remains largely invisible.¹ What was sexually transformative about the epidemic lacks a chronicler. Nolan and Butler have brought the Church's role out of obscurity, but those who reshaped an important segment of Ireland's sexual topography remain obscure and their place in the national memory precarious.

HIV OUTBREAK IN IRELAND

Although Nolan and Butler deftly describe sexual repression in Ireland as background to the evolution of the Bishops' Task Force, they do not sufficiently

provide the epidemic background: a sense of the size and arc of the HIV outbreak in Ireland. In fact, when the Church stepped into the epidemic waters in 1986, the number of seropositive individuals remained quite small. They were overwhelmingly injection drug users, totaling 333 cases since 1982, compared with 50 classified as MSM and 21 as heterosexually infected.² Two years later, as the Task Force disbanded, the annual numbers, respectively, were 461, 88, and 67. But after 1988, the number of heterosexually transmitted cases chased closely the annual number of positive MSM; by 1999, the cumulative figure for each was 412 and 498, respectively. Combined, they matched the 913 injection drug use-associated cases. In the early 2000s, the number of heterosexually transmitted cases soared above the other two, while injection drug use-associated cases declined. With its adamant rejection of condoms,

how could the Church, through the Task Force, have engaged with that rising tide of sexually transmitted HIV?

As in the United States, the Irish HIV epidemic emerged during decades of deep cultural conflict over sexuality. Because of Catholic influence, schools rarely taught about HIV or sexuality, and Ireland's national broadcasting channel, a major agent of public education, failed to adequately inform the populace, 50% of whom feared, according to a 1994 survey, that the virus could be transmitted via shared utensils.³ Decriminalization of homosexuality in 1993, which in theory permitted the government to directly treat with gay activists, required the intervention of the European Court of Human Rights. A breakthrough occurred that same year when, to reduce HIV transmission, influenced by a female minister for health, Parliament finally made condoms freely available in retail shops and vending machines across the country.³

THE MAIN IMPETUS WAS ELSEWHERE


Twenty years later, the public voted in favor of same-sex marriage. How did that significant transformation occur? From Nolan and Butler's conclusion, it appears that the impact of the Bishops' Task Force on the liberalization of sexuality in Ireland was weak and indirect at best. The main impetus was elsewhere. *AJPH*

Gerald M. Oppenheimer, PhD,
MPH

REFERENCES

1. Kerrigan P. Remembering Ireland's early AIDS history. RTÉ. November 29, 2017. Available at: <https://www.rte.ie/eile/brainstorm/2017/1129/923640-remembering-irelands-early-aids-history>. Accessed March 16, 2018.
2. O'Donnell K, Moran J, O'Hora A. *HIV in Ireland, 2011 Report*. Dublin, Ireland: The Health Protection Surveillance Center; 2012.
3. O'Connell GE. *Cultural and Political Geographies of the AIDS Crisis in Ireland* [master's thesis]. Maynooth, Ireland: Maynooth University, Department of Geography; 2017.

Effect of Parental Permission and Age Restriction Laws on US Adolescent Indoor Tanning Trends

 See also Qin et al., p. 951.

Today, 17 states have laws that prohibit all minors (i.e., those younger than 18) from accessing commercially available indoor tanning.¹ Youth access laws have been introduced in another 20 states since 2015 but have yet to pass. At times, this legislative approach has fallen short, with some states ultimately adopting an age limit lower than 18 or requiring

parental consent for adolescents at a certain age. Against this backdrop, the report by Qin et al. (p. 951) in this issue of *AJPH* provides critical and much-needed evidence to reinforce and strengthen advocacy efforts to enact laws that restrict adolescents younger than 18 years from tanning indoors.

Qin et al. used the Youth Risk Behavior Survey from four

biennial surveys between 2009 and 2015 to classify adolescents according to the state laws that were applicable to their age at the time of the survey (e.g., parental

permission or age restriction laws vs none). The prevalence of adolescent use of indoor tanning in the past year was assessed for each type of regulatory environment over time, separately for males and females. From this analysis, three key findings emerge about indoor tanning in relation to state laws, particularly among girls: (1) the strong secular trend for a decline in indoor tanning use from 2009

ABOUT THE AUTHOR

DeAnn Lazovich is with the Division of Epidemiology and Community Health, School of Public Health, and the Masonic Cancer Center, University of Minnesota, Minneapolis.

Correspondence should be sent to DeAnn Lazovich, PhD, Associate Professor, Division of Epidemiology and Community Health, University of Minnesota, 1300 S 2nd St, #300, Minneapolis, MN 55454 (e-mail: lazov001@umn.edu). Reprints can be ordered at <http://www.ajph.org> by clicking the "Reprints" link.

This editorial was accepted April 8, 2018.
doi: 10.2105/AJPH.2018.304458

to 2015, even in states without laws; (2) the lack of association between parental permission laws and adolescent indoor tanning use; and (3) the lowest prevalence of indoor tanning among states with age restriction laws.

DECLINE IN INDOOR TANNING

In states without parental permission or age restriction laws, the prevalence of indoor tanning use among girls declined from 31.0% in 2009 to 10.6% in 2015. This finding is important for two reasons. First, it suggests that factors beyond state laws are contributing to changes in prevalence of indoor tanning over time and likely influence some of the decline observed in states with laws. Research on the harms of indoor tanning has garnered considerable media attention, as have legislative efforts. Thus, parents, as the gatekeepers to their children's indoor tanning access, may have acted on this new knowledge to disallow their adolescents to tan indoors. Adolescents also may have learned through channels other than their parents about indoor tanning harms. Anecdotally, high schools have promoted tan-free proms, and a recent report documented a decline in indoor tanning advertising in school newspapers.² These actions, among others, are undoubtedly reinforcing the message against indoor tanning in states with laws as well.

Second, the authors noted as a limitation that adolescents may have been more likely to underreport indoor tanning use in states with laws. However, the secular trend observed in states without laws indicates that underreporting of the behavior does not fully explain the reduction in indoor tanning use in states with age restriction laws.

PARENTAL PERMISSION LAWS

In legislative testimony and public comments in response to proposed rule changes from the US Food and Drug Administration, the indoor tanning industry has argued for parental permission laws on the basis that age restrictions violate parents' autonomy to make decisions on behalf of their children. Despite evidence that tanning salons are noncompliant with requirements for parental consent,³ this argument has convinced state legislatures to pass parental permission laws, often as a compromise in lieu of passing more restrictive age laws promoted by advocates.

The data from the Qin report are compelling because they undercut industry arguments. After accounting for age, race/ethnicity, and survey year, overall prevalence of adolescent indoor tanning use across four surveys was no different in states with parental permission laws than in states with no laws. However, in 2015, the highest crude prevalence of indoor tanning among girls was in states with parental permission laws (13.5% vs 10.6% in states without laws and 7.0% in states with age restriction laws). These results provide advocates with data to argue more effectively for restricting adolescent indoor tanning based on age.

AGE RESTRICTION LAWS

Significantly, Qin et al. reported that the adjusted prevalence for indoor tanning use was 47% lower in states with age restrictions than in states with no laws. Note, however, that restrictions varied by age, so that in some states, adolescents younger than 18 years were prohibited from indoor tanning, but in other states, the age restriction pertained

only to adolescents younger than 15 or 16 years. Advocacy efforts have focused on the more stringent age limit to prohibit indoor tanning among those younger than 18 years rather than at younger ages. Regrettably, Qin et al. did not directly address indoor tanning according to restrictions at different ages. This was likely because no states had minor bans in 2009 or 2011, just three had bans at the time of the 2013 survey, and although eight additional states had bans in time for the 2015 Youth Risk Behavior Survey, three of those states did not participate. Thus, as more states adopt laws prohibiting indoor tanning by minors, the full effect of this upper age restriction will become more apparent with time. Meanwhile, these results should be embraced for what they indicate about the effectiveness of age restrictions. Setting the limit to the age of majority would mean even fewer adolescents exposed to the harms of indoor tanning.

RAISING THE AGE LIMIT TO 18 YEARS

Following mounting evidence that artificial sources of ultraviolet radiation via indoor tanning cause nonmelanoma and melanoma skin cancers, the International Agency for Research on Cancer classified indoor tanning as a human carcinogen in 2009.⁴ The International Agency for Research on Cancer report, along with methodologically rigorous epidemiological studies investigating the association between indoor tanning and melanoma published shortly thereafter,^{5–7} led to a concerted and coordinated effort by members of the medical, research, public health, and advocacy communities to urge state legislatures to pass laws restricting indoor tanning use by minors. Their

actions to tackle this risk behavior via state legislation has had remarkably rapid results—at 7.0% in 2015, indoor tanning prevalence among adolescents residing in states with age restriction laws was well below the *Healthy People 2020* goal of 14%.

Although this reduction in indoor tanning prevalence is a public health success worth celebrating, more work is needed. Following the 2016 presidential election, the US Food and Drug Administration did not finalize the rules announced the previous year for instituting a national ban on indoor tanning among adolescents younger than 18 years. Thus, the onus for protecting youths from this exposure has now fallen back to the 33 states that have yet to pass legislation to prohibit minors from tanning indoors.

The authors estimated that 61 830 melanoma cases and 6735 melanoma deaths could be prevented in the United States if adolescents were prevented from tanning indoors as a result of the age 18 restriction laws. Moreover, an even greater reduction in the skin cancer burden would be possible if avoiding indoor tanning during adolescence led to lower likelihood of adopting the behavior in adulthood, similar to other risk behaviors like smoking.

Taken together, this report gives new impetus to the advocacy community to pursue legislation with so much potential to protect the lives of adolescents. *AJPH*

DeAnn Lazovich, PhD

REFERENCES

1. National Conference of State Legislatures. Indoor tanning restrictions for minors—a state-by-state comparison. Available at: <http://www.ncsl.org/research/health/indoor-tanning-restrictions.aspx#Tanning>. Accessed April 4, 2018.
2. Lofgreen SJ, Domozych R, Doctor M, Reimer C, Self A, Dellavalle RP. UV tanning advertisements in national high

school newspapers. *Dermatol Online J*. 2017;23(4).

3. Forster JL, Lazovich D, Hickie A, Sorensen G, Demierre MF. Compliance with restrictions on sale of indoor tanning sessions to youth in Minnesota and Massachusetts. *J Am Acad Dermatol*. 2006; 55(6):962–967.

4. El Ghissassi F, Baan R, Straif K, et al. A review of human carcinogens—part D: radiation. *Lancet Oncol*. 2009;10(8): 751–752.

5. Lazovich D, Vogel RI, Berwick M, Weinstock MA, Anderson KE, Warshaw EM. Indoor tanning and risk of melanoma: a case-control study

in a highly exposed population. *Cancer Epidemiol Biomarkers Prev*. 2010;19(6): 1557–1568.

6. Veierød MB, Adami HO, Lund E, Armstrong BK, Weiderpass E. Sun and solarium exposure and melanoma risk: effects of age, pigmentary characteristics, and nevi. *Cancer*

Epidemiol Biomarkers Prev. 2010;19(1): 111–120.

7. Cust AE, Armstrong BK, Goumas C, et al. Sunbed use during adolescence and early adulthood is associated with increased risk of early-onset melanoma. *Int J Cancer*. 2011;128(10): 2425–2435.

Addressing the Declining Rates of Completion and Gender Coverage Inequity in Human Papillomavirus Vaccination in the United States

 See also Spencer et al., p. 946.

Human papillomavirus (HPV) is a significant contributor to the cancer burden in the United States. More than 21 000 cases of cancer are attributed annually to the virus. Although the vaccine has been shown to be both safe and effective, it remains underutilized, particularly among males. Spencer et al. (p. 946), in this issue of *AJPH*, address the very important question of what helps predict, in boys and girls, why the recommended HPV three-shot series is initiated but not completed, which results in sub-optimal protection against HPV infection and related complications.

Using claims data, Spencer et al. determined the rate of three-dose completion within 12 months of taking the first dose. They showed that the vaccine uptake rate of three doses within 12 months is still well below the 80% threshold for Healthy People 2020 and has declined since recommendations for full female and male vaccination were promulgated. Their work is important for several reasons. First, they used claims data that are increasingly important in the analysis of health services delivery and medical care evaluation.¹ As the

electronic health record is more integrated into the American health care system (and ideally links to vaccine registries), it becomes a valuable source of information for the public health community. The incidental finding that about 60% of possible study participants were excluded because they were not continuously enrolled in the same health plan for 24 months highlights the value of such studies and merits additional inquiry. Second, the results of the work by Spencer et al. remind us that despite an abundance of guidance about setting up systems for administering all vaccines, we must be vigilant about implementing those systems and continuously demonstrating their value in increasing universal vaccine uptake.

ORIGINS OF HPV VACCINE

HPV vaccine was first licensed by the Food and Drug Administration in 2006.² This quadrivalent vaccine was created to prevent cervical cancer. Hence, the initial research, evaluation, and regulatory and marketing

efforts focused primarily on females. This focus had the unintended adverse consequence of delaying an HPV vaccine recommendation for males until 2011. During the seven years since that recommendation was made, there has been a continued delay in uptake of the vaccine among males to allow parity with females.³ The implications of this are a lack of equity that puts males and, therefore females, at increased risk for disease, and an under-appreciation of the benefits of the vaccine to all adolescents.

HPV-ASSOCIATED CANCERS

The “epidemic” of HPV-associated head and neck cancers, mostly in men younger than those with these cancers previously, and anogenital cancers in males and females merits increased attention. Oropharyngeal cancers could be on track to surpass cervical

cancer by 2020.⁴ This alarming increase in HPV-associated oropharyngeal cancer highlights the importance of enhanced efforts to increase vaccination among young men. These oropharyngeal cancers have markedly increased survival compared with oropharyngeal cancers associated with other risk factors.⁴

MALES AS ASYMPTOMATIC HPV RESERVOIRS

The low three-dose HPV uptake rate demonstrated by Spencer et al. has significant implications for the persistence of a reservoir of asymptomatic infected males.⁵ A nationally representative sample demonstrated that overall genital HPV infection prevalence for men aged 18 to 59 years was more than 45%. A bimodal pattern of genital HPV infection showed peaks of infection among men aged 20 to 32 years and a second, narrow peak among men aged 58 to 59 years. HPV genotyping identified high-risk and low-risk HPV. HPV types, oncogenic and nononcogenic, were broadly represented among the study participants. This “reservoir” of HPV in men of all ages and the possibility of continuous transmission are clear

ABOUT THE AUTHOR

Franklin D. Pratt is with the Vaccine Preventable Disease Control Program, Department of Public Health, County of Los Angeles, Los Angeles, CA.

Correspondence should be sent to Franklin D. Pratt, Medical Director, Vaccine Preventable Disease Control Program, 3530 Wilshire Blvd., Suite 700, Los Angeles, CA 90010 (e-mail: fpratt@ph.lacounty.gov). Reprints can be ordered at <http://www.ajph.org> by clicking the “Reprints” link.

This editorial was accepted April 14, 2018.

doi: 10.2105/AJPH.2018.304479