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APPROACH TO EMERGING CHILD AND ADOLESCENT PSYCHOSIS

Developed by Dr. Leslie Truong and Dr. Trishnee Chinniah for PedsCases.com. July 19, 2024.

Introduction:

Hello and welcome to this PedsCases podcast on an Approach to Emerging Child and Adolescent Psychosis. My name is Leslie Truong, and I am a first year Psychiatry Resident at the University of Alberta. This podcast was developed in collaboration with Dr. Trishnee Chinniah, a Child and Adolescent Psychiatrist, who primarily works on the acute inpatient care units at The Royal Alexandra Hospital in Edmonton, Alberta.

The purpose of this podcast is to review a general approach to emerging child and adolescent psychosis. Primary Care Physicians are often the initial point of contact for children and adolescents experiencing vague psychotic symptoms for the first time. They play a key role in early recognition, assessment, management, and referral to mental health services, which can greatly minimize the negative impact that psychosis may have on a person's life.

After listening to this podcast, the listener should be able to:

1. Recognize and elicit warning and frank signs of psychosis.
2. Propose a reasonable differential diagnosis for psychosis and identify medical work-up considerations.
3. Understand risk factors for primary psychotic disorders.
4. Be familiar with assessment and treatment options.

Please note, it is recommended that listeners have already developed a basic understanding of the psychiatric interview. Please see the PEDIATRIC PSYCHIATRIC HISTORY AND MENTAL STATUS EXAM PODCAST for further details.

[Let's begin with a case.](#)

You are 3rd year clerk working in a Family Medicine clinic. Your preceptor asks you to see Mitchell, a 16-year-old male brought in by his mother. Mitchell's mother is waiting outside the clinic room and asks to speak to you privately. She says "I am really worried about my son. He used to do so well in school and soccer, but he's become increasingly distracted. Mitchell has been different at home too. He's spending more and more time isolated his bedroom... and he even mumbles to himself sometimes. I've done some reading online, and I'm worried that Mitchell may be experiencing his first episode of psychosis."

[So, listeners, how should we approach this assessment?](#)

OBJECTIVE #1: RECOGNIZE AND ELICIT WARNING SIGNS OF PSYCHOSIS

According to the Centre for Addiction and Mental Health, “The word psychosis is used to describe conditions that affect the mind, in which people have trouble distinguishing between what is real and what is not.” During an episode of psychosis, people may have trouble processing information and emotions, which can cause individuals to misinterpret or confuse what is going on around them. Did this make you think of “Schizophrenia”? It is important to know that psychosis is NOT synonymous with Schizophrenia. Psychosis is a SYMPTOM whereas Schizophrenia is a psychiatric disorder that consists of psychotic symptoms. One can have psychotic symptoms in the context of a variety of both psychiatric as well as medical illnesses.

While 17% of children ages 9-12 experience psychotic-like symptoms, and 3% of people experience at least one episode of psychosis in their lifetime, the prevalence of Schizophrenia is estimated to be much lower, at 1% in the general population. This is because the clinical course after an episode of psychosis is quite variable and does not always lead to chronicity. Most patients will never experience another episode, other patients will experience relapses with periods of remission in between, and the remaining few patients will develop persistent symptoms that meet criteria for a diagnosis of a primary psychotic disorder.

Who does psychosis affect?

- The peak onset of primary psychotic disorders is between the ages of 15-30. (4:39)
- Early-onset schizophrenia which occurs prior to the age of 18 is less common than schizophrenia that is diagnosed after the age of 18.
- Childhood-onset schizophrenia which occurs prior to the age of 13 is even more rare.

If it is so rare... then is this really a condition that PCPs need to be watching for?

Yes. Studies indicate that people diagnosed with schizophrenia in adulthood often experienced their first psychotic symptoms during adolescence and even in childhood, with worse prognosis associated with earlier onset and delayed treatment. The peak of onset coincides with a pivotal and developmentally vulnerable time, where a young person may be starting to discover their own identity, establish relationships, and explore new ventures such as university or entering the workforce. As such, the onset of psychosis during this chapter of life can be especially devastating in terms of both immediate and long-term impacts on quality of life.

For example, individuals with schizophrenia have:

- 1) Higher rates of comorbidity with substance-related disorders including high tobacco use, anxiety disorders, obsessive-compulsive disorder (OCD), and panic disorder, as compared to the general population.
- 2) Additionally, due to functional impairment and stereotypes of patients with schizophrenia being unpredictable and dangerous, patients may experience hardship due to discrimination, social isolation, financial strain, and homelessness.
- 3) The rate of death by suicide for people with schizophrenia spectrum disorders is over 20 times higher than the general population. Of note, rates are worse...
 - a. Within the first 5 years of diagnosis
 - b. If there was a concurrent mood disorder or hospitalization prior to diagnosis
 - c. If diagnosed at a later age

Unfortunately, statistics indicate that ~60% of psychotic disorders are first diagnosed in crisis settings such as the emergency department or an inpatient unit, AFTER the patient has been psychotic for an average of 18 MONTHS. This is where we come in. Even if we don't treat psychotic symptoms right away, recognizing warning signs, following at-risk youth, and providing community mental health supports has the potential to help delay or in some cases, even prevent, the development of severe and incapacitating psychotic symptoms, as well as promote long-term recovery.

What makes this difficult is that patients rarely present complaining of hallucinations or delusions. Much like our vignette, concerns that an individual may be acting oddly or just don't seem like themselves may first be raised to you by the patient's family, friends, or teachers.

Warning signs of emerging psychosis that others may observe include:

- Irritability, anxiety, depression, or stronger emotions than situations call for
- Sleep disturbance
- Reduced motivation
- Less interest in usual activities
- Spending more time alone than usual
- No longer attending school, extracurricular activities, and work, or a general decline in performance
- Misinterpretation of small gestures, comments, or events to have a huge meaning
- Suspiciousness or unease around others

You may notice that most of these symptoms are quite general and could just be typical adolescent behaviour or symptoms of other mental health concerns. **However, if several signs or symptoms occur together, are persistent, recurrent, become more intense over time, lead to substantial functional deterioration, cannot be clearly explained by other factors, and occur alongside a family history of psychosis, the clinical picture becomes much more worrisome.**

In addition to these warning signs, people may report "psychotic-like" symptoms that are a bit easier to recognize. Some people may report that sounds seem louder. They may hear indistinct auditory hallucinations including mumbling or whispers. They may feel overwhelmed with their thoughts and find it harder to keep track of what they are thinking. They may struggle to focus and understand what others are saying. Visual stimuli may appear brighter.

These experiences are often referred to as "attenuated" psychotic symptoms. All of this can be scary and confusing causing individuals to feel more and more disconnected from others. **New or worsening symptoms may indicate a more imminent risk of psychosis.**

Alright, now that we have an idea of what warning signs might look like, what does frank psychosis look like?

This is best described in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition aka the DSM-5. Psychosis is often categorized into "positive" and "negative" symptoms. Positive symptoms can be thought of as experiences that are ADDED to or not expected to occur in the typical human experience whereas negative symptoms are aspects that are MISSING or REDUCED from typical human functioning.

Positive symptoms include:

- 1) **Delusions** - false beliefs, that are out of keeping with the person’s culture, that an individual holds onto despite conflicting evidence.

Some common examples include thoughts that:

- a. Someone wants to hurt them or their family
- b. They have exceptional abilities, superpowers, or are an important famous figure.

If you’re interested, you can refer to our handout for details on different types of delusions.

Delusions can be grouped into those which are bizarre and non-bizarre. Bizarre delusions are those which are not plausible, such as the belief that one’s thoughts are being removed from their mind by some outside force. Whereas non-bizarre delusions are those that albeit not likely, could be plausible, such as being monitored by the police or having your phone hacked.

Description of Various Delusional Themes

Type of Delusion	Definition
Persecutory	Belief that they are being singled out and monitored for some harmful purpose (being poisoned, attacked, murdered)
Referential	Belief that they are receiving special message through media such as TV shows, songs, the radio, or even generic emails, websites, advertisements, etc
Control	<p>Belief that their thoughts are being influenced or controlled by another individual, a real or invented group (the government, a criminal organization), or other vague outside forces</p> <p>Specific delusions of control include:</p> <ul style="list-style-type: none"> • Thought withdrawal - belief that one’s thoughts are being or have been removed • Thought insertion - belief that an outside force has placed thoughts in one’s head • Thought broadcasting – belief that their thoughts can be heard or known by others
Grandiose	Belief that they have special powers or abilities (without evidence of actual training or qualifications), are on a special mission, are important religious or political figure, or are famous
Nihilistic	Belief that a catastrophe is imminent, that the world is ending, or their body is deteriorating
Depressive	Belief that they are guilty of some terrible act or crime
Erotomaniac	Belief that a particular person is in love with them
Somatic	Belief that something is wrong with their body, they have a disease, are invested with parasites, or some part of their body is missing or dead

- 2) **Hallucinations** - vivid perceptual disturbances involving any of the 5 senses. Auditory hallucinations are the most common type of hallucination reported in Schizophrenia, whereas **visual hallucinations are more suggestive of medical causes of psychosis.**

Interestingly, hallucinations are more common than delusions in children, and visual hallucinations are more common in children than adults experiencing psychosis.

- 3) **Disorganized thinking** – impairment in the way an individual forms and expresses ideas, which is inferred from the person’s speech.

Picture trying to hold a conversation with 2 people talking to you about different topics at the same time. Imagine how tricky it would be to maintain your train of thought. On mental status exam, you may notice the patient taking long pauses before answering, abruptly halting speech mid-sentence, providing answers that are partially or completely unrelated, and in more severe cases, speaking nonsensically.

- 4) **Disorganized or abnormal motor behavior** – There is a range of behavioural manifestations, from lack of motor and verbal response to purposeless or excessive motor activity and agitation, which can greatly impair goal-directed activities.

Now we will move onto the negative symptoms which are aspects that are MISSING or REDUCED from typical human functioning. They can be remembered as the 5 A’s:

- 1) Affect flattening - reduced facial expression and intonation of speech
- 2) Alogia - diminished speech output
- 3) Avolition - lack of motivation for self-initiated purposeful activities (such as activities of daily living and other major responsibilities)
- 4) Asociality - apparent lack of interest in social interactions
- 5) Anhedonia - decreased ability to feel pleasure even when engaging in previously enjoyable activities

You might have realized that some of these symptoms are associated with the warning signs of psychosis. **Negative symptoms are closely associated with the prodrome of Schizophrenia, less prominent in other primary psychotic disorders, and typically absent from secondary causes which tend to be associated with a more acute presentation of psychosis.**

In summary, you can use the mnemonic “Delusions Herald Schizophrenic’s Bad News” to help you remember the symptoms in psychotic disorders, where the initials DHSBN stand for the symptom domains as follows:

D – DELUSIONS
H – HALLUCINATIONS
S – SPEECH IS DISORGANIZED
B – BEHAVIOURS ARE DISORGANIZED
N – NEGATIVE SYMPTOMS (5 A’s)

In concluding the first objective, please remember that frank psychotic symptoms may not initially apparent. It is therefore important to be actively screening for warning signs such as problems with mood, sleep, changes in personality and behaviour, sub-threshold psychotic symptoms, and functional decline, which would be more worrisome for schizophrenia.

You can refer to our handout for specific questions you may ask to elicit delusions and hallucinations.

Questions to Elicit Delusions and Hallucinations

<p>Delusions</p> <p>As a clinician, pay special attention to:</p> <ol style="list-style-type: none"> 1) The degree to which the person is convinced in their belief 2) If the belief has altered the person's behaviour, if so, in what way? Have others noticed this change? Are the behaviours dangerous, e.g. starvation, psychogenic polydipsia, self-harm, suicidal ideation, homicidal ideation 3) How did the belief arise? 	<p>Normalizing statement: Everyone has beliefs in certain things. For example, some people follow a religion, some people believe in extraterrestrial life.</p> <ol style="list-style-type: none"> a. General: Any ideas that you just can't get out of your mind? b. Paranoia: Are you worried that there might be people out to get you? Do you ever fear for your safety? c. Grandiosity: What is your self-esteem like? Do you feel more self-confident than usual? Do you feel like you have special talents, abilities, or powers? Do you feel like you're going to become famous? d. Hyperreligiosity: Are you religious? How religious? Do you feel a special connection that goes beyond what others have? e. Ideas of reference: When watching TV, looking at social media, or listening to the radio, do you notice that they are referring to you? Or that there are special messages intended specifically for you? f. Guilt: Do you think you've done something terrible and deserve to be punished? Do you blame yourself for bad things going on in the world like wars, starvation, crimes, etc? g. Somatic delusions: Any worried about your health? How has [the somatic symptom] impacted your life? How long have you been worried about this? How hard is it to get your mind off it? h. Thought Broadcasting: Do you ever feel like people can hear your thoughts even when you aren't talking? How do you know? i. Thought Withdrawal: Have your thoughts even been taken / stolen out of your head? j. Thought Insertion: Are there ever thoughts in your head that have been put there from the outside? Clarify that this does not refer to talking to someone who makes a suggestion or provides advice.
<p>Hallucinations</p> <p>As a clinician, pay special attention to:</p> <ol style="list-style-type: none"> 1) How distressing are the hallucinations? 2) Does the person perceive the voice to have complete power over them? To what degree does the person feel like they must comply with commands 	<ol style="list-style-type: none"> a. General: Do you think that your mind ever plays tricks on you? When does this occur? How often (frequency) and for how long (duration)? What time of day? Does it happen when falling asleep or waking up? b. Auditory: Do you hear any things that others don't seem to hear? E.g. Noises or voices talking to you or about you when no one was there? Do you recognize the voices? What does the voice say? Do you hear them every day? How often do you hear them during the day? Do they influence your behaviour? Does it tell you to do certain things? Have you felt the need to comply? <u>Reality testing</u>: is it possible that people are not really talking about you?

<p>or requests? Have they complied in the past, and what were the circumstances, and consequences?</p>	<ul style="list-style-type: none"> c. Visual: Do you see any things that others can't? E.g. Do you ever see things out of the corner of your eye, shadows, shapes or people whom others don't seem to see? Do you have difficulty with your eyesight, for example, not being able to see things that are too far away? <u>Reality testing</u>: is it possible that your eyes are playing tricks on you? d. Tactile: Do you ever notice any strange sensations in your body or on your skin? E.g. Feel something crawling in your body or on your skin. e. Olfactory and Gustatory: Have you ever noticed smells that other people didn't notice, or have strange tastes in your mouth?
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OBJECTIVE #2: PROPOSE REASONABLE DIFFERENTIAL DIAGNOSES AND IDENTIFY MEDICAL WORK-UP CONSIDERATIONS.

As with any medical assessment, it is vital to keep in mind the age of the patient and the likelihood of certain disorders occurring at that age. In terms of psychosis, we've talked about how it is quite rare in early life, affecting only 1 in 1000 children between the ages of 9 to 13. Moreover, clinical manifestations of psychotic symptoms need to be evaluated in the context of developmental stage.

Please see our handout for a table further detailing symptomatology according to developmental stage.

12.2 Table of Symptomatology According to Developmental Stage

	Infant	Early Childhood	Middle Childhood	Adolescent
Early-Onset Schizophrenia	<ul style="list-style-type: none"> Not diagnosed 	<ul style="list-style-type: none"> Rarely diagnosed May have more visual and tactile hallucinations and this could indicate greater severity Progressive decline in overall function 	<ul style="list-style-type: none"> Rarely diagnosed May have more visual and tactile hallucinations and this could indicate greater severity Progressive decline in overall function 	<ul style="list-style-type: none"> Males develop earlier than females Auditory Hallucinations Delusions Disordered Thinking Social withdrawal Isolation from peers Decline in cognitive abilities Progressive decline in overall function
Schizoaffective Disorder	<ul style="list-style-type: none"> Not diagnosed 	<ul style="list-style-type: none"> See Schizophrenia, Bipolar Disorder, and Major Depressive Disorder 	<ul style="list-style-type: none"> See Schizophrenia, Bipolar Disorder, and Major Depressive Disorder 	<ul style="list-style-type: none"> See Schizophrenia, Bipolar Disorder, and Major Depressive Disorder
Brief Psychotic Disorder	<ul style="list-style-type: none"> Not diagnosed 	<ul style="list-style-type: none"> Rarely diagnosed 	<ul style="list-style-type: none"> Rarely diagnosed 	<ul style="list-style-type: none"> Not commonly diagnosed until late 20's or early 30's Symptom duration less than one month
Delusional Disorder	<ul style="list-style-type: none"> Not diagnosed 	<ul style="list-style-type: none"> Not diagnosed 	<ul style="list-style-type: none"> Rarely diagnosed until late teens Delusions of persecution are more common 	<ul style="list-style-type: none"> Uncommon until late teens and early twenties and more often present with delusions of persecution such as being attacked or harassed
Bipolar Disorder with Psychotic Features	<ul style="list-style-type: none"> Not diagnosed 	<ul style="list-style-type: none"> Not commonly diagnosed Persistently irritable mood is described more often than a euphoric mood Aggressive and uncontrollable outbursts, agitated behaviors (may look like Attention-Deficit/Hyperactivity Disorder [ADHD] with severe hyperactivity and impulsivity) Extreme fluctuations in mood reckless behaviors, dangerous play, grandiosity, and inappropriate sexual behaviors 	<ul style="list-style-type: none"> Persistently irritable mood is described more often than a euphoric mood Aggressive and uncontrollable outbursts, agitated behaviors (may look like Attention-Deficit/Hyperactivity Disorder [ADHD] with severe hyperactivity and impulsivity) Extreme fluctuations in mood, reckless behaviors, dangerous play, grandiosity, and inappropriate sexual behaviors 	<ul style="list-style-type: none"> Markedly labile mood Agitated behaviors, pressured speech, racing thoughts, sleep disturbances Reckless behaviors (e.g., dangerous driving, substance abuse, sexual indiscretions) and grandiosity Illicit activities (e.g., impulsive stealing, fighting), spending sprees Psychotic symptoms (e.g., hallucinations, delusions, irrational thoughts)

	Infant	Early Childhood	Middle Childhood	Adolescent
Major Depressive Disorder with Psychotic Features	<ul style="list-style-type: none"> Not diagnosed 	<ul style="list-style-type: none"> Loss of learned skills, temper tantrums, irritability, destructive behaviors, separation anxiety Mood congruent hallucinations are rare 	<ul style="list-style-type: none"> Somatic complaints, school refusal, anxiety related issues Mood-congruent hallucinations (rare) Depressed mood (what child reports) and/or affect (non-verbal communication), self-esteem issues, boredom, apathy Substance use Change in weight, appetite changes Insomnia, excessive sleep Aggression/anti-social behavior Suicidal thoughts, self-injurious behaviors 	<ul style="list-style-type: none"> Depressed/sad/irritable mood lasting most days for two weeks Feelings of hopelessness, worthlessness or guilt Poor concentration Decreased energy Poor appetite and weight lost Aggression Suicidal thoughts May have mood congruent hallucinations
PTSD	<ul style="list-style-type: none"> Not commonly diagnosed, but may take the form of failure to thrive, feeding problems, or extra fears or aggression in response to stress 	<ul style="list-style-type: none"> Distressing dreams of the events may change to generalized nightmares of monsters or other threats to self and others Persistent re-experiencing of the traumatic event through repetitive play, drawing, or storytelling; possible constriction of other play Physical symptoms (recurrent abdominal pain, headaches) 	<ul style="list-style-type: none"> Increased arousal or hypervigilance; sleep problems Avoidance of activities related to the traumatic event Failure to progress or regression in developmental skills, such as toilet learning, language development, socializing, and learning in school Difficulty concentrating In young children, disturbed patterns of social relatedness (e.g., indifference, extreme ambivalence, failure to show preference for parents and caregivers) 	<ul style="list-style-type: none"> Distressing dreams of the traumatic events or flashbacks to the traumatic event Persistent re-experiencing of the traumatic event, sometimes through risk-taking behavior Physical symptoms (e.g., recurrent abdominal pain, headaches) Increased arousal or hypervigilance; sleep problems Avoidance of activities related to the traumatic event Failure to progress, or regression in academic skills Difficulty concentrating

Brown, J. L., & Bagley, D. A. (2014). Psychosis in children and adolescents (Doctoral dissertation, University of Arkansas for Medical Sciences).

The perception of a psychotic experience can be normal experience in young children, and in isolation, it is benign and quite common among teens as well. For instance, it is developmentally appropriate for a young child to have imaginary friends, however, most children are aware that these characters... do not truly exist, vanish outside of play time, and are generally kind and amusing, however these stipulations would not generally be true if the child was hallucinating. The evaluation process for children and adolescents involves parent report and observation, which can be helpful in instances where non-psychotic idiosyncratic thinking may be reflective of cultural beliefs. For instance, a child who talks about seeing spirits, in the context of parents who hold similar beliefs, may be less concerning.

It is important to rule-out reversible causes before you can attribute psychosis to a “primary” cause. Misdiagnosis is common and can lead to complex social issues such as stigma as well as unnecessary use of antipsychotic medications which can be associated with significant side effects. **Features that suggest a “secondary” cause include acute onset of symptoms, rapid progression, autonomic instability, and neurological signs and symptoms.** Here are some causes of psychosis to keep in mind:

Differential Diagnosis for Medical Causes of Acute Psychosis

Autoimmune	<ul style="list-style-type: none"> • Anti-N-methyl-D-aspartate receptor (NMDA) encephalitis • Neuropsychiatric systemic lupus erythematosus (SLE) • Inflammatory demyelinating disorder (acute disseminated encephalomyelitis, multiple sclerosis) • Hashimoto's encephalopathy
Endocrine	<ul style="list-style-type: none"> • Thyroid dysfunction • Parathyroid dysfunction • Adrenal dysfunction
Genetic	<ul style="list-style-type: none"> • Prader-Willi syndrome • DiGeorge syndrome (22q11.2) • Fragile X syndrome • Klinefelter syndrome (XXY) • Turner syndrome (XO)
Infectious	<ul style="list-style-type: none"> • Sepsis • Encephalitis/Meningitis • Sexually Transmitted Infections (HIV, Neurosyphilis)
Metabolic	<ul style="list-style-type: none"> • Hepatic disease • Renal disease • Wilson's disease • Cerebrotendinous xanthomatosis • Disorder of homocysteine metabolism, urea cycle disorder • Niemann-Pick • Porphyria
Neurologic	<ul style="list-style-type: none"> • Delirium • Tumors • Seizures (temporal lobe epilepsy) • Traumatic brain injury • Migraines
Nutritional	<ul style="list-style-type: none"> • Vitamin A, B1 (thiamine), B3 (niacin), B12 (folate), D deficiency • Hypercalcemia, hypomagnesemia
Sleep Disorders	<ul style="list-style-type: none"> • Narcolepsy • Hypnopompic and hypnogogic hallucinations
Toxicology	<ul style="list-style-type: none"> • Ingestion: <ul style="list-style-type: none"> ○ Prescription: stimulants, corticosteroids, anticholinergics ○ Recreational: sympathomimetic, cannabis, hallucinogens • Withdrawal: alcohol • Poisoning: carbon monoxide, heavy metal (mercury, lead)

Physical Exam for Acute Psychosis

Vital Signs	<ul style="list-style-type: none"> • T, HR, BP, RR, O2 saturation • Hypoglycemia
General Appearance	<ul style="list-style-type: none"> • Dysmorphic features suggestive of genetic syndromes • Toxidromes: <ul style="list-style-type: none"> ○ Anticholinergic: hyperthermia with dry, flushed skin, lack of sweat under the armpits, urinary retention. ○ Sympathomimetics: agitation, diaphoresis, tremors, seizures.
HEENT	<ul style="list-style-type: none"> • Evidence or recent head and face trauma: lacerations, abrasions, hematoma, basilar skull fracture (raccoon eyes, battle's sign, CSF or blood in the ears). • Evidence of past traumatic brain injury: old neurosurgical scars. • Eyes: pupil size and responsiveness to light, extra-ocular eye movements, nystagmus. Ocular findings can be a clue towards various toxidromes or space-occupying lesions. • Neck: meningismus (suggestive of meningitis/encephalitis) and thyromegaly (thyroid disease).
Cardiac	<ul style="list-style-type: none"> • Tachycardia or bradycardia may point to a toxidrome. • Arrhythmia may suggest underlying cardiac abnormality, which has implications for a prescribing an antipsychotic.
Respiratory	<ul style="list-style-type: none"> • Hypoxia: decreased oxygen saturation, diminished breath sounds, crackles, wheezes may indicate pulmonary infection, congestive heart failure, or asthma.
Abdominal	<ul style="list-style-type: none"> • Peritonitis may suggest trauma or intraabdominal infection.
Neurologic	<ul style="list-style-type: none"> • Focal deficits are concerning for a neurologic cause of psychosis. A complete neurologic exam is often difficult to perform as it requires cooperation on the part of the patient. Assess for cranial nerves, strength, sensation, coordination, reflexes, and gait whenever possible.
Dermatologic	<ul style="list-style-type: none"> • Assess for rashes, petechiae, track marks, which may be clues to infection, trauma, intoxication, or withdrawal.

Depending on the patient's signs and symptoms you'll want to order some investigations. One possible approach to the medical workup to screen for common and treatable conditions may include:

Baseline Investigations for Acute Psychosis

Test	Justification
ECG	Assess for underlying cardiac abnormalities as many psychotropic medications can cause prolonged QTc which increases risk for Torsade's
Complete blood count (CBC)	Assess for anemia, leukocytosis, eosinophilia
Basic metabolic panel (BMP) including electrolytes, calcium, magnesium, phosphate, serum glucose, and kidney function tests (creatinine, urea)	Assess electrolytes, hypo-/hyperglycemia, renal function
Liver function tests (LFT) including alkaline phosphatase (ALP), alanine transaminase (ALT), aspartate aminotransferase (AST), gamma-glutamyl transferase (GGT), serum bilirubin, prothrombin time (PT), the international normalized ratio (INR), total protein, and albumin	Assess for liver function
Thyroid function tests	Assess for hyperthyroidism and hypothyroidism
Vitamin tests: A, B1 (thiamine), B3 (niacin), B12 (folate), D Electrolytes: Ca, Mg	Assess for vitamin and Mg deficiencies and hypercalcemia that may contribute to the presentation
Urinalysis	Assess for urinary tract infection
Urine pregnancy test	For females
Urine drug screen	Assess for potential drug ingestion including amphetamines, benzodiazepines, opioids, cocaine, marijuana (THC), etc
Serum drug screen	Assess for alcohol, acetaminophen, or aspirin ingestion
Infectious disease testing: HIV, syphilis, gonorrhea, chlamydia, trichomonas	Assess if high-risk behaviors or symptoms are suggestive of infectious diseases

More extensive evaluation is only indicated for atypical presentations and should be guided by the clinical picture. **Please see our handout for things to consider on history, physical exam, and indications for CT Head / MRI Brain, EEG, lumbar puncture, polysomnography, genetic testing, etc.**

Additional Investigations for Acute Psychosis

Infectious: <ul style="list-style-type: none"> • Meningitis/Encephalitis 	<ul style="list-style-type: none"> • Lumbar Puncture
Neurologic: <ul style="list-style-type: none"> • Neoplasms • Seizures and Epilepsy 	<ul style="list-style-type: none"> • CT Head / MRI Brain • EEG - If there is episodic psychosis with confusion following psychotic behaviors, get an EEG to rule out a seizure disorder
Endocrine: <ul style="list-style-type: none"> • Parathyroid • ACTH stimulation test, morning cortisol, CRH stimulation test 	<ul style="list-style-type: none"> • Assess for hyperparathyroidism • Assess for adrenal dysfunction
Metabolic: <ul style="list-style-type: none"> • Beriberi • Wilson Disease 	<ul style="list-style-type: none"> • Blood and urine tests for thiamine • Slit lamp eye exam for Kayser-Fleischer rings
Genetic: <ul style="list-style-type: none"> • Fragile X • Klinefelter Syndrome 	<p>If the patient has a history of congenital anomalies or a dysmorphic appearance, consider genetic testing such as copy number variants, as there is a high prevalence of genetic abnormalities in early onset schizophrenia.</p> <ul style="list-style-type: none"> • Urine porphyrins • Ceruloplasmin
Sleep Disorders: <ul style="list-style-type: none"> • Narcolepsy 	<ul style="list-style-type: none"> • Polysomnography
Toxicological Causes: <ul style="list-style-type: none"> • Carbon Monoxide Poisoning • Heavy Metal Poisoning (eg. lead, mercury) 	<ul style="list-style-type: none"> • Carboxyhemoglobin • Blood or urine lead and mercury levels

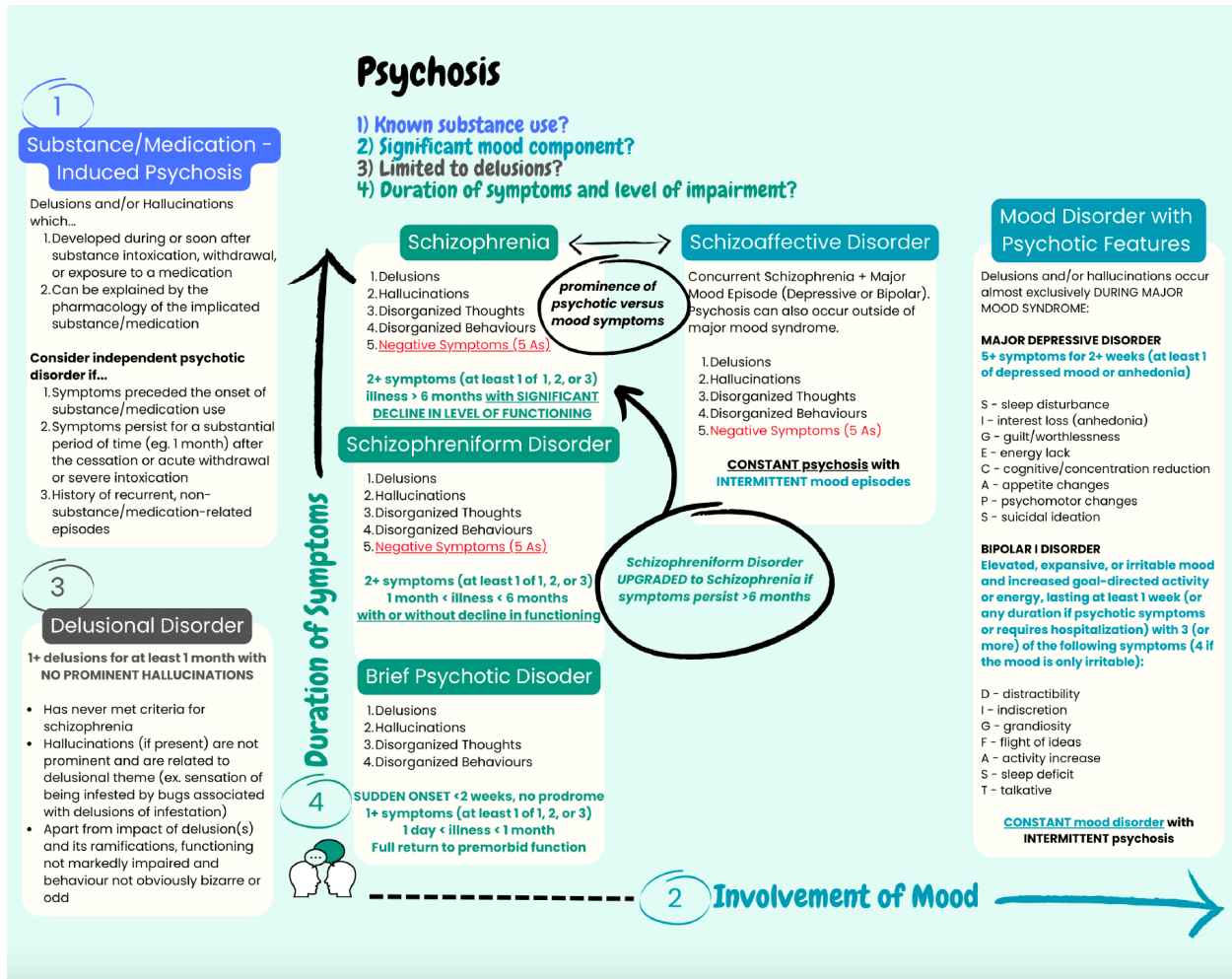
Next, we will consider “primary” causes. Several non-schizophrenia spectrum mental illnesses can include psychosis as a symptom, or have psychotic-like symptoms including:

Nonschizophrenia Spectrum Psychiatric Conditions Associated with Psychotic Episodes in Children and Adolescents

Adjustment disorders
Autism spectrum disorder
Anxiety disorders
Bipolar disorder
Catatonia
Delirium
Delusional disorders
Disruptive behavioral disorders
Factitious disorders
Grief or bereavement
Intellectual and/or developmental delay
Major depressive disorder
Obsessive-compulsive disorder
Parasomnias
Personality disorders
Posttraumatic stress disorder, trauma-related disorders
Substance-induced psychotic disorders
Tourette's syndrome

Hua, L. L., Alderman, E. M., Chung, R. J., Grubb, L. K., Lee, J., Powers, M. E., ... & Wallace, S. B. (2021). Collaborative care in the identification and management of psychosis in adolescents and young adults. *Pediatrics*, 147(6).

In terms of differentiating between psychotic disorders, it may be helpful to follow along with the diagram provided in our handout which provides specific criteria and other considerations.



Please note the above image is also attached as a separate pdf file.

The first question you need to ask yourself is...

Is there known or suspected substance use or recent medication use? If so, consider substance/medication-induced psychosis. Some drugs, such as amphetamines, can directly induce psychosis with current or recent use. However, distinguishing between substance-induced psychosis and a primary psychotic disorder can be challenging because it is often difficult to delineate whether the psychosis came before or after substance use, and if it is solely associated with substance use. There is also the risk that a psychotic episode in the context of substance use may cause the onset of a chronic psychotic disorder. Therefore, a period of sustained abstinence is often most helpful for monitoring if symptoms remit or not.

Next, is there a prominent involvement of mood, such as depression and/or mania for a significant portion of the illness?

1. If there is NOT a significant mood component...
 - a. Are delusions the only psychotic symptom?
 - i. If limited to delusions ... you should consider delusional disorder.

- ii. If having delusions as well as other psychotic symptoms... you'll want to consider brief psychotic disorder, schizophreniform disorder, and schizophrenia based on the duration of symptoms.
 1. Brief psychotic disorder: Psychotic symptoms for less than 1 month, which can be triggered by a major stress in the person's life, such as a death in the family.
 2. Schizophreniform disorder: Psychotic symptoms lasting between 1-6 months.
 3. Schizophrenia: Psychotic symptoms for **at least six months**, with a significant decline in the ability to function.
2. If there is a significant mood component, you'll need to consider whether psychosis or mood is the predominant feature.
 - a. If the person experiences psychotic symptoms with intermittent mood symptoms, you should be thinking of:
 - i. Schizoaffective disorder: A person will have symptoms of schizophrenia and, at some point in the course of illness, concurrent symptoms of a mood disturbance.
 - b. If the person experiences a constant mood disorder with intermittent psychosis, you should be thinking of a mood disorder with psychotic features, such as:
 - i. Depression with psychotic features: A person has severe depression and symptoms of psychosis without mania.
 - ii. Bipolar disorder with psychotic features: The symptoms of psychosis relate more to mood disturbance than to thought disturbance.

In summary, remember that a child responding positively to questions about hallucinations does not mean the child is psychotic. Consider things like epidemiology, risk factors, symptom onset and course, as well as abnormal vital signs and physical exam.

OBJECTIVE #3: UNDERSTAND RISK FACTORS FOR PRIMARY PSYCHOTIC DISORDERS

The onset and course of psychosis is best understood through a stress-vulnerability bucket where the accumulation of biological predisposition, as well as psychological and social stressors can cause the bucket to overflow, and precipitate psychosis. The more vulnerable an individual is, the less stressors are needed to overwhelm the bucket.

Biological factors may include genetics, adverse obstetrical factors, as well as neurodevelopmental disorders. A positive family history of psychosis and certain personality disorders (schizotypal, schizoid, and paranoid personality disorders) have been associated with an increased risk of developing psychosis. Specifically, having a first-degree biological relative with Schizophrenia increases one's risk of developing the disorder by 10% and in the case of identical twins, the risk ranges between 40-65%. Heritability is estimated to be about 50-60% but do keep in mind that many cases are diagnosed in the absence of family history of Schizophrenia or related disorders.

In individuals with a genetic predisposition, a psychotic episode may be triggered by various environmental factors including, but not limited to:

- a) Physical stress (diet, sleep, illness, substance use)
- b) Emotional stress (relationship changes, abuse, legal issues, bereavement)
- c) Chronic stress (food insecurity, housing instability, financial strain, discrimination)

As mentioned previously, substance use is especially important to ask about, as it can cause the onset of a transient or a chronic psychotic disorder, especially with ongoing use. In terms of cannabis, it has been linked to a 2-25 times higher risk of developing schizophrenia regardless of biological or environmental risk factors. Risk tends to increase with earlier age at onset of use, as well as increased potency, quantity, and frequency of use. In those with a biological predisposition to psychosis, use has been associated with earlier age of onset of schizophrenia. Ongoing cannabis use also leads to decreased responsiveness to treatment, and increased risk of relapse.

Alright, with all this new knowledge at our fingertips, let's go speak to Mitchell.

History of Presenting Illness

He reported that he came for a COVID-19 test because he has a runny nose. He denied current stressors. When asked why he had been missing soccer practice and isolating himself in his room, he shared that he has been struggling to keep up with homework and has not been performing well on tests. He has been skipping practice to try to catch up. He described his mood as "good" and rated his mood as 9 out of 10. He denied previous manic symptoms. He denied worries and anxiety. He denied any current or previous auditory or visual hallucinations. He denied any thought interference or other delusions. From a safety standpoint, he denied self-harm behaviours, as well as suicidal and homicidal thoughts. When asked about supports, he reported feeling well supported by his family, but "has to choose better friends" which he refused to elaborate on.

Past Psychiatric History

Not known to psychiatric services. No previous history of self-harm or suicidal behavior.

Substance Use

Drinks alcohol socially, admits to approximately 2 drinks on the weekend when there is a party. Reports smoking cannabis from grade 10 onwards. 2 joints per day. Denies use of other drugs.

Family History

None.

Personal history

Patient was born in Congo and came to Canada at age 6. He has 1 older brother. He denied any prenatal issues and developmental delays. He described his childhood as "good." He denied any childhood abuse or bullying. He does "okay" in school and has been maintaining a "B" to "C" in most subjects. Denied any legal issues.

Time out! As you can see, initial assessments can be limited in the amount and quality of information you can gather. Please be sensitive to the possibility of adolescents and their families underreporting the duration and severity of symptoms due to stigma, stress, and fear.

When speaking to the youth, be aware of who else is present during the interview. Whether they are seen alone or with a family member, friend, or partner, can greatly influence the quantity and quality of the information they provide. It usually works best to see the youth alone before meeting with their support person. However, it can be helpful to ask the youth for their preference, especially if they are anxious. This may help give them a sense of control in decision-making during the assessment process which may help build rapport as well as provide clues into the nature of the patient's relationships with their support persons.

After establishing the setting, it is important to realize that answers youth provide may be unreliable. This can be especially challenging when youth are worried about being labelled as “weird” or even “crazy”.

To navigate this during the interview, it can be helpful to:

- 1) Discuss confidentiality. This provides reassurance to them about the privacy of your assessment but also explains the limits of those boundaries.
- 2) Reduce the tension by...
 - a. Acknowledging that assessments can be stressful and intimidating.
 - b. Establishing common ground by discussing lighter topics such as their hobbies before delving into more serious topics.
 - c. Utilizing the youth’s language to talk about their experience rather than using clinical jargon, for instance, they may describe their symptoms as “spinning out” which may be more meaningful and less intimidating to them than the term “psychosis.”
- 3) Combine normalizing statements with open-ended questions. For example, you may say “sometimes when people are feeling more stressed than usual, they might notice that things don’t seem quite right, or that unusual things are happening around them... have you had any similar experiences lately? Then try following-up with “tell me more about that...” This may open the door to asking more specific questions later in the assessment.
- 4) Vary the way you ask a question. You can always ask about the same experience more than once in slightly different ways to ensure mutual understanding, especially if the patient is younger or has some comprehension difficulties.
- 5) Pay attention to all aspects of body language. Do they seem more suspicious than usual? Are they looking around? Try asking them what they are looking at. Are they questioning others’ intentions? Ask them why. Are they making any abnormal movements? Are they pacing the room? These may all provide clues to psychotic symptoms.
- 6) Be patient. It may not be possible to develop rapport and perform a complete assessment in one session. Follow-up visits are often needed to clarify the clinical picture. Depending on the severity of their psychosis, the youth may be able to hold it together during brief or superficial conversations, however, abnormalities may become more apparent in longer and more challenging interactions, and especially through longitudinal appointments.

[You excuse yourself to get further collateral from Mitchell’s mom.](#)

Important areas to focus on when speaking to collateral include:

- Premorbid personality and functioning
- Specific examples of concerning behavior (consider critical issues associated with neglecting medical needs including medication compliance – insulin for diabetes, starvation, psychogenic polydipsia, aggression, violence, etc)
- Degree of change from the individual’s baseline, rate of onset (sudden or gradual), and possible precipitants (stressors, trauma, drug use)
- Chronology and duration of psychotic symptoms
- History of self-harm and suicide
- History of substance use
- Family history including psychotic disorders

She corroborates that she had an unremarkable pregnancy and birth with him. He has always been healthy and met all developmental milestones. He has never excelled in school but has been struggling more and more with school, to the point that teachers have reached out to her. He has been keeping up with personal hygiene but has not been helping with chores as much. She is not aware of any current stressors but volunteers that she is aware of his cannabis use, and this has been a big point of contention in their household. He does not have any history of self-harm, suicidal ideation, or suicide attempts.

OBJECTIVE #4: BE FAMILIAR WITH ASSESSMENT AND TREATMENT OPTIONS

Watch and Wait

As a primary care physician, you may choose to closely follow symptoms in non-urgent situations, especially when the clinical picture remains unclear, and the patient is agreeable and reliable for follow-up. An antipsychotic free period in first-episode psychosis may be helpful to exclude more transient psychoses such as substance-induced psychosis. This may also help build trust and rapport, as you are not immediately jumping to a diagnosis.

You may find psychosis screening tools helpful for assessing and tracking symptoms.

- Prodrome Questionnaire (PQ-16)
- Yale PRIME Screen–Revised (PS-R)
- Youth Psychosis At-Risk Questionnaire-Brief (YPARQ-B)
- Prodrome Questionnaire: Brief Child Version (PQ-BC) (ages <10)

However, in urgent situations, for instance where patients are more overtly psychotic, lack insight, and have high levels of distress, which could lead to unsafe behaviour with possible suicidal or homicidal ideation, the person should be taken to the emergency department for immediate assessment and stabilization.

First episode psychosis in children and adolescents should always be referred for psychiatric assessment. However, given the shortage of child and adolescent psychiatrists, direct assessments can be quite delayed. PCPs are therefore recommended to collaborate with a child psychiatrist for management while awaiting a full assessment. The Child and Adolescent Intake Services (780-342-2700) may also be a good place to establish links with community mental health resources including Mental Health Therapists (MHTs) with experience in psychosis. MHTs are pivotal for helping the PCP assess, monitor, and provide psychoeducation, as well as non-pharmacological treatment for individuals. They may be able to check-in with the patient more often, develop greater rapport, connect them with appropriate resources, identify red flags and expedite care when necessary.

After being assessed by a child psychiatrist, they may suggest more specialized psychosis follow-up. In Edmonton, we have access to the Edmonton Early Psychosis Intervention Clinic (EPPIC) which is a “multidisciplinary service with a mandate to provide rapid access to evidence based clinical services, for individuals ages 16-35, who are experiencing their first episode of psychosis.”

Pharmacotherapy Options

Antipsychotics

As these patients are typically anti-psychotic naïve, they can be very sensitive to both the pharmacological effects and the side-effects. In general, first-generation / typical antipsychotics

cause more extra pyramidal side effects known as EPS including odd facial and oral movements, upper and lower extremity movements, and trunk movements. These can be assessed and tracked by using the Abnormal Involuntary Movement Scale (AIMS).

ABNORMAL INVOLUNTARY MOVEMENT SCALE (AIMS)

Patient's Name (Please print) _____ Patient's ID information _____

Examiner's Name _____

CURRENT MEDICATIONS AND TOTAL MG/DAY

Medication #1 _____ Total mg/Day _____ Medication #2 _____ Total mg/Day _____

INSTRUCTIONS: COMPLETE THE EXAMINATION PROCEDURE BEFORE ENTERING THESE RATINGS.

	None, normal	Minimal (may be extreme-normal)	Mild	Moderate	Severe
Facial and Oral Movements					
1. Muscles of Facial Expression eg, movements of forehead, eyebrows, periorbital area, cheeks; include frowning, blinking, smiling, grimacing	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
2. Lips and Perioral Area eg, puckering, pouting, smacking	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
3. Jaw eg, biting, clenching, chewing, mouth opening, lateral movement	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
4. Tongue Rate only increases in movement both in and out of mouth, NOT inability to sustain movement	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Extremity Movements					
5. Upper (arms, wrists, hands, fingers) Include choreic movements (ie, rapid, objectively purposeless, irregular, spontaneous); athetoid movements (ie, slow, irregular, complex, serpentine). DO NOT include tremor (ie, repetitive, regular, rhythmic).	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
6. Lower (legs, knees, ankles, toes) eg, lateral knee movement, foot tapping, heel dropping, foot squirming, inversion and eversion of foot	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Trunk Movements					
7. Neck, shoulders, hips eg, rocking, twisting, squirming, pelvic gyrations	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

SCORING:

- Score the highest amplitude or frequency in a movement on the 0-4 scale, not the average;
- Score Activated Movements the same way; do not lower those numbers as was proposed at one time;
- A POSITIVE AIMS EXAMINATION IS A SCORE OF 2 IN TWO OR MORE MOVEMENTS or a SCORE OF 3 OR 4 IN A SINGLE MOVEMENT
- Do not sum the scores: e.g. a patient who has scores 1 in four movements DOES NOT have a positive AIMS score of 4.

Overall Severity

- | | | | | | |
|---------------------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| 8. Severity of abnormal movements | <input type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| 9. Incapacitation due to abnormal movements | <input type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

- | | | | | | |
|----------------------------------------------------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| 10. Patient's awareness of abnormal movements (rate only patient's report) | <input type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
|----------------------------------------------------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|

Dental Status

- | | | |
|--------------------------------------------------|--------------------------|--------------------------|
| 11. Current problems with teeth and/or dentures? | Yes | No |
| | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Does patient usually wear dentures? | | |
| | <input type="checkbox"/> | <input type="checkbox"/> |

Comments: _____

Examiner's Signature _____ Next Exam Date _____

Guy W. ECDEU Assessment Manual for Psychopharmacology - Revised (CH-BW-PUB) No ADM76-338, US Department of Health, Education, and Welfare; 1976

Second-generation / atypical antipsychotics have a lower risk of EPS but can cause fatigue, sedation, postural hypotension, anticholinergic side effects, and metabolic side-effects including weight gain, elevated serum glucose and cholesterol, as well as diabetes. Clozapine and

Olanzapine are associated with the greatest metabolic risk. In youth, consider starting with medications that have less metabolic effects, such as Aripiprazole. Metabolic risk can also be reduced by healthy lifestyle measures such as proper nutrition and regular exercise. The key is to “start low – go slow” to minimize side effects, which greatly contribute to poor compliance. Side effects can occur as early as the first few hours and can be delayed as the first few weeks. If side-effects develop, consider decreasing the dose, using adjunct medications to reduce the side-effects, or switching to a different medication altogether. Increase dosage as needed with the expectation of clinical improvement in 6-8 weeks. About 60% of people will respond by 12 weeks, and in general, treatment should be continued for at least 12 months following the first episode.

See our handout for a list of second-generation antipsychotic medications for adolescents, and adverse effects.

TABLE 5

Second-Generation Antipsychotic Medications: FDA Approval and Dose Ranges for Adolescents With Schizophrenia

	FDA Approval	Recommended Dose	Starting Dose	Maximum Dose, mg
Aripiprazole	Schizophrenia: ≥13 y	10 mg	2 mg	30
Lurasidone	Schizophrenia: ≥13 y	40-80 mg	20 mg	80
Olanzapine	Schizophrenia: ≥13 y	10 mg	2.5 mg	20
Paliperidone	Schizophrenia: ≥12 y	Wt <51 kg: 3-6 mg	3 mg	6
	Schizophrenia: ≥12 y	Wt >51 kg: 3-12 mg	3 mg	12
Quetiapine	Schizophrenia: ≥13 y	400-800 mg/d	25 mg to 25 mg BID	800
Risperidone	Schizophrenia: ≥13 y	0.5-6 mg/d	0.25-0.5 mg	6

Sources: 153 and 154. BID, twice a day.

Hua, L. L., Alderman, E. M., Chung, R. J., Grubb, L. K., Lee, J., Powers, M. E., ... & Wallace, S. B. (2021). Collaborative care in the identification and management of psychosis in adolescents and young adults. *Pediatrics*, 147(6).

TABLE 4
Commonly Used Antipsychotic Medications and Adverse Effects

	Akathisia	TD	Sedation	Anticholinergic Side Effects	Orthostatic Hypotension	Wt Gain	Dyslipidemia	Hyperglycemia	Prolactin Elevation	QTc Prolongation
First generation										
Chlorpromazine	Mild	Moderate	Moderate	Moderate	Moderate	Severe	Severe	Severe	Mild	Minimal
Haloperidol	Severe	Moderate	Mild	None	None	Mild	Minimal	Minimal	Moderate	Minimal
Second generation (atypical)										
Aripiprazole	Moderate	Minimal	Minimal	None	Minimal	Minimal	Minimal	Minimal	None	Minimal
Clozapine	Mild	None	Severe	Severe	Moderate	Severe	Severe	Severe	Mild	Moderate
Lurasidone	Mild to moderate	Minimal	Mild to moderate	None	Minimal	Minimal	Minimal	Minimal	Mild	Minimal
Olanzapine	Mild	Minimal	Mild to moderate	Moderate	Mild	Severe	Severe	Severe	Mild to Moderate	Minimal
Paliperidone	Mild	Minimal	Minimal	None	Mild	Moderate	Mild	Mild	Severe	Mild
Quetiapine	Mild to moderate	Minimal	Moderate	Mild to moderate	Moderate	Moderate	Moderate	Moderate	None	Mild
Risperidone	Mild	Minimal	Mild	None	Mild	Moderate	Mild	Mild	Severe	Mild
Ziprasidone	Mild to moderate	Minimal	Mild	None	None	Minimal	Minimal	Minimal	Mild	Moderate

Sources: 151 and 152. TD, tardive dyskinesia.

Hua, L. L., Alderman, E. M., Chung, R. J., Grubb, L. K., Lee, J., Powers, M. E., ... & Wallace, S. B. (2021). Collaborative care in the identification and management of psychosis in adolescents and young adults. *Pediatrics*, 147(6).

Medication Monitoring

Monitor patients on antipsychotic medications following Canadian Alliance for Monitoring Effectiveness and Safety of Antipsychotics in Children (CAMESA) Guidelines.

- Baseline
 - BMI, waist circumference, personal and family medical history including diabetes and cardiac disease
 - Advise patients of symptoms of hyperglycemia and monitor for same
- At 4, 8, and 12-weeks
 - Reassess BMI at these intervals after initiation or change in antipsychotic therapy, then quarterly once at a stable dose
- At 3-months and annually
 - Reassess fasting plasma glucose, lipids, and blood pressure

Other Medications

- Antidepressants may be used to treat co-occurring depression and anxiety.
- Adjunctive use of a long-acting benzodiazepine to help with sedation and management of agitation while waiting for the antipsychotic to take its full effect.
- Benztropine may prevent and treat EPS symptoms.

Non-Pharmacological Interventions

Other psychosocial supports may include CBT, addictions counselling, family therapy, group therapy, educational and vocational programs, social work, and dietician.

Please see our handout to learn more about each aspect of treatment.

Psychoeducation

Provides information about the illness including causes, symptoms, treatment options including medication expectations and side-effects as well as psychosocial supports, and the recovery progress. Knowledge is key in helping individuals monitor and recognize potential warning signs, which may provide a chance to react by using stress management strategies and other valuable life skills to reduce vulnerability to stress-induced relapse. Over time, learning to cope with stressful scenarios with support from trusted professionals can be both therapeutic and empowering for young individuals.

CBT

You may be familiar with CBT, which assumes that thoughts, emotions, and behaviour influence one another in a cyclical manner. In early psychosis, it can be helpful for addressing mood concerns, substance use, adjustment issues, as well as challenging delusions before they become entrenched.

Addictions Counselling

When an individual is struggling with both psychosis and substance use problems, it is most effective to treat both simultaneously. Addictions support programs involve thorough assessments, education about substances and their impact on psychosis, counselling, and relapse prevention.

Family Therapy

It is important to recognize that early psychosis can be confusing and disruptive to the patient and their loved ones. While it is important to explore the patient’s wishes regarding the extent of family involvement they would like in their recovery process, it can be advantageous for emotional support, monitoring of symptoms, medication compliance, initiating medical follow-up as needed. Family members often appreciate guidance on how to relate to and communicate with their loved one, and greatly benefit from clear expectations of the recovery process. By understanding that the treatment of psychosis takes time, family members may be able to facilitate a gradual approach to return to daily tasks and activities, instead of bombarding and overwhelming the patient. Furthermore, it is important to encourage family members to take care of themselves and manage their own distress.

Group Therapy

While patients may be reluctant to share their psychosis experience due to stigma, group therapy, peer support and learning through active discussion and observation, is invaluable in helping the individual realize that they are not alone.

Educational and Vocational Programs

Psychosis can have a major effect on school and work. Neurocognitive testing may be beneficial for assessing cognitive strengths and deficits, which is imperative for creating plans to best support academic and vocational pursuits that are best suited to them.

Occupational therapists can help individuals explore their interests and goals, as well as conduct skill-oriented evaluations to identify and address challenges in different settings.

Sharing some information with the patient’s school and workplace may be useful for involving other important members in assessing function, ascertaining school-related stressors, and advocating for special accommodations to ensure a more therapeutic learning or working environment. However, as always it is important to discuss with the patient and their family regarding what information will be shared and for what purpose.

Social Work:

Can help with family support, housing, financial disability supports, liaison with school/work.

Dietician:

Can help if there are problems with appetite increase or weight gain, which can be common with antipsychotic medications.

Alright, [back to our case.](#)

After reviewing the patient's presentation, you and your preceptor feel that his symptoms are quite vague and difficult to interpret, especially given ongoing cannabis use. You discuss the limitation that the initial assessment is only a cross-sectional glimpse of the patient's mental state and circumstances. You debate the risks of misdiagnosis and the unnecessary use of antipsychotics, versus the risks of the watch and wait approach with an antipsychotic free period. You recognize that to make an accurate diagnosis of a psychotic disorder, you need to do a comprehensive medical and psychological assessment over a period of time to appreciate characteristic patterns of illness, understand the symptoms within biopsychosocial and developmental contexts, assess overt signs on MSE, obtain multiple sources of collateral to determine changes in level of functioning (school attendance, academic performance, and social functioning), and exclude psychosis caused by other diseases, drugs, and medications. You agree that there are no concerning vital sign or physical exam abnormalities, and longitudinal follow-up is required to get a better understanding of the clinical picture. While we are keeping psychosis high on our differential, she explains that it may be better to provide more general information about the many different causes of their symptoms.

Your preceptor leads the discussion with the patient and his mother. She explains the baseline investigations that are recommended, describes the type of assistance that is available for their current problems and concerns including level of stress, sleep difficulties, as well as school issues. She provides psychoeducation about cannabis while using motivational interviewing techniques. You notice that she tailored the type and depth of information to the patient's mental state, severity of symptoms, level of insight and judgement, as well as his capacity to understand the information. He agrees to go for bloodwork, return for a follow-up in one week (or earlier if symptoms worsen), and provides consent to share the assessment with his teachers as well as initiate a referral for therapy, addictions counselling, and psychiatry. She then clarifies safety issues and works with the patient and their parent to create a safety plan for engaging emergency services as needed.

Before the patient leaves, your preceptor provides some written handouts and online resources for further information and coping strategies to review prior to their next appointment. They thank you for your time and deny any further questions.

[Thank you for listening! We hope this case helped you understand the many causes and approaches to psychosis in the child and adolescent population.](#)

Resources:

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>

Bromley, S., Choi, M. A., & Faruqui, S. (2015). *First episode psychosis: An information guide*. CAMH.

Brown, J. L., & Bagley, D. A. (2014). *Psychosis in children and adolescents* (Doctoral dissertation, University of Arkansas for Medical Sciences).

Crlenjak, C. (2014). *'Let Me Understand': Assessment in Early Psychosis*. Orygen Youth Health Research Centre.

Hua, L. L., Alderman, E. M., Chung, R. J., Grubb, L. K., Lee, J., Powers, M. E., ... & Wallace, S. B. (2021). Collaborative care in the identification and management of psychosis in adolescents and young adults. *Pediatrics*, 147(6).

Kennedy, S. K., Purpura, A., Doos, D., Matusz, E., Natesan, S., & Winograd, S. (2019). Evidence-based approach to psychosis in the emergency department. *Emergency Medicine Reports*, 40(23).

McClellan, J., & Stock, S. (2013). Practice parameter for the assessment and treatment of children and adolescents with schizophrenia. *Journal of the American Academy of Child & Adolescent Psychiatry*, 52(9), 976-990.