Dealing With Behavioral Emergencies in the Field: Where We Are and Where Do We Need to Be?

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Objectives

- To understand the issues surrounding the EMS response to the psychiatric patient.
- To learn how to deal with violent psychiatric patients.
- To become familiar with treatment of psychiatric patients in the field.
- To review the research agenda for evaluation and treatment of behavioral emergencies in the field.

Who is Transported by EMS?

- Study of how psychiatric patients come to an ED
  - 300 patients - 102 walk-ins, 66 from EMS, 82 from police & 36 brought by family.
  - EMS transports significant compared to police, family, walk-ins (<.01)
  - Had psychiatrist (13.6%) *
  - ED diagnosis of drug use and/or positive alcohol level (42.4%) *
  - Restricted (68.2%) *
  - Discharged home (47.0%) *

Conclusions

- EMS system frequently used to transport intoxicated patients are later discharged
- 3.2% of ambulance runs in Canada

Chief complaints

- 46% depression/suicidal
- 43% schizophrenia - bizarre behavior
- 6% agitated
- 5% alcohol
Case Illustration

Ambulance Run

- 34-year-old male who complains of feeling agitated
- History
  - History of schizophrenia.
- Physical Exam
  - Severely agitated & combative
- What is the appropriate evaluation in the field?
- Does the patient need physical restraints?
- What is the best treatment in the field?

Field Evaluation

- Consider medical etiology
  - Abnormal vital signs
  - Evidence of narcotic overdose
  - Abnormal glucose
    - 9% of violent patients had hypoglycemia
  - Abnormal oxygenation
  - Treatment with glucose, oxygen or Narcan
- Consider psychiatric etiology
  - Age and onset of symptoms
  - History of psychiatric illness

Survey of State EMS Directors

- When paramedics or EMTs are assessing agitated patients, do they perform the following?
  - Complete vital signs if possible 100%
  - Blood sugar tested 100%
  - Other IV and pulse ox
Agitation Progression

EMS Violence

- 8.5% patient encounters
- Source
  - Patient 89.6%
  - Bystanders 10.3%
- Type
  - Verbal 20.7%
  - Physical 48.8%
  - Both 30.4%
- Related to
  - Psychiatric illness 33%
  - Substance use 36%

EMS Violence

- 0.8-5.0% of runs violent in nature
- 61-81% EMS worker were assaulted in field
- Threatened with weapon (30%), attacked with weapon (10%), physically attacked (55%)
- 30% have psychiatric history
  - Associated with time of day (overnight), female, violent patient, arrested and need for chemical restraint
- 46% found weapons on patients at least 5 times in their career
- 22% had training in weapons search and seizure
- 19% of EMS workers carried a weapon while at work
- 57% formal training in managing violent episodes
- 92% restrain patients
Prevent Violence

- Identify violent patients
  - Hallucinations or delusions
  - Poor impulse control

- Precipitants of Violence
  - Flannery, R: Precipitants to psychiatric patients assaults. IJEMH 2007;9:5-11
  - Psychosis
  - Organic impairment
  - Excess sensory stimulation
  - Boundary violation
  - Staff precipitants: denying service, setting limits, uninvolved

- Secure Scene
  - Protocols for police involvement

Alternatives to Restraint Use

- Surveyed a random sample of ED and all Psychiatric EDs in the country.
- Almost all EDs (90%) and Psych EDs use alternatives (98%)

- Alternatives used
  - Frequency Effectiveness
    - Verbal 84% 36%
    - One to one 79% 48%
    - Decrease in stimulation 74% 15%
    - Food or drink 69% 18%

De-Escalation

- Control the Environment
  - Location and physical space
  - EMS personnel and police

- Understand your temperament and skills

- Therapeutic Strategies
  - Be direct and authoritative
  - Do not deny what is happening.
  - Do not challenge him.

- Limit setting
- Use gentle confrontation and commands
Physical Restraints

- **Policy**
  - 50% of EMS systems had policy on restraint (Tintinelli, Ann Emerg Med 1993)
- **Procedure** (Kupas & Wydro, NEMSP, 2002)
  - Do not use hog tie or hobble
  - Avoid prone position (confusion in EMT curriculum)
  - Use soft restraints
  - Minimum of 5 staff needed to apply
  - Police only to use handcuffs & must ride with patient
  - Restraint training program improves understanding but not likelihood of use (Campbell, Prehospital Emerg Care, 2008)

Complications Associated with Restraint Use

- Deaths related to restraint use in excited delirium (Stratton, SJ; Am J Emerg Med, 2007)
  - 18 cases of death reviewed
  - Forced restraint
  - Associated with stimulant use in 78%, chronic disease 25%
  - Other studies found high incidence of death with hog tied technique and Taser use (75 cases)
- ED complication rate 6.7% (Stratton, SJ; Emerg Med 2007)
  - Getting out of restraints
  - Vomiting, injured others and spitting
  - No major complications such as death or disability

Chemical Restraint Guidelines

- **ACEP Guidelines**
    - Benzodiazepine or conventional antipsychotic effective
      - Rapid treatment – Droperidol
    - Oral combinations for agitated but cooperative patients
      - Combination of benzoazepine and haloperidol produces more rapid sedation
- **EMS Guidelines**
  - Kupas, DF and Wydro, GC: Patient restraint in emergency medical services system. NAEMSP Position Paper, 2002
    - Lorazepam and midazolam
    - Droperidol and haloperidol
New Treatments

- Ketamine Use in Agitated Patients
  - Given to 40 agitated patients
  - Recommend use even in head trauma patients
  - 1-5 mg/kg IV or IM with no adverse events
  - IV Haloperidol not approved for IV administration
  - Consider IV Olanzapine
    - Small Australian study where 14 of 48 cases received 5-30 mgs IV
    - None had complications
    - 34 patients received other drugs with 4 adverse events
    - Amount of agitation not described

Survey of State EMS Directors

- Does medical control have to be contacted prior to administration 27%
- Do you have a SMO on chemical administration for the agitated patient 57%
- Are agitated patients with substance abuse and psychiatric illness treated have different SMOs? 20%
- Are police routinely dispatched with EMS? 72%
  - Physical restraints allowed? 100%
  - If yes to restraints, what type: soft (50%) varies (25%) locking (25%)
Hospital Response

- Police notification?
- Prepare for patient arrival
  - Security
  - Personnel for restraint
  - Ready medications

Hospital Response: Aggression Response Teams

- Code “Black” Teams
  - Senior MD and RN in ED
  - Hospital nurse manager
  - Psych clinical nurse
  - Security staff
  - Security assistants
- 5.5 CBs per 1000 ED visit
- Most from 1800 to 0600
- Drug overdose, intoxication, alcohol withdrawal
- Threat of harm to others, altered mental status, AMA

Case Illustration

- 34-year-old male who complains of feeling agitated
- History
  - Bipolar, migraine headaches and schizophrenia.
  - Allergies - chlorpromazine and haloperidol.
  - Meds - not currently taking any
- Physical Exam
  - Vital signs were normal
  - Exam unremarkable
  - Severely agitated & combative
- What is the appropriate evaluation in the field? Glucose and oxygenation checked
- Does the patient need physical restraints? Patient was instructed to re-direct behavior. Patient did not respond to the verbal de-escalation and was restrained
- What is the best treatment in the field? Patient given Lorazepam 2 mg IM
17 year old male at a party starts getting agitated and acting bizarre. Paramedics are called. The patient is hot and dry on exam and talking out of his head. He fights with the paramedics. The police are called to the scene.

- What is the diagnosis?
- Excited delirium
- What is the appropriate treatment?
- Agitation-Benodiazepines, Anti-psychotics, Ketamine
- Fluids
- The police are ready to Taser the patient?
- What do you tell them?
- Don't do it

**Excited Delirium**

- **Features**
  - Agitation & decreased pain intolerance
  - Tachypnea
  - Sweating
  - Tactile hyperthermia
- **Underlying associations**
  - Stimulant drug use
  - Psychiatric disease
  - Psychiatric drug withdrawal
  - Metabolic disorders
- Leads to hyperthermia, acidosis, rhabdomyolysis
- Deaths associated with
  - Wrist/ankle bonded restraint
  - Taser use
Paramedics called to see an 83 year old female patient who family states that she has not been acting right lately. Vital signs are P62, BP 112/76, RR 20. Exam - unremarkable. Patient states that she does not need to go to the hospital but is a "little" confused. The paramedics state that they don't know if they have to bring the patient to the ED

- How do the paramedics assess the patient?
- Can the patient refuse treatment?
- Does the patient have cognitive impairment?

**Patient Refusal**


- Assessment of competency
  - Orientation 97%
  - Lack of intoxication 66%
  - Comprehension of situation 58%
  - Understanding risks 48%

- Supervision
  - Physician 15%
  - Supervisor 5%

- Documentation
  - Patient signature 99%
  - Vital signs 81%
  - Mental status 79%
  - Oxygenation 27%

**Short Tests of Cognitive Function**


<table>
<thead>
<tr>
<th>Test</th>
<th># Items</th>
<th>Application Administered by</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mini Mental State Exam</td>
<td>30</td>
<td>clinical, screening</td>
<td>5-10</td>
</tr>
<tr>
<td>Clock Drawing Test</td>
<td>1</td>
<td>clinical, screening</td>
<td>self</td>
</tr>
<tr>
<td>Short Portable Mental Status</td>
<td>10</td>
<td>screening, Interviewer</td>
<td>2</td>
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<tr>
<td>Survey Questionnaire</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive Capacity Screening</td>
<td>10</td>
<td>clinical expert</td>
<td>5-15</td>
</tr>
<tr>
<td>Examination</td>
<td></td>
<td></td>
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</tbody>
</table>
Use of the Short Tests in the ED

- Used the Brief Mental Status Examination in an inner city ED
- Score 0-8 normal, 9-19 mildly impaired
- 20-28 severely impaired
- 100 randomly and 100 with indication
- 72% sensitivity and 95% specificity in identifying impaired individuals

**Brief Mental Status Examination**

<table>
<thead>
<tr>
<th>Item</th>
<th>Score (number of errors) x (weight) = total</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the year now?</td>
<td>0 or 1 x 4 =</td>
</tr>
<tr>
<td>What month is it?</td>
<td>0 or 1 x 3 =</td>
</tr>
<tr>
<td>Present memory phase after me and remember it: John Brown, 42 Market Street New York</td>
<td>0 or 1 x 3 =</td>
</tr>
<tr>
<td>What time is it?</td>
<td>0 or 1 x 3 =</td>
</tr>
<tr>
<td>Count backwards from 20 to 1.</td>
<td>0, 1, or 2 x 2 =</td>
</tr>
<tr>
<td>Say the months in reverse 0, 1, or 2 x 2 =</td>
<td>4</td>
</tr>
<tr>
<td>Repeat the memory phase</td>
<td>0, 1, 2, 3, 4 or 5 x 2 =</td>
</tr>
</tbody>
</table>

*Final score is equal to the sum of the totals*


Paramedics called to see an 83 year old female patient who family states that she has not been acting right lately. Vital signs are P62, BP 112/76, RR 20. Exam unremarkable. Patient states that she does not need to go to the hospital but is a "little" confused. The paramedics state that they don't know if they have to bring the patient to the ED.

- How do the paramedics assess the patient?
  - Short test of mental status
  - No further evaluation of understanding required
  - Can the patient refuse treatment?
    - NO!
  - Does the patient have cognitive impairment?
    - Found cognitive deficit

Case

- 35 year old male family called paramedics because his son stopped taking his psychiatric meds on week ago.
- Patient states he does not want to go the ED
- How to assess the patient’s ability to refuse treatment
- Patient will need to be transferred to another hospital

Patient Wants to Leave AMA?

- Competent patients have the right to refuse treatment
  - Ensure current capacity
  - Drug and/or alcohol use in itself is not criteria for treatment
  - Presence of psychiatric illness is not defacto criteria for treatment
  - Endangered third parties must be notified

Criteria for Refusal

- **Determination of capacity**
  - Applebaum, PS: Assessment of patients' competence to consent to treatment. NEJM 2007;357:1834-1840.
  - "There are no formal practice guidelines from professional societies for the assessment of a patient's capacity to consent"  
- **No definitive test for capacity**
- **How to perform this in the field**
  - Get family involved if possible
  - Involve medical control
  - Consider AMA checklist with at least one witness for documentation: Not clinically intoxicated, no cognitive impairment, understands risks/benefits of refusal & demonstrates understanding

Inter-Facility Transfer of the Psychiatric Patient

- Prepare patient for transfer?
- What if patient changes mind about transfer while en route?
- Does patient need petition and certificate?
- Does the patient need to be restrained or medicated for transport?
Direct Transport to Psychiatric Service

- Study of direct transport to psychiatric emergency service in Albuquerque
- Protocol
  - Alert with normal vital signs, nl glucose & pulse ox
  - Not under the influence of drugs or alcohol
  - Psych history
  - Online consultation with ED
- 174 patients
  - Effective screening in 96%
  - Protocol noncompliance in 29%

Case

35 year old male family called paramedics because his son stopped taking his psychiatric meds on week ago.
- Patient states he does not want to go the ED
  - No choice
  - If appropriate, family to assist
- How to assess the patient’s ability to refuse treatment
  - Unable to comprehend risks/benefits of treatment
- Patient will need to be transferred to another hospital
  - Need for involuntary commitment prior to transfer and medication

Few Articles on EMS Behavioral Emergencies

<table>
<thead>
<tr>
<th>Character</th>
<th>Overall</th>
<th>EM Journals</th>
<th>Psychiatric Journals</th>
</tr>
</thead>
<tbody>
<tr>
<td># psychiatric emergencies articles</td>
<td>1.2% (159)</td>
<td>38.4% (61)</td>
<td>61.6% (98)</td>
</tr>
<tr>
<td>Total</td>
<td>12,751</td>
<td>0.8% (7,421)</td>
<td>1.8% (5,330)</td>
</tr>
<tr>
<td># of research articles</td>
<td>0.96% (123)</td>
<td>73.8% (45)</td>
<td>79.6% (78)</td>
</tr>
</tbody>
</table>
What We Need to Know?
Research Agenda for EMS Behavioral Emergencies

- Appropriate field evaluation of psych patient
  - Proper exam and testing in the field?
  - Best test for cognitive impairment in field?
  - Evaluation process for refusal?
- Proper response
  - Mental health worker/mobile psych teams?
  - EMS training-role of CPI training?
  - Role of the police in psych patients?

What We Need to Know?
Research Agenda for Behavioral Emergencies in the Field

- Best Treatment
  - Field De-Escalation—does it work?
  - Chemical restraint—best meds for field?
  - Physical restraint—how to properly restrain?
  - Combination—increases adverse events?
- Transport
  - Regionalization of psych care like trauma care
  - Direct transport to psych facility

Take Home Points

- Attempt de-escalation techniques
- Proper restraint use is probably safe
- Medicate as necessary with benzodiazepine
- AMA request needs some test of cognition involve medical control and checklist documentation of understanding
- MORE RESEARCH NEEDED FOR THE CARE OF BEHAVIORAL EMERGENCIES IN PREHOSPITAL CARE
Questions

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