The ventilated elite

March 12, 2006 -- Two major news entities have recently run stories about the current lack of intensive care resources, primarily ventilators, that would be needed if a bird flu pandemic hit the United States. Today the *New York Times* published "Hospitals Short on Ventilators if Bird Flu Hits," by Donald G. McNeil Jr. On February 10, National Public Radio's Morning Edition ran "Health Officials Consider Strategy for Possible Bird Flu Pandemic," by Richard Knox. This is an important topic, and both reports include helpful information. Both stress that U.S. hospitals would not have enough ventilators in such a pandemic. But both reports also give the sense that care for affected patients revolves mainly around whether or not physicians grant access to vents. The reports wrongly suggest that physicians make all key health decisions by themselves, and that they are the only health experts worth consulting on this issue. No nurse or respiratory technician is quoted in either piece, even though they play far more active roles in such ventilator care. And the skilled, time-consuming nursing care that keeps such critically ill patients alive involves much more than ventilators. In a pandemic, there would not be enough nurses to provide that care. Neither piece inquires where we might get the 1.5 million additional ICU nurses that it could take to care for such ventilated patients, when we can't find the couple hundred thousand nurses (of all specialties) that we need right now. In focusing on physicians and vents, both reports also miss the broader perspective that a nurse expert might provide. The NPR piece describes a physician proposal to ration access to vents in a pandemic. But sadly, it might not be a wise use of scarce ICU nurses' time to provide ventilator-related care to *any* flu patients, rather than life-saving care to many other patients with a better chance of survival. Of course, getting that perspective would require an understanding that health care involves more than physicians and machines.

NPR story

New York Times story

The Failure to Consider Nursing

NPR story

February 10, 2006 -- The NPR piece begins with Morning Edition host Renee Montagne noting that although federal resources are now being directed at stockpiling drugs and vaccines, "health experts" are more concerned about a lack of sufficient "intensive care" for those who would be affected by a bird flu pandemic. The report focuses on a proposal by Minnesota ED physician John Hick and his colleague Daniel O'Laughlin in a recent study published in *Academic Emergency Medicine*.

These physicians reportedly suggest that because it would be prohibitively expensive to obtain the facilities and machines needed to care for flu patients in a pandemic, we should consider a system that, in health emergencies, would limit access to the vents to those with a "good chance" of survival. The report notes that individual decisions of this nature would be very difficult for "doctors" to make; "doctors" would no longer be able to say, "we did everything we could." "Doctors" might even need to withdraw treatment from people already on the vents, if a crisis became worse and the access standards had to be tightened. But the piece says that Hicks and O'Laughlin suggest this might be the best way to do the greatest good for the greatest number of patients, and to avoid the chaos and unfairness that could result if the health system was overwhelmed and "individual doctors" had to decide which patients to treat, and which to "let [] die." The report also notes that some health officials are considering obtaining more vents at $30,000 each. There is a brief audio quote from Dr. Marci Layton of the New York City health department about the need to get more vents.

But there is nothing in the report about the nurses or other health professionals who would actually run the machines and keep the patients alive in the intensive care units under discussion. The report does briefly mention the lack of sufficient hospital beds to cope with a full-blown pandemic. But listeners are likely to take this mostly as a discussion of the actual beds and the physical space they occupy, rather than the health professionals who keep the bed occupants alive. And on the whole, the report suggests that care for flu patients is mainly a matter of physicians putting patients on vents, or not.

This is an extreme physician-centric distortion of what care for seriously ill bird flu patients would really look like. Although running vents does take a good deal of a nurse's time, he or she has many other things to do to keep ventilated patients alive, as explained in more detail below. More fundamentally, had those responsible for this report asked nurse experts, they might have heard that it would not necessarily be a responsible health policy in a pandemic to devote scarce human resources to providing ventilator-related care to flu patients at all. That is because the nurses who would be doing so might be able to save many more lives if freed up to care for patients who had a better chance of survival. Of course, this analysis is not dissimilar to that discussed in the report. But it might require a deeper understanding of what caring for a ventilated patient really entails, and what else is needed to care for flu patients and prevent new cases. These issues are discussed in more detail in the final section, below.

Finally, the NPR report seems to assume that physicians make all key health care decisions (such as those about granting or withholding treatment) by themselves, and that the only health experts worth consulting are physicians. However, health care is a team project. Nurses and others can and do weigh in on such decisions. Nurses are public health experts who know a great deal about flu care and associated resource issues. Indeed, this distorted and incomplete media report is itself a good example of why the full range of concerned health professionals should be involved in such decisions, and in public discussion about them.

We hope that in future stories about caring for bird flu patients, Mr. Knox and NPR will consider consulting those who actually provide most of that care.

New York Times story

March 12, 2006 -- The *New York Times* piece likewise focuses on the number of ventilators, reporting that the U.S. now has about 105,000 of them. But the piece says that the U.S. would need

up to 742,500 ventilators in a flu pandemic. "Dr. Irwin Redlener, director of the National Center for Disaster Preparedness at Columbia University" laments that "[t]he government puts out a 400-page plan, but we don't have any ventilators and there isn't much chance we're going to get them."

To its credit, the *Times* report does at least raise the issue that personnel are required to run the ventilators. The piece quotes Dr. Michael T. Osterholm, director of the Center for Infectious Disease Research and Policy at the University of Minnesota, noting that "[t]here is also a shortage of trained personnel...[a]sk any respiratory therapist -- you have to adjust the gases, the pressures...[w]e don't have enough trained people to maintain them." (We assume that Osterholm's suggestion that the journalist "ask" a respiratory therapist was considered purely rhetorical; of course you *could* ask one, but why bother when physicians surely know everything they do!) The report goes on to say how difficult it would be to hand-bag patients. Later, the story discusses a disposable emergency ventilator often used by paramedics. Mark Nunes, an emergency preparedness consultant to the Washington State Hospitals Association, reportedly describes these machines as follows: "They'll

keep somebody alive...[b]ut they need to be monitored. You can't just intubate somebody and walk away." However, despite all these general references to the need for someone to run the machines, the reporter apparently never got input from anyone who would actually be involved in doing so, or who could provide expertise from that perspective. No nurses are mentioned or quoted in the piece.

Not surprisingly, the piece fails to pursue adequately what might actually happen on the ground in such a pandemic, and what those with ventilator expertise might advise. For instance, the piece does not inform readers that patients who only have an ambu-bag for respiratory assistance would likely need family members to take over hand-bagging, since no health institution has the sort of staffing it would take to do that. Patients with large families would be more likely to survive, since hand-bagging is exhausting.

The Failure to Consider Nursing

Needless to say, neither piece explores the nurse staffing nightmare that would ensue in the event of any significant effort to actually use greater numbers of ventilators than are now in place, especially in view of the continuing nursing shortage. If the nation were to somehow come up with 637,500 extra ventilators to care for sick patients, we would also need trained ICU nurses to take care of the patients on these ventilators. In our view, it would take roughly 4.7 nurses to provide adequate 24/7 care for every two ventilated patients. This equals roughly 1.5 million ICU nurses for flu patients alone, yet estimates suggest there are now less than 350,000 critical care nurses in the U.S. Even assuming it made sense to try to train 1.5 million additional ICU nurses to care for ventilated flu patients, addressing this would appear to merit a little time in a report about ventilators--especially one that actually raises the general issue of a lack of trained personnel. Of course, training an ICU nurse takes about 5-6 years and far more than $30,000.

Consulting nurses might have helped these pieces avoid a fundamental flaw: the failure to question the underlying assumption that a nation in the midst of a life-threatening pandemic even should pour its scarce resources into ventilator-related care for flu patients. If there were a seven-fold increase in ICU patients in the pandemic, there might well be a corresponding seven-fold increase in non-ICU patients. Nursing care would be critical in keeping these less sick patients out of the ICU . And to provide that care, we might need hundreds of thousands of additional non-ICU nurses. Meanwhile, in the ICU, additional ventilators would be of little use without skilled nurses to run them and provide the other intensive care patients would need. For instance, if you add 637,500 ventilators and 0 nurses, you will save roughly 0 lives. Yet hundreds of thousands of additional nurses seem unlikely to fall from the sky any time soon, especially since we are in the midst of what may be the worst global nursing shortage in modern history.

Neither press piece shows awareness that ventilated patients are a severe drain on ICU nursing resources. Below are just some of the things that nurses do for ventilated patients.

First, the heart monitoring and maintenance of any blood pressure support medications required for ventilated patients take a great deal of time. These patients require frequent suctioning to keep the airway open. The patients are often sedated and given pain medication. Quite often, they develop respiratory infections, especially if short-staffing leads personnel to run from one near-disaster to another, which can mean that a tube gets reconnected with less-than-clean hands.

Patients who are sedated also need extra physical care. They need bathing, and at least every two hours they need turning, to keep their skin intact and free from bedsores. Patients are often restrained to keep them from pulling out their tubes. So nurses must remove the restraints to check for skin integrity and do range-of-motion exercises, which keep joints and muscles pliable and flexible, preventing contractures. Patients should get out of bed at least a few times per day to maintain or improve their circulation, lung function, bone mass and skin integrity. Taking a ventilated patient in and out of bed is a long, multi-person operation, fraught with risk for patients (tubes often become dislodged) and health providers (back injuries).

Ventilated patients need frequent mouth care, because their mouths are propped open with the big endotracheal (ventilator) tube passing through it to go down the airway. And without proper mouth care, more infections can enter patients' systems and increase morbidity. Whether the tubes are passing through their mouths or nares, the tapes that hold the tubes in place become gooey and must be resecured frequently, which is dangerous and time-consuming. The tubes also become dislodged frequently and must be checked with x-rays, which take nursing time.

These patients need tube feedings to maintain their nutrition while they are ventilated and cannot eat. Preparing and maintaining this food is time consuming, and maintaining the tubes can be difficult, since they often come out, and require difficult reinsertion with an x-ray placement check. Sometimes the tubes slip into the lung and can cause aspiration pneumonia.

Ventilated patients also require constant nursing assessment and corresponding action. With ventilation comes general instability, and this requires that laboratory values be drawn frequently. Nurses discuss abnormal values with advanced practice providers, such as physicians and NPs. Simply reaching these providers may take considerable time. Nurses also monitor and maintain arterial lines, and use them to draw blood and monitor blood pressure and oxygen levels. These lines must be kept clean, secure and connected, because a dislodgement can mean rapid exsanguination and death. Nurses coordinate with respiratory therapists and advanced providers to decide how to best adjust ventilator settings--the amount of oxygen, volume of air, and pressure used to push it in and keep it there. The frequent adjustment of these settings is time consuming, especially as a patient is just going on or off of the ventilator, a process that can take a week or more to complete.

For every life that nurses may save with such ICU heroics, many others who start off in less serious condition may sicken and ultimately die for lack of nursing care. Thus, sadly, it is not clear that ventilators should be used to care for victims of such a flu pandemic given current realities. Of course all such patients should receive therapeutic and palliative care. But there is an argument that instead of expending massive resources in trying to provide ventilator-related care to the sickest flu patients, at least some ICU nurses should help care for flu patients on the floor, and do what can be done there without ventilators or blood pressure support. Emergency planners might also consider whether some nurses from the ICU and elsewhere should cross-train to work in public and home health settings in a pandemic. This could help contain large outbreaks, and keep the healthiest patients alive, thus saving more lives overall. In addition, we should consider directing more emergency preparedness resources to nursing education, research and clinical practice. A stronger and larger nursing profession may be the most basic element we will need to save lives in such a pandemic. Failing to consider such measures would appear to reflect a lack of understanding of how ventilated patients actually recover from illness.

Of course, the fact that even elite media entities like the *Times* and NPR seem utterly oblivious of these key public health issues is not encouraging. So we urge everyone to let the media know how important nursing will be in our response to any such pandemic, including in the use of ventilators. Listen to the February 10, 2006 NPR story "Health Officials Consider Strategy for Possible Bird Flu Pandemic" by Richard Knox.

See "Hospitals Short on Ventilators if Bird Flu Hits" by Donald G. McNeil Jr. in the March 12, 2006 edition of the *New York Times.*

Send Donald G. McNeil Jr. a letter by clicking here.

Send Richard Knox an email on NPR's contact form or you can snail mail him at:

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