

Access to limited health care resources

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Epidemiologic projections for H5N1

- **Attack rate 30%**
- **Mortality rate**

Implications

- **Need exceeds supply of ventilators**
 - Require 198% of ventilators
 - ICUs have little surge capacity
- **Impact on patients with other conditions**

Usually squeeze more ICU beds

- **Transfer to another hospital**
- **Cancel non-emergency surgery**
- **Use post-operative beds**
- **May not be feasible during pandemic**

Current guidelines for ventilators

- **First come, first served**
- **Patient autonomy**
 - Discontinue only if patient or surrogate consents
 - Loyalty to individual patient

Clinical dilemmas in H5N1 pandemic

- ICU has only one open bed
- Patients with respiratory failure due to influenza
 - Each will die without ventilator
 - 38 year old with only respiratory failure
 - 38 year old also with shock, renal failure
 - Poorer prognosis

Clinical dilemmas in H5N1 pandemic

- **Patients with other causes of respiratory failure**
 - 58 year old after emergency coronary bypass surgery
 - 22 year old with acute asthma attack
 - Expected to need ventilator only a few days

Grave scarcity

- Ventilator used on one patient cannot be used on another patient with
 - Better prognosis.

Pandemic influenza different

- Number of people affected
- “Veil of ignorance”

Grave scarcity

- **Public health emergency declared**
 - Political legitimacy for decisions
 - Individual health subordinated to public health goals
 - Maximize number of lives saved

Allocation should take into account

- Likelihood of survival
- Likely duration of mechanical ventilation?
- Trying to save one life may reduce total number of lives saved

Triage -- who goes first?

- **Sickest**
 - Help those who are worse off
 - Clear clinical criteria for ventilator

Triage -- who goes first?

- **Most likely to benefit**
 - Optimize community outcomes
- **Within group with similar prognosis, first-come, first served**

Dilemmas / tradeoffs

- **Some survivors need long ICU stay**
- **Patient may die after weeks on ventilator**
- **Prognosis may worsen as complications develop**

Dilemmas / tradeoffs

- **Distribution of benefit problematic in utilitarian approaches**
 - Disparities in access to hospital
 - Facially neutral policies may have disparate impact

New ethical guidelines in public health emergency

1. Triage to maximize lives saved

- Identify those who will likely survive if receive a few days of ICU care
- Not commit disproportionate resources to single individual who will require many days on ventilator?

Limited evidence in pandemic

- **Extrapolate to pandemic**
 - New syndromes, such as coagulopathy during SARS
- **Best-validated prognostic model uses Day 1 data**

Limited evidence in pandemic

- **Studies that better prognosis if**
 - Early response
 - Fewer number of organ systems fail
- **Some questions not studied**
 - Predict duration of ventilation

When limited evidence base

- **Turn to?**
 - Consensus guidelines
 - Individual clinical judgment

Moving from data to policy

Should we consider:

- Duration of life?
- Quality of life?
 - Baseline function

Moving from data to policy

Should we consider:

- Personal behaviors?
- Priority for essential personnel in pandemic response?

New ethical guidelines for public health emergency

2. Autonomy no longer paramount

- Patients will not receive life-prolonging interventions that they would consent to
- Decisions by external rules, not by personal MDs and patients / surrogates

New ethical guidelines for public health emergency

3. Fairness

- Perception of fairness also important

4. Transparency

- Need consistent message
- Guidelines and data publicly available

Clinical dilemmas in H5N1 pandemic

- Problem framed as “last” ventilator
- Consider patients already on ventilators?
 - 38 year old with influenza, multiorgan failure, who is worse after 7 days
 - 38 year old with influenza, multiorgan failure, who has not improved after 7 days

Clinical decisions in H5N1 pandemic

- **Consider patients already on ventilators?**
 - 68 year old with chronic obstructive lung disease, who is likely to require ventilation for several more weeks
 - 68 year old with chronic obstructive lung disease, who requires lifelong ventilation

Stopping ventilation

- **Discontinue mechanical ventilation if other patients more likely to benefit?**
 - Increases total lives saved
 - Violates fidelity to patients

Implementing new ethical guidelines during public health emergency

- **Societal agreement on triage**
 - Declaration of emergency
- **Clinical guidelines on triage**
- **Apply guidelines to specific cases**

Clinical triage process

- **Separate roles**
 - Treating MD provide individual care within constraints by society
 - Experienced ICU physician as triage officer

Applying guidelines to specific cases

- **What to say to patient/family about mechanical ventilation?**
 - Set expectations through public health messages
 - Convey caring as well as limits

Applying guidelines to specific cases

- **What if families strongly disagree?**
 - Appeals process?
 - Enforcement process?

Applying guidelines to specific cases

- **How to manage patient after forego ventilation?**
 - Palliative sedation
 - Psychosocial, spiritual support

Applying guidelines to specific cases

- **What if patient with worsening multi-organ failure is MD or nurse?**
 - High risk during SARS
 - Importance of staff morale
 - Rationale for priority for prophylactic measures is to advance public health goals
 - Reciprocity for assuming personal risk?

Take home messages

- **Anticipate dilemmas front-line MDs face**
 - Hope for the best, but plan for the worst
- **Develop new, specific ethical guidelines**
 - Need interdisciplinary and public discussion

Triage in Napoleonic army

- **Exclude those likely to die**
- **Ambulance to transport wounded**
- **Dangerously wounded first**
 - Without regard to rank
- **Less severely injured wait**

Other examples of resource allocation

- Lifeboat
- Dialysis machines
- Organ transplantation
- Single episode disasters