

## Immigration Justice and the Grounds for Mandatory Vaccinations

**ABSTRACT.** For over a century, a foreign national seeking permission to immigrate to the U.S. could have her application for immigration denied on the ground that she suffers from a serious contagious disease. For just under two decades, a foreign national seeking permission to immigrate could also have her application denied on the ground that she has not been vaccinated against each of a list of vaccination-preventable diseases. Two recently developed *moral* justifications for the use of such “vaccination-related exclusion criteria” have focused on (a) the right and need of a society to prevent the spread of disease to others and (b) the public good of developing and protecting herd immunity. Herein I accept these two general justifications—especially as they are developed by Mark Navin—and explore their limits. In particular, with a focus on the recently developed vaccine against several strains of HPV, as well the short-lived requirement by the CDC that it, too, be required of prospective immigrants, I argue that neither of the two main justifications for the use of vaccination-related exclusion criteria support their use for diseases such as HPV (or even HIV), the transmission of which, unlike airborne diseases such as measles, pertussis and polio, is subject to a considerable degree of individual control.

### HISTORY

**F**or well over a century, foreign nationals seeking permission to immigrate to the U.S. could be judged ‘inadmissible’ or otherwise excluded from consideration on the basis of their ‘health status.’ In particular, the Immigration Act of 1891 stated that “persons suffering from a loathsome or dangerous contagious disease” could, on that ground, be excluded from consideration, and the Immigration and Nationality Act of 1952 listed seven health-related grounds for exclusion, among 31 grounds overall (INA 1891; Wasem 2014). Four decades later, the list of grounds for exclusion was streamlined when Congress passed the Immi-

gration Amendments Act of 1990 which, among other things, “recodified the health-related ground for inadmissibility to include any alien ‘who is determined (in accordance with regulations prescribed by the Secretary of Health and Human Services) to have a communicable disease of public health significance’”(Wasem 2014, 2).

Just a few years later, concerns about a prospective immigrants’ *vaccination* status came into play when the Illegal Immigration Reform and Immigrant Responsibility Act of 1996 (IIRIRA) provided that an individual applying for immigration could be judged inadmissible and her application excluded from further consideration if she did not provide documentation that she had been vaccinated against each of a list of ‘vaccine-preventable diseases’ (IIRIRA 1996). At that time, the list of diseases against which a prospective immigrant must be vaccinated (or else risk being judged inadmissible) included mumps, measles, rubella, polio, tetanus, diphtheria, pertussis, influenza type B, and hepatitis B (IIRIRA 1996). And to allow the list of required vaccinations to be adjusted as new vaccines are developed, U.S. immigration policy held that a prospective immigrant may be judged inadmissible if she has not received each of the vaccinations that the Advisory Committee for Immunization Practice (ACIP) recommends for U.S. citizens. ACIP is an independent advisory board for the Centers for Disease Control and Prevention (CDC 2014a).

Nearly a decade later, serious controversies erupted when ACIP began recommending that females between the ages of 11 and 26 be vaccinated against the human papilloma virus (HPV)—a recommendation that triggered a *requirement* that age-appropriate females seeking to immigrate be vaccinated as well, or else risk being judged inadmissible (Centers for Disease Control and Prevention 2007). The controversies had multiple foci. They addressed the high cost of the vaccine and the length of time and number of doses needed to gain immunity; the apparent sexism in recommending or requiring that females but not males be vaccinated even though males too can suffer from and transmit the disease; the absence of long-term data on the efficacy and side-effects of the vaccine; concerns about the ‘message’ that may be sent when a governmental body recommends that teenagers be vaccinated against a disease that is primarily spread through sexual contact; and concerns that politicians, pharmaceutical companies, and other self-interested groups may have unduly influenced ACIP. In December, 2009, largely in response to these controversies, the CDC issued the following revised criteria for determining

*which* of the ACIP-recommended vaccinations would be required of individuals seeking to immigrate:

1. The vaccine must be age-appropriate for the immigrant applicant [as recommended by ACIP for the general U.S. population],
2. At least one of the following:
  - a. The vaccine must protect against a disease that has the potential to cause an outbreak.
  - b. The vaccine must protect against a disease that has been eliminated or is in the process of elimination in the United States (CDC 2009, 1).

Further, CDC explicitly stated that vaccination against HPV would no longer be required because

HPV is not known to cause outbreaks. Also HPV is the most common sexually transmitted infection in the United States and is not close to being eliminated at this time. (CDC 2014b, 3)

#### CURRENT CHALLENGES

The introduction of the 2009 criteria quelled many of the controversies. But it did not resolve all challenges to the United States Citizenship and Immigration Service's (USCIS's) practice of allowing a prospective immigrant's vaccination status to be used as grounds for exclusion. It could still be argued, for example, that the general practice (even including the 2009 criteria) is flawed because it unjustly discriminates against would-be immigrants by requiring them to receive vaccinations that are merely 'recommended' to citizens and current residents. Or it could be argued that the practice violates our society's commitment to the principles of informed consent and/or an individual's right to be free from nonconsensual medical treatment.

In "HPV and the Ethics of CDC's Vaccination Requirements for Immigrants," Mark Navin addresses these objections and defends both the USCIS policy on vaccination-related exclusion criteria in general and CDC's 2009 criteria in particular (Navin 2015). He maintains that a society's dual rights to protect its members from harm and enforce a fair distribution of the burden of maintaining a societal good justify the use of vaccine-related exclusion criteria, even if the criteria are somewhat coercive.

[C]oercive vaccination is not unjust, per se. . . . This is because vaccination is not merely a personal medical treatment, but it is also a means by which the state may (1) prevent people from harming others and (2) ensure that people make fair contributions to the public good of herd immunity. . . . The principle of informed consent does not go so far as to justify harming others with one's medical choices . . . [nor does it] justify free-riding on public goods, like herd immunity. . . . [The] fact that (potential) disease *victims* are often disease *vectors* means that we must respond to the other-regarding aspects of vaccination choices when we deliberate about coercive vaccinations. (Navin 2015, 118)

[Further,] there are weighty moral reasons to embrace all three of the 2009 CDC criteria: the community has a right to use effective measures to prevent harms to its members and to enforce a fair distribution of the costs of valuable social goods. (Navin 2015, 117)

Navin argues further that USCIS policies regarding an applicant's vaccination status are defensible within both the 'conventional' and 'open borders' conceptions of immigration justice (Navin 2015).

Yet, after defending the USCIS policy and CDC's 2009 criteria, Navin takes a somewhat surprising turn and argues that the CDC may have erred in their own interpretation of the 2009 criteria as applied to vaccination against HPV. He argues that there may be ways to interpret the 2009 criteria which would have allowed the HPV vaccine to be kept on, or be reinstated to, the list of required vaccinations, and he implies that doing so would be a good thing.

I do not think it is so clear that the current CDC criteria rule out HPV vaccination requirements for immigrants. At the very least, we should not take CDC's judgment as the final word on the matter. (Navin 2015, 124)

CDC's claim that HPV is "not close to being eliminated" overstates the demands of their third criterion, which requires only that the "vaccine must protect against a disease that . . . is in the process of being eliminated in the United States." Is it too much of a stretch to think that the current HPV vaccines are part of a 'process' of eradicating [at least strains 16 and 18 of] HPV? (Navin 2015, 125)

It is true that HPV cannot cause outbreaks under current conditions, because (to quote CDC), "nearly all sexually active men and women get it at some point in their lives" (CDC 2014a). But what if HPV-16 and -18 became relatively uncommon? Under this hoped-for future condition, it seems to me that HPV could prevent outbreaks, i.e. "more cases of disease than could be anticipated." (Navin 2015, 125–126)

I have offered a general defense of CDC's 2009 vaccination-related exclusion criteria. And I have argued that HPV vaccination may meet these criteria, if not now, then at some near future time. This is a striking conclusion, since CDC's 2009 criteria resulted from its objection to the fact that its previous policy led to HPV vaccination requirements for aliens. (Navin 2015, 126)

But I think it is Navin who has erred. In what follows I will address Navin's two-pronged moral defense of vaccination-related exclusion criteria and argue that neither defense reasonably justifies adding/retaining the HPV vaccine on the list of vaccinations that can be required of prospective immigrants. In the process I will argue, contrary to Navin, that even if there were ways to interpret the CDC's 2009 criteria that would allow the inclusion of the HPV vaccine on the list, we should not adopt those interpretations. Further, although my present focus is on HPV, many of the issues and arguments to be discussed would apply equally well to questions about whether other, perhaps yet-to-be-developed vaccines could justifiably be added to the list of required vaccinations, while still maintaining our commitment to immigration justice.<sup>1</sup>

#### ARGUMENTS

Recall that Navin's moral defense of vaccination-related exclusion criteria has two prongs: Such criteria are justified when and because they "(1) prevent people from harming others and (2) [they] ensure that people make fair contributions to the public good of herd immunity" (Navin 2015, 118). On this view, a policy requiring prospective immigrants to be vaccinated against any particular disease (or else risk being judged inadmissible) would be justified only if that policy would significantly serve either or both of these ends.

Let us begin with the first prong. Might vaccination against HPV justifiably be required of prospective immigrants on the grounds that doing so would prevent the spread of harm to others? At least three challenges stand in the way of clearly answering that question. The first arises from a combination of the following two facts. (1) For any available vaccine, a vaccination-related exclusion criterion (VREC) could limit the spread of disease only if the recipient of the vaccine does not already have the disease in question. (2) With respect to HPV, there currently is no readily available, affordable, and definitive test to determine whether any prospective immigrant already harbors the vaccine-preventable strains of HPV. Further, HPV, unlike diseases such as measles, mumps, diphtheria, and polio, does not usually manifest in easily visible symptoms. Thus,

for almost any prospective immigrant (or at least among those who have been sexually active) it will be difficult to know whether, at the time of application, she already harbors the virus. If she does not, then she may benefit from being vaccinated, as may others with whom she'll later come into intimate contact. This would support a defense of the VREC under Prong 1.

But suppose she does already harbor the virus and doesn't know it. In this case, requiring her to go through the motions of receiving the vaccine would be pointless with respect to the goal of preventing the spread of disease (as well as pointless with respect to the goal of protecting herd immunity). It may also be a significant waste of time and money.<sup>2</sup> Further, if a prospective immigrant unknowingly harbors the virus and goes through the steps of receiving the vaccine, she may falsely believe that she is now immune. This may actually *increase* the risk of harm to others as she may now be willing to engage in more transmission-risky behaviors than she otherwise would have been. Further, this risk to others might further increase if, when asked by another with whom intimate contact is likely whether she carries the virus, she confidently (but falsely) responds 'No,' based on her belief that she's been vaccinated. This other who has now been exposed might then falsely reassure yet another that she too hasn't been exposed. In short, unless or until we have a reliable way to determine who has already contracted a particular disease, and thus who has the possibility of gaining immunity by being vaccinated, we won't be able to determine, in any meaningful way, the degree to which a policy requiring vaccination as a condition of immigration could be justified under Prong 1.

The second challenge is a result of Prong 1's subtle encouragement to view the not-infected, not-yet-vaccinated (NINV) applicant for immigration as if she poses a significant *threat* of harm to others. It implies that a government should protect its citizens and residents from that threat by denying the NINV applicant permission to immigrate until she removes the thing that makes her a threat—that is, until she become vaccinated. But this view seems to conflate an individual's 'vaccination status' with her 'infectious-disease-status' and view the applicant as if she were already able to spread the disease.<sup>3</sup> (As mentioned at the outset, the U.S has more than a 100-year history of excluding from consideration for immigration or entry individuals who are determined to have an actively contagious disease such as Class A Tuberculosis (Wasem 2014).) In contemporary terms, it encourages us to view the NINV applicant as if she were already a *vector* for disease (Battin 2009). But this is clearly a mistake. By definition,

our NINV applicant poses *no* risk of harm to others from the disease in question at the time of application. She doesn't have the disease and thus can't spread it. She is not even a latent threat to others. At most she is merely a *potential* threat. In order for her to become an actual threat, the NINV applicant must first be exposed to the disease in question, then acquire it, then become sufficiently ill to spread it, and then engage in behaviors that could spread it. The likelihood and length of time it can take for all of this to happen—if it ever does—will vary dramatically among the various diseases for which we might consider a VREC.

The point here isn't that we should wholly ignore an applicant's vaccination status, or equally, that vaccination status should be irrelevant when trying to develop just immigration policies. Instead, the point is more modest. When assessing whether a VREC for a particular disease could be justified under Prong 1—that is, could be justified on the ground that it “prevent[s] people from harming others” (Navin 2015, 118)—we have to take into account the *probability* that a NINV applicant, who is currently at most a potential threat, would become an actual threat. The less likely it is that this would happen, even in the absence of a VREC, the less likely it is that we could justify a particular VREC on the ground that it would prevent the spread of harm to others. I'll return to this soon.

This leads us to the third challenge. As provided, the wording of Prong 1 is open to different interpretations. Would it allow that the prospect of preventing the spread of *any* amount of harm by a VREC is enough to justify that VREC? Such an interpretation seems implausibly broad insofar as it would grant a government a sort of “blank check” for excluding any individual who is merely a potential threat to others in some way. All would-be immigrants, and indeed, all citizens and residents for that matter, satisfy that condition. For example, I have the potential to catch a cold and then pass it on to you. Yet we do not think that that mere potentiality would justify restrictive policies on my movement now. It certainly would not justify imposing a quarantine on me in order to prevent me from catching that cold and risk passing it onto you. Instead, a more reasonable interpretation of Prong 1 would require that we take into account the amount or *degree* of risk of harm that a NINV applicant would pose to others were she to immigrate, where that degree of risk is a function of both the likelihood or probability that the applicant's potential threat will transition into an actual threat, and the size or magnitude of the harm that would come about if that probability materialized (i.e., how virulent that particular disease is, how easily and rapidly it may

spread, etc.). On this view, a particular VREC could be justified under Prong 1 only if the degree of the harm that could reasonably be expected to be prevented the VREC exceeds a certain “threshold of significance.” Determining just where that threshold lies is a problem to be resolved by those seeking to further employ a Prong 1 justification for a VREC. But this much seems clear: For any disease D, if the mere potential threat that a NINV applicant poses to others is so significant that it merits excluding her application from further consideration until she removes the thing that makes her a threat (*i.e.*, she becomes vaccinated), then the actual threat that an applicant who *already has D* poses to others would have to be sufficient to deny immigration altogether.

Given the above, when we examine our current policies regarding known communicable diseases, it should become clear that vaccination against HPV could not now, legitimately or with logical consistency, be on the list of required vaccinations for prospective immigrants. For even though there is no readily available, definitive test to determine whether any given individual harbors HPV, some individuals are known, or very reasonably believed, to have it. (Perhaps it was diagnosed during a DNA analysis of biopsied tissue, or perhaps the individual displays paradigmatic genital warts.) Yet there has been no significant movement towards permanently—or even temporarily—banning these known carriers of HPV from migrating to the U.S. The threat that they pose is just not enough to warrant exclusion. This should come as no surprise given that individuals who have tested positive for HIV—arguably a much more serious disease than HPV—are not banned from immigrating or receiving a non-immigrant visa.<sup>4</sup> And thus, as intimated above, if being a known carrier of a communicable disease such as HIV or HPV is not sufficient ground to deny permission to immigrate, then merely not having the disease and not being vaccinated against it would not, under Prong 1, be a sufficient ground either.

It might be objected that our current practices are misguided. Perhaps being a carrier of a communicable disease such as HPV or HIV *should* be enough to exclude that person from consideration for immigration or entry. And for those who are not infected, choosing to remain unvaccinated when a vaccine is available should be a sufficient ground as well. After all (the argument continues), persons to whom we grant the benefits of immigration should not be allowed to harm us by spreading disease.

The problem with this objection is that it seems to ignore the *many* differences between HPV on the one hand, and the bulk of the other

diseases for which we currently employ vaccination-related exclusion criteria on the other—diseases such as measles, diphtheria, pertussis, and polio. These differences radically affect the degree to which any particular VREC could be thought to limit the spread of disease. First, HPV, unlike the other diseases in question, is not transmitted during normal, everyday, casual contact. A person with HPV does not risk causing harm to another by sitting next to that other on a public bus, going to the supermarket, or visiting Disneyland. In contrast, a person with measles or pertussis, for example, can be responsible for spreading the disease for hours after merely coughing or sneezing in a room. Second, the transmission of HPV depends upon specific kinds of conduct—conduct that an individual typically can choose to engage in or avoid. Thus, a non-vaccinated not-infected individual, either immigrant or citizen, has far more control over whether she comes into contact with HPV than she has for the other listed respiratory diseases. And when she does come in contact with it, there is typically an element of consent.<sup>5</sup>

Third, for HPV, even when transmission happens, further spread of the disease would not be exponential, as it would be when one case of measles quickly turns into five, then twenty-five, and so on. Instead, the spread would take time and would more aptly be described as ‘additive’ as opposed to exponential. Indeed, the spread might not happen at all, as our newly infected person might limit, purposefully or not, all her future intimate contact to another or others who are already infected. At the very least, the fact that the repeated spread would take time (at least outside of a few particular social environments) would make it difficult to view the spread as a meaningful “outbreak.” Fourth, HPV is not as routinely seriously harmful as, say, polio would be, or as measles or pertussis would be for infants. (For pertussis, approximately half of the infants under 1 year of age who contract the disease require hospitalization (CDC 2015).) Instead, the CDC considers HPV to be the most widespread of all sexually transmitted diseases, with almost “all sexually active men and women getting it at some point in their lives” (CDC 2014c). Yet in the majority of cases it “goes away on its own and does not cause any health problems” (CDC 2014c, 1). The vast majority of individuals who have been infected will likely never be aware that they were infected. This is hardly the case for individuals suffering from measles, mumps, pertussis, polio, etc. Of course, chronic HPV infections can *lead* to very serious harms such as cancer, but that is exception rather than the rule. Smoking, or even being exposed to second-hand smoke, can also lead to cancers, but there is no

call to mandate that new immigrants refrain from smoking, even if only around others. Finally, given the prevalence of HPV among citizens and current residents, NINV applicants for immigration pose a comparatively smaller risk of harm to our non-infected public than do the majority of current citizens and residents who already do harbor the virus.

In summary, the preceding differences between HPV on the one hand, and the bulk of the other diseases for which we currently employ vaccination-related exclusion criteria on the other, expose a vast gulf between the degree of harm (taking into account both probability and magnitude) that could reasonably be expected to be prevented by adopting a VREC for HPV, and the degree of harm that could reasonably be expected to be prevented by adopting VREC for the other listed diseases.<sup>6</sup> By itself, this is not *proof* that the harm to be prevented by a VREC for HPV would fall short of a reasonable threshold of significance under Prong 1. But if we combine it with a commitment to not denying immigration or entry to persons already known to have HPV, then I think that it does. For as stated previously, if the latter are not sufficiently dangerous to be excluded from immigration, then the NINV prospective immigrants cannot be either.

What about the second prong? Could we salvage a VREC for HPV by defending it on the ground that it would help “ensure that people make fair contributions to the public good of herd immunity”? (Navin 2015 118). Obviously not, at least if the focus is protecting herd immunity now. Such immunity doesn’t exist for HPV, and it is not likely to exist in the foreseeable future, given that there are more than 100 strains of the virus and more than half of our population are presumed to already carry one or many another. But what if, as Navin suggests, we narrow our focus to the strains of HPV against which we currently have vaccines, and then think ahead to a time when the current vaccines have been able to make some headway toward eradicating those strains? Might prospective immigrants then be required to be vaccinated in order to help that progress continue?<sup>7</sup>

Again, I think the answer is ‘No,’ at least if our concern is one of fairness. Consider the prospective immigrant who already carries the relevant strains of HPV. She can’t meaningfully contribute to the developing herd immunity by being vaccinated. But she can make conscious efforts to not harm that developing immunity by refraining from acts that would increase the risk of spreading the disease to others. At the one extreme, she might avoid intimate sexual contact altogether, or she might avoid intimate sexual contact with persons who have not been vaccinated or she might engage in intimate sexual contact only with persons who are

assumed to already harbor the virus as well (a spouse, for example), or she might employ barriers against transmission or use anti-viral drugs to reduce her viral load. The problem is, if adopting these behaviors would count as doing one's 'fair share' for the person already known to carry HPV, then considerations of fairness dictate that adopting the same the behaviors would also count as doing one's fair share for the NINV prospective immigrant who prefers to adopt these behaviors as opposed to being vaccinated.

It might be objected that, at least for NINV would-be immigrants, a policy *requiring* that they become vaccinated helps *ensure* that the prospective immigrant does her fair share of protecting that good. But that is problematic too, unless we are willing to adopt a policy requiring that non-infected citizens and residents be vaccinated against HPV as well (and we seem far from willing to do that). In the absence of actual herd immunity, requiring a person to do a particular act to help *bring about* herd immunity far down the road amounts to target-focused, enforced benevolence. Such enforced benevolence is particularly problematic when the individual would otherwise enjoy a wide range of avenues and means to contribute to the general welfare of the public, as well as enjoys other noninvasive ways to help protect any particular public good. An individual who prefers one way over another cannot meaningfully be accused of trying to 'free-ride' on a public good, especially a public good that does not yet exist.<sup>8</sup>

Finally, it is possible that the NINV person who is requesting permission to immigrate *is* willing to be vaccinated, both to protect herself and contribute to a public good, but that she has trouble doing so due to the high cost or limited availability of the vaccine in the country in which she currently resides. Allowing her application to be excluded from further consideration—because she has not been vaccinated—covertly discriminates against poorer would-be immigrants. In addition, for prospective immigrants of modest means, the use of vaccination-related exclusion criteria for diseases with new and expensive vaccines places the prospective immigrant in a kind of financial gamble. She is expected to invest in being vaccinated knowing that, even if she does, her application could be rejected on other grounds. If several members of a family need to be vaccinated, this gamble could be prohibitively risky. This problem could be avoided if we reject the use of vaccination-related exclusion criteria for diseases with new and expensive vaccines and then subsidize the vaccination after the prospective immigrant has been granted permission to immigrate, if she has.

In short, efforts to justify vaccination-related exclusion criteria for diseases such as HPV, on the ground the use of such criteria would help ensure that people make fair contributions to the public good of (developing) herd immunity, face considerable problems of justice and fairness. And if the overall goal is to develop just immigration policies, these efforts fail.

#### CONCLUSION

To conclude, Navin has offered a much needed moral defense of the inclusion of vaccination-related exclusion criteria within US immigration policies and practices. His defense also supports the CDC's 2009 revised criteria as well as shows that if vaccination-related exclusion criteria can be justified at all, they can be justified within both the 'conventional' and 'open borders' conceptions immigration justice.

In contrast, I have focused on the much narrower concern of whether, given Navin's two-pronged defense of vaccination-related exclusion criteria, such a criterion could justly be employed for HPV and, by extension, for other to-be-preventable communicable diseases which have similar features to HPV (particularly in terms of the means of transmission), I have argued in the negative. Among other things, I have argued that there are ample reasons for *not* viewing the non-infected, not-yet-vaccinated, would-be-immigrant as a significant *threat* to others, as well as argued that there are ample reasons for not requiring the would-be-immigrant to adopt, prior to being granted permission to immigrate, particular means of advancing the common good within the desired country.

But none of what I've argued should be interpreted as implying that HPV is insignificant. The amount of harm that that virus is now thought to have caused, and will cause, over decades, is staggering. And I fully endorse efforts to make the vaccine against the virus available to those who want it, even when doing so requires subsidizing its cost. But arguing for the need for the vaccine in general, and/or arguing for financially subsidizing its availability, is not the same thing as arguing that individuals who do not currently harbor the virus and who've not yet been vaccinated pose such a threat to others that they may, on that ground, justly be denied permission to immigrate.

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## NOTES

1. Though I will refer to the vaccinations as if they are “required,” they are not required strictly speaking. An applicant could apply for a waiver against all vaccinations (though, as Navin discusses, this can be an expensive process), or request a waiver against a particular vaccination on, for example, the ground that vaccine isn’t available to the applicant. But such requests can be denied. So, in what follows, referring to a vaccination as ‘required’ should be understood as a more felicitous way to say “a vaccination, the absence of which can be grounds for excluding the applicant from further consideration for immigration.”
2. The Gardasil vaccine against HPV has been described as the most expensive recommended vaccine in our relevant history. The vaccination requires three inoculations over several months, and the total cost of being vaccinated in the U.S. typically exceeds \$300 per person. Determining what it would cost prospective immigrants to obtain the vaccine in their home countries is beyond the scope of our present concerns.
3. The view also seems to reinforce the fear of “dirty foreigners,” which Navin mentions in his discussion of unjust immigration practices (Navin 2015, 112).
4. In 2009, the CDC issued a final rule “to remove HIV infection from the definition of “communicable diseases of public health significance” and to remove references to HIV from the scope of medical examinations for aliens” (Wasem 2014, 3).
5. Of course, transmission of HPV could occur during non-consensual contact such as rape. But it seems a huge stretch to maintain that every prospective immigrant in the relevant age group be vaccinated in order to prevent the spread of disease through conduct that is not supposed to happen in the first place. Pregnancy can also occur as a result of rape, but no one is demanding that prospective immigrants be required to be on long-term birth control to protect against that risk as well.
6. It is worth noting that not all of the currently required vaccinations could be justified under CDC’s 2009 criteria or under either arm of Navin’s two-pronged defense. Thus the list of required vaccinations may need to be further culled. (See Navin’s very interesting discussion of the vaccine against tetanus (Navin 2015, 125).) That, or we could develop additional justifications for the requirements. Straight forward paternalism would be an option (albeit controversial) as would defending the requirements on the ground of protecting the public coffers from having to pay for the treatment of disease that could have easily been prevented.

7. Notice that if our focus were on an individual's 'setting back' or 'undoing' or otherwise harming the progress that has been made by spreading the disease to others, we would be discussing a Prong 1 defense rather than a Prong 2 defense. To put it in another way, undermining an already developed herd immunity could be viewed as causing harm (Prong 1) while contributing to the development of the herd immunity could be viewed as being beneficent.
8. Herd immunity is generally thought to be achieved when 90% of a population is immune to the disease in question. Once achieved, that population can handle individual instances of the disease coming into the population, without those instances leading to widespread disease, because most of the members cannot acquire nor transmit the disease—they are immune. Herd immunity is important because it protects individuals who were not able to be vaccinated (perhaps due to allergies or being too young). But herd immunity is a "threshold concept." That is, although we might argue about what the needed threshold is (85%? 90%? 95%?), the threshold has either been met or it hasn't. There is no meaningful sense in which a population in which 30% of the members are immune can be said to have achieved a 30% *herd* immunity. More importantly, for diseases such as HPV, the individuals that herd immunity is supposed to protect (those that can't be vaccinated) enjoy other ways to limit their exposure to the disease, including restricting intimate contact to others who have been vaccinated.

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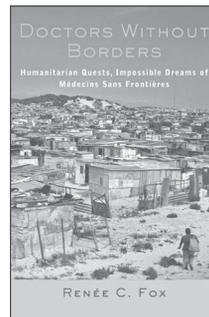
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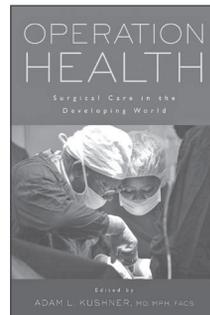
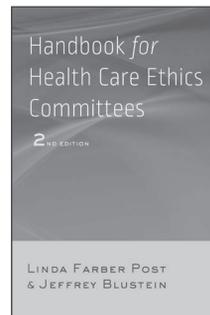
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