

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

Managing Pediatric Agitation and Aggression in the Emergency Department



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Goals and Objectives

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

Outline



Setting the Stage



Current Evidence



Assessing Agitation



Non-pharmacology: Environment, Psychological, Behavioral



Pharmacologic Measures Focusing on Etiology



Summary

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

Current State of Children's Mental Health

- 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



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- When the police arrived, Destiny seemed to be withdrawn, did not make eye contact, and was generally nonresponsive; she was taken to the emergency department at a local hospital.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

Vitiello, et al, J Clin Psychiatry, 1987

Swart et al., J Child Adolesce Psychopharmacol 2011

FDA approved drugs for agitation/aggression

Medication	Age (years)	FDA Indication
Haloperidol (Haldol)	3-12	Hyperactive behavior
Chlorpromazine (Thorazine)	0.5-12	Severe behavior disorders
Risperidone (Risperdal)	5-16	Irritability in ASD
Aripiprazole (Abilify)	6-17	Irritability in ASD

- PRN vs. Chemical restraint
- PRN aims to "calm" child so that he/she can attend to therapeutic activities.



West JEM

Volume XIII, Number 1, February 2012 Open Access at www.westjem.org ISSN 1936-900X

Western Journal of Emergency Medicine

A Peer-Reviewed Professional Journal

BEHAVIORAL EMERGENCIES: BEST PRACTICES IN EVALUATION AND TREATMENT OF AGITATION

- 1 Overview of Project BETA: Best practices in Evaluation and Treatment of Agitation (Editorial)
GH Holloman Jr, SL Zeller
- 3 Medical Evaluation and Triage of the Agitated Patient: Consensus Statement of the American Association for Emergency Psychiatry Project BETA Medical Evaluation Workgroup (Review)
K Nordstrom, LS Zun, MP Wilson, V Stiebel, AT Ng, B Bregman, EL Anderson
- 11 Psychiatric Evaluation of the Agitated Patient: Consensus Statement of the American Association for Emergency Psychiatry Project BETA Psychiatric Evaluation Workgroup (Review)
KR Stowell, P Florence, HJ Harman, RL Glick
- 17 Verbal De-escalation of the Agitated Patient: Consensus Statement of the American Association for Emergency Psychiatry Project BETA De-escalation Workgroup (Review)
JS Richmond, JS Berlin, AB Fishkind, GH Holloman Jr, SL Zeller, MP Wilson, MA Rifai, AT Ng
- 26 The Psychopharmacology of Agitation: Consensus Statement of the American Association for Emergency Psychiatry Project BETA Psychopharmacology Workgroup (Review)
MP Wilson, D Pepper, GW Currier, GH Holloman Jr, D Feifel
- 35 Use and Avoidance of Seclusion and Restraint: Consensus Statement of the American Association for Emergency Psychiatry Project BETA Seclusion and Restraint Workgroup (Review)
DK Knox, GH Holloman Jr

BEHAVIORAL EMERGENCIES

- 41 Evaluation of an Emergency Department Educational Campaign for Recognition of Suicidal Patients (Original Research)
GW Currier, D Litts, P Walsh, S Schneider, T Richardson, W Grant, W Triner, N Robak, R Moscatti
- 51 Impact of the Mental Healthcare Delivery System on California Emergency Departments (Original Research)
A Stone, D Rogers, S Kruckenberg, A Lieser

PERSPECTIVE

- 57 Life in the Inner City
SD Docherty



The American Association of Emergency Psychiatry Best Practices – BETA Guidelines

- Not specially for children
- Many guidelines applicable to children
- Verbal de-escalation, medications, environmental changes decrease need for restraints

• West J Emerg Med. 2012;13(1):17–25

Best Practices for Evaluation and Treatment of Agitated Children and Adolescents (BETA) in the Emergency Department: Consensus Statement of the American Association for Emergency Psychiatry

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Section Editor: Muhammad Waseem, MD
Submission history: Submitted October 21, 2018; Revision received January 12, 2019; Accepted January 20, 2019
Electronically published February 19, 2019
Full text available through open access at http://escholarship.org/uc/uciem_westjem
DOI: 10.5811/westjem.2019.1.41344

4 Main Objectives of Consensus Guidelines



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



• Patient, Family and Staff safety are top priority (this includes you!)
...restraint



(4) Avoid coercive interventions that escalate agitation

...patient manage
...ions and distress
...maintain or regain
control of his behavior

Multimodal Approach

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



Importance of History



HISTORY

Effective history taking combined with practical measures can be extremely effective in stopping aggressive behavior before they start.

Ask Caregivers

How does your child communicate?	Verbal, nonverbal Communication board Sign language/baby sign
Are there any triggers that may upset or aggravate your child?	Too many people in the room at one time Loud noises, etc.
Are there any interventions that help when your child becomes upset or aggravated?	Light up toys Sounds Being alone, etc.
What are your child's favorite things?	
Does your child have a daily routine schedule?	How can we incorporate that into the ED setting?
How is the best way to prepare your child for upcoming tests/procedures/transitions?	Story boards, pictures Lots of information/little information Before it happens/while it's happening
Is there anything else that would be helpful for us to know?	

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

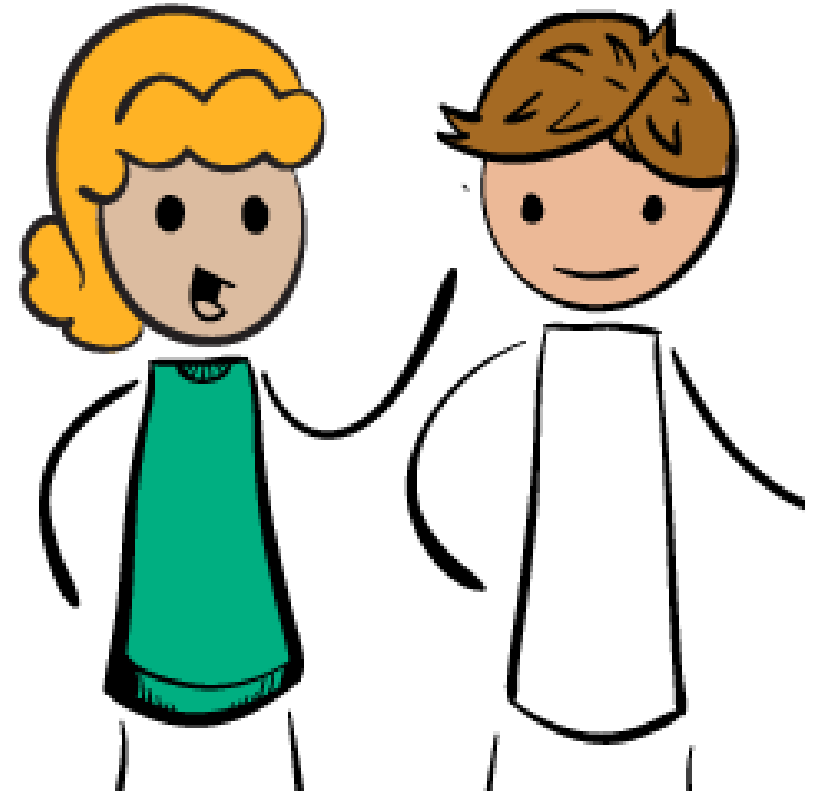


1. The patient is verbally engaged
2. Then a collaborative relationship is established
3. The patient is verbally deescalated out of the agitated state

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

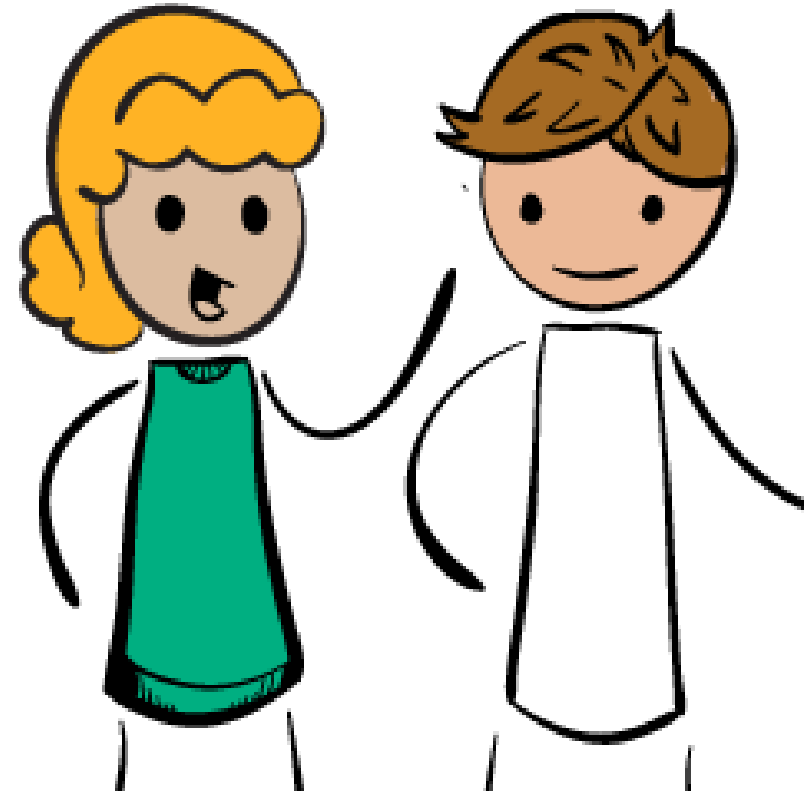
10 Principles of Verbal De-escalation

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.
9. Offer choices and optimism.
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?



Concrete Language and One-Step Instructions

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

Choices

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

Command	Choice
Hold out your arm	Do you want to hold out this arm or this arm?
It's time to eat	Which first: carrots or applesauce?
Time to go to sleep	Which bedtime story: this one or that one?
Time to go to therapy	Pick socks for therapy: orange or black?
Time for (therapy, an x-ray)	Do you want to walk or ride the wheelchair?



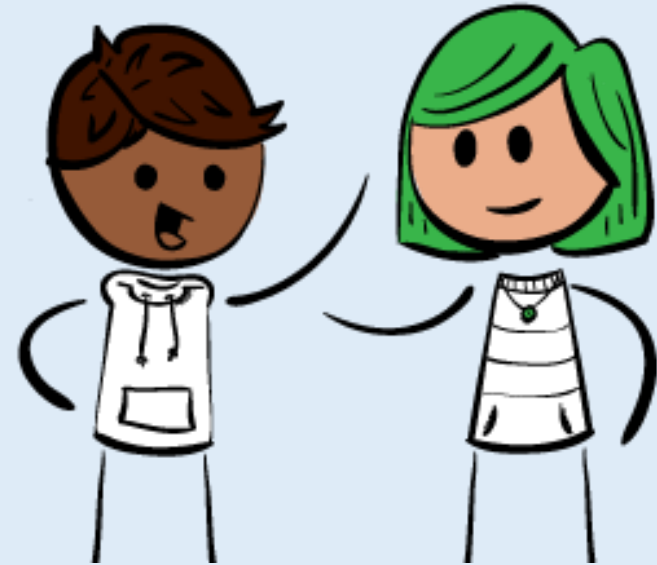
Best PRNs



PRNs

You Might Say...

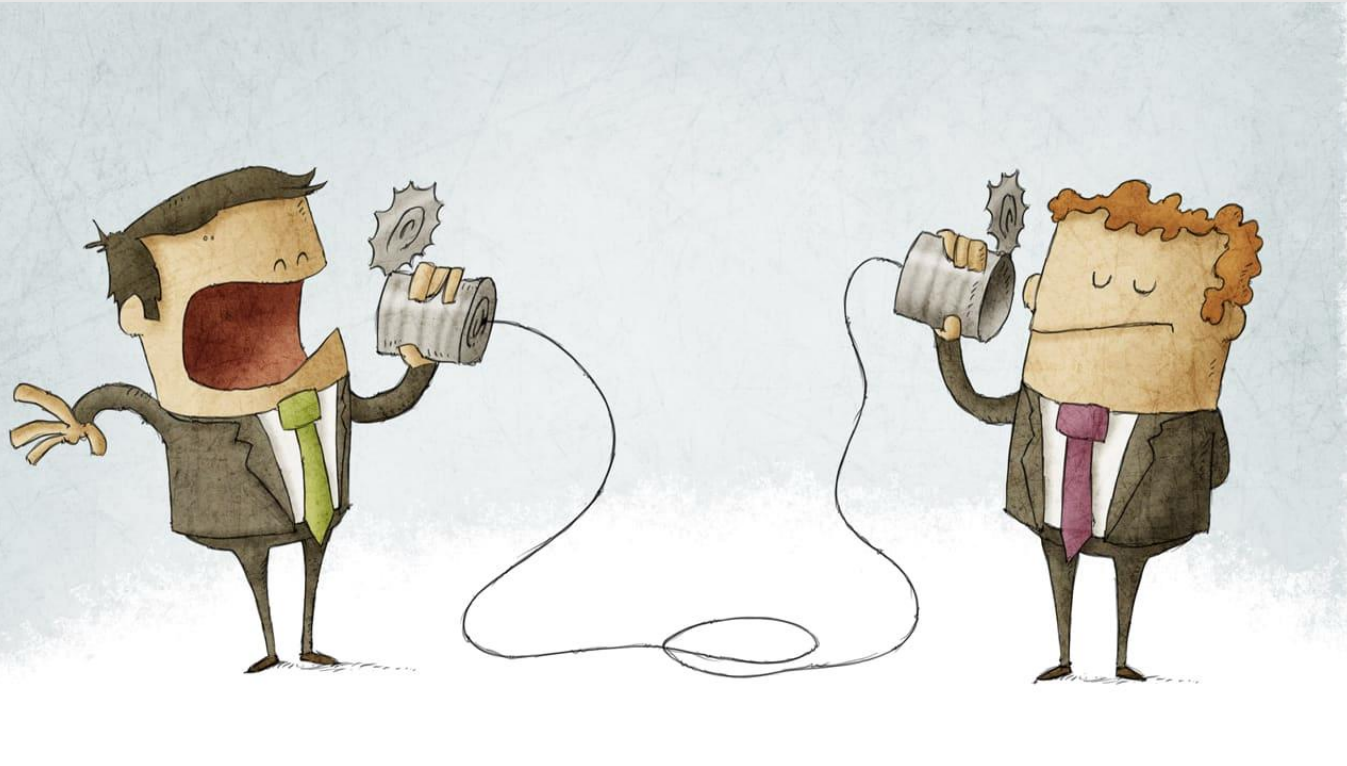
- “I am here to help, not to hurt.”
- “This is a safe place.”
- “No harm will come to you.”
- “I will help you regain control.”



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



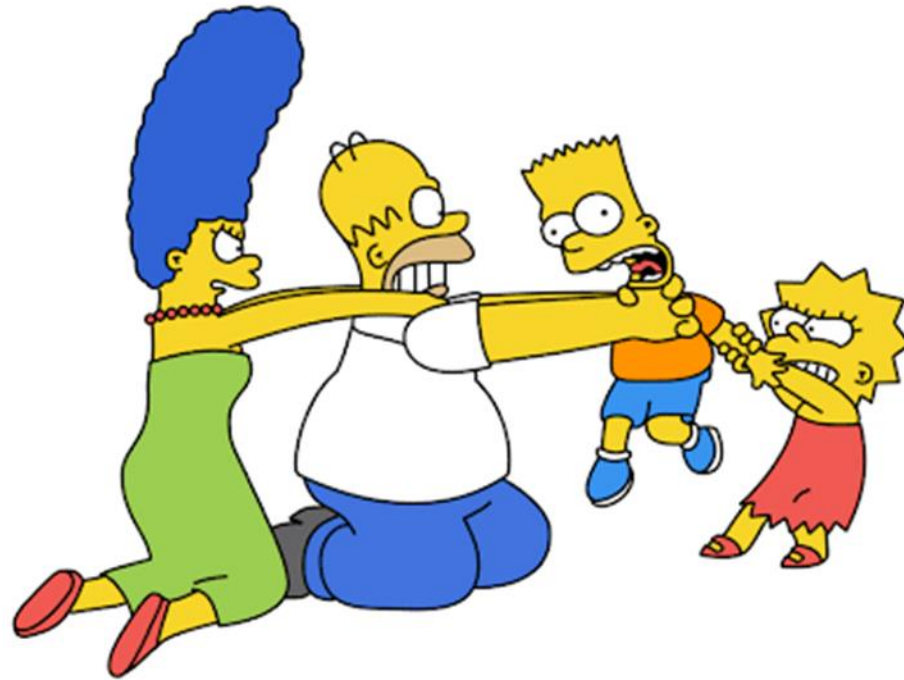
- Communication between staff members regarding a patient's specific needs
- Example: Family tells the doctor that their child does better when given a warning before anyone approaches them



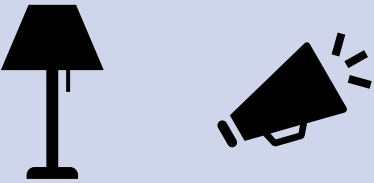

Environmental Controls

- 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

<p>Environmental Controls</p>	<p>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</p>	
<p>Psychological Interventions</p>	<p>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</p>	
<p>Behavioral Interventions</p>	<p>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</p>	



Benefits

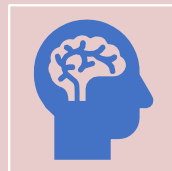
- Verbal de-escalation usually takes less time than the process of restraint and involuntary medication.
- Avoiding “containment” procedures will result in less injuries to both staff members and patients.
- Patients are more trustful when not restrained or forcibly medicated.
- Receiving facilities 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



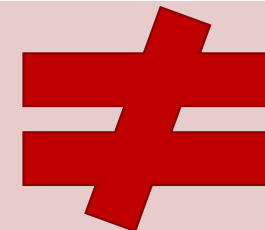
Etiology of agitation should drive medication choice



Treat the cause of agitation



It should be therapeutic
Restraint



Chemical

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-escalation
- Availability of Staff
- Availability of monitoring for Adverse Events (EKGs, etc.)



types of medication used for agitation

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

Monitoring Potential Side Effects

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

Is it delirium?
 acute onset/fluctuating course *plus*
 inattention *plus*
 disorganized thinking or altered level of
 consciousness

Medical
 workup

- address underlying
 medical etiology
 - assess pain
 - avoid benzodiazepines
 and anticholinergics
 which may worsen
 delirium

Still severely agitated
 needs medication

PO: quetiapine or risperidone or clonidine
 IM: olanzapine ☹️ or chlorpromazine
 IV: haloperidol
 or Lorazepam (PO/IM/IV/NGT) if there are seizure concerns or
 catatonia

**Is it substance intoxication
 or withdrawal?**

history,
 Utox,
 physical
 exam

Unknown substance
 Lorazepam (PO/IM/IV),
 with haloperidol if severely
 agitated or hallucinating

**EtOH/Bzd Withdrawal or
 Stimulant Intoxication**
 Lorazepam (PO/IM/IV/NGT), add
 haloperidol if severely agitated or hallucinating

Opiate withdrawal
 Clonidine and/or opiate replacement
 (methadone, suboxone) per hospital protocol
 Add symptomatic meds (ibuprofen, maalox,
 loperamide, ondansetron, dicyclomine) as needed

PCP Intoxication
 Lorazepam
 (PO/IM/IV/NGT)

EtOH Intoxication
 Haloperidol (IV/IM/PO)
 or chlorpromazine (PO/IM)

Utox Negative?
 Suspect **Synthetic Cannabinoids or cathinones**
 Lorazepam+/- haloperidol (PO/IM/IV) or chlorpromazine (PO/IM)

**Is the patient
 developmentally delayed or
 autistic?**
 note ASD/DD its are at higher risk for delirium and
 medical or psych symptoms

Yes

- Attempt behavioral interventions
 - Assess pain, hunger, other physical needs
 - Consider visual communication tools
 - Utilize sensory tools
 - Ask what usually soothes child
 - Ask about prior medication responses (positive or
 negative), especially to benzodiazepines and
 diphenhydramine

Still severely
 agitated
 needs
 medication

Consider extra dose of pt's regular standing medication
 Avoid benzodiazepines due to risk of disinhibition
 Avoid IM route
 Clonidine (PO)
 or diphenhydramine (PO/IM)
 Or antipsychotic (risperidone PO, chlorpromazine PO/IM or
 olanzapine (PO/IM/ODT) ☹️)

**Does patient have a clear
 psychiatric diagnosis?**
 obtain collateral to clarify diagnosis and reason for
 agitation,
 use behavioral deescalation strategies

Yes

agitated catatonia
 Lorazepam (PO/IM/IV/NGT)

ADHD*
 Clonidine (PO) or diphenhydramine
 (PO/IM) or risperidone (PO) if
 concerned about hypotension

Mania or Psychosis*
note: extremely rare under age 12
 If on standing antipsychotic, give extra dose

anxiety, trauma, or PTSD
 Lorazepam (PO/IM/IV)
 or clonidine (PO) if <12yo or
 concerned about disinhibition

ODD or CD*
 Chlorpromazine (PO/IM) or lorazepam
 (PO/IM) or olanzapine (PO/IM) ☹️
 or risperidone (PO)

PO: Risperidone or quetiapine
IM: Chlorpromazine
 or haloperidol +/- lorazepam (add
 diphenhydramine for EPS concern), or olanzapine
 ☹️

**unknown etiology for
 agitation?**
 obtain collateral, continue behavioral deescalation
 strategies, continually reevaluate for above and other
 causes of agitation

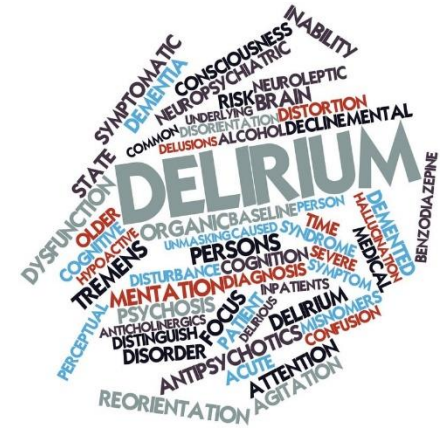
Yes

Unknown etiology, mild agitation
 eg. verbal aggression
 utilize behavioral and environmental
 strategies to deescalate

Unknown etiology, moderate agitation
 eg. aggression against objects or
 property destruction*
 Diphenhydramine (PO/IM)
 or lorazepam (PO/IM)
 or olanzapine (PO/IM) ☹️

Unknown etiology, severe agitation
 eg. aggression to self or others*
 Chlorpromazine (PO/IM) or
 haloperidol+lorazepam (PO/IM)
 or olanzapine (PO/IM/ODT) ☹️

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

PO

- Quetiapine
- risperidone

IM

- *olanzapine
- chlorpromazine

IV

- 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

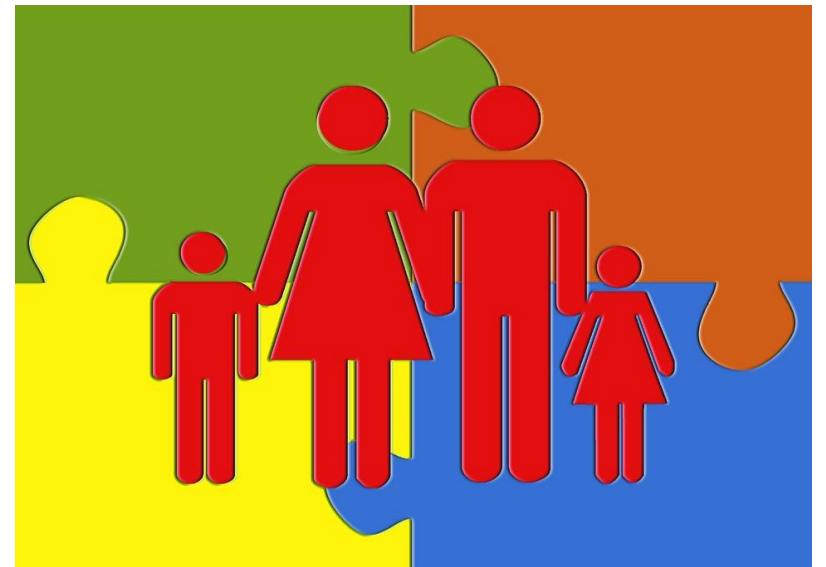
ETOH/BENZO Withdrawal

- 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

PO

- Clonidine
- Diphenhydramine

- Chlorpromazine
- Risperidone
- Olanzapine*

IM

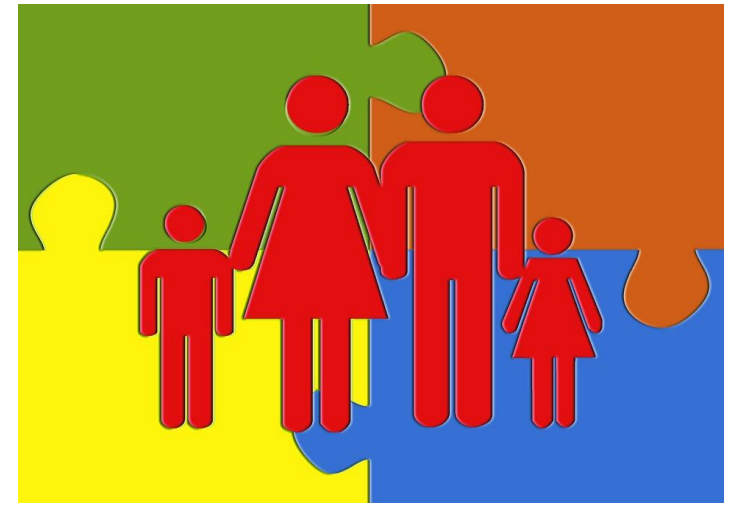
- Try to Avoid

IV

- Diphenhydramine

Autism & Intellectual Disability

Once Agitated:



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

Catatonia

Not only in Psychosis!

Agitated Catatonia

Common Catatonic Behaviors

Rigidity or stupor
that lasts for hours
or even days



Performing strange
movements



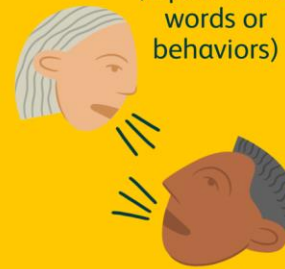
Staying in uncomfortable
positions without shifting



Erratic and extreme
movement



Echolalia
(repetition of
words or
behaviors)



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

PO

- Risperidone
- Quetiapine

IM

- Chlorpromazine
or
- Haloperidol +/-
Lorazepam/Diphenhydramine
- Olanzapine

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...



**Take
home message*

- 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](#)



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