The PsySTART Rapid Mental Health Triage and Incident Management System

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PsySTART Overview

The PsySTART Rapid Mental Health Triage and Incident Management System is the central operational and theoretical cornerstone of comprehensive disaster mental health rapid triage and incident management system of the first known disaster mental health concept of operations (CONOPS) developed for large urban areas, states (Schreiber, et. al, 2010) and a national model for children(Schreiber and Pfefferbaum, 2010) . This disaster mental health CONOPS is first and foremost for site based individual rapid triage decisions for emergency mental health interventions, particularly in high surge situations. The PsySTART system contains the first known "floating triage algorithm" as a evidence based metric to inform crisis standards of care mental health care decisions in real time.

When individual PsySTART triage data is aggregated at the site level, county, region or state level, it provides an evidence based data metric to inform Gap analysis in the preparedness/planning phases.   In the response phase, the system guides near real time incident management using the floating triage algorithm which matches resources to needs in order of decreasing risk and other criteria such as "unaccompanied children", those with high exposure and previous mental health or trauma history, etc.

PsySTART, as an evidence-based rapid mental health triage and incident management system, (Gold, et al, 2009, Reissman et al., 2010; Schreiber, 2005; Theinkurta et al., 2006) helps achieve aspects of varied national homeland security policy directives including the National Health Security Strategie (2010):" ensure situational awareness foster, integrated scalable health care delivery"and "leverage connections between routine health promotion and emergency preparedness" (NHSS, 2010). PsySTART provides a concrete strategy to build community resiliency by pre-event preparedness and development of operational plans (CONOPS) for psychological casualties.
The specific components of the PsySTART system include:
  * Rapid individual and population-level triage and timely matching to appropriate levels of care in near real time

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- Resilience via establishment of local "disaster systems of care "
- Establishes a triage driven incident management system that includes:
  - Used as the example for disaster mental health "crisis standards of care" (IOM, 2009)
  - "Common operating picture" for near real-time situational awareness
  - Dynamic trajectory of evolving secondary/post event stressors
  - Shapes local incident management including: allocation of response to discrete locations in near real time based on acuity of needs, mutual aid decisions
    - Creates common data metrics for "planning/intelligence" and "operations" functions within mental health incident command including the hospital incident command system(HICS)
    - Forms the basis for the "incident action plan" (IAP) for disaster mental health incident management
    - Supports "stepped care" approach for rational allocation of limited resources in high surge conditions ethically
  - Informs long term disaster recovery functions including Stafford Act funding requests for enhanced crisis counseling services and other practical recovery needs of disaster victims.
- Agile, information technology "backbone" that provides the only real-time "common operating picture" capability for dynamic, graphical information system (GIS) situational awareness of mental health risk at the individual and population level. This system is currently in phase II operations for the LA County Emergency Medical Services Agency
- More specifically, PsySTART facilitates compliance with varied state and national policy directives, including:
  - California Disaster Mental Health Recommended Competencies
  - USDHS Universal Task List for Mental Health triage and tracking
  - PAHPA, near real-time situational awareness of "at-risk" populations
  - HRSA Mental Health surge benchmark 2.8 (2004-2005 target)
  - Institute of Medicine (IOM) Response to Terrorism Guidelines
  - Secretary's National Advisory Committee for Children in Terrorism recommendations
  - HSPD 21 Recommendations: triage
  - IOM Disaster Crisis Standards of Care recommendations (IOM, 2009)
  - National Advisory Committee on Children and Disasters
  - PHEP/HPP 2012 Mental Health Risk Assessment, monitoring for health care workers, mental health incident management
- "Capabilities" based planning approach
  - By applying the PsySTART aggregated triage estimates in varied mass casualty scenarios, accurate projections of disaster mental health impact

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and specific requirements estimates (level of care) for GAP analysis that guide planning for the needs of children
- o This approach was recently used in a FEMA/USGS catastrophic earthquake scenario in which scenario features where matched to PsySTART triage estimates at the population level to estimate an overall disaster mental health impact metric and guided subsequent Gap analysis for short term response and long term recovery.
- PsySTART "Force Mental Health Protection" version.
    - o The newest version of PsySTART is a version that is specific to disaster responders and disaster health care providers. This triages risk using evidence informed risk factors specific to disaster health care providers and is available in a deployed "team leader" version and a local disaster responder version.
    - o The PsySTART triage for health care providers is a "self triage" version that also a team leader version that permits team level aggregation of risk.
    - o The PsySTART self triage system ties into another model known as "Anticipate, Plan and Deter" which uses the triage information as one aspect of a "personal resilience plan".
    - o This version is a component of USNORTHCOM response plan for force health protection.

The PsySTART Disaster Mental Health Incident Management System is the first known population level focused disaster mental health system of care (Schreiber, 2000; Schreiber, 2005, Gold et al., 2009; Mace et al, 2010; Reissman et al., 2010) designed to manage a continuum of mass casualty mental health impacts. In this model, the broad spectrum of mental health consequences of a disaster are incorporated into a continuum of population based care, based on a common triage metric.

Rapid mental health triage is critical because, just as in emergency medicine where there is the "golden hour" to get care, in disaster mental health, there is increasing evidence of a "golden month" for the high-risk subset to be matched to brief, evidence-based care(Foa, Hearst-Ikeda, and Perry, 1995; Sijbrandi et al., 2007). The inclusion of a population based approach of assessing disaster mental health risk is a hallmark of public health emergency response, but had yet to be operationalized in disaster mental health response until the PsySTART model was created (Schreiber, 2005).

Key features of this approach include near real-time flexibility and scalability, such that it is dynamically adaptable based on incident-specific features (Schreiber, 2005; Pynoos et al., 2005). The largest deployment of PsySTART to date is the Los Angeles County EMSA multiphase PsySTART project described below.

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Triage. The PsySTART triage component is based on a novel disaster mental health triage "tag" which includes a discrete measurement of severe and extreme event exposures including witnessing traumatic injury and death of others, perceived life threat, traumatic loss of loved ones, injury or illness in self or family, *and ongoing or evolving post event stressors* such as housing, changes to livelihood, and other daily stressors that may have evolved from the index event[1]. PsySTART triage does not require a mental health professional to complete. School staff, health care workers, and individuals themselves can complete the PsySTART triage tag.

The PsySTART triage tag also measures one peri-event[2] symptom, extreme panic, based on the importance of this factor in meta-analytic investigations, the PsySTART field trial project (Theinkurta et al., 2006), and large scale meta-analytic reviews of thousands of disaster victims (see Ozer et al., 2003 for a review, Brewin, 2000). For the most part, with the exception of extremely high levels, discrete distress symptoms assessed in the early, immediate response phase likely reflect expectable and transient distress, but not necessarily risk for new incidence or functional impairments. The factors measured in PsySTART include traumatic exposure, traumatic loss, injury/illness, secondary stressors. With the exception of one highly predictive peritraumatic symptom ("extreme panic") is not symptom based.

The PsySTART triage "tag" (figure 3) includes the following elements:
- Impact of severe/extreme stressors or "severity of exposure" factors
- "What Happened" to the person, *not their symptoms or mental health per se* Based on objective features of :
    - Severe/Extreme Exposure such as being exposed to dead, dying, or mutilated bodies; hearing screams for help; delayed evacuation; trapped; separated from family; exposure to toxic agents/debris
    - Traumatic Loss (including missing family members)
    - Secondary Impacts (home loss, relocation, decreased social support, jobs)
    - Injury/Illness, such as acute injury/illness or extended health risks
    - Expressed Peri-Traumatic Severe Panic (subjective risk)
        - This variable class has recently been associated with poor self-rated health and long-term morbidity following the 2004 Florida Hurricanes (Ruggiero et al., 2009)
    - Practical human services case management foci (housing, unaccompanied children, etc.)

Definitions of PsySTART triage risk levels (see figures 1 and 2)

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[1] An index event is the current event being addressed.
[2] Peri-event symptoms are symptoms that occur at the time of the event.

Acute danger to self/others (Purple): Children presenting with acute danger to self or others

Low Risk (Green): Individuals in this category do not currently present with any of the PsySTART risk factors, are presumptively low risk, and are triaged "green". The presence of other factors, such as prior trauma history, or prior or current mental disorders may still be operative however, even in the absence of any risk factors.

Moderate Risk (Yellow): Individuals in this category display presumptive risk factors suggested by a review of the trauma risk literature and are triaged "yellow".

High Risk (Red): Individuals in this category display one or more multivariate evidence-based risk factors based on studies using PsySTART and are triaged "red". Additionally, based on convention, other factors such as being a "currently unaccompanied minor" are also presumptively triaged red to trigger appropriate protective actions and the need for secondary assessment. In surge conditions, PsySTART adopts crisis standards of care "floating triage algorithm" to sequentially prioritize care to those with greater triage risk.

Danger to Self and/or Others (Purple): Individuals in this category express danger to self or others. They are triaged "purple" and evaluated for danger.
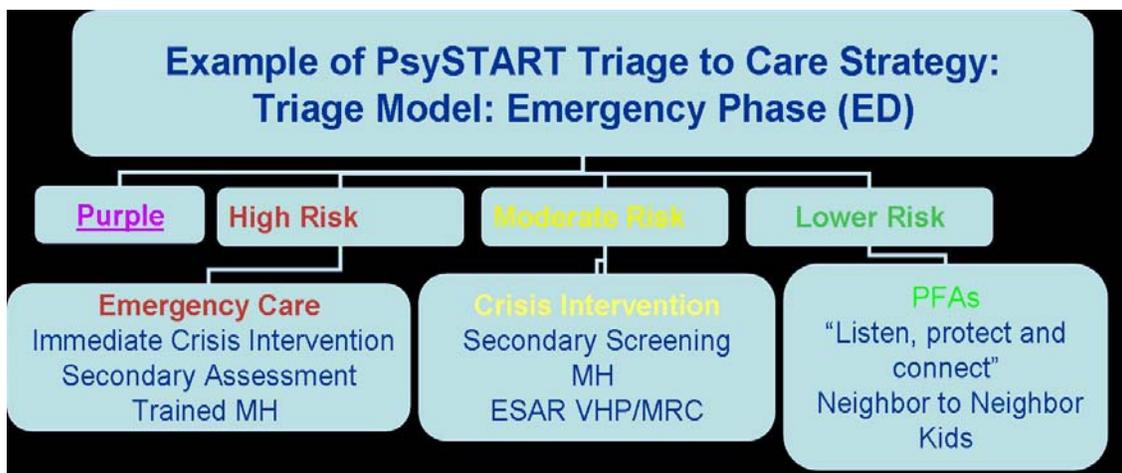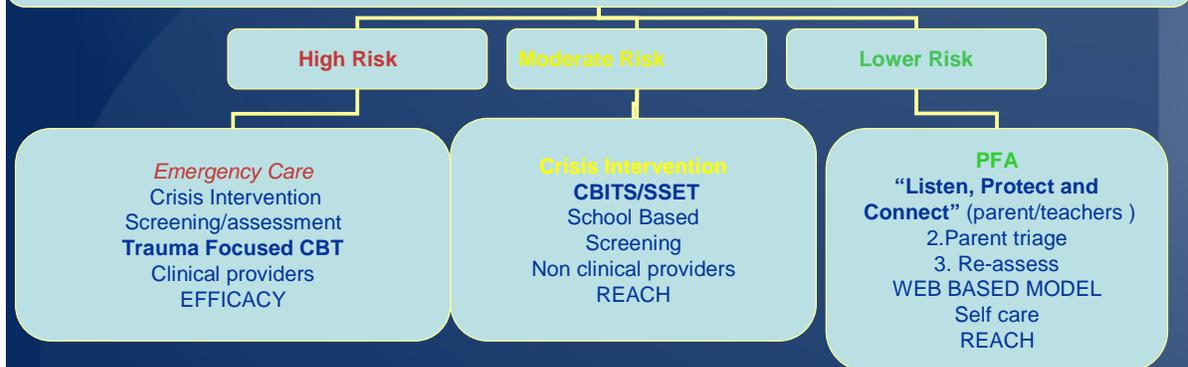

Figure 1:

Figure 2 PsySTART Triage to Care Child specific Incident Management Model
PsySTART Triage Incident Management CONOPS for Children

Seamless PsySTART Triage Incident Management
CONOPS: National Children's Model
NIMH Disaster Mental Health Research Center
University of Oklahoma Health Sciences Center

High Risk — **Moderate Risk** — **Lower Risk**

Emergency Care
Crisis Intervention
Screening/assessment
Trauma Focused CBT
Clinical providers
EFFICACY

Crisis Intervention
CBITS/SSET
School Based
Screening
Non clinical providers
REACH

PFA
"Listen, Protect and Connect" (parent/teachers)
2.Parent triage
3. Re-assess
WEB BASED MODEL
Self care
REACH

Seamless triage to care:

• "Disaster crisis intervention" =prioritized, tangible foci

• Informs mutual aid, "enhanced services" GAP analysis and funding

• Rational allocation of limited resources (eg TFCBT)

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Figure 3: PsySTART Triage Tag

PsySTART™ Disaster Mental Health Triage System

ALIGN STICKER HERE

LAST NAME	HOME ADDRESS (PRE-EVENT)
FIRST NAME	**SAMPLE**
	Not for use

DOB	GENDER	CITY	STATE	ZIP CODE
MM DD YYYY	MALE FEMALE	**©2006-2012**		

MEDICAL RECORD NUMBER: _____

MARK POSITIVE TRIAGE BELOW

Question		
EXPRESSED THOUGHT OR INTENT TO HARM SELF/OTHERS?	⬭	
FELT OR EXPRESSED EXTREME PANIC?	⬭	
FELT DIRECT THREAT TO LIFE OF SELF OR FAMILY MEMBER?	⬭	
SAW / HEARD DEATH OR SERIOUS INJURY OF OTHER?	⬭	
MULTIPLE DEATHS OF FAMILY, FRIENDS OR PEERS?	⬭	
DEATH OF IMMEDIATE FAMILY MEMBER?	⬭	
DEATH OF FRIEND OR PEER?	⬭	
DEATH OF PET?	⬭	
SIGNIFICANT DISASTER RELATED ILLNESS OR PHYSICAL INJURY OF SELF OR FAMILY MEMBER?	⬭	
TRAPPED OR DELAYED EVACUATION?	⬭	
HOME NOT LIVABLE DUE TO DISASTER?	⬭	
FAMILY MEMBER CURRENTLY MISSING OR UNACCOUNTED FOR?	⬭	
CHILD CURRENTLY SEPARATED FROM ALL CARETAKERS?	⬭	
FAMILY MEMBERS SEPARATED AND UNAWARE OF THEIR LOCATION/STATUS DURING DISASTER?	⬭	
PRIOR HISTORY OF MENTAL HEALTH CARE?	⬭	
CONFIRMED EXPOSURE/CONTAMINATION TO AGENT?	⬭	
DE-CONTAMINATED?	⬭	
RECEIVED MEDICAL TREATMENT FOR EXPOSURE/CONTAMINATION?	⬭	
HEALTH CONCERNS TIED TO EXPOSURE?	⬭	
NO TRIAGE FACTORS IDENTIFIED?	⬭	

MARKING EXAMPLES
- CORRECT
- WRONG
- WRONG

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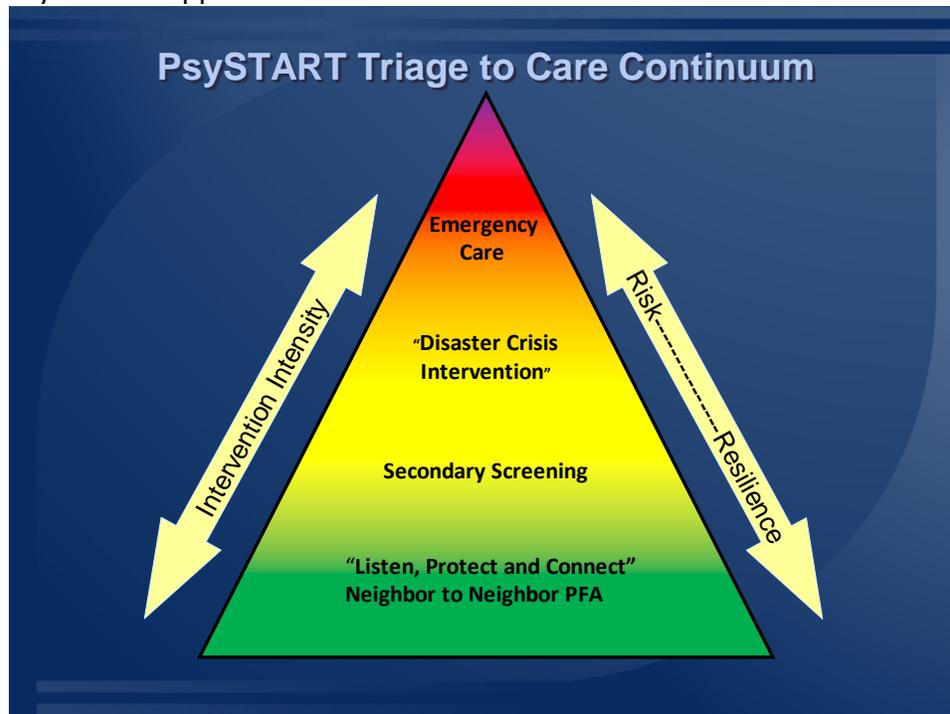**EMERGENCY MEDICAL SERVICES AGENCY** — LOS ANGELES COUNTY

Original – Patient Chart

FORM APPROVED FOR USE UNTIL 11/01/2010
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Figure 4:
PsySTART Stepped Care Continuum Model

PsySTART Triage to Care Continuum

Emergency Care

"Disaster Crisis Intervention"

Secondary Screening

"Listen, Protect and Connect"
Neighbor to Neighbor PFA

Intervention Intensity

Risk

Resilience

When PsySTART triage information ("tags") is aggregated at the site level, the level of need of the entire site is estimated. When PsySTART triage data is aggregated in an entire community, a "population level" estimate of children's acute and long term mental health needs is created to guide incident management, mutual aid, Stafford Act funding needs. When used sequentially over time with cluster modeling, aggregated population data may provide a proxy for behavioral epidemiology of psychological risk in children.

Information technology system. The graphical information system (GIS) based information management component of PsySTART is an information technology platform that allows for the automated processing of PsySTART tags from multiple sites simultaneously. This enables a "Common Operating Picture" yielding near real time situational awareness and is thought to be the first such system in existence. The system compiles triage data and updates the database with each new tag entered. The system provides for near real-time situational awareness of mental health risk with end user selected levels (individual, site, multiple sites) and plots the triage data on a graphic information systems (GIS) based map. This system estimates levels of emergent

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(immediate) and acute (delayed) mental health risk and also allows for near real-time customized data extraction of any of the triage factors.

This system was recently customized for the Los Angeles County Emergency Medical Services Agency and made available for use by county wide mental health agencies, schools and the American Red Cross. For this project, the mental health triage system information technology platform was adapted for use by acute response stakeholders including hospitals, community clinics, and mental health responders for a near real-time common disaster mental health operating picture.

Disaster mental health crisis standards of care. Mass casualty events will likely create unprecedented levels of at-risk individuals and associated surge demand on already severely taxed public mental health systems. In disaster medicine, this has led to the development of "crisis standards of care" for disasters in which clinical resource allocations are not primarily based on individual patient needs, but on "doing the most good for the most people" given unprecedented surge demands. This model is also applicable for disaster mental health response.

The National Academies of Science Institute of Medicine recently convened the "Committee on Establishing Standards of Care for Use in Disaster Situations." Included in the committee's report, *Guidance for Establishing Crisis Standards of Care for Use in Disaster Situations* (IOM, 2009), was a companion model for the rational alignment of limited disaster mental health resources using the objective PsySTART triage system. This model was recently tested in American Samoa following an 8.0 magnitude earthquake and devastating tsunami that followed. Very large numbers of the impacted population were triaged "red", or immediate risk, by PsySTART, but these numbers exceeded the capacity of local and federal acute phase resources. This required the use of "crisis standards of care," floating triage decisions to match the highest risk within the high-risk subset to care first, in accordance with the IOM committee recommendations and principles.

Disaster Systems of Care

PsySTART is built on an operational model of "disaster systems of care (Schreiber, 2004a, 2004b) that establishes pre-event linkage between key health, mental health and disaster response systems including emergency medical services, public health, American Red Cross, public and private mental health, schools and child congregate settings, first responders, faith based community and citizens directly(Schreiber, 2005). When this is accomplished pre-event, as has recently been down in Los Angeles County, at the very moment of disaster, key disaster systems of care can share real time situational awareness of mental health emergencies, patterns of risk informed by GIS and establish a "common operating picture" of needs, resources and gaps to inform

newly developed augmentations to standard ICS models for disaster mental health incident management (Schreiber, 2010, Schreiber, Pfefferbaum and Sayegh, 2010).

Current real world use of the PsySTART Rapid Triage System.

To date, the PsySTART Rapid Disaster Mental Health Triage and Incident Management System has been included in the following training components: the State of California Disaster Mental Health Competencies, the U.S. Public Health Service Field Team Training, USNORTHCOM Draft Force Health Protection Guidance, National Disaster Medical System Force Health Protection Guidelines Training, State of New York State Office of Mental Health/University of Rochester Training, State of Ohio/Case Western University Rainbow Children's Hospital Pediatric Preparedness Training Course, Los Angeles County Emergency Medical Services Agency Disaster Resource Center Project, CDC/DHHS Disaster Surveillance Workgroup Recommendation, National Disaster Medical System Conference, White House Presidential Security Directive 21, and the American Academy of Child Psychiatry (DRAFT) Disaster Guidelines.

Real world and national level exercise use. PsySTART has been used in the following real-world examples (including exercise and actual events): Top Officials (TOPOFF 4) (by ARC, State of Oregon and the U.S. Public Health Services), U.S. Public Health Service Field Response Team Training, USGS Shakeout Scenario/Golden Guardian 2008, Thai Ministry of Health/ Centers for Disease Control and Prevention Southeast Asian Tsunami, ARC in Hurricane Ike, Tennessee Floods, DHHS American Samoa Tsunami (2009) Response, and CDC American Samoa Field Epidemiology Response to the 2009 Tsunami.

Example of PsySTART triage to care mass casualty model. In very large events, particularly those that involve public health emergencies that include social distancing strategies, real and/or perceived contagion, a population level (see figure 4 for PsySTART model for "At Risk" Children) approach developed for the State of California would incorporate PsySTART to rationally align limited mental health assets.

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