

## REVIEW ARTICLE

## Emergency Medical Services

# Interfacility ambulance transport of mental health patients

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## Abstract

The transportation of mental health patients between facilities by emergency medical services personnel poses a unique risk to both patients and their providers. Increasingly, common injuries are occurring and difficulties are arising during this transition in care. Proximal causes exist that could be addressed to help mitigate many of the complexities that occur during this shift in care. Patient safety, quality of care, and provider safety are all at risk if improvements are not made and problems not identified or rectified.

## KEYWORDS

ambulance transportation, ems transport, interfacility transport, mental health patients, psychiatric patients

## 1 | BACKGROUND

Emergency medical service (EMS) personnel face considerable risks in the line of duty, more so than the average worker person. These risks are especially heightened during the interfacility transport of mental health patients. Few guidelines exist to ensure the safety of EMS personnel during these transfers and with increasing frequency staff and patients are being injured during this transition in patient care. Where guidelines do exist, they are often institutional dependent and do not adequately consider all aspects of the transfer process, and disagreements over the rules and regulations are sources of confusion and present as roadblocks to quality patient care. Our goal is to highlight some of the inherent dangers to help minimize the risks faced by EMS personnel and identify best practices currently being utilized during the inter-facility transfer of mental health patients. We believe these suggestions will improve the safety of EMS personnel while also maintaining a high standard of care and safety for patients through the core medical principles of beneficence, patient autonomy, non-maleficence, and justice.

The need for improved and standardized practice is highlighted by a string of incidents in the press involving injured EMS personnel. Nationally, there is no formal reporting structure, no database, or repository of cases where there has been provider or patient injury while in EMS care, there are only news reports if the case captures the attention of the media. For example, in February 2018, a 33-year-old Florida man escaped the gurney restraints and put a paramedic in a chokehold before police arrived and were able to detain him using a stun gun.<sup>1</sup> A few months later, a Texas man escaped from an ambulance after scuffling with the EMS crew and was fatally struck by a car.<sup>2</sup> In 2017, a New York woman punched an emergency medical technician (EMT) in the face before attacking the crew with pepper spray.<sup>3</sup> All three instances involved the ambulatory transport of a patient with a mental health-related condition.

Ambulance-based transportation has inherent dangers based on design and function. There are two ingress/egress methods to the patient bay (rear entrances and passenger side entrance) and depending on the type of ambulance, a passageway to the driver's compartment. Patients and EMS personnel need to be securely restrained in

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the advent of a motor vehicle collision to protect the patients and the providers in the rear patient compartment but also need to be quickly releasable in the advent of patient deterioration necessitating emergent intervention. Patients are typically buckled with a standard buckle releasing seatbelt with three separate straps (chest, waist, and knees) specifically designed to prevent injury in the advent of a motor vehicle collision. Further, there are numerous objects within a short-arms reach that are pertinent for the delivery of emergency care yet can become modes of injury if utilized as a weapon (ie, oxygen tank, suction canisters, etc).

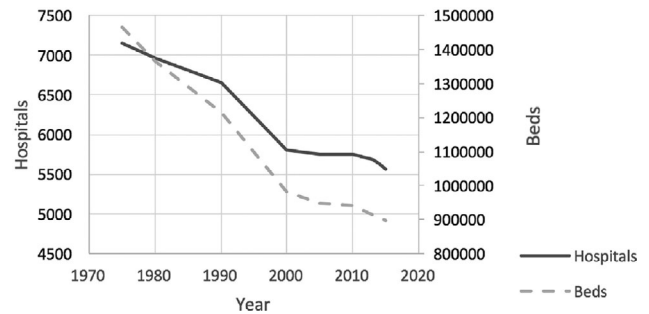
Lack of consensus over whether patients can be pharmacologically sedated or mechanically restrained beyond a simple seat belt have left clinicians confused over how to safely prescribe and prepare a mental health patient for transport. There are numerous occurrences of patients being denied psychiatric admission at the receiving facility because the patient presented from the sending institution sedated or restrained for safety and the receiving facility forcing patients to return to the original sending facility. This is largely based on confusion over the different reporting requirements as created by the different governing bodies overseeing emergency and mental health care.

## 2 | AVAILABILITY OF MENTAL HEALTH RESOURCES

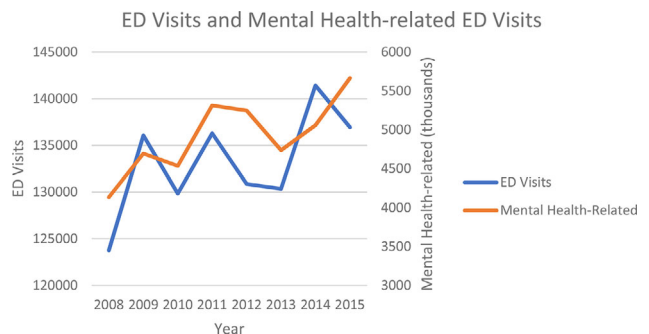
The number of patients admitted to hospitals for mental health conditions is increasing.<sup>4</sup> This is particularly worrisome due to a concurrent decrease in the number of hospitals and hospital beds. Data from the Center for Disease Control and Prevention (CDC) as well as the National Center for Health Statistics demonstrate the significant decline in the number of hospitals and beds in the United States from 1975 to 2015.<sup>5</sup> Steady declines in psychiatric hospital beds consistent with this trend have been reported by the Virginia Treatment Advocacy Center<sup>6</sup> and the American College of Emergency Physicians (ACEP).<sup>7</sup> In New York State, where psychiatric-related emergency department (ED) visits exceed 100,000 annually,<sup>8</sup> the availability of state hospital beds have decreased by a third since 2010, further complicating the ability to get these patients to appropriate psychiatric treatment facilities.<sup>6</sup>

At the same time, hospitals and bed capacity are decreasing around the country, visits to the emergency department (ED) are increasing for both mental health and non-mental health reasons (Figure 1).<sup>9</sup> Data from the CDC demonstrate that from 2008 to 2015, ED visits due to a mental health disorder increased by over 1.5 million (Figure 2).<sup>4</sup> Data from the US Department of Health and Human Services is consistent with the CDC. From 2006 to 2014, ED visits and admissions due to mental health and substance abuse-related problems increased by 44% and 31%, respectively.<sup>10</sup> Within this category, those presenting to the ED with suicidal ideation and intentional self-inflicted injury increased by 414.6% from 2006 to 2014 (Figure 3).<sup>11</sup> The data demonstrate a significant, overall increase in the proportion of ED visits that are related to mental health.

Hospitals and Beds in the U.S. from 1975-2015



**FIGURE 1** Source: Office of Research and Public Affairs; Treatment Advocacy Center. “Going, Going, Gone. Trends and Consequences of Eliminating State Psychiatric Beds.” 2016



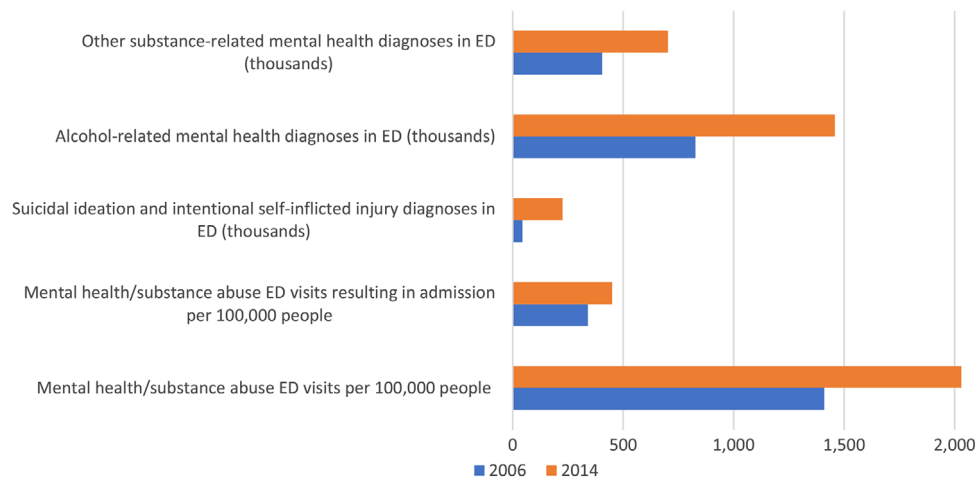
**FIGURE 2** Source: Center for Disease Control and Prevention, National Center for Health Statistics; U.S. Department of Health and Human Services. “National Hospital Ambulatory Medical Care Survey: 2008-2015 Emergency Department Summary Tables”

As the frequency of mental health-related ED visits steadily increased, so has the number of mental health-related visits that resulted in transfers to mental health hospitals. In 2008, there were  $\approx$ 793,000 of these transfers—in 2015 there over 1.13 million (Figure 4).<sup>4</sup> This unprecedented rise in mental health-related patient transport underscores the need for strong guidelines to minimize the risks faced by EMS personnel during years of increased transfer volume. This is particularly important because previous studies have shown that mental health patients use EMS services at a disproportionately higher rate than the rest of the general population<sup>11,12</sup>. We specifically focus on the risk of interfacility transfer of mental health patients as they are often done by EMS personnel alone, whereas 911-originating transfer of mental health patients may have law enforcement accompaniment assisting the EMS personnel in the transfer of the patient.

## 3 | NUMBER OF EMS INJURIES INCREASING

The US Bureau of Labor reports that EMS personnel were injured two and a half times more frequently than workers of the general population in 2016.<sup>13</sup> Studies by the CDC estimate that the annual occupational injury rate of EMS personnel is closer to four times the general population,<sup>14</sup> 7% of which were caused by violence or assault and in

### Increasing Mental Health ED Visits, Admissions, and Related Diagnoses



**FIGURE 3** Source: Center for Disease Control and Prevention, National Center for Health Statistics; U.S. Department of Health and Human Services. "National Hospital Ambulatory Medical Care Survey: 2008-2015 Emergency Department Summary Tables"

almost all cases, the perpetrator was the patient.<sup>15</sup> Meanwhile, work-related violence amongst the general population make up <1% of work-related injuries.<sup>16</sup>

Some studies looked specifically at non-fatal injuries among EMS personnel and reported there are  $\approx 20,000$  non-fatal injuries reported each year.<sup>17,18</sup> It has been estimated that the rate of non-fatal injuries that require time away from work is 350 per 10,000, roughly three times that of private industry occupations.<sup>19</sup> It has also been estimated that these injuries cost \$250 billion annually in the US workforce.<sup>20</sup> When compared to police or firefighters the rate of non-fatal injuries among EMS personnel is disproportionately high.<sup>15</sup> Even more alarming is the rate of occupational fatalities among EMS, which is estimated at 6.3 per 100,000, over 60% higher than the general public. Some studies have even reported the fatality rate to be 2.5 times (250%) higher than the general working public.<sup>18,19</sup>

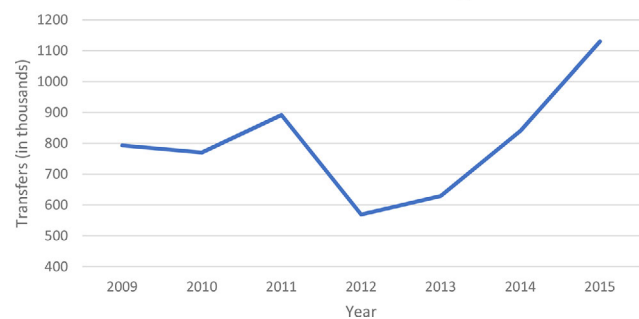
The Bureau of Labor reports that EMS personnel employment is expected to grow by 15% from 2016 to 2026.<sup>21</sup> If this trend continues, the number of EMS personnel injured on the job can be expected to increase as well.

## 4 | ASSESSING AGITATION AND RISK FOR VIOLENCE

As many as 1.7 million ED visits in the United States per year involve agitated mental health patients,<sup>22</sup> and 20% to 50% of visits to mental health ED services are by patients who are at risk of agitation.<sup>23,24</sup> Prompt assessment of a patient's agitation risk is important because agitation is strongly associated with an increased risk of developing aggression that leads to violence.<sup>25,26</sup> Assessing these patients adequately is critical for successful management.<sup>27,28</sup>

Although methods exist for clinicians to assess risk in agitated patients, there is no gold standard. Numerous tools are available (Table 1) to assess psychomotor agitation in the psychiatric session;

### Mental Health-related ED Visits Resulting in Transfer



**FIGURE 4** Source: Center for Disease Control and Prevention, National Center for Health Statistics; U.S. Department of Health and Human Services. "National Hospital Ambulatory Medical Care Survey: 2008-2015 Emergency Department Summary Tables"

however, they are not commonplace nor have high utilization currently. More research correlating the agitation scale scores with stability for transfer, need for medical intervention, or need for restraints is needed. If a tool were to be consistently reliable, administered with relative ease and timeliness, it would be invaluable in the deployment to front-line emergency staff to help set safe transportation of mental health patients.

A review of studies found the Agitation and Severity Scale to be acceptably reliable in assessing the degree of agitation in acute mental health patients presenting to the ED. This 17-item checklist can be completed in 3-5 minutes and evaluates factors that account for 70% of the variant behaviors observed in these patients.<sup>29</sup> Furthermore, the Agitation Severity Scale has been validated against the Overt Agitation Severity Scale, another powerful, previously established tool, but one that may be less applicable due to its 15-minute time requirement. The Agitation Severity Scale is reported to be simple, does not require patient participation, and is useful in the ED when a rapid assessment is of the utmost value.<sup>30</sup>

**TABLE 1** Agitation Assessment Tools

Assessment tool	Author	Type	Used to measure	Reliability and validity	Time needed to perform
Overt Agitation Severity Scale (OASS)	Yudofsky, Kopecky, Junik, Silver, Endicott, 1997	Observational rating (no patient cooperation needed)	Severity of agitation	Equivalence reliability: $r = 0.95, P < 0.01$ Internal consistency: $\alpha = 0.83-0.93$ Discriminant construct validity: difference between agitated and non-agitated scores, $P = 0.0001$	15 min
Agitation Severity Scale (ASS)	<sup>29</sup>	Observational rating (no patient cooperation needed)	Severity of agitation	Pearson coefficient with OASS ( $r$ ) = 0.99, $P < 0.001$ Content validity = 0.8	3-5 min
Overt Aggression Scale (OAS)	Yudofsky et al, 1986	Observational rating (no patient cooperation needed)	Severity of aggression	Correlation coefficient = 0.87 Sensitivity = 0.80 Specificity of 0.97	Not specified
Broset Violence Checklist	Linaker and Busch-Iversen, 1995	Observational rating (no patient cooperation needed)	Risk of violence over next 24 h	Sensitivity = 0.92 Specificity = 0.63	<5 min
The McNeil-Binder Violence Screening Checklist (VSC)	McNeil and Binder, 1994	Observational rating (no patient cooperation needed)	Risk of acute violence	Sensitivity = 0.57 Specificity = 0.70	Not specified
Behavioral Activity Rating Scale	Swift et al, 1998	Observational rating (no patient cooperation needed)	Severity of agitation	Inter-rater reliability = 0.99 Intra-rater reliability = 1.0	<5 min

Source: Garriga M, et al. Assessment and management of agitation in psychiatry: expert consensus. *Eur Psychiatry*. 2016;33.

The Behavioral Activity Rating Scale is shown to be an effective tool in the emergency setting. It is a single item, clinician-administered measure designed to assess agitation. It classifies agitation on a 7-point scale, with a 7 indicating a violent patient who requires restraint. The Behavioral Activity Rating Scale is notable for being quick, valid, reproducible, and easy to use for non-medical or non-mental health-trained professionals.<sup>31</sup>

The Broset Violence Checklist demonstrates adequate predictive value and clinical utility in the inpatient mental health setting (sensitivity 63% and specificity 92%).<sup>32,33</sup> It contains six elements scored for their presence or absence in the 24 hours prior to patient assessment. Low scores suggest a low risk of violence while higher scores suggest a risk that required immediate intervention to prevent a violence episode.<sup>34</sup> During a 3-month open trial in which Broset Violence Checklist was used on a mental health intensive care unit, the rate of patient seclusion dropped by more than half, suggesting that this tool helped improve the staff's ability to recognize signs of imminent violence and intervene before seclusion was necessary.<sup>23</sup> One limitation of the Broset Violence Checklist is that it requires 24 hours, but with current states of boarding in the ED, this tool should not be discounted.

Specific factors associated with increased risk for agitation have been well studied.<sup>35-37</sup>

Data suggest that violence is usually preceded by observable cues and behaviors, especially non-violent agitation (Table 2).<sup>38</sup> Patients with schizophrenia, bipolar disorder, or other psychiatric disorders commit the majority of assaults in the inpatient setting.<sup>39-42</sup> Several

**TABLE 2** Factors associated with increased risk for agitation

Factors associated with increased risk for agitation
Occurrence of previous aggression/violence episodes
Schizophrenia or bipolar diagnosis (especially w/substance abuse)
Presence of impulsive, verbally demeaning, or hostile behavior
History of self-destructive or suicidal behavior
Extended length of hospital stay
Non-voluntary admission
Same-sex aggressor and victim

Source: Garriga M, et al. Assessment and management of agitation in psychiatry: expert consensus. *Eur Psychiatry*. 2016;33.

studies reviewed showed that more than half of assaults in private<sup>43</sup> and public<sup>44</sup> hospitals were committed by patients diagnosed with psychosis, schizophrenia, or mania.<sup>40,45</sup> Patients with non-agitated mental health problems may have lower risk of violence, and therefore, screening for agitation may not be necessary.

One piloted program at a forensic division of a psychiatric hospital in Connecticut developed their own risk assessment form and found it to be effective in reducing escape attempts and violence during inter-facility transfer (Figure 5).<sup>46</sup> This assessment form takes into account the patient's clinical history, current clinical status, elopement risk, and transport compliance history. Clinical status is determined by whether or not the patient is a danger to self, danger to others, is clinically unstable, or exhibits aggressive behavior. There is no data to support

CVH-473 **CONNECTICUT VALLEY HOSPITAL - RISK ASSESSMENT** Name: \_\_\_\_\_ MPI #: \_\_\_\_\_  
 Rev. 1/11 **FOR TRANSPORTATION – HOSPITAL POST** *Print or addressograph imprint*

**DIVISION:** **CURRENT LEGAL STATUS (Key):**

[ ] Whiting Forensic	Mental Health, Dept of Corrections or Substance Abuse	4 Competency Restoration 54-56d	10 60-day WFD Evaluation 17a-582a
[ ] General Psychiatry	1 Voluntary 17a-506, 17a-513, 17a-682,	5 Non-Restorable to Competency 54-56d(m)	11 Disposition After Report WFD 17a567
[ ] Addiction Services	2 Probate Court Commitment 17a-498c, PA98-219	6 Track II Voluntary 54-56d(h)(2)(A)ii	12 Substance Dependence Pre-Trial 17a-696
	3 Physician Emergency Certificate (PEC) 17a-502, 17a-514, 17a-684	7 Track II Probate Commit 54-56d(h) (2)(A)iii	13 Substance Dependence Post-Conviction
		8 Commitment to PSRB 17a-582	14 Federal Detainer
		9 Post-Conviction WFD Exam/Screen 17a-566a	15 Other : (specify): _____

**Unit:** \_\_\_\_\_

**OCCASION FOR LEVEL OF SECURITY DETERMINATION:**

- Admission
- Treatment Plan Review
- Major Changes in Patient's Clinical Status
- Prior to Transport - *Police Verification for Escort Levels A-D and Hospital Posts G & H*
- Assignment of Hospital Post

**LEVEL OF ESCORT:**

A 2 Officers, 1 Nursing Staff, Transport Belt, Leg Irons *WFD*  
 B 1 Officer, 2 Nursing Staff, Transport Belt, Leg Irons *WFD*  
 C 1 Officer, 1 Nursing Staff, Transport Belt, Leg Irons *WFD*  
 D 1 Officer, 1 Nursing Staff, Transport Belt *WFD*  
 E 2 Staff  
 F 1 Staff

**LEVEL OF HOSPITAL POST**

G 1 Officer, 1 Nurse, Leg Restraint *WFD*  
 H 1 Officer, Leg Restraint *WFD*  
 I 1 Nursing Staff  
 J No Staff Required

**CLINICAL RATIONALE (List below all that apply)**

<b>Current Clinical Status:</b>	<b>Risk Factors (continued):</b>
1 Danger to Self	11 Limitation on Communication/Threatening/Harassing
2 Danger to Others	12 Unsuccessful Temp Leave/Conditional Release
3 Clinically Unstable	13 DOC Tickets
4 Impulsive	14 History of Aggressive Behavior
5 Aggressive Behavior	15 Unknown History
<b>Factors that Increase Risk of Elopement:</b>	16 Protective/Restraining Order
6 History of Assault/Violence over one year	17 Bond (amount): _____
7 Assault/Violence less than one year	<b>Factors that Lower Risk of Elopement:</b>
8 History of AWOL over one year	18 Significant Clinical Stability
9 AWOL less than one year	19 Cooperative with Treatment Plan
10 Felony Charges	20 Geriatric Medically Compromised
	21 Significantly Medically Compromised

Date Time	Transport On/Off Grounds		Legal Status (1-15)	Occasion (1-5)	Level Escort Recommended (A-F)	Clinical Rationale (1-21)	Treatment Team Section			Risk Management Section			WFD Police Verification	
	On	Off					Attending Psychiatrist or On-Call Physician Signature/Print Name	Level of Escort Approved	Clinical Rationale	Risk Management Committee (MD Only) Signature/Print Name/Date/Time	Escort Levels A-D, G & H Only	Police Signature/Print Name/Date/Time		

Date Time of Post	Legal Status (1-15)	Level of Post Recommended (G-J)	Clinical Rationale (1-21)	Treatment Team Section		Risk Management Section			WFD Police Verification	
				Attending Psychiatrist or On-Call Physician Signature/Print Name	Level of Post Approved	Clinical Rationale	Risk Management Committee (MD Only) Signature/Print Name/Date/Time	for Hospital Post G & H Only	Police Signature/Print Name/Date/Time	

*File as First Page in the Assessment Section of the Medical Record*

**FIGURE 5** Source: Dike C, Nicholson E. Transporting forensic psychiatric patients. *J Am Acad Psychiatry Law*. 2015;43:468-474 (printed with permission)

or argue against the use of a risk assessment form, but we believe this to be an example of a best practice as it is reasonable and takes <5 minutes to complete.

The only consistent common constant variable tying together these different tools is getting staff together to discuss risks prior to initiating the patient transport. The one consistent message found when reviewing best practices at various institutions was a huddle that occurred just prior to transport. We, therefore, recommend as best practice to huddle with pertinent medical staff (ie, physicians, nurses, EMS personnel) just prior to initiating transport to decrease the dangers of inter-facility mental health patient transport.

## 5 | TELEMEDICINE TO REDUCE UNNECESSARY INTERFACILITY TRANSPORT OF MENTAL HEALTH PATIENTS

Telemedicine has been defined as the intervention of a telecommunication device in the diagnosis and overall care of patients who are separated from providers by a distance.<sup>47</sup> Telepsychiatry is a means by which psychiatric services can be delivered to patients via video, such

that they do not require a physician to be physically present. This can be especially useful in rural areas or regions that lack access to emergency mental health care. As most EDs do not contain comprehensive mental health services, this adjunct is valuable in improving the care provided to mental health patients.

Numerous studies demonstrate increasing the adoption of telemedicine and telepsychiatry services in hospitals substantially reduce psychiatric inpatient admissions and ED visits.<sup>48</sup> At the same time, the use of telemedicine in the ED has been associated with a higher likelihood of routine discharge.<sup>49</sup> These patients are also more likely to receive 30- and 90-day follow-up care with lower hospital charges.<sup>50</sup> Telepsychiatry has also been shown to reduce the average time spent in the ED by almost 3 hours.<sup>51</sup>

Financially, telepsychiatry has been shown to reduce overall health care costs<sup>50</sup> while increasing EMS unit productivity.<sup>51</sup> Studies attribute the reduction in cost to lower rates of inpatient admissions and lower rates of patient transfer to mental health facilities.<sup>52</sup> Video-conferencing telepsychiatry assessments are reliable, and telepsychiatry interventions are comparable to conventional treatments among diverse population groups<sup>53</sup> with high patient satisfaction reported.<sup>54</sup> Combining telepsychiatry into the community ED is a best practice



**TABLE 3** Criteria for EMS screening protocol study to proceed directly to a psychiatric receiving facility

**Criteria for EMS screening protocol study to proceed directly to a psychiatric receiving facility**

Patient's vital signs appropriate and within normal limits

Patient's age <65 y

Patients could normally take care of themselves

Patient did not have any urgent medical symptoms (ie, fever, dyspnea, chest pain, neurological changes, recent syncopal episode, etc)

**Source:** Trivedi TK, Glenn M. Emergency medical services use among patients receiving involuntary psychiatric holds and the safety of an out-of-hospital screening protocol to “medically clear” psychiatric emergencies in the field, 2011 to 2016. *Ann Emerg Med.* 2019;73(1):42-51. <https://doi.org/10.1016/j.annemergmed.2018.08.422>.

method to reduce unnecessary patient transfers, improving mental health patient throughput time and increasing access to outpatient mental health services.

Prehospital, field-screening protocols used by EMS have shown to be useful in distinguishing mental health patients from those who need medical evaluation from an ED. This is incredibly useful because it brings mental health patients on 911 system activation to a specialized mental health ED. A 2014 observational study examined over 500,000 EMS-patient encounters in Houston and found that for those who identified as needing emergency mental health services (and subsequently transported directly to a psychiatric facility), only 0.3% were then transferred to an ED in the first 12 hours.<sup>54</sup> The study called for 911-originating EMS personnel to triage patients and rule out a medical emergency before transport destination decision using pre-specified criteria (Table 3). The implication is EMS personnel screening protocols may be effective at detecting mental health disturbances and making an initial transport decision direct to an appropriate mental health receiving facility. This would reduce the need to transfer the patient later for mental health.

## 6 | LAWS AND THE PSYCHIATRIC PATIENT

Although laws vary state to state, we specifically focus on those applicable in New York, because this was a project that initiated out of the NYACEP EMS Committee. As beds are decreasing around the country, the need to prioritize patients for these beds becomes more important. However, before a need for a bed can be ascertained, a prompt mental assessment of an acute mental health patient is crucial. Therefore, it is vital that a mental status evaluation is conducted before any transfer takes place. This can be done in accordance with New York State Mental Health Law (MHL) article 9. Under MHL §9.27, all New York State hospitals—even those without an Office of Mental Health-licensed psychiatric inpatient unit—are capable of evaluating a patient to determine their mental health status and the need for involuntary admission. This is called the “2 PC” standard, which says that two physicians (including non-psychiatrists) can be used to make the determination for involuntary admission. Once involuntary admission is determined,

one of the physicians can request ambulance services to transfer the patient to another facility or an inpatient psychiatric unit, at which time a psychiatrist in the receiving facility is required to evaluate the patient and confirm that the involuntary standard has been met.

In the absence of a physician in an emergency situation, MHL §33.04 allows patients to be restrained at the discretion of senior staff member who is present, so long as it is to prevent the patient harming his/herself or others. In this scenario, a physician must be summoned as early as possible, and everything documented until a proper medical and mental health evaluation can take place. This law may be useful to expedite the restrained transfer of agitated patients in emergency settings.

## 7 | DEFINING RESTRAINT

Restraint is defined as any manual method, physical or mechanical device, material, or equipment that immobilizes or reduces the ability of a patient to move his or her arms, legs, body, or head freely including full side rails that prevent a patient from voluntarily getting out of bed.<sup>55</sup> Generally, if a patient can easily remove a device, the device would not be considered a restraint. Other examples of restraint include intravenous (IV) boards, safety straps, belts, or other devices used during procedures that are based on standard practice for that procedure; side rails on a stretcher used during transport or while a patient is waiting for a procedure; Geri-chairs used as postural supports; self-releasing lap belts; reasonable safety restraints for children; and medically indicated devices intended to stabilize a body part (eg, back braces, splints, helmets, etc). Side rails used to protect the patient from falling out of bed when on an immobile stretcher, recovering from anesthesia, when sedated, or when experiencing involuntary movement, as well as those on certain types of therapeutic beds are not restraints.

## 8 | WHEN TO USE RESTRAINT

Identifying the optimal way to restrain a patient during an interfacility transport is difficult due to an overwhelming lack of research. Much of what is known comes from the scarce information available in the literature, as well as recommendations of practice from experienced EMS personnel. Different hospital systems have formulated their own protocols to address patient restraints and transfers. As such, there is no single set of guidelines to specifically address this issue.

Most EMS agencies seem to agree that patients exhibiting combative or aggressive behavior that pose a threat to themselves or others indicate for restraint. In New York State ambulances, it is the recommendation of the Office of Mental Health that all patients on a stretcher—whether or not they show signs of agitation—must be secured via seatbelt/harness at all times when the vehicle is in motion or the stretcher is being carried or moved.<sup>56</sup> Manufacturer recommendations often include the use of shoulder harnesses in addition to a standard seatbelt or harness.

The Office of Mental Health has stated that restraint should be “used when the patients’ dangerousness is of such immediacy that less restrictive interventions cannot be safely employed.”<sup>56</sup> ACEP also supports the careful and appropriate use of restraints when it is in the “best interest of the patient, staff or public.”<sup>57</sup> Both the Office of Mental Health and ACEP acknowledge that the method of restraint should be the least restrictive, and used only after verbal de-escalation has been attempted. All use of restraints should conform to applicable laws, regulations, policies, and standards of care.

The literature generally agrees that the restraint of patients should be individualized and used in a manner that makes all reasonable attempts to maintain the patients’ privacy and dignity. There is also a widely held principle that the method of restraint should be the least restrictive necessary for the protection of the patients and others.<sup>58</sup> Properly trained staff should know the appropriate use and application of restraints, as well as how to correctly monitor the restrained patients. Protocols to ensure patient safety should be developed to address observation and treatment during the period of restraint.

The use of restraints should be carefully documented to reduce potential litigation,<sup>43,44,59</sup> including the reasons for and means of restraint, alternatives to restraint, and the periodic assessment of the restrained patient. The use of restraint requires comprehensive patient assessment and should conform to applicable laws. According to ACEP, patient restraint should be considered when a “careful assessment establishes that the patient is a danger to self or others by virtue of a medical or psychiatric condition and when verbal de-escalation is not successful.”<sup>57</sup> If there exists any doubt as to a patient’s risk for agitation, it would be prudent to restrain the patient in accordance with law and standard practice.

Reports from experienced paramedics who have written on psychiatric patient transport argue that a patient who is already restrained prior to transport should remain restrained.<sup>58</sup> If a restraint is required, it should be done prior to leaving the hospital in contained environment where additional help is still available. Removal of restraints during transport should only occur in order to manage a complication pertaining to the patient’s airway, breathing, or circulation.

Suggestions for safety while the patient is in the care of EMS include assuring that stretchers are adjusted to their lowest setting during transport to and from the ambulance so that the patient’s center of gravity is closest to the ground, hindering their ability to stand in case they break free of the restraints, and assuring that the patient cannot rock the stretcher over and fall; keeping the lights of the patient compartment at their brightest setting during transport so that the caregiver can see what is happening at all times; positioning the caregiver in the back of the ambulance slightly behind the patient during transport is thought to prevent the patient from knowing if they are being actively watched. EMS personnel should stay vigilant, especially toward a patient who repeatedly turns around, because this may indicate they are formulating a plan of attack or escape.<sup>58</sup>

Varying protocols and subjective advice seem to comprise the majority of available information on transferring mental health patients, again underscoring the need for standardized guidelines. These techniques must continue to be documented and studied by the

medical community to identify which practices most effectively contribute to the safety of our EMS personnel. We believe best practice should involve the utilization of a hybrid restraint system. Although many devices exist, there are some seat belt-like devices that, instead of the conventional buckle release, have a buckle guard that would prevent the patient from self-initiating release but requires a simple pin to release. Because the seat belt’s main purpose of protection is the motor vehicle collision, this device would provide protection as such but also not allow immediate release by the patient thereby affording protection to EMS personnel.

## 9 | SEDATION

Sedation is oft in the literature regarding the management of the acutely agitated patients and is common lore in medicine with various nicknames such as the 5&2, or the B52. Although certain combinations of medications are commonplace (ie, haldol and ativan, or versed), more research is starting to be presented regarding the use of ketamine as an alternative. Regardless, all the studies currently focus on the acutely agitated patient in the hyperaroused state but not the safe transport of the mental health patient. There is no research on best practices of medication management in combination with restraint use for safe transportation of mental health patients. We believe in using the lowest dose possible and choosing your pharmaceutical agent based on the patient’s condition. These conditions include duration of transport, severity of agitation, and response to previous medications in the past if known. Chemical restraint is a term used by the mental health institutions and should not be used in the Emergency Medical Treatment and Labor Act (EMTALA) setting.

## 10 | BARRIERS TO QUALITY DATA

It is possible that the under-reporting of restraints may hinder attempts to get accurate data on how often restraints are used. Analyses of hospitals, schools, and nursing homes highlight a culture of under-reporting their uses of restraint.<sup>60-63</sup> A study of a major public hospital in New York City showed that roughly 1000 of the 2417 times that mechanical restraints were used in the psychiatric setting were never reported.<sup>64</sup> Reasons for failing to report restraint have not been well documented.

There is additional concern that when mental health patients arrive at mental health facilities they are being returned to the sending facility due to restraints or pharmacological sedation at the point of arrival. There is no data currently in existence to document the number of occurrences but this perception is commonplace amongst emergency medical personnel. This places EMS personnel at risk by increasing the potential for additional or prolonged transfer. We believe this is due to the current laws not being clear in regard to this scenario, such that they must be re-clarified. According to EMTALA, if an emergency medical condition is found during the initial assessment of a patient in the ED, the law requires that the patient be stabilized before discharge

or transfer. In the case of patients with mental health conditions, an emergency medical condition exists if the individual is determined to pose a threat to themselves or others.<sup>65</sup> The law allows transfer of the patient if further care is needed and requires outside facilities to accept the transfer if they have the capacity and capability to treat them. If a hospital has reason to believe it is accepting an unstable patient, it is required to submit a report to the Center for Medicaid Services (CMS) or appropriate state agency. However, it is important to point out that the CMS's intention is to only require reporting by the receiving hospital when a patient transfer is considered to be "inappropriate" under U.S. Code of Federal Regulations (CFR) 489.24 (e). This law says that an unstable patient can in fact be transferred, so long as a physician (or supervising provider) believes the benefits of transfer to a more specialized facility outweighs the risks of not transferring the patient, and that the transfer is appropriate as defined under CFR 489.24 (e) (2). This law designates the transfer of an unstable patient as appropriate if all four of the following conditions are met. The first is that the transferring hospital provides medical treatment within its capacity that minimizes the risk of the patient's health. We believe the use of both mechanical and pharmacological restraints in the setting of an agitated mental health patient is a measure that minimizes risk to the patient's health. The second is that the receiving hospital has the means and capacity to treat the patient. The third is that the transferring hospital provides all records related to the patient's emergency condition to the receiving hospital. The fourth is that the transfer is effected through qualified personnel and transportation equipment, including the use of necessary and medically appropriate life support measures during transfer. We believe the use of mechanical and pharmacological restraints to be "necessary and medically appropriate" in the context of a mental health patient at risk of harming themselves, and does not in itself require reporting to the CMS. Even so, under EMTALA it is never acceptable for a hospital to turn away an unstable patient.

There are other reasons when reporting is required. According to the Joint Commission, the use of restraints need only be reported to the CMS if it results in a patient death.<sup>66</sup> In New York State, the law requires that the use of restraint is reported to the Justice Center if it results in a death, and/or additionally, if restraints have been deliberately and inappropriately used.<sup>67</sup> To that end, the Justice Center works hard through data collection and policy implementation to minimize the unnecessary use of restraints. However, as mentioned earlier, restraints are acceptable and necessary under New York State law when a patient poses a harmful threat to themselves or others. Therefore, appropriate uses of restraint do not necessarily require submitting a report to the Justice Center, so long as they are documented appropriately in the patient's medical record.<sup>67</sup> Our concern is that the decision to reject a patient transfer by a receiving hospital is being driven by the fear of having to report the receipt of a restrained patient due to the complexities of the current laws. Close examination of the law reveals this fear to be unfounded; therefore, clarification may be beneficial.

We believe there is confusion over the interpretation of appropriate use of restraint and sedation, particularly the rules that govern reporting. We believe that best practices require clarification from the

CMS and Justice Center as to which scenarios require reporting by the receiving and transferring hospitals.

## 11 | CONCLUSION

Protecting EMS personnel from preventable injury is paramount to maintaining a health care system that can manage the growing need of emergency psychiatric services. Reducing the need for inter-facility transport is the first step in minimizing the risks faced by EMS personnel. Careful evaluation of patients, as well as using risk assessment tools to determine the extent of restraint required, can help accomplish this goal. Once a transport has been initiated in accordance with state and federal law, practical strategies employed by EMS personnel immediately prior to and during transport can help reduce their risk of injury.

In light of the limited research on this topic, further studies are needed to decrease the rate at which EMS personnel are getting injured during psychiatric patient transport. Telepsychiatry and telemedicine are promising applications of video technology to reduce the number of psychiatric patients needing to be transferred between facilities.

A comprehensive comparison study of available restraints is needed to determine which are the most effective in preventing escapes, attacks, and patient and provider harm during transport. Further research and funding could be used to train EMS personnel on how to better handle agitated patients, as well as how to defend themselves in times of crisis. Additional work must be done to identify checklists and patient evaluation tools that can identify patients most likely to trend toward violence or agitation during a transport. However, first and foremost, we believe that there needs to be collaboration between the various entities responsible for defining mechanical and pharmacological restraint as well as their appropriateness criteria. This collaboration is crucial to allow care in the best interest of patient safety while protecting the EMS personnel involved in their care.

Our recommendations for the improved safety of interfacility transport of mental health patients are that the following items be considered:

- Create screening criteria for EMS personnel to triage patients to the appropriate facility on initial patient contact to reduce unnecessary transfers later.
- Encourage partnership with telepsychiatry services to reduce the need to transfer mental health patients.
- Standardize a best practices assessment prior to initiating transfer of the mental health patient.
- Have a scripted huddle prior to transfer.
- Clarify the laws and differences whereas the department of health (DOH) and the justice intersect.
- Suggest common equipment for the safe restraint that can be universally adopted.
- Create data sets to track the number of injuries and the number of "rejected" transports from mental health facilities.



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## CONFLICT OF INTEREST

The authors declare no conflict of interest.

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