

# *Combating Public Health Threats through the Deployment of Connected Health Technologies*

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ALL PROCEEDINGS WILL BE VIDEO RECORDED

## The Scenario

- The family lives in Boston and is comprised of a divorced mom, Emily, her 2 adolescent children, her mom, Geraldine, and her step-father, Frank.
- Geraldine had cardiac problems and died 2 days ago, perhaps related to the lack of her prescription medication.
- Frank is an alcoholic and smoker. He has high blood pressure.
- Emily is a licensed practical nurse.

## The Scenario

- Because of widespread civil chaos caused by the pandemic and strict Shelter-In-Place (SIP) order, Emily has been unable to have her mother's remains removed from the home.
- Frank is of no help. He has run out of alcohol and cigarettes and continues to demand them.
- Emily's children are weathering the "lock-down" relatively well, although they have become bored and restless.

## The Scenario

- Emily's ex-husband has been involved with the children. However, he works as a police officer, and has been extremely busy.
- Emily is anxious.
- Frank has developed withdrawal symptoms.

## Three Possible Scenarios

- **Best Case** —Have power, water, transportation and home delivery services
- **Intermediate Case** —Have internet, power, water, but no transportation or delivery services
- **Worst Case** —No power, no communications, no transportation or delivery services

## Intermediate-level scenario

- **Please refer to your handout to learn about the intermediate-level scenario.**
- **Technologies available during a SIP scenario.**

## Telehealth Technologies in a SIP

- **Interactive web portal—streaming video, real-time messaging, HAN messages, all forms, resource documents and web links**
- **Incident Management Systems – surge management (bed and resource tracking)**
- **Predictive threat and resource modeling (e.g. Ramsafe)**
- **Geospatial mapping of affected areas (ESRI/GCS)**
- **Videoconferencing over existing networks**
- **Robots for quarantined patients (InTouch)**

## Home Telehealth Technologies in a SIP

- **Real Time Monitoring**
  - Blood Pressure
  - Heart Rate
  - Breath Sounds
  - Body Temp
  - Weight
  - Heart Rhythms
  - Blood Glucose



## Telehealth Technologies Functionality and Support Areas

- **Social Support (e.g. community resilience both preparatory and response phases)**
- **Triage (home-based via internet or telephone using interactive voice response)**
- **Risk Communication and Education (can be automated, personalized, tailored)**
- **Treatment (online stress management, CBT or telephonic coaching systems)**
- **Treatment (remote physiologic monitoring)**

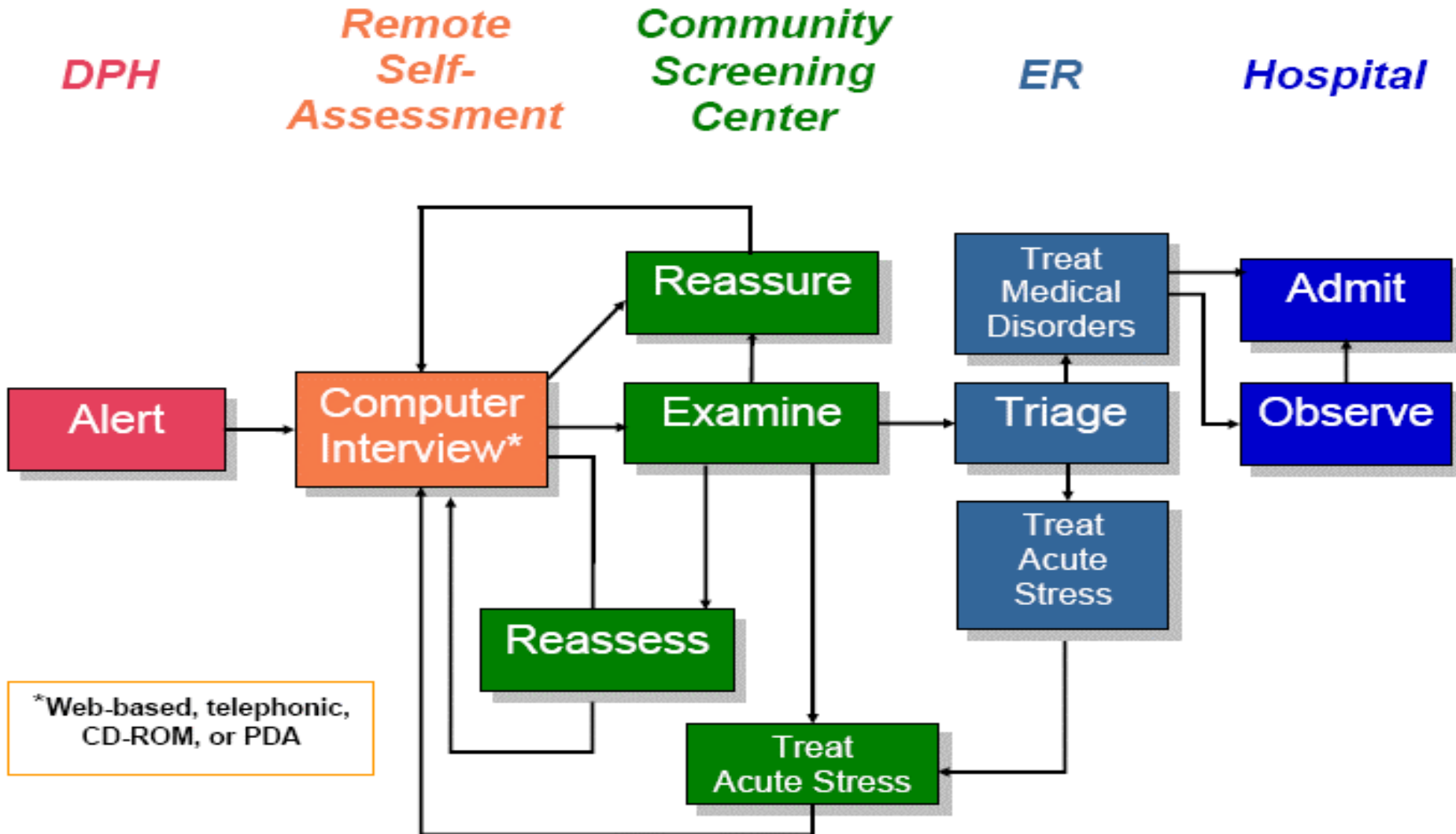
## Applications of Telemedicine in Disaster Response

- **Decision Support (where to go for care, whether to seek care, use of meds)**
- **Social Support (grief counseling and social networking sites)**
- **Online therapy (CBT and/or VTC)**
- **Dealing with Death (advice for handling casualties, online memorial services while SIP)**

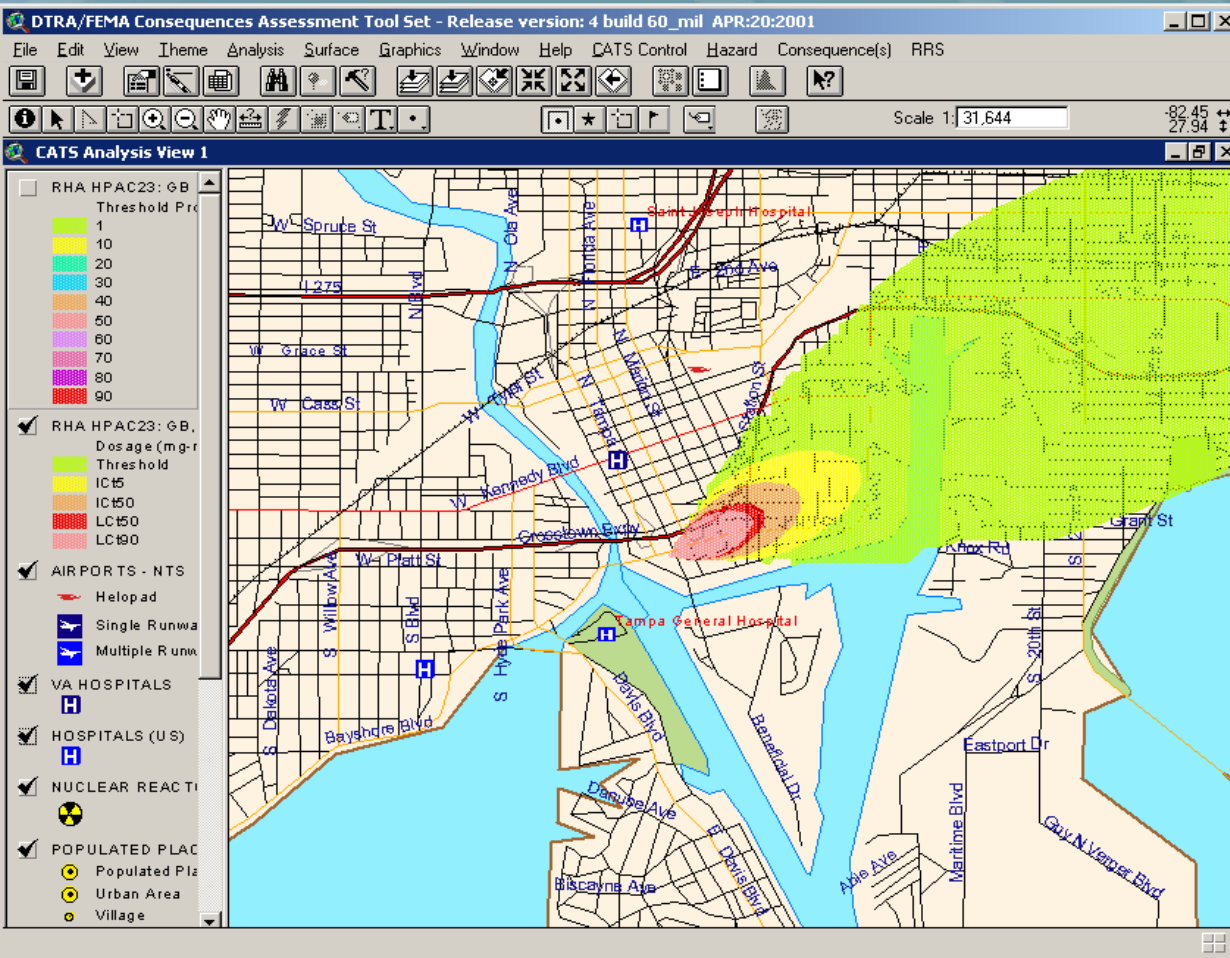
## **Specific Telemedicine Interventions in Disaster Response**

- **Assessment Tools**
  - **Personal Health Questionnaire (PHQ)**
  - **LifeCoach and CrisisCoach**
- **Discern signs & symptoms of toxins, bioweapons, or outbreaks versus somatic symptoms of acute stress**
- **Address problem of MUPS (multiple undiagnosed physical symptoms)**

## Screening & Triage Model



# Geospatial Mapping and Resource Tracking



Rapid Hazards Analysis

Current View: CATS Analysis View 1

Latitude (deg N): 27.942236

Longitude (deg E): -82.455832

Quantity (kg): 200.00

Agent:

- Toxic Industrial Materials
- Chem/Bio/Weapon Agents
- Radiological Weapon
- Nuclear Weapon
- High Explosives

GB (Sarin)

RUN EXIT

## **Applications of Telemedicine in Disaster Response**

- **Disaster Knowledge Management System (community resilience and response tool)**
- **Psychological first aid (online)**
- **Managing children's needs**
  - **games, educational continuity, online home studies for SIP**
- **Psycho-education**

## Family Assistance Center in a Contagious Environment

- In a contagious environment, traditional FAC model does not apply
  - Close contact discouraged in contagious events.
  - Central locations may increase risk for population.
  - Ante-mortem/post-mortem data collection and NOK notification handled by traditional providers.
  - Focus of services honed to support and resource referral information, not for data collection and NOK notification.
- HHS & ESF8 partners develop new FAC model based on tiered approach with virtual and traditional outlets
- Result: Robust tiered service that minimizes risk.

*What does it look like?*

## Tiered Approach

**Pre-event: Broad education and information campaign  
(Resources, FAQs, public service announcements)**

**Traditional  
providers and  
resources**

**From the victims'  
families' perspective**

**Specific education resources  
(FAQs, public service  
announcements)**

**Virtual Assistance  
(Phone & web  
service center)  
(National/local)**

**In person?  
local FAC**

## Questions to be Answered

- **When is the movement of information more useful than the movement of people? (*bits vs. atoms*)**
- **What information should be sent?**
- **How should the information travel--internet, phone, video, EMR ?**
- **To whom, from whom, and through whom does it travel?**
- **What should be the minimum standards/guidelines for each clinical data set? (HL7, DICOM, H.323?)**

- Please hand in your telehealth technology suggestions.
- Questions?