Maryland Behavioral Health Integration in Pediatric Primary Care (MD BHIPP)

Managing Pediatric Agitation and Aggression in the Emergency Department

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www.mdbhipp.org
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Objectives:

- Identify pharmacological and non-pharmacological approaches to managing pediatric agitation and aggression
- Strategies to address family escalation during crisis situations
- Learn ways to create a safe and supportive environment to prevent agitation and aggression
Why are we here?
Many Children Lack Access to Mental Health Care

Nearly 1 in 5 U.S. children are diagnosed with a mental disorder. 20% of those with a mental disorder receive care from a specialized care provider for mental health.

**Barriers to pediatric mental health specialty care**
- Parents may be reluctant to seek professional help
- Cost
- Not enough mental health providers to meet demand
- Lack of access to specialized providers
- Long waiting lists
- Lack of insurance coverage
This year, the nation’s leading experts in pediatrics and psychiatry declared a state of emergency in children’s mental health, citing increased rates of depression, anxiety, trauma, loneliness and suicidality.

A staggering total of at least 167,000 children in the United States have lost a parent or caregiver during the pandemic.
What Does This Mean For You?

More pediatric patients coming to the ER for behavioral health issues!!

More patients with aggressive or agitated behaviors.

Of youth presenting to ED, 6-10% require restraint

Gerson et al, BETA guidelines 2019
Case Vignette

• Destiny is 15 yo and is currently living with her mother and 2 younger siblings.

• Destiny’s mother called the police after she had a violent outburst after her mother refused to allow her to meet friends on a school night. She went into a rage, started screaming obscenities, locked herself in the bathroom, and said she wished she had never been born.

• When the police arrived, Destiny seemed to be withdrawn, did not make eye contact, and was generally nonresponsive; she was taken to the emergency department at a local hospital.

• She has no history of medication or mental health treatment; nor is there a history of suicidal ideation or behavior.

• Although initially calm, loud yelling erupts between Destiny and her mother, Destiny starts kicking her, swinging her arms at security, knocks over medical equipment, and she tries to elope only to have security take her back and hold her so staff can give her IM medication.
Agitation

- Agitation is an acute behavioral emergency

- The DSM-5 (APA 2013) defines agitation as “an excessive activity associated with a feeling of inner tension. The activity is usually non-productive and repetitious and consists of behaviors such as pacing, fidgeting, wringing of the hands, pulling of clothes, and inability to sit still.”

  - Psychomotor activation
  - Mood lability
  - Verbal abuse
  - Aggression
  - Potential to harm self, others or property

- **1.7 million** medical emergency room visits in USA per year may involve agitated patients
What is the Evidence?

• No RCTS in pediatric ED
• Most review articles inspired by consensus guidelines for adults with agitation
• Small number of studies examine use of STAT/PRN meds for acute agitation in psych hospitalized youth
• 1 RCT of stat found no difference between diphenhydramine vs placebo. IM more effective by than PO (including PO)
• Retro study of STAT/PRN olanzapine was more likely than lorazepam or chlorpromazine to produce “settling effect” with 30 min or less

Swart et al., J Child Adolesce Psychopharmacol 2011
<table>
<thead>
<tr>
<th>Medication</th>
<th>Age (years)</th>
<th>FDA Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haloperidol (Haldol)</td>
<td>3-12</td>
<td>Hyperactive behavior</td>
</tr>
<tr>
<td>Chlorpromazine (Thorazine)</td>
<td>0.5-12</td>
<td>Severe behavior disorders</td>
</tr>
<tr>
<td>Risperidone (Risperdal)</td>
<td>5-16</td>
<td>Irritability in ASD</td>
</tr>
<tr>
<td>Aripiprazole (Abilify)</td>
<td>6-17</td>
<td>Irritability in ASD</td>
</tr>
</tbody>
</table>
• PRN vs. Chemical restraint
• PRN aims to "calm" child so that he/she can attend to therapeutic activities.
• Not specially for children
• Many guidelines applicable to children
• Verbal de-escalation, medications, environmental changes decrease need for restraints
ORIGINAl RESEARCH


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DOI: 10.5811/westjem.2018.1.41344

Gerson et al, The western journal of emergency medicine, 2019, 20(2) 409–418
4 Main Objectives of Consensus Guidelines

(1) Ensure the safety of the patient, staff, and others in the area

(2) Avoid the use of restraint when at all possible

(3) Help the patient manage his emotions and distress and maintain or regain control of his behavior

(4) Avoid coercive interventions that escalate agitation

Patient, Family and Staff safety are top priority (this includes you!)
Multimodal Approach

• Successful management of agitation is a team effort
• Proactive problem-solving
• Management needs to be collaborative and individualized
Importance of History

Effective history taking combined with practical measures can be extremely effective in stopping aggressive behavior before they start.
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>How does your child communicate?</td>
<td>Verbal, nonverbal</td>
</tr>
<tr>
<td></td>
<td>Communication board</td>
</tr>
<tr>
<td></td>
<td>Sign language/baby sign</td>
</tr>
<tr>
<td>Are there any triggers that may upset or aggravate your child?</td>
<td>Too many people in the room at one time</td>
</tr>
<tr>
<td></td>
<td>Loud noises, etc.</td>
</tr>
<tr>
<td>Are there any interventions that help when your child becomes upset or</td>
<td>Light up toys</td>
</tr>
<tr>
<td>aggravated?</td>
<td>Sounds</td>
</tr>
<tr>
<td></td>
<td>Being alone, etc.</td>
</tr>
<tr>
<td>What are your child’s favorite things?</td>
<td>How can we incorporate that into the ED setting?</td>
</tr>
<tr>
<td>Does your child have a daily routine schedule?</td>
<td>Story boards, pictures</td>
</tr>
<tr>
<td></td>
<td>Lots of information/little information</td>
</tr>
<tr>
<td>How is the best way to prepare your child for upcoming tests/</td>
<td>Before it happens/while it’s happening</td>
</tr>
<tr>
<td>procedures/transition?</td>
<td></td>
</tr>
<tr>
<td>Is there anything else that would be helpful for us to know?</td>
<td></td>
</tr>
</tbody>
</table>

BHIPP: Behavioral Health Integration in Primary Care for Pediatrics
Assessing the Etiology of Agitation

Observation
Collateral
Chart Review
Why now? Why here?
Response to interventions
Physical exam/labs
Ongoing reassessment
Identify immediate trigger
Differential Diagnosis for Agitation in the ED

Physical Illness
- Pain
- Delirium
- Catatonia
- Intoxication
- Acute neurological illness

Psychiatric Illness
- Anxiety
- PTSD
- Psychosis
- Mania
- ODD
- DMDD
- Autism
- Developmental disability

Sensory Triggers
- Lights
- Noise
- Intrusive Procedures

Physical Triggers
- Hunger
- Fatigue

Relational Triggers
- Fear of strangers
- Parental distress
- Separation from family
- Adults provoking the child
General Considerations for Management

- Use environmental, behavioral techniques
- Emphasize effective communication and behavioral strategies for managing behaviors
- *Always treat underlying cause of agitation first whenever possible...*

**Before** medication!

PRN usage if those avenues are not successful
BETA 3-step Paradigm Approach

1. The patient is verbally engaged
2. Then a collaborative relationship is established
3. The patient is verbally deescalated out of the agitated state

Verbal de-escalation is usually the key to engaging the patient and helping him become an active partner in his evaluation and treatment.

10 Principles of Verbal De-escalation

1. Respect the personal space of the individual; do not get uncomfortably close or block exits.
2. Do not be provocative or respond in anger, be in control and measured.
3. Establish verbal contact calmly with the individual.
4. Be concise and speak in short, easy to understand sentences or phrases. Repeat yourself often.
5. Listen closely to what the person is saying.
10 Principles of Verbal De-escalation

6. Identify the individual’s wants and feelings and try to accommodate reasonable requests.

7. Agree or agree to disagree with the person’s concerns, while avoiding negative statements.

8. Set clear limits with expected outcomes, but do not make demands or order specific behavior.


10. Afterwards, review the event and look for areas of improvement.
Do they want…

• Something to eat or drink?
• A quiet place to go?
• A chance to talk?

dBsalliance.org/UnderstandingagitationKit
## Concrete Language and One-Step Instructions

<table>
<thead>
<tr>
<th>Say This</th>
<th>Not This</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do this (demonstrate)</td>
<td>Hold your arms out nice and straight</td>
</tr>
<tr>
<td>Check breathing</td>
<td>Now I need you to take a deep breath so I can...</td>
</tr>
<tr>
<td>Sit here</td>
<td>Why don't you hop onto this table....</td>
</tr>
<tr>
<td>Open mouth</td>
<td>Open up nice and wide</td>
</tr>
<tr>
<td>Show me (body part)</td>
<td>Where is your ____? Give me your ____?</td>
</tr>
</tbody>
</table>
### Choices

- Working with staff on giving patient (the right) choices
- Increase sense of structure and control

<table>
<thead>
<tr>
<th>Command</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hold out your arm</td>
<td>Do you want to hold out this arm or this arm?</td>
</tr>
<tr>
<td>It's time to eat</td>
<td>Which first: carrots or applesauce?</td>
</tr>
<tr>
<td>Time to go to sleep</td>
<td>Which bedtime story: this one or that one?</td>
</tr>
<tr>
<td>Time to go to therapy</td>
<td>Pick socks for therapy: orange or black?</td>
</tr>
<tr>
<td>Time for (therapy, an x-ray)</td>
<td>Do you want to walk or ride the wheelchair?</td>
</tr>
</tbody>
</table>
Best PRNs
Best PRNs
You Might Say…

• “I am here to help, not to hurt.”
• “This is a safe place.”
• “No harm will come to you.”
• “I will help you regain control.”

d Bsalliance.org/UnderstandingagitationKit
Changes in Strategies

- Early explanation of process to patient and family
- Team based history taking
- Physical exams performed together
- Ensure ordering of patient’s home medications
- Frequent updates
Communication

• Communication between staff members regarding a patient’s specific needs

• Example: Family tells the doctor that their child does better when given a warning before anyone approaches them
Environmental Controls

- Dim lights
- Play low music
- A favorite TV show
- Minimize noise and unnecessary activity, people in the room
Family Escalation - tips
# Review: Non-Pharmacological Interventions

| Environmental Controls | Dim lights  
Play low music  
A favorite TV show  
Minimize noise and unnecessary activity, people in the room  
Remove any potential object/equipment that could cause injury |
|------------------------|---------------------------------------------------------|
| Psychological Interventions | Provide one-to-one verbal support  
Involve or limit family visitation as appropriate  
Implement a Safety Observation Level  
Ask eliciting questions and make uninterrupted time to listen to the patient  
Remain neutral and calm |
| Behavioral Interventions | Child Life interventions  
Use simple age-appropriate directions and explanations  
Try verbal redirection  
Consider distraction techniques  
Set reasonable limits  
Explain consequences of behavior in simple concrete terms |
Benefits

• Verbal de-escalation usually takes less time than the process of restraint and involuntary medication.
• Avoiding “containment” procedures will result in less injuries to both staff members and patients.
• Patients are more trustful when not restrained or forcibly medicated.
• Receiving facilities may be more willing to accept a patient who has not been restrained.
But what if that non-pharmacology fails and you need Meds?

**Etiology**

- Etiology of agitation should drive medication choice
- Treat the cause of agitation
- It should be therapeutic
- Chemical Restraint
Guidelines for Medication Use

Medication use in concert with non-pharmacologic de-escalation techniques

Medication choice should be based on youth’s history (diagnosis, comorbidities, prior medication use) and current medications

PO always preferred over IM, IV over IM if access

Choice of medication depends on your setting and institution

Medications should be calming not excessively sedating!
Considerations for Medications

**Medication Factors**
- Formulations/ What is available?
- Onset/Durations of Action
- Interactions with other medications
- Potential Side Effects

**Patient Factors**
- Etiology of Agitation
- Age, Size, Hepatic/Renal Status
- Prior Response to Medications
- Severity of agitation/Aggression

**System Factors**
- Training and experience with Different Medications
- Training and experience with non-[pharmacological de-escala] (sic)
- Availability of Staff
- Availability of monitoring for Adverse Events (EKGs, etc.)
<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose</th>
<th>Peak Effect</th>
<th>Max Daily Dose</th>
<th>Notes/Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clonidine (alpha2 agonist)</td>
<td>PO: 0.05mg-0.1mg</td>
<td>PO: 30-60 minutes</td>
<td>27-40.5kg: 0.2mg/day</td>
<td>- Monitor for hypotension and bradycardia.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>40.5-45kg: 0.3mg/day</td>
<td>- Avoid giving with BZD or atypicals due to hypotension risk.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt;45 kg: 0.4mg/day</td>
<td></td>
</tr>
<tr>
<td>Diphenhydramine (antihistamine)</td>
<td>PO/IM: 12.5-50mg 1mg/kg/dose</td>
<td>PO: 2 hours</td>
<td>Child: 50-100mg</td>
<td>- Avoid in delirium.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Adolescent: 100-200mg</td>
<td>- Can be combined with haloperidol or chlorpromazine if concern for EPS.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Can cause disinhibition or delirium in younger or DD youth.</td>
</tr>
<tr>
<td>Lorazepam (benzodiazepine)</td>
<td>PO/IM/IV/NGT: 0.5mg-2mg 0.05mg-0.1mg/kg/dose</td>
<td>IV: 10 minutes PO/IM: 1-2 hours</td>
<td>Child: 4mg</td>
<td>- Can cause disinhibition or delirium in younger or DD youth.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Adolescent: 6-8mg</td>
<td>- Can be given with haloperidol, chlorpromazine or risperidone.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Depending on weight/prior med exposure</td>
<td>- Do not give with olanzapine (especially IM) due to risk of respiratory suppression.</td>
</tr>
<tr>
<td>Chlorpromazine (antipsychotic)</td>
<td>PO/IM: 12.5-60mg (IM should be half PO dose) 0.55mg/kg/dose</td>
<td>PO: 30 minutes IM: 15 minutes</td>
<td>Child &lt;5 yo: 40mg/day</td>
<td>- Monitor for hypotension.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Child &gt;5 yo: 75mg/day</td>
<td></td>
</tr>
<tr>
<td>Haloperidol (antipsychotic)</td>
<td>PO/IM: 0.5mg-5mg (IM is half dose of PO) 0.05-0.1mg/kg/dose</td>
<td>PO: 30 minutes IM: 15 minutes</td>
<td>15-40kg: 6mg</td>
<td>- Monitor for hypotension.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt;40kg: 15mg</td>
<td>- Consider EKG or cardiac monitoring for QT prolongation, especially for IV dosing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Depending on prior antipsychotic exposure</td>
<td>- Note EPS risk with MDD&gt;3mg/day, with IM and PO dosing having higher EPS risk.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Consider AIMs testing.</td>
</tr>
<tr>
<td>Olanzapine (antipsychotic)</td>
<td>PO/ODT or IM: 2.5-10mg</td>
<td>PO: 4.7 +/- 3.7 hours IM: 15-45 minutes</td>
<td>10-20 mg</td>
<td>- Do not give with or within 1h of any BZD given risk for resp. suppression.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Depending on prior antipsychotic exposure</td>
<td></td>
</tr>
<tr>
<td>Risperidone</td>
<td>PO/ODT: 0.25-1mg</td>
<td>PO: &lt;1 hour</td>
<td>Child: 1-2mg</td>
<td>- Can cause akathisia (restlessness/agitation) in higher doses</td>
</tr>
</tbody>
</table>
Monitoring Potential Side Effects

- Benzos: Respiratory Depression
- Anti-Psychotics:
  - QT Prolongation
  - EPS
  - NMS
  - Orthostatic Hypotension
  - lower seizure threshold
Medical Considerations

**Delirium:** acute brain dysfunction
Behavioral syndrome caused by medical illness or by treatment of medical illness
acute, fluctuating, inattention, disorganized thinking

- Medical Work-up
- Treat pain
- Treat underlying cause

<table>
<thead>
<tr>
<th>PO</th>
<th>IM</th>
<th>IV</th>
</tr>
</thead>
</table>
| • Quetiapine  
• risperidone | • *olanzapine  
• chlorpromazine | • Haloperidol  
• chlorpromazine |
Substance Intoxication

Medical Work-up:
- Urine toxicology
- Physical exam
- Collateral

Intoxications

- Stimulant /PCP Intoxication
  - Lorazepam

- ETOH Intoxication
  - haloperidol or chlorpromazine

- Synthetic Cannabinoids
  - Lorazepam + haloperidol or chlorpromazine

Withdrawal

- ETOH/BENZO Withdrawal
  - Lorazepam

- Opiate Withdrawal
  - Symptom tx
  - Clonidine
  - replacement
## Autism & Intellectual Disability

### Consider Developmental Level

- Medical Work-up
- Collateral! What helps child
- Communication tools
- Reduce Stimulation
- Avoid IM
- Avoid Benzos

<table>
<thead>
<tr>
<th>PO</th>
<th>IM</th>
<th>IV</th>
</tr>
</thead>
</table>
| **Clonidine**<br>**Diphenhydramine**<br>**Chlorpromazine**<br>**Risperidone**<br>**Olanzapine**<br>*<br>**Try to Avoid**<br>*<br>**Diphenhydramine** | **Try to Avoid**<br>*<br>**Olanzapine**<br>*<br>**Risperidone**<br>**Chlorpromazine**<br>**Diphenhydramine** | *<br>**Clonidine**<br>**Diphenhydramine**

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*Olanzapine is marked with an asterisk due to potential side effects.*
Autism & Intellectual Disability

Once Agitated:

Stop Talking!!!!!
Move Back!!!!!
Catatonia

Common Catatonic Behaviors

- Rigidity or stupor that lasts for hours or even days
- Performing strange movements
- Staying in uncomfortable positions without shifting
- Erratic and extreme movement
- Echolalia (repetition of words or behaviors)

Not only in Psychosis!

Agitated Catatonia

- IV

• Lorazepam
Anxiety/Trauma/ PTSD

• Medical Work-up

• Lorazepam (PO/IM/IV)
• Clonidine (PO) if under 12 years and worried about disinhibition.
Conduct / ODD

- Set clear limits
- Multidisciplinary collaboration for consistency
- Effective communication

### PO
- Chlorpromazine
- Lorazepam
- Risperidone

### IM
- Chlorpromazine or
- Haloperidol +/- Lorazepam/Diphenhydramine
- Olanzapine
# Mania / Psychosis

- Medical Work-up
- Extremely rare <12 years

<table>
<thead>
<tr>
<th></th>
<th>PO</th>
<th>IM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Risperidone</td>
<td>• Chlorpromazine or</td>
</tr>
<tr>
<td></td>
<td>• Quetiapine</td>
<td>• Haloperidol +/-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lorazepam/Diphenhydramine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Olanzapine</td>
</tr>
</tbody>
</table>
Unknown Etiology??

- mild agitation
  - behavioral strategies

- moderate agitation
  - aggression against objects or property destruction
    - diphenhydramine
    - lorazepam
    - olanzapine*

- severe agitation
  - aggression to self or others
    - chlorpromazine
    - haloperidol+lorazepam
    - olanzapine*
Take Home Points...

- Importance of TEAM!!!
- Importance of Non-Pharmacological Interventions
- Keep trying to determine etiology – it will drive medications
- Observe response to interventions
- Continually reevaluate
Join the 2022 Children’s Mental Health Matters! Campaign

We have the opportunity to change the trajectory of children’s lives across Maryland. Consider joining the 2022 Children’s Mental Health Matters! Campaign.

BECOME A CHAMPION

- Each year CMHM invites organizations to join the Campaign as a Champion for Children’s Mental Health, focusing on participation during their annual Awareness Week.
- You are provided with a digital toolkit complete with ideas on how to increase awareness of the importance of children’s mental health within their communities and encourage them to partner with others to promote their local efforts.

AWARENESS WEEK – MAY 1 – 7, 2022

- Campaign Partners and Champions across the state will elevate the importance of children’s mental health on a local level. Be sure to follow the Campaign on social media platforms to see the exciting activities that take place around this time.

To Learn More about the Campaign, please visit the CMHM Campaign website

Questions? Contact Tiffany Thomas, Campaign Coordinator; tthomas@mhamd.org

Interested in becoming a Partner? Click here to Sign Up as A Community Champion
References


- ED Pathway for Evaluation/Treatment of Children with Behavioral Health Issues 2018 by Children's Hospital of Philadelphia

- J. Lavelle, MD; K. Osterhoudt, MD; M. Callaghan, MD; E. Steinmiller, RN; K. Vosburg, MSW; C. Jacobstein, MD; C. Law, PharmD; W. Frankenburger, RN; D. Albert, RN; J. Fein, MD; A. Hayes; E. Friedlaender, MD


References


- dBsalliance.org/UnderstandingagitationKit