Methamphetamine Psychosis

Social Disorder Urban Crime Conference 2024

Dr Wes Orr September 2024

What is it?
How to recognize?
Police? EMS? Mental Health?

Who am I?
Dr Wes Orr

- Medical School Edmonton
- Residency in Victoria and Vancouver, St Paul's.
- Lethbridge ER 2004
- EMS Medical Director 2012 - South Zone. - helped to develop the medic protocols and education about medical issues in Alberta… including this topic.
- OLMC (On line Medical Consultation)

- No conflict of interests

Methamphetamines

How ER docs categorize Drugs of Abuse drug toxicity

- Simulants (cocaine, crack, methamphetamine, caffeine)

- Narcotics (Opioids, fentanyl, morphine, heroine, oxycodone, ….)
- Sedative/Hypnotics (benzos, sleeping pills, antipsychotics)
- Alcohol (EtOH, MetOH, Isopropyl, EG)
- Other (gabapentin, bupropion/Welbutrin, ketamine, THC, MM, etc)

- Peripheral and central effects
- Too much, too little. (Too much meth, too little meth).

use opioids.[3–8] In a study of 1,526 people accessing harm reduction services across Canada in 2019–2021,[24] cocaine and methamphetamine were the most common substances reported used in the previous three days, with cocaine and crack most common in Central and Eastern Canada and methamphetamine and amphetamine most common in the West (consistent with data reported in 2019).[1] Overall, cocaine or crack use in the previous three days was reported by 60% of participants and methamphetamine use by 51% of participants. When participants were asked which they **preferred**, methamphetamine was the preferred stimulant across sites (Figure 1).

Figure 1. Self-reported preferences of stimulants among 1,526 people accessing harm reduction services in 2019–2021

"If you use uppers (stimulants), what would you prefer to use?"

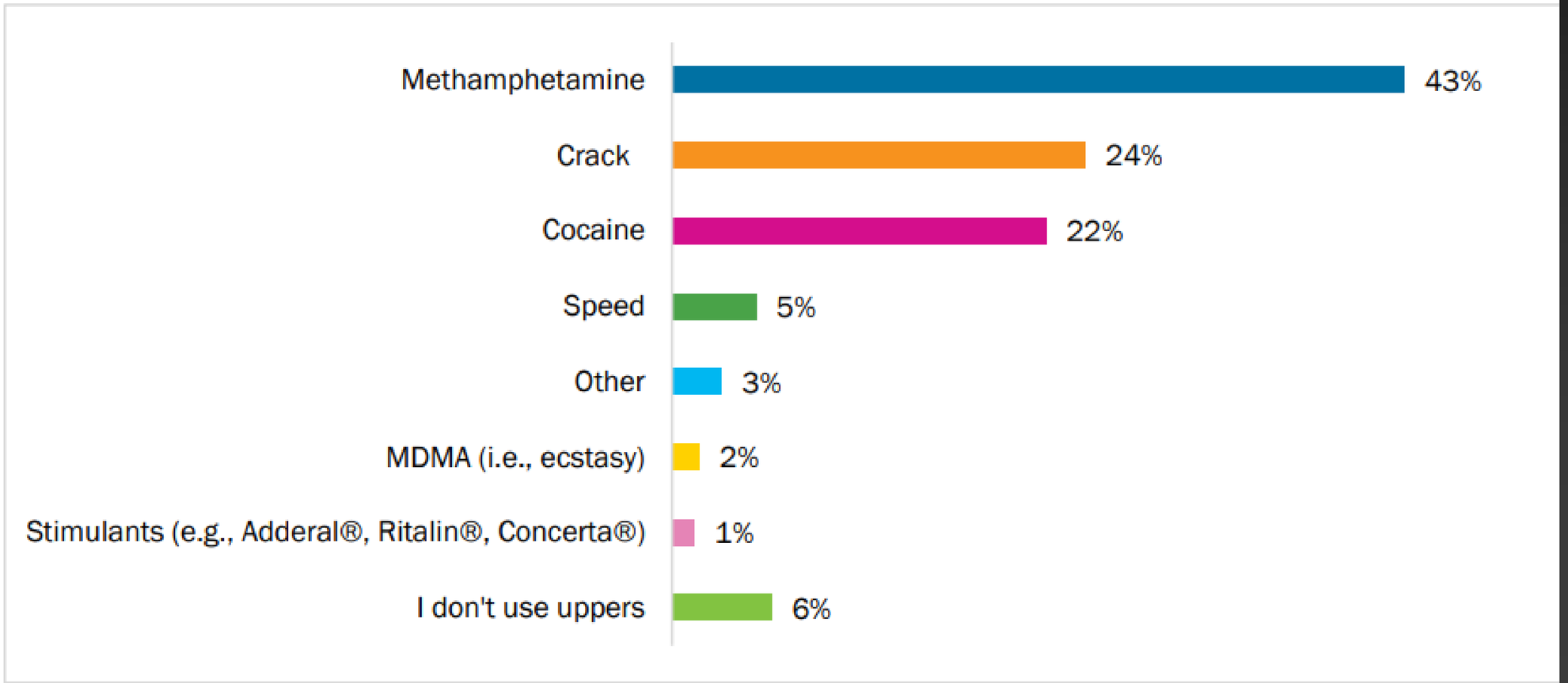
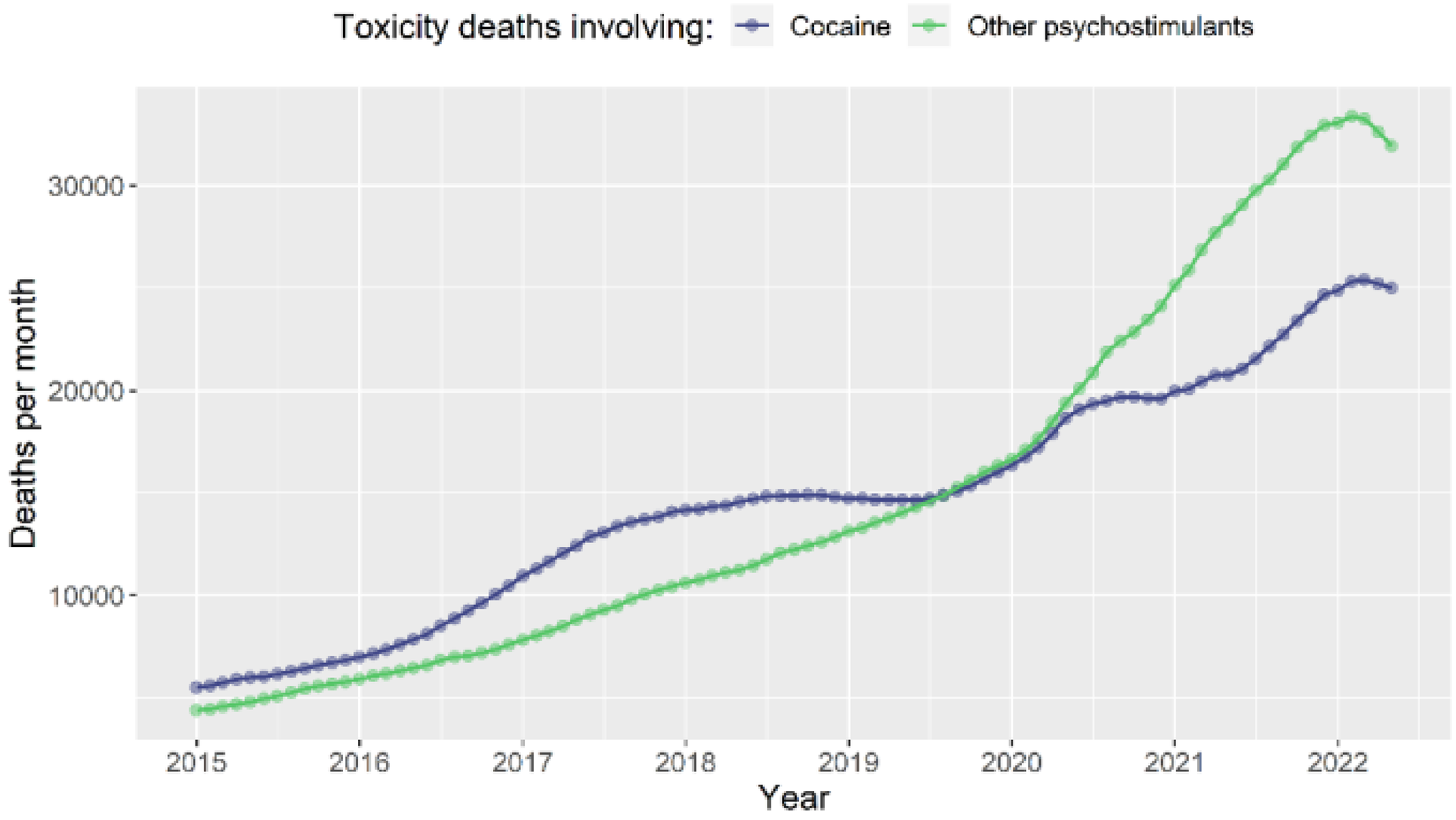


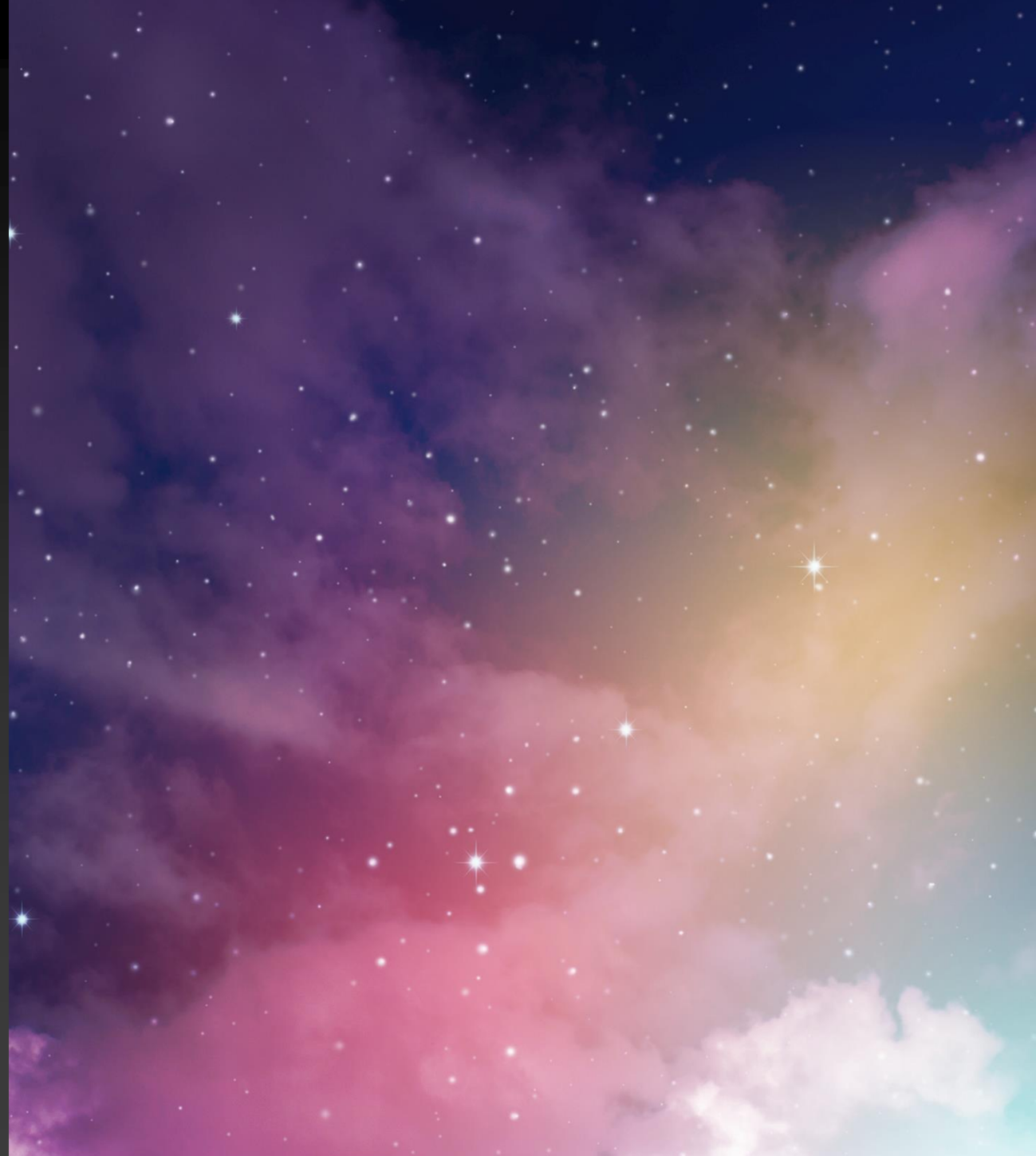
Figure 5. Provisional counts per month of drug toxicity deaths involving stimulants, by type of stimulant: United States, January 2015 to May 2022

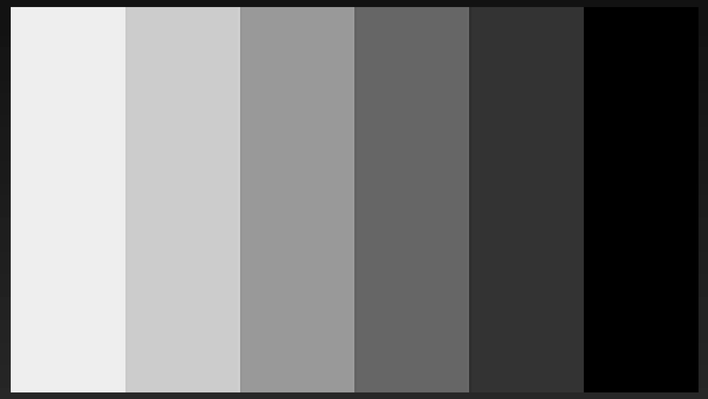


Psychosis

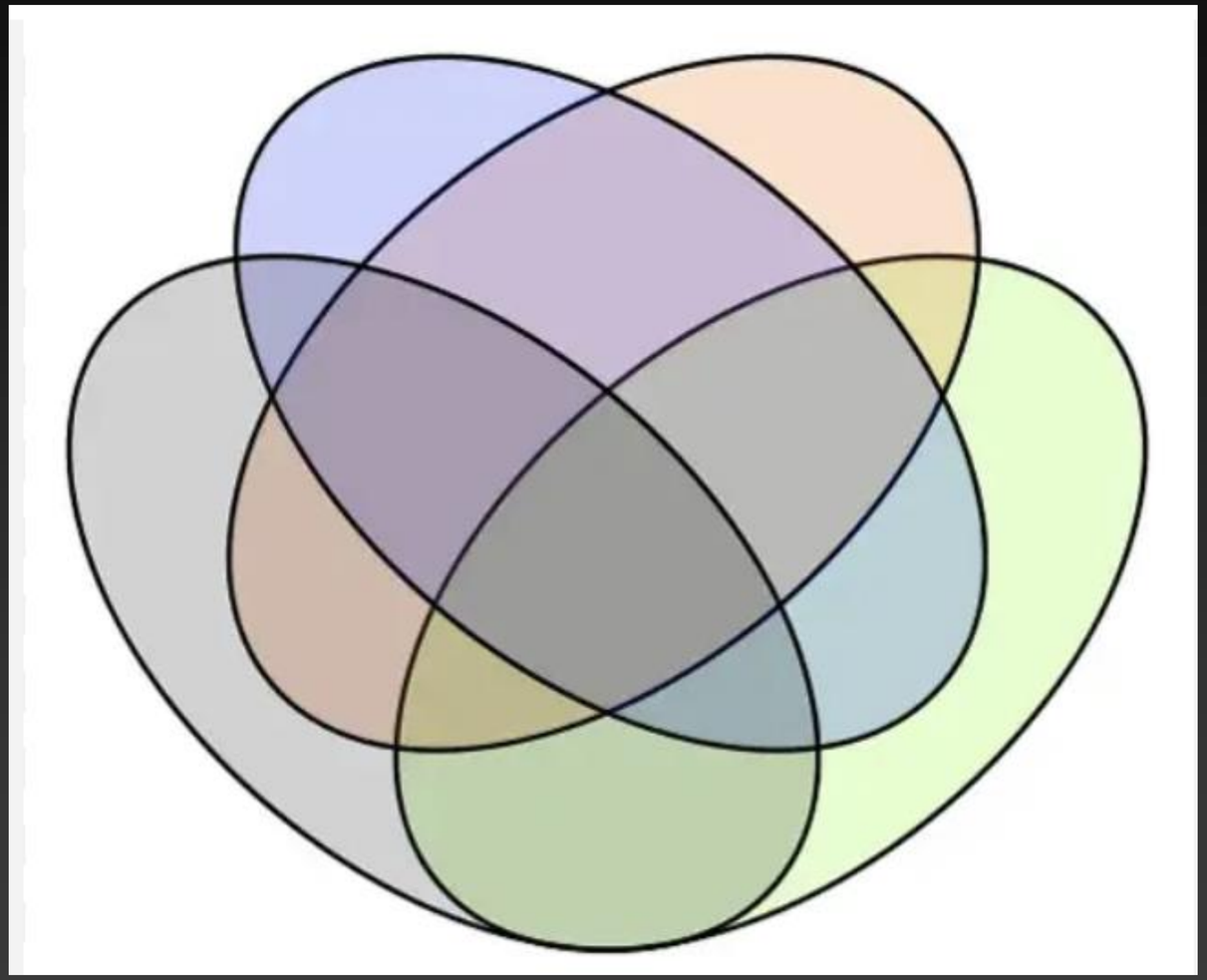
What is it?

Come back to it in a minute…





- Delirium
- Dementia
- Hallucination/Delusions
- Psychosis
- Agitated Delirium/Excited Delirium



Delirium

- Important one
- It is characterized by an alteration of attention, consciousness, and cognition, with a reduced ability to focus, sustain or shift attention. It develops over a short period and fluctuates during the day

Delirium

- Brain like a Muscle??

- Lots of potential causes!
- Fluctuating (psychosis less nor non fluctuating)

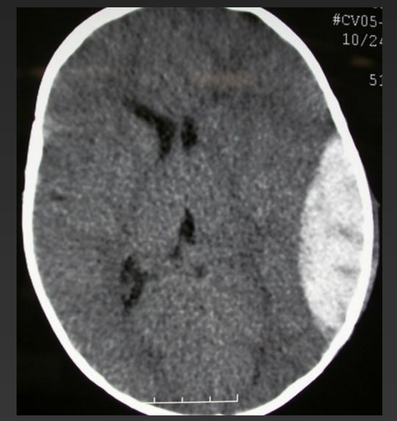
AEIOU TIPS - Causes of Altered Mental Status

A **A**lcohol, **A**cidosis, **A**mmonia, **A**rrhythmia
E **E**lectrolytes, **E**ndocrine, **E**pilepsy
I **I**nfection
O **O**verdose, **O**xygen, **O**piates
U **U**remia

T **T**emperature, **T**rauma, **T**hiamine
I **I**nsulin (hypoglycemia)
P **P**sychiatric, **P**oisoning
S **S**troke, **S**eizure, **S**yncope, **S**pace Occupying Lesions, **S**hunt (VP) Malfunction, **S**AH

It’s Tricky

- Point is that there are a lot of potential causes of psychosis and delirium in a methamphetamine using person



- Might smell like meth, have meth in their pockets but it’s ICH
- Can have more than one at a time, also poly-pharm

- Emergency department urine drug tests (qualitative vs quantitative)

Dementia

Not a lot of time here

Dementia

- Brain injury (congenital/aquired)
- Elderly (disease, CVAs, atrophy, post-trauma)
- Permanent Brain injury
- Increased risk for delirium
- Commonly mixed up with delirium

Hallucinations

- Seeing/hearing/smelling things that aren’t really there.
- Doesn’t have to be psychotic. Can just have controlled schizophrenia, for example. Or certain recreational drugs can cause hallucinations without psychosis.
- Can hallucinate without losing touch with reality

Delusions

- Could be true but…

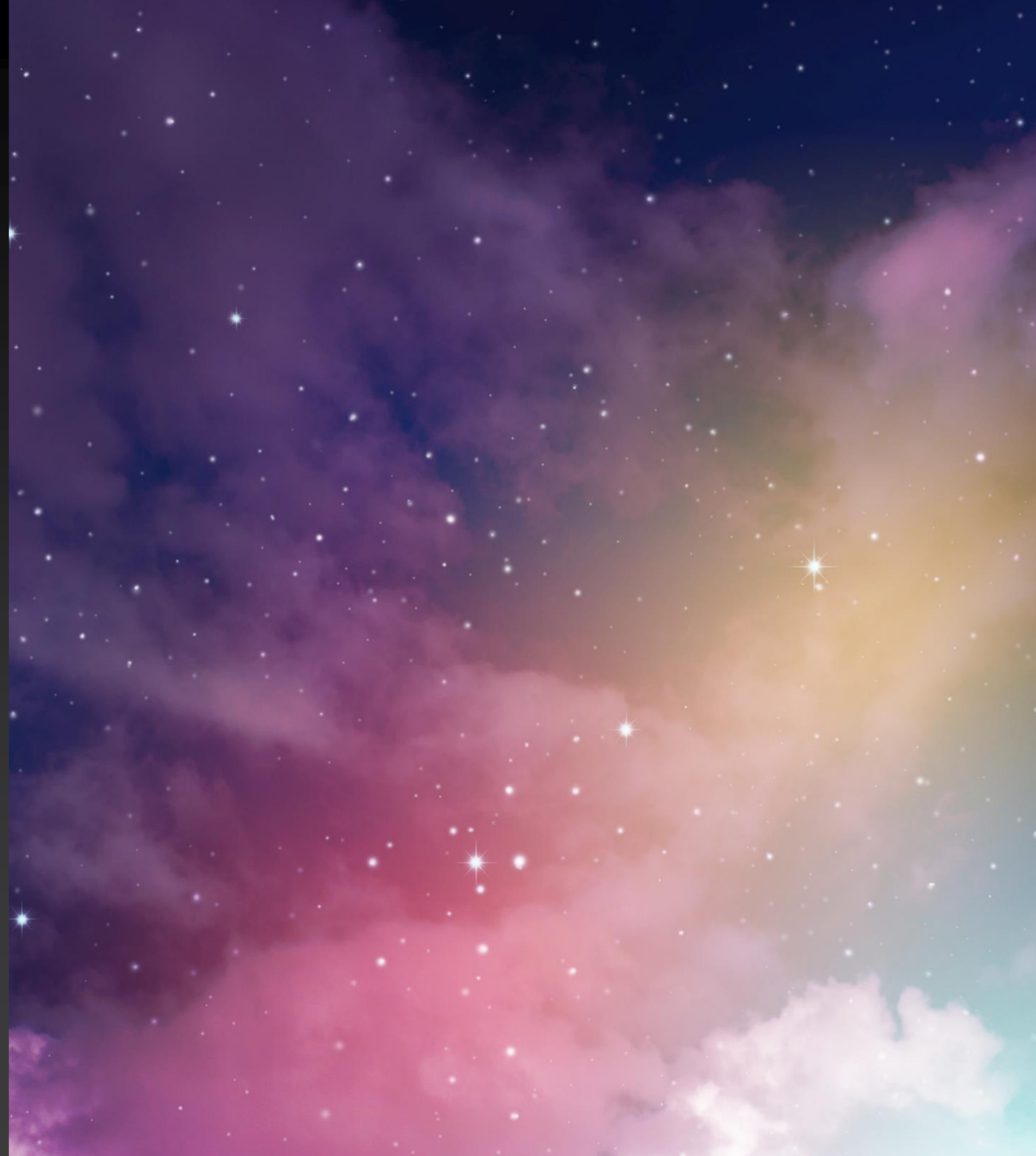
- Main one here would be paranoia
- Symptom of psychosis but can occur without psychosis like hallucinations

Psychosis

Brain Dysfunction.

Might even be a subtype of delirium

Psychiatric Delirium?



Psychosis

- Losing touch with reality
- Having a hard time or unable to distinguish what is real.
- Is on a spectrum as well (the harder cases are on the line)
- Can range from mild to word-salad to agitated delirium to coma

- Has a differential diagnosis that includes but definitely not limited to methamphetamine. AEIOUTIPS

Delirium vs Psychosis

Very similar

Generally Delirium is more medical…

And Psychosis is more psychiatric

Non-fluxuating

But they blur together frequently

Commonly delirious people have a degree of psychosis (hallucinate/delusions)

Excited Delirium

Agitated Delirium

Excited Delirium

Agitated Delirium

- Personal and Staff Safety
- Related to Meth, more like to be too much.. but can be many things
- Body Packers VS Body Stuffers
- Lactic Acid, Carbonic Acid/CO2, (Keto-acids)
- These patients can and do die, they need to breath
- Physical and Chemical restraints

The Psych Exam

- Now you need to determine if they are psychotic (or delirious)
- And, maybe, that is secondary to methamphetamine

- Don’t have to memorize this…

1. A)PPEARANCE AND BEHAVIOUR

Apparent Age	Stated age? Younger/older?
Dress	Casually? Formally? Poorly?
Grooming Hygiene	Good or poor? Good or poor?
Gait	Brisk, slow, intoxicated, ataxic, rigid, shuffling, staggering, uncoordinated?
Psychomotor activity	Normal, reduced, excessive?
Abnormal movements	Grimaces, tics, tardive dyskinias, foot tapping, ritualistic behaviour?
Eye contact	Good or poor?
Attitude	Cooperative, belligerent, oppositional, submissive, etc.?

2. S)PEECH

Rate	Rapid, pressured, slowed?
Rhythm	Hesitant, rambling, halting, stuttering, jerky, long pauses?
Tone of voice	Appropriate or inappropriate tone of voice?
Volume	Loud, soft, whispered, yelling, inaudible?
Accent Clarity Quantity	Any accent? Pronunciation, articulation Responds only to questions, offers information, repetitive, verbose?

3. E)MOTION (MOOD AND AFFECT)

Mood: Patient's subjective emotional state	When the clinician asks, "How is your mood?" and the patient responds, "Good", "Depressed", "Down", etc.
Affect: objective emotional state	What you actually observe about how they appear to be feeling, e.g. if their affect appears down, euphoric, etc.
Congruence to mood Appropriateness	Congruent mood means that the mood is appropriate to the situation, e.g. patient's father has passed away and the patient is sad Incongruent mood means that the mood is inappropriate to the situation, e.g. patient's father has passed away and the patient is laughing hysterically
Quality	Euthymic, elevated, depressed?
Range	Broad/ restricted?
Stability	Fixed / labile?

4. P)ERCEPTION

Hallucinations	Auditory: Are you hearing any things that others can't hear? Visual: Are you seeing any things that others can't hear? Olfactory: Any unusual smells that you notice, e.g. burning smells? (classically seen in temporal lobe epilepsy)
Illusions	Distortions of real images or sensations
Depersonalization	Patient feels that they are not real Clinician: "Do you ever feel that you are not real?"
Derealisation	Patient feels that the world is not real Clinician: "Do you ever feel that things around you aren't real?"

5. T)HOUGHT CONTENT AND PROCESS

Thought Process	How well are the patient's thoughts connected? Are the patient's thoughts coherent, logical, relevant? Does the patient tend to go off topic? (e.g. circumstantial) Does the patient completely go from one thing to the next? (e.g. tangential (as in mania, psychoses); flight of ideas (as in mania, disconnecting rambling from one idea to the next); loosening of associations (as in psychosis with shifting from one subject to another) Thought blocking (as in psychosis, where person stops suddenly in the middle of a sentence) Word salad (as in schizophrenia, with seemingly random words and phrases) Echolalia (as in Tourette's where patient copies another's speech), Neologisms (as in psychosis with patient making up new words)
Thought Content	
Delusions	Delusions: (to friends and family): "Does your loved one have any strong or unusual beliefs?" Delusions: (to the patient) "Everyone has beliefs. Some people are religious. Some people believe in UFOs. Some people believe that the government is spying on us. Any strong beliefs that you have?" (NOTE: Having any of the above believes can be on the normal spectrum. It is when these beliefs are to an unhealthy extreme that causes problems, that one wonders about psychosis. E.g. On one hand, it is normal for many to believe in God. On the other hand, if one believes that God has given them special powers that allow them to jump off a building and fly, this would likely be delusional.) Paranoid delusions: "Do you feel that people are watching you, following you or trying to hurt you?" Delusions of grandeur: "Do you have any special powers or skills?"
Suicidal ideation	Suicidal: "With all the stress that you've been under, has it ever gotten to the point that you feel life isn't worth living?" If positive, then ask: "What's the strongest those thoughts have gotten?" "At this moment, do you have any thoughts of ending your life?"
Homicidal ideation	Homicidal ideation: "Any thoughts of hurting other people?"

6. I)NSIGHT AND JUDGEMENT

Insight	Assuming the patient has difficulties and/or an illness, does the patient understand this? ▪ Good insight: Patient understands they are ill and need treatment (similar to being in action phase)) ▪ Partial insight may indicate that the patient acknowledges a problem, but is not willing to seek appropriate help or treatment (similar to being contemplative) ▪ Poor insight means that the patient does not see that they are ill nor does the patient need any help or treatment (similar to being pre-contemplative)
Judgment	Is patient able to use facts and make reasonable decisions? May be good, fair, impaired

7. C)OGNITION

Level of consciousness	Alert, confused, lethargic, stuporous
Orientation in 3 spheres	Name: What is your name? Place: Where are you right now? Time: What year, month, day is it?
Attention/Concentration	How well does the patient seem to be able to focus? (Good, poor)
Memory	How well can the patient remember? Short-term: Can the patient recall recent things that have happened? Long-term: Can the patient recall distant events?
Intelligence (globally and intellectual functions)	Based on your observations and patient's use of speech, does the patient's overall intelligence and cognition appear to be 1) below average, 2) average, or 3) above average?

Search

AHS EMS

Medical Control Protocols

Open

31 RATINGS	AGE	CATEGORY	DEVELOPE
2.6 ★★½☆☆	17+ Years Old	Medical	The Essentia

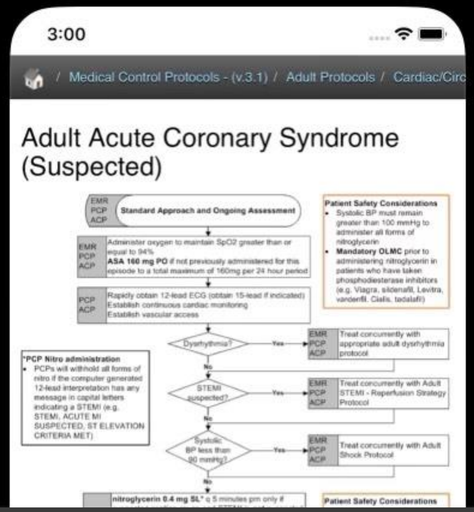
What's New

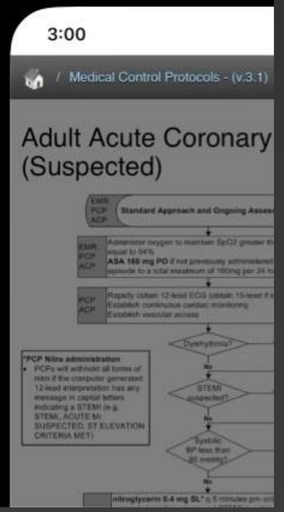
Version History

Version 2.3.3 — 1y ago

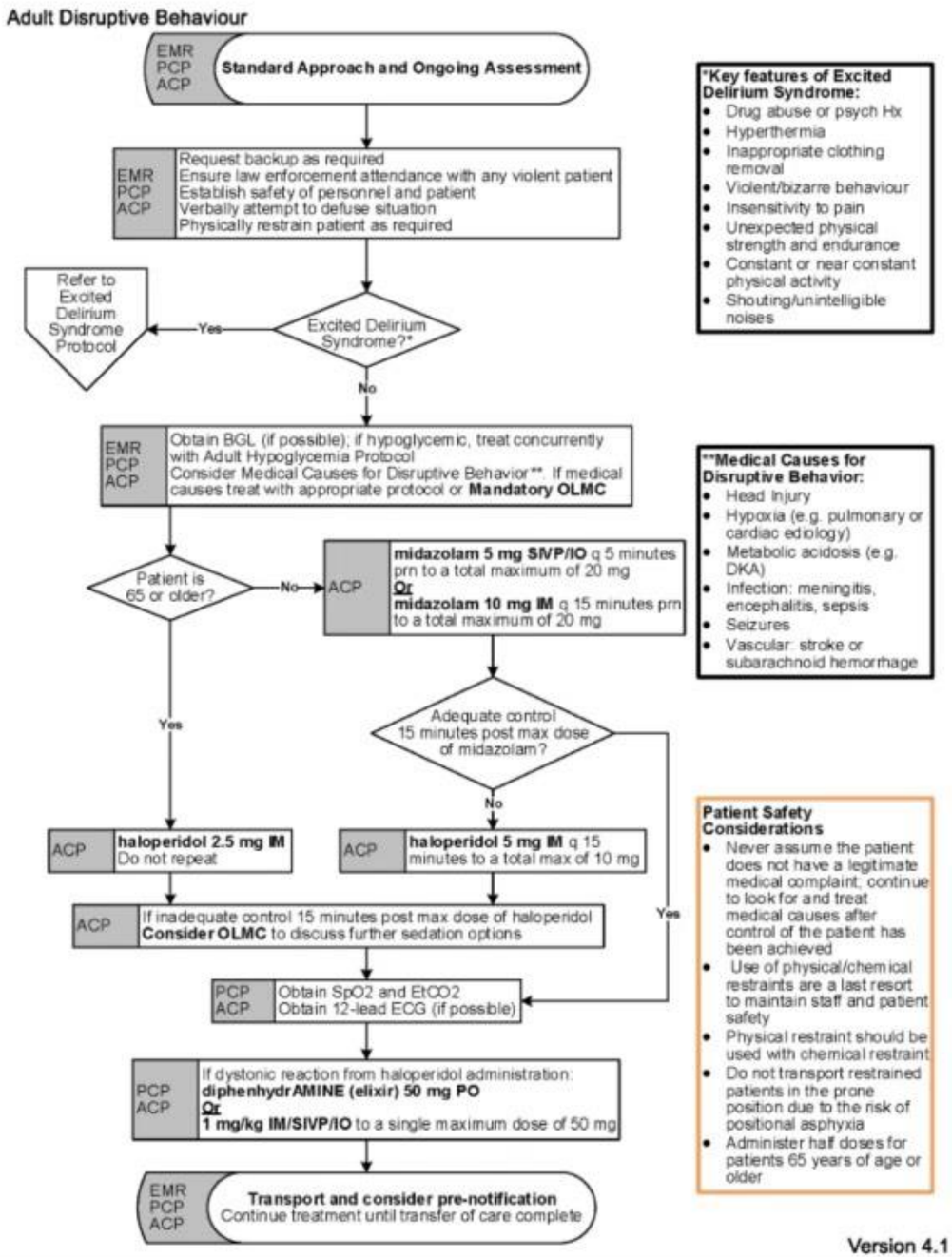
When you have the latest content downloaded, you can now leave the app and return to the same place, without automatically refreshing to the more

Preview





Adult - Disruptive Behaviour



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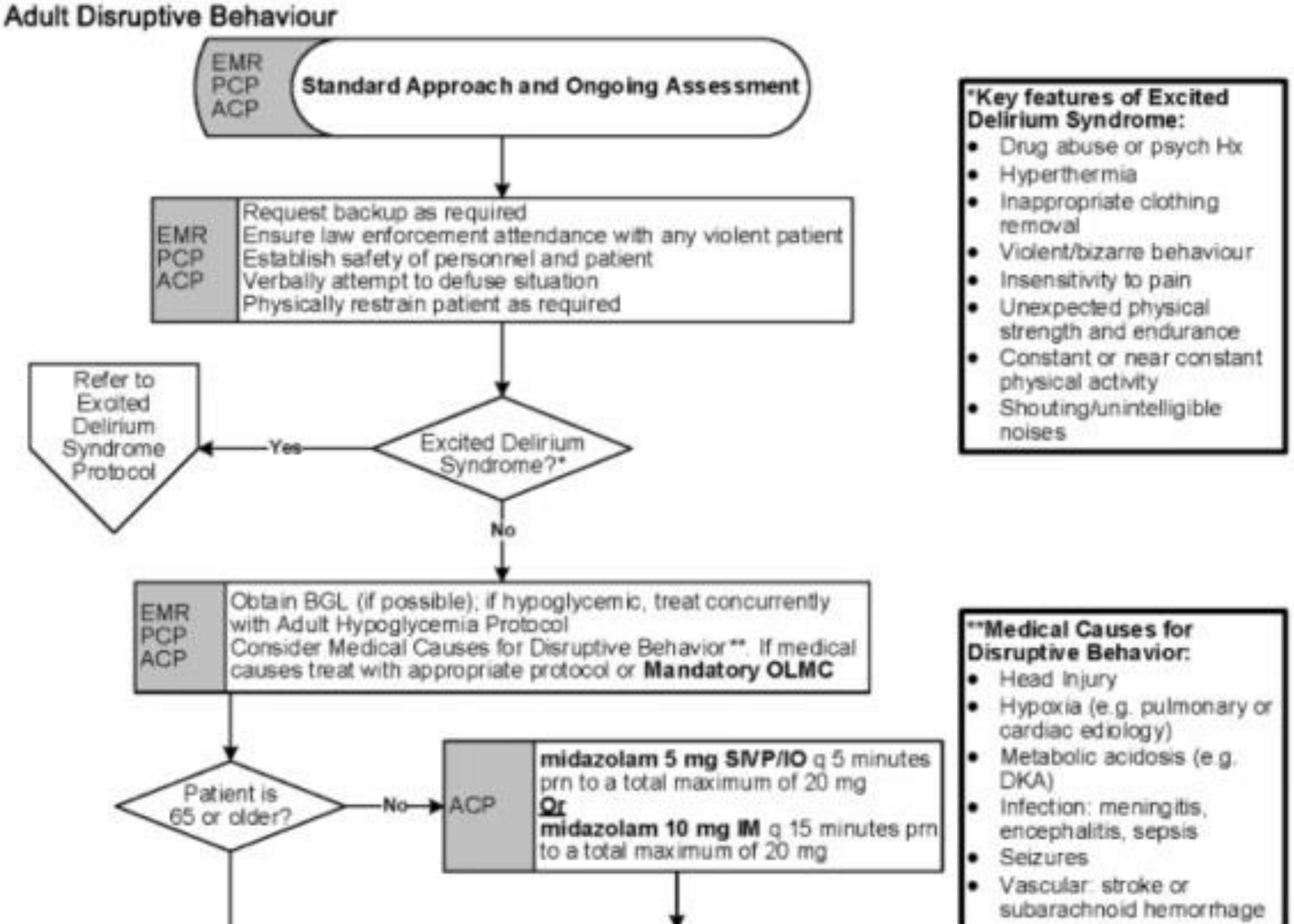
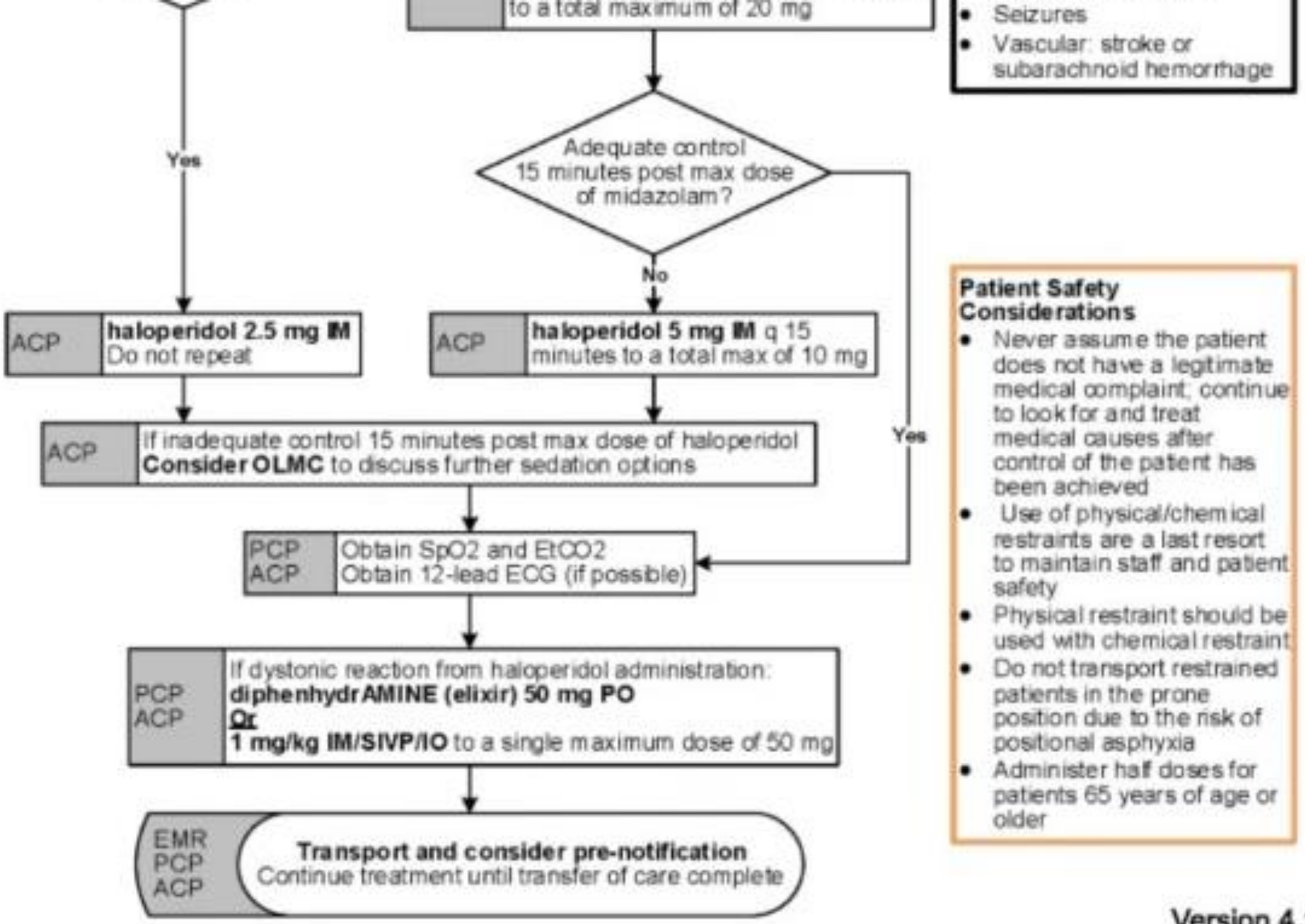
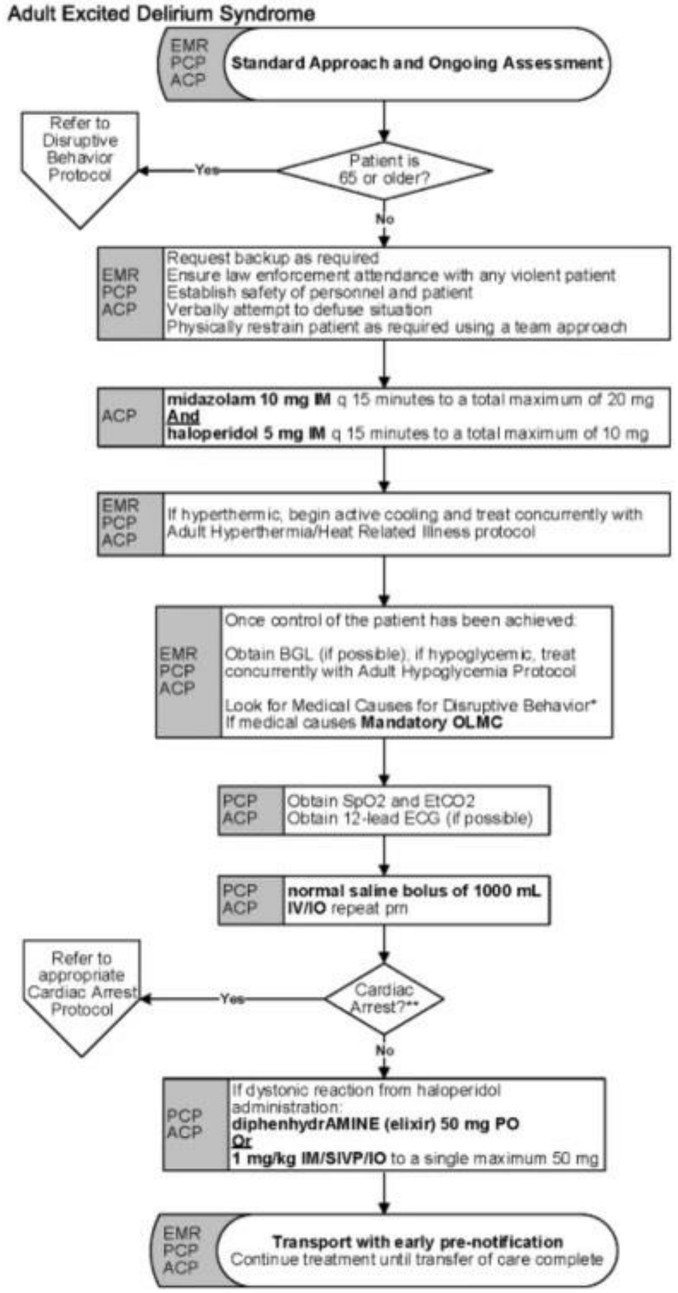



to a total maximum of 20 mg
Seizures
Vascular: stroke or subarachnoid hemorrhage
Adequate control 15 minutes post max dose of midazolam?
Yes
No
Yes
ACP haloperidol 2.5 mg IM Do not repeat
ACP haloperidol 5 mg IM q 15 minutes to a total max of 10 mg
ACP If inadequate control 15 minutes post max dose of haloperidol Consider OLMC to discuss further sedation options
PCP ACP Obtain SpO2 and EtCO2 Obtain 12-lead ECG (if possible)
PCP ACP If dystonic reaction from haloperidol administration: diphenhydrAMINE (elixir) 50 mg PO Or 1 mg/kg IM/SIVP/IO to a single maximum dose of 50 mg
EMR PCP ACP Transport and consider pre-notification Continue treatment until transfer of care complete
Patient Safety Considerations
Never assume the patient does not have a legitimate medical complaint; continue to look for and treat medical causes after control of the patient has been achieved
Use of physical/chemical restraints are a last resort to maintain staff and patient safety
Physical restraint should be used with chemical restraint
Do not transport restrained patients in the prone position due to the risk of positional asphyxia
Administer half doses for patients 65 years of age or older
Version 4.1

Adult - Excited Delirium Syndrome



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Key features of Excited Delirium Syndrome:

- Drug abuse or psych Hx
- Hyperthermia
- Inappropriate clothing removal
- Violent/bizarre behaviour
- Insensitivity to pain
- Unexpected physical strength and endurance
- Constant or near constant physical activity
- Shouting/unintelligible noises

***Medical Causes for Disruptive Behavior:**

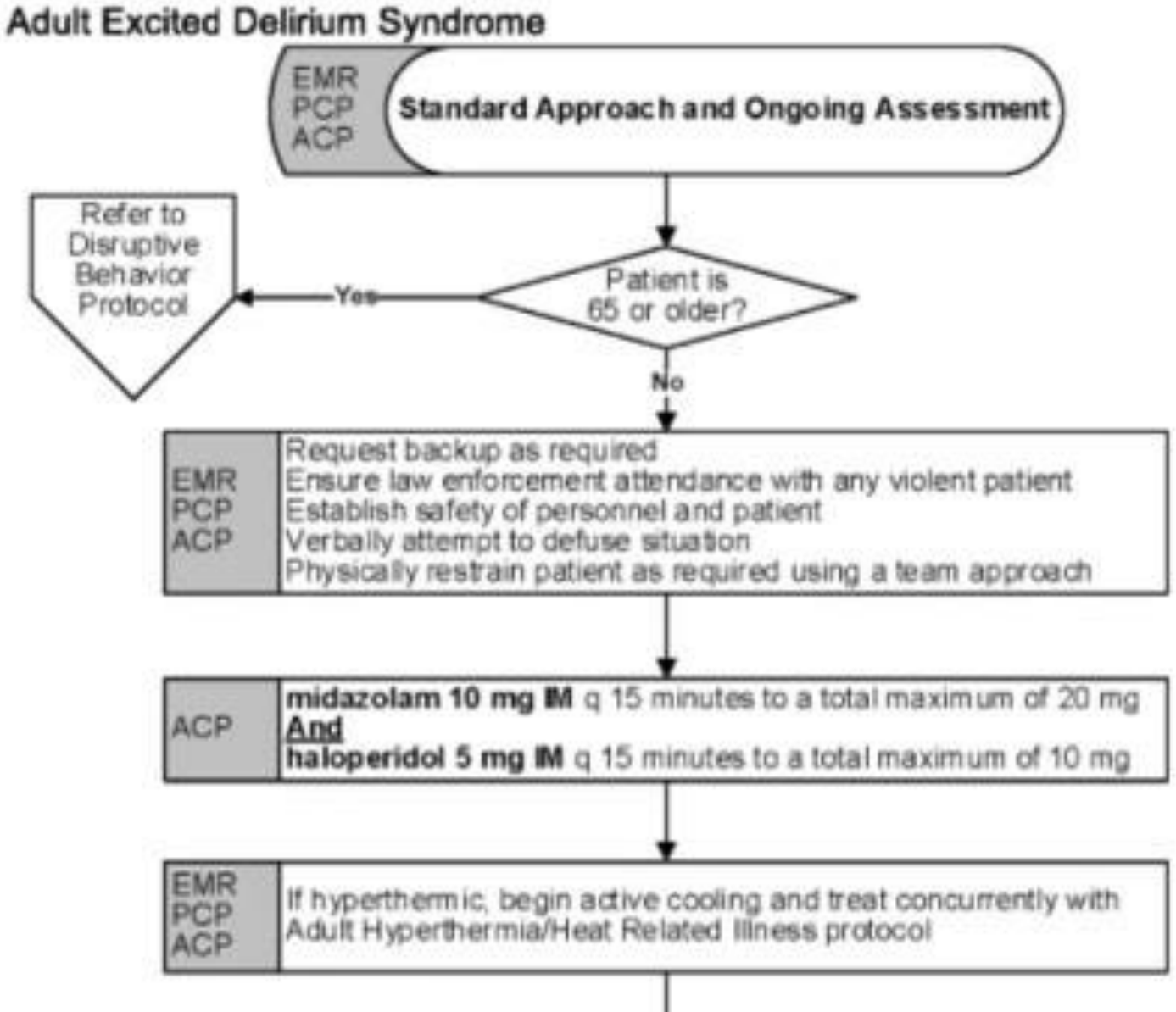
- Head injury
- Hypoxia (e.g. pulmonary or cardiac ediology)
- Metabolic acidosis (e.g. DKA)
- Infection: meningitis, encephalitis, sepsis
- Seizures
- Vascular: stroke or subarachnoid hemorrhage

****Treatment priorities for suspected excited delirium patients in cardiac arrest include:**

- **sodium bicarbonate 2 mEq/kg RIVP**
- Establish second IV/IO, bolus 1 – 2 L normal saline

Version 4.1

Adult - Excited Delirium Syndrome



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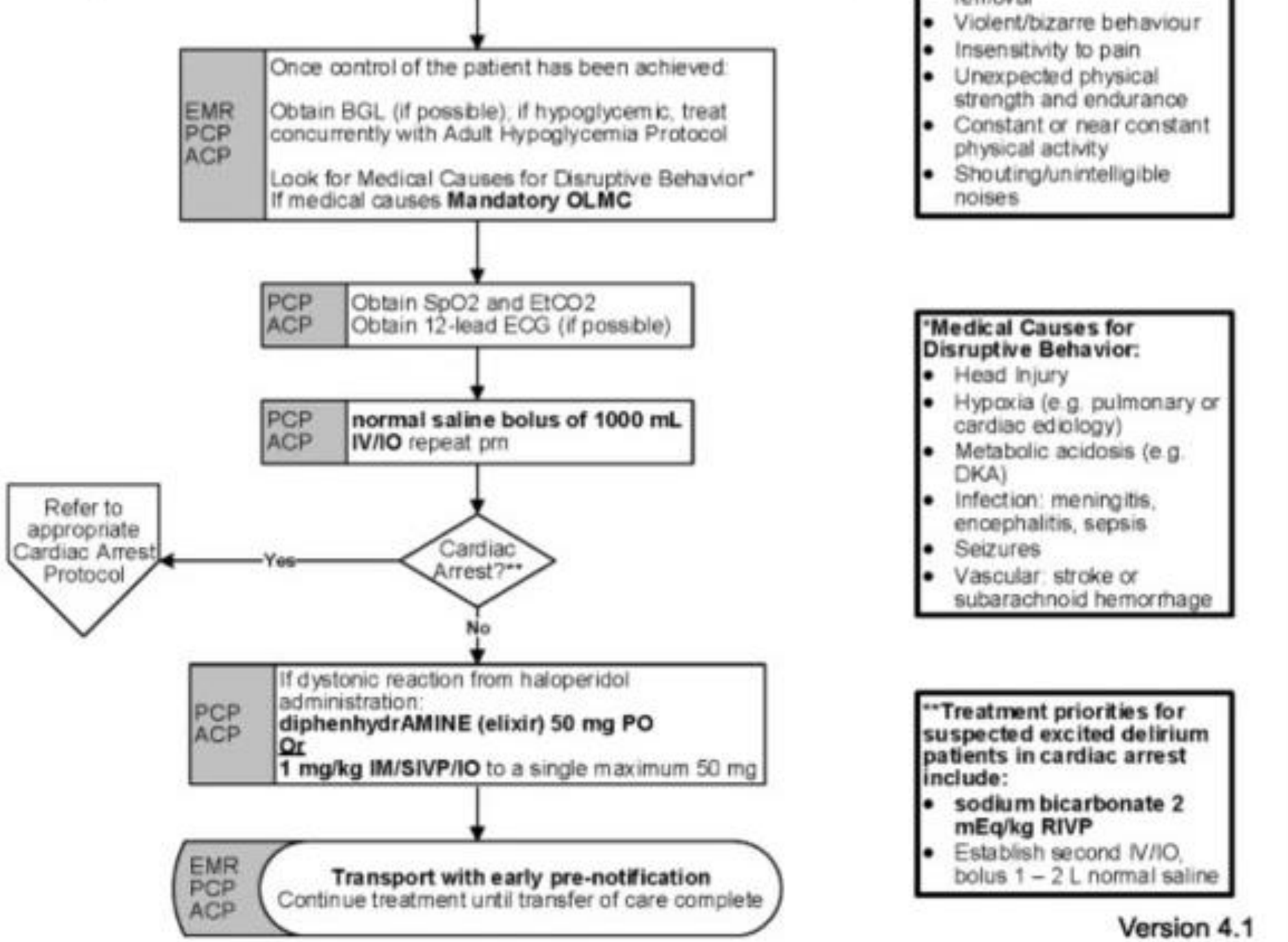

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Version 4.1

On Meth, Meth Toxic

- Could just be having a great time
- Psychosis, Delirium
- Excited Delirium
- Perephial effect; ranging from normal physiologic to pathophysiologic

Toxicokinetics

Go to:

For oral administration, peak methamphetamine concentrations are seen in 2-4 hours; snorting, smoking, and injecting peak concentrations occur within minutes. Elimination half-life ranges from 6-15 hours. Methamphetamine is metabolized via the cytochrome P450 complex to active amphetamine, and p-OH-amphetamine and norephedrine, which are both inactive. The rate of excretion into the urine is enhanced as pH falls. Urine toxicology screening may be positive up to 4 days after use.

Too Little Meth

- May not have slept for extended periods of time
- Coming down, anhedonia, aches & pains, life in general

- 2 general groups (IMO)
- Angry, frustrated, want more (this is in less psychotic people)
- More likely to be psychotic, but not agitated psychosis, disordered thought

Form 10

- Form 10 we read and use if we fill out Form 1
- Specifics are better, detailed exam
- Helps us on our Form 1
- Please don’t leave without talking to the Peace Officer

Alberta

Admission Certificate (Form 1)

Protected B (when completed)

Mental Health Act Section 2

I, _____ of _____, am

print name of physician or other qualified health professional — business address

- ☐ a physician.

or

- ☐ a qualified health professional other than physician.

I certify that I examined _____,

print name of person examined

of _____ on _____ at _____ _____ ☐ am ☐ pm

home address — date dd-mm-yyyy — hours — minutes

using the following means:

location of person who was examined

In my opinion the person examined:

(a) is suffering from mental disorder, based on the following facts

☐ observed by me, and/or ☐ communicated to me by others

(b) has the potential to benefit from treatment for the mental disorder, based on the following facts

☐ observed by me, and/or ☐ communicated to me by others

ER Approach
(General Approach to all patients)

- Triage/ABC's
- History (including old charts, Form 10)
- Physical Exam/Psych Exam
- Investigations (vital signs, blood work, ECG)
- Treatments/Medications
- Disposition

ER Course

- Depends, of course

- Too much
- Too little

- Treat the medical issue
- Sedate, sleep and reassess

2024 Meth Psychosis Study

Michael Humphreys, Australia, Retrospective

- 287 patients, 71% acute psychosis (205)
- 65% male, 36 median age (16-57 yo)
- Paranoid Delusions (65%), most common
- Chemical sedation 95%, (194), 70% parenteral (IM, IV)

- 4% admitted, 96% discharged from the ER
- Median length of stay 15 hours (ranged 11-20 hours)

Enhancing Healthcare Team Outcomes

Go to:

Methamphetamine toxicity is best managed by a team of healthcare professionals that include a social worker, addiction nurse, cardiologist, internist or pediatrician, and a mental health counselor. Once a diagnosis of methamphetamine toxicity is made, the patient should be referred to a psychiatrist or a drug addiction center. Patients need to be educated about the potentially life-threatening adverse effects of this illicit agent. Unfortunately, addiction to methamphetamine is one of the most difficult to cure as there is no agent that can prevent abstinence. The majority of patients continue to abuse the drug until they run afoul of the legal system.[14][15] [Level 5]

Outcomes

Methamphetamine toxicity is a very serious social problem. The addiction is very difficult to stop, and as yet there is no pharmacological agent that can help patients abstain from this illicit agent. Despite referral to addiction clinics, relapses in addiction are common. When the drug is forcibly withdrawn while the individual is incarcerated or in hospital, withdrawal reactions are very common and often require sedatives or anti-anxiety agents. Deaths from methamphetamine toxicity are common and include arrhythmias, intracranial hemorrhage, and cardiogenic shock. The use of methamphetamine during pregnancy has also been linked to preterm birth and intrauterine growth restriction. The majority of patients come from a subculture that is involved in the manufacture of the drug, and until that environment is changed, the cycle of addiction will continue. [16][17][18] [Level 5]

Thank You!

Questions?