

Pandemic Flu Preparedness:
Ethical Issues and Recommendations to the
Indiana State Department of Health

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Pandemic Flu Preparedness in Indiana: Ethical Issues and Recommendations

Executive Summary

The World Health Organization reports that more than 300 human cases of avian influenza H5N1 have been confirmed and that nearly 200 of these cases have been fatal. With experts warning that an influenza pandemic is overdue and that H5N1 has pandemic potential, governments, health departments, healthcare professionals, and many others have been working to develop response plans for such a crisis. Included in these plans must not only be strategies to address the technical and scientific difficulties that may arise, but also strategies to address the moral dilemmas that inevitably will follow.

The Indiana State Department of Health contracted with the Indiana University Center for Bioethics to provide recommendations on four specific areas of ethical concern:

- management of the healthcare workforce;
- triage and allocation of scarce medical resources;
- necessary alterations to the standard of care provided by healthcare professionals; and
- the allocation of scarce vaccines and antiviral medications.

Following an extensive literature review and study of approaches to these problems by other groups, organizations, and agencies, we summarized the ethical issues in each area, and propose 14 total recommendations for action. Recommendations described below are shortened in this document; a fuller description of each recommendation is provided in the respective Technical Advisory Document.

Management of the Healthcare Workforce. Issues included absenteeism and questions of whether potential sanctions for absenteeism are justified; the use of control measures, such as isolation and quarantine; and the expectations of non-professional healthcare workforce, who do not have the same professional obligations as physicians and nurses. Four Recommendations are proposed:

- 1. the State must identify all healthcare workers who are deemed to be critically necessary during the pandemic;**
- 2. the State and healthcare organizations should adopt a “high expectations, no punishment” approach to absenteeism;**
- 3. the State should set and communicate expectations that healthcare institutions have adequate medical supplies and that these institutions ensure these supplies be made available to all personnel expected to interact with patients; and**
- 4. the State should encourage healthcare institutions to establish clear policies for determining sanctions for noncompliance with expected responsibilities that are both fair and responsive to exceptional circumstances.**

Triage and Allocation of Scarce Resources. Triage and access to healthcare resources raise questions of how various patient-specific factors (medical, social, demographic) should affect individuals’ priority in times of scarcity. The key ethical issues involve whether to include age or social criteria as considerations when determining who is given access to scarce medical resources such as ventilators. Three Recommendations are proposed:

- 1. the State should adopt the New York State Workgroup’s framework for ventilator triage , which rejects the consideration of social role and age as triage inclusion and exclusion criteria in favor of a system of allocation based solely on physiologic prognosis;**
- 2. the State should encourage all acute care facilities to adopt a common procedure for addressing how to allocate scarce resources; and**
- 3. the State should require all acute care facilities to adopt a common procedure to conduct a daily retrospective review of all triage decisions in order to identify flaws in the protocol and to provide accountability.**

Altered Standards of Care. The key ethical issues are: the use of alternate care sites, such as whether facilities should be acquired via coercion or partnership; methods for maintaining adequate staffing; and changes in documentation standards for patient admittance and fatality processing. Five Recommendations are proposed:

- 1. the State should develop a protocol which would take effect for all healthcare institutions upon the declaration of a statewide pandemic influenza emergency by the Governor;**

2. the State should begin immediately to engage leadership of all healthcare facilities in discussions about the impact of a statewide protocol for altered standards of care, including the selection of alternate care sites;

3. the State should develop a database of healthcare workers and volunteers that can be accessed efficiently to provide surge capacity during the pandemic;

4. the State should ensure that a comprehensive program is developed and implemented to provide all healthcare workers with adequate training and information regarding pandemic flu and their anticipated responsibilities; and

5. the State should establish minimal standards for modified documentation procedures which can be implemented efficiently at the time of the pandemic for all healthcare institutions, mortuaries, and others.

Vaccine and Antiviral Medication Allocation. The prioritization of individuals depends on the immediate objective of the vaccine and antiviral allocation procedure, whether it is to minimize societal disruption or to minimize morbidity and mortality. Two Recommendations are proposed:

1. the State should adopt a system similar to the California Department of Health Services' and construct a prioritization list based on its implementation;

2. the State should develop an education module for county health departments regarding the criteria by which the prioritization plan is developed, and counties should be instructed as to how prioritization decisions will be made.

All 14 recommendations are consistent with an ethical framework that we have developed entitled *Points to Consider*, which contains seven key considerations that we believe the Indiana State Department of Health should take into account in the development of its pandemic flu policies in order to ensure that any policy changes will be morally sound and acceptable to Hoosiers. These points are: 1) consistency with the Mission of ISDH and other healthcare organizations in general; 2) transparency; 3) public accountability; 4) responsiveness; 5) proportionality; 6) reciprocity; and 7) uniformity of implementation.

-- Eric M. Meslin, Jennifer M. Alyea, Paul R. Helft; August 2007

Technical Advisory Document (TAD-05-07)

**POINTS TO CONSIDER IN PANDEMIC INFLUENZA PLANNING:
*ETHICAL ISSUES AND RECOMMENDATIONS
TO THE INDIANA STATE DEPARTMENT OF HEALTH***

August 2007

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Points to Consider in Pandemic Influenza Planning

Across the globe governments, health departments, institutions, and healthcare professionals have been preparing for a modern influenza pandemic. In general, these preparations have focused on technical issues that may arise, such as the assignment of duties and how to obtain and stockpile medications (University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group, 2005). Technical and scientific information, however, is insufficient when addressing the moral dilemmas that will arise in the event of a pandemic (Thompson, Faith, Gibson, & Upshur, 2006). For example, how will the State allocate scarce resources, approach the topic of restricting individual freedom, or ensure a policy's fairness?

Often overlooked is the importance of the establishment of ethical guidance that may assist in the development and implementation of pandemic influenza preparation and response plans. To address this issue, many efforts have been undertaken to develop ethical principles, framework, and guidance documents designed to assist in the development, implementation, and evaluation of policies that will be regarded as fair and morally acceptable by the majority of citizens in the event of a crisis (Caddy & Vergez, 2003; Centers for Disease Control and Prevention [CDC], 2007; Kass, 2001; Kotalik, 2005; Thompson et al., 2006; University of Toronto, 2005).

As in any area of public health policy that involves ethical issues and community values, making determinations about the right course of action involves a careful consideration of all scientific and medical facts coupled with ethical principles and

values. On the other hand, no algorithm has yet been developed that can mechanistically make these decisions that have ethics content (Fife, Keener, Meslin, Randall, & Schiffmiller, 2004).

This document provides a middle approach, called *Points to Consider*, which has been used successfully in other areas. While *Points to Consider* documents “are not regulations and do not have the force of law” (Nail & Aikers, 2002, p. 445), they attempt to incorporate current attitudes of government and academia (Nail & Aikers, 2002) and are typically utilized when control and evaluation policies are in their initial developmental stages (Estrin, 1990). This function is applicable to the current pandemic response policies. The *Points to Consider* document is an intuitive strategy meant to provide a guide for action and is framed as questions, the answers to which are not predetermined. The “Points” are neither a set of decision rules that mechanistically resolve issues at stake, nor a set of principles whose interpretation can be manipulated by various parties to support their particular points of view. At the same time, there is (and must be) a principled basis for each of the “Points” if the document is to be (and be perceived to be) of value.

This document contains seven points that we believe ISDH should consider in the development of its pandemic flu policies in order to ensure that any policy changes will be morally sound and acceptable to Hoosiers. It is expected that ISDH will directly refer to this document when drafting policy and when evaluating the impact of policy. It is further expected that any policy should be consistent with this document.

Points to Consider in Pandemic Influenza Planning

In this way it functions both as an ethics framework and as a method for ethical policy construction.

Points to Consider

Consistency of the Mission of the Indiana State Department of Health and the Professional Values of Healthcare in General

It is the mission of the Indiana State Department of Health to support Indiana's economic prosperity and quality of life by promoting, protecting, and providing for the health of Hoosiers in their communities and to do so via intra- and interagency cooperation and data-driven policy. In preparation for an influenza pandemic, everyday methods of fulfilling this mission and vision will need to be carefully reconsidered in response to shifting public health priorities. The ISDH has a public set of values embodied in its Mission and Vision Statements. Similarly, health professionals—physicians, nurses, social workers, technicians, health administrators and others—each subscribe to a set of professional standards, commitments, and ethical values inherent in their own respective practices. To the extent possible, decisions regarding pandemic influenza preparedness must be internally consistent with the respective value and mission statements of the individual groups and jointly consistent across groups.

The following questions should be addressed:

- What mechanisms will be used to provide the Indiana public with the assurance that the policy will be

consistent with the principles, missions, and values of ISDH and health care professionals generally?

- What mechanisms are contemplated for attending to conflicts that may arise when the proposed policy is consistent with the values of ISDH but not other organizations? For example, what if the policy conflicts with the values of a private medical center?

Transparency

No policy can be developed, much less implemented, without an assurance that its justification and rationale have been made clear to those who will be affected by it. Maintaining transparency and open communication enhances the public's trust in the decision-makers and may assist in achieving public compliance to control measures (University of Toronto, 2005). Policymakers' concern that openness may lead to public distress does not justify a lack of transparency, "just as a concern for a patient's anxiety would not justify not warning him of an impending stroke" (Kotalik, 2005, p. 430).

When developing a policy, the following transparency questions should be raised:

- What steps are being taken to inform the public of the policy and its implications?
- What steps are being taken to inform healthcare professionals, staff, and administrators of the policy and its implementation?

Public Accountability

It must be possible "to identify and hold public officials to account for their

actions” (Caddy & Vergez, 2003, p. 29) in order to avoid an erosion of trust and transparency with the public. In the event of a pandemic flu crisis, policymakers are obligated to include a method for ensuring ethical guidelines and procedures are upheld (Thompson et al., 2006). Should an error or oversight occur, it is the responsibility of the policymakers to acknowledge the situation and address the public promptly in order to resolve the resulting complications. Failure to do so may result in a loss of public support and compliance.

For this reason, decision-makers should be prepared to answer the following questions:

- What steps have been taken to prepare for a public acknowledgement of flaws in the policy and/or its implementation that may arise as the pandemic progresses?
- Who will take responsibility for such flaws or errors while addressing the public?
- What actions will be taken to ensure the effects of any errors will be corrected and/or minimized?

Responsiveness

While it is often accepted that public health actions should ultimately be determined by experts, involving the public can help build trust and increase acceptance of the proposed policy (CDC, 2007). Public engagement may occur along a spectrum: at one end of the spectrum, the public is merely informed of the policy. The most extreme version of this is to be informed after the policy is in place. A less extreme version is to

be informed that the policy is being developed. At the other end of the spectrum, the public has the power to give or withhold permission for the policy to be developed or implemented. At this extreme, the public is a “partner” in the development of the policy. In the middle of this spectrum, the public has the opportunity to express views (vociferously) about the policy. These views may be considered by the public health professionals, but there is no obligation for them to do so.

Questions regarding the involvement of the public and health professionals include:

- What outlets are available to the public and to health professionals for inclusion in policy formation? Are these outlets accessible to representatives from all groups of stakeholders?
- What outlets are available to the public and to health professionals for expression of concern about or dissent for the policy? For example, will a website or a call center be established to receive this input? Dissent alone does not sufficiently justify blocking a public health program, but if the majority of complaints are coming from a particular subgroup, corrective actions may be required to assuage these grievances (Kass, 2001).
- What steps will be taken to respond to the concerns of the public and of health professionals?

Proportionality

Policies and procedures should be based on sound scientific evidence or on the best evidence available (CDC, 2007).

Points to Consider in Pandemic Influenza Planning

An ineffective intervention will not achieve the desired outcome, no matter how perfectly implemented. In addition, the policy's measures should reflect the severity of the situation while remaining as minimally invasive as possible. "The greater the burdens posed by the program, the stronger the evidence must be to demonstrate that the program will achieve its goals" (Kass, 2001, p. 1779).

When determining if a policy's measures are proportional to its need, the following questions should be carefully considered:

- Do the benefits of the policy outweigh the burdens of implementing it? For example, is sacrificing individual liberty or scarce financial or human resources appropriate given the anticipated outcome?
- Could a less restrictive measure achieve the desired results?
- Is any group taking on more burden than is necessary to achieve the desired outcome (i.e. is subjected to improper discrimination)? In other words, is the policy substantively fair?

Reciprocity

In the event of a pandemic flu crisis, certain communities and individuals may face increased risk of illness and/or restrictions on their autonomy. In such an event, decision-makers must have a developed procedure to minimize the resulting encumbrance. "If leaders expect people exposed to or suffering from communicable diseases to act in a manner that does not put others at risk, it is important that they create a social environment that does not leave people

without supports" (University of Toronto, 2005, p. 13).

Questions to be considered include:

- What steps are being taken to support those individuals who take on a necessary but disproportionate burden of the disease, such as health care professionals or individuals subjected to isolation or quarantine? For example, are healthcare workers being offered lifelong care for any disabilities that result from acquiring the illness, or are quarantined individuals being protected from financial burden resulting from work absenteeism?
- Are those citizens without immunization being informed of other preventive measures available to them?
- Are those citizens who are denied access to limited medical supplies informed of other options available to them?

Uniformity of Implementation

Consistency in the implementation and application of the policy helps to ensure that similar cases will be treated equally (CDC, 2007). This will aid in eliminating unnecessary discrimination and may assist in conveying the policy's fairness to the public and to the affected parties.

On the topic of uniformity, the following questions should be considered:

- What steps are being taken to ensure the policy is being implemented consistently throughout the state?

- How will this consistency of implementation be enforced, and by whom?
- What procedures will be in place for evaluating policy implementation and for proposing revisions to it? For example, how will ISDH revise procedure if significant new epidemiological data arises?
- What exceptions may be made to the policy, and who has the authority to make these exceptions? Under what guidelines will this authority evaluate the appropriateness of any exceptions?

Implementation/Operationalizing the Points to Consider

The “Points” in this document should be acknowledged explicitly whenever a policy is being developed. We intend for the individual questions identified within each “Point” to be answered and, in so doing, provide a justification for the extent to which the “Point” is or is not being accommodated in policy.

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**ALTERED STANDARDS OF CARE AND PANDEMIC FLU
PREPAREDNESS:**

*ETHICAL ISSUES AND RECOMMENDATIONS
TO THE INDIANA STATE DEPARTMENT OF HEALTH*

August 2007

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With nearly forty years passed since the last influenza pandemic, experts are warning that the next pandemic is overdue and that the H5N1 strain of avian influenza has this pandemic potential (Ontario Health Plan for an Influenza Pandemic [OHPIP], 2006). According to the World Health Organization (2006), H5N1 “has met all prerequisites for the start of a pandemic save one: an ability to spread efficiently and sustainably among humans” (para. 18). As a result of this threat, international organizations, governments, health departments, institutions, and healthcare professionals throughout the world are currently preparing for a modern influenza pandemic. Such preparations require a shift in priorities and expectations in medical care delivery and setting. This includes the allocation of “scarce equipment, supplies, and personnel in a way that saves the largest number of lives in contrast to the traditional focus on saving individuals” (Agency for Healthcare Research and Quality [AHRQ], 2005, p. 8).

A scarcity of resources within the context of a severe pandemic emergency will inevitably require an alteration in healthcare practice. Indeed, not only will practice need to be modified but so

too might the very norms and assumptions underlying provision of healthcare. As such, any recommendations for altering the standards of care will require careful consideration and justification. This document addresses the ethical implications of implementing altered standards of care.

The Issues

A review of the relevant literature (AHRQ, 2005; AHRQ, 2007; Bogdan et al., 2004; Cantrill, Eisert, Pons, & Vinci, 2004; Center for Law and the Public’s Health at Georgetown and Johns Hopkins Universities, 2001; De Ville, 2007; Gostin et al., 2002; New York State Workgroup on Ventilator Allocation in an Influenza Pandemic, 2007; OHPIP, 2006; Rubinson et al., 2005; United States Department of Health and Human Services [HHS], 2007a; United States Department of Health and Human Services [HHS], 2007b; World Health Organization, 2006), found five areas of agreement regarding the implementation of altered standards of care.

These agreed upon topics are presented in Table 1 below.

Table 1: Areas of Agreement Regarding Altered Standards of Care

Issue	Explanation
Timing of protocol development	Planning must be done prior to the event of a pandemic in order to ensure the most ethically and operationally sound policies. “Actions that are carefully planned, justified, and executed are easier to defend retrospectively than those made out of panic or confusion” (De Ville, 2007, p. 317).
Communication with the public and healthcare providers	It is essential to make the public and healthcare providers aware of the need for altered standards of care, as well as the

Altered Standards

	details about the specific alterations. Messages must be consistent, simple, and clear and take into consideration the various segments of the population (e.g., non-English speakers). This will help to gain compliance and reduce civil unrest.
Management of psychological crises	The public in general and healthcare staff in particular may experience emotional and psychological distress due to the unique demands that may arise in the event of a public health crisis. Psychological First Aid should be provided in order to help alleviate this situation.
Legal protection for providers and facilities	Healthcare providers and facilities may face litigation in response to decisions which are necessitated by the altered standards of care. Because healthcare facilities, professionals, staff, and volunteers may be reluctant to provide care due to fear of legal repercussions, alterations to relevant healthcare laws and regulations are necessary in the event of an emergency in order to ensure the participation of as many providers as possible. Planners must identify in advance any applicable laws and regulations, such as those which may be altered or suspended during an emergency. These may include: EMTALA, HIPAA, the Federal Volunteer Protection Act, and the Good Samaritan Law (AHRQ, 2007).
Security	The combination of the health crisis and the shift in healthcare delivery methods potentially may result in civil unrest and increased violence, particularly in healthcare facilities. Increased and adequate security at each healthcare delivery site in order to protect the safety of patients and providers alike is necessary.

We note that while there is agreement reached on these issues, other ethical issues may not enjoy the same level of accord, perhaps because the deviation from standard healthcare norms affects several areas of healthcare delivery. Three additional issues arise: 1) the need for alternate care sites; 2) adequate staffing; and 3) standards of documentation.

Alternate Care Sites. Pandemic flu will require planners to consider the need to use alternate care sites for healthcare delivery, quarantine, and isolation should hospitals become overwhelmed (AHRQ, 2005; AHRQ, 2007; Bogdan et al., 2004; Cantrill, Eisert, Pons, & Vinci, 2004; Center for Law and the Public's

Health at Georgetown and Johns Hopkins Universities, 2001; Gostin et al., 2002; HHS, 2007a; HHS, 2007b; OHPIP, 2006; Rubinson et al., 2005). In addition to the question of which facilities to utilize, planners also will be expected to consider how they will obtain access to and control of these facilities (coercion vs. partnership) and whether the owners and administrators of these facilities will be compensated or insured for their assistance.

Adequate Staffing. A pandemic will lead inevitably to staffing losses resulting from illness, fear, and conflicting obligations (e.g., family needs). Due to the combination of such absenteeism and a surge in patients, a shortage of workers

is expected (AHRQ, 2005; AHRQ, 2007; Bogdan et al., 2004; Cantrill et al., 2004; Center for Law and the Public's Health at Georgetown and Johns Hopkins Universities, 2001; De Ville, 2007; Gostin et al., 2002; HHS, 2007a; HHS, 2007b; New York State Workgroup on Ventilator Allocation in an Influenza Pandemic, 2007; OHPIP, 2006; Rubinson et al., 2005). Such shortages will require institutions to consider how to anticipate and address these shortages principally because the alteration of staff members' regular responsibilities may result in increased stress for the affected staff or in a quality of care below that which is present in non-pandemic situations.

Standards of Documentation. In the event of an influenza pandemic, current documentation standards of healthcare facilities for charting, medical records, diagnostic procedures, and consent "will be impossible to maintain" (AHRQ, 2005, p. 10). The consequences of these challenges include backlogs of patients and of processing fatalities (AHRQ, 2005; AHRQ, 2007; Gostin et al., 2002), which may lead to delayed care and delayed burial, potentially offending the customs of certain religious groups (AHRQ, 2007). The modification of documentation standards, however, may result in inadequate or inappropriate care and in difficulties obtaining reimbursement (AHRQ, 2005).

The Approaches

Using Alternate Care Sites. Bogdan et al. (2004) write that call centers can be important resources involved in processes including "syndromic surveillance, emergency medicine and triage, and home health care support" (p.

34). The one-on-one communication that callers receive may be an important source of reassurance and instruction, and utilizing such an approach may prove to be useful in alleviating hospital overflow.

Should hospitals require an expansion of their facilities, several possible locations have been suggested to handle triage, non-critical care, isolation, and quarantine, among others. These include adult detention facilities, aircraft hangers, churches, military facilities, schools, hotels, convalescent care facilities, and sports facilities (AHRQ, 2007; Cantrill et al., 2004; OHPIP, 2006), provided they are readily accessible to the public (e.g., near public transportation) (AHRQ, 2007). Gostin et al. (2002) recommend that, if private property (e.g., a sports facility) is confiscated by the government for use of public services such as an acute care site, the owner(s) should be compensated. They state, however, that if property is taken and destroyed because it poses a serious health threat, then the owner(s) need not be compensated (Gostin et al., 2002). Another approach to obtaining alternate care sites is through partnership and agreement with, instead of the outright seizure of, the facilities that potentially may be used (OHPIP, 2006). Such collaboration should be initiated prior to an acute emergency. The OHPIP (2006) document also addresses the inclusion of insurance coverage for the utilized sites. Such coverage includes that for "fire, damage, theft, and site liability" (OHPIP, 2006, p. 11A-6).

Ensuring Adequate Staffing. Should there be a deficiency in the number of employees required to sustain normal operations and standards, healthcare

facilities may supplement staff from various sources. The first source is to supplement the workforce from the regular hospital staff. This would require an alteration in responsibilities. For example, Rubinson et al. (2005) state that if hospitals have a shortage of intensivists, those in nonintensivist positions may instead work with critically ill patients under the supervision of an intensivist. The New York State Workgroup (2007) also includes a discussion of the modification of individual responsibilities, stating that “less experienced staff may need to manage patients” (p. 12), so added duties should be simplified to the furthest extent possible.

According to AHRQ (2005), other potential staff should be identified prior to the pandemic and may include “retired or currently unemployed but qualified volunteer providers” (p. 27), reserve military and nursing providers, veterinarians, dentists, and pharmacists. In addition, non-medical responders may be trained to “support health and medical care operations” (AHRQ, 2005, p. 27; Rubinson et al., 2005). Healthcare professionals who are not currently licensed in the state are another potential source, even though their involvement in providing care may result in what would ordinarily be considered substandard care.

Licensing requirements may be suspended via gubernatorial orders (Cantrill et al., 2004). In order to ensure the ability to call upon these individuals in times of staffing needs and to verify their credentials and capabilities, AHRQ (2005), Cantrill et al. (2004), and Rubinson et al. (2005) recommend the development of a registry or database of these potential replacement staff. Such a

database may expedite the process of increasing staffing, as well as make certain that the called-upon individuals are qualified to perform their newly assigned duties. Furthermore, AHRQ (2007) recommends the development of identification procedures, such as site-generated photo IDs, for staff members in response to the unfamiliarity of the staff with each other. This will help to assure patients and employees alike that all workers have been credentialed and/or verified.

Whether retrieved from existing staff or from a group of volunteers, AHRQ (2005) states that healthcare workers involved in providing care during a pandemic should be instructed and prepared to the greatest extent possible. “Planners should not assume that individual providers will know how to deliver appropriate care in a mass casualty event, but rather should develop or identify training programs to ensure a knowledgeable and systematic, coordinated response effort” (AHRQ, 2005, p. 28). Rubinson et al. (2005) state that staff should receive training regarding the use of personal protective equipment, which will assist in workers feeling more adequately prepared for dealing with the infirmed. Educating healthcare workers with information about the etiology of the illness and its proper control measures is expected to increase willingness to provide care (Tzeng, 2004) and also will aid in maintaining workers’ safety and health.

Finally, some literature suggests the necessity of meeting various needs of the staff—regular and volunteer—during the crisis in order to help ease the burden of the heavy and stressful workload. These needs may involve housing (AHRQ,

2007; Center for Law and the Public's Health at Georgetown and Johns Hopkins Universities, 2001), transportation, child care, and pet care (Cantrill et al., 2004). Additional compensation for those working in times of a pandemic also has been recommended (OHPIP, 2006).

Documentation Alterations. AHRQ (2005) suggests that it is necessary to alter current documentation procedures in such a way that adequate information is gathered regarding patient medical needs and means of reimbursement “without posing an undue administrative burden” (p. 13). Changes in these procedures may result in decreased patient privacy and confidentiality, but the rights of patients should be preserved to the greatest extent possible (AHRQ, 2005). Nonetheless, it has been argued that citizens must be required to sacrifice some of their liberties in order to maintain the health and safety of the masses (Gostin et al., 2002).

Documentation not only affects patient care and reimbursement, it also affects mortuary procedures. A backlog of fatality processing may result in delays in burial. Gostin et al. (2002) write that “the authorities are required to exercise their powers with respect for cultural and religious beliefs and practices such as observing, wherever possible, religious laws regarding burial” (p. 626). Similarly, AHRQ (2007) writes that procedures for complying with individuals’ funeral and burial practices should be outlined in advance, while remaining flexible to meet the demands of the situation. Religious and cultural communities should be informed of any such procedures, which should “ensure that the minimum level of disruption to

usual cultural practices and the maximum level of dignity are afforded the deceased and their families” (AHRQ, 2007, p. 73). A major barrier to complying with such procedures, however, is that the remains may pose a threat to the living in the event of a pandemic (AHRQ, 2007). In such an event, careful consideration must be made to manage the delicate situation.

Recommendations

Recommendation 1: The State of Indiana should develop a protocol for altered standards of care, which would take effect for all healthcare institutions upon the declaration of a statewide pandemic influenza emergency by the Governor. This protocol should specify those healthcare professionals affected by this protocol and would include legal protections for healthcare providers and institutions.

It is necessary for any decisions about altering the standards of providing healthcare to patients in Indiana to be statewide and uniform. As a part of this protocol, it is critical for the State to identify relevant laws and regulations that may need to be altered or suspended during an emergency in order to provide legal protections to healthcare institutions, providers, staff, and volunteers. Doing so may increase healthcare workers’ and healthcare institutions’ compliance to the recommended alterations by removing the fear of litigation that may result from following altered standards of care. It also may help to ensure these altered standards are implemented consistently statewide.

Recommendation 2: The State should begin immediately to engage owners/administrators of all healthcare facilities in discussions about the impact of a statewide protocol for altered standards of care, including the selection of alternate care sites. All efforts should be made to agree to these changes by consensus and partnership.

The key to a smooth transition from current to any system that amends the standards of care is the emphasis on early planning. The use of partnership instead of coercion may result in less resistance and greater compliance to the use of alternate care facilities. In addition, it is recommended that such facilities are insured and compensated to the most reasonable extent possible for their cooperation so that they do not suffer large financial or property losses. Finally, selected facilities should be located in readily accessible sites to ensure ease of access for citizens.

Recommendation 3: The State should design, develop, and maintain a database of healthcare workers and encourage all healthcare institutions, including professional schools, to identify potential healthcare workers and register them into this database prior to the pandemic.

Through the creation of a database, volunteers such as retired or inactive nurses and physicians, as well as professionals from other related fields (e.g., dentists), could be called upon in times of emergency. A common database can be accessed efficiently to manage workforce flow.

Recommendation 4: The State should ensure that a comprehensive program is developed and implemented to provide all healthcare workers with adequate training and information regarding pandemic flu and their anticipated responsibilities.

By being prepared, these potential staff members are more likely to report to work and to provide care of the greatest quality possible in the strained situation. In addition, it is recommended that these workers be provided compensation and have their basic needs met (e.g., housing, child care) while working under the stressful conditions.

Recommendation 5: The State should establish minimal standards for modified documentation procedures which can be implemented efficiently at the time of the pandemic for all healthcare institutions, mortuaries, and other organizations.

This will help to reduce the number of backlogged patients and fatalities; to provide patients with the most appropriate care available given their individual needs; to reduce the amount of privacy and confidentiality each patient must sacrifice; and to ensure reimbursement for the healthcare facilities. If at all possible, mortuary procedures should allow families to carry out their desired funeral and burial practices, provided the deceased does not pose a significant threat to the health of the community. The possibility of mortuary delays and non-adherence to religious burial practices should be discussed with citizens and faith-based communities in advance.

Application to the Points to Consider

The aforementioned recommendations, in addition to the areas of agreement regarding altered standards of care

mentioned earlier, adhere to several of the “Points” stated in the *Points to Consider* document. These relevant Points are presented in Table 2 below.

Table 2: Points to Consider Reflected in the Altered Standards of Care Document

Ethical Point to Consider	Applicability to Recommendations
Transparency	Providing the public and healthcare providers with information regarding alterations in regular healthcare procedures will help to achieve compliance to these procedures. Discussions with citizens and faith-based communities regarding potential barriers to adherence to funeral and burial procedures will prepare these communities for potential delays and alterations that may occur while attempting to follow cultural practices. By making these communities aware of these implications prior to the event, they may be more likely to comply with the necessary course of action.
Responsiveness	Through partnership with the owners/administrators of potential alternate care sites, planners may develop procedures that will ensure the public’s health needs are met while assuring owners their facilities will be properly insured and protected.
Proportionality	Alternate care sites are to be used only when hospitals lack sufficient capacity; alternate staffing procedures are to be used only when there is a staffing shortage; and documentation procedures are to switch to truncated procedures only when current standards are impossible to maintain given a large patient influx. Patients must sacrifice some privacy and confidentiality only when absolutely necessary to maintain a functioning care facility.
Reciprocity	Providing legal protection and mental health services to healthcare workers will help to ease the disproportional amount of burden they will bear. Preparing these workers prior to the pandemic will reduce the stress they will endure. Providing additional security also will help to ease the burden of healthcare professionals, as they will be more able to perform their duties in the absence of fear. Furthermore, meeting the basic needs of these workers, such as providing housing for non-local volunteers, will help to reduce stress and to retain these staff members. Apart from staffing reciprocity, the owners/administrators of alternate

Altered Standards

	care site facilities are provided insurance and/or are reimbursed for their contributions.
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Technical Advisory Document (TAD-02-07)

**TRIAGE AND PANDEMIC INFLUENZA:
ETHICAL ISSUES AND RECOMMENDATIONS
TO THE INDIANA STATE DEPARTMENT OF HEALTH**

August 2007

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The World Health Organization (2007) reports that 317 human cases of avian influenza H5N1 have been confirmed and 191 of these cases have been fatal. With experts warning that an influenza pandemic is overdue and that H5N1 has pandemic potential (Ontario Health Plan for an Influenza Pandemic [OHPIP], 2006), governments, health departments, health care professionals, and many others have been working to develop response plans for such a crisis. Those plans must include ethical strategies for allocating resources which become insufficient to support the demand, because “shortages of specialized staff, medical equipment, and supplies could limit the number of patients who can receive the appropriate supportive critical care interventions” (Rubinson et al., 2005, p. 6). Such resource allocation strategies may be referred to as “triage” of scarce resources because they necessarily involve a prioritization of which patients will receive care when not all can. Consistent, ethically defensible methods for allocating scarce resources require careful planning and deliberation. This document presents several ethical issues that must be considered and addressed in the development of a triage protocol for

Indiana, followed by a set of recommendations. When considering the recommendations, it should be noted that triage prioritization differs from immunization prioritization in the event of a pandemic. The arguments presented here refer only to the former.

The Issues

A review of the small but growing literature on allocation of scarce resources during a pandemic event (Agency for Healthcare Research and Quality [AHRQ], 2007; Burkle, 2006; Centers for Disease Control and Prevention [CDC], 2007; Challen, Bright, Bentley, & Walter, 2007; Clarian Ethics Policy Review Committee Working Group on Ethics in Pandemic Flu [Clarian], 2006; Christian et al., 2006; Hick & O’Laughlin, 2006; Indiana Pandemic Influenza Community Advisory Groups, 2006; Melnychuk & Kenny, 2006; New York State Workgroup on Ventilator Allocation in an Influenza Pandemic, 2007; Ontario Health Plan for an Influenza Pandemic [OHPIP], 2006; Rubinson et al., 2005) suggests several areas of agreement, summarized in Table 1 below.

Table 1: Areas of Agreement Regarding Triage

Issue	Explanation
Timing of protocol development	It is necessary to establish triage guidelines prior to the occurrence of a pandemic in order to make the most ethically sound, well-considered choices possible.
Triage classification personnel	Identification of who will be responsible for making the triage decisions is necessary before a pandemic strikes. Teams or triage officers, such as supervising clinicians, are recommended. Individual physicians should not make such decisions unless absolutely necessary in order to avoid conflicting senses of duty toward patients and the public and to ensure equitable application of triage guidelines.

Location of implementation	Policies must be implemented statewide and/or regionally in order to ensure fairness and equal opportunity for care to all the State's citizens.
Transparency and public awareness	Preparing the community for the challenges embedded in a pandemic event will help to reduce civil unrest and may assist with gaining compliance.
Managing psychological crises	Clinicians, first-responders, the afflicted and their families, as well as the "worried well" may all require Psychological First Aid to treat emotional distress, and provisions should be made to make this available to them.
Proportionality in implementation	Inclusion and exclusion factors should only be considered when all other options have been exhausted. For example, if canceling or postponing elective surgeries will result in a sufficient supply of ventilators, then other criteria need not be considered.
Inclusion of patients in acute care	Non-influenza patients in acute care facilities also must be included in triage in order to maximize the number of lives saved. This also will help to ensure that care and resources are distributed fairly and similarly among all acute care patients.
Use of palliative care	Those denied access to ventilators and other medical resources should be provided palliative care and pain management.
Flexibility of guidelines	Because current triage protocols have yet to be tried in a real-world situation, their effectiveness and potential drawbacks are not entirely known. In addition, technological advances may require a revision of procedure in order to accommodate new innovations. Triage guidelines must be adaptable.
Plan for legal protection	Healthcare providers may face litigation for following triage criteria. Providing legal protection for those who make allocation decisions using established guidelines will increase healthcare worker compliance and ensure consistent implementation.

In addition to these issues, the use of smart systems for assigning prognosis based on acute physiology is a vital component of any system of triage. Such predictive systems have been developed in critical care populations to predict the likelihood of a patient's survival to discharge, including APACHE III, SAPS, LOD, MODS, and MPM II (Hick & O'Laughlin, 2006). Variations of the Sequential Organ Failure Assessment model—sometimes referred to as the Sepsis-related Organ Failure Assessment model (New York State Workgroup, 2007) or SOFA—arose most frequently in the literature review as the fairest and most effective

prognostic scoring method (Christian et al., 2006; Hick & O'Laughlin, 2006; New York State Workgroup, 2007; OHPIP, 2006). SOFA assesses six organ systems, "each graded from 0 to 4 points according to the degree of dysfunction" (Arts, de Keizer, Vroom, & de Jonge, 2005, p. 1988). The resulting scores can be compared to predetermined treatment categories to establish a patient's treatment plan. For example, individuals with a SOFA score >11 have more than a 90% mortality rate (OHPIP, 2006) and would be unlikely to benefit from intensive care treatment.

While we found general agreement regarding the majority of ethical considerations that should affect triage planning, other key issues surrounding triage allocation decisions remain unresolved. These center primarily on disagreement over what non-physiological considerations should be incorporated into inclusion and exclusion criteria. These considerations include: role in society (e.g., should

healthcare workers receive preferential treatment within an allocation framework?), age (e.g., should younger patients receive preferential treatment compared to older patients?), and “social worth” (e.g., should any other individual characteristics influence preferential treatment?)

The Approaches

Table 2: Summary of Groups’ Non-physiological Considerations for Triage Criteria

Source	Role in Society	Age
AHRQ (2007)	--	--
CDC (2007)	●	●
Challen et al. (2007)	●	●
Clarian (2006)	●	●
New York State Workgroup (2007)	--	--
OHPIP (2006)	--	●

● = *should be considered*;

-- = *not considered*

Those Supporting Inclusion of Social Role and Age in Triage Criteria. According to the CDC (2007), in the event of a pandemic, preserving society’s function should be given priority over maximizing the number of lives saved. Such an argument suggests a need for the determination of an individual’s “value to societal function” and his or her contributions to society. The CDC (2007) acknowledges the difficulties inherent in this process and advocates discussion among diverse stakeholders in order to resolve this issue, as well as transparency with the public in order to increase acceptance and compliance. The Clarian Health Partners (2006) working group addresses the issue of social role by placing healthcare workers, public health

officials, first emergency responders, government officials, and workers involved with critical infrastructure in positions of priority over others in treatment allocation decisions. Challen et al. (2007) also support these considerations and write that “social factors” (p. 2) should be considered in patient categorization. Their scoring system includes a point system that takes into account “social isolation... [and a] performance status of limited activity or worse” (p. 2). While determining social worth is a complex undertaking, at the minimum the government workforce can be prioritized legally in the event of an emergency (AHRQ, 2007). The literature suggests clearly that, in cases where priority is given to individuals for the sake of preserving societal function,

“justification for such decisions should be drawn up in advance and publicized” (Gomersall et al., 2006, p. 1011).

In addition to social role, the question of whether to include age in triage criteria has been addressed in several documents (AHRQ, 2007; Challen et al., 2007; Christian et al., 2006; Clarian, 2006; New York State Workgroup, 2007; OHPIP, 2006). The Clarian document (2006) suggests that, if all other factors are equal, a younger individual should be given priority over an older individual, because the younger has more potential life to lose or gain. The OHPIP (2006) method of addressing age, in contrast to Clarian’s (2006), is not dependant upon comparisons with other patients. Instead, it uses age as an exclusion criterion only if the age of the individual is greater than 85 years. Challen et al. (2007) suggest that a scoring system be used that accommodates age, giving the patient an extra “point” if he or she is greater than or equal to 65 years old. Other literature also suggests considering age in exclusion criteria, but methods of how to do so are not overtly stated. Christian et al. (2006) write that, although they did not include an age criterion in their draft, they “received both strong and consistent feedback from both expert and stakeholder consultations that” an age criterion should be included (p. 1379).

Those Rejecting Inclusion of Social Role and Age in Triage Criteria. The New York State Workgroup (2007) offers the most extensive discussion on the inclusion of priority groups and social worth in triage classification procedures, and its views are similar to those of the Agency for Healthcare Research and

Quality (2007). Ultimately, the groups reject prioritization using any criteria other than medical or physiological factors. The New York State Workgroup acknowledges that healthcare workers who become ill and require acute care will be unlikely to recover and return to their duties before the pandemic runs its course, making their preferential treatment unproductive. In addition, the group argues that the inclusion of all healthcare workers as priority groups—such as morgue workers, ambulance staff, firefighters, etc.—would result in healthcare workers being provided ventilators and other medical treatment to the exclusion of all other groups in some locales, and “ordinary” citizens consistently would be denied ventilator access and life-saving care. Furthermore, workgroup members “objected strongly to the appearance of favoritism, in which those who devised the rationing system appeared to reserve special access for themselves” (New York State Workgroup, 2007, p. 28). They suggest that the public will hold decision-makers accountable for any protocol regarded as biased and inequitable, and any procedure that may be viewed as discriminatory will evoke a harsh response from the public at large.

The New York State Workgroup (2007) also rejects the use of age as an exclusion criterion in their ventilator allocation protocol. The group’s argument is based upon the idea that aged individuals intrinsically are more likely to suffer physiological derangement than their younger counterparts. This increased risk will be taken into account inherently by the SOFA prognostic scoring system used by the New York group to determine the

individual's triage status. Thus, age indirectly affects the likelihood of survival without being made an explicitly decisive factor. The Agency for Healthcare Research and Quality (2007) presents a similar argument, stating that "age may be considered only as it relates to underlying organ function and diagnosis" (p. 71).

Included in the New York State Workgroup's (2007) planning document is an acknowledgement of the difficulty of the removal of life support. Because such procedures can be traumatic for both the patient and the attending physician, the New York group recommends limiting circumstances that would require such actions. For this reason, the group rejects the idea of a universal "trial period" for ventilator use for incoming patients, as it ultimately could result in large numbers of extubated patients. They also have reservations about removing a ventilator from a patient who is stable or improving in favor of a new patient with a better prognosis. Instead, the Workgroup suggests evaluation based on the SOFA score. Patients on ventilators would be assessed at 48 and 120 hours. "Those who meet the criteria for benefit or improvement would continue until the next assessment, while those who no longer met these criteria would lose access to mechanical ventilation" (New York State Workgroup, 2007, p. 32). The patients who are removed from life support should be given palliative care with the option of sedation. Justification for extubation and sedation should be documented.

It should be noted that the New York group's suggested protocol aims to prevent the need for the inclusion of a

"tiebreaker" in the event that two patients with identical SOFA scores present for medical attention. It does so by recommending the adjustment of each day's threshold SOFA score so that a few extra ventilators are always available in intensive care units. For example, at times when relatively few patients are in need of intubation, the SOFA threshold may be high, and individuals with high SOFA scores still may have access to a ventilator. When many patients are in need of ventilators, however, the SOFA threshold must be set lower, and those individuals with high SOFA scores no longer may be allowed access. While this protocol theoretically will eliminate the need for a tiebreaker, it remains a possibility that individual hospitals may face rare instances in which a tie does occur. How to address such an occurrence is not discussed in the New York document.

Terminal extubation of patients in chronic care facilities is addressed in the New York protocol. It is the group's recommendation that triage criteria not be expanded to include individuals in chronic care facilities, as such actions would "make victims of the disabled" (New York State Workgroup, 2007, p. 29). Should an individual from such a facility require admittance into an acute care facility, however, he or she would be subject to the same triage criteria as other acute care patients.

The New York State Workgroup (2007) also includes an appeals process in their triage protocol. Appeals may be used, for example, when a clinician disagrees with a patient's triage classification. The group presents two possible methods for undertaking such an appeals

process. The first is for a committee to review the appeal as it occurs. This could benefit individual cases, but it also may delay others from receiving care (New York State Workgroup, 2007). In addition, it could spark “explosive debate during a time of scarce manpower and other resources” (New York State Workgroup, 2007, p. 36). An alternative approach would be to have a daily retrospective review of all triage decisions in order to identify flaws in the protocol and to provide accountability. In this situation, however, individual patient interventions would not be possible (New York State Workgroup, 2007).

Recommendations

Recommendation 1: The Indiana State Department of Health should adopt the New York State Workgroup’s (2007) protocol, which rejects the consideration of social role and age as triage inclusion and exclusion criteria in favor of a system of allocation based solely on physiologic prognosis.

This protocol is preferred for the following reasons: 1) it allows for public accountability by using quantitative and objective data, which are much more easily justified to the general public than subjective “social worth” evaluations; 2) it facilitates uniformity of implementation, because the analysis of objective data creates less variation in triage decisions than subjective considerations would create; and 3) it is the only system of all those considered which logistically could be implemented on a Statewide level. The New York proposal relies on a prognostic scoring system based only on readily-available

physiological criteria. Scores can be calculated easily for all individuals presenting for consideration, and allocation decisions can be made centrally, based on the number of resources available at the time (e.g., ventilators or ICU beds) and the number of individuals above and below a threshold score for that time. Threshold scores can be adjusted based on availability of resources.

The adoption of a system similar to the proposal developed by the New York State Workgroup’s would, of necessity, require centralized allocation decision-making. This would include collecting real-time information about patients at risk, their SOFA scores, and resources available, and setting thresholds for triage up to several times per day. Such a centralized decision-making process would take individuals on the ground out of the decisions and allow them merely to implement decisions made at the State level.

Recommendation 2: The Indiana State Department of Health should encourage all acute care facilities to adopt a common procedure for addressing how to allocate scarce resources when two (or more) patients arrive at an acute care facility with identical prognoses, and there are insufficient resources to treat all.

We acknowledge the ethically sensitive nature of any tiebreaking criterion. Although this protocol is expected to be used only in rare circumstances, it is necessary for institutions to have in place a common policy for addressing these issues. For example, the policy must not take into account factors that have already been included in the

original triage plan and must provide an equal opportunity for treatment amongst the afflicted. In such a rare event that a tiebreaker must be used, we recommend that concept of “first come, first served” be applied, with “time arrived” being defined as the time the individual’s SOFA score is entered into the system. This will reduce the need to extubate those patients who already have begun intensive care treatment, thus reducing further psychological trauma for those patients, their families, and their physicians. “First come, first served” also is an objective deciding factor, as opposed to the evaluation of social role.

Recommendation 3: The State should require all acute care facilities to adopt a common procedure to conduct a daily retrospective review of all

triage decisions in order to identify flaws in the protocol and to provide accountability.

Since an appeals process would be likely to interfere substantially with the system of resource allocation, we instead would recommend daily review of decisions by the central triage officials, with prospective, system-wide resolution of discrepancies which become apparent.

Application to the Points to Consider

Such a triage framework would be consistent with several of the ethical “Points” presented in the *Points to Consider* document. Table 3 below summarizes the applicable “Points” and how they are addressed.

Table 3: Points to Consider Reflected in the Proposed Triage Protocol

Ethical Point to Consider	Applicability to Protocol
Transparency	The protocol proposes that the State educate the public about the developing triage guidelines. Efforts to include historically underserved populations are recommended. Ethical justification for triage criteria is enumerated.
Public Accountability	Objective decision-making procedures eliminate subjectivity and bias from the triage protocol. As a result, allocation decisions will be able to withstand public scrutiny.
Responsiveness	The inclusion of an appeals process allows healthcare workers and the general public to voice concern and dissent. Evaluation of these appeals will result in more effective and acceptable triage protocol.
Proportionality	Less drastic methods of preserving scarce resources, such as canceling elective surgeries, are recommended prior to the implementation of rationing procedures. As need becomes greater and resources become more scarce, the policy’s inclusion and exclusion criteria become more

	restrictive, reflecting the level of severity of the situation.
Reciprocity	The protocol provides various means of support to affected individuals. For example, those individuals denied access to scarce resources (e.g., ventilators) are provided other means of medical attention, such as palliative care, and those with emotional and psychological burdens resulting from the crisis (e.g., healthcare workers) are provided Psychological First Aid.
Uniformity of Implementation	The analysis of objective physiological data creates less variation in triage decisions than subjective considerations would create.

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The pandemic potential of the H5N1 strain of avian influenza has created the necessity for comprehensive planning of resources and procedures. Although H5N1 has not yet acquired efficient transmission between humans, evidence suggests that soon this may be possible, causing widespread transmission (World Health Organization [WHO], 2006). Various experts have projected that this strain of avian influenza has the potential to be comparable to the 1918 pandemic, causing approximately 180–360 million deaths globally, and with 1.7 million deaths possible in the United States alone (Barnett et al., 2005). As a result, the Centers for Disease Control and Prevention (CDC), the U. S. Department of Health and Human Services (HHS), and other governmental agencies have established pandemic preparedness as a top priority. Included in those plans must be strategies for allocating vaccine and antiviral resources which will become insufficient to support the demand. A consistent, equitable, and well-developed method for the prioritization of target groups for vaccination and antiviral therapy requires detailed consideration. Presented in this document are several

issues to be deliberated and addressed in the development of such allocation priorities. This discussion is followed by recommendations for the Indiana State Department of Health.

The Issues

A review of the developing literature on vaccine and antiviral agent prioritization (Barnett et al., 2005; California Department of Health Services [CDHS], 2006a; California Department of Health Services [CDHS], 2006b; California Department of Health Services [CDHS], 2006c; California Department of Health Services [CDHS], 2006d; Centers for Disease Control and Prevention [CDC], Ethics Subcommittee of the Advisory Committee to the Director, 2007; Florida Department of Health [Florida DOH], 2004; Gostin, 2006a; Gostin, 2006b; Gostin & Berkman, 2007; HHS, 2005; HHS, 2006; New York State Department of Health [NYSDOH], 2006; Olson, Simonsen, Edelson, & Morse, 2005; Public Engagement Pilot Project on Pandemic Influenza [PEPPI], 2005) identifies four areas of agreement.

These are presented in Table 1 below.

Table 1:

Areas of Agreement Regarding Vaccination and Antiviral Agent Prioritization

Issue	Explanation
Planning	It is necessary to establish target group prioritization guidelines prior to the occurrence of a pandemic in order to prepare for the inevitable shortages of vaccines and antiviral agents.
Implementation	Policies must be implemented consistently to ensure fairness and equal opportunity for care.
Transparency and public awareness	Preparing and informing the community regarding how target groups are intended to be prioritized during a pandemic event will help to reduce civil unrest and may assist with gaining compliance.

Flexibility of guidelines	The epidemiology of the actual influenza pandemic may vary from what is projected. Plans must be modifiable to ensure the most appropriate response and usage of vaccines and antiviral agents. Changes in the production volume of vaccine manufacture also may affect prioritization. Technological advances in vaccine production and other innovations may require a revision of procedures. Prioritization guidelines must be able to accommodate changes that result from these factors.
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Providing vaccines and antiviral medications will be a principal strategy in the response to an H5N1 pandemic, and a majority of the proposed expenditures in the federal influenza plan are devoted to these countermeasures (Gostin, 2006a). Within the \$6.7 billion federal plan, \$4.7 billion has been allotted for vaccine stockpiling and technology development, and \$1.4 billion has been allotted for antiviral agents (Gostin, 2006a; Gostin & Berkman, 2007). Allocation of these federal stockpiles has been predetermined based on State population (HHS, 2006). However, in the event of a pandemic, there almost certainly will be an insufficient supply of vaccines and antiviral medications, and particular target groups will need to be prioritized (Gostin & Berkman, 2007). While there is general concurrence with the priority groups emphasized and the majority of ethical considerations which should affect vaccine and antiviral allocation planning, specific approaches stemming from these considerations vary.

The Approaches

Establishing guidelines for vaccine and antiviral distribution requires the identification of clear goals and objectives, since allocation procedures and criteria will be affected directly depending on the standards used for ranking the various risk groups. For example, although healthcare workers consistently are given high priority in the

various protocols (CDHS, 2006b; Florida DOH, 2004; NYSDOH, 2006), utility workers are not always identified as a high priority group (CDHS, 2006d).

The two primary areas of concern that are debated in terms of their relative importance are the reduction of societal disruption and the minimization of morbidity and mortality. Societal disruption can be described as a significant disturbance to the functioning of society (e.g., the cessation of essential services or the occurrence of severe economic distress), and some argue that reducing societal disruption should be given priority over the minimization of morbidity and mortality (CDC, 2007; PEPPI, 2005). By adopting this as the top priority, individuals who are prioritized may include those involved in public safety and maintaining order, those who are key government leaders and decision-makers, and those involved in “maintaining homeland security, utilities, food distribution, and communications” (PEPPI, 2005, p. 19).

Others contend that minimizing morbidity and mortality should be the main objective in vaccine and antiviral prioritization strategies (CDHS, 2006b; Florida DOH, 2004; HHS, 2005). This strategy is partially dependent upon epidemiological data (CDHS, 2006d), which will help to identify the groups that are at the highest risk. For example, it is noteworthy that the pandemic could

affect young adults disproportionately, as occurred with the 1918 strain (Olson et al., 2005). This characteristic may create the need to favor this age group over others in the effort not only to save the most lives (Gostin & Berkman, 2007), but to save lives that have the best chance of living into adulthood to maintain societal functioning. In addition, efforts to save the most lives will include the prioritization of medical personnel, who not only treat the afflicted but who also come into contact with large numbers of individuals, both with the flu and without. Healthcare providers' vaccination would allow medical care to continue and would slow the transmission of the virus throughout the population by preventing transmission from the provider to uninfected patients.

The debate regarding which objective (and therefore which groups) to prioritize has occurred at the federal and state levels. According to the CDC (2007), in the event of a pandemic, preserving society's function should be given priority over maximizing the number of lives saved. As a result, these CDC guidelines identify those who are "essential to the provision of health care, public safety and the functioning of key aspects of society" (CDC, 2007, p. 2) as the groups that should have priority in the distribution of vaccines and antivirals. The CDC (2007) states that this approach uses a "social worth criterion and its use is justified in these limited circumstances" (p. 7). However, the CDC does not state explicitly who would be considered essential and recommends policymakers engage in a dialogue with all stakeholders to make this determination.

For the HHS Pandemic Influenza Plan (2005), the Advisory Committee on Immunization Practices and the National Vaccine Advisory Committee provide general recommendations regarding the allocation of vaccines and antiviral medications. However, conversely to the CDC guidelines, these advisory committees consider the primary goal of a pandemic response to be decreasing the health impact on society and secondarily rank the minimizing of other societal and economic impacts.

States also have varied in the way they have included these goals in their efforts to develop specific guidelines and prioritizations. In addition to these federal recommendations, the vaccine and antiviral agent prioritization guidelines of California, Florida, and New York have been reviewed.

California. The California guidelines consider the minimization of health consequences as the primary objective in the response to a pandemic, under the assumption that "focusing intervention efforts on reducing the direct health consequences [such as death] reduces indirect consequences (e.g., economic loss and social disruption)" (CDHS, 2006c, p. 15). The minimization of social disruption and economic loss also are identified as critical factors, however, and as a result, strategies presented are required to achieve all three of these goals. The CDHS strategies additionally are evaluated based on their ethical, legal, political, and implementation feasibility.

Four rationing strategies are identified as meeting these standards for prioritization: allocation to those who perform essential emergency response

roles; allocation based on identification of medical and prevention needs in order to limit risk of transmission, infection, and complication; allocation based on the probability of successful immunization; and allocation to those who perform critical infrastructure services (CDHS, 2006a). The target groups presented in the California guidelines were developed by University of California, Berkeley, Center for Infectious Disease Preparedness researchers and vetted by representatives from the CDHS Joint Advisory Committee on Pandemic Influenza Vaccine and Antiviral Prioritization, in addition to staff within the CDHS Immunization Branch.

The CDHS also has developed the Decision Analysis Scoring Tool (DAST) as a resource to analyze “multiple goals, criteria, and alternatives to develop an optimal prioritization scheme” (CDHS, 2006b, p. 14). This tool takes into account various criteria, such as risk of infection, risk of transmission, and role in direct emergency response service. It was distributed to several groups so that they could rank, on a scale of 0 to 10, various populations on each of the predetermined criteria. For all identified populations, CDHS has calculated the average scores for each criteria category, and the sums of these averages are the basis for the priority rankings. This mathematical method allows for clear identification of priority groups. Should epidemiological data become available that identifies some groups at greater risk for infection or transmission than previously assumed, DAST scores and rankings then may be adjusted accordingly. Such elements of the California guidelines enable them to be comprehensive, yet they remain flexible

to the potential modifications necessary in the event of a pandemic. Currently, essential medical and emergency response personnel retain the highest rankings in the priority list, and the healthy adult population that otherwise does not hold essential positions is ranked at the bottom (CDHS, 2006b).

Florida. As with the California guidelines, those developed by the Florida Department of Health identify the minimization of illness and death as its primary goal and the minimization of social disruption as secondary (Florida DOH, 2004). The need for the protocol to be flexible in order to accommodate epidemiological data is emphasized additionally within the guidelines. The guidelines for both the Florida DOH and CDHS similarly define the primary goals for the prioritization of vaccines and antiviral medications. The Florida guidelines rank healthcare workers, those responsible for law enforcement, and those with specialized skills essential for utility services all as having priority over those at high risk for illness and mortality (Florida DOH, 2004). The CDHS guidelines include “both epidemiologic as well as social role-oriented criteria” (CDHS, 2006a, p. 123), and medical care and emergency response personnel comprise the top third of the priority list (CDHS, 2006b). A difference between the two sets of guidelines is that CDHS (2006d) ranks those in the utility industries in the bottom third of the priority list due to these workers having low projected risks of hospitalization and death, limited projected infectiousness and contact with susceptible populations, and minimal risk of contact with infected populations.

New York. The New York State Department of Health identifies its primary objectives to be limiting illness and death as well as social interruption (NYSDOH, 2006). These guidelines differ from the others, however, in that these two priorities are not ranked in terms of relative importance to each other. As with the California guidelines, New York recommends that groups considered to be at medical risk be given higher priority over those involved with infrastructure roles. The importance of continuously reassessing the established priorities based on epidemiological information additionally is given focus. The NYSDOH explicitly identifies those healthcare workers with *direct* patient contact as a primary target group, just as the CDHS guidelines recommend. The NYSDOH and CDHS guidelines also are similar in terms of their ranking and rationale for other specific priority groups. However, the CDHS guidelines are more explicit in their approach of categorization methodology, such as the use of the Decision Analysis Scoring Tool (DAST) to assess prioritizations. The CDHS guidelines additionally emphasize the need for strategies to fulfill multiple criteria for their inclusion in the response plan.

Recommendations

Recommendation 1: The Indiana State Department of Health should adopt a system similar to the California Department of Health Services vaccine and antiviral agent prioritization plans and construct a prioritization list based on its implementation.

This protocol places the maximization of lives saved as the top priority to be

achieved. By making the first prioritization the reduction of direct health consequences, the reduction of indirect consequences such as societal and economic disruption also will result. In order to achieve these objectives, the plan assesses multiple criteria, including individuals' risk of infection and risk of transmission. Therefore, those at highest risk for these outcomes will be given higher priority ranking. Those with roles in emergency response also are given higher rankings, both due to their high risks of infection and transmission, as well as their abilities to maximize others' chances of survival. Those given lower priority in the California system are less likely to become infected and transmit the virus, thus have a lesser need for vaccines and antivirals.

The California scoring method takes into account a variety of criteria in the structuring of its prioritization rankings, including those related to the minimization of deaths, of societal disruption, and of economic disruption. Although the scale used to evaluate the criteria for each identified population is subjective, the calculation method for scoring and ranking these groups is objective and consistently implemented through the use of the Decision Analysis Scoring Tool methodology. The use of such a mathematical scoring method based on a variety of criteria, rather than simple subjective rankings, allows for greater transparency and accountability to the public, as well as the consistent implementation of vaccination protocol. Furthermore, the use of DAST allows for flexibility and adjustment should new epidemiologic data arise. It also may be distributed and calculated in Indiana to adapt the prioritizations to the State's unique needs.

Recommendation 2: The Indiana State Department of Health should develop an education module for county health departments regarding the criteria by which the prioritization plan is developed, and counties should be instructed as to how prioritization decisions will be made.

In times of scarcity, a common approach to allocation is essential. Each county should be confident that it fully understands the objectives of ISDH with respect to prioritizing vaccine and antiviral availability. Therefore, each county should be briefed fully as to how ranking will occur, and each should be

asked to undertake a census of their respective counties to determine eligibility.

Application to the Points to Consider

The areas of agreement presented in Table 1 and the recommended vaccine and antiviral agent prioritization guidelines are consistent with several of the ethical “Points” presented in the *Points to Consider* document.

Table 2 below summarizes the applicable “Points” and how they are addressed.

Table 2: Points to Consider Reflected in the Proposed Prioritization Strategy

Ethical Point to Consider	Applicability to Protocol
Transparency	The inclusion of open communication facilitates public awareness of the prioritization policies and their implications.
Public Accountability	The inclusion of the public in the various levels of the policymaking process, as well as the inclusion of means of communication to the public, allows policymakers to address the public promptly regarding any complications of the guidelines.
Responsiveness	Public and professional input contributed in the decision-making process, as well as the presence of communication mechanisms, allow for the iterative evaluation and improvement of the prioritization guidelines.
Reciprocity	Healthcare workers engaged in direct patient care and emergency response personnel will be at highest risk of infection and are prioritized for protective equipment, vaccines, and medications to minimize their increased risk of infection and allow them to fulfill their duties.
Uniformity of Implementation	Development of vaccine and antiviral agent prioritization groups at the State level via the use of DAST allows for clear and consistent identification of priority groups.

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Technical Advisory Document (TAD-01-07)

**WORKFORCE MANAGEMENT AND PANDEMIC FLU
PREPAREDNESS:
*ETHICAL ISSUES AND RECOMMENDATIONS
TO THE INDIANA STATE DEPARTMENT OF HEALTH***

August 2007

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Serious outbreaks of avian influenza A (H5N1) have occurred among birds in Asia, Europe, and the Middle East. Although highly contagious among bird populations, the H5N1 virus is rare in human populations due to a significant species barrier (World Health Organization [WHO], 2006). However, as of June 29, 2007, human infection has continued to increase with 317 reported cases, 191 of which were fatal (WHO, 2007a). While there has been no efficient human-to-human transmission to date (WHO, 2006), the underlying knowledge of the virus—its highly virulent nature, constant evolution and mutation, and the potential for transmission from migratory birds to mammals and humans—has raised global concern of a pandemic potential.

The World Health Association and the World Health Organization have recognized the potential of an influenza pandemic and have called for member nations to start planning for the next pandemic (WHO, 2005), which WHO refers to as “inevitable, and possibly imminent” (Barnett et al., 2005, p. 1235). Some professionals have suggested preparing for a pandemic similar to the 1918 “*Spanish flu*” that is estimated to have caused 50–100 million deaths. It is projected that a similar pandemic would cause about 180–360 million deaths globally, including 1.7 million deaths in the United States, with transmission of the disease lasting at least two years (Barnett et al., 2005).

If such a pandemic occurs, it will require drastic, though temporary, changes in many areas of society, including hospitals, schools, workplaces, and other public service organizations. In planning a response for such a

pandemic, many decisions will have to be made both to contain and control its spread, and policies to guide decision-making will require consideration of ethical issues related to workforce management, allocation of scarce resources, and minimization of societal disruption.

This paper discusses the ethical concerns related to workforce management. By “workforce” we mean all persons employed in the various occupational fields. As such, this paper identifies workforce-related ethical issues and suggests relevant questions that policymakers should take into account when planning for an influenza pandemic response. Finally, it provides recommendations to the Indiana State Department of Health that may be used in the planning process.

It is necessary to note that although an influenza pandemic would affect the workforce indiscriminately throughout society, we will focus primarily on the healthcare sector and the healthcare workers in clinical environments such as hospitals and clinics. We also briefly will consider other workers, such as food service and janitorial workers, in those same institutions. This focus is intentional given the direct impact on the delivery of health care to patients should these essential healthcare workers be unavailable to carry out their responsibilities. Nevertheless, it is paramount to note the presence of workforce that support continual operation of healthcare delivery (e.g., suppliers of drugs and devices).

The Issues

A review of current literature on workforce management (Agency for Healthcare Research and Quality [AHRQ], 2005; AHRQ, 2007; Barnett et al., 2005; Ehrenstein, Hanses, & Salzberger, 2006; Gomersall et al., 2006; Gostin, 2006; Hsin & Macer, 2004; Lo

& Katz, 2005; Morin, Higginson, & Goodrich, 2006; Reid, 2005; Tzeng, 2004; University of Maryland Center for Health and Homeland Security, 2005; WHO, 2005) suggests some areas of agreement.

These are summarized in Table 1 below.

Table 1: Areas of Agreement Regarding Workforce Management

Issue	Explanation
Planning	It is crucial to plan for a response strategy to a pandemic prior to its occurrence.
Involvement in policymaking	It is necessary to include both the public and healthcare workers in the planning process in order to gain support for and compliance to the plan. Public and worker involvement also will help to cultivate ethically sound decision-making.
Prioritization	Healthcare workers should be given priority to scarce protective resources, such as protective equipment, vaccines, and prophylactic antiviral medications.

We note that the agreement reached on these three issues is not surprising, since they are somewhat uncontroversial. Other ethical issues may not enjoy the same level of agreement. Therefore, we outline the following four additional issues: the duty to care in healthcare provision; sanctions for absenteeism; control measures; and obligations of other important individuals in the workforce.

Duty to Care. Healthcare workers and healthcare professionals are faced with the risk of being infected while providing care to both infected and exposed patients. The level of risk is relative to the specific agent involved in the pandemic, which in most cases will be unknown, at least when the first cases

are identified. Since most healthcare professionals are bound by a code of ethics that obligates them to provide care to patients, the scenario above gives rise to several ethical concerns: what degree of risk is acceptable in occupational exposure? Should the obligation to provide care diminish with rising levels of risk? Is there a level of risk at which the duty to care no longer remains (Reid, 2005)? Should we expect healthcare workers to sacrifice their lives for our society in severe pandemics because it is ethically unacceptable for them to abandon patients (Hsin & Macer, 2004)? How should healthcare workers balance competing obligations when they come into conflict, such as when obligations to family conflict with obligations to patients (Hsin & Macer, 2004)? Is the

obligation to treat absolute (Morin et al., 2006)? Each of these questions speaks to the central ethical concern facing healthcare workers in a pandemic: the nature and extent of their obligation to care for patients, even when this creates a risk of harm to the healthcare workers themselves.

Sanctions for Absenteeism. The public will demand that healthcare professionals be held accountable for providing care throughout the pandemic. However, enforcing accountability raises several ethical questions. For example, should care providers be reprimanded for choosing not to treat infected patients in a severe pandemic, and should healthcare workers be reprimanded for choosing not to report to work (Hsin & Macer, 2004)? Are there cases when absenteeism is acceptable, such as when a worker tends to an ill family member? What if a worker fraudulently claims to be tending to a family member when no such family member exists? Some of the possible sanctions for noncompliance with one's employment contract or professional duties to care include professional licensure revocation (Center for Law and the Public's Health at Georgetown and Johns Hopkins Universities, 2001) and imprisonment (AHRQ, 2007; University of Maryland Center for Health and Homeland Security, 2005). Other forms of sanctions may include warnings; letters of reprimand, financial penalties, or license suspension (see for examples, Indiana Code 25-1-9-9); or termination of employment. Noncompliance with professional ethical obligations to care for patients always raises profound ethical issues in the normal course of affairs. When extraordinary events arise, they sometimes demand

extraordinary responses, and caution must be exercised in how institutions respond.

Control Measures. The State will be required to institute public health control measures immediately in order to contain the spread of the disease. Some of the control measures may include quarantining workers in places believed to be exposed, such as hospitals, clinics, airports, and bus terminals. These issues arose in the SARS epidemic, where quarantine was invoked in various workplaces (Hsin & Macer, 2004), and in the recent case of the airline passenger initially diagnosed with extremely resistant tuberculosis who was placed in isolation upon his return to the United States (Centers for Disease Control and Prevention [CDC], 2007a; Centers for Disease Control and Prevention, 2007b). The principal ethical question is whether quarantine should be ordered without warning or preparation, and whether families of care providers should be quarantined after a documented exposure (Hsin & Macer, 2004).

On the other hand, negative outcomes from quarantine, such as fear, depression, anxiety, anger, frustration, community isolation, and stigma for workers providing care to infected individuals produce another set of ethical concerns: whether families of care providers should be prioritized for scarce protective resources; whether stigmatization of healthcare workers is justifiable in pandemic situations; whether healthcare workers should be quarantined; and whether control measures should aim primarily at controlling the spread of a disease or at reducing societal disruption (Hsin & Macer, 2004; Reid, 2005).

Other Vital Workers. For healthcare institutions to be able to provide care to infected and exposed individuals during a pandemic emergency, other vital workers need to be at work. These include cooks, hospital janitorial staff, and suppliers of critical resources, who are hourly employees but who are critical to the daily operation of healthcare organizations. In the absence of the use of accrued paid sick leave or invocation of Family and Medical Leave Act (FMLA) rights, a choice not to report to work, for whatever reason, would result in these workers not being paid. Thus, the main ethical concerns revolve around reporting to work: should such groups of hospital workers, who do not have the same kinds of professional obligations that doctors and nurses do, be expected to work? What should the consequences be when such workers do not report to work? Will the consequences differ depending on the underlying reason for absence (e.g., not reporting to work due to fear versus staying home to care for a sick family member)?

The Approaches

A number of approaches have been offered to address the ethical issues that arise for workers during an influenza pandemic. We outline these below.

Emphasizing Duty to Care. As emphasized, healthcare professionals have a duty to assure adequate availability of care in emergencies, and various studies have demonstrated that most healthcare professionals recognize their professional obligation to treat patients in an influenza pandemic (Ehrenstein, Hanses, & Salzberger, 2006; Morin et al., 2006). It also has

been proposed that educating healthcare workers with information about the etiology of the illness and its proper control measures would increase willingness to provide care (Tzeng, 2004).

The debates that arose about healthcare workers' obligations to assume risk during the early years of the HIV/AIDS era provide a useful comparison to the issues in pandemic flu planning. In the context of treating HIV/AIDS, some commentators argued that the obligation to provide care to infected patients should be inversely related to risk (Morin et al., 2006). The main ethical concern was whether there exists a point where risk outweighed the obligation to provide care. However, the recent experience in the context of SARS suggested that risk and obligation do not stand in an inverse relationship (Reid, 2005); rather, it is suggested that the greater the risk, the more obligated health professionals are to respond. This is based on the argument that there is no one else in our society who is "more appropriately trained and more deeply obligated to serve in [the] case of a medical emergency" (Reid, 2005, p. 352) than healthcare professionals. If they do not tend to the infirmed, who will (Reid, 2005)? Nonetheless, even though healthcare professionals appear ready to take risk in care provision, other healthcare workers, such as health administrators, have been reported not to have the same commitment (Ehrenstein et al., 2006).

Absenteeism. While some argue that the choice of whether to report or not to report to work during an influenza pandemic should be an individual decision, others contend that the decision

should not be left to individuals (Morin et al., 2006). Nonetheless, from the revelation that healthcare professionals are dependable in times of crisis as depicted during the SARS epidemic, there has been growing consensus that the choice to report to work by healthcare workers should be voluntary (Ehrenstein et al., 2006; Hsin & Macer, 2004).

Since absenteeism is a real possibility, planning for countermeasures in case of understaffing is recommended. Some have proposed the identification of volunteers, such as retired physicians and veterinarians, prior to the pandemic (AHRQ, 2005; Cantrill et al., 2004; Rubinson et al., 2005). These individuals could then be registered in a database for their quick retrieval and verification (Cantrill et al., 2004; Rubinson et al., 2005). Gomersall (2006) suggests drafting of staff to work in intensive care units if there are insufficient volunteers. However, he cautions that this should be done before the pandemic in a manner that is “fair, transparent, participatory, [and] understood” (Gomersall, 2006, p. 1009).

As with the duty to care, approaches to sanctions for absenteeism and refusal to care vary greatly. Regarding penalties for those choosing not to report to work, Ehrenstein’s (2006) survey found that most healthcare professionals did not support sanctions for absenteeism. At the opposite end of the spectrum, Maryland law requires healthcare professionals to report to work in times of medical emergencies (University of Maryland Center for Health and Homeland Security, 2005). One’s failure to do so may result in the individual’s arrest (AHRQ, 2007). Also

suggested as a form of penalty, the Center for Law and the Public’s Health at Georgetown and Johns Hopkins Universities (2001) discusses the possibility of making a practitioner’s license dependent upon that individual assisting “in the performance of vaccination, treatment, examination, or testing of any individual” (p. 33). The Public Engagement Pilot Project on Pandemic Influenza [PEPPPI] (2005) suggests obtaining “commitments from vaccinated individuals stating that they will conduct the work for which they received the immunization” (p. 21). Sanctions, then, may be reserved for those who break these commitments.

There are substantial difficulties in assessing whether the reasons are legitimate for absenteeism among healthcare professionals. What is a legitimate reason for not reporting to work? Family obligations? Overwhelming fear of infection? How can the system verify the reasons provided? Will there be “verification officials” to check on healthcare professionals and to verify the excuses they provide for absenteeism? Admittedly, these are delicate decisions and require care and consideration.

Control Measures. As control measures, isolation and quarantine of exposed individuals “are extreme measures that require rigorous safeguards” (Gostin, 2006, p. 1703), especially in pandemics, which are known to be socially divisive, so that they are exercised fairly and not as subterfuges for discrimination (Gostin, 2006). Isolation and quarantine may be ineffective because most healthcare workers not only dislike being quarantined, but they also are more likely to fulfill their obligations

during a pandemic in the absence of strict prophylactic quarantine (Tzeng, 2004). On the other hand, as Lo and Katz (2005) have argued, the need to protect the general public from serious illness is more important than respecting the individual's autonomy. Nonetheless, it is argued that this "loss of individual liberty must be balanced by the demonstrable need for restrictive measures to protect society" (Gomersall, 2006, p. 1010).

This need to protect society has come to the forefront recently with the case of Andrew Speaker, the individual initially diagnosed with extremely resistant TB (Conant & Wingert, 2007; WHO, 2007b). Few would disagree that Speaker's quarantine was necessary to protect the public against the risk of possible transmission. Indeed, the outcry has been quite the opposite: had the Centers for Disease Control and Prevention put the patient in isolation immediately, he would not have exposed fellow airline passengers and others to this potentially lethal illness. His forced isolation upon return to the United States has prevented further possible transmission to other members of society.

Actions Regarding Other Vital Workforce. Only two organizations have commented directly on the issue of whether all or only "vital" healthcare workers should be subject to workforce management strategies. The AHRQ (2005) recommends including protection of all staff and their families (e.g., providing prophylaxis) in order to ensure the staff report to work. In addition, it has been suggested that staff be given "opportunities for rest and recuperation" (WHO, 2005, p. 40) between waves and

at the end of the pandemic in order to decrease worker burnout.

Recommendations

Recommendation 1: The State Department of Health should identify and designate healthcare workers deemed to be critically necessary during a pandemic.

This recommendation is central to all workforce policy recommendations, and as such needs to be made centrally by the State. A common list that can be adapted by institutions for their own use will ensure that all workers know their status and what will be expected of them.

Recommendation 2: The State of Indiana and healthcare organizations should plan an influenza response on the premise of high expectations for workplace continuity for professional healthcare staff. Efforts should be made to educate fully all healthcare workers about the nature of pandemic influenza and of their professional ethical responsibilities.

It has been observed that healthcare workers generally are willing to fulfill their obligations in pandemic situations. Because verifying reasons for absenteeism would be practically impossible, we favor a "high expectations, no punishment" approach. By adopting a policy of high expectations, most healthcare workers will be encouraged to participate voluntarily in the response of a pandemic, thereby winning their commitment and compliance. In addition, efforts should be made to involve all stakeholders to the extent

possible at various levels of the planning process before, during, and after the pandemic. It is critically important that healthcare workers be sufficiently informed about the nature of pandemic flu, its causes, modes of transmission, and risk. Members of a fully informed workforce are less likely to make inappropriate judgments about their personal safety.

Recommendation 3: The State should set and communicate expectations that healthcare institutions have adequate supplies of appropriate medical equipment, prophylaxis, and related material and that these institutions ensure these supplies be made readily available to all critical personnel expected to interact with patients. Healthcare institutions should be expected to inform the relevant county and State health officials of the extent to which they are able to meet these expectations.

Since healthcare workers will be expected to care for patients thereby placing their own lives at risk, this recommendation recognizes that there is a commensurate obligation on the part of the healthcare institution to provide as safe a work environment as possible for those workers who will be placing themselves at increased risk. Since healthcare coordination in a pandemic is a statewide responsibility, it is incumbent on the State to ensure that institutions carry out these functions. Identified critical personnel should be given priority to scarce protective resources, such as protective equipment, vaccines, and prophylactic antiviral medications. They must have adequate protection in order to protect the health and safety of the general public.

However, the limitations and eligibility criteria need to be outlined clearly in advance. Finally, due to workers' tendency to resist isolation and quarantine control measures, these measures should be undertaken only if alternative approaches (i.e., voluntary isolation and quarantine) fail.

Recommendation 4: The State should encourage healthcare institutions to establish clear policies for determining sanctions for noncompliance with expected responsibilities that are both fair and responsive to exceptional circumstances. By "clear policies" we mean that an institution should describe whether some or all workers may be permitted to be absent; whether workers may use accrued leave/vacation time; and whether sanctions will be applied to workers who elect to be absent without acceptable reasons.

The rationale of this recommendation is based on the historical and accepted ethical principles underlying healthcare professionals' obligations to society and to patients, as well as the empirical observation that most healthcare workers have demonstrated readiness to fulfill their obligations in pandemic situations if they are in agreement with the policies adopted. Listing "reasonable" and "unreasonable" justifications for missing work, as well as the practical impossibility of verifying reasons provided, causes us to favor a system which sets expectations for participation in the care of sick people high, and sanctions and other punishments low.

Allowance of some absences but not others may prove to be problematic because of the difficulties involved in

verifying the legitimacy of absentees’ excuses. However, it is recognized that in exceptional cases, e.g., a critical care nurse who is responsible for her own child at home, absence from work may be justifiable.

Application to the Points to Consider

The recommended workforce protocol is consistent with several of the ethical “Points” presented in the *Points to Consider* document.

Table 2 below summarizes the applicable “Points” and how they are addressed.

Table 2: Points to Consider Reflected in the Proposed Protocol

Ethical Point to Consider	Applicability to Protocol
Consistency of the Mission of ISDH and Other Healthcare Professionals	The recommendation to involve healthcare professionals in the planning process will help to ensure that the protocol is supported by the various Missions of the affected organizations.
Transparency	The inclusion of stakeholders in the decision-making process, as well as the presence of communication mechanisms, ensures that those affected will be informed of the developing protocol.
Public Accountability	The inclusion of healthcare workers in the various levels of the policymaking process, as well as the presence of communication mechanisms, allows policymakers to address the workers promptly regarding any complications of the protocol.
Responsiveness	Healthcare professionals’ input contributed in the decision-making process, in addition to the presence of communication mechanisms that allow for the expression of dissatisfaction by the healthcare professionals, allows for the iterative evaluation and improvement of the policy.
Proportionality	As personal risk increases, healthcare workers are able to weigh their own priorities to determine whether they will report to work. They are to decide if the benefits of reporting to work outweigh the burdens of doing so.
Reciprocity	Healthcare workers, who bear a large portion of the burden of caring for the afflicted, are prioritized for protective equipment and medications in order to minimize their increased risk of infection.
Uniformity of Implementation	Development of workforce management protocol at the State level, the inclusion of healthcare professionals in the development process, and open communication will help to ensure members of the healthcare field statewide will be aware of and approve of the recommended protocol, resulting in policy compliance.

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Annotated Bibliography (AB-04-07)

**ALTERED STANDARDS OF CARE AND PANDEMIC FLU
PREPAREDNESS:**
*ETHICAL ISSUES AND RECOMMENDATIONS
TO THE INDIANA STATE DEPARTMENT OF HEALTH*

August 2007

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With nearly forty years passed since the last influenza pandemic, experts are warning that the next pandemic is overdue and that the H5N1 strain of avian influenza has this pandemic potential. According to the World Health Organization, H5N1 “has met all prerequisites for the start of a pandemic save one: an ability to spread efficiently and sustainably among humans.” As a result of this threat, international organizations, governments, health departments, institutions, and healthcare professionals throughout the world are currently preparing for a modern influenza pandemic. Such preparations require a shift in priorities and expectations in medical care delivery and setting. This includes the allocation of “scarce equipment, supplies, and personnel in a way that saves the largest number of lives in contrast to the traditional focus on saving individuals.”

Several references for this document were found via the Indiana University Center for Bioethics website’s pandemic

resources page

(<http://bioethics.iupui.edu/Pandemic.html>).

Others were found through searches on the PubMed database

(<http://www.ncbi.nlm.nih.gov/sites/entrez/>),

the World Health Organization’s website (<http://www.who.int/en/>), the United States

Department of Health and Human Services website

(<http://www.hhs.gov/pandemicflu/plan>), the Ovid Web Gateway

(<http://gateway.ovid.com>), and the Yahoo! search engine using the terms “pandemic influenza,” “pandemic triage,” “avian influenza,” “triage,” “pandemic altered standards,” “pandemic alternate care sites,” “pandemic ventilator allocation,” and “pandemic law.”

This document is not exhaustive of all possible resources regarding the topic of pandemic altered standards of care, but it is our hope that these resources may be of some use to those who are interested in pursuing the topic further. This document is current as of July 16, 2007.

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Agency for Healthcare Research and Quality. (2005, April). Altered standards of care in mass casualty events [Electronic version]. AHRQ Publication No. 05-0043. Retrieved April 27, 2007, from <http://www.ahrq.gov/research/altstand/altstand.pdf>.

The purpose of this document is to provide planners with a framework from which they can develop a protocol to change the provision of medical care in the event of a mass casualty event (MCE). It examines how current care standards may need to change and which tools are available to make these changes, and it provides recommendations to emergency planners on the most reasonable and ethical methods to address an MCE. The authors make recommendations regarding alternate care sites, adequate staffing, and documentation standards.

Agency for Healthcare Research and Quality. (2007, February). Providing mass medical care with scarce resources: A community planning guide [Electronic version]. AHRQ Publication No. 07-0001. Retrieved March 28, 2007, from <http://www.ahrq.gov/research/mce/>.

The purpose of this document is to guide planners in their development of strategies to address mass casualty events. It provides examples of resources currently available to states and communities that may assist in their planning. Included is a list of relevant laws that may need to be suspended or altered during a bioevent such as an influenza pandemic. Also included are discussions on alternate care sites, staffing considerations, and documentation standards.

Bogdan, G. M., Scherger, D. L., Brady, S., Keller, D., Seroka, A. M., Wruk, K. M., et al. (2004, December). Health emergency assistance line and triage hub (HEALTH) model [Electronic version]. AHRQ Publication No. 05-0040. Retrieved April 27, 2007, from <http://www.ahrq.gov/research/health/health.pdf>.

Bogdan et al. developed a model protocol to address communication difficulties that occur during public health emergencies. In this document, the authors identify best practices in the medical call center industry and combine these practices into their developed model, which aims use various communication methods to provide the public with necessary information to respond to the emergency properly. The use of efficient call centers equipped with the latest technology is recommended in order to reduce the surge in demand for information from other sources that must tend to other aspects of the public health emergency (e.g., hospitals).

Cantrill, S. V., Eisert, S. L., Pons, P., & Vinci, C. E. (2004, August). Rocky Mountain regional care model for bioterrorist events: Locate alternate care sites during an emergency [Electronic version]. AHRQ Publication No. 04-0075. Retrieved May 14, 2007, from <http://www.ahrq.gov/research/altsites>.

This document was developed in order to address medical surge capacity needs in the event of a bioterrorism event, but its methods also are applicable to a

naturally-occurring bioevent. The authors created a surge capacity model in order to anticipate medical surge capacity needs. Included in the protocol is a recommendation pertaining to maintaining adequate staffing, stating that volunteers, such as retired physicians, should be registered into a database so that they may be called upon to assist in medical care provision should regular workforce numbers drop too low to maintain a minimally-functioning healthcare site.

Center for Law and the Public's Health at Georgetown and Johns Hopkins Universities. (2001, December). Model state emergency health powers act [Electronic version]. Retrieved May 11, 2007, from <http://www.publichealthlaw.net/MSEHPA/MSEHPA2.pdf>.

The purpose of this document is a model for State legislation that addresses the need for State and local governments to act quickly and effectively at handling public health emergencies. It grants governors and public health authorities emergency powers to address events such as a bioterrorist attack or a pandemic event. The authors state that planners must identify sites for isolation and quarantine, medical supply and food distribution, and healthcare worker housing.

De Ville, K. (2007). Legal preparation and pandemic influenza. *Journal of Public Health Management Practice, 13*(3), 314-317.

De Ville discusses legal issues that may arise in the event of a pandemic and stresses the importance of states and localities identifying and addressing such issues prior to the pandemic. He analyzes and expands on publications which discuss the topic, including those by the Centers for Disease Control and Prevention and by other authors. De Ville discusses such topics as isolation and quarantine, immunization, property confiscation, and healthcare volunteer and worker temporary licensure.

Gostin, L. O., Sapsin, J. W., Teret, S. P., Burris, S., Mair, J. S., Hodge, J. G., et al. (2002). Model state emergency health powers act: Planning for and response to bioterrorism and naturally occurring infectious disease. *Journal of the American Medical Association, 288*(5), 622-628.

Gostin et al. review the Model State Emergency Health Powers Act, which was published in 2001 by the Center for Law and the Public's Health at Georgetown and Johns Hopkins Universities as a model for State legislation that addresses the need for State and local governments to act quickly and effectively at handling public health emergencies. The authors describe the Act's inclusion in legislation in 34 states, as well as the adoption of some form of the Act in 16 states. Also included is a discussion on property seizure and compensation, which is related to the establishment of alternate care sites. Documentation alterations and the need for cultural sensitivity also are discussed.

New York State Workgroup on Ventilator Allocation in an Influenza Pandemic. (2007, March 15). Allocation of ventilators in an influenza pandemic: Planning document. Retrieved March 17, 2007, from

http://www.health.state.ny.us/diseases/communicable/influenza/pandemic/ventilators/docs/ventilator_guidance.pdf.

The New York State Workgroup has developed a comprehensive plan to address the issue of triage management, specifically ventilator allocation. This protocol attempts to provide the most ethically sound method of triage possible and uses only physiological data assessed as a SOFA score in determining ventilator access, thereby eliminating subjective “quality of life” and “social role” decision-making criteria, as well as rejecting the use of age as an exclusionary criterion. In addition to the primary discussion on ventilator triage, the workgroup discusses the potential need to alter individual healthcare workers’ responsibilities in times of staffing shortages and states that this alteration of duties should be simplified as much as possible.

Ontario Health Plan for an Influenza Pandemic (2006, September). [Electronic version]. Retrieved March 28, 2007, from http://www.health.gov.on.ca/english/providers/program/emu/pan_flu/ohpip2/plan_full.pdf.

This document is intended to be the guiding plan for health and response efforts for the Canadian province of Ontario in the event of an influenza pandemic. It includes information on necessary public health measures that must be taken, as well as a detailed plan on how to maximize communication efforts. It provides an in-depth discussion on the identification and use of alternate care sites, stating that partnership in obtaining such sites is preferable over coercion and that alternate sites should be provided insurance. It also discusses the need to compensate healthcare workers for the disproportionate burden they may endure.

Rubinson, L., Nuzzo, J. B., Talmor, D. S., O’Toole, T., Kramer, B. R., Inglesby, T. V., et al. (2005). Augmentation of hospital critical care capacity after bioterrorist attacks or epidemics: Recommendations of the working group on emergency mass critical care [Electronic version]. *Critical Care Medicine*, 33(10). Retrieved from Ovid Web Gateway on March 27, 2007.

The authors of this document have addressed possible mass critical care alterations that should be made in the event of a bioterrorist attack but also have written that such alterations also may apply to naturally-occurring biological events, such as a pandemic. In the document, Rubinson et al. discuss triage implementation, alternate care sites, the need for altered workforce responsibilities, and possible legislative actions to protect healthcare workers and facilities from litigation. They provide examples of how to redistribute healthcare worker responsibilities. They also have proposed the need for identification and registration of volunteers, such as retired physicians and veterinarians, whose names can be stored in a database for rapid accessibility.

Tzeng, H. M. (2004). Nurses' professional care obligation and their attitudes towards SARS infection control measures in Taiwan during and after the 2003 epidemic. *Nursing Ethics*, 11(3), 277-289.

Tzeng conducted a study to determine statistically significant predictors of

nurses' willingness to provide care during the SARS epidemic. The researcher found that nurses were more likely to provide care if they were in agreement with infection control measures and if they were not subjected to quarantine. This information may be applicable to the development of pandemic influenza response protocols regarding how to maintain adequate staffing during an influenza pandemic.

United States Department of Health and Human Services. (2007a). Pandemic influenza plan, part 2: Public health guidance for state and local partners. Retrieved May 15, 2007, from <http://www.hhs.gov/pandemicflu/plan/pdf/part2.pdf>.

This document aims to assist states and localities in pandemic preparedness planning and to assist in the collaboration between states and localities and private healthcare institutions. It outlines state and local responsibilities, describes the ideal planning process, identifies legal preparedness as a priority, and discusses community planning. It also includes checklists that may help to guide emergency preparedness planners. Furthermore, the authors identify the need to consider the use of alternate care sites and alternative staffing procedures.

United States Department of Health and Human Services. (2007b). Pandemic influenza plan: Supplement 3. Retrieved May 15, 2007, from <http://www.hhs.gov/pandemicflu/plan/sup3.html>.

This HHS document is a guide for influenza pandemic response plans. Its primary focus is the development of plans during the interpandemic period. Such plans address communication methods, vaccine and antiviral allocation, and surge capacity, among many other issues. Pertaining to altered standards of care, the document includes lists of steps planners should take in order to identify and utilize alternate care sites, as well as steps to take in order to address emergency staffing needs.

World Health Organization. (2006). Avian influenza ("bird flu")--Fact sheet. Retrieved June 5, 2007, from http://www.who.int/mediacentre/factsheets/avian_influenza/en/index.html.

This WHO document provides an overview of avian influenza, including discussion on its presence in birds and its history of human infection. It also provides a discussion on human epidemiology and symptoms. Finally, it identifies the nations currently affected by H5N1 infections. This document describes the potential of H5N1 to become the next influenza pandemic.

Annotated Bibliography (AB-02-07)

**TRIAGE AND PANDEMIC INFLUENZA:
*ETHICAL ISSUES AND RECOMMENDATIONS
TO THE INDIANA STATE DEPARTMENT OF HEALTH***

August 2007

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The World Health Organization reports that 317 human cases of avian influenza H5N1 have been confirmed and 191 of these cases have been fatal. With experts warning that an influenza pandemic is overdue and that H5N1 has pandemic potential, governments, health departments, health care professionals, and many others have been working to develop response plans for such a crisis. Those plans must include ethical strategies for allocating resources which become insufficient to support the demand, because “shortages of specialized staff, medical equipment, and supplies could limit the number of patients who can receive the appropriate supportive critical care interventions.” Such resource allocation strategies may be referred to as “triage” of scarce resources because they necessarily involve a prioritization of which patients will receive care when not all can. Consistent, ethically defensible methods for allocating scarce resources require careful planning and deliberation.

Several references for this document were found via the Indiana University Center for Bioethics website’s pandemic resources page (<http://bioethics.iupui.edu/Pandemic.html>). Others were found through searches on the PubMed database (<http://www.ncbi.nlm.nih.gov/sites/entrez/>) and on the World Health Organization’s website (<http://www.who.int/en/>) using the terms “pandemic influenza,” “pandemic triage,” “avian influenza,” “triage,” “pandemic ventilator allocation,” and “SOFA.” Finally, the Clarian document and the Indiana Pandemic Influenza Community Advisory Group document were obtained from each group directly.

This document is not exhaustive of all possible resources regarding the topic of pandemic influenza triage, but it is our hope that these resources may be of some use to those who are interested in pursuing the topic further. This document is current as of July 16, 2007.

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Agency for Healthcare Research and Quality. (2007, February). Providing mass medical care with scarce resources: A community planning guide [Electronic version]. Publication No. 07-0001. Retrieved March 28, 2007, from <http://www.ahrq.gov/research/mce/>.

The purpose of this document is to guide planners in their development of strategies to address mass casualty events. It provides examples of resources currently available to states and communities that may assist in their planning. The authors discuss ethical considerations of triage, rejecting the use of gender, race, financial status, and social role. Age also is only to be considered as it relates to physiological diagnosis.

Arts, D. G. T., de Keizer, N. F., Vroom, M. B., & de Jonge, E. (2005). Reliability and accuracy of sequential organ failure assessment (SOFA) scoring. *Critical Care Medicine, 33*(9), 1988-1993.

The authors of this document performed a study in order to evaluate the accuracy of SOFA scoring. Their findings supported the scoring method's reliability. The statistics and conclusions provided in this document support the New York State Workgroup's recommendation to use SOFA scores as the primary inclusion and exclusion criterion.

Burkle, F. M. (2006). Population-based triage management in response to surge-capacity requirements during a large-scale bioevent disaster. *Academic Emergency Medicine, 13*(11), 1118-1129.

Burkle discusses the strategy of implementing population-based triage in the event of a biological crisis. Using the SEIRV methodology, he describes two phases of population-based triage. Phase 1 involves generic strategies that are applied to the entire population, such as social distancing. Phase 2 involves person-specific strategies, such as denial of rigorous medical care due to an unlikelihood of survival. In this document, Burkle includes a discussion on the use of call centers as primary triage points. He also discusses the need for psychological care for all those who are affected by the event, including healthcare providers and the afflicted.

Centers for Disease Control and Prevention, Ethics Subcommittee of the Advisory Committee to the Director. (2007, February 15). Ethical guidelines in pandemic influenza. Retrieved March 15, 2007, from http://www.cdc.gov/od/science/phec/panFlu_Ethic_Guidelines.pdf.

This document provides guidance in ethical decision-making related to vaccine and antiviral medication distribution (pharmaceutical interventions) and to social distancing and limiting individual freedom (non-pharmaceutical interventions). It discusses general ethical considerations, such as public involvement and transparency, as well as recommendations for the allocation of scarce resources during a pandemic. It also allows for the use of age and social role as inclusion and exclusion criteria.

Challen, K., Bright, J., Bentley, A., & Walter, D. (2007). Physiological-social score (PMEWS) vs. CURB-65 to triage pandemic influenza: A comparative validation study using community-acquired pneumonia as a proxy [Electronic version]. *BMC Health Services Research*, 7(33). Retrieved March 28, 2007, from the Biomed Central database, <http://www.biomedcentral.com>.

The authors of this document developed the Pandemic Medical Early Warning Score (PMEWS) as a method of triaging patients. PMEWS was found to be readily applicable for the triage of large numbers of patients, but it was not found to be an accurate predictor of inpatient mortality. The authors of this study included social role and age in their triage scoring method.

Christian, M. D., Hawryluck, L., Wax, R. S., Cook, T., Lazar, N. M., Herridge, M. S., et al. (2006). Development of a triage protocol for critical care during an influenza pandemic. *Canadian Medical Association Journal*, 175(11), 1377-1381.

This document presents a triage protocol that was developed by the authors through stakeholder and expert involvement, evaluation of best methods, and the use of general ethical principles. Their protocol includes the use of the sequential organ failure assessment (SOFA) method and applies it to all incoming patients, not only influenza patients. It does not include age as an exclusion criterion, but the authors write that they had consistent feedback that indicated age should be considered in triage.

Clarian Ethics Policy Review Committee Working Group on Ethics in Pandemic Flu. (2006). *Pandemic influenza triage principles*. Unpublished policy draft.

This policy draft addressing triage was developed by an interdisciplinary team, with contributions from Clarian Health Partners experts and individuals from Indiana University-Purdue University-Indianapolis. The group's goals were to develop methods that would maximize healthful life and contribute to ethically-sound triage decisions in times of extreme scarcity. The group's recommendations included the use of allocation based on priority groups and medical factors, as well as including a "first come, first served" prioritization. This document allows for the use of age and social role as exclusionary criteria.

Gomersall, C. D., Tai, D. Y. H., Loo, S., Derrick, J. L., Goh, M. S., Buckley, T. A., et al. (2006). Expanding ICU facilities in an epidemic: recommendations based on experience from the SARS epidemic in Hong Kong and Singapore. *Intensive Care Medicine*, 32, 1004-1013.

The authors of this document present the recommendations of expert groups who expanded intensive care services in response to outbreaks of severe acute respiratory syndrome in Hong Kong and Singapore. These recommendations address estimating bed requirements, infection control, staffing, counseling and stress reduction, communication, and other ethical issues. In regards to triage, the authors recommend that any groups selected for prioritization be identified clearly in advance and that the decision to prioritize a group should be

transparent and justifiable.

Hick, J. L., & O’Laughlin, D. T. (2006). Concept of operations for triage of mechanical ventilation in an epidemic. *Academic Emergency Medicine, 13*(2), 223-229.

Hick and O’Laughlin’s report provides a three-tiered approach to the triage of mechanical ventilation in the event of a pandemic situation that causes a scarcity of resources. With each successive tier, inclusion criteria become more stringent. The authors write that a patient may be removed from ventilation if a new patient arrives with a better prognosis. Age is suggested as a possible exclusionary criterion only in the third and most stringent tier.

Indiana Pandemic Influenza Community Advisory Groups. (2006, November 15). *Report to the state health commissioner on the findings and recommendations of the pandemic influenza community advisory groups.*

This report outlines the pandemic influenza response recommendations provided to the State of Indiana by four separate community advisory groups: the Community Advisory Group on the Role of Antiviral Medications in Pandemic Influenza; the Community Advisory Group on Community Containment Measures: Isolation, Quarantine and Social Distancing; the Community Advisory Group on Altered Standards of Care; and the Community Advisory Group on Mental Health Issues. It provides each group’s justifications for its recommendations. Included in discussion of the Community Advisory Group on Mental Health Issues is the group’s support for the use of the Psychological First Aid Model used by the Center for Excellence in Disaster Management and Humanitarian Assistance in order to assist individuals suffering from psychological and emotional distress during the crisis.

Melnychuk, R. M., & Kenny, N. P. (2006). Pandemic triage: The ethical challenge. *Canadian Medical Association Journal, 175*(11), 1393-1394.

Melnychuk and Kenny provide a commentary on the triage recommendations put forth by Christian et al. (2006) and the Pandemic Working Group at the University of Toronto’s Joint Centre for Bioethics (2005). The authors argue that such publications that attempt to address ethical approaches to triage must elaborate on the underlying ethical principles that lead to their conclusions. The authors regard the concepts of equity of outcomes and fairness as vital in triage implementation, such as the provision of palliative care and pain management to those individuals who are denied other intensive care treatment.

New York State Workgroup on Ventilator Allocation in an Influenza Pandemic. (2007, March 15). Allocation of ventilators in an influenza pandemic: planning document. Retrieved March 17, 2007, from http://www.health.state.ny.us/diseases/communicable/influenza/pandemic/ventilators/docs/ventilator_guidance.pdf.

The New York State Workgroup has developed a comprehensive plan to address the issue of triage management, specifically ventilator allocation. This protocol

attempts to provide the most ethically sound method of triage possible and uses only physiological data assessed as a SOFA score in determining ventilator access, thereby eliminating subjective “quality of life” and “social role” decision-making criteria, as well as rejecting the use of age as an exclusionary criterion. This document is proposed to be the guiding document for the Indiana State Department of Health’s pandemic influenza triage plan.

Ontario Health Plan for an Influenza Pandemic (2006, September). [Electronic version]. Retrieved March 28, 2007, from http://www.health.gov.on.ca/english/providers/program/emu/pan_flu/ohpip2/plan_full.pdf.

This document is intended to be the guiding plan for health and response efforts for the Canadian province of Ontario in the event of an influenza pandemic. It includes information on necessary public health measures that must be taken, as well as a detailed plan on how to maximize communication efforts. OHPIP also provides a thorough protocol for the implementation of triage. The physiological assessment is based on the SOFA scoring method, which also is proposed to be the assessment method of healthcare facilities in the State of Indiana.

Rubinson, L., Nuzzo, J. B., Talmor, D. S., O’Toole, T., Kramer, B. R., Inglesby, T. V., et al. (2005). Augmentation of hospital critical care capacity after bioterrorist attacks or epidemics: Recommendations of the working group on emergency mass critical care [Electronic Version]. *Critical Care Medicine*, 33(10). Retrieved from Ovid Web Gateway on March 27, 2007.

The authors of this document have addressed possible mass critical care alterations that should be made in the event of a bioterrorist attack but also have written that such alterations also may apply to naturally-occurring biological events, such as a pandemic. In the document, Rubinson et al. discuss triage implementation, the need for altered workforce responsibilities, and possible legislative actions to protect healthcare workers and facilities from litigation. In this protocol, triage decisions are based on the objective of maximizing the number of lives saved.

World Health Organization. (2007, June 29). Cumulative number of confirmed human cases of avian influenza A/(H5N1) reported to WHO. Retrieved July 6, 2007, from http://www.who.int/csr/disease/avian_influenza/country/cases_table_2007_04_02/en/index.html.

This website is maintained by the World Health Organization and reports the most current numbers relating to cases of H5N1 in the world. It currently lists 12 countries as having reported cases, 11 of which also have reported deaths.

Annotated Bibliography (AB-03-07)

VACCINES AND PANDEMIC FLU PREPAREDNESS:
ETHICAL ISSUES AND RECOMMENDATIONS
TO THE INDIANA STATE DEPARTMENT OF HEALTH

August 2007

Jennifer M. Alyea, B.S.

The pandemic potential of the H5N1 strain of avian influenza has created the necessity for comprehensive planning of resources and procedures. Although H5N1 has not yet acquired efficient transmission between humans, evidence suggests that soon this may be possible, causing widespread transmission. Various experts have projected that this strain of avian influenza has the potential to be comparable to the 1918 pandemic, causing approximately 180–360 million deaths globally, with 1.7 million deaths possible in the United States alone. As a result, the Centers for Disease Control and Prevention (CDC), the U. S. Department of Health and Human Services (HHS), and other governmental agencies have established pandemic preparedness as a top priority. Included in those plans must be strategies for allocating vaccine and antiviral resources which will become insufficient to support the demand. A consistent, equitable, and well-developed method for the prioritization of target groups for vaccination and antiviral therapy requires detailed consideration.

Several references for this document were found via the Indiana University Center for Bioethics website's pandemic resources page (<http://bioethics.iupui.edu/Pandemic.html>). Others were found through searches on the PubMed database (<http://www.ncbi.nlm.nih.gov/sites/entrez/>), the World Health Organization's website (<http://www.who.int/en/>), the United States Department of Health and Human Services website (<http://www.hhs.gov/pandemicflu/plan>), the Centers for Disease Control and Prevention website (<http://www.cdc.gov>), and the Yahoo! search engine using the terms "pandemic influenza," "pandemic triage," "avian influenza," "pandemic vaccine allocation," "pandemic law," and "state influenza plans."

This document is not exhaustive of all possible resources regarding the topic of pandemic influenza vaccine and antiviral medication allocation, but it is our hope that these resources may be of some use to those who are interested in pursuing the topic further. This document is current as of July 16, 2007.

References

Barnett, D. J., Balicer, R. D., Lucey, D. R., Everly, G. S., Jr., Omer, S. B., Steinhoff, M. C., et al. (2005, December). A systematic analytic approach to pandemic influenza preparedness planning [Electronic version]. *PLoS Medicine*, 2(12), 1235-1241. Retrieved May 15, 2007, from <http://medicine.plosjournals.org/perlserv/?request=get-document&doi=10.1371%2Fjournal.pmed.0020359>.

This document provides an overview of the pathology of H5N1 and of its pandemic potential. In addition, it discusses human, agent, environmental, and sociocultural factors that may influence the spread of the disease. The authors identify a need for phase-specific planning, relating to the time prior to the pandemic, during the pandemic, and after the pandemic.

California Department of Health Services. (2006a, September 8). Pandemic influenza preparedness and response plan. Retrieved May 16, 2007, from <http://www.dhs.ca.gov/ps/dcdc/izgroup/pdf/pandemic.pdf>.

CDHS has prepared a pandemic influenza response plan that outlines how it will coordinate the pandemic preparedness, response, and recovery efforts with various federal, county, local, and private partners. The authors discuss relevant legal references, in addition to surveillance and epidemiology, healthcare planning and infection control, risk communication, community disease control and prevention, and vaccine and antiviral allocation, among other topics. In reference to vaccine and antiviral allocation, CDHS has identified the minimization of morbidity and mortality as the primary priority to be addressed, with the minimization of societal and economic disruption following as priorities.

California Department of Health Services. (2006b, January 18). Pandemic influenza preparedness and response plan, Appendix 6: Pandemic influenza vaccine program. Retrieved May 16, 2007, from: http://www.idready.org/pandemic_influenza/CDHS_plan_appendix6A.pdf.

This CDHS document provides an in-depth discussion on the department's decision-making process regarding how to prioritize groups for vaccine allocation. Ultimately CDHS opted to use the Decision Analysis Scoring Tool (DAST), which analyzes multiple goals and criteria in the prioritization process. The tool was used based on the primary priority of minimizing morbidity and mortality under the assumption that societal and economic consequences will then be lessened indirectly. This is the prioritization method that is recommended for the Indiana State Department of Health.

California Department of Health Services. (2006c). Vaccine prioritization plan supplemental document B: Target population group profiles. Retrieved May 16, 2007, from:

http://www.idready.org/pandemic_influenza/SUPPLEMENTAL_DOC_B.pdf.

This document describes the 69 target population groups that CDHS ranked in terms of vaccine prioritization. This includes subgroups of five general categories: individuals with specific health-related characteristics; individuals with professions in certain health industries; individuals with roles in public administration, safety, and justice; individuals with professions in non-health commercial industries; and other healthy populations. These target groups and their subgroups are prioritized in other CDHS documents (see, for example, CDHS, 2006d).

California Department of Health Services. (2006d). Vaccine prioritization plan supplemental document E: Analysis of DAST survey results. Retrieved June 13, 2007, from http://idready.org/pandemic_influenza/SUPPLEMENTAL_DOC_E.pdf.

This supplemental document provides the Decision Analysis Scoring Tool survey results for the CDHS plan. It presents the vaccine prioritization rankings for each of the 69 previously identified target groups. At the top of the list are healthcare professionals who have a high risk of both contracting and transmitting the virus. At the bottom of the prioritization list are healthy children and adults. These rankings are based on the top priority of vaccine allocation being the minimization of morbidity and mortality.

Centers for Disease Control and Prevention, Ethics Subcommittee of the Advisory Committee to the Director. (2007, February 15). Ethical guidelines in pandemic influenza. Retrieved March 15, 2007, from http://www.cdc.gov/od/science/phec/panFlu_Ethic_Guidelines.pdf.

This document provides guidance in ethical decision-making related to vaccine and antiviral medication distribution (pharmaceutical interventions) and to social distancing and limiting individual freedom (non-pharmaceutical interventions). It discusses general ethical considerations, such as public involvement and transparency, as well as recommendations for the allocation of scarce resources during a pandemic. It identifies the need to maintain a functioning society as the primary priority to be addressed regarding vaccine and antiviral allocation.

Florida Department of Health. (2004, March). Action plan for pandemic influenza. Retrieved May 17, 2007, from <http://www.doh.state.fl.us/disease%5Fctrl/epi/htopics/flu/Pandemicdraft8.pdf>.

The Florida DOH has prepared this document to assist in pandemic emergency planning and response at all levels of government. Among others, it discusses surveillance, communication, and antiviral allocation. Its prioritization for immunizations and antiviral medication is based on the main priority being the minimization of morbidity and mortality, with the minimization of societal and infrastructure disruption ranked as the second priority. The Florida guidelines rank healthcare workers, those responsible for law enforcement, and those with specialized skills essential for utility services all as having priority over those at high risk for illness and mortality.

Gostin, L. O. (2006a). Medical countermeasures for pandemic influenza: Ethics and the law. *Journal of the American Medical Association*, 295(5), 554-556.

Gostin discusses the inevitable shortage of vaccines and antiviral medications that will occur during an influenza pandemic. He discusses various criteria that can be taken into consideration in order to determine prioritization for medical countermeasure allocation. These include measures that impede virus transmission; that preserve scientific and social functioning; that address medical need and vulnerability; and that promote equitable access and social justice. Gostin identifies the maximization of lives saved and the preservation of societal functioning as priorities.

Gostin, L. O. (2006b). Public health strategies for pandemic influenza: Ethics and the law. *Journal of the American Medical Association*, 285(14), 1700-1704.

Gostin suggests a multidimensional approach to addressing the problems that may arise with a pandemic influenza event. This approach includes surveillance, community hygiene, hospital infection control, social distancing, travel and border controls, and isolation and quarantine. Regarding vaccines and antiviral agents, Gostin identifies the public benefits to the use of such medical countermeasures, as well as the private interests and rights that would be affected by them.

Gostin, L. O., & Berkman, B. E. (2007). Pandemic influenza: Ethics, law, and the public's health. *Administrative Law Review*, 59(1), 121-176.

Gostin and Berkman discuss in detail the allocation of scarce vaccines and antiviral medications, as well as potential ethical and human rights concerns, which may occur during an influenza pandemic. In addition, the authors identify and address various legal considerations that are applicable to each of these areas of discussion. They argue for thoughtful reflection on not only scientific responses but also on ethical responses. In terms of vaccine and antiviral allocation, the authors identify eight rationing criteria they believe should be considered.

New York State Department of Health. (2006, February 7). Pandemic influenza plan. Retrieved May 17, 2007, from http://www.health.state.ny.us/diseases/communicable/influenza/pandemic/docs/pandemic_influenza_plan.pdf.

The purpose of this document is to provide guidance, consistent with national advisories, to public health officials and healthcare providers in their development of pandemic influenza preparedness and response plans. Included in the document is discussion on surveillance, infection control, vaccine and antiviral allocation, communication, and workforce management, among others. Relating to vaccines and antivirals, NYSDOH bases its prioritizations on the minimization of morbidity and mortality and the minimization of social disruption, but it does not rank explicitly one priority over the other. NYSDOH does, however, recommend that groups considered to be at medical risk be given

higher priority over those involved with infrastructure roles.

Olson, D. R., Simonsen, L., Edelson, P. J., & Morse, S.S. (2005). Epidemiological evidence of an early wave of the 1918 influenza pandemic in New York City. *Proceedings of the National Academy of Sciences of the United States of America*, 102(31), 11059-11063.

Olson et al. describe the occurrence of an influenza epidemic in New York City in early 1918. They argue that its epidemiology suggests it was an early wave of the Spanish flu, preceding the rise of the epidemic in Europe that occurred that summer. This analysis of a historical case of pandemic influenza provides statistics and epidemiological data that may be relevant to a future H5N1 pandemic.

Public Engagement Pilot Project on Pandemic Influenza. (2005, December). Citizen voices on pandemic flu choices. Retrieved March 13, 2007, from: <http://pandemicflu.gov/plan/federal/peppimaintext.pdf>.

This publication documents public sessions that were held in Washington, D. C., Georgia, Oregon, Nebraska, and Massachusetts in order to assess stakeholders' and the general public's opinions on pandemic flu vaccination prioritization. The authors state that those involved believed that prioritization first should be based on assuring the functioning of society. Minimizing deaths and hospitalizations was identified as the second priority.

United States Department of Health and Human Services. (2006, October). Antivirals – state allocation. Retrieved May 16, 2007 from: <http://pandemicflu.gov/plan/states/antivirals.html>.

This website shows the allocation of federally- and state-purchased antiviral medications by state, which is based on population. Indiana is allotted approximately 1.5 million courses.

United States Department of Health and Human Services. (2005, November). HHS pandemic influenza plan. Retrieved May 15, 2007, from: <http://www.hhs.gov/pandemicflu/plan/pdf/HHSPandemicInfluenzaPlan.pdf>.

The purpose of this HHS document is to serve as a framework for all HHS pandemic response plans. It outlines federal plans and provides guidance to state and local planners. The top priority in vaccine and antiviral allocation identified in this document is the minimization of morbidity and mortality.

World Health Organization. (2006). Avian influenza ("bird flu")—Fact sheet. Retrieved June 5, 2007, from http://www.who.int/mediacentre/factsheets/avian_influenza/en/index.html.

This WHO document provides an overview of avian influenza, including discussion on its presence in birds and its history of human infection. It also provides a discussion on human epidemiology and symptoms. Finally, it identifies the nations currently affected by H5N1 infections. This document describes the potential of H5N1 to become the next influenza pandemic.

Annotated Bibliography (AB-01-07)

**WORKFORCE MANAGEMENT AND PANDEMIC FLU
PREPAREDNESS:**
*ETHICAL ISSUES AND RECOMMENDATIONS
TO THE INDIANA STATE DEPARTMENT OF HEALTH*

August 2007

Jennifer M. Alyea, B.S.

The World Health Association and the World Health Organization have recognized the potential of an influenza pandemic and have called for member nations to start planning for the next pandemic, which WHO refers to as “inevitable, and possibly imminent.” Some professionals have suggested preparing for a pandemic similar to the 1918 “*Spanish flu*” that is estimated to have caused 50–100 million deaths. It is projected that a similar pandemic would cause about 180–360 million deaths globally, including 1.7 million deaths in the United States, with transmission of the disease lasting at least two years. If such a pandemic occurs, it will require drastic, though temporary, changes in many areas of society, including hospitals, schools, workplaces, and other public service organizations. In planning a response for such a pandemic, many decisions will have to be made both to contain and control its spread, and policies to guide decision-making will require consideration of ethical issues related to workforce management.

Several references for this document were found via the Indiana University

Center for Bioethics website’s pandemic resources page

(<http://bioethics.iupui.edu/Pandemic.html>).

Others were found through searches on the PubMed database

(<http://www.ncbi.nlm.nih.gov/sites/entrez/>),

the World Health Organization’s website (<http://www.who.int/en/>), the Centers for Disease Control and Prevention website

(<http://www.cdc.gov>), and the Yahoo! search engine using the terms “pandemic influenza,”

“avian influenza,”

“pandemic altered standards,”

“pandemic triage,”

“pandemic absenteeism,”

“pandemic alternate care sites,”

“pandemic altered care,”

“pandemic workforce management,”

“medical professional obligations,”

“pandemic law,”

“Indiana medical standards,” and “tuberculosis patient.”

This document is not exhaustive of all possible resources regarding the topic of workforce management during a pandemic, but it is our hope that these resources may be of some use to those who are interested in pursuing the topic further. This document is current as of July 16, 2007.

References

Agency for Healthcare Research and Quality. (2005, April). Altered standards of care in mass casualty events [Electronic version]. AHRQ Publication No. 05-0043. Retrieved April 27, 2007, from <http://www.ahrq.gov/research/altstand/altstand.pdf>.

The purpose of this document is to provide planners with a framework from which they can develop a protocol to change the provision of medical care in the event of a mass casualty event (MCE). It examines how current care standards may need to change and which tools are available to make these changes, and it provides recommendations to emergency planners on the most reasonable and ethical methods to address an MCE. The authors recommend the use of a database with registered volunteers, who may include dentists and retired physicians and who can be called upon in times of staffing shortages. It is also recommended that healthcare workers and their families be given prophylaxis in order to ensure that all employees will report to work.

Agency for Healthcare Research and Quality. (2007, February). Providing mass medical care with scarce resources: A community planning guide [Electronic version]. AHRQ Publication No. 07-0001. Retrieved March 28, 2007, from <http://www.ahrq.gov/research/mce/>.

The purpose of this document is to guide planners in their development of strategies to address mass casualty events. It provides examples of resources currently available to states and communities that may assist in their planning. It describes potential sanctions for healthcare workers who are absent during mass casualty events. It also discusses the legality of prioritizing the government workforce for various health interventions, such as immunization and antiviral allocation.

Barnett, D. J., Balicer, R. D., Lucey, D. R., Everly, G. S., Jr., Omer, S. B., Steinhoff, M. C., et al. (2005, December). A systematic analytic approach to pandemic influenza preparedness planning [Electronic version]. *PLoS Medicine*, 2(12), 1235-1241. Retrieved May 8, 2007, from <http://medicine.plosjournals.org/perlserv/?request=get-document&doi=10.1371%2Fjournal.pmed.0020359>.

This document provides an overview of the pathology of H5N1 and of its pandemic potential. In addition, it discusses human, agent, environmental, and sociocultural factors that may influence the spread of the disease. The authors identify a need for phase-specific planning, relating to the time prior to the pandemic, during the pandemic, and after the pandemic.

Cantrill, S. V., Eisert, S. L., Pons, P., & Vinci, C. E. (2004, August). Rocky Mountain regional care model for bioterrorist events: Locate alternate care sites during an emergency [Electronic version]. AHRQ Publication No. 04-0075. Retrieved May 14, 2007, from <http://www.ahrq.gov/research/altsites>.

This document was developed in order to address medical surge capacity needs in the event of a bioterrorism event, but its methods also are applicable to a

naturally-occurring bioevent. The authors created a surge capacity model in order to anticipate medical surge capacity needs. Included in the protocol is a recommendation that volunteers, such as retired physicians, be registered into a database so that they may be called upon to assist in medical care provision should regular workforce numbers drop too low to maintain a minimally-functioning healthcare site.

Center for Law and the Public's Health at Georgetown and Johns Hopkins Universities. (2001, December 21). Model state emergency health powers act. Retrieved May 10, 2007, from <http://www.publichealthlaw.net/MSEHPA/MSEHPA2.pdf>.

This document is a model for State legislation that addresses the need for State and local governments to act quickly and effectively at handling public health emergencies. It grants governors and public health authorities emergency powers to address events such as a bioterrorist attack or a pandemic event. In this document, the authors include a discussion on forms of sanctions that possibly may be applied to healthcare workers who do not perform their duties in a time of emergency. One suggested sanction is the revocation of an individual's professional license.

Centers for Disease Control and Prevention. (2007a, May 29). Corrected: Investigation of U.S. traveler with extensively drug resistant tuberculosis (XDR TB). Retrieved June 14, 2007, from <http://www2a.cdc.gov/HAN/ArchiveSys/ViewMsgV.asp?AlertNum=00262>.

This press release discusses the CDC's investigation into the recent actions of a man with a drug-resistant form of tuberculosis who flew on several long flights that affected United States- and European-based airlines. The CDC identifies the flights that were affected by this passenger's travels. This article is applicable to this workforce document in that it demonstrates the public's support for patient isolation in the case of deadly, contagious illness.

Centers for Disease Control and Prevention. (2007b, June 6). Recent case of extensively drug resistant TB: CDC's public health response. Retrieved June 14, 2007, from http://www.cdc.gov/washington/testimony/6-06-07_XDR_TB_testimony.html.

This document is the statement released by the Director of the CDC to the United States Senate that outlines the events that led to a man with a drug-resistant form of TB flying on two trans-Atlantic flights, as well as several other shorter flights, possibly exposing numerous fellow passengers to his disease. This article is applicable to this workforce draft in that it demonstrates the public's support for isolation in the case of deadly, contagious illness

Conant, E., & Wingert, P. (2007, June 11). A long, strange TB trip: An Atlanta lawyer with a potentially deadly contagious disease talks about a journey that has triggered fear and outrage [Electronic version]. *Newsweek*.

Retrieved June 14, 2007, from

<http://www.msnbc.msn.com/id/19000895/site/newsweek/?from=rss>.

This *Newsweek* article includes an interview Andrew Speaker, the man with a drug-resistant form of tuberculosis who flew on several airline flights, potentially exposing numerous passengers to the deadly and difficult-to-treat disease. The article also discusses the outrage expressed by his fellow passengers and the general public that Mr. Speaker was allowed to leave the country and was allowed back in over the Canadian border. This supports the idea that the public would prefer control measures, such as isolation, over individual freedom in the case of deadly, contagious illnesses.

Ehrenstein, B. P., Hanses, F., & Salzberger, B. (2006). Influenza pandemic and professional duty: family or patients first? A survey of hospital employees [Electronic version]. *BMC Public Health*, 6, 311. Retrieved May 8, 2007, from the Biomed Central database.

Ehrenstein et al. performed a study in which they surveyed hospital employees regarding their beliefs about workforce obligations during a pandemic influenza, as well as ethical considerations about obligation to work or choice to work. The general findings were that physicians and nurses were more likely than hospital administrators to report to work during a pandemic. In addition, it was found that most disagreed with permanent dismissal that results from absenteeism during a pandemic.

Gomersall, C. D., Tai, D. Y., Loo, S., Derrick, J. L., Goh, M. S., Buckley, T. A., et al. (2006). Expanding ICU facilities in an epidemic: Recommendations based on experience from the SARS epidemic in Hong Kong and Singapore. *Intensive Care Medicine*, 32(7), 1004-1013.

The authors of this document present the recommendations of expert groups who expanded intensive care services in response to outbreaks of severe acute respiratory syndrome in Hong Kong and Singapore. These recommendations address estimating bed requirements, infection control, staffing, counseling and stress reduction, communication, and other ethical issues. Should a shortage of staffing occur, it is recommended that employees be drafted to work. The authors also support the use of control measures, such as isolation and quarantine, for employees if necessary to spare the general public's health.

Gostin, L. O. (2006). Public health strategies for pandemic influenza: Ethics and the law. *Journal of the American Medical Association*, 285(14), 1700-1704.

Gostin discusses a multidimensional approach to addressing the problems that would arise with a pandemic influenza event. This approach includes surveillance, community hygiene, hospital infection control, social distancing, travel and border controls, and isolation and quarantine. In the document, Gostin states that isolation and quarantine are to be used carefully and with rigorous safeguards so that individuals are not subjected to discrimination. This supports the belief that isolation and quarantine measures, including those for the workforce, should be implemented if the public's health would benefit

substantially.

Hsin, D. H., & Macer, D. R. (2004). Heroes of SARS: Professional roles and ethics of health care workers. *Journal of Infectious Diseases*, 49(3), 210-215.

The authors of this publication examined the relationship of professional moral duties with the SARS epidemic in 2003. Hsin and Macer argue that healthcare workers should have the right to make their own choice about whether to report to work in times of a public health crisis such as SARS. They state that there should be reasonable expectations from healthcare workers in such crises, but that they should not "be expected to be martyrs for society" (p. 210). In other words, they support the high expectations, limited sanctions approach recommended in this document.

Indiana Code 25-1-9-9. (n.d.) Health professions standards of practice. Retrieved June 14, 2007, from <http://www.in.gov/legislative/ic/code/title25/ar1/ch9.html>.

This is an Indiana law pertaining to the standards of practice set for various professions, including those of physicians. In this document, potential forms of sanctions are discussed for physicians who violate their professional codes of conduct. Should a law be passed requiring physicians to report to work during a pandemic, such sanctions may be expanded in order to apply to a violation of such a new law.

Lo, B., & Katz, M. H. (2005). Clinical decision making during public health emergencies: Ethical considerations. *Annals of Internal Medicine*, 143(7), 493-498.

Lo and Katz provide recommendations for clinical decision-making during a public health emergency, such as the decision whether or not to provide a patient with prophylactic medication that is in short supply simply because the patient requests it. They discuss the alterations to clinical medicine that must take place during a public health emergency, with individual liberty potentially becoming a lesser priority than the overall health of the public. Related to this, the authors discuss the relevance of and need for control measures such as isolation and quarantine.

Morin, K., Higginson, D., & Goldrich, M. (2006). Physician obligation in disaster preparedness and response. *Cambridge Quarterly of Healthcare Ethics*, 15(4), 417-421; discussion 422-431.

Morin et al. provide an overview of the historical development of medical ethics. They discuss opposing views on whether physicians have an obligation to care for patients if providing care results in great personal risk, such as in a bioterrorist attack, as well the extent of such an obligation. The authors conclude that those in the medical profession are obligated to provide care even if it means risking their own safety. They also state, however, that the medical workforce "is not an unlimited resource" (p. 421) and should not be sacrificed to care for the unsalvageable now if it compromises their ability to provide care for the public in the future.

Public Engagement Pilot Project on Pandemic Influenza. (2005). Citizen voices on pandemic flu choices. Retrieved March 13, 2007, from http://www.keystone.org/spp/documents/FINALREPORT_PEPPPI_DEC_2005.pdf.

This publication documents public sessions that were held in Washington, D. C., Georgia, Oregon, Nebraska, and Massachusetts in order to assess stakeholders' and the general public's opinions on pandemic flu vaccination prioritization. The authors state that those involved believed that prioritization first should be based on assuring the functioning of society. Minimizing deaths and hospitalizations was identified as the second priority. Relevant to workforce management, the authors write that a possible method of assuring that healthcare employees report to work would be to require that they sign a commitment to do so upon receiving immunization.

Reid, L. (2005). Diminishing returns? Risk and the duty to care in the SARS epidemic. *Bioethics*, 19(4), 348-361.

Reid outlines various points of view regarding whether there is a direct or inverse relationship between risk and duty to care, putting these issues in the context of both the early years of AIDS and the SARS epidemic. The author includes discussions on the American Nursing Association's stance, as well as that of the American Medical Association. She also reviews other relevant literature published on the topic of medical professionals' duty to care. Reid concludes that the SARS epidemic showed physicians are willing to accept increased risk and the duty to care is directly proportional to risk. This conclusion may hold true for an influenza pandemic.

Rubinson, L., Nuzzo, J. B., Talmor, D. S., O'Toole, T., Kramer, B. R., Inglesby, T. V., et al. (2005). Augmentation of hospital critical care capacity after bioterrorist attacks or epidemics: Recommendations of the working group on emergency mass critical care [Electronic version]. *Critical Care Medicine*, 33(10). Retrieved from Ovid Web Gateway on March 27, 2007.

The authors of this document have addressed possible mass critical care alterations that should be made in the event of a bioterrorist attack but also have written that such alterations also may apply to naturally-occurring biological events, such as a pandemic. In the document, Rubinson et al. discuss triage implementation, the need for altered workforce responsibilities, and possible legislative actions to protect healthcare workers and facilities from litigation. They have proposed the need for identification and registration of volunteers, such as retired physicians and veterinarians, whose names can be stored in a database for rapid accessibility.

Tzeng, H. M. (2004). Nurses' professional care obligation and their attitudes towards SARS infection control measures in Taiwan during and after the 2003 epidemic. *Nursing Ethics*, 11(3), 277-289.

Tzeng conducted a study to determine statistically significant predictors of

nurses' willingness to provide care during the SARS epidemic. The researcher found that nurses were more likely to provide care if they were in agreement with infection control measures and if they were not subjected to quarantine. This information may be applicable to the development of pandemic influenza response protocols regarding workforce management.

University of Maryland Center for Health and Homeland Security. (2005, September 9). *Maryland public health emergency preparedness legal handbook* [Electronic version]. Retrieved June 6, 2007, from <http://www.umaryland.edu/healthsecurity/docs/Handbook%209-9-05.pdf>.

This handbook provides an overview of Maryland laws that are applicable to public health emergencies. Its purpose is to shorten research time for state, county, and local lawyers should they be confronted with legal challenges related to such emergencies. This handbook includes Maryland law 14-3A-03(c), which states that the governor may order any healthcare provider to participate in disease surveillance, treatment, and control. Failure to comply would have legal implications.

World Health Organization. (2006). Avian influenza ("bird flu")--Fact sheet. Retrieved June 5, 2007, from http://www.who.int/mediacentre/factsheets/avian_influenza/en/index.html.

This WHO document provides an overview of avian influenza, including discussion on its presence in birds and its history of human infection. It also provides a discussion on human epidemiology and symptoms. Finally, it identifies the nations currently affected by H5N1 infections. This document describes the potential of H5N1 to become the next influenza pandemic.

World Health Organization. (2007a). Cumulative number of confirmed human cases of avian influenza A/(H5N1) reported to WHO. Retrieved June 6, 2007, from http://www.who.int/csr/disease/avian_influenza/country/cases_table_2007_06_06/en/index.html.

This website is maintained by the World Health Organization and reports the most current numbers relating to cases of H5N1 in the world. It currently lists 12 countries as having reported cases, 11 of which also have reported deaths.

World Health Organization. (2007b, May 30). Extensively drug-resistant tuberculosis (XDR-TB) in United States of America air passenger. Retrieved June 14, 2007, from http://www.who.int/csr/don/2007_05_30a/en/index.html.

This article provides a brief overview on the situation in which a man diagnosed with a drug-resistant form of tuberculosis took multiple long airplane flights, potentially infecting his fellow passengers.

World Health Organization. (2005). WHO global influenza preparedness plan: The role of WHO and recommendations for national measures before and during pandemics. Retrieved May 8, 2007, from

http://www.who.int/csr/resources/publications/influenza/GIP_2005_5Eweb.pdf .

This document was created to assist nations on their development of pandemic influenza response plans. It identifies six pandemic phases, ranging from interpandemic and pandemic alert periods to the pandemic period itself. WHO recommends steps national, public health, and medical policymakers should take during each phase. In the described plan, it also is recommended that those in the healthcare workforce be allowed time to rest and recuperate between waves and following the pandemic in order to decrease worker burnout which may result from high demands at work.