

confusion observed among U.S. parents, even those generally supportive of vaccination (Kennedy et al. 2011). The time and resources spent by the public health community debunking claims of the alleged risks and overstated benefits of vaccines may actually perpetuate these concerns, a variation of the “backfire effect” described by Nyhan and Reifler (2010). Likewise, time spent defending vaccines and vaccine policies, including mandatory vaccination requirements, is time not spent making the positive case for the clear benefits of vaccination for individuals and communities.

Childhood vaccination requirements in the United States have been described as a “safety net” that, in tandem with comprehensive promotional and educational activities, helps to ensure high vaccination rates when substantial support for vaccination already exists (Abramson and Pickering 2002). Influenza vaccination requirements ought to be understood similarly, supplementing, but not replacing, concurrent efforts to build support for vaccines and confidence in their safety, necessity, and value among HCP. The more that mandatory vaccination becomes the public “face” of U.S. vaccination efforts, the greater the impediments are to preserving and growing this vital trust in vaccines and vaccine policy. Even if evidence, experience, and ethics justify the current use of mandatory influenza vaccination policies for health care personnel, the need to employ these measures may suggest that the time has come to dramatically reimagine U.S. vaccine promotion and education, seeking to establish a new vaccine narrative for a new era in medicine and public health. ■

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Mandatory Influenza Vaccination: How Far to Go and Whom to Target Without Evidence?

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In deploying a public health ethics framework to analyze mandatory influenza vaccination programs (MVP) for health care personnel, Antommara (2013) provides a new perspective that substantially enriches our understanding of the issues at hand. In going beyond a principle-based approach that might provide only general guidance for decision making, Antommara lays out the obligations and expectations for health care personnel—in practice, for *everyone* working within the boundaries of a health institution—

regarding vaccination, and with which we are mostly in agreement.

Attaining specific vaccination targets likely drives decision makers in health institutions (e.g., hospitals, nursing homes) to a slippery slope with two possible inclinations: it can either lead to the efficient but problematic solution of mass vaccination of all staff, or, following the invocation of either a strong or weak version of the precautionary principle, to inaction and thus limited or no vaccination of

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some/all staff members. In the absence of clear evidence regarding the risk of infection and harms to different parties (staff members, patients) (van den Dool et al. 2009), neither approach is more ethically justifiable than the other, as one will harm the most vulnerable patients and the other will recklessly affect too many individuals. To avoid falling into either extreme situation, we need to define what kind of risk is acceptable (and for whom) but without sufficient evidence, and so determine who should be targeted for vaccination to reduce potentially devastating consequences for patients. The fact is that nosocomial infections will not be “on hold” until enough evidence has been developed regarding their pattern of transmission, and they will continue to spread, so decision makers need clear and practical guidance to evaluate fair and effective vaccination of personnel working in their institution.

But where should we draw the line? Building on Antommaria’s conclusions to justify MVP and fair exemptions, we suggest a working model to support institutional decision making, based on the following two conditions: (1) enforceability of vaccination policies, and (2) proximity with patients.

Enforceability of vaccination policies refers to the notion of control by health institutions of the actions that occur within their physical boundaries, in comparison to regular public health campaigns or policies that may cross institutional or other boundaries. Alongside an institution’s administrative capacity, enforceability also refers to the employee relation, that is, employees’ having obligations, whether or not inscribed in a professional code, to fulfill their work responsibilities.

Proximity with patients refers to the degree of separation between a person – either directly or indirectly—with a patient, with a patient’s health care provider, or with the patient’s environment. This condition is bound to the degree of risk that the institution will accept in its MVP. We argue that up to two degrees of separation of any kind (direct, indirect, etc.) presents a sufficient risk that justifies vaccination. It should be noted that the number of degrees are here set arbitrarily for the purpose of demonstration, and should be established by each institution’s infection control department or designated experts on the basis of studies demonstrating the relationship between distance and risk of transmission.

Risk assessment analysis needs to take into consideration that personnel of the same group or function can have similar roles but different tasks. Therefore, for each role:

1. It is important to evaluate the employee status in order to determine the individual’s institutional obligations and whether the vaccination policies are applicable. The notion of control can help even if there is not a direct relation of employment; for instance, volunteers generally have a moral contract with institutions (e.g., confidentiality agreements), and third-party employees can have certain enforceability clauses in their contracts.
2. The proximity with the patient must be assessed. The type of contact is helpful in determining the degree of separation with the patient or with his or her direct en-

vironment. When the policies can be enforced, and the degrees of separation are two or less, then vaccination is required.

The following examples, summarized in Table 1, show how to use the two conditions—that is, enforceability of vaccination policies and proximity with patients—in a variety of situations. Decision makers can reproduce the same logic in their particular context based on the complete list of stakeholders involved with their institution.

For example, delivery or repair personnel may be employees of a third party that is contractually bound to the institution, but are nonetheless part of the environmental aspect of patient care. Here, proximity plays an important role. The delivery of medical supplies or food to the hospital will in most cases be too distant to be problematic; these personnel do not fulfill the minimal conditions unless the services are provided directly on the units (e.g., repairs conducted to unit resources), near patients, or even at their bedside. By contrast, even if caterers work at a distance from patients, they enter the patient environment directly through food trays, and serve HCP in the institution’s cafeteria. Some might argue that basic hygiene requirements should be enough to control this kind of transmission vector, as is required of health care professionals (washing their hands and wearing masks). However, it is not possible to control all infectious agents in this way (e.g., influenza is easily transmitted orally and through contact) (Weber and Stilianakis 2008), and in absence of epidemiological studies on the roles of caterers as vectors of nosocomial infections, prudence is necessary. Finally, some might argue that in order to protect themselves and others, patients should be vaccinated as a condition of admission, as is the case for children in school nowadays (Omer et al. 2009). As patients do not have a contractual link with the hospital to protect other patients, we cannot use their vulnerability and their need for health care services to force them into vaccination. Patients’ dependency toward the health institution would make the measure very coercive. It is rather the hospital that has an obligation to ensure patient safety through its control of staff and the environment, thus making mandatory patient vaccination as a condition of admission very difficult to justify and implement; the same argument would apply to family members and visitors, as literature shows the benefits for patients to be surrounded by their family (Johnson, Abraham, and Shelton 2009), although in the case of a serious outbreak, these people could reasonably be excluded from the institution (limited quarantine).

Underlying the two conditions of enforceability of vaccination policies and proximity with patients is the requirement that an MVP be always applied with the patients’ best interests in mind. We recognize that this is not a perfect model, but it is, we feel, an ethically justified approach between not acting and overacting on the potentially slippery slope of mass vaccination. Avoiding those two extremes, our model is procedural enough to be used as guidance for decision makers and keeps in mind the goal of vaccination, that is, protecting the most vulnerable. The model’s strengths are that (1) it builds on fair application by targeting for

Table 1. Example of framework use

Health care personnel/ roles and examples	Conditions				Vaccination
	Enforceability of vaccination policies		Proximity with patients		
	Employee status	Institution control	Type of contact	Degree of separation	
Administrative staff					
Payroll personnel	Yes	Yes	Personnel	3 or more	No
Unit managers	Yes	Yes	Environmental, personnel, patient	1 or 2	Yes
Delivery or repair personnel					
Supplies delivered to hospital	Through third party	Through third party	Environmental, personnel	Indirect (3 or more)	No
Technical services	Yes	Yes	Personnel, patients	1 or 2	Yes
Clinical staff					
e.g., MD, nurse	Yes or third party	Yes	Patients, personnel, environment	1 or 2	Yes
e.g., Lab technician	Yes	Yes	Environment, personnel	3 or more	No
Caterers	Yes	Yes	Environmental, personnel	1 or 2	Yes
Volunteers	No	Yes	Environmental, personnel, patient	1 or 2	Yes
Patients	No	No, limited by patient's autonomy	Environmental, personnel, patient	1	No
Family/visitors	No	No, limited by autonomy	Environmental, personnel, patient	1	No

Note. Employee status: Yes, No. Hospital control: Yes, No. Type of contact: patient, personnel, environment. Degrees of separation: Number.

vaccination only those people who need to be included for patient protection, and (2) it is easily adaptable to the particular realities of different institutions. Once the line has been drawn for an institution, decision makers can build on Antommaria's analysis of the acceptable conditions of exemption to justify withdrawing some targeted individuals from MVP.

In explicitly balancing population risks and benefits, a public health ethics framework such as that presented by Antommaria reminds us all that the risk encountered by the patient population, which is potentially highly vulnerable, is too important to be ignored and thus can justify some applications of mandatory vaccination programs. To avoid getting onto a slippery slope, however, health institution decision makers will have to reflect on the particular risks posed by clinical and nonclinical staff through their proximity with patients and the enforceability of policies. Considering the risks at stake, we need to remain cognisant that mandatory programs are not designed to be punitive or to restrict individual liberty; rather, they focus on what precaution demands in a health care institution, ensuring patient safety. ■

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