

# Mandatory Influenza Vaccination for Medical Workers: a Critique

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In Hippocratic medicine, the physician is working for the good of the individual patient, and the voluntary nature of the patient-physician relationship is axiomatic.

The New Ethics, however, is attempting to replace the Hippocratic model with a public health model. The emphasis is on prevention and on optimizing "population health," not individual outcomes. A "right to healthcare" is proclaimed, and few notice that the right to refuse healthcare is being overridden by a duty to accept it in the name of public health. An expert committee replaces the individual patient as the decisionmaker.

Mandatory vaccination is the leading edge of the new ethic. The policy to require annual influenza vaccination as a condition of working in a medical facility illustrates the dogmatism of the public health model and how it trumps individual autonomy, the Hippocratic ethic, and also evidence-based medicine.

## The Nuremberg Code

At the 69<sup>th</sup> annual meeting of AAPS, past president Lee Hieb, M.D., remarked that mandatory influenza vaccination violates the Nuremberg Code.<sup>1</sup> This Code applies to human experimentation, and provides, *inter alia*, that:

1. The voluntary consent of the human subject is absolutely essential.

This means that the person involved should have legal capacity to give consent; should be so situated as to be able to exercise free power of choice, without the intervention of any element of force, fraud, deceit, duress, over-reaching, or other ulterior form of constraint or coercion; and should have sufficient knowledge and comprehension of the elements of the subject matter involved, as to enable him to make an understanding and enlightened decision. This latter element requires that, before the acceptance of an affirmative decision by the experimental subject, there should be made known to him the nature, duration, and purpose of the experiment; the method and means by which it is to be conducted; all inconveniences and hazards reasonably to be expected; and the effects upon his health or person, which may possibly come from his participation in the experiment.

The duty and responsibility for ascertaining the quality of the consent rests upon each individual who initiates, directs or engages in the experiment. It is a personal duty and responsibility which may not be delegated to another with impunity....

3. The experiment should be so designed and based on the results of animal experimentation and knowledge of

the natural history of the disease or other problem under study that the anticipated results will justify the performance of the experiment....

7. Proper preparations should be made...to protect the experimental subject against even remote possibilities of injury, disability, or death.<sup>2</sup>

One may argue that mass influenza vaccination is not an experiment. There is no experimental protocol, and no systematic means of collecting follow-up data on all the subjects. The experiment was arguably done with each vaccine prior to release. Alternately, one may argue that mass annual vaccination is a nonconsented, very poorly designed mass experiment. Under current recommendations, compliant persons would receive around 75 influenza vaccines in a lifetime, write Geier et al. No data exist on the safety of receiving such a large number of doses of vaccine. While the influenza virus and hence the vaccine changes each year, many epitopes are shared. The potential risks of receiving so many similar vaccinations include but are not limited to allergic, anaphylactic, hyperimmune, and dysimmune reactions.<sup>3</sup>

The Vaccine Adverse Event Reporting System (VAERS) is admittedly incomplete, at best, for ascertaining events, and even with complete reporting it would likely be impossible to establish causality for chronic conditions developing only after repeated exposures.

Since there are no recognized experimental subjects, there are no protections in place. In fact, vaccines are particularly privileged in that manufacturers are protected against liability. On Jun 25, 2009, HHS Secretary Kathleen Sebelius declared that makers of Relenza, Tamiflu, swine flu vaccine, and any associated adjuvants, were immune under the 2006 Public Readiness and Emergency Preparedness Act (PREPA), which also explicitly shields "government program planners" who arrange the liability waivers. This appears to be a precaution against the consequences of the last major swine flu vaccine campaign, in 1976, which had to be terminated because of thousands of lawsuits about alleged adverse effects, including Guillain Barré syndrome (GBS).<sup>4</sup> The cost to taxpayers of the swine flu scare included \$3.5 billion in damages for vaccine injuries.<sup>5</sup>

It may be argued that compliance with vaccination is voluntary, in that one does not have to work in a medical facility (or attend school). Mandatory vaccine advocates say that a person has the right to assume the risk of getting influenza, but no right to impose the risk on others, such as those who cannot be vaccinated, or in whom the vaccine simply does not work. All unvaccinated persons are assumed to be potential disease vectors.

The general requirement for informed consent for medical treatment notwithstanding, the government's authority to require vaccination was established in the U.S. Supreme Court in 1905 for smallpox vaccination. The Court held that one exchanged certain freedoms for the benefits of being in a civilized society, and was not entitled to be a "free rider." The Court also held that even though some persons still contested the efficacy of vaccination, it was the legislature's prerogative to adopt one from many conflicting scientific views.<sup>6,7</sup> Although smallpox was an extremely contagious and highly lethal disease, the precedent has not been challenged for diseases that are less contagious or generally have a more benign course.

### Evidence-based Medicine: Effectiveness

In 2010, the Cochrane Collaboration published an analysis of 50 controlled studies of the influenza vaccine in healthy adults.<sup>8</sup> About 90 studies were excluded for not meeting criteria for study design. The authors concluded: "In the relatively uncommon circumstance of vaccine matching the viral circulating strain and high circulation, 4% of unvaccinated people versus 1% of vaccinated people developed influenza symptoms (risk difference (RD) 3%, 95% confidence interval (CI) 2% to 5%)." In the event of poor vaccine matching, the corresponding figures were 2% and 1% (RD 1, 95% CI 0% to 3%). While the results were "not likely to be due to chance," the authors described them as "modest" for reducing influenza symptoms and work days lost. However, "there is no evidence" that [the vaccines] affect complications, such as pneumonia, **or transmission** [emphasis added]. Moreover, authors warn that "reliable information on influenza vaccine is thin but there is evidence of widespread manipulation of conclusions and spurious notoriety of the studies."

Authors specifically warn that previous reviews "have been extensively misquoted especially in public policy discussions." They note that authors from the Centers for Disease Control and Prevention (CDC) "clearly do not weight interpretation by quality of the evidence, but quote anything that supports their theory."<sup>8</sup>

Osterholm et al. screened 5,707 articles to find 31 of acceptable quality. They found that efficacy of trivalent inactivated vaccine was shown in eight (67%) of the 12 seasons analyzed in ten randomized controlled trials (pooled efficacy 59% [95% CI 51-67] in adults aged 18-65 years). They concluded that "influenza vaccines can provide moderate protection against virologically confirmed influenza, but such protection is greatly reduced or absent in some seasons."<sup>9</sup>

Recently, *The New York Times* quoted statements from scientists that it said were "tantamount to heresy in the public health world." For example, Michael Osterholm, director of the Center for Infectious Disease Research and Policy, said: "We have overpromoted and overhyped this vaccine." He noted that a recurring error in influenza vaccine studies led to an exaggeration of the vaccine's effectiveness. In addition, the statement on influenza vaccines put forth by the expert panel that develops vaccine recommendations contains 30 inaccuracies, all of which favor the vaccine.<sup>10</sup>

Questions concerning the effectiveness of this vaccine are not new. In 2006, Dr. Tom Jefferson, first author of the 2010 Cochrane Report, called for a reevaluation of the expensive UK vaccination

program.<sup>11</sup> Pressure to expand vaccination is heightened since then, though the evidence is no better.

Startling claims have been made, notably a 50% reduction in all-cause mortality during the winter in persons who receive flu vaccine in the fall. Yet influenza accounts for only 10% of deaths, even if all illnesses that influenza might aggravate are included. Vaccine skeptics argue: "For a vaccine to reduce mortality by 50 percent means it has to prevent deaths from falls, fires, heart disease, strokes, and car accidents. That's not a vaccine, that's a miracle."<sup>12</sup>

The "healthy user effect" could largely account for reduced mortality, but authorities say it would be unethical to do double-blind, placebo-controlled studies—since we "know" that the vaccines work.<sup>12</sup>

Influenza vaccine has recently been claimed to prevent stroke and heart attack. A dispatch from the American Council on Science and Health<sup>13</sup> carried this headline: "Flu vaccine's unexpected heart benefits." ACSH quoted Dr. Jacob Udell of the University of Toronto, who gave a presentation at the Canadian Cardiovascular Conference on four randomized controlled trials "of moderate quality" involving 3,000 patients from 1994 to 2008, half of whom received influenza vaccine, and half of whom did not. After one year, the incidence of serious cardiovascular events was claimed to be reduced by 48% in vaccine recipients.

"There are no pills out there that reduce your risk by 50%. It's a profound finding, and if that's actually the case, this stuff should be in the water," Udell stated. Even if the reduction is only 10%, he added, "you would still have a major improvement in cardiovascular clinical prevention, as well as cost-effectiveness and burden on the healthcare system."<sup>13</sup>

The meta-analysis also showed that the all-cause mortality in vaccine recipients was 40% less (not statistically significant).

Udell told NBC News that the influenza vaccine was "perhaps a heart vaccine."<sup>14</sup>

Although he did note Udell's "somewhat breathless self-evaluation," Dr. Gilbert Ross of ACSH proposed a couple of mechanisms through which this effect [if it occurs] might work. Lowering systemic inflammation in an illness such as influenza might lower the likelihood that it would trigger rupture of a vulnerable plaque.<sup>13</sup>

Looking at the raw data in the actual abstract presented by Udell et al.,<sup>15</sup> the largest of the four studies had 7 major adverse cardiovascular events (MACE) in 927 vaccine recipients and 5 events in 911 placebo recipients, a statistically nonsignificant adverse trend in vaccine recipients.

### Safety

Influenza vaccine is said to be one of the safest vaccines, yet there are acknowledged risks, as well as potential risks that are unknown or ignored.

The incidence of Guillain-Barré syndrome (GBS) is estimated to be 1.6 extra cases per million vaccinations. Attributable risk of oculo-respiratory syndrome was estimated to be 2.9%; of hoarseness, 1.3%; and coughing, 1.2%, within six days of vaccination. In one study, there was a massive increased risk of Bell's palsy (adjusted odds ratio 84), and that product was withdrawn. The Cochrane Review concludes that "the harms

evidence base is limited.”<sup>8</sup> According to the National Vaccine Information Center (NVIC), adult flu vaccine injuries are the leading cause of injury claims in the National Vaccine Injury Compensation Program.<sup>5</sup>

One theory for the connection with GBS is potential contamination by *Clostridia jejuni* of vaccines grown in chicken embryo material. *C. jejuni* infection from eating undercooked poultry is also associated with GBS. To avoid problems with egg allergies, flu vaccines may be grown in other cell cultures, which are generally grown in bovine serum, which carries the risk of contamination with viruses or prions.<sup>5</sup> Vegans, incidentally, are exempted from vaccine mandates—and reportedly without documentation, unlike those requesting a medical exemption.

Adverse effects of vaccines may not result from the vaccine antigen itself, but rather from other components, such as aluminum salts. These may have an intended or unintended adjuvant effect. The control groups in safety studies for vaccines may not receive a true placebo such as saline but rather vaccine components including the adjuvant. This may account for a surprisingly high incidence of reported symptoms in the control population.

The safety of vaccine components is widely accepted; however, “there is a concerning scarcity of data on toxicology and pharmacokinetics of these compounds,” including aluminum adjuvants. In particular, experimental research shows that these adjuvants have a potential for long-term brain inflammation and neurologic complications.<sup>16</sup>

Killed influenza vaccine contains thimerosal. While intended as a preservative, not an adjuvant, thimerosal does have sensitizing effects in some individuals. It is suggested that such effects could account for the rising prevalence of allergies and autoimmune diseases.<sup>17</sup> Thimerosal provoked strong immunostimulation and autoimmunity in genetically susceptible mice.<sup>18</sup>

While most adverse reactions to influenza vaccine are mild, severe effects can occur. “The worst nightmare for both the pharmaceutical industry and the health authorities,” stated Richard Bergström, Director-General of the European Federation of Pharmaceutical Industries and Associations (EFPIA), “is an illness that turns out to be mild, while the vaccine that was supposed to prevent a severe epidemic causes a severe side effect that was previously unknown.” The 2009 novel H1N1 “swine flu” vaccine Pandemrix was used in mass vaccination programs in Sweden, Finland, Norway, and Iceland, with heavy social pressure: “Be vaccinated to protect your fellow citizens.” The governments of these countries signed a contract protecting Glaxo Smith Kline from any financial claims if the vaccine had side effects.

In September 2010, Finland stopped all vaccinations with Pandemrix when cases of narcolepsy in children began to be reported. In Finland about 100 children were affected, and in Sweden at least 150. The incidence was about 6 per 100,000 persons between the ages of 4 and 19 who were vaccinated, a 12.7-fold increase over background.<sup>19</sup>

## Patient Protection

The idea of protecting the sick from harm through a safe and effective vaccination program for workers seems unarguable. It is surely the duty of physicians not to harm their patients. Forcing physicians and others to take serious risks, against their better judgment, for questionable benefit is, however, a different issue.

In passing, one may note the double standard. Patients are also at risk from methicillin resistant *Staphylococcus aureus* (MRSA), *Clostridium difficile*, human immunodeficiency virus, and hepatitis A, B, and C, yet workers are not routinely screened for these conditions, or excluded from work because of an asymptomatic carrier state, although hepatitis B vaccine may now be required.

Theoretically, a patient could be infected by a worker who is shedding influenza virus while not yet symptomatic, or who comes to work despite being ill. It is assumed, but not established, that influenza vaccine prevents virus shedding by persons who are partially protected and have a subclinical infection. In a Freedom of Information Act request<sup>20</sup> sent to the CDC on Apr 7, 2012, AAPS asks for “documents and emails describing the carriage rate of respiratory viruses, including the influenza virus, in vaccinated versus unvaccinated personnel.” The CDC has not yet responded to this request, which includes a number of other questions related to influenza vaccine safety and effectiveness.

There is scant evidence that vaccinating workers has a noticeable effect on patient infection rates. A systematic search for all articles published between 1980 and early 2012 pertaining to the self-protection of HCWs or protection of patients through influenza vaccination of HCWs does not support uniform vaccination of health care workers (HCWs), concludes Zvi Howard Abramson.<sup>21</sup> There is no evidence that HCWs or their families are at higher risk of influenza infection than the general population. There are reports of outbreaks in hospitals and nursing homes in which personnel infection preceded patient infection, but no evidence that this temporal sequence occurs any more frequently than expected by chance. The main evidence for patient benefit from vaccinating HCWs comes from four randomized controlled trials on elderly patients in long-term care facilities. Abramson reviews these in depth, stating that “the repeated conclusion that staff vaccination has preventive value for elderly patients in nursing homes appears to be the result of major methodological errors and wishful thinking.”<sup>21</sup> The Society for Healthcare Epidemiology in America (SHEA) bases its 2010 recommendation for mandatory vaccination of HCWs on these four randomized studies.<sup>22</sup>

In reviewing evidence to present to the medical staff at his hospital, David Floering, M.D., found that there are no studies of HCW vaccination in acute-care hospitals. He observes that there is no consideration of unvaccinated visitors. From his review of the four randomized controlled trials and one cohort study in long-term care facilities, he found that the evidence for benefit to patient outcome was inconclusive and that it did not justify mandatory vaccination (D. Floering, personal communication, 2012).

Another theoretical reason for vaccinating HCWs is the potential for a deadly epidemic from a novel influenza virus. The seasonal vaccination might provide at least partial protection for HCWs so that they can care for the afflicted before a specific vaccine can be developed. There is, however, evidence that seasonal influenza vaccine can actually make recipients more vulnerable to a novel virus.<sup>23</sup>

The strength of the evidence seems to be inversely proportional to the moral fervor of compulsory vaccination advocates. For example, bioethicist Arthur Caplan writes: “Newborn babies, the elderly, and the immunocompromised

have a powerful interest in not being killed by those caring for them and in having a healthy workforce available to treat them." Moreover, he states that "by not vaccinating themselves, health-care workers feed vaccine fears, reinforce anti-vaccine sentiment, and set a dismally poor example for the public." He concludes that "vaccination is a duty that one assumes in becoming a healthcare provider, despite the loss of personal freedom entailed." His assumptions are that workers are "a powerful disease vector in a hospital" and that the efficacy of vaccination is a "proven fact," as is "overwhelming safety." Those who disagree are "delusional."<sup>24</sup>

The policy of the American College of Physicians<sup>25</sup> (ACP) states that discussion of immunization of medical personnel must begin with "undisputed facts," including that "influenza vaccines are safe and effective." As shown above, these "facts" are not undisputed. It is true that "unvaccinated HCWs spread influenza to their patients" in some documented cases, but it is not established that vaccination reliably prevents this.

SHEA acknowledges the criticism that results from long-term care might not apply to the acute-care setting, but states that a similar study there would be costly and challenging.<sup>19</sup>

### The "Herd Effect"

The herd effect is a key rationale for mandatory immunizations. The American Council on Science and Health (ACSH) approvingly quotes Steven Weinreb: "We should not get vaccinated for ourselves alone; we should do it for one another. After all, we're in the same herd."<sup>26</sup> Unvaccinated children are protected by the vaccinated herd, and if the children do not have a medical reason not to be vaccinated they are readily characterized as "selfish free riders." Previously, a 75% immunity rate was generally held to produce this effect; now 90% or more is the goal.

In reporting on a 2010 conference on the Science, Ethics, and Politics of Vaccine Mandates at the University of Pennsylvania, Louise Kuo Habakis<sup>27</sup> writes that the original concept of herd immunity, which first appeared in 1923, referred to natural, lifelong immunity from contracting the wild form of the disease.

Because few people now have natural immunity to most vaccine-preventable diseases, it has been suggested that the U.S. has been without a herd effect for 30 to 40 years. Vaccine-induced immunity lasts for perhaps 10 years at the most, and "boosters" may be protective for only two.<sup>28</sup>

Herd immunity appears to be a plausible, but largely unexamined assertion. The drive for adult pertussis boosters is a tacit admission that vaccination-based herd immunity may be less robust than has been assumed.

### Conflicts of Interest

According to Meryl Nass, M.D., the prime mover for mandatory influenza vaccine since the 1990s has been Dr. Gregory A. Poland, a member of the CDC Advisory Committee on Immunization Practices, who has done research for many pharmaceutical companies.<sup>29</sup> According to his own Mayo Clinic website, Poland views himself as a passionate warrior against "unwarranted death," and sees vaccines as "the singularly most

important medical technology ever devised." He would like "every single human being on earth" to receive a series of vaccines over a lifetime.<sup>30</sup> Most recognized experts on vaccines also have strong ties to the pharmaceutical industry.

Vaccine skeptics, on the other hand, are likely to be demonized and marginalized.

### Worker Mandates

The National Vaccine Advisory Committee (NVAC), created by statute in 1987, advises the Department of Health and Human Services (HHS) on vaccine policy. While its recommendations are vague, leaving details about exemptions and sanctions up to individual institutions, the overall message is clear: HCWs must start getting annual influenza vaccination or risk losing their jobs. To reach "Healthy People 2020" objectives, 90% of HCWs need to receive annual influenza vaccine.<sup>5</sup>

The most notable example of a failed statewide mandate is the 2009 attempt by New York to require all HCWs in the state to receive both H1N1 vaccine and seasonal influenza vaccine or face job termination. The New York State Health Commission regulation came into conflict with the New York State Committee for Occupational Safety and Health, the New York State Public Employees Federation, several other unions,<sup>31</sup> and the New York State Civil Liberties Union. Individual HCWs and several unions filed lawsuits, and HCWs staged a large protest in Albany. A state trial court judge handed down a temporary injunction pending a trial scheduled for Oct 30, 2009, but on Oct 22 the mandate was rescinded, purportedly because of a shortage of H1N1 vaccine, but possibly because of the risk of losing a trial.<sup>5</sup>

On the whole, however, courts have upheld mandates imposed by private employers.<sup>5</sup> Physicians and other personnel nationwide are facing increasingly aggressive efforts to enforce vaccination. For example, Marshall Medical Center in Placerville, Calif., requires workers either to provide documentation of influenza vaccination, or sign a declination form and wear a mask, citing California law and The Joint Commission (TJC, formerly JCAHO) requirements.

The declination form used by Providence Health and Services in the Oregon region, said to be required to meet TJC and Oregon statutory reporting standards, requires employees to "acknowledge that I am aware of the following facts." These include a statement that influenza kills an average of 23,607 persons annually and causes more than 200,000 hospitalizations in the U.S. The worker also accepts the blame for potentially life-threatening consequences of his vaccine refusal. In actuality, the statement is quite misleading. CDC statistics combine "deaths attributed to influenza and pneumonia." Only a small percentage of patients are actually tested for influenza. Of the specimens tested, only 5% to 13% are positive for influenza. An influenza-like illness (ILI) is defined as "a temperature  $\geq 100.0$  °F ( $\geq 37.8$  °C), oral or equivalent, and cough or sore throat, in the absence of a known cause other than influenza."<sup>32</sup> In other words, about 90% cases of "ILI" are not influenza, and do not even involve classic symptoms of influenza such as myalgias, prostration, and headache.

Many medical organizations support mandatory influenza vaccines. The American Academy of Pediatrics (AAP) picked 80%

**Table 1.** Mandatory Influenza Vaccine Survey Results

Question/Answer	Physicians (number)	Physicians (percent)	Respondents (number)	Respondents (percent)
1. What is your personal position on annual influenza immunization?				
a. I willingly get my flu shot annually	227	46%	282	42%
b. I will get a flu every year only if required to do so	114	23%	142	21%
c. I will refuse ... even at the risk of my job or medical staff privileges	156	31%	248	37%
<b>Total</b> responses to question	497		672	
2. What do you think about annual influenza immunization?				
a. It should be required of all who are in contact with patients, without exception	18	4%	23	3%
b. It should be required for patient contact, with medical exemptions only for severe past reactions.	69	14%	98	14%
c. It should be required for patient contact, with religious or philosophical exemptions	30	6%	39	6%
d. It should be a matter of personal choice.	386	77%	522	77%
<b>Total</b> responses to question	503		682	

as the staff immunization level required to protect patients “from healthcare-associated influenza.” Yet coverage of medical professionals “stalled” around 40% in the absence of compulsion. Rates of 98% can be achieved with compulsion. Virginia Mason Medical Center in Seattle, which began requiring influenza vaccination in 2005, reported that only 0.7% of employees were granted an exemption, and 0.2% left rather than comply.<sup>33</sup>

### Medical Professionals Respond

As noted above, more than half of medical professionals decline annual influenza vaccination if given the choice. It is demeaning to assume that they are all uninformed or irresponsible. Because AAPS has received so many calls from physicians, nurses, and others who object to the mandate, we distributed a survey to our email list. Within about three days, we had nearly 700 responses,<sup>34</sup> about 75% of whom are physicians<sup>35</sup> (see Table 1). While this is not a scientific survey, it is interesting to note that 156 physicians (31%) felt strongly enough to risk losing their medical staff privileges, and 92 nonphysicians were willing to risk losing their job. About 25% of respondents submitted a comment, more than 112 physicians<sup>36</sup> and 60 others.<sup>37</sup> While it is apparent from the comments that many physicians agree with the mandate, many have well-reasoned opposition. Nearly 80% believe annual influenza vaccine should be a matter of personal choice.

A group of activists, Colorado Health Care Workers Against Forced Vaccination has formed a Facebook group; some report being fired.<sup>38</sup>

### A Broader Approach to Nosocomial Infection

There are three statements with which everyone can probably agree: (1) pandemic influenza is potentially a very serious threat; (2) physicians, nurses, and other professionals have a duty to protect their patients; and (3) influenza vaccine is neither totally safe, nor 100% effective.

Vaccine mandates attest to the fact that the “universal precautions” from the AIDS era do not work very well.

What about requiring everyone to wear a surgical mask, vaccinated or not, to protect against the more than 90% of airborne infections that are not vaccine preventable? The California Labor Federation states that masks have not been proved effective; indeed, they might actually lead to more contamination because of more frequent mouth, nose, or eye contact as workers adjust the mask.<sup>39</sup> While workers may or may not wash their hands every time they touch a patient, it is very unlikely that they do so every time they touch their face or their mask—or the computer keyboard or mouse. It is possible that the main reason for masks is to stigmatize the unvaccinated and to promote vaccination.

For protection against severe acute respiratory distress syndrome (SARS), the CDC recommended an N-95 respirator mask, which removes 95% of airborne particles, plus goggles.<sup>40</sup> A surgical mask is a much less effective substitute.

Masks remove droplets, but neither masks nor HCW vaccination are effective in interrupting transmission via aerosols, which may occur from infected patients or visitors. Large amounts of respiratory aerosols may be generated through endotracheal intubation, noninvasive ventilation, cardiopulmonary resuscitation, and receipt of high-flow oxygen. Proper ventilation and airflow management in the facility are very important.<sup>41</sup>

In the past, some hospitals had ultraviolet lights in the isolation rooms. UV air disinfection in the past was probably of greatest interest in tuberculosis sanatoria.<sup>42</sup> General principles of air disinfection were developed.<sup>43-46</sup> Riley argues that outbreaks of influenza may be prevented in hospitals and schools through UV air disinfection, which, properly applied, is safe and effective.<sup>47</sup>

Another method for reducing influenza susceptibility is vitamin D supplementation. Some epidemiologic observations that demand an explanation are: (1) Influenza is distinctly (though not invariably) seasonal, occurring during times of least solar radiation (wintertime above 30 latitude, rainy season in the tropics). (2) Outbreaks have begun simultaneously in widely separated areas before the age of mass transit. (3) Many families have only one affected member. Could there be widespread transmission by asymptomatic carriers, followed by an outbreak when resistance falls? Could vitamin D deficiency contribute to decreased resistance (and to the overactive inflammatory cytokines that are at least partly responsible for the death of robust young persons)?<sup>48</sup>

A study of 208 black, post-menopausal women, half of whom received vitamin D3 supplementation and half placebo, showed that over 3 years, 26 of the patients on placebo reported cold or influenza symptoms, compared with only 8 in the D3 group ( $P < .002$ ). The dose was 800 IU/d for 1 year, followed by 2,000 IU/d for 2 years.<sup>49</sup> In a review article, Cannell et al. suggest that vitamin D, or lack of it, might be the “seasonal stimulus” for influenza outbreaks.<sup>50</sup> Cannell observed that none of the 32 patients in the

ward he supervised developed influenza during an outbreak that affected 10% of the 1,200 patients in a forensic psychiatric facility. His patients were receiving 2,000 IU vitamin D per day. His ward was the only one unaffected, but the results were of borderline statistical significance.<sup>51</sup>

A recent negative study showed that vitamin D did not prevent upper respiratory tract infections. Influenza viruses were detected in only 4 of 686 episodes. The randomized double-blind controlled study involved 332 healthy adults over 18 months. A 100,000 IU monthly dose of vitamin D3 approximately doubled baseline 25 OH-vitamin D levels and maintained them above 48 ng/ml. Levels in the placebo group dropped to around 20 ng/ml in winter; only 5 had baseline levels less than 10 ng/ml.<sup>52</sup> The trial is completely irrelevant to the protection of sickly, vitamin D deficient patients during an influenza outbreak. However, the *JAMA* editorial simply suggested that vitamin D join the therapies listed by the Cochrane Review as ineffective for upper respiratory tract infections in healthy adults.<sup>53</sup>

In stark contrast to its readiness to force vaccines on millions of unwilling recipients, the American College of Physicians cautions against overenthusiastic use of vitamin D supplementation lest thousands of detrimental events occur when hundreds of millions are treated.<sup>54</sup>

## Conclusions

In the view of public health authorities and many medical organizations, medical professionals by virtue of their occupation have forfeited the rights that apply to experimental subjects and patients. They are expected to assume unknown and potentially serious risks to achieve hypothetical, likely small protective benefits to patients, with no mention of indemnification for harm they may suffer. The influenza vaccine mandate is authority-based, not evidence-based. It is arguably both unnecessary and insufficient.

Nosocomial infections are a problem, and pandemic influenza is a genuine threat. The emphasis on compelling acceptance of vaccines, which have at best limited effectiveness against one source of infection with a small proportion of potential pathogens, diverts resources from measures with much greater potential protectiveness, including environmental and engineering changes and efforts to bolster patients' resistance.

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