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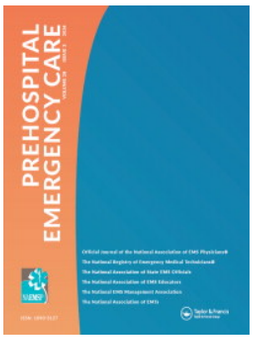

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Advancing Emergency Medical Services' (EMS) Response Capability for Behavioral Health Emergencies: Los Angeles County's Performance Improvement Initiative

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ABSTRACT

Introduction: Behavioral health emergencies (BHEs) are a common patient encounter for emergency medical services (EMS) clinicians and other first responders, in particular law enforcement (LE) officers. It is critical for EMS clinicians to have management strategies for BHEs, yet relatively little information exists on best practices. In 2016, the Los Angeles County EMS Agency's Commission initiated a comprehensive evaluation of the 9-1-1 response for BHEs and developed a plan for improving the quality of care and safety for patients and first responders.

Methods: A Behavioral Health Initiative Committee was assembled with broad representation from EMS, LE, health agencies, and the public. Committee objectives included: 1) produce a process map of the BHE response from the time of a 9-1-1 call to patient arrival at transport destination, 2) identify and describe the different agencies that respond, 3) describe the critical decision points in the EMS and LE field responses, 4) acquire data that quantitatively and/or qualitatively describe the services available, and 5) recommend interventions for system performance improvement.

Results: The committee generated comprehensive process maps for the prehospital response to BHEs, articulated principles for evaluation, and described key observations of the current system including: 9-1-1 dispatch criteria are variable and often defaults to a LE response, the LE response inadvertently criminalizes BHEs, EMS field treatment protocols for BHEs (and especially agitated patients) are limited, substance use disorder treatment lacks integration, destination options differ by transporting agency, and receiving facilities' capabilities to address BHEs are variable. Recommendations for performance improvement interventions and initial implementation steps included: standardize dispatch protocols, shift away from a LE primary response, augment EMS treatment protocols for BHEs and the management of agitation, develop alternate destination for EMS transport.

Conclusion: This paper describes a comprehensive performance improvement initiative in LAC-EMSA's 9-1-1 response to BHEs. The initiative included a thorough current state analysis, followed by future state mapping and the implementation of interventions to reduce LE as the primary responder when an EMS response is often warranted, and to improve EMS protocols and access to resources for BHEs.

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Introduction

Behavioral health emergencies (BHEs), which include mental health and substance use disorder (MH/SUD) conditions, are a common patient encounter for emergency medical services (EMS) clinicians. Encounters classified as BHEs account for 7.3% of EMS field responses nationwide and are increasing in prevalence (1, 2). Emergency department (ED) visits for BHEs have increased in recent years for both adults and children (3, 4). There are over 20 million EMS transports to the ED each year and historically one in seven ED visits arrived by ambulance (5, 6). The United States (US) is witnessing a strain on the emergency care system, in part due to the high rates of prevalence of mental health conditions, and relative low rates of access to non-emergent psychiatric and behavioral health services. Over 22% of adults in the US carry a mental health diagnosis, and nearly 6% suffer from a serious mental illness, however only 65%

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of adults received mental health treatment in the past year (7, 8). Almost 23% of children and adolescents in the U.S. have a MH/SUD condition, and there are increasing numbers of pediatric patients presenting with BHEs to EDs (9–11). Despite the growing need for coordinated access and integrated guidelines for delivering mental health care across the spectrum of emergency response, few resources or dedicated clinical protocols for BHEs exist for EMS systems and clinicians (12–15).

Los Angeles County (LAC) has a population of over 10 million persons. Between five to eight million calls are placed to 9-1-1 Public Safety Answering Point (PSAP) (AKA "dispatch") each year in LAC (16, 17). Approximately 500,000 (8%) of the 9-1-1 calls per year are related to a BHE. Data from the LAC EMS Agency (LAC-EMSA) shows that EMS responds to 800,000 calls for *all-causes* each year, and roughly 65,000 (8%) are for BHEs, making it the second most common clinician impression (18).

The protocols in LAC, like most EMS systems in the US, have offered relatively limited guidance for BHEs. Patients are frequently transported to EDs for further evaluation and care, with the intent of accessing psychiatric services. Given the number and proportion of EMS encounters for BHEs, it is increasingly apparent that EMS clinicians and the public would benefit from more robust pre-hospital protocols for evaluation and management. Advocacy toward these issues is growing, for example a recent National Association of EMS Physicians position statement on the care of agitated patients recommends that EMS agencies should have standard protocols for managing BHEs and that enhanced education for EMS clinicians is needed to identify BHE conditions and administer appropriate management (19). Additionally, with many EDs lacking resources to optimally care for BHEs, a small number of EMS systems have innovated with "alternate destination" protocols that allow transport directly to mental health centers, demonstrating favorable outcomes (20).

The LAC-EMSA establishes policies and procedures for the local EMS system, including designating EMS base hospitals and specialty care centers (e.g., trauma, stroke, STEMI, and pediatric centers), articulating standards and protocols for patient treatment and transfer, and supervising training and education programs. The LAC-EMSA has oversight of approximately 18,000 EMS personnel (which includes over 4,600 paramedics employed by 29 Fire Departments), 18 ambulance companies, and 70 9-1-1 receiving hospitals (18). The LAC-EMS Commission acts in a governance and advisory capacity on behalf of the County's Board of Supervisors and the County Director of Health Services regarding LAC-EMSA's policies, programs, and standards. In 2015, the EMS Commission established a Behavioral Health Initiative Committee (BHIC) to evaluate the current state of the 9-1-1 response to BHEs and to propose steps to improve the quality of care and safety for patients and first responders alike (21). The objective of this paper is to describe the development and implementation of a comprehensive behavioral health performance improvement initiative in a large urban EMS system.

Methods

The BHIC was assembled with broad representation from strategic partners (Table 1). The committee met quarterly for a period of two years, with intervening working-group meetings. All meetings were administratively managed and documented by LAC-EMSA staff. The overarching goal of the committee was to answer a patient-centered question: "What happens when a person in LA County calls 9-1-1 with a behavioral health emergency?" The embedded questions included: "Who will respond in the field, and how is that determined? What kind of evaluation will be performed? Where will the person be transported to (e.g., "destination")?" Based on these focal areas of inquiry, the following objectives were established:

1. Produce a process map of the response(s) to BHEs from the time of a person placing a 9-1-1 call to arrival at transport destination;
2. Identify and describe the different types of agencies that can potentially respond to BHEs;
3. Describe the critical decision points in the EMS and LE responses;
4. Identify data that quantitatively and/or qualitatively describe the availability of services, or lack thereof; and,
5. Recommend strategic interventions for performance improvement by the LAC-EMSA, or other agencies as appropriate.

At the outset, the committee articulated four key principles to guide the evaluation of the current system (Table 2).

Results

The BHIC performance improvement processes resulted in a set of critical observations and analysis of the current state, and recommendations for future state and initial implementation steps (19).

BHIC Observations of Current State

Extensive stakeholder meetings and data gathering facilitated the creation of process maps to illustrate the 9-1-1 response for BHEs in LA County (in 2016). Figure 1 demonstrates the law enforcement response, and Figure 2 illustrates the EMS response. Though both processes begin with a call to 9-1-1, the protocols utilized by dispatch lead to a divergent response by either LE or EMS, with a contrasting series of decision points, field "evaluation" processes, resources available, and destination. Generally, the BHE field response is variable, lacks uniformity, and does not have a source of central oversight. The BHIC's analysis of these field response maps and corresponding data resulted in a number of key observations detailed below.

9-1-1 PSAP's Dispatch Criteria for BHEs are Variable

The main source of variability in the BHE field response originates from the PSAPs who dispatch LE or EMS based

on local agency customs (e.g., different questions may be asked by each PSAP), rather than a standardized countywide systematic approach. Most PSAP's (42 in LAC) are operated by LE agencies. If the call is determined to be medical then it may be transferred to an EMS dispatcher, if one is available. Most commonly, the decision support algorithm involves an inquiry of whether the person on the scene has an "injury, trauma, or loss of consciousness." If the answer is "no" then LE is dispatched (Figure 1). The LE officers are, therefore, often placed in the position of first responder for BHEs, with a goal of determining whether the patient needs further medical evaluation and treatment despite the lack of clinical training or credentials.

To further investigate, LAC-EMSA partnered with the Los Angeles Area Police Chiefs Association to conduct a survey of LE dispatch and field response practices in 2017 (19) (see online supplemental materials). The survey was distributed to the County's 42 dispatch agencies, 26 (64%) responded with valid data. The survey demonstrated several important findings: approximately 8% of the 20,000 daily calls to 9-1-1 in LAC were for a BHE (e.g., an average of one call every minute in the county is BHE related), and dispatch was defaulted to a LE response compared to EMS at a rate of 4:1. Between 30 to 40% of the BHE calls were for suicidal ideation or behaviors, or a suicide attempt (SI/SA). Only 1 in 5 agencies (18%) report having a standardized dispatch protocol for BHE's, but most agreed this would be beneficial.

Table 1. Stakeholder representatives to the Behavioral Health Initiative Committee.

County Health Agencies
Los Angeles County Department of Health Services - Emergency Medical Services Agency
Los Angeles County Department of Mental Health
Los Angeles County Department of Public Health
EMS Providers and Affiliates
California State Firefighters' Association
Los Angeles Ambulance Association
Los Angeles County Fire Chiefs' Association
Los Angeles County Fire Department
Healthcare Providers, Specialty Societies, and Affiliates
American College of Emergency Physicians, California Branch
Emergency Nurses Association
Exodus Recovery Inc. Mental Health Urgent Care Center (AKA "Psychiatric Urgent Care Center")
Hospital Association of Southern California
Los Angeles County Mental Health Commission
Los Angeles General Medical Center Psychiatric Emergency Services
Southern California Psychiatric Society
Law Enforcement Agencies
Los Angeles County Police Chiefs' Association
Los Angeles County Sheriff's Department
Los Angeles Police Department
Peace Officers' Association of Los Angeles County
Public Representatives
Los Angeles County Board of Supervisors Health Deputy
National Alliance on Mental Illness
Insurance Providers
LA Care
HealthNet

The LE Response Inadvertently Criminalizes Behavioral Health Emergencies

When LE responds to a BHE, their initial decision point is to determine whether there is crime being committed which warrants arrest or other LE intervention (pursuant to state criminal law). The LE responder may call EMS to the scene if they believe that a medical evaluation is needed in the field, though the training and criteria for what constitutes the need for a medical evaluation is unclear. For example, a person with an apparent injury, or an officers' opinion that a subject is "ill" or has identifiable chronic medical problems would trigger a call for EMS support. In most circumstances, LE will ultimately transport the patient in a LE vehicle and in handcuffs (some agencies have policies that strictly require this). The LE response has the unintended consequence of "criminalizing" persons with BHE emergencies.

Many LE agencies across the county have made notable efforts to improve officers' training to interact with BHE patients. Three quarters of the LE agencies reported that they have some availability of embedded mental health clinicians (such as social workers or psychologists), but it was overall rare to have 24/7 availability. The embedded LE mental health teams are not dispatched as first responders, rather are secondary responders with protracted transit and response times as well as a lack of 24/7 availability and limited geographical reach. Finally, the LE field protocols for management of the acutely agitated person with a BHE are guided by department specific customs or training, and it is not clear to what degree situations could be de-escalated with better integration of EMS resources.

EMS Field Treatment Protocols for the Acutely Agitated Patient Are Limited

The LAC-EMS protocols (2016) are limited to evaluation for medical conditions and identification of patients with "agitated delirium" and treatment with midazolam (a benzodiazepine). This protocol is narrow in scope compared to the range of medications available to treat the agitated patient in EDs and is insufficient to address the broad spectrum of agitation or behavioral disturbances that can manifest from BHEs in adults and children, such as acute psychosis, bipolar disorder, autism or dementia with behavioral disturbance, and other conditions (22–28). Furthermore, existing field protocols do not describe the indications or applications of de-escalation techniques, which are generally preferred to the use of medication (especially involuntarily), the application of restraints, or the use of other force (29). There is essentially no guidance on evaluation and management of patients with suicidal ideation or behavior, though some limited guidance is provided for suicide attempts. In general, the EMS protocols addressing BHE's lack detail and depth, and the

Table 2. Guiding principles for the Los Angeles County EMS Agency Behavioral Health Initiative Committee.

- Behavioral health emergencies are medical emergencies and should be treated as such to the maximal extent possible.
- Behavioral health emergencies are unique in their potential for agitation or violence, which ideally requires an appropriate co-response from EMS and LE.
- Behavioral health emergencies are best treated in receiving facilities that are appropriately designed and resourced.
- The system of pre-hospital care for behavioral health emergencies should be based on best practices.

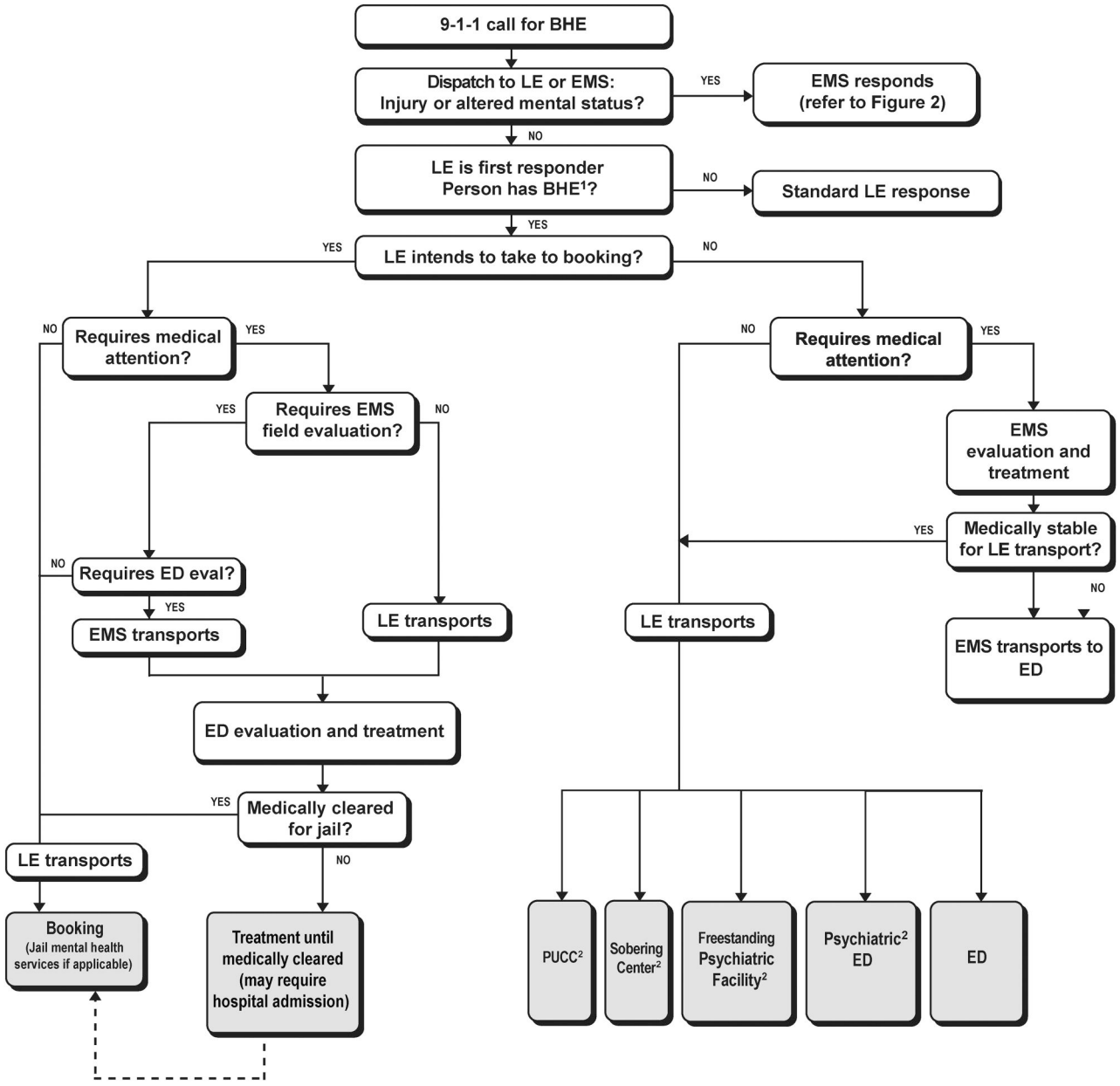

Figure 1. BHE response process map, current state (2016): law enforcement response.

corresponding educational training on BHE's is very limited for EMS clinicians.

Destination Options Differ by Transporting Agency

Discrepancies in patient destination were identified based primarily on which agency responds (as opposed to the patient's condition or the services needed) (Figures 1 and 2). The system provides several destination options to LE that increase the access to appropriate mental health care, such as options to transport to Psychiatric Urgent Care Centers (PUCCs) (4 facilities in 2016, now increased to 7 in 2023), Sobering Centers (1 facility was available in 2017, closed during COVID, and re-opened in 2022), or directly to freestanding psychiatric hospitals. A LE responder can also transport to any ED in the county, including a very small number that have a specific "psychiatric ED" component with mental

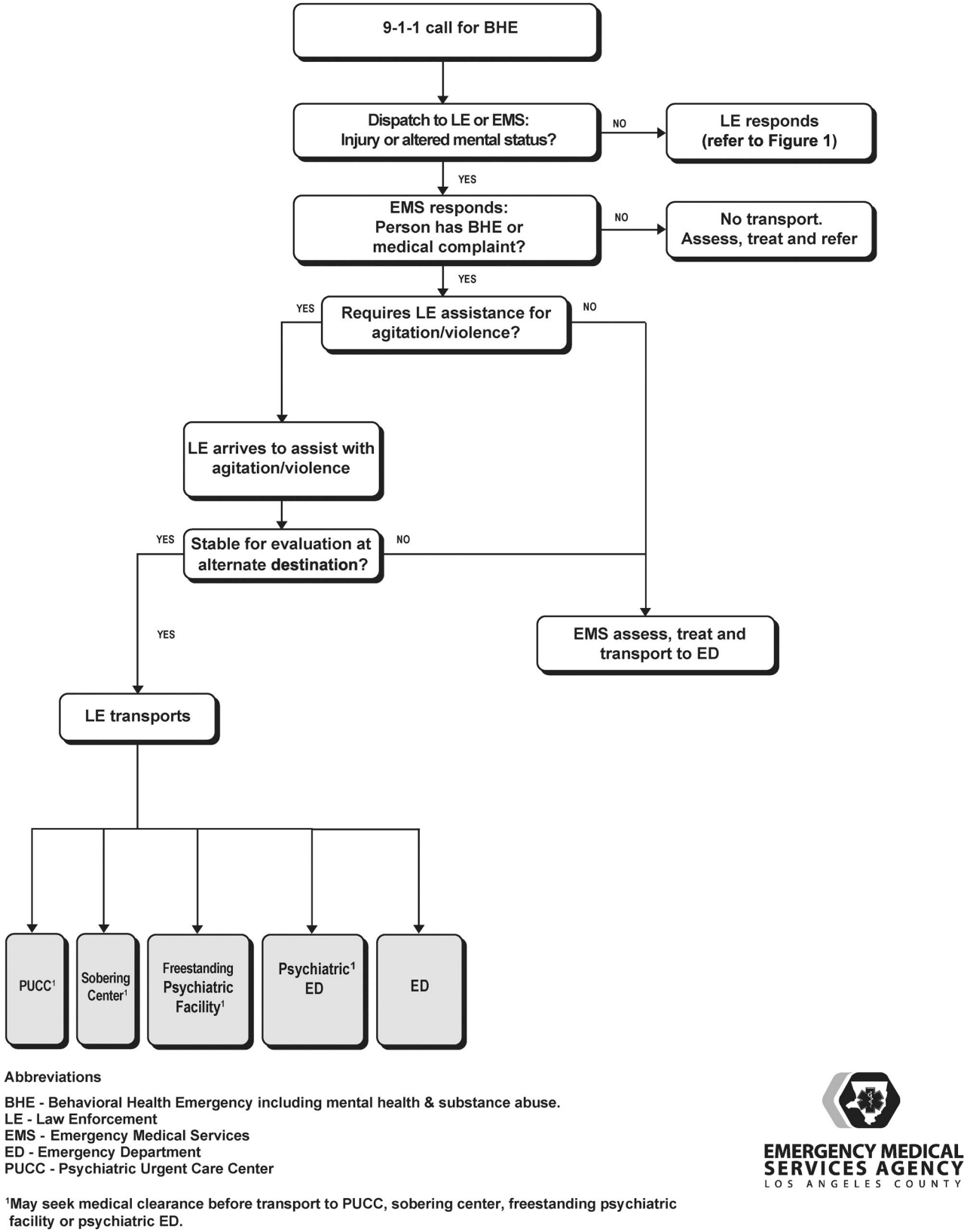

Figure 2. BHE response process map, current state (2016): EMS response.

health practitioners and an appropriate built environment (3 facilities). Data from the internal survey of LAC dispatch and LE agencies showed that LE transported to PUCC's approximately 25% of the time (see online supplemental material).

Conversely, in 2016 the EMS destination for patients with BHEs was limited to the "nearest ED", with very narrow exceptions for approved "community paramedicine programs" who were permitted to transport to PUCC and

sobering centers. Finally, there are 11 freestanding psychiatric facilities in LA County, several whom work collaboratively with local LE to receive patients directly from the field. While this arrangement may be advantageous for those agencies with partnerships, the lack of standardization across the county contributes to disparities in the system.

ED's Capability to Address Behavioral Health Emergencies is Variable

Many EDs that receive patients from EMS clinicians lack both sufficient resources (such as an appropriate built environment) and clinical expertise (such as psychiatric consultants, nurses, social workers, or technicians) to optimally manage BHE patients. The most optimally staffed and designed facilities are psychiatric emergency departments, however there are only 3 in the county. One third of the county's EDs (24 of 74) are designated to be able to perform evaluations for involuntary psychiatric hospitalization (CA Welfares and Institutions Code 5150 et seq.). These facilities have greater availability of appropriate mental health staff resources to evaluate BHEs, compared to the remainder of ED's (50 of 74) who often rely on mobile response teams to travel to the ED to perform an evaluation for involuntary detention and assist with disposition, resulting in lengthy boarding for BHE patients in the ED (30).

Substance Use Disorder (SUD) Services Lack Integration

The SUD services are largely unavailable or lack integration into the emergency and acute care system. Specifically, LE and EMS do not have acute substance detoxification or rehabilitation services readily available as a destination option, although as noted previously LE may access sobering centers. Individuals with SUDs are often discharged from the ED with inadequate follow up and have difficulty accessing community outpatient resources for their addiction. In LAC there is a scarcity of medically monitored detoxification programs, and limited ability to place patients directly into detoxification or rehabilitation programs from the ED.

BHIC Recommendations for Future State Performance Improvement and Initial Implementation

Based on the observations and analysis, the BHIC proposed a series of recommendations designed to advance the 9-1-1 and EMS response system as summarized below. Recommendations were implemented through deliberate, iterative committee efforts, and through systemwide education and training. Figure 3 illustrates the BHIC's proposed future state response to BHEs. Table 3 provides a summary of BHIC interventions and milestones.

Improve Dispatch Protocols

Further investigation is needed regarding the feasibility of developing improved dispatch criteria that is organized to identify dangerous behaviors and to generally increase the dispatch of EMS clinicians to non-agitated/non-violent BHEs. Ideally, LE should co-deploy with EMS for potentially agitated or dangerous BHEs. Standardization of dispatch criteria across all PSAP agencies would greatly enhance uniformity of the system, however significant barriers exist to addressing this recommendation. First, the majority of PSAP's in LA county are managed by LE as opposed to Fire Department or EMS, therefore the EMS agency and Commission do not have jurisdiction over PSAPs. Second, there is no known governing entity with oversight of all PSAPs.

This information contributed to the development of a pilot program whereby local LE agency PSAPs in 2018 began transferring calls for suicidal ideation to the regional suicide prevention hotline for further evaluation and to determine if a field response (aka "rescue") was needed. Other pilot programs for co-dispatch of LE and EMS to BHEs are currently under evaluation by select municipalities in the County.

Improve EMS Treatment Protocols for BHEs

The goals of this recommendation are to enhance EMS protocols to emphasize de-escalation tactics, to evaluate potential additional pharmacologic interventions, and to ensure the safe and limited utilization of restraints (as a last resort). In 2021, the EMS commission established a subcommittee comprised of experts from EMS and paramedics, emergency medicine, pediatric emergency medicine, emergency psychiatry, child/adolescent psychiatry, law enforcement, and county social workers to investigate and develop new protocols and guidelines. Through a series of monthly meetings occurring over one year, the working group developed four new policies and updated three existing policies (Table 4).

The main driver of policy improvement efforts was the creation of a new protocol focused on the "Care of the patient with agitation" (Table 4). This protocol included a decision support diagram and an extensive list of definitions of common psychiatric symptoms and diagnoses to aid EMS responders in better assessment and communication regarding BHEs. Examples of key terms that were defined include agitation, autism, dementia, bipolar disorder, disorganized behaviors, hallucinations, psychosis, and self-injurious behavior. Core principles in the management of agitation were articulated, including: the overarching goal of helping the patient regain control over their behaviors so that they can participate in their evaluation and treatment, maintaining the patient's dignity to the greatest extent possible, prioritizing the use of least restrictive methods possible, indications for medical or pharmacologic treatment, and protocols for safe transport to a hospital or facility. All EMS personnel are now required to be trained, capable, and competent in verbal de-escalation techniques, and relevant guidance is provided. Finally, the protocol on restraining patients, among others, were revised to provide guidance on interactions with LE on the scene, emphasizing the role of EMS in always advocating for the health of the patient.

The LAC-EMSA conducted a review of the literature and data on use of olanzapine (an atypical antipsychotic) in ED and EMS field encounters. Olanzapine is available in

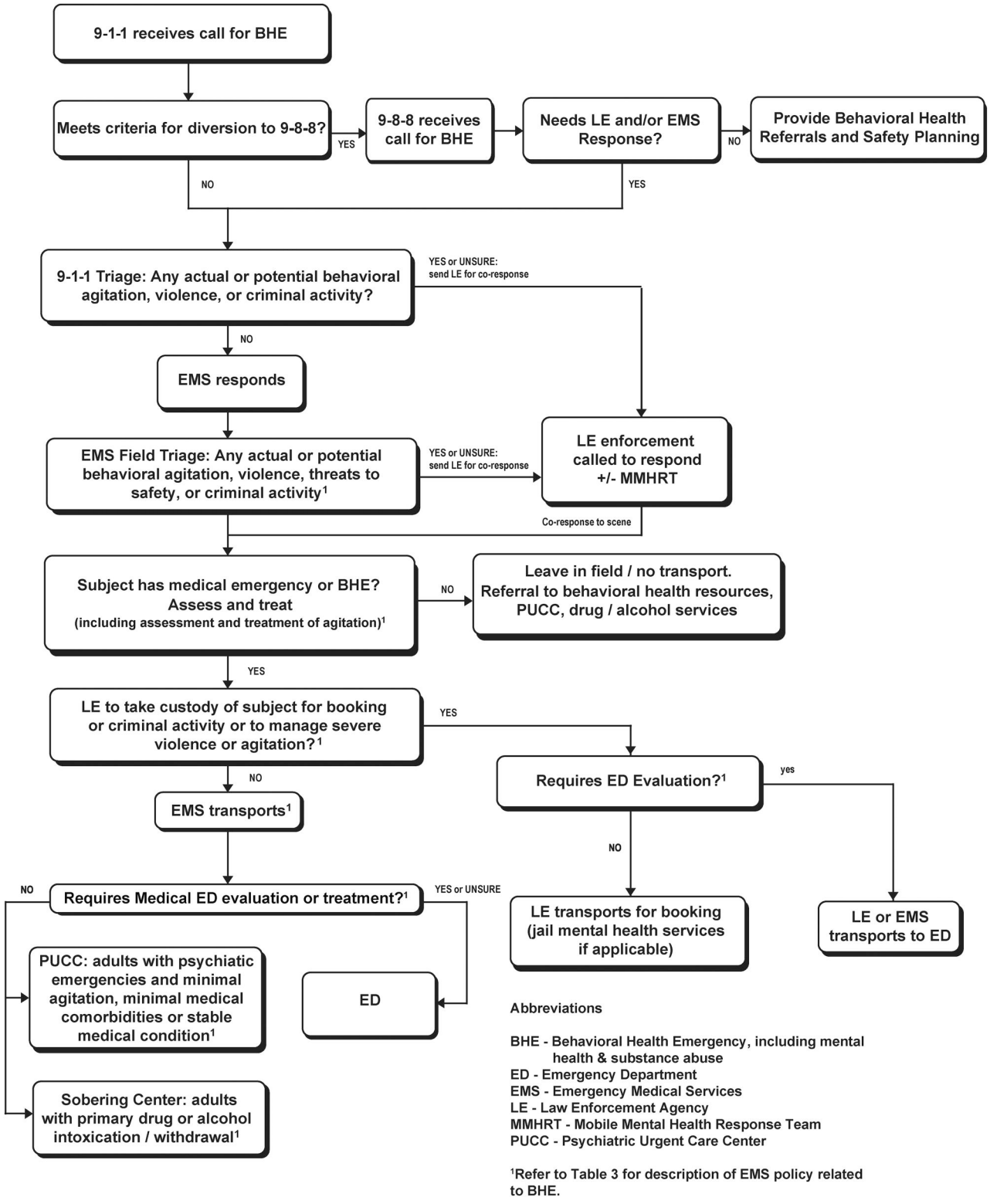

Figure 3. BHE response process map, proposed future state.

parenteral and oral formulations. While parenterally administered olanzapine is commonly used for acute agitation for patients of all ages in hospital settings, this formulation requires reconstitution which adds complexity to field preparation and administration. A sub-committee of local emergency medicine, pharmacologists, and psychiatric experts agreed that the orally disintegrating olanzapine could be promising for field treatment of agitation in cooperative patients and was added to EMS protocols in 2022 (Table 4).

The LAC-EMSA's annual system wide training (referred to as "EMS Update") in 2022 delivered mandatory training for all paramedics on all new and revised BHE policies, with special emphasis on concepts of verbal de-escalation and patient-centered management of acute agitation. Every

Table 3. Descriptive summary of Behavioral Health Initiative Committee interventions or milestones.

Intervention or Milestone	Date (Duration)	Description
BHIC convenes	1/2016 – 1/2018 (2 years)	Quarterly committee meetings held with stakeholders (Tables 1 and 2), extensive data gathered to describe current state of 9-1-1 response to BHEs, developed process maps (Figures 1 and 2). Committee analyzed and critiqued current state, proposed recommendations for future state (Figure 3).
Tour PSAPs	10/2016 – 12/2016 (2 months)	BHIC members toured PSAPs, held focused discussion with dispatchers regarding their processes and algorithms for triaging 9-1-1 BHE calls and deploying LE vs. EMS.
Survey of PSAP and LE Agencies	1/2018 – 1/2019 (1 year)	LAC-EMSA conducted countywide survey of PSAPs and LE agencies regarding triage practices for 9-1-1 BHE calls, volume and type of BHEs, identified areas of need for greater resources or support. See online supplemental material.
State advocacy for alternate destination	1/2019 – 1/2020 (1 year)	LAC-EMSA engaged with State agencies to advocate for laws and/or policies to authorize EMS transport to alternate destinations (e.g., PUCC and Sobering Centers).[33]
Subcommittee to address BHIC recommendations	3/2019 – 3/2021 (2 years)	LAC-EMSA formed subcommittee to advance BHIC recommendations including: evaluation of EMS field protocols for BHEs, pharmacologic treatment options for BHEs, and investigation of (EMS and LE) co-response models.
Pilot of PUCC destination program	6/2019 – 6/2022 (2 years)	LAC-EMSA approved four EMS provider agencies (fire departments) with appropriate education, training, and supervision to pilot test EMS transport to PUCCs.
Pilot of LAPD dispatch of 9-1-1 SI calls to suicide prevention center	6/2020 – 6/2021 (1 year)	LAPD, with support from LAC-EMSA, initiated a pilot of transferring 9-1-1 calls for SI to the regional suicide prevention center; evaluated feasibility, call volume, and outcomes of calls transferred.
Pilot of EMS and LE co-response for BHEs	6/2020 – 1/2022 (18 months)	LAC-EMSA partnered with Long Beach Police and Fire Department to pilot test co-response of LE and EMS for BHE, incorporated into a training model.
LE naloxone administration	6/2020 – 12/2022 (30 months)	LAC-EMSA provided oversight and medical support for LE agencies across LA county to implement naloxone treatment protocols.
Leave behind naloxone program for EMS	6/2020 – 12/2022 (30 months)	LAC-EMSA developed protocols and training for EMS providers to provide naloxone to third parties (family/caregivers) during field encounters.
Subcommittee on pharmacologic treatment of agitation (olanzapine)	1/2021 – 6/2021 (6 months)	Subcommittee of experts from psychiatry, emergency medicine, and EMS evaluated expansion of pharmacologic treatment options to include olanzapine (second generation antipsychotic), developed relevant treatment protocols and drug reference documents. See Table 4.
Subcommittee on EMS field response protocols for BHEs	1/2021 – 6/2022 (18 months)	Subcommittee of experts from psychiatry, emergency medicine, and EMS/paramedic developed new protocols on the care of the patient with agitation and conducted extensive revision of existing protocols. See Table 4.
9-8-8 implementation	1/2022 – 12/2022 (1 year)	9-8-8 system initiated; lessons learned from LAPD pilot (see above) incorporated into countywide implementation.
EMS clinician education on BHE field response protocols	6/2022 – 12/2022 (6 months)	LAC-EMSA developed and implemented "EMS Update" focused on education of new BHE protocols for agitation, olanzapine, and all revised BHE field treatment protocols.

Abbreviations: BHE: Behavioral health emergency; BHIC: Behavioral health initiative committee; ED: emergency department; EMS: Emergency medical services; LAAPCA: Los Angeles Area Police Chiefs' Association; LAC: Los Angeles County; LAC-EMSA: Los Angeles County Emergency Medical Services Agency; LAPD: Los Angeles Police Department; LE: Law enforcement; PD: Police department; PSAP: Public safety answering point; SI = suicidal ideation.

practicing paramedic in LA County was required to complete this training (and was offered to all EMTs) by December 31, 2022.

Support Efforts to Increase Access to Acute SUD Treatment

In January 2021, LAC-EMSA established protocols for naloxone use, incorporating guidance for all ages where opioid overdose/poisoning is suspected. Additionally, LAC-EMSA developed and communicated protocols for 'leave behind naloxone", whereby EMS clinicians provide intranasal naloxone for future use by the patient or caregivers/friends during a suspected overdose. LE agencies in LAC also have opportunities to establish programs where intranasal naloxone could be given if an opioid poisoning or overdose was suspected prior to EMS arrival. Future efforts to increase access to acute SUD treatment facilities and services will require enhanced partnership with the substance abuse and prevention County agencies and are most likely to be accessed from ED or PUCC locations as opposed to EMS field responders. The development of comprehensive sobering center services is an additional opportunity to avoid ED utilization in favor of services that may enhance patient's connection to SUD and MH resources.

Provide Alternate Destination for EMS

Based on the need for expanded services for BHE patients, LAC-EMSA along with other EMS agencies within the state of California have called for the ability for all EMS agencies to transport patients to alternate destinations, specifically PUCCs and sobering centers (30–32). In 2019, LAC-EMSA implemented a PUCC pilot program, whereby PUCC Standards and a PUCC Patient Destination Policy were developed (Table 4). Seven PUCCs were designated, and four EMS agencies (Culver City, Santa Monica, LA City Fire Department and LA County Fire Departments) met the training requirements and were approved to participate in the pilot program (31).

On November 1, 2022, the State of California Emergency Medical Services Authority released new regulations for Community Paramedicine and Triage to Alternate Destinations (California Code of Regulations, Title 22, §1800-1820, Division 9, Chapter 5) (33). These regulations define the requirements for local EMS Agencies to fully implement an alternate destination program, which would allow paramedics to triage and EMS personnel to transport voluntary, low-acuity patients experiencing a BHE to a designated PUCC, and also establish minimum standards for PUCC designation and training requirements for EMS clinicians. The LAC-EMSA

Table 4. EMS policies related to behavioral health emergencies for adult and pediatric patients.

Policy Title	Reference	Status	Description
Care of the Patient with Agitation	Ref. No. 1307	New (2022)	Definitions of common behavioral health conditions and symptoms, principles and protocols for assessment, and prioritization of verbal de-escalation techniques.
Flow chart for initial approach to scene safety	Ref. No. 1307.1	New (2022)	Diagrammatic representation of approach to scene safety.
Verbal De-Escalation	Ref. No. 1307.2	New (2022)	Verbal de-escalation strategy and mnemonic.
Common Etiologies of Agitation	Ref. No. 1307.3	New (2022)	Description of common etiologies of agitation, field presentation, and likelihood of success by verbal de-escalation.
Olanzapine Drug Reference	Ref. No. 1317.32	New (2022)	Drug reference and protocol for use of olanzapine (atypical antipsychotic).
Patient Destination: Behavioral / Psychiatric Crisis	Ref. No. 526	New (2019)	Guidelines for the transport of patients with BHEs to the most appropriate facility, including triage criteria for psychiatric urgent care centers. Details paramedic training requirements.
Medical Clearance Criteria Screening Tool for PUCC	Ref. No. 526.1	New (2019)	A series of 20 decision support inclusion/exclusion criteria to determine medical clearance and appropriateness for transport to psychiatric urgent care centers.
Intoxicated (Alcohol) Patient Destination	Ref. No. 528	New (2019)	Guidelines for the transport of patients with alcohol intoxication to the most appropriate facility, including triage criteria for sobering centers.
Medical Clearance Criteria Screening Tool for Sobering Center	Ref. No. 528.1	New (2019)	A series of 21 decision support inclusion/exclusion criteria to determine medical clearance and appropriateness for transport to sobering centers.
Behavioral / Psychiatric Crisis	Ref. No. 1209 1209-P (pediatric)	Revised (2022)	Field medical assessment and treatment protocols for behavioral / psychiatric crises. Revised to include verbal de-escalation, indications for Olanzapine, guidance for alternate destination.
Agitated Delirium	Ref. No. 1208 1208-P (pediatric)	Revised (2022)	Field medical assessment and treatment protocols for agitated delirium. Revised to include verbal de-escalation.
Application of Patient Restraints	Ref. No. 838	Revised (2022)	Guidelines for safe application of restraints. Emphasizes respect and dignity for the patient, verbal de-escalation, least restrictive treatments, appropriate medical monitoring, pharmacologic indications, and best practices in coordination with law enforcement.
Suicide Risk Screening	_____	Pending	Provides guidance on use of evidence- based suicide risk screening tool – awaiting further exploration on implementation strategies.

Note. LA County EMS Agency Pre-Hospital Care Manual (available online at: https://dhs.lacounty.gov/emergency-medical-services-agency/prehospital-care-manual/). PUCC: psychiatric urgent care centers, which have the capability to evaluate and treat behavioral health emergency patients for up to 24 h.

therefore has taken steps to update PUCC policies and education, and to designate additional PUCCs that meet the minimum standards, thereby expanding access to these resources.

Discussion

Behavioral health emergencies are prevalent, complex, at times dangerous, and increasingly the cause for calls to the 9-1-1 system. In LAC, the field response to BHEs has historically been variable, with a predominant LE response (and relatively limited EMS response) based on non-standardized triage protocols administered by PSAPs with little oversight or uniformity. As a result, a person cannot reliably predict who will respond and how their BHE will be evaluated and managed in the field, and furthermore, how, or where they will be transported if additional care is needed.

In the 1960s and 1970s, laws in the state of CA (and similarly in other parts of the U.S.) delegated the authority to detain individuals for mental health treatment to LE officers, likely contributing to a default 9-1-1 LE response for BHEs (34). At the same time, the EMS system was beginning to develop, with a particular focus on heart disease, stroke, and trauma (35). By virtue of LE's role and training (e.g., the enforcement of penal codes and public safety) the system has inadvertently promoted the criminalization of BHE's as illustrated in the BHIC process maps (Figures 1 and 2). The BHIC's performance improvement process attempts to correct this legacy, beginning with the principle that BHEs are medical emergencies; and by developing comprehensive BHE field protocols, deploying system wide training, and supporting efforts to reorganize PSAP dispatch protocols to decrease LE involvement (Figure 3). These steps increase the likelihood that a person with a BHE will receive care by a mental-health-trained first responder.

The BHIC process maps identified the profound and fundamental impact that PSAP dispatch algorithms have on the type of response that will occur, and the BHIC articulated observations and recommendations to address critical shortfalls. Lack of standardized protocols is a nationwide issue as less than half of PSAPs follow "formal protocols" for dispatch in general (let alone for BHEs) (16). It is vitally important to consider which systems or jurisdictional bodies can organize decision support protocols to carefully identify BHE's and to dispatch EMS as the preferred responder for BHE's, with LE co-dispatched for dangerous behaviors or threats to safety. For cases that do not require LE or EMS evaluation, ideally a mobile mental health crisis team should respond (and with much greater efficiency than currently is available). Further studies will evaluate outcome data (such

as changes in frequency of response by LE versus EMS) and the experiences of responding personnel and the community to determine whether it is practical and appropriate to expand co-deployment models throughout the County.

In 2022, "9-8-8" became operationalized as a nationwide three-digit dialing code for behavioral health emergencies (36). As a dedicated 24/7 line for BHEs this enhances the possibility and importance of developing clear dispatch protocols for a variety of potential responders that include County mental health response teams (frequently with psychologists and social workers), LE BHE-specialty teams, EMS, and the traditional LE response (37). Further integration between the 9-8-8 and 9-1-1 systems is crucial for efficient and coordinated prehospital care in the future.

Notably, EMS should be the preferred mode of patient transport (unless there are overriding concerns for safety in which case LE can assist), minimizing and avoiding the use of patrol cars and handcuffs. This supports the principle of managing BHE's as medical emergencies, avoids harmful stigma and potentially traumatic encounters with LE, and preserves the dignity of patients. These are features of a patient's experience that cannot be overstated. Additional steps should be taken toward appropriate expansion of destination options for EMS transport to PUCCs and Sobering Centers to deliver greater mental health expertise and treatment for patients with BHEs, and to minimize over-crowding of EDs (38, 39).

While the BHIC subcommittee's extensive work on policies addressed several gaps in EMS protocols, especially addressing the care of patients with agitation, there remains a lack of any guidance on suicide risk screening. The BHIC determined that a significant amount of time and resources would be necessary to evaluate evidence-based protocols for suicide risk screening, to conduct pilot testing, and finally to educate and implement county wide. Therefore, this work is planned as a next priority. Prehospital care responses to BHEs are just one component of the larger emergency and acute mental health system in LA County. As such, this response is intimately related to, and impacted by, the lack of access to acute care services (e.g., inpatient and residential psychiatric beds) (40–42). In addition, it is impacted by patients' access (or lack thereof) to timely resources and treatment for non-emergent BHE problems, where case management and wrap-around care are needed to reduce the incidence of these emergencies.

Conclusions

This paper describes a broad multi-disciplinary performance improvement process in LAC-EMSA's 9-1-1 response to BHEs, driven by a robust committee process that articulated guiding principles, generated current state process maps, described critical observations of the current LE and EMS response systems, provided recommendations, and initiated implementation steps. These processes can be utilized by other systems to address the EMS needs of BHE patients, serving as a basis for further integration of services, and can foster future research to improve patient-centered outcomes. All EMS agencies can implement direct changes by revising and augmenting treatment protocols for BHEs (especially the management of patients with agitation), developing alternate destination for EMS, and supporting efforts to increase access to acute MH/SUD treatment. Standardizing and modifying PSAP protocols to shift away from LE involvement require ongoing work and collaboration.

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