IMPLEMENTATION AIDS

CRITICAL RESOURCE SHORTAGES PLANNING GUIDE

September 2009

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

TROUTMAN SANDERS

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The *Implementation Aids* are intended to serve as a planning resource for Health and Medical Delivery Organizations (HMDOs). Nothing in the *Implementation Aids* shall be considered to be a public health directive by the Virginia Department of Health or legal advice by Troutman Sanders LLP. The components of the *Implementation Aids* are intended to be tools to assist HMDOs in developing their critical resource shortage response plans. Each HMDO's response plan should be tailored to meet its specific needs and should be created after thorough evaluation of the challenges different types of disasters may create for the organization. Like any printed resources, these materials may not be complete, may become out of date over time and/or may need to be revised or updated. References to sites on the Internet are provided as a service for users of the *Critical Resource Shortages Planning Guide Implementation Toolkit* (*Implementation Toolkit*) and do not constitute or imply endorsement of these materials by Troutman Sanders or the Virginia Department of Health. Neither Troutman Sanders nor the Virginia Department of Health are responsible for the content of pages found at these sites. URL addresses listed in the *Implementation Toolkit* were current as of the date of publication.

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Toolkit Materials

Implementation team invitation template

Implementation team roster

CRAG invitation template

CRAG member roster

Template compensation agreement

Implementation Team Invitation Template

Instructions for Use: Once the Convener has reviewed the *Critical Resource Shortages Planning Guide* and has decided he/she wants to implement it, appropriate individuals must be formally invited to join the Implementation Team. Use this letter, tailored to your facility's specifications, to invite these individuals to participate.

[Letterhead]

RE: Invitation to become a member of the Implementation Team and participate in the creation of a Critical Resource Shortage Response Plan.

Dear _____,

We are all aware that Health and Medical Delivery Organizations face a variety of threats from disasters and public health emergencies like the pandemic. These threats are very real, and they create very real challenges for us in the delivery of healthcare services. Our planning efforts have identified a need to actively plan for shortages of critical resources that may occur with this event and could impact our ability to continue to deliver care. Because of this possibility, we are convening an initiative that will help our [hospital/Planning Unit] prepare to provide care in the face of severe resource shortages by modifying care and, if necessary, allocating resources.

Our efforts will be guided by the planning framework contained in the *Critical Resource Shortages Planning Guide* (*Planning Guide*). The *Planning Guide* was created to assist Health and Medical Delivery Organizations in preparing to respond to critical resource shortage events like that which we may encounter. Using the *Planning Guide* will provide some structure to our planning process and will help us not overlook important issues.

The *Planning Guide* strongly recommends that we begin by selecting an Implementation Team. This team includes critical stakeholders who will have the responsibility of creating, managing, and facilitating the critical resource shortage planning process. The Implementation Team will work alongside the Convener [You should identify the Convener here] to identify the most appropriate Planning Units for several areas of concern regarding this planning process. The Implementation Team will then have the responsibility of selecting individuals within each Planning Unit to serve on Critical Resource Advisory Groups, or CRAGs, which will be charged with creating specific frameworks or Protocols in their assigned area. You have been selected to join the Implementation Team because your experience, resources, and expertise are crucial to the success of this initiative. [Customize as appropriate]

The project will begin [date] and last for [duration of time]. We are planning on having [number] meetings tentatively scheduled for _____, _____, and _____. Again, your expertise is vital to the success of this project.

A copy of the *Planning Guide* is attached for your review.

Please contact [Name, contact information] with any questions.

Best regards,

_____

Implementation Team Roster

Implementation Team

<u>Instructions for Use:</u>   The "Implementation Team" will be a small group of critical stakeholders responsible for working closely with the Convener to guide, manage, oversee and facilitate the critical resource shortage planning process. The roster below indicates several positions that would be helpful on an Implementation Team. Some may not be necessary, and you may have other positions that you want on the roster.

FUNCTION	NAME	TITLE	PREFERRED PHONE NUMBER	E-MAIL ADDRESS
1. [Convener]				
2. [Facilitator(s)]				
3. [Administrative Support Staff]				
4. [Administrative Champion]				
5. [Physician Champion]				
6. [Nurse Champion]				
7. [Public Health Champion]				
8. [Emergency Planning Champion]				
9.				
10.				
11.				
12.				

CRAG Invitation Template

<u>Instructions for Use</u>: Members of the Critical Resource Advisory Group (CRAG) will be responsible for developing and implementing Protocols based on key activities listed in the *Critical Resource Shortages Planning Guide* that will make up the Critical Resource Shortage Response Plan (CRSRP). This letter serves as the official invitation for the recipient to participate in a CRAG. Attached are template descriptions of what different CRAGs will to so that the recipient has some understanding of what is expected of him.

[Letterhead]

RE: Invitation to become a member of the Critical Resource Advisory Group and participate in the creation of a Critical Resource Shortage Response Plan.

Dear _____,

We are all aware of the current circumstances [insert an appropriate description here of the specific event] and the challenges that it poses as we work to assure that healthcare services continue to be available to those within our area who need them. Our planning efforts have identified a need to actively plan for shortages of critical resources that may occur with this event and could impact our ability to continue to deliver care. Because of this possibility, we are convening an initiative that will help our [hospital/Planning Unit] prepare to provide care in the face of severe resource shortages by modifying care and, if necessary, allocating resources.

Our efforts will be guided by the planning framework contained in the *Critical Resource Shortages Planning Guide* ("*Planning Guide*"). The *Planning Guide* was created to assist Health and Medical Delivery Organizations in preparing to respond to critical resource shortage events like that which we may encounter.   Using the *Planning Guide* will provide some structure to our planning process and will help us to not overlook important issues.

We are establishing various Critical Resource Advisory Groups (CRAGs) to participate in this planning initiative. You have been selected to join the CRAG responsible for _____ [Insert: attached summary of appropriate activity] because of your expertise in [_____].

The project will begin [date] and last for [duration of time]. We are planning on having [number] meetings tentatively scheduled for _____, _____, and _____.   [Indicate commitment requirements and responsibilities of team member]. Again, your expertise is vital to the success of this project; we hope that you will be able to participate.

Please contact [Name, contact information] with any questions regarding this initiative.

Best regards,

_____

Summary of Appropriate Activities

Conduct a Critical Resource Vulnerability Analysis: A Critical Resource Vulnerability Analysis is used to determine which critical resources may become limited in the event of an emergency or disaster. This CRAG will identify resources that are likely to be scarce in a disaster, prioritize them, and identify mechanisms for mitigating depletion of prioritized critical resources.

Establish baseline ethical principles: While there is a general consensus that healthcare providers will use their best efforts to appropriately allocate scarce resources during a critical resource shortage event, there is much less consensus as to what "appropriately" means. This CRAG will have the task of defining and outlining basic ethical principles regarding the care of patients during a critical resource shortage event, including how to appropriately allocate scarce resources during such an event.

Establish baseline operational principles: This CRAG is responsible for determining operational procedures to guide the development and implementation of specific Protocols. It is very important that a consistent process be followed so that Protocols are able to be effectively implemented. These operational principles will include procedures for the implementation of all Protocols, including those issued by government agencies.

Develop Protocols related to critical shortages of materials, physical space, and personnel: If no mandatory local, state, or federal Protocols exist to modify practices or allocate scarce resources, this CRAG's responsibility is to create a specific Protocol addressing [insert subject of Protocol].

Develop Ad Hoc Protocols: In an emergency or disaster, there will inevitably be certain unforeseen critical resources that will become scarce. This CRAG is responsible for creating mechanisms to operationalize the creation of Protocols for resources for which no plan is pre-existing during an event. (NOTE: These procedures can also be applied to critical resources identified in the Critical Resource Vulnerability Analysis for which no Protocol has been developed.)

Coordinate with other healthcare providers in the area: This CRAG will determine how best to coordinate with other healthcare providers such as long-term care, home health care, EMS providers, and primary care to collaborate on a proper response to a critical resource shortage event. Because such a drastic event will demand radical augmentation of practices for optimal effectiveness, coordination with other HMDOs is vital.

Develop comprehensive communications plans to communicate the details of the CRSRP to key audiences: To many, the concept of modifying or allocating care in response to a critical resource shortage event is something that

they have not thought much about. Those who have thought about it are usually troubled by the types of life and death decisions that HMDOs will be forced to make. Part of the Planning Unit's CRSE preparedness, response, and recovery activities must include communication with various audiences about CRSEs in general and the Planning Unit's CRSRP in particular. This CRAG will focus on the development of a cohesive communication plan.

CRAG Member Roster

CRAG Members

<u>Instructions for Use</u>: Once you convene a Critical Resource Advisory Group (CRAG), it is important that you keep accurate records of who the members are and how to reach them. This will be important for many reasons including confirming attendance at meetings, meeting reminders and informing others about the individuals who were involved in developing the work product of the CRAG. This can also be an effective tool for the CRAG members to reach each other.]

REPRESENTING:	NAME	TITLE	PREFERRED PHONE NUMBER	E-MAIL ADDRESS
1. [Surgery]				
2. [Palliative care]				
3. [Internal medicine]				
4. [Pediatrics]				
5. [Emergency medicine]				
6. [Respiratory therapy]				
7. [Legal]				
8. [Ethics]				
9. [Critical care]				
10. [Nursing (applicable field(s))]				
11. [EMS]				
12. [Pharmacy]				
13. [Laboratory]				
14. [Information systems]				
15. [Incident Command]				
16.[Administration]				
17.[Other]				
18. [Other]				
19. [Other]				
20. [Other]				

Template Compensation Agreement

MODEL PHYSICIAN SERVICES AGREEMENT

Instructions for Use: This PHYSICIAN SERVICES AGREEMENT ("Agreement") is offered as a model that could assist hospitals to engage physicians in the critical resource shortage response planning process by offering to compensate them for their time. Physician input and active participation is vital to the successful development of a Critical Resource Shortage Response Plan (CRSRP) and will be even more important if the plans must be implemented during a critical resource shortage event. Having physicians involved in the process sends a strong signal that the process is important and relevant which helps to keep others engaged as well. However, this is a complicated and time consuming process and physicians are often reluctant to participate because of the financial impact on their medical practices. Compensating these physicians for their time might encourage their participation.   Under applicable federal law, including Stark and Anti-kickback, a hospital may not compensate a physician for services except in accordance with very specific requirements. This Agreement is intended to serve as a model to help hospitals address these requirements.   This model Agreement assumes that the physician is not employed or otherwise already being compensated by the hospital for services that would include participating in the planning process. If so, a hospital should not offer the physician additional compensation. It is possible that a physician could be under contract for specific services that are limited and would not include time spent in support of the planning process. In that case, you might be able to compensate the physician for their additional work. **THIS MODEL AGREEMENT DOES NOT CONSTITUTE LEGAL ADVICE AND SHOULD NOT BE USED WITHOUT CONSULTING WITH LEGAL COUNSEL WHO IS KNOWLEDGEABLE ABOUT THE SPECIFIC REQUIREMENTS OF FEDERAL AND STATE LAW ON THIS TOPIC.**

Model Agreement:

This PHYSICIAN SERVICES AGREEMENT ("Agreement") is made and entered into effective as of the later of _____, 20__ or the date of last signature ("Effective Date"), by and between [HOSPITAL] and ("Physician").

WITNESSETH:

WHEREAS, to encourage physician participation in [HOSPITAL'S] Critical Resource Advisory Group ("CRAG"), all parties have agreed to compensate non-[HOSPITAL] employed physicians for their time spent working on CRAG- related activities.

NOW THEREFORE, for and in consideration of the mutual covenants herein contained and intending to be legally bound hereby, the parties hereto agree as follows:

1. Engagement and Responsibilities. [HOSPITAL] hereby engages Physician under the terms and conditions set forth herein to provide the services set forth below.

2. Duties and Responsibilities of Physician. Physician will:

    a. Be a member of the CRAG or a subcommittee of the CRAG;

    b. Attend and actively participate in as many CRAG meetings as possible;

  c. Offer clinical expertise to guide the development of Critical Resource Shortage Response Plans (CRSRPs);

  d. Aid in the development of a clinical decision-making infrastructure that will support implementation of the CRSRPs;

  e. Provide suggestions for wider physician engagement and plan adoption; and

  f. Participate in the development of the final tabletop exercise or the exercise itself.

  g. INSERT OTHER DUTIES AS APPROPRIATE FOR YOUR SITUATION

3. <u>Compensation.</u> As compensation for services provided by Physician pursuant to this Agreement, [HOSPITAL] will pay Physician $___ per hour, for documented services as set forth herein. NOTE: YOU MAY ELECT TO PAY ON A PER MEETING BASIS OR SOME OTHER BASIS THAT YOU FEEL IS MORE APPROPRIATE, BUT IT MUST BE TIED TO THE ACTUAL WORK PROVIDED. In order to receive payment, Physician shall submit a monthly invoice to [HOSPITAL], which shall be paid to Physician within thirty (30) days thereafter.

4. <u>Compliance With Law.</u> The parties shall comply with all applicable statutes, rules, regulations and standards of any and all governmental authorities and regulatory and accreditation bodies relating to physicians, hospitals and skilled nursing facilities and to the provision of services as provided hereunder.

5. <u>Medicare Access to Books and Records.</u> In the event, and only in the event, that Section 952 of P.L. 96-499 (42 U.S.C. Section 1395x(v)(1)(I)) is applicable to this Agreement, Physician agrees as follows until the expiration of four years after the furnishing of such services pursuant to this Agreement, Physician shall make available, upon written request to the Secretary of the federal Department of Health and Human Services or upon request to the Comptroller General of the United States, or any of their duly authorized representatives, this Agreement, and books, documents and records of Physician that are necessary to certify the nature and extent of the cost of services provided pursuant to this Agreement.

6. <u>Independent Contractors.</u> In the performance of all obligations hereunder, Physician shall be deemed to be an independent contractor of [HOSPITAL].

7. <u>Term and Termination.</u>

  A. This Agreement will become effective on the later of the Effective Date specified herein or the date of final signature hereof, and will be in effect until [INSERT DATE].

  B. If either party substantially fails to comply with the terms of this Agreement, the other party may deliver written notice of its intention to terminate this Agreement, specifying with particularity

the event(s) justifying such notification. If such default is not corrected to the reasonable satisfaction of the non-defaulting party within thirty (30) days following the giving of such notice, the non-defaulting party shall have the right to immediate termination of this Agreement by further notice in writing to the defaulting party.

C. In the event that this Agreement is terminated in less than one year, the parties agree not to re-contract for the same or similar services for the remainder of such one year period. For the purposes of this Agreement, the term "same or similar services" means the services provided in support of the CRAG.

8. Assignment. This Agreement shall bind and inure to the benefit of the parties named herein and their respective successors and assigns. Neither party may assign its rights and/or duties hereunder, directly or indirectly, by deed or act of the party or by operation of law, without the prior written consent of the other party.

9. Amendments. This Agreement may be amended at any time by mutual agreement of the parties, provided that before any amendment shall be operative or valid it shall have been reduced to writing and signed by both parties. NOTE: THERE ARE STRICT LEGAL PROHIBITIONS ON ALTERING COMPENSATION TERMS.

10. Strict Performance. No failure by either party to insist upon the strict performance of any covenant, agreement, term or condition of this Agreement or to exercise a right or remedy shall constitute a waiver. No waiver of any breach shall affect or alter this Agreement, but each and every covenant, condition, agreement and term of this Agreement shall continue in full force and effect with respect to any other existing or subsequent breach.

11. Entire Agreement. There are no other agreements or understandings, either oral or written, between the parties affecting this Agreement, except as otherwise specifically provided for or referred to herein. This Agreement cancels and supersedes all previous agreements between the parties relating to the subject matter covered by this Agreement.

12. Notices. Any notice, demand, or communication required, permitted, or desired to be given shall be deemed effectively given (i) when personally delivered, (ii) upon receipt when delivered by telephonic document transfer, (iii) three (3) business days next following the day the notice is mailed by prepaid certified mail, return receipt requested, or (iv) the next business day following deposit with a reputable overnight courier, addressed as indicated in the signature line hereof. Either party may, at any time, change or amend its address for notification purposes, by mailing a notice as required hereinabove, stating the change and setting forth the new address. The new address shall be effective on the date specified in such notice, or if no date is specified, on the tenth (l0th) day

following the date such notice is received.

13. <u>Choice of Law.</u> This Agreement has been executed and delivered in and shall be interpreted, construed, enforced and governed by and in accordance with the laws of [INSERT STATE].

14. <u>Severability.</u> In the event any paragraph, article, or provision of this Agreement is declared invalid, unlawful, or unenforceable, such declarations shall neither nullify nor affect the validity, legality, or enforceability of any other paragraph, article, or provision hereof. Furthermore, the invalid provision shall be amended to whatever extent is needed to make such provision acceptable and enforceable by the applicable court while retaining the intent of the provision to the greatest possible extent.

15. <u>[HOSPITAL] Policy.</u> In order to assure compliance with applicable federal, state and local laws, regulations, standards and other compliance requirements at all levels of government and within the applicable health professions, [HOSPITAL] policy requires, and Physician agrees, that no payments will be made for any services provided to [HOSPITAL] by Physician except pursuant to and in accordance with the terms of a binding written contract signed by the parties and approved by the [HOSPITAL] Legal Department ("Legal") prior to execution. In order to assure compliance with this policy, the parties agree that this Agreement shall be enforceable only if (i) the approved Legal watermark is visible on the original executed document, and (ii) no changes were made to the text of the document after such watermark was affixed thereto by Legal (excepting handwritten additions in underlined blanks). If this Agreement is executed without the approved watermark or includes changes made to the text of the document after the watermark was affixed by Legal, this Agreement shall be voidable and unenforceable. Further, in accordance with this policy, no payments will be made to Physician for any services rendered thereafter except pursuant to an approved, fully executed Agreement between the parties.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed on the last day and year written below.

[HOSPITAL]

By: _____   Date:_____

Title: _____

Printed Name: _____

Address: _____

_____

PHYSICIAN

By: _____   Date: _____

Title: _____

Printed   Name:

Address: _____

_____

Toolkit Materials

Critical Resource Vulnerability Analysis

Additional Resources

Emergency Management Strategic Health Care Group (2009). *2009 Emergency Management Program Guidebook*. **Retrieved from** http://www1.va.gov/EMSHG/page.cfm?pg=154#Chapter_1

CDC and DHHS (2007). *In a Moment's Notice: Surge Capacity for Terrorist Bombings – Challenges and Proposed Solutions*. **Retrieved from** http://www.bt.cdc.gov/masscasualties/pdf/surgecapacity.pdf

California Department of Public Health (2007). *Standards and Guidelines for Healthcare Surge During Emergencies*. **Retrieved from** http://bepreparedcalifornia.ca.gov/epo/cdphprograms/publichealthprograms/emergencypreparednessoffice/epoprogramsservices/surge/standguide/

CDC's *Proposed Considerations for Antiviral Drug Stockpiling by Employers in Preparation for an Influenza Pandemic* **(draft, October 2007)**

Critical Resource Vulnerability Analysis

Critical Resource Vulnerability Analysis

Instructions for Use: The following tables may help you to facilitate the discussion of those resources for which your Planning Unit is vulnerable in a disaster or public health emergency. The first table shows one way to capture feedback from a "brainstorming" session. The second table will help you to prioritize the list. It will be helpful to capture whether the resource is reusable or is consumed at the point of care and cannot be reused. It will also be important to identify if the resource has any substitutes which might make a shortage a lower priority than a resource for which there is no substitute.
REMINDER: A resource is deemed "critical" ONLY if it meets the following criteria:
(1) it is necessary to sustaining human life,
(2) it is necessary to preventing permanent disability/injury, OR
(3) it is necessary for stabilizing a person experiencing a medical emergency.

Personnel	Materials	Physical Space

Critical Resource Vulnerability Analysis: Comprehensive, Prioritized List

Critical Resource	Consumable?	Reusable?	Availability of Substitutes?

Toolkit Materials

Ethics and Allocation of Scarce Resources: An Annotated Bibliography

Ethics Glossary

Ethics Toolkit Prioritization Aid

Additional Resources

California Department of Public Health (2007). *Standards and Guidelines for Healthcare Surge During Emergencies*. Retrieved from http://bepreparedcalifornia.ca.gov/epo/cdphprograms/publichealthprograms/emergencypreparednessoffice/epoprogramsservices/surge/standguide/

Ethics and Allocation of Scarce Resources: An Annotated Bibliography

Ethics and Allocation of Scarce Resources:
An Annotated Bibliography

July 2009

Instructions for Use:

During an emergency or disaster like an influenza pandemic, Health and Medical Delivery Organizations (HMDOs) will be faced with many challenges, including providing care in the face of potentially severe resource shortages. These resource shortages may force HMDOs to modify the way in which care is delivered or to allocate resources between patients, resulting in an "altered" standard of care. "Altered" standards of care present significant ethical issues for HMDOs, patients and the community at large.

A number of articles have been written on the topic that may prove useful as your Planning Unit (state, region, health system or facility) begins preparing an ethical framework as part of its planning and response to a critical resource shortage event. When used in conjunction with the Ethics Chapter of the *Critical Resource Shortages Planning Guide* (*Planning Guide*), these articles will likely be even more beneficial since the *Planning Guide* will provide you with a framework for evaluating and adapting these existing resources to the unique needs of your Planning Unit. Please note that the articles in this Annotated Bibliography are presented alphabetically by principal author or sponsoring organization in an effort to avoid any express or implied prioritization.

1. American Nurses Association. (Mar 2008). "Adapting Standards of Care Under Extreme Conditions: Guidance for Professionals During Disasters, Pandemics, and Other Extreme Emergencies." Available online at: http://www.nursingworld.org/MainMenuCategories/HealthcareandPolicyIssues/DRP/The LawEthicsofDisasterResponse/AdaptingStandardsofCare.aspx (last visited March 9, 2009).

   A panel convened by the American Nurses Association (ANA) considered the ethical, professional, and practical challenges of meeting "normal" standards of care in situations such as extreme emergencies or disasters. This document was drafted as a white paper to summarize the issues identified by the panel and to provide recommendations and guidance for use by individual practitioners, hospitals, clinics and emergency planners. As a basis for its ethical determinations, the panel considered several publications including the University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group publication, "Stand on Guard for Thee" (see Article #22). The panel determined that decision-making during extreme emergencies requires the use of a utilitarian framework, with care organized under an incident command structure.

   The document identified certain services that should be provided regardless of the circumstances, and others that can be delayed. Services that cannot be delayed include: (1) maintaining worker and patient safety, (2) maintaining the patient's airway, breathing, and circulation, and (3) establishing or maintaining infection control. These are services that should be maintained at all times. Other less critical activities, such as blood pressure checks, could be delayed, eliminated or assigned to family members. The white paper concludes with a checklist of pre-event, intra-event, and post-event actions for registered nurses, health care facilities, and emergency response planners to consider when planning and responding to extreme emergencies or disasters.

2. Barr HL, et. al. (Feb 2008). "Ethical Planning for an Influenza Pandemic." *Clinical Medicine,* 8(1): 49-52. Available online at: http://docserver.ingentaconnect.com/deliver/connect/rcop/14702118/v8n1/s13.pdf?expire s=1236626659&id=49311501&titleid=5200003&accname=Guest+User&checksum=6FF AF12D2D32329748912AB6A4A2649B (last visited March 9, 2009).

   As part of pandemic preparation in the United Kingdom, a Pandemic Influenza Plan (Plan) was developed in 2006. In order to determine if the Plan would be ethically acceptable to society, a survey containing two hypothetical scenarios was distributed to hospital staff. The survey was intended to glean information on health care workers' attitudes about (i) their ethical obligations during a pandemic and (ii) the allocation of scarce ICU beds. The results indicated that a majority of health care workers would continue to work during a pandemic despite high personal risk. Opinions among those surveyed varied widely with respect to the allocation of the ICU beds.

3. Berlinger, N and Moses, J. "The Five People You Meet in a Pandemic—and What They Need from You Today" *Hastings Center Bioethics Backgrounder*. Available online at: http://www.thehastingscenter.org/pdf/Pandemic-Backgrounder-The-Hastings-Center.pdf (last visited July 15, 2009).

   The authors urge creation of pandemic plans that contain concrete guidance on how officials and first responders can make ethical decisions under the immense pressure of a pandemic. The article identifies five types of first responders who should be incorporated into pandemic plans so that they will know how to respond to the event in an ethically appropriate manner.

4. DeBruin DA, et. al. (Jan 2009). "Implementing Ethical Frameworks for Rationing Scarce Health Resources in Minnesota During Severe Influenza Pandemic." *Minnesota Pandemic Ethics Project*. Available online at: http://www.ahc.umn.edu/mnpanflu/prod/groups/ahc/@pub/@ahc/@ethicsmpep/documents/content/ahc_content_090510.pdf (last visited March 9, 2009).

   This report was generated as a companion to "For the Good of Us All: Ethically Rationing Health Resources in Minnesota in a Severe Influenza Pandemic" (Article #22). These reports are part of the Minnesota Pandemic Ethics Project, a collaboration between the Minnesota Center for Health Care Ethics and the University of Minnesota Center for Bioethics (the "Project"). The Project was designed to develop ethical frameworks for rationing scarce resources as well as to identify and analyze issues relating to the use of these ethical frameworks. To that end, this report makes recommendations regarding: (1) equitable access to resources; (2) eligibility to receive resources; (3) emergency powers of the government/health commissioner; (4) standards of care; (5) rationing criteria; (6) protections for the public; (7) ethics consultation; and (8) palliative and hospice care.

5. Department of Veterans Affairs. (Aug 2006). "VA Staff Discussion Forums on Ethics Issues in Pandemic Influenza Preparedness: A Guide." Available online at: http://www.ethics.va.gov/activities/pandemic_influenza_preparedness.asp (last visited June 18, 2009).

   This packet was prepared by the National Center for Ethics in Health Care and the Office of Public Health and Environmental Hazards of the Veterans Health Administration (VHA). It is intended to serve as a guide to VHA facilities as they discuss ethical issues relating to preparation for pandemic influenza. The authors note that staff discussion forums prior to a pandemic can help promote open and transparent decision making. The packet includes a sample agenda and some planning points for the discussion forum as well as a sample overview to provide to forum participants. The packet also includes a discussion of the ethical issues faced during a pandemic and discussion questions which can be used to engage participants and assess their understanding of the difficult issues that may be confronted during a pandemic.

6. Gostin LO and Berkman BE. (Winter 2007). "Pandemic Influenza: Ethics, Law, and the Public's Health." Washington College of Law *Administrative Law Review,* 59(1): 121-176. Available online at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=905916 (last visited June 18, 2009).

    The authors explore the ethical issues surrounding the allocation of limited public health resources during a pandemic. They identify eight rationing criteria to consider when deciding who should receive limited resources. The criteria include: (1) ration to prevent the spread of additional outbreaks; (2) ration to protect essential medical and scientific personnel; (3) ration to protect essential health and safety personnel, including individuals such as ambulance drivers, police, pharmacists, and sanitation workers; (4) prioritize patients with the greatest need; (5) ration based on life cycle allocation to preserve younger people's opportunity to live (based upon age and overall health); (6) ration in a way that does not exacerbate existing imbalances for low-income, rural, and isolated communities; (7) prioritize early detection and assist in providing global treatment to areas outside of the United States to prevent and contain outbreaks among the world's poorest people; and (8) ration with transparency and educate health care providers and the general public about the process.

    The authors further discuss the values of public health ethics which may be applicable in public health planning. These values are: (1) the public health action must be necessary, meaning that compulsion should only be used when an actual threat to the community is posed; (2) the public health intervention must be a reasonable and effective action; (3) the public health action should be proportional to the goal achieved; (4) the public health action should fairly allocate the burden (distributive justice); and (5) the public health action should be transparent in order to maintain trust and accountability with the public.

7. Hastings Center. "Flu Pandemic and the Fair Allocation of Scarce Life-Saving Resources: How Can We Make the Hardest of Choices?" *Bioethics Backgrounder.* Available online at: http://www.thehastingscenter.org/pdf/avian_flu_backgrounder.pdf (last visited June 18, 2009).

    This article explores the values that should guide allocation decisions during an influenza pandemic. The article notes that during a pandemic, rationing will be inevitable because there will not be sufficient resources to treat all patients. The article summarizes L. Gostin's ethical options for rationing as published in *JAMA*. These seven options are similar in content to the ethical rationing criteria described above in Gostin and Berkman's article in Washington College of Law's *Administrative Law Review* (see Article #6).

8. Indiana University Center for Bioethics. (Aug 2007). "Pandemic Flu Preparedness: Ethical Issues and Recommendations to the Indiana State Department of Health." Available online at: http://www.bioethics.iu.edu/pandemic_docs/pandemic_TADs-ABs_2008.pdf (last visited March 9, 2009).

The Indiana State Department of Health (ISDH) contracted with the Indiana University Center for Bioethics (IUCB) to provide guidance and recommendations on ethical issues that may arise during a pandemic. The report identifies seven key considerations to take into account when developing pandemic policies for Indiana, including: (1) consistency with the mission of the ISDH; (2) transparency; (3) public accountability; (4) responsiveness; (5) proportionality; (6) reciprocity; and (7) uniformity of implementation. The report specifically applies the seven key characteristics to address ethical concerns and to make recommendations for the following areas: (1) management of health care workers, (2) triage and allocation of scarce medical resources, (3) altered standards of care, and (4) allocation of limited vaccines and antiviral medications.

9. Jennings B. and Arras J. (2009). "Executive Summary: Ethical Guidance for Public Health Emergency Preparedness and Response, Highlighting Ethics and Values in a Vital Public Health Service."

The authors provide guidance on the ethical considerations for public health planners and individuals responsible for disaster management which are intended to aid decision-makers in planning for and recovering from a public health emergency. The executive summary identifies seven goals to guide the preparation and recovery efforts. The goals include: (1) reducing harm and promoting benefit; (2) designing activities to best respect the liberty, autonomy, and dignity of people; (3) distributing benefits and burdens among the population equitably and fairly; (4) using decision-making mechanisms that are inclusive and transparent in order to maintain the trust of the public; (5) developing activities that encourage resilient communities; (6) maintaining professionalism by public health professionals; and (7) designing activities that promote citizenship and personal responsibility. The authors identify general features that should be included in the design of public health emergency preparedness planning and response and also provide specific recommendations on ethical policy and practice that comply with the seven goals.

10. Kass NE, et. al. (2008). "Ethics and Severe Pandemic Influenza: Maintaining Essential Functions Through a Fair and Considered Response." *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science*, 6(3).

The authors advocate a "continuity of operations plan" for the allocation of scarce resources which gives priority to those individuals who provide essential functions for society. Under this approach, priority in the distribution of scarce resources might be provided to vaccine manufacturers, many health care providers, some utility workers, key communications personnel, and truck drivers who can deliver food and fuel. The

rationale for this approach is that maintaining a minimally functional society would aid in recovery and would serve the public health goal of minimizing the overall burden of disease and lives lost. The authors further advocate for public-private coordination, industry/organizational preparedness, and individual household preparedness to reduce susceptibility to secondary consequences of a pandemic such as the debilitation of societal infrastructure.

11. Kinlaw K, et. al. (Feb 2007). "Ethical Guidelines in Pandemic Influenza – Recommendations of the Ethics Subcommittee of the Advisory Committee to the Director, Centers for Disease Control and Prevention." Available online at http://www.pandemicflu.utah.gov/docs/20070515-PanFluEthicGuides.pdf (last visited June 18, 2009).

    This document was prepared on behalf of the Ethics Subcommittee of the Advisory Committee to the Director of the Centers for Disease Control and Prevention. When addressing the allocation of scarce resources during a pandemic, the authors reject a straight utilitarian approach. Instead, they propose using a modified utilitarian approach which has "side constraints" and focuses on the consequences of allocation decisions. The proposed side constraints would incorporate the principles of respect for persons, nonmaleficence, and justice into the decision-making process. The authors specifically reject distributing scarce medical resources based upon purchasing power, social worth, characteristics such as race, gender, ethnicity, and religion, or on a first come, first served basis. However, they distinguish straight distribution for social worth from distribution to certain key individuals who may ethically receive priority for vaccines and antivirals due to their functions in the preservation of society. The authors drafted their guidelines broadly, with the intent that they could be transformed by the communities and regions applying them in order to make ethically sound decisions on specific matters.

12. New Jersey Hospital Association. (July 2008). "Ethics Planning & Assessment Tool: A Healthcare Guide for Pandemic Flu Planning." Available online at: http://www.njha.com/paninf/Pdf/Ethics_module.pdf (last visited July 15, 2009).

    The New Jersey Hospital Association published a multi-module planning tool to assist hospitals in preparing for an influenza pandemic. This module consists of tools that can aid hospitals in the facilitation of discussions on the role of ethics in pandemic planning and response. The module includes sample policies, a step-by-step decision-making framework, and checklists to aid hospitals in their development of pandemic policies related to ethics.

13. New Zealand National Ethics Advisory Committee. (July 2007). "Getting Through Together: Ethical Values for a Pandemic." Available online at: http://www.neac.health.govt.nz/moh.nsf/pagescm/1090/$File/getting-through-together-jul07.pdf (last visited June 18, 2009).

This document was drafted by the New Zealand National Ethics Advisory Committee (NEAC). NEAC categorizes the ethical values applicable in a pandemic in two categories: those that inform how decisions are made and those that inform what decisions are made. NEAC identifies the values of inclusiveness, openness, reasonableness, responsiveness, and responsibleness as guiding how decisions are made. The values of minimizing harm, respect, fairness, neighborliness, reciprocity, and unity direct what decisions are made. NEAC illustrates how these values could be applied in a pandemic situation by using two hypothetical cases, one involving an inner-city suburb with twenty-five houses, with some households suffering from influenza and others practicing social distancing, and the other involving prioritization of patients in need of limited ICU beds. Of particular interest is the set of questions presented in Section 2.3.2 and in Appendix A of the document for prioritization of scarce health resources and services when there is overwhelming demand. These questions are designed to be asked about each patient to determine patient priority for services during a pandemic.

14. North Carolina Institute of Medicine. "Stockpiling Solutions: North Carolina's Ethical Guidelines for an Influenza Pandemic – Appendix A: Ethical Principles to Guide Societal Decision Making for an Influenza Pandemic." Available online at: http://www.nciom.org/projects/flu_pandemic/appendixA.pdf

This Appendix identifies a set of ethical principles to guide the response of the government, state agencies, healthcare professionals and emergency management responders in the event of an influenza pandemic. The ethical principles identified are: (1) individual liberty; (2) protection of the public from harm; (3) proportionality; (4) privacy; (5) reciprocity; (6) duty to provide (for healthcare workers); (7) duty to work (other critical infrastructure); (8) equity; (9) trust; (10) collaboration; (11) stewardship; (12) reasonableness; (13) transparency; (14) truth telling; (15) inclusiveness; (16) responsiveness; (17) timeliness; and (18) accountability.

15. Pandemic Influenza Ethics Initiative Workgroup of the Veterans Health Administration's National Center for Ethics in Health Care. (Draft Apr 2009). "Meeting the Challenge of Pandemic Influenza: Ethical Guidance for Leaders and Healthcare Professionals in the Veterans Health Administration." Available online at: http://www.ethics.va.gov/activities/pandemic_influenza_preparedness.asp (last visited June 18, 2009).

This document from the Veterans Health Administration (VHA) National Center for Ethics in Health Care Pandemic Influenza Ethics Initiative Workgroup (Workgroup) provides guidance for providers on the allocation of scarce health resources, such as ventilators and other critical resources. The Workgroup adopts the ethical model of utility with side constraints as described by Kinlaw K, et. al. (see Article #11). The Workgroup discusses health care providers' duties/obligations to provide care and to accept certain risks to their own safety. The Workgroup acknowledges that VHA has corresponding duties to health care providers to safeguard their health and well being and

to meet their basic needs for rest and food. The Workgroup provides a framework for making triage decisions by using a Scarce Resource Allocation Team and a Triage Team. The Workgroup also discussed the need for hospice and palliative care to mitigate the pain and suffering of those individuals who are not eligible for life-saving treatment. Finally, the Workgroup addresses restrictions on individual liberties which should be the least restrictive necessary to achieve the public health goals.

16. PandEmicS N˚1. (October 2006). "Pandemics, Ethics and Society." Available online at: http://www.espace-ethique.org/fr/documents/pandemics/pandemics01.pdf (last visited July 15, 2009).

This document, produced in conjunction with Paris-Sud 11 University and the Espace éthique of the Assistance Publique-Hôpitaux de Paris, includes a series of short interdisciplinary articles addressing ethical and social issues surrounding the response to pandemic influenza. The articles address topics on ethical considerations involved in pandemic planning, preparing hospitals for a pandemic, and restricting ICU care.

17. Powell T, et al. (March 2008). "Allocation of Ventilators in a Public Health Disaster." *Disaster Medicine and Public Health Preparedness*, (2)1:20-26.

This article summarizes the work of New York's State Task Force on Life and the Law. It describes the ethical framework on which New York's ventilator allocation algorithm is built. The principles forming the foundation of the ethical framework include the duty to care, duty to steward resources, duty to plan, distributive justice, and transparency.

18. Thomas JC. (2007). "Ethics in a Pandemic: A Survey of the State Pandemic Influenza Plans." *Health Policy and Ethics*, 97(Supp 1): S26-S31. Available online at: http://www.ajph.org/cgi/reprint/97/Supplement_1/S26.pdf (last visited June 18, 2009).

The authors conducted a study of federal and state pandemic plans to determine how many discuss the ethical challenges that may arise during a pandemic. Overall, the authors found a lack of ethical language in the plans reviewed. The authors urge that the time to consider the ethical challenges of a pandemic is prior to the pandemic occurring. The authors encourage the enumeration of anticipated ethical decisions, development of structures and systems for ethical deliberation, and training for health care providers to work within those developed systems.

19. Torda, A. (Nov 2006). "Ethical Issues in Pandemic Planning." *Medical Journal of Australia,* 185(10): S73-S76. Available online at: http://www.mja.com.au/public/issues/185_10_201106/tor10900_fm.pdf (last visited March 9, 2009).

This article explores the ethical issues raised in a pandemic by using two scenarios. To address these scenarios, the author applies the values identified in the University of

Toronto Joint Centre for Bioethics Pandemic Influenza Working Group's publication, "Stand on Guard for Thee" (see Article #22). The first scenario involves the isolation and quarantine of airplane passengers prior to the outbreak of pandemic. The second scenario involves a pandemic outbreak where some doctors and nurses are refusing to treat patients and those who are treating patients are exhausted. These scenarios raise issues relating to the need to protect the public, restriction of movement of individuals, resource allocation, health care workers' duties of care, and the need for transparent decision-making.

20. Tuohey, JF. (Nov.-Dec. 2007). "A Matrix for Ethical Decision Making in a Pandemic: The Oregon Tool for Emergency Preparedness." *Health Progress*, 88 (6). 22-25. Available online at: http://www.astho.org/pubs/MatrixforPandemic.pdf (last visited July 15, 2009).

Oregon, through its Medical Advisory Group (MAG), created a matrix to use as part of its emergency preparedness planning. The matrix is designed to address public health concerns during a pandemic. It includes consideration of three key values: social solidarity, professionalism, and justice. Each value has several corresponding characteristics and key ethical principles that assist in the decision-making process. Health care providers can apply the matrix to assist in their decision-making as pandemic conditions change. By using the matrix, health care providers can be assured that they are consistently acting justly, with professional competence, and maintaining social solidarity.

21. United Kingdom Department of Health (Nov 2007). "Responding to Pandemic Influenza: The Ethical Framework for Policy and Planning." Available online at: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_080734 (last visited July 13, 2009).

This guidance document was issued by the United Kingdom (UK) Department of Health. It is designed to assist planners and strategic policy makers at the national, regional, and local level with the ethical decisions they will face before, during, and after an influenza pandemic, and sets forth an ethical framework to use when making those decisions. It can also assist clinicians and other health care providers as they make decisions during a pandemic. The guidance document identifies equal concern and respect as the fundamental principles underpinning the ethical framework. The document discusses eight individual principles that can be weighed in order to make ethical decisions. The eight principles are: (1) respect; (2) minimizing the harm caused by the pandemic; (3) fairness and equality; (4) working together to plan for and respond to a pandemic; (5) reciprocity; (6) providing accurate information and making decisions that are proportionate to risks; (7) flexibility; and (8) good decision making. Good decision making includes making open and transparent decisions that are accountable, reasonable, and inclusive. The guidance document notes that when the first seven principles indicate more than one decision would be ethically acceptable, the final principle of good decision-making may be used to determine the appropriate action.

22. University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group. (Nov 2005). "Stand on Guard for Thee: Ethical considerations in preparedness planning for pandemic influenza." Available online at: http://www.jointcentreforbioethics.ca/people/documents/upshur_stand_guard.pdf (last visited May 5, 2009).

This report of the University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group (JCB Working Group) identifies ten substantive values and five procedural values to guide ethical decision-making in the event of an influenza pandemic. The ten substantive values identified by the JCB Working Group are: (1) individual liberty; (2) protection of the public from harm; (3) proportionality; (4) privacy; (5) duty to provide care; (6) reciprocity; (7) equity; (8) trust; (9) solidarity; and (10) stewardship. The five procedural values identified are: (1) reasonableness; (2) open and transparent decisions; (3) inclusiveness; (4) responsiveness; and (5) accountability. The JCB Working Group recommends that all pandemic plans include ethical components which incorporate both substantive and procedural values.

Specifically, the JCB Working Group recommends that: (1) while health care workers have a duty to provide care, health care providers' safety should be safeguarded at all times; (2) pandemic response plans should restrict individual liberties using the least restrictive means that balances individual freedoms with the protection of the public from harm, and informs the public of the rationale for any restrictive measures applied; (3) the health care sector should publicize a clear rationale for the allocation of scarce resources; and (4) governments should consider the impact on global governance such as travel restrictions in order to assist in containment. This report has influenced a significant amount of work in this area (See Articles #1, 19, 24).

23. Vawter DE, et. al. (Jan 2009). "For the Good of Us All: Ethically Rationing Health Resources in Minnesota in a Severe Influenza Pandemic." Available online at: http://www.ahc.umn.edu/mnpanflu/prod/groups/ahc/@pub/@ahc/@ethicsmpep/documents/content/ahc_content_090503.pdf (last visited June 18, 2009).

This report was generated as part of the Minnesota Pandemic Ethics Project through collaboration between the Minnesota Center for Health Care Ethics and the University of Minnesota Center for Bioethics. It establishes a recommended ethical framework for rationing scarce health resources in a severe pandemic. The report specifically addresses rationing of antiviral medications for treatment and prophylaxis, N95 respirators, surgical masks, pandemic influenza vaccines, and mechanical respirators. The goal of the panel is to ration scarce resources in a manner that protects the population's health, protects public safety and civil order, and treats people fairly. The report notes that factors including risk of flu-related mortality and serious morbidity, probability of a positive response to a particular limited resource, high risk of exposure taken on behalf of others, performance of health care, public health, public safety or other critical functions, risk of

transmitting flu to high risk persons, lack of satisfactory alternative protections, and age may aid in prioritizing groups who receive scarce medical resources.

24. Washington State Department of Health. (Oct 2008). "The Altered Standards of Care Workgroup's Report and Recommendations to the Department of Health Secretary on Establishing Altered Standards of Care during an Influenza Pandemic."

The Washington State Altered Standards of Care Workgroup (ASCW) sought to develop recommendations on altered standards of care to provide to the Secretary of the Washington State Department of Health. The recommendations are intended to be used by health care professionals during a pandemic to save as many lives as possible. The ASCW identified distributive justice, defined as providing the greatest good for the greatest number, as the key ethical objective when providing health care during a pandemic. The ASCW adopted the ethical values included in the University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group publication, "Stand on Guard for Thee" (see Article #22) as well as the principles of beneficence, non-maleficence, proportionality, and autonomy. The ASCW established guiding principles and identified gaps in the current system which could impact care during a pandemic. The ASCW determined that Washington State lacks sufficient resources and training to effectively operate under altered standards of care. In order to remedy this issue, the ASCW recommends that (1) a statewide scope of practice workgroup be formed, (2) a legal workgroup be formed, (3) a triage system with triage training be established, and (4) registration of emergency workers be made easier.

25. Wisconsin's Pandemic Flu Resource. Ethics Brochure Series. Available online at: http://pandemic.wisconsin.gov/category.asp?linkcatid=2845&linkid=903&locid=106 (last visited June 18, 2009).

The Wisconsin State Expert Panel (SEP) on the Ethics of Disaster Preparedness in collaboration with the Wisconsin Division of Public Health, Hospital Emergency Preparedness Program and the Wisconsin Hospital Association prepared a series of brochures that address the ethics of health care disaster preparedness, ethical responsibilities of federal, state, and local government, ethical responsibilities of health care vendors, ethical responsibilities of health care leadership, ethical responsibilities of health care professionals, and guidelines for the triage of patients. The brochures are intended to trigger discussion of these topics so that people will have a greater awareness of the ethical decision that may arise during a disaster. The SEP identified nine ethical principles to be considered when health care decisions are made in disaster situations. The principles identified are: (1) fairness, (2) respect for persons, (3) solidarity, (4) limiting harm, (5) reasonableness, (6) transparency/openness, (7) inclusiveness, (8) responsiveness, and (9) responsibility.

26. World Health Organization. (2007). "Ethical Considerations in Developing a Public Health Response to Pandemic Influenza." Available online at: http://www.who.int/csr/resources/publications/WHO_CDS_EPR_GIP_2007_2c.pdf (last visited June 18, 2009).

This WHO report advocates establishing a process for setting priorities in a manner that promotes equitable access to therapeutic and prophylactic measures. The decision-making process for determining allocation criteria should be open, transparent, and inclusive and incorporate clear pre-established mechanisms for revising decisions based upon new evidence. The report notes that the ethical principles of necessity, proportionality, social justice, liberty, confidentiality, reciprocity, fair process, efficiency, transparency, and accountability should receive special consideration when restrictions on individual liberties, including quarantine, isolation, and limiting social gatherings are utilized as public health strategies. The WHO encourages countries to develop policies that delineate health care providers' obligations to provide care so that health care providers have advance notice of the duties expected of them during a pandemic.

Of particular interest, the WHO encourages all countries to prepare for pandemic influenza, but acknowledges that not all counties have similar resources. Because developing countries do not have the same resources as more developed countries, the WHO emphasizes the importance of international cooperation to develop a global response. The WHO also encourages particular attention be paid to the health care needs of all populations, including displaced persons, refugees, asylum seekers, migrants, and travelers regardless of their legal status in a country.

Ethics Glossary

Ethics Glossary

August 2009

<u>Instructions for Use:</u> Members of the CRAG responsible for developing the ethical framework may not be familiar with terminology used by ethicists. These definitions should be helpful to orient CRAG members to the "ethics vocabulary."

Accountability*: There should be mechanisms in place to ensure that decision makers are answerable for their actions and inactions. Defense of actions and inactions should be grounded in ethical values.

Beneficence**: The state or act of intentionally doing or producing good. The principal of beneficence involves duties to prevent harm, remove harm, and promote the good of another person. The obligation of health care professionals is to seek the well-being or benefit of other patients. Duties of beneficence concern the welfare of others.

Distributive justice and fairness***: Distributive justice is concerned with the fair allocation of resources among diverse members of a community. Fair allocation typically takes into account the total amount of goods to be distributed, the distributing procedure, and the resulting pattern of distribution. This ethical principle requires that the risks, benefits, and burdens of allocation decisions be fairly distributed. This suggests that decisions about allocation of resources should be based, to the extent possible, on clinical indicators instead of non-clinical patient characteristics like race, sex, gender, religion, etc.

Duty to provide care*: Inherent to all codes of ethics for health care professionals is the duty to provide care and respond to suffering. Health care providers will have to weigh demands of their professional roles against other competing obligations to their own health, and to family and friends.

Equity*: All patients have an equal claim to receive the health care they need under normal conditions. During a pandemic, difficult decisions will need to be made about which health services to maintain and which to defer. Depending on the severity of the health crisis, this could curtail not only elective surgeries, but could also limit the provision of emergency or necessary services.

Inclusive*: Decisions should be made explicitly with stakeholder views in mind, and there should be opportunities to engage stakeholders in the decision-making process.

Individual liberty*: In a public health crisis, restrictions to individual liberty may be necessary to protect the public from serious harm. Restrictions on individual liberty should be: proportional, necessary and relevant, employ the least restrictive means, and be applied equitably.

Non-maleficence**: The state of not doing harm or evil. It requires a provider to avoid doing harm and, if unavoidable, minimize the amount of harm done.

Open and transparent*: The process by which decisions are made must be open to scrutiny, and the basis upon which decisions are made should be publicly accessible.

Privacy*: Individuals have a right to privacy in health care. In a public health crisis, it may be necessary to override this right to protect the public from serious harm.

Proportionality*: Proportionality requires that restrictions to individual liberty and measures taken to protect the public from harm should not exceed what is necessary to address the actual level of risk to or critical needs of the community.

Protection of the public from harm*: To protect the pubic from harm, health care organizations and public health authorities may be required to take actions that impinge on individual liberty.   Decision makers should: weigh the imperative for compliance; provide reasons for public health measures to encourage compliance; establish mechanisms to review decisions.

Reasonable*: Decisions should be based on reasons (i.e. evidence, principles, and values) that stakeholders can agree are relevant to meeting health needs during a crisis. The decisions should be made by people who are credible and accountable.

Reciprocity*: Reciprocity requires that society support those who face a disproportionate burden in protecting the public good, and take steps to minimize burdens as much as possible. Measures to protect the public good are likely to impose a disproportionate burden on families of health care workers, patients, and their families.

Respect for patient and health care provider autonomy**: Autonomy refers to the patient's right of self-determination concerning medical care. Autonomy may be used in various senses including freedom of action, effective deliberation, and authenticity. It supports such moral and legal principles as respect for persons and informed consent. It also supports making decisions for oneself, in light of a personal system of values and beliefs.

Responsive*: There should be opportunities to revisit and revise decisions as new information emerges throughout the crisis. There should be mechanisms to address disputes and complaints.

Solidarity*: A pandemic outbreak will require a new vision of global solidarity and a vision of solidarity among nations. A pandemic can challenge conventional ideas of national sovereignty, security, or territoriality. It also requires solidarity within and among health care institutions. It calls for collaborative approaches that set aside traditional values of self-interest or territoriality among health care professionals, services, or institutions.

Stewardship of resources*: Inherent in stewardship are the notions of trust, ethical behavior, and good decision-making. This implies that decisions regarding resources are intended to

achieve the best patient health and public health outcomes given the unique circumstances of the crisis.

Transparency of process*: The process by which decisions are made must be open to scrutiny, and the basis upon which decisions are made should be publicly accessible.

Trust*: Trust is an essential component of the relationships among clinicians and patients, staff and their organizations, the pubic and health care providers or organizations, and among organizations within a health system. Decision makers will be confronted with the challenge of maintaining stakeholder trust while simultaneously implementing various control measures during an evolving health crisis.   Trust is enhanced by upholding such process values as transparency.

The above definitions for the Ethics Glossary terms have been drawn from the following sources:

* University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group. (Nov 2005). "Stand on Guard for Thee: Ethical considerations in preparedness planning for pandemic influenza." Available online at: http://www.jointcentreforbioethics.ca/people/documents/upshur_stand_guard.pdf (last visited May 5, 2009).

** Howard University, College of Medicine. "Health care ethics glossary." Available online at: http://www.med.howard.edu/ethics/handouts/health_care_ethics_glossary.htm

***Maiese, M. (June 2003). "Distributive Justice." Available online at: http://www.beyondintractability.org/essay/distributive_justice/ (last visited September 29, 2009).

Ethics Toolkit Prioritization Aid

Prioritization of Ethical Principles

<u>Instructions for Use:</u> This is a tool that can be used to help the CRAG begin to delineate among the many substantive and procedural ethical principles. It is intended to force participants to make difficult choices, and you should expect some "pushback." You should provide clear instructions to the CRAG members in these sessions by explaining that while all of these ethical principles are important, they must still rank them. Encourage them to try to distribute the ethical principles as equally as possible among the High, Medium and Low categories. The first set is intended to be completed by the CRAG members from their point of view as health care providers. The second set is intended to be completed by the CRAG members from their point of view as a patient. You should expect some differences in the rankings.

Commonly accepted definitions of these ethical principles can be found in the Ethics Glossary. Also included are discussion questions about each principle to assist you in leading the CRAG.

A principle source for the ethical principles listed in these tools was the University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group. (Nov 2005). "Stand on Guard for Thee: Ethical considerations in preparedness planning for pandemic influenza." Available online at: http://www.jointcentreforbioethics.ca/people/documents/upshur_stand_guard.pdf (last visited May 5, 2009). Other commonly accepted ethical principles were added to the list.

Prioritization of Ethical Principles form the Provider's Point of View

Substantive Ethical Principles	**Procedural Ethical Principles**
Individual liberty	Reasonable
Protection of the public from harm	Open and transparent
Proportionality	Inclusive
Distributive justice and fairness	Responsive
Beneficence	Accountable
Non-maleficence	
Privacy	
Duty to provide care	
Reciprocity	
Respect for autonomy	
Equity	
Trust	
Solidarity	
Stewardship	

High Priority	Medium Priority	Low Priority

Prioritization of Ethical Principles form the Patients' Point of View

Substantive Ethical Principles	Procedural Ethical Principles
Individual liberty	Reasonable
Protection of the public from harm	Open and transparent
Proportionality	Inclusive
Distributive justice and fairness	Responsive
Beneficence	Accountable
Non-maleficence	
Privacy	
Duty to provide care	
Reciprocity	
Respect for autonomy	
Equity	
Trust	
Solidarity	
Stewardship	

High Priority	Medium Priority	Low Priority

Toolkit Materials

Palliative Care Definitions

Additional Resources

Bogucki, Sandy and Jubanyik, Karen (2009). "Triage, Rationing, and Palliative Care in Disaster Planning." Biosecurity and Bioterrorism: Biodefense, Strategy, Practice, and Science 7(2) 221-224. doi:10.1089/bsp.2009.0025

Matzo, Marianne, et. al. (2009). "Palliative Care Considerations in Mass Casualty Events with Scarce Resources." Biosecurity and Bioterrorism: Biodefense, Strategy, Practice, and Science 7(2) 199-210. doi: 10.1089/bsp.2009.0017

National Palliative Care Research Center (2009). "Palliative Care Organizations." Retrieved from http://www.npcrc.org/resources/resources_list.htm?cat_id=1235

Storey, Porter, MD. "Palliative Medicine Offers Lessons for Pandemic Preparedness." Retrieved from http://www.aahpm.org/pdf/pandemic.pdf

Palliative Care Definitions

Definitions of Palliative Care

<u>Instructions for Use:</u>   The term "palliative care" is used very differently among healthcare providers. These definitions are offered to assist the CRAG in determining how to use this term in its Protocol, if it uses the term at all.

- ¾   ***Centers for Medicare and Medicaid Services***: "Palliative care means patient and family-centered care that optimizes quality of life by anticipating, preventing, and treating suffering.   Palliative care throughout the continuum of illness involves addressing physical, intellectual, emotional, social, and spiritual needs and to facilitate patient autonomy, access to information, and choice." 42 C.F.R. § 418.3.

- ¾   ***World Health Organization***: "An approach which improves the quality of life of patients and their families facing life-threatening illness, through the prevention, assessment, and treatment of pain and other physical, psychosocial, and spiritual problems."   WHO   Definition   of   Palliative   Care   (available   at http://www.who.int/cancer/palliative/definition/,World Health Organization. 2002.

- ¾   ***Joint Commission:*** "Palliative care is an approach designed to improve the quality of life of patients and their families by relieving the pain, symptoms and stress of serious illnesses such as cancer or AIDS."

- ¾   ***National Consensus Project for Quality Palliative Care:*** "Palliative care focuses on the relief of suffering and distress for people facing serious, life-threatening illness to help them and their families to have the best possible quality of life, regardless of the stage of the disease or the need for other therapies.   Palliative care is both a philosophy of care and an organized, highly structured system for delivering care. Palliative care expands traditional disease-model medical treatments to include the goals of enhancing quality of life for patient and family, optimizing function, helping with decision making, and providing opportunities for personal growth. As such, it can be delivered concurrently with life-prolonging care or as the main focus of care." Clinical Practice Guidelines for Quality Palliative Care (2009 2d ed.) (Available at http://www.nationalconsensusproject.org/guideline.pdf).

- ¾   ***Nebraska Hospice and Palliative Care Partnership***: "Palliative care means comfort care (vs. curative care)…. Palliative care is holistic. It includes and goes beyond palliative medicine—which focuses on pain and symptom management—to identify and address social, psychological, and spiritual issues that can impact both an individual's physical condition and the effectiveness of medical interventions." (Available at http://www.nehospice.org/displaycommon.cfm?an=1&subarticlenbr=9).

- ¾   ***Oxford Handbook of Palliative Care***: Palliative Care is care that takes into account the following principles: "A focus on quality of life which includes good symptom control; a whole person approach taking into account the person's past and current situation; care which encompasses both the person with life-threatening illness and those that matter to the person; a respect for patient autonomy and choice (e.g. over

place of care, treatment options); an emphasis on open and sensitive communication." [Authors, Max Watson (Author), Caroline Lucas (Author), Andrew Hoy (Author), Jo Wells (Author), 2005.]

Toolkit Materials

Allocation of Scarce Critical Resources: An Annotated Bibliography

Predictive Scoring System Comparison Chart

Additional Resources

Johns Hopkins. EMCAPS (Electronic Mass Casualty Assessment & Planning Scenarios). Available at http://www.hopkins-cepar.org/

Emergency Medical Services (EMS) Surge Planning Template and Toolbox for Mass Casualty Incidents (MCI) in Virginia (August 2007); Version 1.1. Available at http://www.vdh.state.va.us/OEMS/Files page/EmergencyOperations/ EMSSurgeTemplat.pdf.

Surge Capacity Assessments and Regionalization Issues. Web Conference, broadcast on June 17, 2003. Agency for Healthcare Research and Quality, Rockville, MD. http://www.ahrq.gov/news/ulp/surge/

Additional Resources cont.

CDC. FluSurge. Available at
http://www.cdc.gov/flu/flusurge.htm

U.S. Department of Health and Human Services,
Agency for Healthcare Quality and Research.
Hospital Surge Model. Available at
http://www.ahrq.gov/prep/hospsurgemodel/

Allocation of Scarce Critical Resources: An Annotated Bibliography

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An Annotated Bibliography
April 2009

Instructions for Use:

Over the past few years, there has been significant research activity around methods for allocating scarce critical resources during public health emergencies, such as an influenza pandemic. This bibliography presents only a selection of the most widely recognized articles on this topic. The selected articles have been divided into three categories based on content:

♦ Reviews of triage scoring tools such as the Sequential Organ Failure Assessment (SOFA) and Apache scoring systems;

♦ Algorithms to guide hospital and ICU admission decisions when demand exceeds supply; and

♦ Algorithms for the allocation of ventilators when demand exceeds supply.

As your Planning Unit (state, region, health system or facility) begins preparing to respond to critical resource shortages, these articles may prove useful. When used in conjunction with *Critical Resource Shortages Planning Guide* (*Planning Guide*"), they will likely be even more beneficial since the *Planning Guide* will provide you with a framework for evaluating and adapting these existing resources to the unique needs of your Planning Unit.

It is important to note that new articles and papers are being published on these topics. You should conduct a literature review to be sure that you have captured new materials.

Reviews of Triage Scoring Tools

♦ Challen K, et al. (Mar 2007) "Physiological-social score (PMEWS) vs. CURB-65 to triage pandemic influenza: a comparative validation study using community-acquired pneumonia as a proxy." *BMC Health Services Research*, 7:33. Available online at: http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=1819377&blobtype=pdf (last visited March 10, 2009).

> The authors developed the Pandemic Medical Early Warning Score (PMEWS) to track and triage pandemic influenza patients as an alternative to the existing CURB-65 (the tool recommended for pandemic influenza patient triage in the United Kingdom in conjunction with a chest x-ray). PMEWS was used as a prediction of the need for admission and the need for higher level of care. It was not used as a tool to determine allocation of resources between admitted patients.

> PMEWS takes into account physiological and social factors and does not require laboratory or radiology services. Components of PMEWS include: respiration rate, oxygen sats, heart rate, systolic blood pressure, temperature, neurological status, age, social isolation, chronic disease, and performance status (ability to care for self). The study found that, compared to CURB-65, PMEWS was a better predictor of need for admission and need for a higher level of care, but was not as good of a predictor of subsequent inpatient mortality.

♦ Minne L, et al. (Oct 2008) "Evaluation of SOFA-based models for predicting mortality in the ICU: A systematic review." *Critical Care*, 12(6). Available online at: http://ccforum.com/content/pdf/cc7160.pdf (last visited March 10, 2009).

> The authors systematically reviewed studies evaluating the performance of Sequential Organ Failure Assessment (SOFA)-based models for predicting mortality in patients in the ICU. They compared SOFA-based models to APACHE II/III and SAPS II and found that models based on SOFA scores at admission had only slightly worse performance than APACHE II/III and were competitive with SAPS II models in predicting mortality in patients in the general med/surg ICU. Models that used sequential SOFA scores seemed to have a comparable performance with other organ failure scores. The combination of sequential SOFA derivatives with APACHE II/III and SAPS II models clearly improved prognostic performance of either model alone.

♦ Talmor D, et al. (2007) "Simple Triage Scoring System Predicting Death and the Need for Critical Care Resources for Use during Epidemics." *Crit Care Med*, 35(5): 1251-1256. Available online at: http://webdisk.planet.nl/noote174/publiek/album/icu@midden-limburg/Nascholing2006/Ramp/triage%20infection%20ic-talmor-052007ccm.pdf (last visited March 9, 2009).

The authors recommend a triage algorithm based on data readily available in the emergency department on presentation rather than using any laboratory testing or medical history information. Components of the algorithm include:

- respiratory rate > 30 breaths/min;
- shock index > 1 (heart rate > blood pressure);
- low oxygen saturation;
- altered mental status; and
- age > 65.

The algorithm can be used to predict death and the need for intensive care during an epidemic. It should apply uniformly to all patients in the hospital rather than just suspected victims of an epidemic. This algorithm deserves further study since its development was based on a retrospective review of patients presenting in two centers with a variety of conditions, not just influenza.

Hospital/ICU Admission Algorithms

♦ Christian MD, et al. (Nov 2006) "Development of a Triage Protocol for Critical Care During an Influenza Pandemic." *CMAJ*, 175(11): 1377-1381. Available online at: http://www.cmaj.ca/cgi/reprint/175/11/1377 (last visited March 9, 2009).

The Ontario Health Plan for an Influenza Pandemic (OHPIP) developed a triage protocol for allocation of critical care resources during an influenza pandemic "in an effort to ensure the equitable and efficient use of critical care resources if scarcities occur during an influenza pandemic." The protocol, which was designed to be used in an open and transparent manner, utilizes inclusion and exclusion criteria, with minimum qualifications for survival and prioritization based on Sequential Organ Failure Assessment (SOFA) score. One of the more controversial aspects of the protocol is the exclusion of anyone over age 85. The authors recommend that a central triage committee with triage officers implement the protocol and that palliative care be provided to those who do not qualify for or receive critical care resources. This work forms the basis of many of the protocols being considered and adopted around the country.

♦ Devereaux A, et al. (2008) "Definitive Care for the Critically Ill During a Disaster: A Framework for Allocation of Scarce Resources in Mass Critical Care." *Chest*, 133: 51S-66S. Available online at: http://www.chestjournal.org/content/133/5_suppl/51S.full (last visited March 9, 2009).

This is the final article in the *Chest* series. In this article, the authors expand on the idea of reallocation of ventilators when demand exceeds supply. The authors stress the importance of participation by government, community, hospitals, and individuals in developing methods for allocation of scarce resources, including ventilators. The suggested allocation algorithm uses inclusion criteria and exclusion criteria to determine who is appropriate for mechanical ventilation. Immediate need for active critical care services is the only inclusion criteria. Exclusion criteria seek to exclude patients with a very high risk of death, little likelihood of long-term survival, and a correspondingly low likelihood of benefit from critical care resources. There are two subcomponents of the exclusion criteria: the Sequential Organ Failure Assessment (SOFA) score and the severity of chronic illness. The authors recommend appointment of a Triage Officer to make final, binding decisions and a Review Committee for retrospective analysis with no authority to change Triage Officer decisions.

♦ Rubinson L, et al. (2008) "Definitive Care for the Critically Ill During a Disaster: A Framework for Optimizing Critical Care Surge Capacity." *Chest*, 133: 18S-31S. Available online at: http://www.chestjournal.org/content/133/5_suppl/18S.full (last visited March 9, 2009).

This is one of a series of five articles published in *Chest* by the Task Force for Mass Critical Care. In this article, the authors suggest a set of critical care therapeutics and interventions for responding to mass critical illness, benchmarks for critical care surge capacity, a general approach to optimizing resource availability, and criteria for when to modify typical critical care. They recommend that individual hospitals plan to provide emergency mass critical care for a patient census at least triple usual ICU capacity and to operate without sufficient external assistance for at least ten days. A stepwise modification in the use of critical care resources is suggested to maintain positive pressure ventilation capability and capacity. These modifications include:

- Substitution (e.g., use of anesthesia machines, noninvasive ventilators, and transport ventilators);
- Adaptation (e.g., use of noninvasive ventilators capable of bilevel pressure ventilation through an endo tube for acute respiratory distress syndrome);
- Conservation (e.g., revise criteria for use of ventilators (reduce frequency of HME or ventilator circuit scheduled changes));
- Reuse (e.g., clean ancillary respiratory equipment (circuits)); and
- Reallocation (e.g., prioritization when demand overwhelms supply).

♦ Rubinson L, et al. (2008) "Definitive Care for the Critically Ill During a Disaster: Medical Resources for Surge Capacity." *Chest*, 133: 32S-50S. Available online at: http://www.chestjournal.org/content/133/5_suppl/32S.full (last visited March 9, 2009).

In this article, which is also part of the *Chest* series, the authors discuss resources that hospitals should have on hand to handle a critical care surge. They examine pre-incident planning for pharmaceuticals, supplies, treatment space, and staffing models (pod, functional and hybrid models) and recommend suggested characteristics for stockpiled mechanical ventilators.

♦ Utah Department of Health (Aug 2008) "Utah Pandemic Influenza Hospital and ICU Triage Guidelines." http://www.uha-utah.org/Disaster%20Prep%20Materials/PANDEMIC%20FLU%20TRIAGE%202008-12-08.pdf (last visited March 9, 2009).

The Utah Department of Health published detailed guidelines and algorithms for hospital admission and ICU admission/ventilator use during an influenza pandemic. The guidelines begin with triage by pre-hospital healthcare providers (e.g. EMS, physician

offices, clinics, home care, and long term care facilities). They then present an algorithm for use by hospitals to determine admission to the hospital and, if admitted to the hospital, admission to the ICU for ventilator care. While there are no inclusion criteria for hospital admission, there are inclusion criteria for ICU admission and ventilator use. The algorithm includes exclusion criteria for both hospital and ICU admission/ventilator use.   If a patient does not present with any exclusion criteria, then the algorithm recommends the use of a modified Sequential Organ Failure Assessment (SOFA) score to place the patient into the low, intermediate or highest priority categories for admission to the hospital. The recommended modified SOFA score requires only one lab value, which can be obtained using bedside point of care testing (creatinine obtained through ISTAT). In addition to the algorithms, the Department also suggests some basic surge mechanisms that hospital administrators can implement (e.g., canceling elective surgeries and phasing out all hyperbaric medicine treatments to conserve oxygen capacity).

♦ Vawter DE, et al. (Jan 2009) "For the Good of Us All: Ethically Rationing Health Resources in Minnesota in a Severe Influenza Pandemic." *Minnesota Pandemic Ethics Project*. Available online at: http://www.ahc.umn.edu/mnpanflu/prod/groups/Ahc/@pub/@ahc/@ethicsmpep/docume nts/content/ahc_content_090503.pdf (last visited March 9, 2009).

The Minnesota Center for Health Care Ethics and the University of Minnesota Center for Bioethics built on the work done by Hicks et al. on the allocation of ventilators. Minnesota proposes an ethical framework for rationing ventilators.   Within this framework, the panel found some non-clinical factors such as age to be appropriate in certain circumstances (all other things being equal, children should receive ventilators before adults), but specifically considered and declined to take into account other non-clinical variables such as social value, key worker status, or quality of life. The authors put forth recommendations for ventilator adaptation, conservation, reuse, and reallocation similar to the recommendations of Hick et al. in 2007.   Minnesota's algorithm for reallocation uses a three step approach:
- Step 1: use the Sequential Organ Failure Assessment (SOFA) score to assess patient acuity.
- Step 2: compare the patient to other patients to see whether reallocation is justified using four factors:
  - Organ system function (e.g., SOFA);
  - Duration of benefit/prognosis;
  - Duration of need; and
  - Response to mechanical ventilation.
- Step 3: reallocate only if the patient presenting has a significantly better chance of survival/benefit as compared to the patient currently receiving the ventilator.

Ventilator Allocation Algorithms

♦ Hick JL, et al. (Feb 2006) "Concept of Operations for Triage of Mechanical Ventilation in an Epidemic." *Academic Emergency Medicine*, 13(2): 223-229.   Available online at: http://www3.interscience.wiley.com/cgi-bin/fulltext/119820506/PDFSTART (last visited March 10, 2009).

The authors, in conjunction with the Minnesota Department of Health, developed one of the first ventilator allocation algorithms to be used to determine who should receive a ventilator during an event when the demand for ventilators exceeds the supply.   The authors present a tiered, scalable framework for declining to offer or withdrawing ventilators from patients.   Tiers are used so that as resources are exhausted, another stricter tier of exclusion criteria is implemented in an attempt to provide the best care possible to those with the best chance of survival.

- First Tier: excludes or withdraws from patients with respiratory failure with shock and multiple organ dysfunction.

- Second Tier: excludes or withdraws from patients with high potential for death, prolonged ventilation, and high levels of resource utilization.

- Third Tier: excludes or withdraws from patients based on additional restrictions depending on the needs of the situation or by applying a SOFA cutoff score.

♦ Hick JL, et al. (June 2007) "Clinical review: Allocating ventilators during large-scale disasters – problems, planning, and process." *Critical Care*, 11(3). Available online at: http://ccforum.com/content/pdf/cc5929.pdf (last visited March 10, 2009).

The authors expanded on their previous work involving allocation of ventilators during a disaster by focusing on the complex decisions involved when comparing patients in need of ventilator support. They propose a decision matrix for ventilator allocation between patients that use the Sequential Organ Failure Assessment (SOFA) score, an assessment of the duration of the benefit, an assessment of the duration of the need for ventilation and, for those already on a ventilator, the response to mechanical ventilation. An analysis of these factors will help a triage committee answer the question "Compared to other patients requiring and awaiting mechanical ventilation, does this patient have significant differences in prognosis or resource use in one or more categories [above] that would justify reallocation of the ventilator?"

Before withdrawing a ventilator from a current patient to give to another patient, there must be a substantial advantage of the other patient. If there is not a clear-cut difference between the patients, the ventilator should be allocated on a first-come, first-served basis. Because withdrawal will be an option if the patient does not improve on the ventilator,

the authors suggest offering patients a ventilator as a "trial" and reassessing on an ongoing basis to determine whether mechanical ventilation should be continued.

♦ Powell T, et al. (Mar 2008) "Allocation of Ventilators in a Public Health Disaster." *Disaster Medicine and Public Health Preparedness*, 2(1): 20-26.

This article summarizes the work of New York's State Task Force on Life and the Law. It starts by describing the ethical framework on which the ventilator allocation algorithm is built. The principles forming the foundation of the ethical framework include the duty to care, duty to steward resources, duty to plan, distributive justice, and transparency.

The ventilator allocation algorithm itself is adapted from the OHPIP guidelines (2006). The algorithm should be implemented statewide when the need for ventilators overwhelms supply. Importantly, the algorithm is not based on a comparison of patients. Each patient is evaluated to determine whether they meet the inclusion criteria and do not meet exclusion criteria. The Task Force modified the OHPIP exclusion criteria so that, for New York, advanced age is not an exclusion criteria. Ventilator treatment should be provided for a timed period with periodic review and re-evaluation to determine whether the patient still meets inclusion and does not meet exclusion criteria. A triage officer should make all triage decisions based on the allocation algorithm. For those patients who do not receive a ventilator, palliative care should be provided. There should also be an appeal process related to allocation decisions, but the details of this process are still under development.

Predictive Scoring System Comparison Chart

Predictive Scoring System Comparison Chart

Instructions for Use:

       In developing a Protocol, the CRAG might want to use one of the several predictive scoring systems that have been developed to help evaluate the likelihood of a positive outcome for an individual patient. Many CRAG members may not be knowledgeable about these scoring systems. This chart compares the 8 most commonly recognized predictive scoring systems. This should be a useful tool to educate the CRAG on the relative strengths and weaknesses of each scoring system.

Predictive Scoring Systems Comparison

	SOFA[1]	MSOFA[2]	P-MEWS[3]	APACHE[4]	SAPS III[5]	MPM II[6]	Talmor Simple Triage[7]	CURB-65[8]
Background	Originally "Sepsis-related Organ Failure Assessment" developed to describe the degree of organ dysfunction and morbidity in ICU septic patients. Changed to "Sequential Organ Failure Assessment" to apply to non-septic patients. Also used for predicting mortality but not designed for this.	Published in 2008 by Utah Department of Health (DOH). Utah DOH modified the standard SOFA score to only require one lab value (creatinine through ISTAT).	Published in 2007 in the UK as the "Pandemic Medical Early Warning Score" – a screening tool to identify adults who need hospital admission during a pandemic.	Published in 1985, the "Acute Physiology and Chronic Health Evaluation II" is used to determine a patient's morbidity in the ICU. One of the most widely used ICU scoring systems.	Published in 2005 as an iteration of the "Simplified Acute Physiology Score." It is used to measure the severity of disease for patients admitted to ICU and predict mortality. Second to APACHE as the most widely used ICU scoring system.	Published in 1993, the "Mortality Probability Model II" is an update to earlier models in the MPM system. It is used to estimate the probability of hospital mortality in ICU patients and is calculated upon admission to the ICU and 24 hours after admission.	Published in 2007 to predict mortality and the need for mechanical ventilation and treatment in an ICU in patients presenting to the ED with infection. Designed to be used during an epidemic to allocate scarce resources.	Published in 2002, the "Confusion, Urea, Respiratory Rate, Blood Pressure and Age over 65" score was designed as a practical means of stratifying patients with community acquired pneumonia into low, medium and high mortality risk groups. CRB-65 is a variation of this score.

	SOFA[1]	MSOFA[2]	P-MEWS[3]	APACHE[4]	SAPS III[5]	MPM II[6]	Talmor Simple Triage[7]	CURB-65[8]
Respiratory	PaO_2/fraction of inspired oxygen, mm Hg Identify with vs. without respiratory support	SpO_2/FIO_2 ratio OR Nasal cannula or mask O_2 required to keep SpO_2 >90%	Respiratory rate O_2 Sats	Respiratory rate (non-ventilated or ventilated) Oxygenation: a: $FIO_2 \geq 0.5$ – use A-aDO$_2$ b: $FIO_2 < 0.5$ – use PaO_2 (mm Hg) Serum HCO_3 (venous-mMol/L) – use only if no ABGs	Oxygenation (PaO_2/FiO_2) Hydrogen ion concentration (lowest), pH	Mechanical ventilation Partial pressure PsO_2	Respiratory rate of >30 breaths/min Low oxygen saturation	Respiratory rate
Hematology	Platelet count			Hemocrit (%) WBC (in 1000s)	Leukocytes (highest), G/L Platelets (lowest), G/L	Prothrombin time >3 sec above standard		
Hepatic	Total bilirubin	Jaundice			Total bilirubine (highest) mg/dL Total bilirubine (highest), μmol/L	Cirrhosis		

	SOFA[1]	MSOFA[2]	P-MEWS[3]	APACHE[4]	SAPS III[5]	MPM II[6]	Talmor Simple Triage[7]	CURB-65[8]
Cardiac/ Circulatory	Level of hypotension or need for vasopressor Measured by mean arterial pressure, or levels of dopamine, dobutamine, epinephrine, or norepinephrine	Hypotension Measured by mean arterial pressure, or levels of dopamine, dobutamine, epinephrine, or norepinephrine	Heart Rate Systolic BP	Mean arterial pressure (mm Hg) Heart Rate Arterial pH Serum Na (mMol/L)	Heart Rate (highest), beats/minute Systolic blood pressure (lowest), mm Hg	Heart rate ≥ 150 beats/min Systolic blood pressure ≤ 90 mm Hg Cardiac dysrhythmia Cardiopulmonary resuscitation prior to admission Vasoactive drugs	Shock index >1 (HR > BP)	Blood pressure
Neurological/ Central Nervous System	Glasgow Coma Scale	Glasgow Coma Scale	Identify patient as Alert, Confused/ Agitated, Voice, Pain/Unconscious	Glasgow Coma Score	Estimated Glasgow Coma Score	Coma or deep stupor Cerebrovascular incident Intracranial mass effect	Altered mental status	Confusion
Renal	Creatinine or urine output	Creatinine obtained through ISTAT or urine output		Serum creatinine (mg/dL); double point score for acute renal failure Serum Na (mMol/L) Serum K (mMol/L)	Creatinine (highest), mg/dL Creatinine (highest), μmol/L Hydrogen ion concentration (lowest), pH	Chronic renal insufficiency Acute renal failure Creatinine Urine output		Urea

Chapter 5: Protocol Development
Predictive Scoring System Comparison Chart

	SOFA[1]	MSOFA[2]	P-MEWS[3]	APACHE[4]	SAPS III[5]	MPM II[6]	Talmor Simple Triage[7]	CURB-65[8]
Temperature			Temperature	Temperature, core in Celsius	Body Temperature (highest), degrees Celsius			
Age			>65	Age	Age	Age	Age of 65-74 yrs Age ≥ 75 years	Age >65
Chronic Disease			Chronic Disease – respiratory, cardiac, renal, immunosuppressed, DM	Immunocompromise or history of severe organ insufficiency	Co-morbidities: cancer therapy, chron, HF (NYHA IV), Heamatological cancer, Cirrhosis, AIDS, Cancer	Metastatic neoplasm Cirrhosis		

	SOFA[1]	MSOFA[2]	P-MEWS[3]	APACHE[4]	SAPS III[5]	MPM II[6]	Talmor Simple Triage[7]	CURB-65[8]
Other factors			Performance status – ability to perform Activities Social Isolation – lives alone or no fixed abode		Length of stay before ICU admission (days) Intra-hospital location before ICU admission Use of major therapeutic options before ICU admission Planner or unplanned ICU admission Reason(s) for ICU admission Surgical status at ICU admission Anatomical site of surgery Acute infection at ICU admission	Medical or unscheduled surgery admission Gastrointestinal bleeding Confirmed infection		

[1] Devereaux A, et al. (2008) "Definitive Care for the Critically Ill During a Disaster: A Framework for Allocation of Scarce Resources in Mass Critical Care." *Chest*, 133: 51S-66S. Available online at: http://www.chestjournal.org/content/133/5_suppl/51S.full (last visited March 9, 2009).

[2] Utah Department of Health (Aug 2008) "Utah Pandemic Influenza Hospital and ICU Triage Guidelines." http://www.uha-utah.org/Disaster%20Prep%20Materials/PANDEMIC%20FLU%20TRIAGE%2008-12-08.pdf (last visited March 9, 2009).

[3] Challen K, et al. (Mar 2007) "Physiological-social score (PMEWS) vs. CURB-65 to triage pandemic influenza: a comparative validation study using community-acquired pneumonia as a proxy." *BMC Health Services Research*, 7:33. Available online at: http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=1819377&blobtype=pdf (last visited March 10, 2009).

[4] Merck Manuals Online Medical Library. "APACHE II Scoring System." Available online at: http://www.merck.com/media/mmpe/pdf/Table_063-4.pdf (last visited April 27, 2009). Adapted from Knaus WA et al. (1985) "APACHE II: A severity of disease classification system. *Crit Care Med*, 13:818,829.

[5] Moreno RP, et al. (2005) "SAPS 3 – From evaluation of the patient to evaluation of the intensive care unit. Part 2: Development of a prognostic model for hospital mortality at ICU admission." *Intensive Care Med*, 31:1345-1355. Available online at: http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=1315315&blobtype=pdf (last visited April 27, 2009).

[6] Lemeshow S, et al. (1993) "Mortality Probability Models (MPM II) based on an international cohort of intensive care unit patients." *JAMA*, 270(20):2478-2486.

[7] Talmor D, et al. (2007) "Simple Triage Scoring System Predicting Death and the Need for Critical Care Resources for Use During Epidemics." *Crit Care Med*, 35(5): 1251-1256. Available online at: http://webdisk.planet.nl/noote174/publiek/album/icu@midden-limburg/Nascholing2006/Ramp/triage%20infection%20ic-talmor-052007ccm.pdf (last visited March 9, 2009).

[8] Lim WS, et al. (2003) "Defining community acquired pneumonia severity on presentation to hospital: an international derivation and validation study." *Thorax*, 58:377-382.

Toolkit Materials

Sample Instructions for an Ad Hoc Protocol Development Subcommittee

Sample Instructions for an Ad Hoc Protocol Development Subcommittee

Sample Instructions for an Ad Hoc Protocol Development Subcommittee

Instructions for Use: This is a sample set of instructions that would be distributed to an Ad Hoc Protocol Development Subcommittee that is activated during a critical resource shortage event. You should develop these instructions now so that they are available when needed.

Sample Instructions:

In the midst of a large-scale emergency or disaster such as an influenza pandemic, there will likely be a higher than normal demand for inpatient hospital services and a high level of staff absenteeism. These two factors will stress [hospital's] ability to provide care consistent with current practices. This scarcity of resources is referred to as a critical resource shortage event (CRSE).

[Hospital] has prepared ahead of time and create protocols to address certain expected shortages of certain critical resources. However, due to the vast number of critical resources used in healthcare today, [hospital] could not to develop protocols for all of the resources that may become scarce during an event nor could [hospital] foresee all such scarcities. Because [hospital] cannot develop protocols to address these resources prior to an event, it will have to develop protocols to address such scarcities in the midst of an event ("Ad Hoc Protocol").

The Critical Resource Advisory Group (CRAG) at [hospital] has developed an infrastructure ("Ad Hoc Protocol Infrastructure") to support the development, implementation and operationalization of Ad Hoc Protocols during a CRSE. The Ad Hoc Protocol Infrastructure provides guidance on how to develop and activate an Ad Hoc Protocol.

As part of this Ad Hoc Protocol Infrastructure, Incident Commend (IC) monitors the resource situation at [hospital].   When a shortage of a critical resource is identified, the department responsible for managing the resource evaluates the resource situation, investigates methods of responding to this shortage through surge plans, and reports the imminent shortage to IC.   IC evaluates the information provided by the department to determine an appropriate response to the shortage. IC has determined that it is appropriate to activate an Ad Hoc Protocol Development Subcommittee.

IC has asked you to be a member of an Ad Hoc Protocol Subcommittee responsible for developing an Ad Hoc Protocol to address the impending shortage of [_____]. For these purposes, an Ad Hoc Protocol is a plan created to respond to a critical resource shortage event, pursuant to which delivery of care provided with the scarce critical resource is modified or the scarce critical resource is allocated to accomplish the ethical Goal of [hospital].

In developing an Ad Hoc Protocol, the Ad Hoc Protocol Development Subcommittee has been instructed as follows:

- o The Subcommittee must use the ethical framework that has been adopted by [hospital] for responding to a CRSE. This ethical framework requires that the Protocol developed by the Subcommittee be designed to do the ethical Goal of [hospital]. The Protocol must also be supported by the ethical principles identified by [hospital]. The Subcommittee must use the operational infrastructure that has been adopted by [hospital] for responding to a CRSE. The ethical framework and operational infrastructure are provided for your use.
- o The Subcommittee should first consider options for modification. If modification is not appropriate or feasible, the Subcommittee should consider options for allocating. The Subcommittee should consider the inclusion, exclusion and prioritization criteria developed by [hospital].
- o The Protocol must be easy to implement.
- o The Subcommittee may want to consider developing tiers in the Protocol to respond to a progressively more severe shortage of [insert the resource].
- o The Subcommittee should consider options for communicating the final Protocol to applicable audiences.
- o The Subcommittee should consider any metrics that can be used to determine when the CRSE has ended and how this will be communicated.

Toolkit Materials

Sample Tabletop Exercise Player's Guide

Additional Resources

Association of State and Territorial Health Officials (Winter 2002). "Guide to Preparedness Evaluation Using Drills and Table Top Exercises."
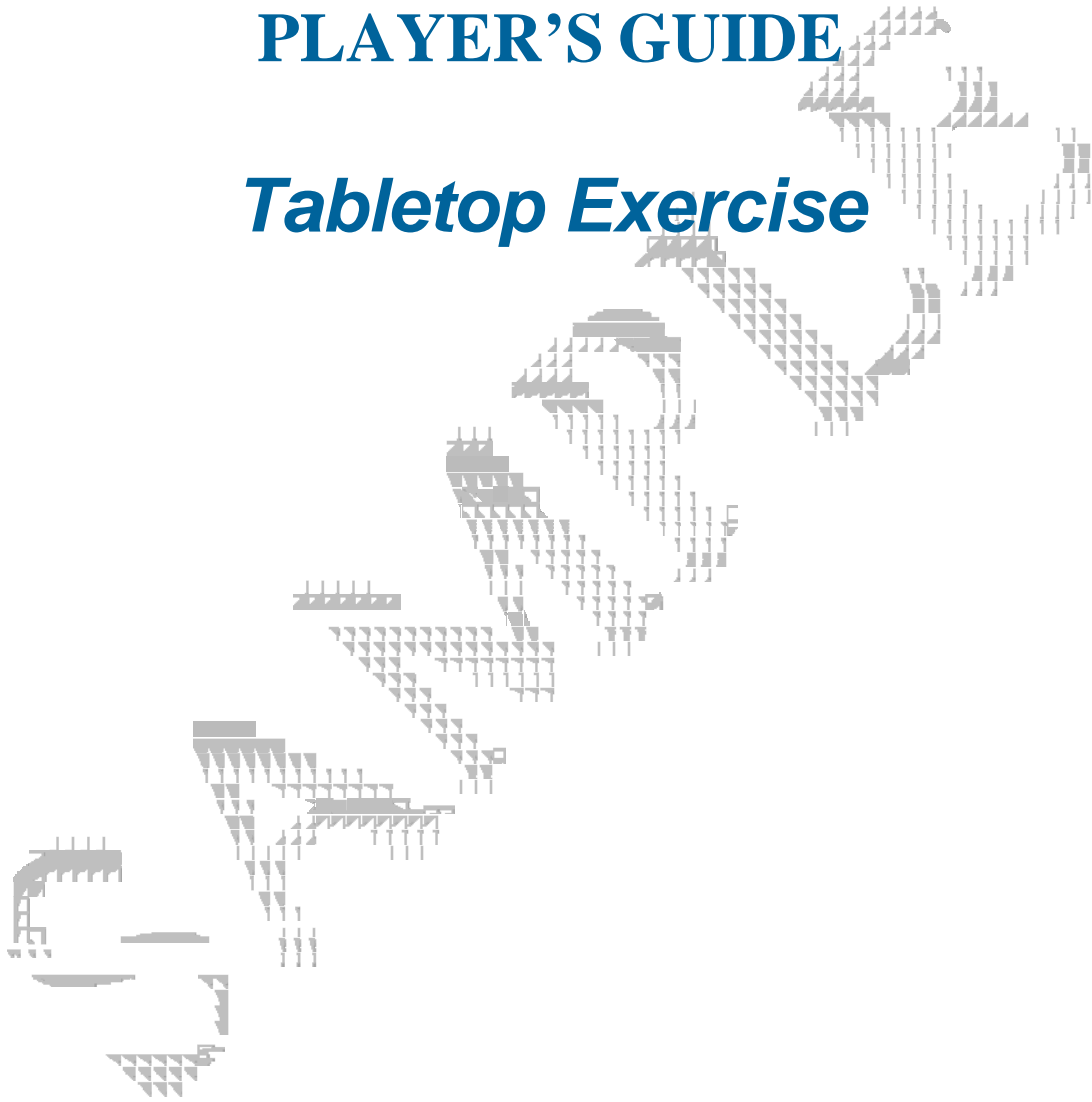
Johns Hopkins University Evidence-based Practice Center (June 2008). *Tool for Evaluating Core Elements of Hospital Disaster Drills*. **AHRQ Publication No. 08-0019. Retrieved from http://www.ahrq.gov/prep/drillelements/**

Sample Tabletop Exercise Player's Guide

PLAYER'S GUIDE

Tabletop Exercise

AGENDA

This exercise is intended to last 5 hours, with 3 hours and 45 minutes dedicated to the exercise itself.

[15 minutes]   **Welcome, Introductions and Overview**

[3 hours, 45 minutes]   **Tabletop Exercise**

[15 minutes]   **Triage Committee or Ad Hoc Protocol Development Subcommittee Hotwash/Discussion**

[15 minutes]   **Break**

[30 minutes]   **Entire Group Hotwash/Discussion**

INTRODUCTION AND INSTRUCTIONS FOR USE

The Virginia Department of Health received an Essential Services Grant #EHS25VA from the Centers for Disease Control and Prevention (CDC) to conduct a trial implementation of the *Critical Resource Shortages Planning Guide* at Sentara Norfolk General Hospital (SNGH) in Norfolk, Virginia in September 2008. Troutman Sanders LLP served as the project lead and facilitator for the grant. A multi-disciplinary group of dedicated clinical and non-clinical staff from SNGH (the Critical Resource Advisory Group or CRAG) participated in numerous meetings from December 2008 to August 2009 to develop the content of a draft Critical Resource Shortage Response Plan (CRSRP)[1] including:

♦ An ethical framework which serves as the foundation for the other portions of the CRSRP
♦ A basic operational framework and infrastructure on which specific protocols will be built
♦ A Protocol for the allocation of inpatient beds during a critical resource shortage event (CRSE)
♦ A Protocol for the modification of Registered Respiratory Therapists' workflow during a CRSE
♦ An infrastructure for the development of Ad Hoc Protocols during a CRSE

Upon completion of the *Planning Guide* process, SNGH participated in a final tabletop exercise to test the effectiveness of its draft CRSRP. This Player's Manual is a sample of the one that was used during this final exercise. It is intended to serve as an example of what a tabletop exercise might look like for any hospital that is testing a CRSRP developed through the *Planning Guide* framework. No two hospitals are identical, and the decisions that each hospital reaches about how best to respond to CRSEs will vary. This means that the exact content of each hospital CRSRP will be different and therefore the method for testing each CRSRP will be slightly different. However, this example may be helpful to the Convener and the Implementation Team as indicative of how a final test could look.

This tabletop exercise was designed to test two specific sections of the draft CRSRP: the "Protocol for the Allocation of Inpatient Beds During a CRSE" and the "Infrastructure for the Development of Ad Hoc Protocols During a CRSE." The tabletop exercise participants were divided into two groups which correspond to these two tests:
♦ Ad Hoc Protocol Development Subcommittee (Subcommittee): The Subcommittee has been activated by Incident Command (IC) in response to a perceived imminent shortage of personnel to serve on Medical Response Teams (MRTs) and Code Teams. The Subcommittee's role is to develop a Protocol for responding to this shortage during the current CRSE.
♦ Inpatient Bed Triage Committee (Triage Committee): The Triage Committee has been activated as part of the "Protocol for the Allocation of Inpatient Beds During a CRSE." The Triage Committee is responsible for making disposition decisions for all inpatients and all ED patients with a recommended admission order.

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[1] Refer to the Sample CRSRP included in this *Implementation Toolkit* for more information on the specific protocols.

EXERCISE INTRODUCTION

Concept

During a large-scale emergency or disaster, such as an influenza pandemic, a healthcare provider's ability to continue providing care will be challenged as a result of a larger than normal influx of patients, shortages of critical resources, and higher levels of staff absenteeism. It is impossible to predict the exact magnitude of each of these factors. However, each of them will occur and, in combination, will make it impossible to continue to provide care the same way that it is provided in "normal" times. This scarcity of resources, including staff, during a disaster or emergency is referred to as a critical resource shortage event (CRSE). It is imperative to plan for how [hospital] will respond to these resource scarcities before the emergency or disaster giving rise to the CRSE occurs.

Goal

This tabletop exercise was developed to test the effectiveness of [Planning Unit's] draft CRSRP and to identify areas for revision and improvement.

Structure

This tabletop exercise will test two specific sections of [Planning Unit's] CRSRP: the "Protocol for the Allocation of Inpatient Beds During a CRSE" and the "Infrastructure for the Development of Ad Hoc Protocols During a CRSE." The tabletop exercise participants have been divided into two groups which correspond to these two tests:

♦ Ad Hoc Protocol Development Subcommittee (Subcommittee): The Subcommittee has been activated by Incident Command (IC) in response to a perceived imminent shortage of personnel to serve on Medical Response Teams (MRTs) and Code Teams. The Subcommittee's role is to develop a protocol for responding to this shortage during the current CRSE.

♦ Inpatient Bed Triage Committee (Triage Committee): The Triage Committee has been activated as part of the "Protocol for the Allocation of Inpatient Beds During a CRSE." The Triage Committee is responsible for making disposition decisions for all inpatients and all ED patients with a recommended admission order.

Expectations and Guidelines

• Participants should consider their roles in the context of their organizational responsibilities and existing plans or procedures. Participants are encouraged to use existing plans, but also think freely and improvise if better solutions can be identified. However, participants cannot make unrealistic assumptions that would not apply in the real world.

• The decision-making process and the coordination among the various departments/personnel are more important than minute details. Participants are encouraged to focus on developing the best possible response through joint problem identification, coordination, innovation, resolution, and the effective integration of capabilities.

- This is not a test. Varying viewpoints, even disagreements, are expected. This is intended to be an open, relaxed environment.
- Respond based on your knowledge of your facility's plans and capabilities (i.e., you may only use existing assets) and insights derived from training and experiences.
- Decisions are not precedent-setting and may not reflect your organization's final position on a given issue.
- Issue identification is as valuable as suggestions and recommended actions that could improve response and preparedness efforts.
- Participants should follow all directions of the facilitators, and should ask them to clarify any issues in the tabletop exercise that might be confusing or appear to be inaccurate.
- Participants should understand the scope of the exercise, if you are uncertain about a particular participant's role in the exercise, ask a facilitator.
- Participants should recognize that the tabletop exercise has specific objectives that may necessitate tabletop exercise constructs and constraints in addition to those already identified.

Rules of Engagement

In any tabletop exercise, a number of assumptions and artificialities are necessary to complete play in the time allotted. During this tabletop exercise, the following assumptions and artificialities apply generally. We will discuss more specific assumptions and artificialities that apply to the Subcommittee or Triage Committee once we split into the separate groups.

- The scenario is plausible, and events occur as they are presented.
- There are no wrong answers or solutions.
- There are no "hidden agendas" or trick questions.
- All participants receive information at the same time.
- Participants should assume that all jurisdictions and individual healthcare facilities in [State] have implemented their current pandemic plans, procedures, and protocols. In addition, assume that the [State] Department of Health has activated its Pandemic Influenza Plan and the [State] Department of Emergency Management (DEM) has activated its EOP. The existing [State] statutes and [State] regulations are currently in effect. The National Response Plan is also in effect. Be advised, however, that this is a planning and learning event specific to [hospital].

A Pandemic Unfolding: The Outbreak of H1N1 Influenza

Spring 2009

In late March 2009, Edgar Hernandez, a four year old boy living in Mexico, contracts H1N1. Approximately two weeks later, Maria Adela Gutierrez, a 39-year-old tax inspector, dies at a hospital in the southern Mexican state of Oaxaca. Shortly thereafter, on April 17, 2009, the CDC reports two H1N1 (swine flu) cases in children in southern California, and the H1N1 virus begins to spread throughout the United States. Fortunately, research indicates that Tamiflu (Oseltamivir) and Relenza (Zanamivir) prove to be effective antiviral drugs for use in patients suffering from the H1N1 virus.

On June 11, 2009, WHO announces that we are now in a global pandemic. As of this date, the H1N1 virus that started in Mexico has spread to 76 countries.

Summer 2009

While the flu season in the northern hemisphere persists at a moderate rate, the southern hemisphere is at the peak of its winter flu season. By late July, New Zealand is reporting its worst flu season in more than a decade. Research published in a New Zealand Medical Journal indicates that the reproduction rate is 1.96, meaning that up to 79% of the population could potentially contract H1N1 over the course of the pandemic. Australia is reporting similar numbers. Over the summer months, the news media begins referring to Melbourne as the "swine flu capital of the world" because it is the city with the highest concentration of cases. More than 16,000 people have been infected to date and more than 40 people have died in Australia since H1N1 first reached its shores.

Early August 2009

The New South Wales Department of Health issues a report that certain cases of the H1N1 virus are showing signs of resistance to antiviral treatments such as oseltamivir (Tamiflu), zanamivir (Relenza), amantadine, and rimantadine. The report indicates that at least one-third of the new cases are likely to be drug resistant. Public health officials in Sacramento determine that a case of the drug-resistant H1N1 virus entered the United States through an international flight returning to LAX from Australia. The woman, in her first trimester of pregnancy, dies at Cedars-Sinai Medical Center in Los Angeles, CA. More aggressive H1N1 cases begin to appear slowly throughout the United States, including [State].

Patients in far greater numbers than had been seen in the spring and early summer from throughout [State] are presenting to hospitals and physician's offices with the H1N1 virus. For many of those people, Tamiflu and Relenza are ineffective at curbing their symptoms, even when taken within two days of becoming symptomatic. The cable news outlets are broadcasting stories about the "emergence of drug resistant swine flu" and the public is beginning to panic.

Initial Declaration of a State of Emergency

Governor [Name] declares a State of Emergency in [State], which includes the mandatory closure of all day care facilities and summer camps. Summer classes at [State] colleges and universities have been cancelled. The local media is broadcasting that it is likely that public schools may not be open as usual after Labor Day. Parents begin to worry about how they can continue to work with nowhere to send their children during the day.

The Governor's declaration does not include any health care specific provisions, however, the State Health Commissioner, Dr. [Name], issues guidelines to encourage social distancing based on guidance from the CDC. These guidelines recommend that residents of [State] avoid congregating in groups, not attend local gatherings, and maintain a distance of three feet from others.

Additional active and sentinel surveillance indicates a rapid increase in patients exhibiting influenza-like illness (ILI) across [State]. The speed with which the virus has spread in [State] is unprecedented. Outbreaks have been reported in a variety of institutions, including state correctional facilities, local jails, long term care facilities, and assisted living facilities.

Antivirals, which have shown very limited effectiveness on the mutated H1N1 virus, are still being given to those at the highest risk of complications and death. Due to the drug's limited availability and effectiveness, they are not being provided for prophylaxis.

High absenteeism rates have already been observed in all areas of the public and private sector and are expected to worsen over the coming days and weeks. Transportation Security Administration (TSA) screeners are already largely unavailable at airports, causing huge delays in the air transportation sector. The ground transportation sector is experiencing similar absenteeism rates resulting in interruptions in the supply chains of many critical businesses, including utility supply companies, grocery stores, and healthcare facilities. Shortages in the public works and energy infrastructure are likely to result in the loss of critical services.

Families are distraught and outraged as some victims die within a matter of a few days. Funeral homes expect to be overwhelmed by the numbers of fatalities, and will not be able to keep up with the need for services in the very near future. Police, fire, and EMS are reporting an inability to respond to calls because of increasing volume and staff absenteeism, and prisons and local jails are severely understaffed, creating concern about the ability to handle the inmate population.

Hospitals are being overwhelmed by the number of people presenting with influenza. Many hospitals have reached their surge capacity and are reporting absenteeism rates of 25-30% due to illness, caring for family members, or simply fearing for their safety. Phones at area hospitals, health clinics, and health departments are ringing constantly. More people are seeking medical care than actually need it because of fears about the new resistant strain of the virus. Citizens are demanding a vaccine, but do not understand that a vaccine specific to the pandemic strain is not available, and will not be for at least another month. People are confused because a vaccine for the regular, seasonal flu is available.

[Hospital] activates its Emergency Operations Plan, including the Facility Surge Capacity Response Plan and the Pandemic Flu Response for the Emergency Department, as well as its Emergency Operations Centers which houses Incident Command.

Week 2
Pursuant to its surge plan, [hospital] has cancelled all elective surgeries where the patient will require an inpatient bed post-op and opened all units for patient care. Despite these efforts, demand for inpatient admissions is still exceeding supply of beds. As a result, [hospital] activates its *Critical Resource Shortage Response Plan* (CRSRP) in response to a shortage of inpatient beds and an imminent shortage of Registered Respiratory Therapists (RRTs).

At this point in the pandemic, up to 6,700 people in the region have been hospitalized as a result of the pandemic. Of those hospitalized, approximately 7% require a ventilator to assist them with breathing. The death rate appears to be about 2.1%, much like the 1918-pandemic.

Incident Command has declared a Level 1 CRSE for inpatient beds. This means that patients over the age of 90 are no longer eligible for inpatient beds. [Hospital] has activated its Triage Officers and Triage Committees to make allocation decisions for inpatient beds. In the ED, the Triage Officer is evaluating on average 50 patients per shift to determine if they require inpatient admission. The Triage Committee is working diligently in 12 hour shifts to evaluate new patients presenting in the ED and to re-evaluate all inpatients.

The Med/Surg unit, the Stepdown unit, and the Critical Care unit are filled to capacity. Due to overwhelming demand for hospital care, [hospital] has activated its Self Care Pod and its Supportive Care Pod as part of the CRSRP activation. These two additional pods are expected to fill to capacity rapidly. Currently, the Med/Surg nurse-to-patient ratio is 1:8. The Stepdown nurse-to-patient ratio is 1:6. The Critical Care nurse-to-patient ratio is 1:3. The nurses caring for patients are being stretched to their limits. Due to high absenteeism among nurses, these already high nurse-to-patient ratios may need to increase in the near future.

[Hospital] cannot transfer patients to any other facility, including the local children's hospital, because these facilities are already at their surge capacity. [Hospital] has entered into an agreement with the children's hospital to treat children weighing approximately 100 pounds or more during the pandemic so that the children's hospital can focus its attention on younger, smaller children who are being heavily impacted by the H1N1 virus.

In addition, [hospital] is experiencing high absenteeism among RRTs. Approximately five RRTs have called in sick just today. Despite having 45 patients currently on vents, [hospital] is maintaining its non-CRSE standard of care. Reports from the last two shifts are indicating that it may be necessary to activate Modification A in the near future. Incident Command is monitoring this situation closely.

At this time, alternate care facilities to provide hydration and minimal care have been opened in the region.

Week 4

The situation with the H1N1 pandemic continues to worsen. As the primary trauma center in the region, [hospital] is seeing a large number of pandemic influenza patients but is also continuing to receive numerous trauma victims and other patients requiring tertiary care as during non-pandemic times. [Hospital] has been struggling to provide its usual high standard of care to patients. All elective procedures where the patient will require an inpatient bed post-op remain cancelled. [Hospital] is discouraging any type of surgery or diagnostic testing unless such procedures are "critical."

Incident Command has declared a Level 2 CRSE for beds. This means that patients over the age of 85 are no longer eligible for inpatient beds. Modification A of the "Protocol to Alter RRT Workflow During a CRSE" has been activated. At this point, close to 90% of patients in the ICU require ventilators. Because of this, many high acuity patients who would otherwise be in ICU are in Stepdown, and some are even in Med/Surg. Like the rest of the hospital, the Self-Care and Supportive units are full.

Both the Triage Officers and Triage Committee members are visibly fatigued. Some of the members of the Triage Committee have received threats against them from angry family members who are distraught that their loved ones are not being admitted or not receiving the level of care they need. Despite these threats, the Triage Officers and members of the Triage Committee are diligently performing their designated tasks.

Staffing ratios at [hospital] are becoming progressively worse. Currently, the Med/Surg nurse-to-patient ratio is 1:12. The Stepdown nurse-to-patient ratio is 1:8. The Critical Care nurse-to-patient ratio is 1:4. Due to staffing shortages, [hospital] is asking family members to provide some types of care (e.g., helping to transport patients; assisting in feeding and using the restroom). In addition to staffing shortages, [hospital] is preparing for shortages of other resources like insulin, catheters, and epinephrine. Due to high absenteeism in the shipping and delivery industry, [hospital] has been warned that it will be unable to receive additional shipments of supplies in the near future.

At this point all hydration centers and other alternate care facilities in the region have closed due to staffing and supply shortages.

Week 7 - Current Situation

The situation with the H1N1 pandemic is still worsening. Incident Command has declared a Level 3 CRSE for beds. This means that patients over the age of 80 are no longer eligible for inpatient beds.

At this point in the pandemic, the hospitals in the region are admitting between 8000-9000 influenza patients a week. On a daily basis, [hospital's] ED is seeing on average 210 patients with an admission rate of 29%.

Triage Officers and Triage Committees continue to work diligently. Two physicians and three nurses have refused to work on the Triage Committee for various reasons including fear for

personal safety and mental distress. Incident Command is currently identifying new individuals to fill these roles, however, they are concerned that such individuals have not received adequate training on the CRSRP and the expectations of them as a member of the Triage Committee.

Staffing ratios at [hospital] are becoming progressively worse. Currently, the Med/Surg nurse-to-patient ratio is 1:16. The Stepdown nurse-to-patient ratio is 1:10. The Critical Care RN-to-patient ratio is 1:7. [Hospital] has, on average, 72 patients on ventilators. The Respiratory Department is continuing to provide ventilator care according to Modification A of the "Protocol to Alter RRT Workflow During a CRSE." Per shift, RRTs are being assigned 44 procedure counts. RRTs report that they will soon be forced to recommend the activation of Modification B unless something dramatic happens.

Ad Hoc Protocol Development Subcommittee

Introduction

Within the last few hours, Incident Command has received status reports from all hospital departments, including Respiratory Therapy and Critical Care.

The Respiratory Therapy report contained many of the same troubling elements that reports submitted over the past 36 hours have contained. The Registered Respiratory Therapists (RRTs) are reporting that they will soon recommend activation of Modification B in the "Protocol to Modify RRT Workflow During a Critical Resource Shortage Event." With 72 patients on ventilators and, on average, 8 RRTs per shift, each RRT is averaging 44 procedure counts per shift. The RRTs have maintained this level of activity for the past 36 hours, but will not be able to do so for much longer.

The Critical Care report included concerns from the Critical Care nurse managers that they are having difficulties caring for all of the patients in the units with dramatically reduced staffing. Each ICU is full but only has, on average, 2 RNs for the entire unit. These RNs are supervising various other care partners in a team nursing model. The younger and less experienced RNs have expressed concerns about this model. Some have requested that they be transferred to stepdown units because they do not believe that they have the experience necessary to supervise a care team. Included in the report is a statement that if there comes a time when there are even fewer Critical Care RNs, they may not be able to respond to out of unit MRT calls without risking the health and safety of Critical Care patients. At this point, the Critical Care nurse managers do not know how they will staff two or more concurrent MRT calls.

Incident Command has evaluated the reports and is concerned about [hospital's] ability to continue responding to MRT calls and Code Blues according to current policies and procedures. After evaluating the situation, the Incident Commander has decided to activate an Ad Hoc Protocol Development Subcommittee (Subcommittee) to develop an Ad Hoc Protocol to address the imminent shortage of personnel to staff MRTs and Code Teams. The Incident Commander is activating the Subcommittee in accordance with [hospital's] "Infrastructure for the Development of Ad Hoc Protocols During a Critical Resource Shortage Event," which is contained in its *Critical Resource Shortage Response Plan*. The Incident Commander made this decision based in part on the following:

o MRT and Code Teams are a critical resource at [hospital].
o Over the last four weeks, the average daily number of out of unit MRT calls has steadily increased from less than one per day to four per day. This is attributed to the fact that higher acuity patients are residing outside of the ICU since the ICU is used primarily for patients requiring ventilator support.
o The number of out of unit codes is also increasing for the same reasons. Currently, [hospital] is averaging about 3 Code Blues per day.
o For the last week, the only individuals on the MRT Team who have been responding to MRT calls were an RRT and a Critical Care RN. An RRT, a RN, IV team nurse, medical resident and representative from anesthesia are still responding to Code

Blues, but this is becoming more difficult as absenteeism rates increase and the number of codes increases. A Chaplain attends codes when he is available.

TTX Role

You have been asked by Incident Command to be a member of the Subcommittee responsible for developing an Ad Hoc Protocol to address the impending shortage of MRT and Code Team personnel. For these purposes, a Protocol is a plan created to respond to a Critical Resource Shortage Event (CRSE), pursuant to which delivery of care provided with the scarce critical resource is modified or the scarce critical resource is allocated to accomplish the greatest good for the greatest number. A CRSE in this case means that personnel for MRT and Code Teams has been depleted, and all alternate methods of obtaining such personnel have been exhausted, such that remaining personnel will not allow [hospital] to continue responding to MRT and Code calls in accordance with its policies and procedures.

The Subcommittee has been given the following instructions:

- o The Subcommittee must complete an Ad Hoc Protocol to address a shortage of MRT and Code Team personnel within 3 hours and 45 minutes.
- o The Subcommittee must use the ethical framework that has been adopted by [hospital] for responding to a CRSE. This ethical framework requires that the Protocol developed by the Subcommittee be designed to do the greatest good for the greatest number by saving the most number of lives. The Protocol must also be supported by the following ethical principles:

High Priority	Medium Priority	Low Priority
• Protection of the public from harm	• Proportionality	• Individual Liberty
• Duty to provide care	• Reciprocity	• Privacy
• Trust	• Reasonable	• Equity
• Stewardship	• Accountable	• Solidarity
	• Responsive	• Open and Transparent

- o The Subcommittee must use the operational infrastructure that has been adopted by [hospital] for responding to a CRSE, including the use of Triage Officers and Triage Committees.
- o The Subcommittee should consider options for modifying the composition and use of MRT and Code Teams first. If modification is not appropriate or feasible, the Subcomittee should consider options for allocating MRT and Codes Teams, including the use of inclusion, exclusion and prioritization criteria.
- o The Protocol must be easy to implement.
- o The Subcommittee should consider developing tiers in the Protocol to respond to a progressively more severe shortage of MRT and Code Team personnel.
- o The Subcommittee should consider options for communicating the final Protocol to applicable audiences.

o The Subcommittee should consider any metrics that can be used to determine when the CRSE of MRT and Code Team personnel has ended and how this will be communicated.

Materials

- *Critical Resource Shortage Response Plan* (CRSRP): Using the *Planning Guide,* [hospital] developed a CRSRP which includes the following materials:

  o Ethical Framework: [Hospital] developed an ethical framework which serves as the foundation for the other portions of the CRSRP. The ethical framework ranks the priority of ethical principles and identifies [hospital's] ethical goal of doing the greatest good for the greatest number, defined as saving the greatest number of lives. The ranked ethical principles and the identified goal should guide your development of an Ad Hoc Protocol to address a shortage of MRT and Code Team personnel.

  o Operational Framework: The CRSRP includes a basic operational framework and infrastructure on which specific protocols will be built. The operational framework document provides information on how protocols are activated, maintained, and terminated. It also discusses the process for making allocation decisions as well as issues regarding non-compliant providers, alternative resources and palliative care, and the process for communicating information.

  o Bed Protocol: The document titled "Protocol for the Allocation of Inpatient Beds at [Hospital] during a Critical Resource Shortage Event" was developed as part of [hospital's] CRSRP. This document provides the complete protocol for responding to a shortage of inpatient beds during a CRSE.

  o RRT Workflow Protocol: The document titled "Protocol to Modify RRT Workflow during a Critical Resource Shortage Event" was developed as part of [hospital's] CRSRP. This document provides the complete protocol for responding to a shortage of Registered Respiratory Therapists (RRTs).

  o Ad Hoc Protocol: The document titled "Infrastructure for the Development of Ad Hoc Protocols during a Critical Resource Shortage Event" was developed as part of [hospital's] CRSRP. This document provides guidance on how to develop and activate an Ad Hoc Protocol.

- Medical Response Team brochure: This brochure developed by [hospital] provides a quick overview of the criteria used to determine when an MRT should be called and includes a flow chart showing the MRT process.

Assumptions and Artificialities

- [Hospital] cannot supplement its staffing. Those who are at work are the only ones who are available.
- Patients cannot be transferred to other units without the approval of the Triage Committee.
- The high level of MRT and Code Team activity will continue for at least two weeks given the high acuity of patients.

TRIAGE COMMITTEE

Introduction

The ethical goal of [hospital] during a CRSE is to allocate resources to do the greatest good for the greatest number by saving the most lives. Allocation decisions should be made to further this goal.   The "Protocol for the Allocation of Inpatient Beds at [Hospital] During a CRSE" ("Protocol"), part of the larger [hospital's] *Critical Resource Shortage Response Plan*, was developed as a process for achieving this ethical goal in regards to the allocation of inpatient beds. This Protocol was activated during Week 1.

This Protocol includes the activation of a central decision making construct through the use of Triage Officers and a Triage Committee, consistent with [hospital's] operational framework. This Triage Committee is better suited than individual attending physicians to make ethical and consistent allocation decisions because they can maintain awareness of the overall supply and demand situation at [hospital] when evaluating individual patients for inpatient admission.

ED Process

Patients will receive initial stabilization in the emergency department (ED). One ED physician is designated as the Triage Officer for each shift. As each ED Attending treats their patients and determines they require admission, notification is sent to the Triage Officer. The Triage Officer then evaluates these patients and determines whether they qualify for inpatient admission based on [hospital's] inclusion and exclusion criteria. The Triage Officer assigns the patient to one of the three following categories:

- ♦ Recommend admission: if patient meets at least one of the inclusion criteria and does not meet any of the exclusion criteria
- ♦ Evaluate for alternative care options: if the patient meets at least one of the exclusion criteria or does not meet any of the inclusion criteria
- ♦ Discharge home: if hospital admission is not medically necessary

For those patients with recommended admission, an immediate notification through [hospital's] electronic medical records system (if available) or phone/pager is sent to you as the Triage Committee to evaluate this patient for inpatient admission.

Inpatient Process

Once a patient is admitted, they are re-evaluated on a regular basis by the Triage Committee to determine whether they should remain at their current level of care. Triage Officers are used to help gather the information needed by the Triage Committee to re-evaluate inpatients. On each shift, one physician is designated as the Triage Officer for each unit or group of units (e.g., ICUs).   Each unit has designated a hospitalist, intensivist or other physician specialist, as appropriate for their patient population. The Triage Officer evaluates each patient in the units to which he has been assigned every 12 hours and inputs the metrics listed below into [hospital's]

electronic medical records system. This information is used to populate the Inpatient Workbench Report which is delivered to the Triage Committee for evaluation.

- ♦ Patient's General Status Trend: better, same, or worse
- ♦ Ambulatory vs. non-ambulatory
- ♦ Does patient meet any exclusion criteria?: yes or no
- ♦ Does patient continue to meet inclusion criteria?: yes or no
- ♦ Re-evaluation period by Triage Officer (if patient requires a shorter or longer re-evaluation period than the standard 12 hours)
- ♦ Expected discharge date
- ♦ Recommendation for patient disposition:
  - o Immediate discharge for improved or futile patients. (Note: These patients require no further evaluation by the Triage Committee.)
  - o Transfer to a higher level of care is recommended
  - o Transfer to a lower level of care is acceptable if required by CRSE
  - o Remain same

Triage Committee Process

One Triage Committee per 12-hour shift is dedicated to evaluating ED patients for initial admission and inpatients for continued admission and making necessary admission allocation decisions. There are eight separate Triage Committees to allow for rotation and time off for the members of the Triage Committees. Each Triage Committee is comprised of two physicians (ideally one medical and one surgical), two nurses (preferably at least one of which is a nurse manager), and one clinical administration representative. Each Triage Committee includes at least one member who has been trained on critical resource shortage response and can serve as the facilitator for the group. Additionally, each Triage Committee should identify one member to keep the Committee on track regarding their ethical values during discussion. A support staff individual is also assigned to work with each Triage Committee to record decisions made by the committee and coordinate communication with the departments regarding admission, transfer, and discharge of patients. Even though ethics, chaplaincy and risk management are not directly represented on each Triage Committee, they are available for consult as needed.

Every 12 hour(s), the Triage Committee pulls the current Inpatient Workbench Report from [hospital's] electronic medical records system and evaluates the patient disposition recommendations made by the Triage Officers. The Triage Committee determines a disposition for each inpatient listed on the Inpatient Workbench Report based on the prioritization criteria. This disposition will identify: (i) whether the patient should remain in their current care pod; (ii) whether they should be transferred to another care pod, and if so, which pod; or (iii) whether the patient should be discharged.

The Triage Committee should first evaluate those patients designated as "worse" by the Triage Officers to determine if they require a higher level of care. Then the Triage Committee should evaluate those patients designated as "better" by the Triage Officers to determine if they are well enough to transfer to a lower level of care or be discharged home. Finally, the Triage Committee

should evaluate those patients designated as "same" by the Triage Officers to verify they are really maintaining their current status and do not warrant an intra-hospital transfer or discharge.

As the ED Triage Officer makes admission recommendations for ED patients, the Triage Committee receives immediate notification. The Triage Committee will evaluate each ED patient as they receive the notification and determine the patient's disposition based on the prioritization criteria. This disposition will identify: (i) whether the patient should be admitted, and if so, to which care pod; or (ii) whether the patient should be evaluated for alternative care options; or (iii) whether the patient should be discharged.

Admit, transfer, and discharge orders are sent out from the Triage Committee as decisions are made. Decisions made by the Triage Committee are final. Non-compliance by any physician or staff member of [hospital] will result in appropriate sanctions as determined by [hospital] Administration.

TTX Role

You are the current Inpatient Bed Triage Committee and are in the ninth hour of your twelve hour shift. You have already dispositioned all of the patients indicated by the Triage Officers as "worse" and "better" as well as a number of ED patients that have been recommended for admission over the past eight hours.

At this point, you have 125 inpatients remaining on the workbench report that require a disposition decision before the end of your shift. ED patients will continue to be recommended for disposition and will be presented as these recommendations are made by the ED Triage Officer. You must make a disposition decision for every ED patient as they are presented.

Materials

- *Critical Resource Shortage Response Plan* (CRSRP): Using the *Planning Guide,* [hospital] developed a CRSRP which includes the following materials:

  o Ethical Framework: [Hospital] developed an ethical framework which serves as the foundation for the other portions of the CRSRP. The ethical framework ranks the priority of ethical principles and identifies [hospital's] ethical goal of doing the greatest good for the greatest number, defined as saving the greatest number of lives.

  o Operational Framework: The CRSRP includes a basic operational framework and infrastructure on which specific protocols will be built. The operational framework document provides information on how protocols are activated, maintained, and terminated. It also discusses the process for making allocation decisions as well as issues regarding non-compliant providers, alternative resources and palliative care, and the process for communicating information.

o Bed Protocol: The document titled "Protocol for the Allocation of Inpatient Beds at [Hospital] during a Critical Resource Shortage Event" was developed as part of [hospital's] *Critical Resource Shortage Response Plan.* This document provides the complete protocol for responding to a shortage of inpatient beds during a CRSE.

• Inpatient Workbench Report: The Inpatient Workbench Report is populated with all inpatients based on the re-evaluation timeframes determined by the Triage Officers during the last evaluation of the patient. This report is generated every 12 hours and given to the Triage Committee for evaluation. The Inpatient Workbench Report is intended to be the primary source of information for the Triage Committee when making disposition decisions.

• Inpatient Charts: Copies of the inpatient charts are available for each inpatient included on the Inpatient Workbench Report. These charts are intended to provide supplemental information as needed when making disposition decisions. These charts include only Patient H&P, Admission Notes, Consultation Notes, Provider Notes, Progress Notes, and Procedure Results and Notes.

• ED Workbench Report: The ED Patient Workbench Report is populated with all patients who have an admit recommendation from the Triage Officer in the ED. Patients are automatically and immediately added to this report once the Triage Officer recommends the admission. The Triage Committee receives an updated ED Workbench Report every time an ED patient is recommended for admission. The ED Workbench Report is intended to be the primary source of information for the Triage Committee when making disposition decisions.

• ED Patient Charts: Copies of the ED patient charts are available for each ED patient. These charts are intended to provide supplemental information as needed when making disposition decisions.

• Definition of Care Pods: As part of the Protocol, five care pods have been activated to provide varying levels of care to patients within [hospital]. This sheet provides a brief description of the type of care that is being provided within each care pod to assist the Triage Committee in determining where to disposition a patient.

• Patient Evaluation Criteria: As part of the Protocol, patient evaluation criteria is used to make disposition decisions. The Triage Officers will mainly use the inclusion and exclusion criteria when determining their recommendation to the Triage Committee. The Triage Committee should also evaluate a patient based on inclusion and exclusion criteria, but they will primarily use the prioritization criteria when comparing two or more patients for an inpatient bed.

- Disposition Decision Flow Sheet: This flow sheet will be used by the Triage Committee's support staff to record and communicate disposition decisions made by the Triage Committee.

- Bed Tracking Flip Charts: These flip charts will be used to keep track of how many beds are empty in each care pod throughout the exercise.

Assumptions and Artificialities

- All med/surg beds and stepdown beds are currently full.
- Five self care beds are currently available.
- Seven supportive care beds are currently available.
- Two ICU beds are currently available for patients who do not require ventilators.
- All of [hospital's] ventilators are currently in use.
- Patients on ventilators must be in the ICU.
- To admit a patient who needs a ventilator to the ICU, you must reallocate the ventilator from a current inpatient.
- Any ventilators used in the ED are for transport purposes only.
- After open beds are filled, the only way to admit an ED patient is to discharge another patient.
- For inpatients included on the Inpatient Workbench Report, the current location of the patient is based on the decision made by the last Triage Committee. You may disagree with that decision. If you disagree, you may move the patient, but to do so, you will likely have to move other patients as well.
- Within the past eight hours, you have made a disposition decision for every other inpatient and a number of ED patients. These patients are not eligible for review again until the next Triage Committee shift in four hours.
- You have already addressed all those inpatients designated by their Triage Officer as "worse" and "better." All remaining patients have been designated by their Triage Officer as "same."
- The vast majority of flu patients have already been reviewed because they were mostly designated by a Triage Officer as either getting better or getting worse.
- The information included in the Inpatient Workbench Report has been pulled from standard fields in the inpatient chart. If certain fields are blank, then they were also blank in the inpatient chart.
- The Inpatient Workbench Report does not include all of the data elements identified in the Protocol. Assume that these data elements are not available due to a problem with [hospital's] electronic medical records system.

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