GARDASIL A YEAR LATER: CERVICAL CANCER AS A MODEL FOR INEQUALITY OF ACCESS TO HEALTH SERVICES

MICAH GLOBERSON*

This article updates a prior feminist legal analysis of Gardasil,[1] the vaccine against Human Papillomavirus ("HPV"), in light of new developments. Recent discoveries confirming that HPV poses threats to men led Merck & Co. ("Merck") to apply for FDA approval to market Gardasil to males. These developments have renewed focus on the recurring question of whether making Gardasil vaccination a prerequisite for boys' school participation will arouse the same public condemnation that resulted from the prior mandate targeting girls. Another new development involves a vaccine panel recommendation by the Centers for Disease Control ("CDC") that inadvertently resulted in a policy change requiring proof of HPV vaccination from all female U.S. green card applicants between ages eleven and twenty-six. This article contrasts the new green card policy against the school vaccination policy, lamenting that the new immigration policy bypassed the opportunity for a critical cost-benefit analysis that would likely have shown that the new policy lacks substantial public benefit and is both over-inclusive and cost-inefficient. The article then observes how technologies such as the Pap smear and Gardasil served to widen the gap in equal access to medical services that initially emerged between the wealthy and the poor in the 1960s and 1970s with respect to cervical cancer. Particular attention is given to poor and minority women—groups identified to be at greater risk of contracting HPV-triggered cancers than others. The Visual Inspection with Acetic Acid ("VIA") technique is discussed as a possible option for meeting the immediate health needs of low-income populations.

---

* Regulatory Specialist, Bureau of Economic Growth, Agriculture, and Trade ("EGAT") and Office of General Counsel ("GC") at the United States Agency for International Development ("USAID"). J.D., 2007, University of California-Davis; Masters of Pacific International Affairs, 2003, University of California-San Diego; B.A., Philosophy, 2000, University of California-Los Angeles. The author wishes to thank Linda Globerson, Anna Slotky, Dara Walsh, Meredith Wallis, Patricia Stephenson, Ariel Rief, and Dr. Ti Nghiem for their encouragement and advice in writing this paper and composing related presentations. Special thanks to Prof. Lisa R. Pruitt and Dr. Hanh La for their indispensible input and direction.

The information and views presented in this article were prepared by the author outside of his employment with USAID. As such, they are solely the views of the author and do not necessarily represent the views or the positions of the U.S. Agency for International Development or the U.S. Government.

[1] Micah Globerson, *Protecting Women: A Feminist Legal Analysis of the HPV Vaccine, Gardasil*, 17 TEX. J. WOMEN & L. 67 (2007).

The case of Vietnamese-American women—the sub-population in the United States facing the greatest risk from cervical cancer—is discussed in detail, demonstrating that cultural norms and practices can be as important as access in determining the effectiveness of preventative screening programs. The paper concludes by considering how the policy changes proposed in the Obama-Biden reform plan, as well as the Obama-Biden pledge to double foreign assistance funding, might affect citizen and immigrant girls' and women's access to health insurance and services in the United States. Finally, HPV research over the past year teaches us that the problems that do not affect us directly today are ones that we may nonetheless need to solve as a community moving forward.

I. BACKGROUND: A BRIEF SUMMARY OF HPV AND GARDASIL

While fifth century B.C.E. Greek and Hindu texts made reference to cervical cancer, and various nineteenth century medical texts detail the disease and its treatment, it was not until 1900 that Thomas Stephen Cullen, a Professor at Johns Hopkins University, linked precursor lesions to cancer of the cervix.[2] Sixty years of additional research developed the science community's current understanding of the disease and how it progresses.[3] Today, the science of preventative treatment of cervical cancer is nearly perfected, such that the contemporary screening techniques, when properly administered, make cervical cancer almost 100 percent preventable.[4]

A. Cervical Cancer Incidence and Mortality Worldwide

As systematic population-based prevention programs went into effect in the 1960s and 1970s, the number of cervical cancer cases among populations with access to those programs dropped precipitously.[5] For example, the cervical cancer rate in the United States was 38 per 100,000 in the second national cancer survey in

---

[2] MICHAEL J. O'DOWD & ELIOT ELIAS PHILIPP, THE HISTORY OF OBSTETRICS AND GYNAECOLOGY 297 & 397 (Parthenon Publishing Group 1994); THOMAS STEPHEN CULLEN, CANCER OF THE UTERUS: ITS PATHOLOGY, SYMPTOMOLOGY, DIAGNOSIS, AND TREATMENT, ALSO THE PATHOLOGY OF DISEASES OF THE ENDOMETRIUM 2 (D. Appleton & Co. 1900) (stating that "[w]e now know that in the beginning cancer is essentially a local process, and that the apparently independent growths occurring later in other organs are really metastases from the primary tumor[] . . . if the primary growth can be removed by operation, before metastases have taken place, the patient is permanently cured.").

[3] A.E. Pollack & V.D. Tsu, Editorial, *Preventing Cervical Cancer in Low-resource Settings: Building a Case for the Possible, Editorial*, 89 INT'L J. GYNECOLOGY & OBSTETRICS S1, S1 (2005), *available at* http://www.rho.org/files/IJGO_89_S2_2005_01.pdf.

[4] Emmanuel Gakidou, Stella Nordhagen & Ziad Obermeyer, *Coverage of Cervical Cancer Screening in 57 Countries: Low Average Levels and Large Inequalities*, 5 PLOS MEDICINE 0863 (2008), http://medicine.plosjournals.org/archive/1549-1676/5/6/pdf/10.1371_journal.pmed.0050132-L.pdf.

[5] *Id.*

1959, but today the rate in developed countries is below 14.5 per 100,000.[6] In developing countries, however, cervical cancer incidence remains at approximately the level of the United States, Europe, Australia, and New Zealand prior to the introduction of modern screening techniques.[7]

Of the 493,000 new cases of cervical cancer that appear each year, 83 percent occur in developing countries, where cancer of the cervix accounts for 15 percent of all female cancers, versus only 3.6 percent in industrialized parts of the world.[8] The highest incidence rates are observed in Sub-Saharan Africa, Melanesia, Latin America, the Caribbean, and South-Central and Southeast Asia.[9] Of those infected worldwide, 55 percent die, resulting in 274,000 mortalities annually. There is great statistical variation in mortality rates between high and low-income populations, however, with 85 percent of those killed by cervical cancer hailing from developing countries.[10]

Cervical cancer incidence and mortality rates declined dramatically in Western countries and some developing regions over recent decades. [11] In China, for example, incidence rates declined from 17.8 in 1985 to 6.8 in 2002.[12] After breast cancer, cervical cancer is now the second deadliest cancer among women worldwide, accounting for twelve percent of cancers in women.[13] But in areas where effective screening technologies are scarce, such as sub-Saharan Africa, Central America, South-Central Asia, and Melanesia, cervical cancer remains the leading cancer.[14]

Hundreds of subtypes of HPV, the most common of all known sexually transmitted infections ("STIs"), are the main causes of cervical cancer in women.[15] The uniquely high level of contagiousness of HPV is in part a consequence of its ability to bypass the protection of condoms more easily than other STIs and the virus's ability to move from person to person by means not necessarily typical for

---

[6] D. Max Parkin, Freddie Bray, J. Feraly & Paola Pisani, *Global Cancer Statistics 2002*, 55 CA CANCER J. CLINICIANS 74, 91-92 (2005), *available at* http://caonline.amcancersoc.org/cgi/reprint/55/2/74.

[7] *Id.*

[8] *Id.* at 91; Gakidou, *supra* note 4, at 0863.

[9] Parkin et al., *supra* note 6, at 91, 93.

[10] *Id.* at 91.

[11] *Id.* at 93; WORLD HEALTH ORGANIZATION, CERVICAL CANCER SCREENING IN DEVELOPING COUNTRIES: REPORT OF A WHO CONSULTATION vii (2002) (noting that cervical cancer accounts for 12 percent of all cancers in women worldwide) *available at* http://whqlibdoc.who.int/publications/2002/9241545720.pdf.

[12] Parkin et al., *supra* note 6, at 93.

[13] *Id.*

[14] *Id.*

[15] *See generally* F.X. Bosch et al., *The Causal Relation Between Human Papillomavirus and Cervical Cancer*, 55 J. CLIN. PATHOLOGY 244 (2002); *see also* Suzanne M. Garland, *Can We Really Beat Cervical Cancer?*, 178 MED. J. AUSTRALIA, 647, 647 (2003) (explaining that "the association between persistent oncogenic HPVs and cervical cancer is the strongest for any environmental factor and human cancer.").

other STIs.[16] These atypical means of infection include skin-to-skin contact, oral sex, inadequately sanitized sex toys, and delivery of a baby where the HPV-infected mother passes it to her newborn.[17]

B. The HPV Vaccine, Gardasil

Gardasil targets only four of the hundreds of subtypes of HPV, but two of these strains cause 90 percent of genital warts and the other two, identified as HPV-16 and HPV-18, cause 70 percent of cervical cancers.[18] Clinical tests in 2005 demonstrated that the vaccine is 100 percent effective against these four strains.[19] Findings in 2007 confirmed Gardasil's effectiveness against HPV-16 and HPV-18, validating the prior findings.[20] One should note, however, that Gardasil only fully protects those not already infected with HPV, and that scientists have yet to determine how long the protection lasts beyond the first four years following the vaccination.[21]

II. INTRODUCTION: GARDASIL A YEAR LATER

A year ago, in *Protecting Women: A Feminist Legal Analysis of the HPV Vaccine, Gardasil*, I analyzed the thinking behind negative reactions to the HPV vaccine, Gardasil.[22] I commented that "[a]n interesting question that the furor over Gardasil raises is whether critics' sentiments would be the same were the vaccine intended for boys, as well as, or instead of, girls."[23] I identified as the strongest normative argument against Gardasil the proposition that use of the vaccine among girls would engender promiscuity.[24] This argument, I observed, is traceable to several interrelated sources, including: similar assumptions with respect to birth control and emergency contraception, which have been soundly disproven by researchers and courts over the past half-century; fears toward women as temptresses of men that lingered in Western thought for thousands of years and continue to play a role in modern thought and policy; today's commodification of

---

[16] Globerson, *supra* note 1, at 69 (mentioning that HPV infections pass in various ways and may circumvent the protection of condoms).

[17] The Society of Obstetricians and Gynecologists of Canada, *Frequently Asked Questions at hpvinfo.ca*, http://www.hpvinfo.ca/hpvinfo/adults/faqs.aspx (last modified Feb. 5, 2008).

[18] Globerson, *supra* note 1, at 74-75 & n.47.

[19] *Id.*

[20] *Id.* at 74 & n.47.

[21] *See* Pauline Self, *The HPV Vaccination: Necessary or Evil?*, 19 HASTINGS WOMEN'S L.J. 149, 158 n.90 (2008) (discussing need for early vaccination and reduced effectiveness of vaccination for women already exposed to any strain of HPV); Gail Javitt, Deena Berkowitz, & Lawrence O. Gostin, *Assessing Mandatory HPV Vaccination: Who Should Call the Shots?*, 36 J.L. MED. & ETHICS 384, 387-88 (2008) (observing that the duration of Gardasil protection remains unknown, but studies have shown it can be 4.5 years or more).

[22] *See generally* Globerson, *supra* note 1.

[23] *Id.* at 88-89.

[24] Globerson *supra* note 1, at 77-78.

female sexuality; a virginity-obsessed political agenda that knowingly imperils the young people that it purports to protect; and above all, an ongoing struggle between moral conservatives and progressives to define women's changed role in modern America. Because these prejudices specifically target women and girls, I concluded that an HPV vaccine intended for boys would be unlikely to attract the same degree of harsh criticism that resulted when federal and state governments included Gardasil in school vaccination schedules in 2007.

Several recent developments have occurred during the year after publication of my previous feminist legal analysis of Gardasil. One year later, Merck is in the process of applying for FDA approval to use Gardasil on boys and men, offering a novel opportunity to compare the public's reaction toward protecting men against the virus, with its earlier reaction toward using Gardasil on women.[25] In addition, during the past year, the CDC's recommendation to vaccinate women and girls between the ages of eleven and twenty-six with Gardasil has translated into a requirement that all green card applicants within that age and gender group demonstrate proof of HPV vaccination before they may attain permanent resident status.[26]

A. Revisiting the Question of an HPV Vaccine for Boys and Men

A growing body of research in 2007 and 2008 pointed to HPV's links to oropharyngeal —head and neck—cancers as well as anal and penile cancers, thus suggesting that HPV presents a cancer risk for men as well as women.[27] HPV is also responsible for a condition called recurrent respiratory papillomatosis, which affects approximately 20,000 children and adults of both genders in the United States and causes wart-like growths that can overtake the voice box and block a person's ability to speak or breathe.[28] By early 2008, research showed the increasing incidence of oral sex, particularly among American youths, which some attributed to the abstinence-only education's condemnation of vaginal intercourse and its agenda of hiding information regarding prophylactic safe sex from youths.[29] Consequently, as smoking declined in America, incidence rates for HPV-related oropharyngeal cancers rose steadily in men between 1973 and 2004, at which time HPV became as common a cause of oral cancer as alcohol or tobacco.[30]

Not long after Merck received federal approval to put Gardasil on the market, homosexual men in the United Kingdom began requesting HPV vaccinations,

---

[25] *See infra* Part II.A.ii.

[26] *See infra* Part II.B.

[27] Globerson, *supra* note 1, at 70 nn.25-28.

[28] Judy Fortin, *Robbed By Rare Virus, Boy Gets His Voice Back* (CNN television broadcast Dec. 22, 2008), *available at* http://www.cnn.com/2008/HEALTH/12/22/hm.voice.box/#cnnSTCVideo (describing the recurrent respiratory papillomatosis condition in a young boy).

[29] Globerson, *supra* note 1, at 91 & n.124.

[30] *Id.* at 71.

believing that they might benefit from protection against the highly contagious virus.[31] Research in early 2007 indicated that men might benefit from the HPV vaccine, particularly gay men who are at a greater risk for potentially HPV-triggered anal cancers but who are often unaware that they face any such risk and consequently do not request anal pap tests.[32]

In my previous article, I posited that, if studies revealed that women and gay men—but not straight men—both benefit from HPV vaccination, constitutional issues arise on the basis of equal protection.[33] While constitutional protections based on gender may justify a school vaccination program directed only at women, members of the LGBT community are not currently a protected group under the constitution, and therefore, are not entitled to similar special protection.[34] Recent research, conducted since the publication of my article in 2007 and 2008, demonstrates with increased clarity, that HPV is not a unique threat to females or to gays, but a threat to people of all genders and sexual preferences.[35]

i. New Findings Confirm that HPV Causes Cancer in Men

New research demonstrates that HPV poses a real cancer risk for men and women alike and that Gardasil can effectively reduce this risk in women. The American Cancer Society estimates indicate a 2006 penile cancer infection rate of 1,530 cases and a 2007 anal cancer rate of 1,900 cases among men in the United States.[36] Comparatively, doctors in the U.S. diagnose approximately 12,000 cases of cervical cancer in women, one third of which result in death, and many other cases which leave survivors infertile or otherwise harmed.[37]

Overall, HPV causes more cancer in women than in men.[38] Nonetheless, the HPV-caused cancers afflicting men are equally as disabling and life-threatening as the cancers affecting women.[39] Scientists believe that general HPV infection rates

---

[31] Michelle Roberts, *Gay Men Seek 'Female Cancer' Jab* (BBC television broadcast Feb. 23, 2007), *available at* http://news.bbc.co.uk/1/hi/health/6342105.stm.

[32] *See* Globerson, *supra* note 1, at 71-72; Edwin J. Bernard, *HAART is not Reducing Risk of Anal Cancer*, AIDSMAP NEWS, Aug. 29, 2005, http://www.aidsmap.com/en/news/44e54c4a-27d9-45fe-8533-a0e7c70499b8.asp (showing that, as far back as 2005, 95 percent of gay men infected with HIV also had anal HPV, half of those infected showing precancerous HPV-induced lesions).

[33] Globerson, *supra* note 1, at 87-88.

[34] *Id.*

[35] *See infra* Part II.A.i.

[36] *See* Centers for Disease Control and Prevention ("CDC"), CDC Fact Sheet: HPV and Men (2007), http://www.cdc.gov/std/hpv/HPV&Men-Fact-Sheet.pdf.

[37] *See* CDC, HPV Vaccine Information For Young Women, http://www.cdc.gov/std/hpv/STDFact-HPV-vaccine.htm (last modified Jun. 26, 2008).

[38] Globerson *supra* note 1, at 70-71 & n.21.

[39] Posting of Bernadine Healy to Heart to Heart heath blog of U.S. NEWS & WORLD REPORT http://www.usnews.com/blogs/heart-to-heart/2008/11/14/hpv-vaccine-for-men-its-about-time.html (Nov. 14, 2008, 05:41 PM EST).

are approximately equal between the genders.[40] Infected men, however, lack access to a preventative screening technology that is analogous to the vaginal Pap smear for women, which is effective at detecting cervical pre-cancers before they become deadly.[41]

ii. Merck Applies for FDA Approval to Give Gardasil to Men

In a recent trial of over 4,000 males aged from sixteen to twenty-six, Gardasil cut infection rates for the four most dangerous HPV strains by 45 percent and reduced the incidence of genital warts by 90 percent.[42] These findings are remarkable. Until December 2007, the CDC's primary literature on HPV in men advised that men would derive no clear health benefit from knowledge of the virus and that there was no need to treat men for the virus because it rarely affected men's health.[43] Recent research suggests otherwise: the suspicions sewn by the 2006 HPV trials have now ripened into scientifically recognized concerns regarding men's cancer risk from HPV. Consequently, former hypothetical questions regarding the appropriateness or efficacy of an HPV vaccine for boys are now ripe questions before the FDA.

B. The Gardasil Mandate for Green Card Applicants

Based on the same recommendations of the CDC Advisory Committee on Immunization Practices that supported HPV vaccination programs for schoolgirls, girls and women between ages eleven and twenty-six must now show evidence of Gardasil vaccination in order to apply for a United States permanent resident card, also known as a "green card."[44] The vaccination requirement came into effect in

---

[40] Sylvia Law, *Human Papillomavirus Vaccination, Private Choice, and Public Health*, 41 U.C. DAVIS L. REV. 1731, 1733 n.6 (2008) (stating that the rate of HPV infection is approximately the same for men as for women). *See also* Globerson, *supra* note 1, at 71 nn.18-20 (providing the current estimated male HPV infection rates).

[41] An underutilized *anal* pap test does exist for those who engage in anal sex; however, men still have no penile Pap test analogous to the vaginal Pap smear for women. Globerson, *supra* note 1, at 71-72 (referring to an anal pap test for gay men, who are seventeen times more likely than heterosexual men to develop anal cancer); *id.* at 71 n.22 (explaining that no test currently exists for identifying HPV-associated penile cancers in men); CDC, CDC Fact Sheet: HPV and Men (2007), http://www.cdc.gov/std/hpv/HPV&Men-Fact-Sheet.pdf (maintaining that no test exists for men that is analogous to the female Pap smear).

[42] Press Release, Merck, *GARDASIL®, Merck's Cervical Cancer Vaccine, Demonstrated Efficacy in Preventing HPV-Related Disease in Males in Phase III Study* (Nov. 13, 2008), *available at* http://www.merck.com/newsroom/press_releases/research_and_development/2008_1113.html (describing results of study that included approximately 3,400 heterosexual males aged 16 to 23 and approximately 600 men of the same age group that have sex with men).

[43] Globerson, *supra* note 1, at 71 & n.23 (paraphrasing from the 2006 CDC factsheet on HPV and Men); *contra* CDC, *supra* note 36 (updating substantially the prior year's factsheet to acknowledge anal and penile cancer risks from HPV in men and making reference to on-going trials to assess the effectiveness of HPV vaccine for men).

[44] Miriam Jordan, *Gardasil Requirement for Immigrants Stirs Backlash*, WALL ST. J., Oct. 1, 2008, *available at* http://online.wsj.com/article/SB122282354408892791.html. *See also* Associated Press, *Green Card Applicants Mandated to Get HPV Vaccine*, INT'L HERALD TRIBUNE, Oct. 2, 2008,

July 2008, when the U.S. government updated its list of recommended vaccines in response to a 1996 immigration law that requires green card applicants to receive any vaccinations recommended by the U.S. government for its own citizens.[45] Other vaccines required for the permanent residency application include childhood diarrhea, Hepatitis A, Meningitis, and shingles.[46]

In each of the past two years, over 200,000 women and girls between ten and twenty-nine obtained legal permanent resident status, indicating that the new green card vaccination policy change may call for a large number of new vaccinations.[47] As with the mandatory vaccination programs for school girls, the usual criticisms arise regarding "Big Pharma" padding its pockets at the expense of parental rights.[48] The new green card policy, however, is substantially different from the prior policy both in terms of the cause and the manner of its implementation and with respect to the entirely new cadre of critics that it has summoned from within the immigration law community.[49]

The mandatory green card vaccination policy and the mandatory school vaccination policy share several similarities and even appear complimentary, but three critical differences set them apart. One difference is that a prospective green card recipient cannot avoid the vaccination requirement by means of a parental waiver, and may only waive the obligation by showing that her religious or moral

---

http://www.iht.com/articles/ap/2008/10/02/america/NA-US-Immigration-HPV.php (noting that this policy resulted from a decision to require all vaccinations previously recommended by the CDC Advisory Committee on Immunization Practices, which had also previously recommended Gardasil vaccination for girls aged 10 to 26, thus converting the recommendation into law; noting also that Gardasil remains the only cervical cancer vaccine on the market); Michelle Gillen, *I-Team: Green Cards And Gardasil: Female Immigrants Required to Get HPV Shot Before They Can Get a Green Card*, CBS4.COM, Nov. 26, 2008, http://cbs4.com/iteam/gardasil.immigration.fda.2.874641.html; U.S. Citizenship and Immigration Services, *Lawful Permenent Residence ("Green Card")*, www.uscis.gov/greencard (last visited Mar. 15, 2009) (referring to the United States Permanent Resident Card the "green card").

[45] U.S. Citizenship & Immigration Services ("USCIS"), USCIS Update, *USCIS Changes Vaccination Requirements To Adjust Status To Legal Permanent Resident*, Jul. 24, 2008, http://www.uscis.gov/files/article/Vacine%20Req_Ajust_Stat_LPR_20080724.pdf. *See also* Jordan, *supra* note 44 (explaining how the recommendation for U.S. citizens became a requirement for green card applicants).

[46] USCIS, *supra* note 45 (revising required vaccine list).

[47] *HPV Vaccine Mandated for Green Card Applicants,* USA TODAY, Oct. 3, 2008, *available at* http://www.usatoday.com/news/health/2008-10-02-hpv-green-card_N.htm.

[48] Posting of Jill to FEMINISITE, http://www.feministe.us/blog/archives/2008/09/15/requiring-gardasil-for-us-immigrants/ (Sept. 15, 2008, 10:30AM) (concerned about "Big Pharma" targeting disadvantaged populations to take away their right of choice, regardless of the proven effectiveness of the vaccine). With a three-shot Gardasil series priced at $360 and upward, it is easy to imagine that over 200,000 female green card applicants between ages ten and twenty-nine can reasonably translate into half a billion dollars in additional annual revenues for the pharmaceutical industry as a consequence of this new policy. *See* Globerson, *supra* note 1, at 73 (detailing Gardasil pricing).

[49] *See, e.g.,* USA TODAY, *supra* note 47 (citing Tuyet Duong, a senior staff attorney for the Immigration and Immigrant Rights Program at the Asian American Justice Center, on the encumbering effect of the new policy on those seeking green cards); Gillen, *supra* note 44 (citing Marisa Casablanca, a Florida immigration attorney who says that the green card vaccination requirement "really does not make sense.").

beliefs forbid her from receiving vaccination of any kind.[50] A second difference is that females between eleven and twenty-six in most parts of the U.S. need not receive, or may easily waive, the vaccination, whereas all incoming permanent residents within the same gender and age group must adhere to a strict mandate.[51] Finally, as non-residents, girls and women applying for green cards are unlikely to receive subsidies from federal programs or medical insurance for the hundreds of dollars required to purchase a vaccination.[52]

This section first addresses the very limited HPV vaccine waiver right for green card applicants, the strictness of which does not contribute to the achievement of the so-called herd immunity.[53] The next part examines the extension of the mandate to women aged nineteen to twenty-six, which, while generally beneficial, may offer no real benefits to some of the women who must nonetheless provide evidence of vaccination.[54] Finally, this section discusses the cost implications for immigrant women of the vaccine policy that translates into approximately a $400 self-financed step-up in the cost of applying for U.S. residency.[55]

i. The Herd Immunity Justification

In the long-run, the green card policy could be important for achieving herd immunity; as the affected population is serially immunized, viable transmission vectors for the disease are cut off and the community as a whole benefits, including those not vaccinated.[56] Thus, the need to create herd immunity arguably justifies the narrowing of the opt-out clause in the context of the green card mandate, as compared to the highly permissive opt-out clause of the typical school vaccination mandate. This is particularly the case where, as here, individuals must generally

---

[50] Associated Press, *Green Card Applicants Must Get HPV Vaccine*, MSNBC.COM, Oct. 2, 2008, http://www.msnbc.msn.com/id/26999081/ (based on interview of Chris Rhatigan of the U.S. Citizenship and Immigration Services, the agency enforcing the green card vaccination checks).

[51] INT'L HERALD TRIB., *supra* note 44 (citing Jessica Arons, Director of the Women's Health and Rights Program at the Center for American Progress, who criticizes this apparent double standard).

[52] *Id.* (referring to complaints by immigration advocates that the added costs will substantially augment the financial burden for green card applicants who already pay upward of $1,000 in application fees and hundreds of dollars in mandatory medical exams). *See, e.g.*, CDC, Federal Vaccines for Children Program, http://www.cdc.gov/vaccines/programs/vfc/ (offering full official information on federal program designed to finance American children's required vaccine costs in cases of need); JEFFREY S. PASSEL & REBECCA L. CLARK, URBAN INSTITUTE, IMMIGRANTS IN NEW YORK: THEIR LEGAL STATUS, INCOMES, AND TAXES, Part I (1998), http://www.urban.org/url.cfm?ID=407432 (stating that "new immigrants are barred from Temporary Assistance for Needy Families (TANF) and Medicaid for their first five years and from Supplemental Security Income (SSI) and federal food stamps until they become citizens.").

[53] *See infra* Part II.B.i.

[54] *See infra* Part II.B.ii.

[55] *See infra* Part II.B.iii.

[56] Kevin M. Malone & Alan R. Hinman, *Vaccination Mandates: The Public Health Imperative and Individual Rights*, *in* LAW IN PUBLIC HEALTH PRACTICE 262, 263 (2003) (describing herd immunity as an effort to vaccinate the whole community except where contraindicated, substantially reducing the risk of infection to the community as a whole, including the minority of individuals left unvaccinated).

self-finance the vaccination, creating a substantial cost incentive for opting-out. A female-only vaccination scheme, however, is not designed in a way that creates herd immunity. Therefore, herd immunity is a poor justification for substantially restricting the ability to opt-out.

Herd immunity was recognized by the U.S. Supreme Court a century ago in the seminal smallpox vaccination case, *Jacobson v. Massachusetts*.[57] The Court deemed herd immunity a valid justification for requiring mass vaccinations in limited cases where such a requirement would protect public welfare from the threat of a serious disease.[58] The Court grounded state authority for overriding personal liberty in limited cases in a combination of a fundamental "social compact" that limits the scope of civil liberties and the government's inherent police power to act in order to protect general public welfare in the face of individual interests.[59] In the debate over the HPV vaccine for schoolgirls, some advocates used the herd immunity argument as a justification for mandatory immunizations.[60] If schoolgirl vaccinations could ultimately produce herd immunity, the green card requirement might protect preserve that herd immunity over time. A vaccination program limited to only females, however, will not create substantial herd immunity, even where such a program includes immigrants.

Suppose that all states adopted the typical HPV vaccine mandate for schoolgirls so that the large majority of school girls would receive HPV vaccinations. In that case, a complimentary vaccination policy for green card applicants could help prevent the dilution of nationwide herd immunity caused by foreign girls and women entering the country as non-residents, without the vaccination. Thus, even under these hypothetically optimal conditions, a combined nationwide school attendance mandate and green card mandate for women within the CDC-recommended age group may not fully achieve herd immunity.

Vaccination programs exclude boys and men in addition to girls and women not in school, those who are neither permanent residents nor citizens and those who opt-out of HPV vaccinations.[61] Consequently, half, or more of those aged eleven to twenty-six may not receive the HPV vaccination, even if both types of vaccination mandates were applied to the entire nation. So long as boys and men also carry and transmit the virus but do not receive vaccinations, herd immunity will be unattainable.[62] Since roughly nine out of ten people are heterosexual and

---

[57] Jacobson v. Commonwealth of Massachusetts, 197 U.S. 11 (1905), *reaffirmed in* Zucht v. King, 260 U.S. 174 (1922).

[58] Note, *Toward a Twenty-First Century Jacobson v. Massachusetts*, 121 HARV. L. REV. 1820, 1822-1823 (2008) (describing elements of Judge Harlan's majority decision).

[59] *Id.*

[60] *See* Globerson, *supra* note 1, at 85 & n.94.

[61] *Id.* at 80-81 (explaining easy opt-out process for "mandatory" school vaccine policy).

[62] *See* Javitt, *supra* note 21, at 389-90 (claiming that the *Jacobson v. Massachusetts* herd immunity test does not apply to the HPV school vaccination mandate primarily because the test was not designed to address vaccines against diseases such as hepatitis and HPV, which are not necessarily transmitted within the school context, thus making it harder to justify a vaccination rule that restricts school

HPV is transmitted primarily through sexual intercourse, men are the primary vector for HPV transmission to women.[63] Especially in a society where not all women are vaccinated, some individuals have partners of the same or both genders, and men often have multiple partners throughout their lives, one cannot hope to achieve herd immunity with respect to HPV in women without addressing women's primary vehicle of infection—men.

The key to achieving herd immunity in the case of HPV is to recognize that the problem of HPV infections, like many other women's issues, affects not only women but also men, and that the best solution can be obtained only through efforts inclusive of both genders. Males face direct threats to their own health from HPV, in addition to the threats faced by their by sisters, daughters, mothers and wives that indirectly, but often very substantially, impact boys and men. Therefore, when an HPV vaccine becomes available to men, both genders will benefit from the opportunity to achieve herd immunity. In the meantime, however, the green card vaccination program, with its extremely limited opt-out clause, implies a presumption that vaccinating *all* women in their mid-twenties would necessarily produce some health benefit. Given that sexual activity generally increases among women as they reach adulthood, adult immunizations may be of limited value and, in some cases, of no use at all.[64]

ii. Automatic Mandate for Adult Women Bypasses Cost-Benefit Analysis

The CDC's review panel recommended Gardasil vaccinations for all girls and women aged eleven through twenty-six, and sometimes as young as nine.[65] Mandatory school HPV vaccination policies, however, affect only the younger half of this age range because American students typically complete secondary school by age eighteen.[66] Following the CDC's study of 11,000 girls and women, the May 10, 2007 issue of the *New England Journal of Medicine* published an article describing the results of three years of follow-up studies involving 17,500 women

---

attendance; *also* stating that the *Jacobson* test fails to capture new situations where mandatory vaccinations may be justified, such as with Hepatitis and HPV, and advocating for an update of the test). Regardless of the legal issues involved in the discussion of whether a vaccine for HPV meets, under the most optimal circumstances, the *Jacobson* test for a mandate based on a herd immunity justification, it is clear that the female-only mandates leave so many carriers of the disease unimmunized that they can hardly qualify as herd protection. This is particularly true in the context of HPV, which is perhaps the most infectious and prolific of all STIs. Nonetheless, it is important to note that on an individual—i.e., non-"herd"—basis, even female-only vaccination can be very valuable. Those individuals who receive vaccination before exposure to cancer-causing HPV strains still greatly reduce their probability of contracting cervical cancer later in life.

63 JUDITH LEVINE, HARMFUL TO MINORS 92 (Thunder's Mouth Press 2003).

64 *See infra* Part II.B.ii.

65 Globerson, *supra* note 1, at 75.

66 *See* U.S. DEP'T OF EDUC., NATI'L CTR. FOR EDUC. STATISTICS, INST. OF EDUC, SCI., NCES 2008-031, THE CONDITION OF EDUCATION 2008 6 (2008), *available at* http://nces.ed.gov/programs/coe/2008/pdf/01_2008.pdf (noting that "Youth ages 18–19 are typically transitioning into postsecondary education or the workforce.").

aged from fifteen to twenty-six in a variety of counties around the world.[67] The studies showed that Gardasil is 100 percent effective for up to four years at preventing genital warts and precancerous lesions of the vulva, vagina and cervix in those women not already infected with any strain of HPV prior to vaccination.[68] Because the average age of first intercourse is 17.4 years and the HPV vaccine gives far inferior protection once the body has already encountered HPV, it is particularly important to give Gardasil to young girls before they become sexually active.[69]

On the other hand, HPV vaccination may be substantially less beneficial to the older half of the women targeted by the green card policy.[70] This group of women are much more likely to be sexually active than primary or secondary school-aged girls, and therefore, far more likely to have already contracted the HPV strains.[71] Among those women infected with one or more HPV strains prior to Gardasil vaccination, the prevalence of lesions was reduced by only seventeen percent in one study and thirty-five percent in another, regardless of whether the strains with which the woman was infected included any of the four targeted by the Gardasil vaccine.[72] Six months later, the *New England Journal of Medicine* published a cost-benefit analysis suggesting that the costs of Gardasil vaccination may outweigh the benefits of the vaccine to women of this older group with a likelihood of prior exposure.[73] At the very least, some direct attention should have been given to the proposition of mandating the vaccine for *all* women aged eleven to twenty-six, as women aged nineteen to twenty-six may be substantially less likely to benefit from HPV vaccination than girls aged eleven to eighteen—and by turning recommendations directly into mandates, the government bypassed an important opportunity for a careful analysis of the costs and benefits of such mandates.

Because the national green card policy does not permit the kind of case-by-case considerations embedded in the school HPV vaccine mandates, it is not unlikely that many sexually active women in their twenties now required to get vaccinated in order to receive their green cards will not receive any cancer-prevention benefits from the vaccine at all. It is telling that even some of those on

---

67 Self, *supra* note 21, at 152.

68 *Id.*

69 Globerson, *supra* note 1, at 93.

70 *See* Jane J. Kim & Sue J. Goldie, *Health and Economic Implications of HPV Vaccination in the United States*, 359 NEW ENGLAND J. MED. 821, 827-29 (2008), *available at* http://content.nejm.org/cgi/reprint/359/8/821.pdf (suggesting that HPV vaccination might not be cost-effective for some older women already exposed to HPV); *see also* Self, *supra* note 21 (emphasizing the importance of early vaccination).

71 Kim & Goldie, *supra* note 70, at 827-29.

72 Self, *supra* note 21, at 152 (adding that "[t]hese findings clearly demonstrate that the vaccine's effectiveness is optimal before the onset of sexual activity and confirm the need to provide the vaccine before exposure to the targeted HPV strains.").

73 Kim & Goldie, *supra* note 70.

the same CDC panel that unanimously recommended the vaccine were later dismayed to discover that the recommendation automatically became law without any further consideration for the fine details or additional set-asides to finance the cost of vaccination.[74] Indeed, the additional costs imposed by the vaccination requirement may not be nominal for many immigrants and may impact the ability of some to immigrate to the U.S. In a noble effort to protect women by requiring them to obtain life-saving vaccinations, it is arguable that the federal government has put the green card outside the financial reach of many women; in so doing, the federal government has inadvertently precluded the poorest legal immigrant girls and women from reaping the benefits of modern health care, personal rights and other important welfare benefits of U.S. residency.

iii. Gardasil Cost Impact for Immigrants

At the same time that the CDC panel reviewing Gardasil released its recommendation that women aged eleven to twenty-six should receive HPV vaccinations, the panel also moved to create a $2 billion fund to vaccinate the country's poorest school-aged girls.[75] Although this same vaccination later became a requirement for girls and women seeking green cards, no fund was created to subsidize their vaccines, requiring immigrant women to cover the cost of the vaccination out-of-pocket.

Green card applicants may only need to demonstrate evidence of one shot in order to meet the vaccination requirement.[76] If so, the cost of satisfying the requirement is only a third of the total cost of vaccination. Because one needs the full six-month regimen of three shots to attain immunity, a mere one-shot requirement seems all the more arbitrary. In effect, the rule only guarantees that immigrant girls and women will need to pay more to apply for a green card, while providing no certainty that the series of shots will be completed and therefore, no assurance that any benefits will ultimately accrue to either the individual or the American public.

U.S. Citizenship and Immigration Services ("USCIS") offers at least six different ways of attaining a green card.[77] To obtain a green card for employment

---

[74] Jordan, *supra* note 44 (citing Jon Abramson, chairman of CDC's Advisory Committee for Immunization Practices, at the time when the committee unanimously determined to recommend Gardasil vaccinations for girls and women aged eleven to twenty-six; also referencing a CDC spokesman who said that the panel did not recognize that its recommendations would automatically become law and a government official who said that the government might consider removing the HPV vaccine from the list); *see also* Globerson, *supra* note 1, at 68 (noting that the panel's recommendation was unanimous).

[75] Globerson, *supra* note 1, at 68.

[76] Gillen, *supra* note 44 (claiming that only one shot in the series would be enough to satisfy the evidentiary requirement for green card applicants).

[77] *See* U.S. Citizenship and Immigration Services, *Lawful Permanent Residence ("Green Card")*, http://www.uscis.gov/greencard (last visited Feb. 11, 2009) (listing ways of applying for green card). The Department of Homeland Security posts a complete breakdown of historical admission types for

purposes, all applicants must submit an I-140 Immigrant Petition and an I-485 Application for Adjustment of Status.[78] The Preference Petition, I-140, costs $475 to file and the Final Application, I-485, costs $1,010. In addition to these filing fees, the employer must competitively advertise the position, which typically costs $1,000 or more, and applicants typically hire an attorney or other agent to manage the process at a cost of around $4,000 or more.[79] Applications will require incidental fees for FedEx and other services, and other forms and fees may be involved, depending on the specific type of application.[80] At a minimum, the cost of application is $1,485 for these common forms alone.[81] In addition to the fixed USCIS form processing costs, the full Gardasil series would add at least another twenty-five percent to the price tag of a green card.[82]

The Department of Homeland Security statistics indicate that the United States took in a little over 12 million legal permanent residents in 2006, with California taking in 3.43 million, New York 1.49 million, Texas 1.16 million, and Florida 1.04 million.[83] A few studies have examined income levels among new green card recipients. One study, published by the Urban Institute in 1998, focused on New York.[84] Looking at the 1994 tax year, the study showed that the per capita income of non-refugees that attained legal alien status from 1990 to 1995 was $11,513 in the state of New York and $9,661 in New York City.[85]

Other studies by the U.S. Department of Labor examined the incomes of farm workers.[86] A 2005 study showed that, in 2001 and 2002, permanent residents made up twenty-one percent of this group, constituting almost half of all legally

---

2007. *See also* KELLY JEFFERYS & RANDALL MONGER, U.S. DEP'T OF HOMELAND SECURITY, ANNUAL FLOW REPORT, U.S. LEGAL PERMANENT RESIDENTS: 2007 3 (2008), http://www.dhs.gov/xlibrary/assets/statistics/publications/LPR_FR_2007.pdf.

[78] Immigration.com, Green Card Fee Schedule (Apr. 18, 2008), http://www.immigration.com/ourservice/greencard.html (advertising fees for green card application and legal services for a wide variety of green card types).

[79] *Id*; Gaebler.com, Green Card Costs, http://www.gaebler.com/Green-Card-Costs.htm (describing a firm's anticipated costs for obtaining an employee green card, based on a consultation with an attorney).

[80] Immigration.com, *supra* note 78.

[81] Gaebler.com, *supra* note 79 (giving figures that add up $1,010 + $475 = $1,485).

[82] *Id*; CDC, CDC Vaccine Price List, http://www.cdc.gov/vaccines/programs/vfc/cdc-vac-price-list.htm (last modified Feb. 5, 2009) (pricing the private sector cost per dose of Gardasil at $125.29).

[83] NANCY RYTINA, U.S. DEP'T OF HOMELAND SECURITY, OFFICE OF IMMIGRATION STATISTICS, ESTIMATES OF THE LEGAL PERMANENT RESIDENT POPULATION IN 2006 4 (2008), http://www.dhs.gov/xlibrary/assets/statistics/publications/LPR_PE_2006.pdf.

[84] *See* PASSEL & CLARK, *supra* note 52.

[85] *Id.* at Part IX, Detailed Table 3.

[86] *See generally* DANIEL CARROLL ET AL., U.S. DEP'T OF LABOR, FINDINGS FROM NATIONAL AGRICULTURAL WORKERS SURVEY (NAWS) 2001-2002: A DEMOGRAPHIC AND EMPLOYMENT PROFILE OF UNITED STATES FARM WORKERS (2005), http://www.dol.gov/asp/programs/agworker/report9/naws_rpt9.pdf; RICHARD MINES, SUSAN GABBARD & ANNE STEIRMAN, U.S. DEP'T OF LABOR, A PROFILE OF U.S. FARM WORKERS: DEMOGRAPHICS, HOUSEHOLD COMPOSITION, INCOME AND USE OF SERVICES (1997), *available at* http://www.dol.gov/asp/programs/agworker/report.

documented farm workers.[87] During the same period, only twenty-three percent of farm workers had health insurance, and among them, between eight and twelve percent received health insurance through their employer.[88] An earlier study from 1997 showed that farm workers holding green cards earned $7,500 to $10,000 per year, while those holding other authorizations earned $5,000 to $7,500 and unauthorized workers received only $2,500 to $5,000 annually.[89] Moreover, women farm workers made far less than men, earning between $2,500 and $5,000, compared to $5,000 to $7,500 for men.[90] A woman farm worker seeking a green card will probably earn less than $5,000 per year and have a less than one-in-four chance of carrying health insurance, self-financed or otherwise. Even the minority of those farm workers carrying a health insurance plan may not have Gardasil covered.[91] Consequently, Gardasil vaccination costing $125 per shot may put permanent residence even further out of reach for women, some of whom may find that the application costs exceed a year of their earnings.[92] At the very least, a cost-benefit analysis should consider whether the benefits of the shot outweigh the potentially substantial costs for those required to receive the shot, particularly for adult women.[93]

III. CERVICAL CANCER, "THE POOR WOMAN'S DISEASE"

Cartograms, a set of geographical maps distorted in perspective to reflect relative influence or impact rather than actual physical size, demonstrate the inverse relationship between geographical prevalence of rampant disease and regional allocations of resources used to combat disease.[94] HPV is a model for appreciating this gulf between disease prevention resources and infection rates, both because infection rates are higher for minority women and because poorer women are less likely to have access to regular Pap smears that identify pre-cancerous cervical lesions that can then be treated before they become life threatening.[95]

---

[87] CARROLL ET AL., *supra* note 86, at 6-7, 56 (stating that 53 percent of farm workers were undocumented immigrants during this period).

[88] *Id.* at 41-42.

[89] *Id.* at Chapter 3.

[90] *Id.*

[91] Sandra G. Boodman, *Is Gardasil Worth a Shot?*, L.A. TIMES, May 14, 2007, at F8 (giving examples of ways in which insurance companies do not cover the full cost of Gardasil).

[92] *See* CDC, *supra* note 82 (providing a table of vaccine prices).

[93] *See supra* Part II.B.ii (advocating a cost-benefit analysis, particularly with respect to those in the older half of the women required under the green card vaccination policy to receive Gardasil).

[94] *See generally* DANIEL DORLING, MARK NEWMAN & ANNA BARFORD, THE ATLAS OF THE REAL WORLD: MAPPING THE WAY WE LIVE (2008). Modern cartograms make use of computerized Geographical Information System (GIS) technology to dynamically calculate and display detailed data in map form. The cartogram type described here is also known as an area cartogram, a value-by-area map or an isodemographic map. *See also* International Rice Research Institute, *Cartograms,* http://www.irri.org/gis/cartograms/cartograms.htm (last visited March 24, 2009) (defining term "cartogram," with several examples).

[95] *See* Globerson, *supra* note 1, at 72-73. Cervical cancer rates are also greater for women in developing countries than for those in developed countries, the relative numbers having diverged over

As I examined in my prior article, a combination of factors in the United States create wide disparities between racial and economic groups, such that white women are both less likely to develop cervical cancer and less likely to die from the cancer if they do develop it.[96] Poorer girls, by virtue of their economic status, are least likely to be able to afford the HPV vaccine absent some form of subsidy.[97] They are also more likely to be from poor communities, where schools need federal funding for sex education, which is not only ineffective but may increase their risk from sexual activity by leaving them woefully under-informed or even misinformed.[98] Those women who are least likely to be able to afford regular, high-quality healthcare, are also those less likely to receive regular Pap smears.[99] Consequently, the poorest girls are also the most in need of an HPV vaccine.[100] This explains why cervical cancer has become "the poor woman's disease," both within the United States and internationally, with incidence and mortality rates among poor populations far outpacing those among wealthier populations.[101]

Effective cervical cancer screening programs, which include laboratory tests—e.g., biopsies—and three-year follow-ups, make cervical cancer nearly 100 percent preventable.[102] A screening every three years is equally as effective as an annual screening, and even screening only once a decade can reduce cervical cancer cases by forty percent.[103] A program in South Africa demonstrates that even once-in-a-lifetime Pap smears with follow-up colposcopy and treatment can reduce cervical cancer by nineteen percent, and other single-visit approaches using HPV DNA tests or visual screenings are even more effective and less expensive, reducing cervical cancer risk by twenty-six and thirty percent, respectively.[104]

---

the past five decades. *See generally* Gakidou, *supra* note 4, at 0863. In developing countries, "[o]lder and poor women, who are at the highest risk of developing cervical cancer, are least likely to be screened." *Id.*

96 *See* Globerson *supra* note 1, at 73.

97 *Id.* at 81 & n.79.

98 *Id.* at 89-90.

99 *Id.* at 81.

100 *Id.*

101 *See id.* at 72-74 (comparing relative incidence and mortality). Kounteya Sinha, a reporter at *The Times of India*, referred to cervical cancer as "the poor woman's disease" at least three times, referring to the condition's disproportionate impact on poor women; the expression is occasionally picked up by others as well. *See, e.g.*, Kounteya Sinha, *Rise in Cervical Cancer Deaths Alarms India*, THE TIMES OF INDIA, May 27, 2008, http://timesofindia.indiatimes.com/India/Rise_in_cervical_cancer_deaths_alarms_India/articleshow/3075123.cms.

102 Nancy C. Lee, Associate Director for Science, Nat'l Ctr. for Chronic Disease and Health Promotion, Testimony before the House Committee on Commerce, Subcommittee on Health and Environment (March 16, 1999) (stating that "cervical cancer is nearly 100 percent preventable . . . . This is largely attributed to the effectiveness of Pap smear screening for cervical cytology.").

103 J. Bradley et al., *Delivering Cervical Cancer Prevention Services in Low-Resource Settings*, 89 INT'L J. OF GYNECOLOGY AND OBSTETRICS S21, S22 (2005).

104 *Id.*

Unfortunately, only one out of every five women in the developing world receives effective cervical cancer screening.[105]

A. Cervical Cancer Prevalence in the Developing World

In the 1960s and 1970s, cervical cancer incidence rates were relatively homogeneous from country to country, but the disease is now far more prevalent among poorer populations that lack access to effective cervical cancer screening.[106] A recent study analyzed cervical cancer screening rates in fifty-seven countries around the world.[107] Of the women in these countries, in aggregate, sixty-eight percent received some kind of screening.[108] Only thirty-one percent of women in countries within the lowest decile for global wealth had ever received screenings, and only nine percent received effective screenings.[109] By comparison, nearly three times the percentage of women in the highest global wealth decile—ninety-one percent—received screening, and effective screening rates were nearly seven times higher—sixty-four percent—for women in the top decile.[110]

The disparities in cervical cancer screening rates are stark, both between developed and developing countries and within developing countries themselves. On average, nineteen percent of women receive screening in developing countries, compared to sixty-three percent in developed countries.[111] In Bangladesh, where nearly half the population lives on less than a dollar per day, a miniscule one percent of women receive screening for cervical cancer.[112] Even in relatively wealthy developing countries like China, which has a seventy percent screening rate, only twenty-three percent of women receive effective screening.[113]

Within developing countries, cervical cancer screening rates vary greatly with income levels.[114] In China, for example, about half of wealthy women have access to effective screening and all but about ten percent have access to screening

---

105 e! Science News, Only 1 in 5 Women in Developing World Receive Effective Cervical Cancer Screening, http://esciencenews.com/articles/2008/06/17/only.1.5.women.developing.world.receive.effective.cervical.cancer.screening (last visited June 17, 2008) (citing Gakidou, *supra* note 4).

106 Gakidou, *supra* note 4, at 0863; *see also supra* Section I.A. (discussing the disparity in cervical cancer rates between high- and low-income countries after the introduction of cervical cancer screening methods).

107 *See generally* Gakidou, *supra* note 4.

108 *Id.* at 0865-6.

109 *Id.*

110 *Id.*

111 *Id.* at 0863.

112 Gakidou, *supra* note 4, at 0864 (reporting screening statistic for Bangladesh); National Geographic, Bangladesh facts, http://travel.nationalgeographic.com/places/countries/country_bangladesh.html (explaining that poverty is widespread in Bangladesh).

113 *Id.* at 0864 (comparing, across 57 countries, the percentages of women with "effective," "crude," and no pelvic exam coverage in table form with descriptions).

114 *Id.* at 0865, 0867.

of some kind. [115] At the same time, only about half of poor Chinese women have access to any kind of cervical cancer screening and only about five percent receive effective screening.[116] In India, screening rates are much closer for rich and poor women, but only because screening rates are universally very low, particularly with respect to effective screening.[117] Even in Germany, where virtually all women have access to cervical cancer screening, wealthy women have ten percent more access to effective screening than poorer women.[118] Emerging technologies may widen the gap further, especially because cutting edge medicine is very expensive. Gardasil, in particular, is among the most expensive vaccines ever marketed.[119]

B. Visual Inspection with Acetic Acid ("VIA")

At the same time that technologies like Gardasil may serve to widen the gap in access to cervical cancer screening in the short-term, other technologies directed to lower-income populations can substantially address the needs of those without access to modern medicine. In low-income settings that lack highly trained medical practitioners or advanced medical equipment, developing a screening program that is both effective and affordable can be a serious challenge. Worldwide, the standard form of cervical cancer screening is the Pap smear, but a more expensive DNA test for the HPV virus is the most accurate test available.[120] Scientists grade the precision of a test in terms of its sensitivity—the degree to which it does not miss cases, yielding false negatives—and specificity—the degree to which it does not misidentify cases, yielding false positives.[121] A third type of test, Visual Inspection with Acetic Acid ("VIA"), has a level of sensitivity near that of the Pap smear, although the test's specificity is a bit lower than that of the Pap or the DNA test. This means that VIA has a greater tendency towards over-diagnosis, resulting in more unnecessary treatments—these treatments rarely produce serious complications.[122] Because the test requires only limited training and equipment, it is relatively cheap and can be administered along with immediate treatment in a single visit. VIA, therefore, represents an important alternative screening

---

[115] *Id.*

[116] *Id.*

[117] Gakidou, *supra* note 4, at 0865, 0867.

[118] *Id.* (adding that inequalities in Germany's quality of cervical cancer screening between wealthy and poor groups of women were also seen in "several other high-income countries").

[119] *See* Globerson, *supra* note 1, at 73.

[120] Sue J. Goldie et al. *Cost-Effectiveness of Cervical-Cancer Screening in Five Developing Countries*, 353 NEW ENG. J. MED. 2158, 2161 (2005).

[121] These terms are here used in the diagnostic sense rather than the analytical sense. *See generally* Alfred J. Saah & Donald R. Hoover, *"Sensitivity" and "Specificity" Reconsidered: The Meaning of These Terms in Analytical and Diagnostic Settings*, 126 ANNALS OF INTERNAL MED. 91 (1997) (defining "sensitivity" and "specificity" and analyzing the terms' use in clinical and laboratory settings).

[122] Goldie, *supra* note 120, at 2161 (presenting a table with sensitivities and specificities of the different tests, as well as the likelihood of complications from cryosurgical treatment of the lesion). Note that only about 1 percent of women suffer major complications from the cryosurgery procedure. *Id.*

procedure for use among low-income groups where the financial, staffing and equipment requirements of a Pap test are not met.[123] The VIA test uses common vinegar to blanch white any areas of the cervix that may be precancerous, making those regions visible to screening with the naked eye.[124] In low-income regions, where other screening techniques are unavailable, the VIA test can reduce lifetime cervical cancer risk by twenty-five to thirty-six percent at a cost of less than $500 per year of life saved, and the test requires only one or two visits rather than the full three visits required for a Pap test.[125] VIA is forty percent more cost-effective in two treatments rather than only one, although per-visit costs vary substantially among countries, with the greatest variability coming from training costs.[126] Thus, regardless of whether one visit or two are most cost-efficient, the VIA option represents a highly promising alternative for delivering screening at a level of sensitivity approximately equal to the Pap smear to populations that would otherwise receive no screening at all.[127]

IV. CULTURAL FACTORS INFLUENCE CERVICAL CANCER SCREENING RATES

If cervical cancer is almost completely preventable, why does it remain the second most deadly cancer for women? The obvious explanation is that not all women have access to preventative care in the form of vaccinations and regular effective screenings. At first glance, this is a very plausible explanation: cervical cancer incidence and mortality rates roughly correspond inversely to income rates worldwide, which generally correspond to rates of access to health services. But why are certain populations within an individual country at much greater risk from cervical cancer than other populations in the same country? Again, racial differences broadly correspond to economic differences, but in the United States, some sub-populations with superior access to high-quality health services have levels of cervical cancer risk that are much higher than those of other sub-populations. Scientific analysis focused on sub-populations reveals a second very important factor that substantially influences cervical cancer incidence and mortality: cultural and ethnic norms and practices.

A. Vietnamese-American Women Face Elevated Cervical Cancer Risk

After the Vietnam War ended in 1975, over 800,000 Vietnamese immigrated to the United States where they were federally designated a refugee population and

---

123 *Id.* at 2161-162 (including breakdown of costs for various cervical cancer tests across India, Thailand, Kenya, Peru, and South Africa). VIA screening was substantially cheaper than a Pap or DNA test in all cases examined.

124 Alliance for Cervical Cancer Prevention (ACCP), *Visual Inspection With Acetic Acid (VIA): Evidence to Date* 4 (2003), *available at* www.path.org/files/RH_via_evidence.ppt.

125 Goldie, *supra* note 120, at 2161-2.

126 *Id.* at 2165-6.

127 *Id.* at 2158.

therefore received greater access to health services than other groups of immigrants.[128] A large proportion of these Vietnamese immigrated to California where they received Medi-Cal and Refugee Preventive Health Services, which services included free or low-cost infectious disease treatments.[129] Despite superior access to health services in the United States, Vietnamese-American women have the lowest rate of Pap testing and the highest rate of cervical cancer of any racial or ethnic groups in the country by a wide margin.[130] The rate of cervical cancer incidence among Vietnamese women in the United States is 43.0 out of 100,000, five times the incidence rate for white women, which is 8.7 out of 100,000.[131] For example, one survey of Vietnamese-American students at the University of Houston in 1998 showed that only a little more than a third of college-aged women at the school had received a Pap test, which the researchers attributed to insufficient knowledge about screening and its importance.[132] This low rate of screening is not attributable to lack of access but to cultural norms and practices among Vietnamese-Americans, including a "strong cultural taboo" against an unmarried woman receiving a pelvic examination.[133]

While cervical cancer screening rates remain very low among Vietnamese-American women, vaccination rates among Vietnamese-American children reached eighty to ninety percent by the end of the 1990s.[134] Researchers suspect that Vietnamese-American children receive vaccinations at a rate in parity with that of children of other races in the United States primarily because federally mandated vaccine programs require, and cover the cost of, these vaccinations.[135] For example, in 1995, when fourteen percent of Asian-Americans and Pacific Islanders were estimated to carry hepatitis B, the CDC panel that would later recommend Gardasil vaccinations for schoolgirls, recommended hepatitis B vaccinations for all Asian-American and Pacific Islander children born on or after October 1, 1983.[136] Researchers in Boston studied 151 children and determined that eighty-two percent completed their vaccination series. They attributed the findings to a 1989 federal

---

128 Ramani Rangavajhula & Kathleen Hofvendahl-Clark, *Vietnamese-American Women And Cervical Cancer Screening: A Missed Opportunity?*, 2 CAL. J. HEALTH PROMOTION 120, 120 (2004).

129 *Id.*

130 *See generally* H. Rika Houston, *Health Care and the Silent Language of Vietnamese Immigrant Consumers*, 65 BUS. COMM. QUARTERLY 37 (2002), *available at* http://bcq.sagepub.com.

131 *See, e.g.*, Tung T. Nguyen, Stephen J. McPhee, Thoa Nguyen, Tram Lam, & Jeremiah Mock, *Predictors of Cervical Pap Smear Screening Awareness, Intention, and Receipt among Vietnamese-American Women*, 23 AM. J. PREVENTIVE MED. 207 (2002), *available at* http://www.pubmedcentral.nih.gov/articlerender.fcgi?tool=pubmed&pubmedid=12350454.

132 *See* Jenny Yi, *Acculturation and Pap Smear Screening Practices Among College-Aged Vietnamese Women in the United States*, 21 CANCER NURSING 335 (1998).

133 Rangavajhula & Hofvendahl-Clark, *supra* note 128, at 122.

134 Christopher N.H. Jenkins et al., *Hepatitis B Immunization Coverage Among Vietnamese-American Children 3 to 18 Years Old*, 106 PEDIATRICS e78 (2000), *available at* http://pediatrics.aappublications.org/cgi/content/full/106/6/e78.

135 Rangavajhula & Hofvendahl-Clark, *supra* note 128, at 121.

136 *See generally* Q. Ngo-Metzger et al. *Hepatitis B Vaccination Among Vietnamese-American Children in a Boston Community Clinic*, 9 ASIAN AM. & PAC. ISLANDER J. HEALTH 179 (2001).

regulation that—like the new Gardasil rule for green card applicants—required immigrants to receive at least one dose of the three-dose series of the hepatitis B vaccine.[137] Note again that the federal government paid vaccine costs for postwar Vietnamese immigrants, which is not necessarily the case for today's green card applicants.

B. Cultural Factors Explain Lower Screening Rates Among Vietnamese-American Women

The high vaccination rate among Vietnamese-American children demonstrates that Vietnamese-Americans have good access to health services and will use those services. Moreover, in contrast to their low rate of cervical cancer screening, Vietnamese-American women have a relatively high rate of self-examination for breast cancer, which researchers, attribute to the fact that, unlike with a Pap test, a woman can perform this test on herself.[138] In a broad survey of literature on the topic, Ramani Rangavajhula and Kathleen Hofvendahl-Clark explain the low cervical cancer screening rate in the Vietnamese-American community by pointing to a number of factors, including differences in Eastern and Western medical practices, time orientation and organization of tasks, and an expectation that the whole family will be involved in each family member's health care process.[139]

Rangavajhula and Hofvendahl-Clark detail several cultural beliefs and practices in the Vietnamese-American community that result in lower rates of screening.[140] First, Western and Eastern medical practices differ substantially. Vietnamese-Americans often believe that Western medicine is harsh on the body and that Western doctors will look down upon Eastern medical practices.[141] Many use traditional Eastern medicine to treat "female problems."[142] Traditional Vietnamese medicine, which has no analog to the Pap test, uses a curative rather than a preventative approach, so Vietnamese-American women rarely seek medical attention until after they discover symptoms.[143]

Second, methods of communications with doctors differ. Vietnamese-Americans often use polychromic time instead of the monochromic time typically used by Westerners in making schedules, which may result in miscommunication with doctors and missed or skipped appointments.[144] Vietnamese people tend to be "high context," which means that the family identifies itself as a group, and even

---

137 *Id.*

138 Rangavajhula & Hofvendahl-Clark, *supra* note 128, at 123.

139 *Id.* at 122.

140 *Id.*

141 *Id.*

142 *Id.*

143 Rangavajhula & Hofvendahl-Clark, *supra* note 128, at 122.

144 *Id.* at 122-23.

the extended family is expected to be involved in providing monitoring, support, and other resources, including ethnic food and medicine.[145] Western medical providers generally do not include extended family in communications with the patient, which can result in a clash of expectations.[146]

Third, ideas of female modesty in Vietnamese-American culture contribute to lower screening rates. Young women model their mothers' behavior and their mothers often do not receive Pap tests or discuss sexuality.[147] Misperceptions regarding the Pap test are also common because Vietnamese-Americans often believe that unmarried women do not need pelvic exams. Factors such as education, age, and access to a culturally appropriate care by a female doctor who recommends the test, all play a role in determining the likelihood that a Vietnamese-American woman receives screening.[148] Of those Vietnamese-American women who are aware of the high risk of cervical cancer, some do not receive screening because of their fatalistic manner of thinking—they want to protect themselves from discovering that they have cervical cancer by avoiding the Pap smear.[149]

C. Lessons from Research on Vietnamese-American Screening Rates

Cultural factors also explain relatively low cervical cancer screening rates among other populations in the United States.[150] Along with Vietnamese-American women, Latinas have some of the lowest rates of cervical cancer screening and highest rates of cervical cancer prevalence relative to other racial groups, which is attributable to a number of cultural causes largely similar to those for Vietnamese-American women, including, for example, fatalistic thinking, lack of information, modesty and shame, and family involvement in care.[151] Notably,

---

145 *Id.* at 123.

146 *Id.*

147 *Id.*

148 Rangavajhula & Hofvendahl-Clark, *supra* note 128, at 123.

149 *Id.*

150 *See, e.g.*, Frances Lee-Lin et al., *Cervical Cancer Beliefs and Pap Test Screening Practices among Chinese American Immigrants*, ONCOLOGY NURSING FORUM (2007), http://www.articlearchives.com/population-demographics/demographic-groups/1532550-1.html (noting that cervical cancer incidence and mortality rates are higher for Asian women than for white women and looking at cultural causes among Chinese-American women); Felicia Schanche Hodge, Larri Fredericks & Beverly Rodriguez, *American Indian Women's Talking Circle: a Cervical Cancer Screening and Prevention Project*, 78 CANCER SUPPLEMENT 1592 (1996), http://www.nursing.ucla.edu/orgs/caire/American%20Indian%20Women's%20Talking%20Circle.pdf; NAT'L ASIAN WOMEN'S HEALTH ORG., A PROFILE, CERVICAL CANCER AND ASIAN AMERICAN WOMEN (2000), http://www.hawaii.edu/hivandaids/A_Profile_on_Cervical_Cancer_and_Asian_American_Women.pdf.

151 NAT'L CANCER INST., A SNAPSHOT OF CERVICAL CANCER, http://planning.cancer.gov/disease/Cervical-Snapshot.pdf (last updated Sept. 2008); NAT'L CANCER INST., SEER CANCER STATISTICS REVIEW 1975-2005 tbl. V-8 (2008), http://seer.cancer.gov/csr/1975_2005/results_merged/sect_05_cervix_uteri.pdf; *see generally* Linda C. Harlan, Amy B. Bernstein & Larry G. Kessler, *Cervical Cancer Screening: Who Is Not Screened and Why?*, 89 AM. J. PUB. HEALTH 885 (1991); Leo R. Chavez et al., *Beliefs Matter: Cultural Beliefs and the*

some of the racial and ethnic groups with relatively high incidences of cervical cancer in the United States—including the Vietnamese, Latinas, Philippinas and Koreans—have histories of Catholic cultural influence that could be both a potential cause and a potential solution to this situation. [152] The Church might be able to play a valuable role in encouraging greater screening among women by addressing the cultural proclivities that discourage screening. Rangavajhula and Hofvendahl-Clark recommended leveraging the Vietnamese-American community's consistent use of available healthcare services to address early childhood concerns such as vaccination.[153] Specifically, they proposed that, when mothers come to the hospital to administer shots to their children, they should be confronted with information about cervical cancer, if not an opportunity to receive an on-the-spot screening.[154] The Rangavajhula and Hofvendahl-Clark study, released in 2004, preceded the market availability of an HPV vaccine, but the study probably would have strongly recommended a Gardasil vaccination program had the vaccine existed at the time.[155] Including Gardasil in school vaccination programs should make a particularly large difference for the Vietnamese-American community where childhood vaccination rates are very high and adult cervical cancer screening rates are very low.

V. CONCLUSION

A. Changes to Expect in an Obama-Biden Presidency

Over the next four years, the healthcare crisis in America is a stated priority for Barack Obama's team as he begins his first term as president. The U.S. Census Bureau survey indicates that, from 2005 to 2007, on average, 7.1 percent of all children under nineteen years of age in the United States are at or below 200 percent of the national poverty level and lack health insurance.[156] During the 2008 election, President Barack Obama proposed requiring children to possess health insurance and advocated expansion of the State Children's Health Insurance

---

Use of Cervical Cancer-Screening Tests, 113 AM. ANTHROPOLOGIST 1114 (2001); Amelie G. Ramírez et al., The National Latino Cancer Research Network, *Hispanics and Cervical Cancer: Cultural Factors Affecting Screening Practices* 2 (2006), *available at* http://ncipoet.cancer.gov/CervicalCancer/Ramirez.ppt (giving a set of reasons for lack of testing among Hispanics that are highly similar to the reasons cited by Rangavajhula and Hofvendahl-Clark).

[152] NAT'L CANCER INST., RACIAL/ETHNIC PATTERNS OF CANCER IN THE UNITED STATES 1988-1992 (Barry A. Miller et al. eds., 1996) (giving cervical cancer statistics for racial sub-groups in the U.S.).

[153] Rangavajhula & Hofvendahl-Clark, *supra* note, 128, at 124-25.

[154] *Id.* at 124.

[155] *See generally id.*

[156] U.S. CENSUS BUREAU, NUMBER AND PERCENT OF CHILDREN UNDER 19 YEARS OF AGE, AT OR BELOW 200 PERCENT OF POVERTY, BY STATE: THREE-YEAR AVERAGES FOR 2005, 2006, AND 2007, http://www.census.gov/hhes/www/hlthins/liuc07.html.

Program ("SCHIP").[157] Alongside Medicaid and the Vaccines for Children program, SCHIP provides federal funds to state health insurance programs for families with children.[158] As mentioned in my prior paper, these programs may serve as important sources of funding for required childhood vaccines such as Gardasil.[159]

The House reintroduced a bill previously rejected by the Bush Administration that, if passed, will add $33 billion to SCHIP over the next 4.5 years and increase enrollment in the program from around 6.7 million to an estimated 11 million.[160] Funding for SCHIP will come from cigarette tax revenues.[161] The updated program will give pregnant immigrants and legal immigrant children health coverage under SCHIP and Medicaid and will add an estimated 400,000 to 600,000 children to both programs if all states opt for coverage of these additional immigrants.[162] Current policy imposes a five-year waiting period before legal immigrants become eligible for such coverage.[163] The bill is generally favored by Democrats but was rejected by Republicans when they dominated both the legislative and executive branches.[164] It is uncertain how the bill will fare when it reaches the Senate, which is more conservative than the House, but its passage will appear to bolster school vaccination efforts and encourage more states to adopt programs in order to tap the expanded pool of federal funding.[165] It remains unclear whether the final version of the policy will extend the program's benefits to those who have not yet received green cards and are in the process of applying for them, but if it does apply to those groups, it may significantly reduce the cost for some individuals of obtaining legal residency in the United States in light of Gardasil and similar vaccine prerequisites.

---

[157] The Henry J. Kaiser Family Foundation, 2008 Presidential Candidate Health Care Proposals: Side-by-Side Summary, http://www.health08.org/healthissues_sbs/pdf/2_CANDIDATES_Side_By_Side_Oct_08_v4.pdf (comparing both candidates' healthcare plans); Obama for America, Barack Obama And Joe Biden's Plan to Lower Health Care Costs and Ensure Affordable, Accessible Health Coverage for All at 6, 8 (2008), http://www.barackobama.com/pdf/issues/HealthCareFullPlan.pdf (stating that the Obama-Biden administration will expand eligibility of SCHIP and maintain the program); U.S. Dep't of Health and Human Serv. (HHS), Ctr. for Medicare & Medicaid Serv. (CMS), State Children's Health Insurance Program, http://www.cms.hhs.gov/home/schip.asp (detailing the program); *see generally* Balanced Budget Act of 1997, Pub. L. No. 105-33, 111 Stat. 251 (1997) (creating the State Children Health Insurance Program (SCHIP)); Social Security Act, 42 U.S.C. § 1397 (1997).

[158] *See* Globerson, *supra* note 1, at nn.41 & 76.

[159] *Id.*

[160] Kevin Freking, *House to take up Children's Insurance*, JOURNAL GAZETTE, Jan. 14, 2009, *available at* http://www.journalgazette.net/apps/pbcs.dll/article?AID=/20090114/NEWS03/901149967; Shailagh Murray & Ceci Connolly, *House Set to Pass Child Health Bill*, WASH. POST, Jan. 14, 2009, at A15.

[161] Murray & Connolly, *supra* note 160, at A15.

[162] Freking, *supra* note 160.

[163] *Id.*

[164] *Id.*; Murray & Connolly, *supra* note 160, at A15.

[165] Freking, *supra* note 160.

President Obama also indicated that he intends to specifically address women's healthcare issues, including underinsurance, screening programs and research on women's health.[166] Obama specifically addressed cervical cancer when, as a state senator, he sponsored the creation of a Task Force on Cervical Cancer Elimination within the Department of Public Health.[167] What changes Obama will make on children's and women's healthcare issues are still unknown and may be largely undetermined within his fledgling administration at this point, but if he follows through in the areas of need that he identified during his campaign, vaccination and screening rates may improve for American women over the next four years. Hopefully, Obama will not stop at access but will also give adequate attention to other issues—particularly cultural issues—that impede women from getting the preventative care that they need.

With regard to international policy, Obama has mentioned a restructuring of U.S. foreign assistance programs that would include a doubling of foreign assistance funding.[168] Of course, the fiscal crisis may stand in the way of immediate-term allocations of money to America's non-military foreign programs. Obama and Biden both indicated during the campaign that their plan to increase funding for foreign assistance would be among the first casualties of the drain in federal financial resources that resulted from the financial meltdown and subsequent bailouts.[169] Until more money is available for a budget expansion, a priority may be to improve the efficient use of funds already available. Obama policies are likely to have an impact on women's health in other ways, including: a preference toward pro-choice Supreme Court judges; funding to increase availability of contraceptives to reduce unwanted pregnancies; an end to federal promotion of abstinence education in favor of full sex education; increased funding for research of women's health issues including stem-cell research; and policies that promote greater gender parity in personal income levels.[170]

---

[166] Obama for America, The Impact of the Obama Economic Plan for America's Working Women at 1 (2008), http://obama.3cdn.net/51f774d367c050dd21_ram6bhdat.pdf.

[167] Bill status of SB2424, 93rd General Assembly, http://www.ilga.gov/legislation/BillStatus.asp?DocNum=2424&GAID=3&DocTypeID=SB&LegId=8666&SessionID=3&GA=93 (identifying Obama as a sponsor of the bill and citing 20 Ill. Comp. Stat. Ann. Adv. 2310, 2310-353); Obama for America, The Obama-Biden Plan to Combat Cancer at 1 (2008), http://www.barackobama.com/pdf/issues/healthcare/Fact_Sheet_Cancer_FINAL.pdf.

[168] TheOneCampaign.com, Sen. Obama on Doubling Foreign Assistance, http://www.youtube.com/watch?v=8puAo2A8BZ8 (last visited March 9, 2009) (stating that "we are going to double foreign aid" and specifically identifying health programs, among others, as programs that will be enhanced).

[169] Ian Wilhelm, *Foreign Aid Pledge Under Scrutiny*, CHRON. OF PHILANTHROPY, Oct. 3, 2008, http://philanthropy.com/news/government/5891/foreign-aid-pledge-under-scrutiny.

[170] Obama for America, *supra* note 166, at 2-12.

B. Cervical Cancer is Everyone's Problem

By the numbers alone, cervical cancer reflects the inequality between the rich and the poor in their access to health services. One should remember, however, that cervical cancer screening was developed relatively recently, during the baby boom generation, and since then, cervical cancer has been demoted to the second most deadly cancer in women. The primary concern in fighting this disease should be ensuring that efforts do not stop at the doorstep of the world's wealthiest. Advocates of women's health must find ways to make access to cervical cancer screening technologies affordable to the world's poorer women. Techniques that bring affordable medical technologies to the world's poorest, such as Visual Inspection with Acetic Acid screening, should be funded, researched, and sustainably implemented in developing countries. At the same time, efforts to provide healthcare both within the United States and worldwide must take into consideration, and accommodate, the variety of cultural issues, such as those discussed in the context of the Vietnamese-American community, greatly impact women's likelihood of benefitting from health services.

The lesson to take away from HPV is the realization that a problem that does not affect us today, or does not affect us directly, may still be one that we should try to solve. Only a year ago, the CDC advised the American public that, although men's HPV rates equaled those of women, there was no need to treat men for the STI because it rarely affects men's health. Although there was no question, even then, that HPV very seriously impacts women's health, it also should have been apparent that that the overwhelming majority of HPV infections in women originate from men. It is problematic that only after discovering that HPV can endanger men's health that the problem was acted upon. The knowledge that men could pass a potentially lethal STI to their girlfriends and wives should have been sufficient reason to seek out ways to reduce this risk. This year, we learned that HPV affects men even more directly, for it causes penile, anal and oropharyngeal cancers. This discovery, however, should not obscure the reality that, in fact, HPV has always been a men's problem.

Just as men cannot distance themselves from the problems that afflict the women who make up their community, neither can Americans ignore the problems of their fellow Americans. America's highly inefficient healthcare system, for example, magnifies the costs for both those with insurance and those without it. Greater numbers of uninsured not only decrease the total pool of insurance money available for all, but those uninsured also tend not to receive preventative care, which means more emergency room visits, further driving up everyone's healthcare costs. Thus, the costs of the broken healthcare system will be borne ultimately by all Americans through higher taxes and increased medical insurance costs.

As the information age and climate change make the world appear increasingly as a single interconnected community, the stark inequalities in opportunity and access between low and high income communities are becoming

glaring and difficult to ignore. We are also coming to acknowledge that problems left ignored outside the United States borders—whether disease, drugs, terrorism, or poverty—tend to eventually find ways to reach America. Only by addressing problems like HPV holistically and understanding the circumstances of the people around us can we generate the benefits of herd immunity and use preventative care to finally stamp out the second-most deadly, yet almost wholly preventable, cancer in women. HPV research over the past year teaches us that that we must stop viewing ourselves, our interests and our problems as belonging to our self or our group alone, and instead learn to recognize that all human beings are a single group, whose interests, problems and future are inextricably intertwined.