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Disaster Alternate Care Facilities:
The Old, The New & The Difficult

Emergency Preparedness – Standards of Care During Prolonged Health Emergencies

Connecticut Hospital Association
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Department of Emergency Medicine
Denver Health Medical Center
Surge Capacity

- Ability to manage a sudden, unexpected increase in patient volume that would otherwise severely challenge or exceed the current capacity of the health care system
  - Facility based
  - Community based
  - Extrinsic
Part of the Problem: Loss of Surge Capacity

- ED overcrowding
- Inpatient bed loss: 38,000 (4.4%) between 1996 and 2000
- ICU capacity loss: 20% between 1995 and 2001
- Most health care is in the private sector not under governmental or municipal authority
Facility Based Surge Capacity

- Expedited discharges
- Adaptation of existing capacity
  - Single rooms become doubles
  - Establish internal alternate care sites
    - Classrooms
    - Offices
    - Lobbies
    - Hallways
DHMC Disaster Contingency
Discharge Drill – 1/05

- Services participating: Internal Medicine, Surgery, Pediatrics
- 26% of patients could be transferred off-site to lower care facility (alternate care facility)
- 28% of patients could be discharged home
- 14% could be transferred from ICU to ward
- Patients transferred with Problem List and Kardex
Community Based Surge Capacity: Alternate Care Facilities

- Requires close planning and cooperation amongst diverse groups who have traditionally not played together
  - Hospitals
  - Offices of Emergency Management
  - Regional planners
  - State Department of Health
  - EMS
  - Law Enforcement
Some of the Current Jargon

- MEMS: Modular Emergency Medical System
  - Developed under auspices of the Department of Defense
  - An expanded “system” of care
  - A framework for a massive medical response
  - Never implemented
Some of the Current Jargon

- Alternate Care Facilities
  - A non-hospital based location where non-ambulatory (and ambulatory) care can be provided
  - AKA:
    - Acute Care Center (ACC)
    - Alternative Care Center
    - Alternative Care Site
    - Alternate Treatment Sites (ATS)
    - Alternate Care Sites (ACS)
    - Alternate Treatment Facility (ATF)
    - Alternate Medical Treatment Sites (AMTS)
    - Alternate Treatment Centers (ATC)
    - Temporary Alternative Healthcare Facilities (TAHCF)
Where Have We Been?
Hospital Reserve Disaster Inventory

- Developed in 1950’s-1960’s
- Designed to deal with trauma/nuclear victims
- Developed by US Dept of HEW
- Hospital-based storage
- Included rotated pharmacy stock items
Packaged Disaster Hospitals

- Developed in 1950’s-1960’s
- Designed to deal with trauma/nuclear victims
- Developed by US Civil Defense Agency & Dept of HEW
- 2500 deployed
- Modularized for 50, 100, 200 bed units
- 45,000 pounds; 7500 cubic feet
Packaged Disaster Hospitals

- Last one assembled in 1962
- Adapted from Mobile Army Surgical Hospital (MASH)
- Community or hospital-based storage
Packaged Disaster Hospital: Multiple Units

- Pharmacy
- Hospital supplies / equipment
- Surgical supplies / equipment
- IV solutions / supplies
- Dental supplies
- X-ray
- Records/office supplies
- Water supplies
- Electrical supplies/equipment
- Maintenance / housekeeping supplies
- Limited oxygen support
Packaged Disaster Hospital
Packaged Disaster Hospitals

- Congress refused to supply funds needed to maintain them in 1972
- Declared surplus in 1973
- Dismantled over the 1970’s-1980’s
- Many sold for $1
The Re-Emergence of a Concept

- Medical Armory (Medical Cache)
  - Think of the National Guard Armory

- Driving Forces:
  - Loss of institutional flexibility
    - “Just-In-Time” Everything
  - Loss of physical surge capacity
    - Denver has 1000 fewer physical beds that it did 10 years ago
The Re-Emergence of a Concept: Alternate Care Facilities

- Issues:
  - Augmentation vs Alternate Facility?
  - Inclusion of actual structure / Physical Space
  - Cost
  - Storage
  - Ownership
  - Organizational Structure
  - Staffing: Medical/Ancillary
  - Supplies/Equipment
  - Pharmaceuticals
  - Support (Nutrition, mental health, etc)
  - Other resources
  - Level of care provided?
Level I Cache: Hospital Augmentation

- Bare-bones approach
- Physical increase of 50 beds
- Would rely heavily on hospital supplies
- Stored in a single trailer
- About $20,000
- Within the realm of institutional ownership
- Readily mobile - but needs vehicle
Level I Cache: Hospital Augmentation

- Trailer
- Cots
- Linens
- IV poles
- Glove, gowns, masks
- BP cuffs
- Stethoscopes
Used During Katrina Evacuee Relief
Level II Cache: Regional Alternate Care Facility (ACF)

- Significantly more robust in terms of supplies
- Designed by one of our partners, Colorado Department of Public Health and Environment
Level II Cache: Regional Alternate Care Facility

- Designed for initial support of 500 patients
  - Per HRSA recommendations of 500 patient surge per 1,000,000 population
  - Modular packaging for units of 50-100 pts
- Regionally located and stored
- Trailer-based for mobility
- Has been implemented
- Approximate price less than $100,000 per copy
Level II: Level I Plus:

- Ambu bags
- Bed pans / Urinals
- Medical ID bracelets
- Chairs
- Cribs
- Emesis basins
- Forms for documentation
- IV sets
- Oxygen masks
- Ice packs
- Pillows
- Privacy screens
- Soap
- Tables
- Duct tape
- Adhesive tape
- Thermometer strips
- Tongue depressors
- (Still No Drugs)
Level III Cache: Comprehensive Alternate Care Facility

- Adapted from work done by US Army Soldier and Biological Chemical Command
- 50 Patient modules
- Most robust model
- Closest to supporting non-disaster level of care, but still limited
- More extensive equipment support
Work at the Federal Level

- DHHS: Federal Medical Stations (FMS)
  - 250 beds in 50 bed units
  - Quarantine or lower level of care
  - For use in existing structures
  - Multiple copies to be strategically placed
  - Owned and operated by the federal government
  - Operational in 2005
  - Used during Katrina, Rita & subsequent disasters
### Basic Concept: HHS Federal Medical Stations

#### “PHS-CS” 250 Bed Module

#### Configuration

<table>
<thead>
<tr>
<th>PHS-CS Base Support With Quarantine</th>
<th>PHS-CS Treatment</th>
<th>PHS-CS Pharmaceutical</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Primary Care</td>
<td>• Non-Acute Treatment</td>
<td>• Special Needs</td>
</tr>
<tr>
<td>• Administration</td>
<td>• Pharmaceutical</td>
<td>• Special Medications</td>
</tr>
<tr>
<td>• Support</td>
<td>• Prophylaxis</td>
<td></td>
</tr>
<tr>
<td>• Feeding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Quarantine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Beds(50)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Housekeeping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• First Aid Equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Pediatric Care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Adult Care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Personal Protective Equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Beds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Bedding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Bedside Equipment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Station Layout

- Patient Wash Area
- Latrine Area
- Feeding Area
- Waiting Area
- Biotech Area: 100 sq ft
- Treatment Area
- Pharmacy
- Morgue: 100 sq ft
- Main Power Distribution Box
- House Support: 700 sq ft
- House Administration: 194 sq ft
- Admin Support: 300 sq ft
- Medical Support
- Admin Supply Pallet
- Medical Support Curtains 2x7
- Treatment Isolated Power
- Admissions
- Administration & Admission 194 sq ft
- Curtains
- Pharmacist
- Ticket System
- Tri-Fold Litter Aid Pack
- Staging Area
- To Generator

Dimensions:
- 275'-0"
- 126'-0"
House Support Area

- The House Support Area will be used to store cleaning supplies for the CS custodians.
- It will be staffed by 2 full-time and 1 part-time custodians.
- The Medical Logisician will manage the custodian staff and develop the cleaning schedule.

Medical Support Area

- The Medical Support Area will be staffed with 1 Medical Logistics and 1 Medical Supply Technicians who will provide 24-hour coverage.
- The Medical Support Area will be responsible for requisitioning and Distributing all supplies within the Contingency Station (CS).
- The Medical Logisician will develop processes for the CS to request and receive supplies.
- Specific forms will be used by each CS unit to request item(s) and place orders for supplies.
Additional Work at the Federal Level

- DHS: Critical care unit
  - Contains ED/OR/ICU
  - Single copy implemented
  - No sustaining funding

- Specialty care units
  - Not yet implemented
AHRQ Task Order

- Revise Alternate Care Facility (ACF) Site Selection Tool
  - Expert opinion
  - Experience from Katrina/Rita ACF’s
- Development of ACF Facility Operations Template (Concepts of Operations)
- Development of ACF staffing guidelines
- Development of hospital “Early Discharge / Transfer Algorithm”
- Presentation of prototype lists of supplies and equipment for an ACF
ACF Issues and Decision Points

- “Ownership”, command and control
  - HICS is a good starting structure
- Who decides to open an ACF?
- Scope of care to be delivered?
  - Offloaded hospital patients
  - Primary victim care
  - Nursing home replacement
  - Ambulatory chronic care / shelter
ACF Issues and Decision Points

- Operational support
  - Meals
  - Sanitary needs
  - Infrastructure
- Documentation of care
- Security
ACF Issues and Decision Points

- Communications
- Relations with EMS
- Rules/policies for operation
- Exit strategy
- Exercising the plan
Some ACF Site Issues:

- Private sites vs Public sites
- Who can grant permission to use?
- Need for decontamination after use to restore to original function
Possible Alternative Care Facilities

Hotel

Stadium

Recreation Center

School

Church
Potential Non-Hospital Facilities

- Aircraft hangers
- Churches
- Community/recreation centers
- Convalescent care facilities
- Fairgrounds
- Government buildings
- Hotels/motels
- Meeting Halls
- Military facilities

- National Guard armories
- Same day surgical centers/clinics
- Schools
- Sports Facilities/stadiums
- Trailers/tents (military/other)
- Shuttered Hospitals
- Detention Facilities

- Consider potential previous use obligations
### Factors to Weigh in Selection of an Alternative Care Facility

- Ability to lock down facility
- Adequate building security personnel
- Adequate lighting
- Air conditioning
- Area for equipment storage
- Biohazard & other waste disposal
- Communications
- Door sizes
- Electrical power (backup)
- Family Areas
- Floor & walls
- Food supply/prep area

- Heating
- Lab/specimen handling area
- Laundry
- Loading Dock
- Mortuary holding area
- Oxygen delivery capability
- Parking for staff/visitors
- Patient decon areas
- Pharmacy areas
- Toilet facilities/showers (#)
- Two-way radio capability
- Water
- Wired for IT and Internet Access
Factors Categorized Into:

- Infrastructure
- Total Space and Layout
- Utilities
- Communication
- Other Services
### Alternative Medical Care Selection Matrix

**Infrastructure**

- Door sizes adequate for gurneys: 5
- Floors
- Loading Dock
- Parking for staff and visitors
- Roof
- Toilet facilities/showers (\#)
- Ventilation
- Walls

**Total Space and Layout**

- Auxiliary spaces (Rx, counselors, chapel)
- Equipment/supply storage area
- Family Area
<table>
<thead>
<tr>
<th>Rating System</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 = Equal to or same as hospital.</td>
</tr>
<tr>
<td>4 = Similar to that of a hospital, but has SOME limitations (i.e. quantity/condition).</td>
</tr>
<tr>
<td>3 = Similar to that of a hospital, but has some MAJOR limitations (i.e. quantity/condition).</td>
</tr>
<tr>
<td>2 = Not similar to that of a hospital, would take modifications to provide.</td>
</tr>
<tr>
<td>1 = Not similar to that of a hospital, would take MAJOR modifications to provide.</td>
</tr>
<tr>
<td>0 = Does not exist in this facility or is not applicable to this event.</td>
</tr>
<tr>
<td>Category</td>
</tr>
<tr>
<td>--------------------------------</td>
</tr>
<tr>
<td>Lab specimen handling area</td>
</tr>
<tr>
<td>Mortuary holding area</td>
</tr>
<tr>
<td>Patient decontamination areas</td>
</tr>
<tr>
<td>Pharmacy area</td>
</tr>
<tr>
<td>Staff areas</td>
</tr>
<tr>
<td>Utilities</td>
</tr>
<tr>
<td>Air Conditioning</td>
</tr>
<tr>
<td>Electrical power (backup?)</td>
</tr>
<tr>
<td>Heating</td>
</tr>
<tr>
<td>Lighting</td>
</tr>
<tr>
<td>Refrigeration</td>
</tr>
<tr>
<td>Water (hot?)</td>
</tr>
<tr>
<td>Communication</td>
</tr>
<tr>
<td>Communication (# phones, local/long distance, intercom)</td>
</tr>
<tr>
<td>Two-way radio capability to main facility</td>
</tr>
<tr>
<td>Wired for IT and Internet Access</td>
</tr>
</tbody>
</table>
### Original ACF Selection Tool - 2004

<table>
<thead>
<tr>
<th>Wired for IT and Internet Access</th>
<th>Other Services</th>
<th>Ability to lock down facility</th>
<th>Accessibility/proximity to public transportation</th>
<th>Biohazard &amp; other waste disposal</th>
<th>Laundry</th>
<th>Ownership/other uses during disaster</th>
<th>Oxygen delivery capability</th>
<th>Proximity to main hospital</th>
<th>Total Rating/Ranking (Largest # indicates best site)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 = Equal to or same as a hospital</td>
<td>4 = Similar to that of a hospital, but has SOME limitations (i.e. quantity/condition)</td>
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<td>1 = Not similar to that of a hospital, would take MAJOR modifications to provide</td>
<td>0 = Does not exist in this..</td>
<td>5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td>
</tr>
</tbody>
</table>

51
Infrastructure:
- Parking area lighting
- Elevators
- Material handling equipment
- Adequate ambulance/bus access
- Split out showers
- Generators/Backup power
- Helipad/LZ
- ADA accessible
- Hand washing stations
- Ventilation/HVAC
ACF Site Selection Tool Additions

- **Total Space and Layout:**
  - Family waiting area
  - Patient isolation area
  - Pharmacy security
  - Service animal/Pet area

- **Utilities:**
  - Lights controllable for sleeping
  - Video monitoring
  - Alarm systems
ACF Site Selection Tool Additions

- **Communication:**
  - Overhead paging
  - WiFi access
  - Available computers for staff use

- **Other Services:**
  - Environmental supplies/services
Augmented ACF Site Selection Tool

- Factors – by category
- “Necessity Level” option 0 – 5
  - Allows users to indicate importance of specific capabilities/factors
  - 0 – Not necessary
  - 3 – Desirable
  - 5 – Absolutely required
- Factor Scoring: 0-2
  - 0 – Not present
  - 1 – Not present but easily accommodated
  - 2 - Present
- “Weighted Ranking” automatically computed and summed by category and for entire facility
Augmented ACF Site Selection Tool

## Alternate Care Facility Site Selection Matrix

<table>
<thead>
<tr>
<th>Site Infrastructure</th>
<th>Total Space and Layout</th>
<th>Utilities</th>
<th>Communication</th>
<th>Other Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door sizes adequate for gurneys (46&quot;)</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>Floors (OK for wheeled stretchers)</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>Loading Dock</td>
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<td>0</td>
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<td>0</td>
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<tr>
<td>Material handling equipment</td>
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<td>0</td>
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<td>0</td>
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<tr>
<td>Parking for staff and visitors</td>
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<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>Parking area lighting</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Adequate ambulance/ bus access</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Adequate weather protection</td>
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<td>Toilet facilities</td>
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<td>Showers</td>
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<tr>
<td>Hand washing stations</td>
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<tr>
<td>ADA accessible</td>
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<td>0</td>
</tr>
<tr>
<td>Elevators</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Holpap/LZ</td>
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<td>0</td>
</tr>
<tr>
<td>Site infrastructure rating/ranking</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### ACF Name
- [ ] Hospital Decompression
- [ ] Ambulatory Care Center
- [ ] Outpatient Care
- [ ] Inpatient Care
- [ ] Chronic Care Center
- [ ] Shelter / Quarantine
- [ ] Critical Care
- [ ] Other (specify):

### Intended Use: (mark all that apply)

### Based upon initial evaluation, this could be used for:

### General Information:
- ACF Name:
- Address:
- Latitude:
- Contact Person:

### Total Square Feet: 0

### Patient Care Sq Ft: 0

### Weighted Rating

### Site Rating

### Rating

### Augmented ACF Site Selection Tool

### Total ACF Site Rating/Ranking: 0
# Augmented ACF Site Selection Tool - 1

**Alternate Care Facility Site Selection Matrix**

## General Information

**ACF Name:**

**Address:**

**Latitude:**

**Longitude:**

**Contact Person:**

**Total Square Feet:**

**Patient Care Sq Ft:**

<table>
<thead>
<tr>
<th>Necessity Level (1-5)</th>
<th>Site Rating</th>
<th>Weighted Rating</th>
<th>Site Rating</th>
<th>Weighted Rating</th>
<th>Site Rating</th>
<th>Weighted Rating</th>
<th>Site Rating</th>
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<th>Site Rating</th>
<th>Weighted Rating</th>
<th>Site Rating</th>
<th>Weighted Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>5: Required</td>
<td>2: Present</td>
<td>1: Reasonably Accommodated</td>
<td>0: Not Present</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>3: Desired</td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>0: Not Necessary</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Site Infrastructure

- **Door sizes adequate for gurneys (45")**
- **Auxiliary spaces (Rs, counselors, chapel)**
- **Equipment/support storage area**
- **Family waiting area**
- **Separate areas for isolation / Palliative Care**
- **Food supply and prepare area**
- **Lab specimen handling area**
- **Patient decontamination areas**

### Total Space and Layout

- **Air Conditioning/ Ventilation/HVAC**
- **Communication (W phones, local for emergency)**
- **Wired for IT and Internet Access**

### Utilities

- **Lighting controllable for sleeping**
- **Refrigeration**
- **Computers available for staff use**
- **Water (cold/hot)**

### Communication

- **Intercom / Overhead Paging**
- **Two-way radio capability to main facility**
- **Computers available for staff use**
- **Oxygen delivery capability**

### Other Services

- **Ability to lock down facility**
- **Accessibility / proximity to public transportation**
- **Dishwash & other waste disposal**
- **Environmental Compliance Services**

---

**Necessity Level:**

The Necessity Level can be a value from 0 to 5, with 5 being the highest/most important, and represents how necessary this factor is to this specific incident and facility.
## Augmented ACF Site Selection Tool - 2

<table>
<thead>
<tr>
<th></th>
<th>Adequate Weather Protection</th>
<th>Patient decontamination areas</th>
<th>Video Monitoring / Alarm systems</th>
<th>Proximity to main hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toilet facilities</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>5</td>
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<tr>
<td>Showers</td>
<td>5</td>
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<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Hand washing stations</td>
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<td>10</td>
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<td>ADA accessible</td>
<td>1</td>
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<td>1</td>
</tr>
<tr>
<td>Elevators</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Helipad/LZ</td>
<td>1</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>Fire protection safety and equipment</td>
<td>5</td>
<td>2</td>
<td>10</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site Infrastructure Rating/Ranking</th>
<th>18</th>
<th>68</th>
</tr>
</thead>
<tbody>
<tr>
<td>Space &amp; Layout Rating/Ranking</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>Utilities Rating/Ranking</td>
<td>10</td>
<td>46</td>
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<tr>
<td>Communication Rating/Ranking</td>
<td>5</td>
<td>18</td>
</tr>
<tr>
<td>Other Services Rating/Ranking</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total ACF Site Rating/Ranking:** 49 183
A facility and/or factor can be added as a new row to excel spreadsheet.
Augmented ACF Site Selection Tool - Instructions

Instructions for Use of Alternate Care Facility (ACF) Site Selection Tool

This tool is intended to assist institutions and communities in the selection of non-standard locations for the provision of medical care during times of markedly increased. This spreadsheet tool is constructed to allow the entry of data points for multiple facilities with the automated production of a summary which may be of help in comparing the suitability of different potential sites for a specific incident type.

For each potential site, begin by entering the general information in the top left-hand box. Latitude and longitude are requested in case of possible helicopter transfers or if the ACF is to be listed on a GIS system showing its location. The intended use(s) for the site should then be indicated by an “X” in the top-center box.

The actual characteristics of the potential ACF are divided into five categories: infrastructure, total space and layout, utilities, communication, and other services. Prior to entering site-specific data, the “Necessity Level” should be entered for each characteristic and for the specific incident type for which the facility is being considered. This value may range from 0 (not needed at all) to 5 (required/extremely important). This serves as a weighting factor for each characteristic. These values need be filled out only on the worksheet for “ACF Site 1”, as they are automatically propagated to the worksheets for the other sites.

After completing the “Necessity Level”, the Site Rating for the characteristic for a site may then be entered. For this value, a 2 implies that the characteristic is present, a 1, that it could be reasonably accommodated, a 0, that it is not present and not possible to supply. The spreadsheet will automatically compute a “Weighted Ranking” for each characteristic (Site Rating times “Necessity Level”).

The spreadsheet will automatically calculate a cumulative site ranking and weighted ranking for each category and for the ACF overall. The category and overall data are automatically placed on the “ACF Site Summary” worksheet, allowing quick overall comparison of up to 6 sites.

After entry of the data for each of the characteristics for the site, the user may then, based upon this initial evaluation, indicate the potential uses for the site by checking the appropriate boxes in top right-hand box.

Although the automatic calculation feature of this tool enhances its utility, the site selection tool may also be used in a manual or hard copy mode by printing out the basic site selection matrix

Notes:
1. Excel macros must be enabled for this tool to work correctly
2. This spreadsheet contains suggestions only and its design may be altered to include other desired characteristics. It should be noted, however, that this must be done with care and be done by an individual conversant in Excel and Visual Basic to preserve the automatic calculation feature.
### Augmented ACF Site Selection Tool

**Site Comparison Matrix**

**Alternate Care Facility Site Selection Matrix**

**Site Evaluation Summary**

<table>
<thead>
<tr>
<th>Site</th>
<th>Site Infrastructure</th>
<th>Space and Layout</th>
<th>Utilities</th>
<th>Communication</th>
<th>Other Services</th>
<th>Total ACF Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site 1</td>
<td>68</td>
<td>30</td>
<td>46</td>
<td>18</td>
<td>21</td>
<td>183</td>
</tr>
<tr>
<td>Site 2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Site 3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Site 4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Site 5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Site 6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Weighted Score**

| Site 1  | 0                   | 0               | 0         | 0             | 0             | 0               |
| Site 2  | 0                   | 0               | 0         | 0             | 0             | 0               |
| Site 3  | 0                   | 0               | 0         | 0             | 0             | 0               |
| Site 4  | 0                   | 0               | 0         | 0             | 0             | 0               |
| Site 5  | 0                   | 0               | 0         | 0             | 0             | 0               |
| Site 6  | 0                   | 0               | 0         | 0             | 0             | 0               |
WHO needs this tool?

- Incident commanders
- Regional planners
- Planning teams including: fire, law enforcement, Red Cross, security, emergency managers, hospital personnel
- Public works / hospital engineering should be involved to know what modifications are needed.
WHEN should you use this tool?

- Before an actual event.
- Choose best site for different scenarios so have a site in mind for each “type”.
# ACF Facility Operations Template

## Table of Contents:

1. **Introduction**
2. **Alternate Care Facility Concept Overview**
3. **Assumptions**
4. **ACF Basic Functions**
5. **Description of an ACF**
6. **Staffing Framework**
7. **ACF Command and Control**
8. **ACF Site Selection and Infrastructure Requirements**
9. **ACF Operations and Logistics**
ACF Facility Operations Template

- Designed as a stand-alone unit
- Easily pulled from the report for alteration/customization
- Extensive instruction and explanation of (NIMS compliant) Incident Command System
- Used FMS ConOps as a starting point
- Glossary of terms included
Staffing Recommendations

- General paucity of recommendations in the literature
- Some initial guidance from the Modular Emergency Medical Systems Document (MEMS) developed by SBCCOM
- Questionnaire data surprisingly incomplete
### MEMS Acute Care Center
50 bed unit per 12 hour shift

<table>
<thead>
<tr>
<th>Position</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician</td>
<td>1</td>
</tr>
<tr>
<td>Physician Assistant (PA) or Nurse Practitioner (NP)</td>
<td>1</td>
</tr>
<tr>
<td>Registered nurses (RN) and/or Licensed Practical Nurses (LPN)</td>
<td>6</td>
</tr>
<tr>
<td>Nursing Assistants and/or nursing support technicians</td>
<td>4</td>
</tr>
<tr>
<td>Medical clerks (unit secretaries)</td>
<td>2</td>
</tr>
<tr>
<td>Respiratory therapist</td>
<td>1</td>
</tr>
<tr>
<td>Case manager</td>
<td>1</td>
</tr>
<tr>
<td>Social worker</td>
<td>1</td>
</tr>
<tr>
<td>Housekeepers</td>
<td>2</td>
</tr>
<tr>
<td>Patient transporters</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>21</strong></td>
</tr>
</tbody>
</table>
**MEMS Acute Care Center**

*50 bed unit per 12 hour shift - Minimum*

<table>
<thead>
<tr>
<th>Position</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician</td>
<td>1</td>
</tr>
<tr>
<td>Physician Assistant (PA) or Nurse Practitioner (NP)</td>
<td>1</td>
</tr>
<tr>
<td>Registered nurses (RN) and/or Licensed Practical Nurses (LPN)</td>
<td>6</td>
</tr>
<tr>
<td>Nursing Assistants and/or nursing support technicians</td>
<td>4</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>
Enhanced: 50 bed unit per 12 hour shift: 32.5

- Physician [1]
- Physician extenders (PA/NP) [1]
- RNs or RNs/LPNs [6]
- Health technicians [4]
- Unit secretaries [2]
- Respiratory Therapists [1]
- Case Manager [1]
- Social Worker [1]
- Housekeepers [2]
- Lab [1]
- Medical Asst/Phlebotomy [1]
- Food Service [2]
- Chaplain/Pastoral [1]
- Day care/Pet care
- Volunteers [4]
- Engineering/Maintenance [.25]
- Biomed [.25]
- Security [2]
- Patient transporters [2]
Most Prominent Deficiency in all of these proposals:

- Lack of pharmacists and pharmacy technicians
## Summary of Questionnaire Staffing Responses

<table>
<thead>
<tr>
<th>Function</th>
<th>Site 1</th>
<th>Site 2</th>
<th>Site 3</th>
<th>Site 4</th>
<th>Site 5</th>
<th>Site 6</th>
<th>Site 7</th>
<th>Site 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric shelter support</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>General shelter support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambulatory and inpatient health care replacement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambulatory healthcare replacement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambulatory and surgical healthcare replacement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special needs inpatient care</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambulatory healthcare replacement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inpatient special needs care</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure</td>
<td>Fixed facility</td>
<td>Fixed facility</td>
<td>Fixed facility</td>
<td>Fixed facility</td>
<td>Mobile</td>
<td>Fixed facility</td>
<td>Fixed facility</td>
<td>Fixed facility</td>
</tr>
<tr>
<td>Inpatient Capability</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Days of Operation</td>
<td>13</td>
<td>16</td>
<td>NDA</td>
<td>NDA</td>
<td>10</td>
<td>NDA</td>
<td>NDA</td>
<td>NDA</td>
</tr>
<tr>
<td>Total Patients</td>
<td>&gt;3,500</td>
<td>&gt;10,000</td>
<td>&gt;6,000</td>
<td>&gt;20,000</td>
<td>7400</td>
<td>200</td>
<td>400</td>
<td>340</td>
</tr>
<tr>
<td>Daily Average Census</td>
<td>NDA</td>
<td>619 (+/- 301)</td>
<td>NDA</td>
<td>NDA</td>
<td>25-300</td>
<td>NDA</td>
<td>NDA</td>
<td>NDA</td>
</tr>
<tr>
<td>Peak Daily Census</td>
<td>400</td>
<td>1,100</td>
<td>NDA</td>
<td>NDA</td>
<td>500</td>
<td>NDA</td>
<td>NDA</td>
<td>NDA</td>
</tr>
<tr>
<td>Shift Length (hours)</td>
<td>8, 12, or 24</td>
<td>4, 8, or 12</td>
<td>8 for most, 12 for nurse managers</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>NDA</td>
<td>8</td>
</tr>
<tr>
<td>Day/Night Staffing Difference</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>NDA</td>
<td>Y</td>
</tr>
<tr>
<td>Total Staff</td>
<td>NDA</td>
<td>7 common staff / 1000 volunteers</td>
<td>&quot;seven hundred&quot;</td>
<td>50</td>
<td>60-100</td>
<td>100</td>
<td>300 at various times; daily total not listed</td>
<td>200</td>
</tr>
<tr>
<td>Physicians</td>
<td>6</td>
<td>16 AM / 4 PM</td>
<td>25</td>
<td>NDA</td>
<td>11</td>
<td>4</td>
<td>7</td>
<td>2-3</td>
</tr>
<tr>
<td>Midlevel Providers (PA/NP)</td>
<td>Present but number not recorded</td>
<td>N</td>
<td>20</td>
<td>NDA</td>
<td>1-2</td>
<td>5</td>
<td>3</td>
<td>2-3</td>
</tr>
<tr>
<td>Nurses</td>
<td>6</td>
<td>20</td>
<td>50+</td>
<td>NDA</td>
<td>8-10</td>
<td>20</td>
<td>10</td>
<td>20-30</td>
</tr>
<tr>
<td>LPN/EMT</td>
<td>N</td>
<td>N</td>
<td>50+</td>
<td>NDA</td>
<td>8-10</td>
<td>NDA</td>
<td>1-2</td>
<td>10</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>1</td>
<td>21</td>
<td>6+</td>
<td>2-3</td>
<td>2-3</td>
<td>2</td>
<td>1-2</td>
<td>1-2</td>
</tr>
<tr>
<td>Clerks/Administrative</td>
<td>1</td>
<td>5 AM / 1 PM</td>
<td>50+</td>
<td>1-2</td>
<td>1-2</td>
<td>NDA</td>
<td>6</td>
<td>20</td>
</tr>
</tbody>
</table>

Y = yes or present but number unknown
N = no
NDA = No Data Available

Fields that have two numbers listed in a " silky " format indicate a difference in staffing between day & night

Due to difficulties with record keeping and in light of day to day variations in staffing, all numbers should be viewed as estimates.
### Summary of Questionnaire Staffing Responses: Staffing Ratios: Staff / # Patients

<table>
<thead>
<tr>
<th></th>
<th>Site 1</th>
<th>Site 2</th>
<th>Site 3</th>
<th>Site 4</th>
<th>Site 5</th>
<th>Site 6</th>
<th>Site 7</th>
<th>Site 8</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Days of Operation</strong></td>
<td>13</td>
<td>16</td>
<td>13*</td>
<td>13*</td>
<td>10</td>
<td>13*</td>
<td>13*</td>
<td>13*</td>
</tr>
<tr>
<td><strong>Total Patients</strong></td>
<td>3,500</td>
<td>10,000</td>
<td>6,000</td>
<td>20,000</td>
<td>7400</td>
<td>200</td>
<td>400</td>
<td>340</td>
</tr>
<tr>
<td><strong>Daily Average Census</strong></td>
<td>269*</td>
<td>625*</td>
<td>462*</td>
<td>1538*</td>
<td>740*</td>
<td>15*</td>
<td>31*</td>
<td>26*</td>
</tr>
</tbody>
</table>

*Numbers below reflect the ratio of a given category of provider to the number of patients seen on an average day*

<table>
<thead>
<tr>
<th>Provider Type</th>
<th>Site 1</th>
<th>Site 2</th>
<th>Site 3</th>
<th>Site 4</th>
<th>Site 5</th>
<th>Site 6</th>
<th>Site 7</th>
<th>Site 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physicians</td>
<td>1:45</td>
<td>1:39</td>
<td>1:18</td>
<td>NDA</td>
<td>1:67</td>
<td>1:4</td>
<td>1:4</td>
<td>1:9</td>
</tr>
<tr>
<td>Midlevel Providers (PA/NP)</td>
<td>NDA</td>
<td>NP</td>
<td>1:23</td>
<td>NDA</td>
<td>1:493</td>
<td>1:3</td>
<td>1:10</td>
<td>1:9</td>
</tr>
<tr>
<td>Nurses</td>
<td>1:54</td>
<td>1:31</td>
<td>1:9</td>
<td>NDA</td>
<td>1:82</td>
<td>1:1</td>
<td>1:3</td>
<td>1:1</td>
</tr>
<tr>
<td>LPN/EMT</td>
<td>NP</td>
<td>NP</td>
<td>1:9</td>
<td>NDA</td>
<td>1:82</td>
<td>NDA</td>
<td>1:16</td>
<td>1:3</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>1:269</td>
<td>1:313</td>
<td>1:77</td>
<td>1:513</td>
<td>1:246</td>
<td>1:8</td>
<td>1:16</td>
<td>1:13</td>
</tr>
<tr>
<td>Clerks/Administrative</td>
<td>1:269</td>
<td>1:125</td>
<td>1:9</td>
<td>1:1025</td>
<td>1:493</td>
<td>NDA</td>
<td>1:5</td>
<td>1:1</td>
</tr>
</tbody>
</table>

NP = Type of provider Not Present  
NDA = No Data Available  
* Estimated; see text for details
Staffing Considerations

- Requires significant pre-planning
  - State \{S\}
  - Local \{L\}
  - Institutional \{I\}

- Unclear who would volunteer

- Contained vs Population-based Surge event
Facilitation of Emergency Staffing

- Establish legal authority to utilize out-of-state licensed personnel {S}
- Establish supervision criteria for volunteer and out-of-state licensed personnel {S}
- Establish/maintain list of retired individuals who could be called upon to staff {S L I}
- Availability of prophylaxis for employees and volunteers (? and their families) to guarantee workforce availability {S L I}
Facilitation of Emergency Staffing

- Communication of institutional workforce plan in advance to employees
- Develop, test and maintain emergency call-in protocol
- Expectation and capacity for flexibility in roles
- Establish linkages with community resources (ie. hotel housekeeping)
Facilitation of Emergency Staffing

- Address specific needs of employees (transportation, single mother, pets) {I}
- Implement a reverse 911 or notification system for all employees {S L I}
- Establishment of institutional policies for credentialing of non-employees {S L I}
Surging with Limited Staff

- Database of retired healthcare personnel and former trainees
- Limit non-essential patient care
- Use of phone triage to free up providers
- Restructuring/reassigning HCW tasks daily through incident command
- Use of family members (bathing, bathroom, vital signs, meals)
- Maximize protection of current personnel: vaccines, prophylaxis, infection control
- Day care center for employee families?
Credentialing

- A major issue
- Emergency Systems for Advance Registration of Volunteer Health Professionals (ESAR-VHP) not well developed at time in question
  - Unclear how useful it will be
- EMAC used by several sites
## Summary Credentialing Data

<table>
<thead>
<tr>
<th>Site 1</th>
<th>Site 2</th>
<th>Site 3</th>
<th>Site 4</th>
<th>Site 5</th>
<th>Site 6</th>
<th>Site 7</th>
<th>Site 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method of credential verification for health professionals</td>
<td>County Health Department Oversight</td>
<td>Inspection of identification badge from home institution</td>
<td>Handled by U.S. Public Health Service</td>
<td>&gt; 90% were Federal so came credentialed</td>
<td>Credentialed through sponsoring healthcare system</td>
<td>All Federal employees; arrived credentialed</td>
<td>Credentials not verified due to rapid need for response</td>
</tr>
<tr>
<td>Were identification cards created?</td>
<td>Sponsoring hospital ID cards used. Others tried for outside staff with little success</td>
<td>Yes, with a make-shift badge maker</td>
<td>Special event bands provided by local University</td>
<td>No, most used federal identification cards.</td>
<td>Home state office of EMS ID cards.</td>
<td>Federal ID card.</td>
<td>N</td>
</tr>
<tr>
<td>If so, was a commercially available product used?</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>N/A</td>
</tr>
<tr>
<td>Suggested future changes in the credentialing process?</td>
<td>Early credentialing; ideally prior to the event</td>
<td>N</td>
<td>N</td>
<td>NA</td>
<td>N</td>
<td>Develop a standardized credentialing system</td>
<td>NA</td>
</tr>
<tr>
<td>Did anyone impersonate a provider to gain access?</td>
<td>One individual tried to impersonate a physician.</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Steps taken at the State level to facilitate out-of-state providers?</td>
<td>State allowed instant licensure with sponsorship of the primary hospital</td>
<td>State was not involved.</td>
<td>NA</td>
<td>NA</td>
<td>EMAC</td>
<td>NA</td>
<td>EMAC</td>
</tr>
<tr>
<td>Were providers from different healthcare systems working side by side?</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>If so, did this create any command and control (C2) issues?</td>
<td>No significant issues. Sponsoring hospital retained control</td>
<td>N</td>
<td>No, too busy to have any turf battles</td>
<td>No, used clear command system</td>
<td>N</td>
<td>Minor issues while establishing C2 system</td>
<td>N</td>
</tr>
<tr>
<td>Were there any challenges dealing with out-of-state licensing issues?</td>
<td>Y</td>
<td>N</td>
<td>No, handled through U.S. Public Health Service</td>
<td>Difficult writing prescriptions for controlled substances</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Y = yes or present but number unknown
N = no
N/A = Not Available
Transfer / Discharge Algorithm Process

- Establishment of expert panel
  - Conference calls
- Literature review – not much there!
- Development of algorithm
  - Quantify capability of ACF
  - Reassess each patient’s needs
  - Establish potential match with tool
Transfer/Discharge Algorithm

Step 1:

- Determine the capabilities of the Alternate Care Facility (ACF) to which you are considering transferring patients and so indicate on the Transfer Matrix.
Indicate Capabilities of ACF

- Minimum Age of patients
- Non-ambulatory care
- Maximum frequency of vital signs
- Oral meds: non-scheduled/scheduled
- IV hydration
- IV meds: non-scheduled / scheduled
- Glucose determination
- Daily CBC, BMP
- Supplemental Oxygen (L/m per patient)
- Cardiac monitoring
- Radiology access
- Dressing changes
- Mental health care
- Ostomy care
- Tube feedings
- Others, as appropriate
- 5 user-defined
## Indicate Capabilities of ACF

### Alternate Care Facility Patient Transfer Matrix

* Mark the ACF capability where indicated (see row 4)
* For each patient, mark an X (or a numeric value, if required) in the appropriate column to indicate a specific patient need; leave blank otherwise.

  Do not skip lines between patient names!
* If a patient is generally unsuitable for transfer or has a specific need not otherwise listed, mark an X by the patient's name where indicated (see column B)
* Click on any cell in Column A. Press Ctrl + 1 to run the program.
* Patients suitable for transfer to the ACF will be highlighted in green. Patients not suitable for transfer will be highlighted in red.

Patients whose names have no color may be evaluated by a clinician for possible discharge.

<table>
<thead>
<tr>
<th>ACF Capabilities:</th>
<th>PT. CLINICIAN NOT SUITABLE FOR TRANSFER</th>
<th>Minimum Phys. (Y/N)</th>
<th>Non-ambulatory Care</th>
<th>Vital Signs every 12 hours</th>
<th>Non-controlled oral meds</th>
<th>Non-controlled IV meds</th>
<th>Glucose</th>
<th>B/P (daily or less)</th>
<th>O2 flow rate needed</th>
<th>Cardiac monitoring</th>
<th>Respiratory access</th>
<th>Dressing Changes</th>
<th>Mental Health Care (Non-Emergency)</th>
<th>Tube Feeding</th>
<th>User-defined 1</th>
<th>User-defined 2</th>
<th>User-defined 3</th>
<th>User-defined 4</th>
<th>User-defined 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT. CLINICIAN NOT SUITABLE FOR TRANSFER</td>
<td>6</td>
<td>12</td>
<td>X</td>
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<td>Patient Name A</td>
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</tbody>
</table>
Transfer/Discharge Algorithm

Step 2:

- For each patient, review their current level of care in terms of the following and determine the absolute minimum level of care necessary:
  - Determine that patient is clinically stable enough for potential discharge/transfer.
  - Determine the minimum frequency of vital signs that are necessary for the ongoing care of this patient.
  - If the patient is currently on supplemental oxygen, can this be discontinued or decreased?
  - If the patient is currently on cardiac monitoring, can this be discontinued?
Transfer/Discharge Algorithm

Step 2:

- If this patient is on IV meds, can these be discontinued or changed to comparable oral meds?
- If the patient has an IV, can it be discontinued?
- Determine if any oral medications may be discontinued.
- Review current standing laboratory orders.
  - Determine the absolute minimum frequency and number of laboratory tests that are necessary for this patient’s ongoing care.
- Review all other ongoing therapies for this patient.
  - Determine which of these may be discontinued or decreased in frequency.
Transfer/Discharge Algorithm
Step 3:

Now, based upon the established minimum level of care for each patient, review the following:

- Is this patient now suitable for discharge with follow-up as an outpatient? If so, commence the discharge process. If not and an ACF is available for possible patient transfer, continue below. If no ACF is available, move on to next patient.

- Are there any therapies or monitoring required for this patient that cannot be supplied by the available ACF? If so, this patient is not suitable for transfer to the available ACF. Move on to next patient. If not, consider this patient for transfer to your available Alternate Care Facility.
Transfer/Discharge Algorithm

Step 4:

- The patient data are then entered into the Patient Transfer Matrix spreadsheet for the potential transfer patients.
- The embedded program is then executed by pressing CTRL+J.
- Those patients potentially suitable for transfer to the designated ACF will be highlighted in green. Those patients whose care needs exceed that available at the designated ACF will be highlighted in red.
**Transfer/Discharge Algorithm**

**Step 4:**

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### Alternate Care Facility Patient Transfer Matrix

- Mark the ACF capability where indicated (see row 4)
- For each patient, mark an X (or a numeric value, if required) in the appropriate column to indicate a specific patient need; leave blank otherwise.

  Do not skip lines between patient names!
- If a patient is generally unsuitable for transfer or has a specific need not otherwise listed, mark an X by the patient’s name where indicated (see column B)
- Click on any cell in Column A. Press CTRL + 1 to run the program.
- Patients suitable for transfer to the ACF will be highlighted in green. Patients not suitable for transfer will be highlighted in red.
- Patients whose names have no color may be evaluated by a clinician for possible discharge.

#### ACF Capabilities:

| Patient | Pt. Clinically Not Suitable for Transfer | SUITABLE FOR TRANSFER | General Health | Vital Signs every 1x hour | Non-controlled Oral meds | Non-controlled IV meds | GI bleed | CBC (daily or less) | Daily Labs (daily or less) | Cardiac monitoring | Dialysis access | Mental Health | Severe | Ostomy Care | Tube Feedings | User Defined 1 | User Defined 2 | User Defined 3 | User Defined 4 | User Defined 5 | User Defined 6 |
|---------|----------------------------------------|-----------------------|---------------|--------------------------|-------------------------|-------------------------|---------|-------------------|-----------------------------|-------------------|----------------|--------------|--------|------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Patient A | 22 | 6 | 12 | X | X | X | X | X | X |
| Patient B | 19 | 12 | X | | | | | | |
| Patient C | X | 35 | | | | | | | |
| Patient D | 58 | 12 | X | | | | | | |

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*In this row, enter the capability of the ACF using either an "X" to indicate a capability or a numerical value as appropriate.*
Transfer/Discharge Algorithm - Step 1:
Determine the capabilities of the Alternate Care Facility (ACF) to which you are considering transferring patients and so indicate on the Discharge/Transfer matrix.

Transfer/Discharge Algorithm - Step 2:
For each patient, review their current level of care in terms of the following and determine the absolute minimum level of care necessary:
Determine that patient is clinically stable enough for potential discharge/transfer
Determine the minimum frequency of vital signs that are necessary for the ongoing care of this patient.
If the patient is currently on supplemental oxygen, can this be discontinued or decreased?
If the patient is currently on cardiac monitoring, can this be discontinued?
If this patient is on IV meds, can these be discontinued or changed to comparable oral meds?
If the patient has an IV, can it be discontinued?
Determine if any oral medications may be discontinued.
Review current standing laboratory orders.
Determine the absolute minimum frequency and number of laboratory tests that are necessary for this patient’s ongoing care.
Review all other ongoing therapies for this patient.
Determine which of these may be discontinued or decreased in frequency.

Transfer/Discharge Algorithm - Step 3:
Now, based upon the established minimum level of care for each patient, review the following:
Is this patient now suitable for discharge with follow-up as an outpatient? If so, commence the discharge process.
If not and an ACF is available for possible patient transfer, continue below. If no ACF is available, move on to next patient.
Are their any therapies or monitoring required for this patient that cannot be supplied by the available ACF?
If so, this patient is not suitable for transfer to the available ACF. Move on to next patient.
If not, consider this patient for transfer to your available Alternate Care Facility.
The Supplemental Oxygen Dilemma

- Supplemental oxygen need highly likely in a bioterrorism incident
- Has been carefully researched by the Armed Forces
- Most options are quite expensive
- Many have high power requirements
- Most require training/maintenance
- All present logistical challenges
- Remains a work in progress
Oxygen Concentrator

- Up to 10 liters per min @ 7 psi
- 110V AC
- 57 lbs
- Approx $1,400
And Then The “Other” Problems:

- Ventilators:
  - Currently in US: 105,000
  - In daily use: 100,000
  - Projected pandemic need: 742,500

- Respiratory Therapists
Ventilators – Surge Supply

- Additional full units - $32,000 each
- Smaller units for $6,000 each

- Many “Disposable” Units - $65 each
Respiratory Therapists: Just-In-Time Training
Responses: Summary of Important Issues

- Planning is best done in advance and should involve all players, including care providers.
- Ideally, the role of the ACF decided in advance of an incident and will guide staffing, supply, and equipment issues:
  - “Ward” level care to decompress a hospital and provide surge
  - Ambulatory acute care – i.e., triage, minor wound care, etc.
  - Chronic care
Responses: Important Issues

- The ACF will usually have to care for the full age range of patients – pediatrics, adolescents, adults, and the elderly and must plan accordingly.

- Even with the best of plans, overall flexibility is mandatory and should be maintained.
If possible, a college campus would make an excellent ACF: availability of appropriate space, manpower, food service, security, bathrooms, showers, etc.

Proximity to a hospital is desired if diagnostic tests will be needed that cannot be done at the ACF.

Point of care clinical laboratory testing should be considered. At a minimum, glucometers should be available.

Toilet and shower facilities both important.
Responses: Important Issues

- The nature of the disaster may dictate that nursing home patients be cared for en masse.
- Lighting control and noise control are issues that may be difficult to solve if the ACF is housed in a single large area (such as a gymnasium).
- It is usually best to try to keep families together.
- If palliative care is going to be necessary, those patients should be cohorted together, preferably in a separate area or unit.
Caring for patients’ pets should be considered.

Security is extremely important. Individuals in uniforms (even if not true security) can assist with this. Law enforcement should be included in any advance planning and should be pressed for a commitment to provide security for any ACF.

Incident command of an ACF is probably best done by a medical person (physician/nurse) who understands incident command.
Responses: Important Issues

- In most situations, pediatric patients made up about 10% of the patient load.
- Chronic-care medications (hypertension, diabetes mellitus, etc.) are extremely important, as are pain medications and antibiotics.
- Replenishing narcotics at an ACF may be an issue due to DEA regulations.
Responses: Important Issues

- Most medical providers worked 12 hour shifts.
- Chronic dialysis may become a chronic-care issue.
- Although ACF incident command usually works well, there are sometimes issues interfacing with local area command.
Responses: Important Issues

- Organized facility layout
- Importance of ICS
- Importance of public health issues
  - Safe food
  - Clean water
  - Latrine resources
  - Sanitation supplies
- The need for “House Rules”
Sample “House Rules”

- No weapons allowed on the premises
- The use of alcohol is strictly forbidden and will result in dismissal
- Wash your hands: Before and after you eat – After you use the bathroom
- Wash your hands or use hand sanitizer throughout the day; especially if you sneeze or cough into your hands
- Be respectful of others and their property
- No open food or drink in the sleeping areas
- Smoke only in the designated smoking areas
- Keep noise to a minimum
- Clean up after yourself in the bathroom, around your sleeping area, and in the dining room
- Lights on – 7:00am  Lights out – 10:00pm
- No arrivals or departures after 10:00pm
- Failure to follow the rules may result in your discharge
Summary: What we have discussed

- Revised Alternate Care Facility Site Selection Tool
- Important ACF lessons observed
- ACF Facility Operations Template (Concepts of Operations)
- Some ACF staffing guidance
- A hospital “Early Discharge / Transfer Algorithm”
Colorado Department of Public Health and Environment

Guidance for Alterations in the Healthcare System During an Influenza Pandemic

Draft as of September 2008
The Challenge

To balance…
- Basic standards of practice
- The ethical obligation to provide care
- The need to protect the public from harm
- The need to protect self, family & friends
- With the reality of too many ill patients and too few resources

All of which represents an alteration in the normal standard of care
Providing Mass Medical Care with Scare Resources: A Community Planning Guide

Submitted to:
AGENCY FOR HEALTHCARE RESEARCH AND QUALITY
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

JUNE 30, 2006

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Suite 700
Washington, DC 20036
Additional Information

AHRQ Disaster Alternate Care Facility Final Report Available at:

www.ahrq.gov/prep/acfselection/dacfrep.htm