

# Psychosis

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The following text is envisioned to help case based learning of Psychosis by providing a background context (the video case). This is designed to show how the scenario may present in real life when you are faced with a similar patient rotating through the ER or in an inpatient unit.

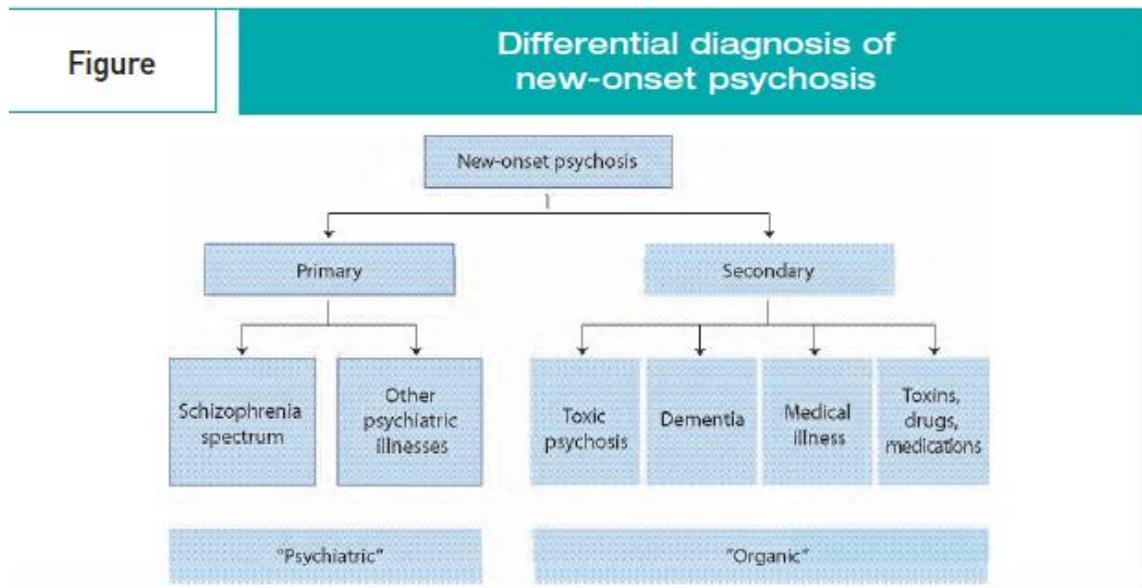
**Click on the following hyperlinks to arrive at each section with pertinent examples from our video case (commiserate to enabling objectives):**

- [\*\*What is psychosis?\*\*](#) **Definition and meaning.**
- [\*\*Differential Diagnosis:\*\*](#) How to differentiate between a psychotic disorder from a secondary medical cause vs. a psychiatric cause
- [\*\*How to get a history\*\*](#) and pertinent information
- [\*\*Objective evaluation: Physical Exam and MSE\*\*](#)
- [\*\*What are the investigations?\*\*](#)
- [\*\*Management\*\*](#)
  - [\*\*Short Term\*\*](#), including addressing safety concerns and acute agitation
  - [\*\*Long Term\*\*](#)
- [\*\*References\*\*](#) and further reading (for the so inclined)

## What is Psychosis?

- Psychosis is a severe and disabling psychiatric phenomena present in several disorders, the most common of which is schizophrenia.
- The traditional meaning of the term psychotic emphasized loss of reality testing and impairment of mental functioning—manifested by delusions, hallucinations, confusion, and impaired memory
- With gross impairment in reality testing, persons incorrectly evaluate the accuracy of their perceptions and thoughts and make incorrect inferences about external reality, even in the face of contrary evidence.
- The term psychotic does not apply to minor distortions of reality that involve matters of relative judgment.
- It can be associated with severe psychosocial dysfunction and can be life threatening

## What are the causes of Psychosis?



Toxic psychosis = Delirium

## Differential Diagnosis:

### PRIMARY PSYCHOTIC DISORDERS:

Schizophrenia  
Schizophreniform disorder  
Schizoaffective disorder  
Delusional disorder  
Brief psychotic disorder  
Psychotic disorder NOS

### OTHER CAUSES:

Secondary to General medical condition  
Substance-induced (e.g., illicit drugs or medication-induced)  
Mood disorder: As part of mania with psychosis or Major Depression with psychosis  
Micropsychotic Episode in Borderline PD

- Unfortunately, there is no easy way to differentiate primary from secondary psychoses on the basis of psychopathology alone.
- Clinicians have to rely on typicality (with regard to age at onset, symptoms, treatment response, and course) as well as temporality and biological plausibility to judge whether a medical condition is causally related to psychosis.
- A primary psychotic disorder, such as schizophrenia, is a diagnosis of exclusion, and all patients with new-onset psychosis need a medical workup that excludes medical-toxic causes of psychosis
- The overall clinical and epidemiological situation is of utmost importance to keep the workup manageable and to determine the degree of urgency
  - For example, any new-onset psychosis in a hospitalized, elderly patient following hip surgery is most likely a toxic psychosis (delirium); an antisocial patient with polysubstance dependence who presents at the emergency department is likely suffering from a drug-induced psychosis
- Delirium: key features that differentiate delirium from a psychotic disorder:
  - Fluctuating course of symptoms
  - Fluctuating level of consciousness
  - Presence of a causal medical etiology
- In a Psychotic Disorder Due to a General Medical Condition, the index of suspicion can be raised by atypical features:
  - Acute onset and change in personality
  - Atypical age of onset
  - Physical symptoms (e.g., gait change, new-onset headache incontinence, change in neurological function, symptoms suggestive of seizures)
  - Visual or olfactory hallucinations
  - Fluctuating course

## Examples of General Medical Conditions Causing Psychosis:

Alzheimer's dementia  
Autoimmune disorders (e.g., systemic lupus erythematosus)  
Central nervous system infection (e.g., acquired immune deficiency syndrome, Jakob Creutzfeldt disease, neurosyphilis, herpes encephalitis)  
Cerebrovascular disease (e.g., stroke, brain trauma)  
Endocrine/metabolic disorders (e.g., hypothyroidism, hyperthyroidism, acute intermittent porphyria, Cushing's disease, homocystinuria)  
Epilepsy (particularly, temporal lobe epilepsy)  
Huntington's disease  
Multiple sclerosis  
Neoplasm (primary or metastatic brain tumors)  
Normal pressure hydrocephalus  
Pellagra  
Toxic poisoning (e.g., heavy metals, carbon monoxide)  
Vitamin B12 deficiency  
Wernicke-Korsakoff syndrome

- For Substance induced:
  - Consideration must be given to the type of substance consumed. Some classes of drugs (e.g., stimulants, hallucinogens) are more acutely psychotogenic than others (e.g., opiates, alcohol).
  - Some cause positive symptoms (e.g., stimulants), whereas others may cause positive and negative symptoms suggestive of schizophrenia (e.g., PCP)
  - THC (Marijuana) is implicated in precipitating and/or inducing psychosis. Heroic use can lead to developing Schizophrenia as per some authorities

## Common medications implicated in causing psychosis:

Corticosteroids  
Stimulants  
Dopaminergic drugs (e.g., L-dopa, amantadine)  
Interferon  
Anticholinergics

## Primary or secondary psychosis? Diagnostic mistakes

Missing a toxic psychosis (delirium)

Attributing causality to incidental findings

Indiscriminate screening without organizing framework

Premature diagnostic closure

Not obtaining a medical history and family history or not appreciating medical abnormalities (e.g., vital signs)

Not revisiting the initial diagnostic impression of a primary psychiatric disorder

## How to gather pertinent history?

### Conduct an interview

(Please refer to the video demonstration of the interview)

### General interviewing tips for interviewing a pt. with psychosis:

- During questioning, try to be respectful and non-judgmental which will help build a rapport.
- Empathetic statements can help. For example, “I am sorry to hear that you are going through such a distressing time”
- Start with open-ended questions but often very simple close ended and multiple-choice questions are asked as the patient may be quite disorganized, and the interviewer has to make an attempt to organize the history for the patient.
- Try to establish a timeline (Onset, course and progression of psychotic symptoms). Sometimes this is difficult – can use collateral history to establish this. An attempt can be made to establish the relationship between recent stressors and psychotic symptoms.
- Try to establish precipitating events such as recent stressors and stoppage of psychotropic medications (although not applicable in this case, this is very often is a precipitating factor).
- Try to understand the patient’s delusional beliefs or delusional system. Often this can highlight safety concerns such as homicidality or suicidality. Ask about common delusions found in schizophrenia (as in the video). It can also be used to understand the pt. as a whole to inform future treatment.
- Ask re use of recreational drugs, such as stimulants, can precipitate/exacerbate psychosis or may be causative of it.
- Different hallucinations are inquired into. Usually auditory and visual hallucinations are routinely inquired into while somatic – gustatory, tactile or olfactory can also be asked about if clinically indicated. Always ask re command hallucinations.
  - Schneiderian Criteria: Voices conversing with each other or keeping a running commentary. Used to be pathognomic of Schizophrenia as per DSM IV. One can also ask about the number of voices and characterize the hallucinations further.
- Often forgotten and difficult to characterize are negative symptoms of schizophrenia. From collateral, history from pt. or by MSE: try to inquire into anhedonia, alogia, asociality, avolition, cognitive problems with executive functioning and planning. There can also be problems with working memory.
- Try to understand level of insight – which is clearly quite poor in our case, direct questions can be asked
- For this case: During the interview ask if the patient can see anything wrong or evil through the interviewer’s eyes as the patient was staring intently at times (an important safety check).

- Complete psychiatric functional inquiry.
  - Ask about current stressors, mood symptoms (rule out mania or depression).
  - Complete safety assessment – ask about suicide. In other cases where it is not as obvious, always ask about thoughts of hurting others (homicidal ideation).
- Also make sure patient isn't neglecting self-care (e.g. sometimes psychotic patients do not eat food because they are paranoid about it being poisoned).
- Find out about other safety concerns such as child-care responsibilities or driving.
- Inquire into current and past medical history to rule out medical causes of psychosis.
- Ask family history and social history as much as is possible.
- Safety is first: refer to note on safety in management section.

### **Obtain Collateral History**

The observations of a third party can be invaluable. This is particularly so for issues that patients themselves may have difficulty describing, or may not be aware of, such as: type of onset and evolution overtime, what actual changes have occurred (e.g., in personality and functioning), self-care issues, or fluctuations in state.

### **Consideration must be given to the following:**

- Confidentiality: It is important to have as transparent a process as possible. It is helpful to let the patient know from the beginning that you will need additional information, but to reassure him that you cannot give information without his consent. The exception is when the patient is certified and it is only for purposes of gathering information, not giving it.
- Seeing the patient alone versus with the collateral source: People are different when they are alone versus with others (particularly family members). It can be helpful to see the patient alone to cover sensitive issues.
- Other sources:
  - Other medical personnel involved in care i.e. GP's, Psychiatrists, RN's, and SW's. Clinical records e.g. Discharge summaries, consultation notes.
  - Legal records which are accessible
  - Group home/Shelter staff
  - Pharmacy/medication records

## **Case Notes:**

The on-call Psychiatrist called up Sam's home number and spoke to his mother. She also provided you with the number of his friend, Bill. Information provided by University Police when they brought Sam in is documented by the nurse. From these sources the following is understood:

Sam is a 23 y.o male in 3<sup>rd</sup> year of Computer Science Undergraduate program

- Currently single
- Supported financially by parents, lives on campus
- Academically doing well until one year ago, since then his grades have fallen.
- Has been found to be isolating to his room and was previously quite social and a member of many university groups. Has been drawing strange symbols on the walls of his room. There is poor personal hygiene.
- He is known to smoke atleast 1gm of Marijuana a day

A fax is received from Sam's GP and the following information comes to light:

Past Psychiatric History: Learning disability in language diagnosed in grade 6. Psychological report also highlights moderate deficits in working memory.

Saw the University Psychological Services 6 months ago once for vague complaints around anxiety and depression with social withdrawal. Was prescribed Escitalopram, but did not fill the prescription.

### Past Medical History:

- None

### Family History:

- Maternal Aunt has Schizophrenia

### Social History:

- Delay in language milestone
- Grew up in a stable home
- Difficulties in academics in English/language subjects predominantly
- Some history of bullying

## **Mental Status findings in Psychosis and its interpretation:**

(See [Mental Status Exam](#) section of the HUB for details)

**Hygiene/self-care, general appearance** - patient may be overweight from medications or underweight from poor nutrition?

**Appropriate dress for the weather** – due to disorganization or impoverishment

### **Signs of intoxication:**

Pupils (dilated or restricted), tremulousness or sweating.

### **Signs of medication side effects:**

**Akathisia:** Is the patient fidgety, unable to remain sitting?

**Extrapyramidal side effects:** Check for tremor and cogwheel rigidity, decreased arm swing, slowing, stiff gait, choreiform or dyskinesic movements

**Anticholinergic:** dry mucosa

### **Signs of motor abnormalities associated with psychosis:**

Tics

Dyskinesias

Mannerisms

Posturing

Psychomotor agitation

**Level of cooperation** – may be poor, due to paranoia or disorganization

**Eye contact** – Poor or alternatively can be piercing and inappropriate

### **Speech:**

Slowing of speech or monotonous speech in schizophrenia

Pressured in mania

### **Affect and Mood:**

Flat affect or restricted/blunted affect - reduced intensity of emotional expression and response

Unchanging facial expression, decreased spontaneous movements, poverty of expressive gestures, poor eye contact, lack of vocal inflections, and slowed speech.

Patients may also exhibit inappropriate affect.

### **Thought Process:**

There is usually a thought disorder in psychosis ranging from circumstantiality to derailment to a world salad. See MSE section for details.

**Thought Content:**

Overvalued ideas and delusions are usually present.

Schizophrenia: Commonly paranoid/Persecutory. Can be bizarre, and have thought withdrawal, insertion or broadcasting

Mood congruent for Depression and Mania

**Level of consciousness:**

Altered in delirium not in primary psychosis (orientation is usually intact)

**Cognition:** slowed or impaired

**Perception:** hallucinations/illusions elicited through history or inferred by patient responding to their internal stimuli

**Insight and Judgment:** Can be poor, often elicited by asking the patient.

**Physical exam:**

Get vital signs first to make sure there is nothing acute going on. Physical examination with emphasis on the neurological and cognitive parts are the cornerstones for the initial approach to psychosis. To detect fluctuations in mental status typical for delirium, repeated visits with bedside testing of cognition may be necessary (E.g. MMSE, MOCA).

**Case Notes:**

Note the various MSE findings for Sam as described in the captions in the video. This is documented as:

- The pt. is a 23 y.o male who appears his age. There is poor grooming and personal hygiene evidenced by foul body odor and long unkempt hair. The pt. is wearing a worn T-Shirt with an odd symbol looking like a shield. This appears to be related to his delusions that he needs 'antivirus' protection from people who can access his mind. Pt. was cooperative initially but not towards the end. There were no abnormal psychomotor movements. His eye contact was poor throughout with some intermittent piercing stares. There is slowed, halting and monotonous speech. Thought process was disorganized with tangentiality and loosening of associations. Thought content had bizarre persecutory delusions and delusions of thought withdrawal, insertion and broadcasting (TW/TI/TB). Perception consisted of auditory hallucinations, which were command in nature with homicidal instruction. Pt. is responding to internal stimuli. Insight is poor. Judgment is poor, as he wants to kill his friend and is acting on a delusional pretext.

## What are the Investigations?

Suggested medical workup for secondary psychosis:

Screen broadly

CBC count, glucose, full chemistry, LFTs, ESR, ANA, Urine Analysis

Urine Drug Screen

Consider brain imaging with CT or MRI\*

\* There is no consensus of whether brain imaging should be part of a routine workup for patients with first-episode psychosis. The yield of brain imaging is low in a patient with first-episode psychosis who presents with typical psychopathological features and illness course, and no red flags by history (e.g., history of head injury), and without positive findings on a neurological examination.

Exclude specifically

Abnormal levels of TSH, vitamin B12 and foliate, ceruloplasmin, HIV, FTA-Abs

### Investigate further as clinically indicated:

Electroencephalogram

Chest radiography, lumbar puncture, blood and urine cultures, arterial blood gases

Serum cortisol levels

Toxin search

Drug levels

Genetic testing

Please read references for specific reasons for the tests

### Case Notes:

Sam's investigations come back the next day:

- Physical and neurological exam by ER MD was reported as "normal"
- Urine Tox positive for THC only
- Initial blood work ( CBC, lytes etc.) "normal"
- TSH is normal
- No CT/MRI ordered

## What is the Management?

Continue to obtain collateral information

Establish a diagnosis and management plan

Explain this to the pt. in a non-confrontational and respectful manner (if possible)

Address medical concerns

If pt. needs hospitalization – assess if this will be voluntary or involuntary

A short term and long term management plan

Think bio-psycho-social:

### Short term:

Consider if there is a 'duty to warn'

- If the pt. has expressed a wish to seriously harm a clearly identifiable person or a group and it is imminent.
- Tarasoff ruling and CPA position paper allows the clinician to do this and warn the person/group of this threat

### Case notes:

The psychiatrist calls up Bill, after obtaining the number from his mother and informs him of the death threats. He thanks you and hopes for his friend's speedy recovery.

Assess if pt. meets criteria for certification (see Legal section of HUB for details)

Usually Form 1 is required if pt. is reasonably at risk for

- Self harm (imminent)
- Violence to others (imminent)
- At risk for physical impairment i.e. lack of self care to the point that it becomes a danger to the pt. e.g. not eating food at all - worrying it is poisoned

Depends on level of agitation or need for emergency measures at any point, we will divide this into management of a stable pt. vs. an unstable pt.

Unstable pt.:

### A note about Safety:

Always remember that safety is first. If at any point during the interview or later you feel threatened, leave the room and ask for assistance. The assessment can be finished with the help of a nurse, PA or security. At other times, the patient is so agitated that an emergency chemical restraint is necessary before assessment can

be completed for the safety of the patient and medical personnel. The assessment may also have to be deferred. However, try to ask questions re SI/HI or other pertinent safety risks in order to be able to make a clinical decision.

Make sure there are no acute medical concerns requiring further assessment and treatment e.g. acute delirium secondary to a toxic substance with unstable vitals

Assess if chemical restraints and/or mechanical restraints are required to protect the pt. and others from harm

How to manage an agitated/hostile/threatening patient:

1. Often antecedents to agitation may be when a Form is handed to the pt. or medication is and one has to be cautious at these times
2. Try to use verbal de-escalation techniques to try and diffuse the situation. Try and empathize genuinely, put yourself in the pt.'s shoes. Be respectful and honest. Try distracting, bargaining/negotiating. One common technique is to try and say 'yes' and use positive terms and appear to agree even when the underlying topic has negative connotations for the patient.  
For E.g. "Yes, you are correct that staying in hospital may be thought of as unpleasant." "Yes, you may have to stay in the hospital for some time."
3. Offer meds orally at first and try to persuade the pt.
4. If this fails, ask for security or call a code white.
5. Try to offer oral meds again with security present. Failing which, injectable antipsychotics will have to be delivered under physical/mechanical restraint. Note: this may appear unpleasant but remember this is done only to protect the pt. and others from harm under extreme circumstances. Also, any inappropriate use of this can be interpreted by the law as assault and/or battery perpetrated by the medical team. So there are checks and balances!
6. Make sure there is no contraindication to use of chemical restraint. e.g. allergies

Chemical restraints in a nutshell:

Commonly used are a combination of atypical antipsychotics + benzodiazepines IM or PO

1. Haldol 5 mg IM and Ativan 2 mg IM more > effective than Haldol 5 mg alone.
2. IM olanzapine 2.5 – 10 mg as effective as Haldol alone, with less EPS.
3. Avoid olanzapine and benzodiazepines due to cardiac and respiratory difficulties (including fatalities).
4. Zuclophentixol acetate (Accuphase) – peak serum in 24-48 hrs., declines to 1/3 at 72 hrs. Avoid in drug-naïve pts. No benefit above others shown. Helpful to avoid multiple IM chemical restraints.

**Case Notes:**

The Psychiatrist on call offers Sam some PRN medication after explaining the diagnosis calmly. Sam surprisingly accepts the oral medication, saying he understands that Santa Claus is trying to help him and he should not refuse.

After 30 mins, The Psychiatrist fills out a Form 1 and gives Sam a Form 42, advising him he needs to stay involuntarily upto 72 hours as he is at a risk for harming other people. Sam accepts this calmly, appearing a bit groggy from his Loxapine 25mg PO and Ativan 2mg PO.

Stable patient:

Short term:

Assess capacity – usually done after acute stabilization

If pt. is voluntary or involuntary and capable – go ahead and treat with informed consent

If involuntary, assess need for a Form 3 (involuntary hospitalization upto 2 weeks) as Form 1 expires in 72 hours. Get patient rights advice.

If incapable do a Form 33 and apply for rights advice and find a SDM

If the patient challenges Form 3 and/or 33, prepare and participate in a Consent and Capacity Board hearing and abide by its decision.

Ensure ongoing assessment of capacity and the need for a substitute decision-maker  
Attend to the patient's immediate psychosocial needs e.g. contacting family, legal requirements etc. Can involve social worker.

Treating any underlying disorders or comorbidities e.g. depression, OCD

Counsel and support patient/caregiver/family regarding clinical impression/management

Refer the patient for specialized care once stabilized e.g. First Episode Psychosis Clinic, out patient follow-up, Case Management and ACT team.

### Long Term:

Treatment is as per the diagnosis underlying psychosis. Presented here is a snapshot of long-term management of Schizophrenia.

### Pharmacotherapy:

Agent	Introduction dosage range, mg <sup>a</sup>	Incremental dosage range, mg	Usual target dosage, mg	Monograph maximal dosage, mg (CPS) <sup>b</sup>
Risperidone	0.5 to 1.0	↑ 0.5 to 1.0 every 3 to 4 days, up to ↑ 1.0 daily	2.0 to 6.0	8.0
Risperidone long-acting injectable	25.0 IM every 2 weeks (oral supplementation required for the first 3 weeks)	↑ 12.5 every 4 to 8 weeks	25.0 to 37.5 IM every 2 weeks	50.0 IM every 2 weeks
Olanzapine	5.0 to 10.0	↑ 2.5 to 5.0 every 3 to 4 days, up to ↑ 5.0 daily	10.0 to 20.0	20.0
Quetiapine	100.0	↑ 100.0 daily	600.0	800.0
Clozapine	12.5 to 25.0	↑ 12.5 to 25.0 on the second day, ↑ up to 25.0 to 50.0 daily	300.0 to 600.0	900.0

<sup>a</sup>Adult recommendations, not adapted for elderly  
<sup>b</sup>*Compendium of Pharmaceuticals and Specialties (53)*

## Psychotherapy and social interventions

Table 7 Recommendations		
Recommendations	Evidence	Evidence level
<b>Psychoeducation</b>		
Psychoeducation is an important intervention that needs to be accompanied by training in practical illness management strategies to achieve medication treatment adherence and to prevent relapse.	Psychoeducation can improve knowledge about illness, but there are equivocal findings that it increases treatment adherence unless there are also motivational enhancement and behavioural strategies for taking medication as prescribed.	B
<b>Vocational interventions</b>		
A wide range of possibilities should be considered for patients who are able to work, including volunteer work, supported, or transitional employment.	Individuals who suffer from schizophrenia have historically had low rates of employment; meaningful vocational activity, including paid employment, can be positive for individuals' psychological health and quality of life.	B
For many patients it is important to formulate goals for competitive paid employment and, in general, supported employment programs appear to offer the best approach to meeting such goals.	Supported employment approaches result in greater success in obtaining competitive paid employment.	A
<b>Skills training</b>		
Social skills training should be available for patients who are having difficulty and (or) experiencing stress and anxiety related to social interaction.	Social skills training leads to better outcomes with reference to symptoms, social functioning, and quality of life, compared with other standard care and (or) other interventions such as supportive psychosocial intervention and occupational therapy.	B
Life skills training in an evidence-based format should be available for patients who are having difficulty with tasks of everyday living.	Life skills training leads to better outcomes with reference to social functioning and quality of life, compared with standard care.	B
<b>Cognitive-behavioural interventions</b>		
Cognitive therapy should be offered to treatment-resistant patients.	Randomized controlled studies have shown benefits of CBT for patients with treatment-resistant schizophrenia.	B
<b>Family interventions</b>		
Family interventions should be part of the routine care for patients with schizophrenia.	Patients with schizophrenia whose families receive psychoeducation demonstrate reduced rates of hospitalization and show delayed or reduced symptomatic relapse.	A
Family psychoeducation programs should last more than 9 months and include features of engagement, support, and skills-building, not simply information- or knowledge-sharing.		B

Table 7 Recommendations <i>continued</i>		
Recommendations	Evidence	Evidence level
Peer support, self-help, and recovery		B
Local antistigma campaigns should include contact with people with schizophrenia.	Strategies to combat societal stigma and discrimination against the mentally ill are most effective when the public education includes contact with people who have schizophrenia telling their story.	C
Peer provider services should be included in the continuum of care; such services include consumer roles in group-based skills training, peer support, and public education programs.	Peer provider services contribute beneficial role-modelling and experiential knowledge but have not been adequately studied in controlled research designs.	
Treatment of comorbid symptoms		
Cognitive-behavioural interventions should be considered in the treatment of stress, anxiety, and depression in patients with schizophrenia; some adaptation of the techniques used in other populations may be necessary.	Symptoms of distress, anxiety, and depression occur in a substantial proportion of patients with schizophrenia.	B
	Psychosocial interventions, particularly cognitive-behavioural interventions used in other populations may be useful in reducing symptoms of stress, anxiety, and depression in patients with schizophrenia.	B
Substance use		
Integrated programs for concurrent substance use disorders should be available for people with schizophrenia	The optimal intervention is integrated treatment of both psychosis and substance use in a single program.	B

### Case Notes:

Sam is ultimately put on a Form 3 and 33. He contests these in a CCB and loses his appeal. At which point his mother agrees to be his SDM and he is treated with Risperidone 1mg PO titrated slowly upwards. He gradually recovers from this episode and understands he had a psychotic episode. He is discharged after 3 weeks of an inpatient stay. He is referred to the First Episode program at his local hospital where he and his family are engaged. He is also counseled about THC use and he agrees to take part in a Youth Addiction's Group. He is also provided with academic accommodations so as to return to University. He is currently back part time and following up as an outpatient. He takes Risperidone 5mg QHS and is compliant.

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