

# **An Assessment of the TRAIN© Tool for Development in County Disaster Response Plans**

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# Disasters

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- Types
- Damages
- How to Handle
- Lessons Learned

# Children in Disasters

“Not Just Small Adults”

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- Dolan & Krug (2006).

Lack of support to hospitals for shelter in place orders, no pre-planned evacuation arrangements, poor family reunification, limited mental health resources, no plans to address special needs/medically fragile.

- National Commission on Children and Disasters

Improve EMS capabilities to transport; develop a national strategy to improve transport; Disaster plans at all levels of government must address evacuation of children and specifically focus on those with disabilities or special health needs; coordination must exist with child care facilities.



# Contra Costa EMS

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- “To ensure that quality emergency medical services are available for all people in Contra Costa County, and that emergency medical care is provided in a coordinated, professional and timely manner”
- Acts as the County Local Emergency Medical Service Agency (LEMSA)
  - Track and monitor emergency critical care capacity
  - Procure and monitor emergency ambulance services
  - Plan and coordinate disaster medical response; local and regional
  - Implement and monitor Emergency Medical Services for Children Program





# Pediatric Care in CoCo

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- Reduction of inpatient pediatric beds
- Surge Capacity
  - 380 inpatient beds needed
  - 5% Flex
  - Mitigation approaches

# Goals of the SLE

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Goal 1) Revise the current pediatric disaster plan of Contra Costa County EMS.

Goal 2) Develop a support annex to the pediatric disaster plan that will incorporate the TRAIN© model developed by Dr. Cohen at Stanford University.

# Literature Review

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# Fuzak et al. 2010

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## Pros

- Simulation software
- Existing MOUs with transport
- Real time tracking with EMR
- HICS aided operations

## Cons

- Needed better traffic Control
- Staff needed more training on equipment
- Missing supplies of equipment
- patient identifiers

# Distenfanso et al. 2006

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- Conditions to evacuate were not ideal
- Hospital had MOUs with hospitals out of area, and transport companies
- adequate transport staff and receiving end staff
- Transport teams pre-arranged
- Hospital tried to pre-assign patient to aircraft
  - Vital time spend re assigning
  - Receiving end staff not prepared; wrong equipment



- Recommend six key areas of institutional focus:
  - Having the right staff
  - Communication, Communication, Communication
  - Proper equipment and supplies
  - Security
  - Effective leadership well versed in disaster management
  - Pre-arranged evacuation and transport plans

# TRAIN<sup>©</sup>

## Transport Resource Allocation for IN-Patients

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- ❑ Created for the Neonatal population
- ❑ Focuses on resources, not mortality or acuity
- ❑ Incorporating into daily workflow allows for pre-disaster preparedness and resource planning
- ❑ Standardized approach, saves time
- ❑ Applies to evacuation and medical surge decompression



- First developed with four, color categories, after implementation there was a need for a 5th category
- Validated by 2 methods:
  - Review by MD, RNS, EMT
  - Chart biopsy
- Available for EMR
- Validating for all populations (OB-TRAIN<sup>©</sup>)

Transport	Car	BLS	ALS	CCT	Specialized
Life Support	Stable	Stable	Minimal	Moderate	Maximal
Mobility	Car/Carseat	Wheelchair or Stretcher	Wheelchair or Stretcher	Transport Rig	Immobile
Nutrition	All PO	Intermittent Enteral	Continuous Enteral or Partial Parenteral	Complete TPN	NPO & TPN
Pharmacy	PO Meds	IV Lock	IV Fluids	IV Drip x1	IV Drip x2

Life Support	Minimal = Hood or Low Flow Cannula O2, Chest Tube, etc.
	Moderate = CPAP/BiPAP/Hi-Flow, Conventional Ventilator, Peritoneal Dialysis, Externally paced, wt <u>?</u> 3kg, continuous nebulizer treatments, etc.
	Maximal = Highly specialized equipment: i.e. HFOV, ECMO, iNO, CVVH, Berlin Heart, wt <u>?</u> 1.5kg, etc.
Mobility	Car/Carseat = able to ride in automobile with age-appropriate restraints
	Transport Rig = Age-appropriate rig with equipment for connecting to ambulance
	Immobile = Unable to move without special equipment, i.e. neurosurgical/bariatric

# TRAIN<sup>©</sup>

Transport Resource Allocation for IN-patients



# Steps

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Step 1: Assess the patients Life Support needs i.e. Breathing, Circulation, and Physical Assessment

Step 2: Identify Mobility Level

Step 3: Nutrition and other equipment

Step 4: How are their medications administered? Will they need any medications delivered when transporting?

# Categories

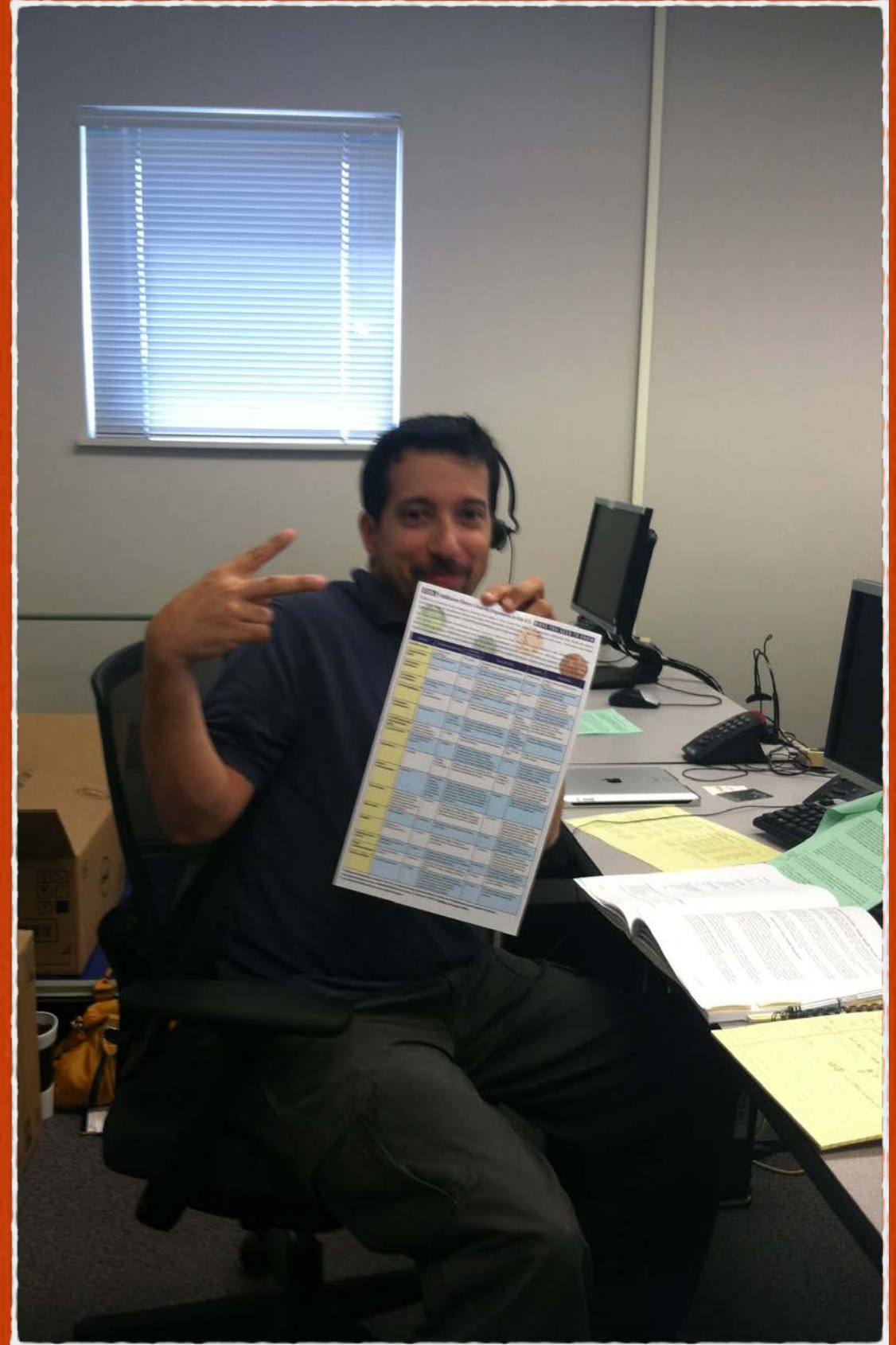
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- ❑ Blue: Stable. Transport can occur by car, bus or consider discharge
- ❑ Green: Stable Transport can occur by BLS Ambulance.
- ❑ Yellow: : Minimal. Transport to be provided by ALS ambulance.
- ❑ Orange: Moderately Stable. Transport provided by ALS ambulance and team of RN, RT, MD.
- ❑ Red: Maximum. Transportation requires specialized transport from Military or Specialized Team.



# Methods

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# Methods for Goal 1

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- Information gathered from secondary sources:
  - kidsdata.org
  - Pediatric Readiness Survey
  - US Census Bureau
  - ReddiNet bed numbers
  - manual calculations
- Deliverables:
  - Entire document updated with most recent statistics from 2011-2013
  - Seven of the eleven tables were redone
  - Additional sections added including the Pediatric Readiness Survey, TRAIN<sup>©</sup>tool, and PsySTART



# Methods for Goal 2

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- Needs Assessment
  - Literature search and review
  - attendance at conferences and workshops
  - Conducting four informational interviews with key stakeholders
- Participate in tabletop exercise (TTX)



- Needs Assessment
  - Literature review:
    - No published articles on TRAIN©
    - Two different toolkits available, Lucile Packard Children's Hospital, Loma Linda Children's Hospital
    - Identified need to conduct interviews
  - Interviews
    - Michelle Heckle, Children's Hospital of Oakland -implemented in NICU
    - Karen Greeley RN, Loma Linda Children's Hospital of LA-implemented in NICU
    - Dr. Anna Lin, Stanford University, co-developer of TRAIN tool
    - June Roberts RN, John Muir Health Center Walnut Creek-implemented in NICU in CoCo
  - Conferences
    - Local Preparedness Training Workshop, Napa County Neonatal and Pediatric Disaster Preparedness Tabletop Exercise, Disaster Planning for California Hospitals

# Tabletop Exercise

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- TTX is to predicate statewide medical health exercise, allows for planning and discussion
- Theme: Food borne illness
- EpiReady Workshop: 3 days of education and training related to food borne illness and outbreak investigation
- Attended planning and development meetings following HSEEP model
- 15 minute, educational powerpoint covering the TRAIN<sup>©</sup> tool
- Positive feedback
  - want EMR development
  - SNF interest



# Deliverable for Goal 2

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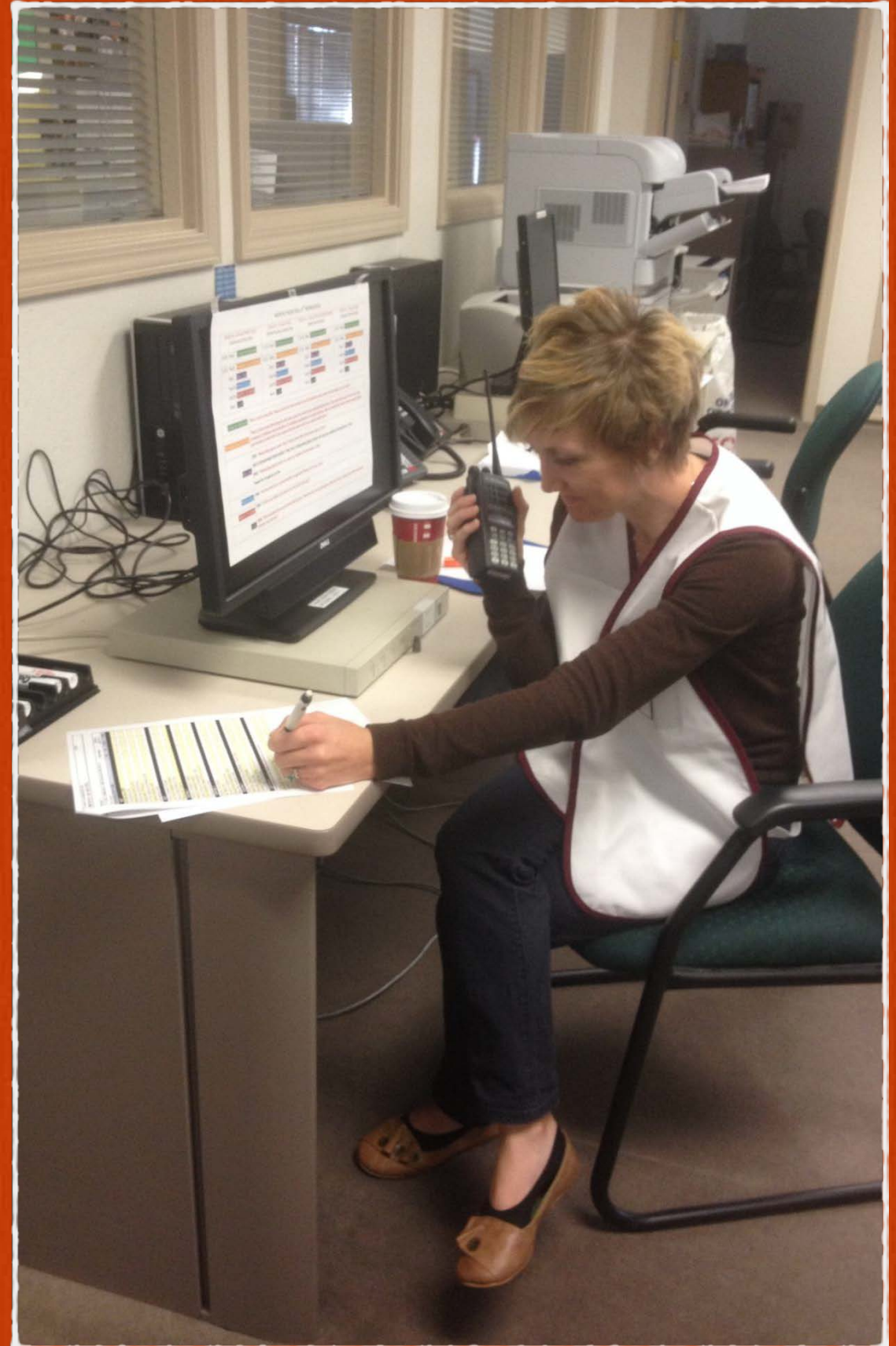


- Resource Guide for the TRAIN tool
- Newly developed annex
- Video powerpoint of TRAIN<sup>©</sup> presentation
- Staff resource handout
- Additional resource material



# Findings

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# Interviews

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- Four Hospitals in CA using TRAIN in NICU setting
- Committees or Unit Champions were used to establish methods for implementation and work on disaster/evacuation plans
- Different approaches to training staff, who would complete the tool, and on what shift
- All completed manually (No EMR)



# Common Themes

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- Increase awareness of evacuations and emergency operations
- Identified resources needed to mobilize patients
  - “Go Bags”, matching equipment
- Used the tool to test evacuation plans
- Struggles with training staff
- Staff Burden- EMR integration
- County Support/Regional Development



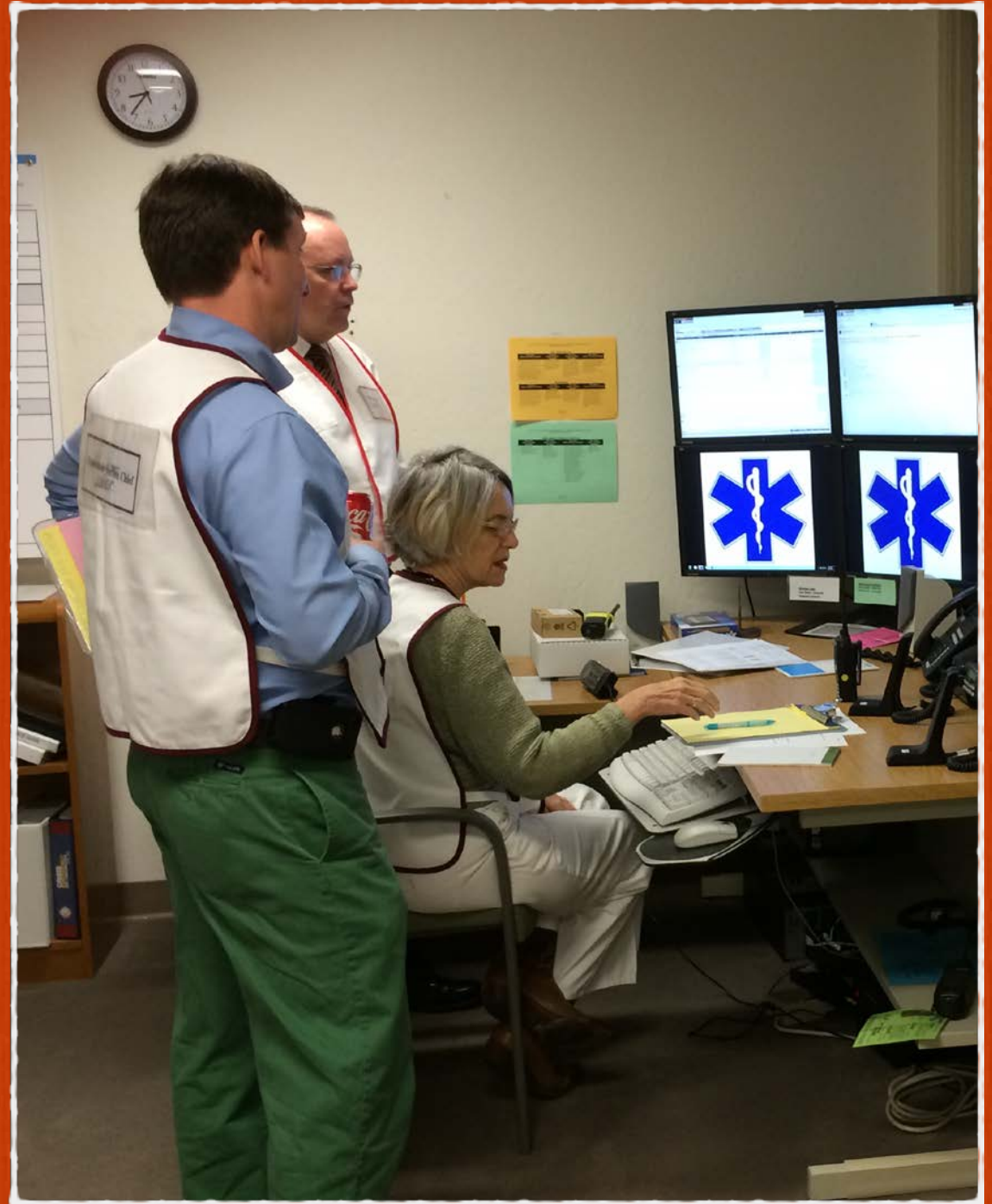
# Development

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- Successfully built into EMR, and more accurate
- 5-category tool
- Other populations
- Implementation Regionally
- “Central Repository”

# Discussion

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# TRAIN© tool Implementation

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- Increase awareness and education
  - Publish annex
  - Share video recording
  - Coordinator at EMS
- Use the tool to address resource gaps in facilities
  - Create “Go bags”
  - Conduct drills



# Implementation

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- Implement in all populations
- EMR development
- Continue regional development and collaboration
- Create a regional list of bed availability to match TRAIN©







# Public Health Competencies

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- Biostatistics:
  - Apply descriptive and inferential methodologies according to the type of study design.
  - Interpret results of statistical analyses in public health studies.
- Environmental Health
  - Specific approaches for assessing, preventing, and controlling environmental hazards that pose risks to human health and safety.
- Epidemiology
  - Use epidemiological measures to describe public health problems in terms of magnitude, person, time, and place.
- Health Policy and Management
  - Identify the main components and issues of the structure, financing and delivery of health services within health systems in the U.S.
  - Discuss policy process for improving the health status of populations.
  - Identify the fundamentals of organizational management.
  - Discuss the theory of organizational structures and behaviors.



- Social and Behavioral Sciences

- Identify social and behavioral factors that affect the health of individuals and populations.
- Describe planning, implementation, and evaluation of public health programs, policies and interventions

- Foundations of Public Health

- Communicate accurate public health information with professional and lay audiences.

- Applied Research

- Identify and apply fundamental research skills in public health.

- Leadership, Advocacy, and Community Building

- Identify linkages with key stakeholders.
- Identify different levels of community engagement and participation.
- Engage in collaborative problem solving and decision-making.

- Culture and Diversity

- Discuss determinants of health disparities.
  - Describe methods and regulations associated with public health practice in relation to diverse populations.

- Ethics

- Articulate how ethical principles apply to public health practices.
  - Demonstrate the skills to resolve organizational problems through a systems approach.
  - Demonstrate the skills to analyze organizational issues from a multidisciplinary perspective.
  - Evaluate and document internal and external strengths, weakness, opportunities, and threats to identify strategic issues.
  - Demonstrate the skills to lead and facilitate planning activities.



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# Thank You!

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Questions?

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