Level 0

Comprehensive assessment

- Diagnosis based on:
  - Symptom presentation
  - Mental status examination findings (e.g., responding to internal stimuli, bizarre beliefs, disorganized speech)
  - Course of illness, especially a decline in function or failure to progress
- Assess potential confounding factors, including any history of significant developmental problems, mood disorders, trauma, or substance abuse.

Helpful clinical tools include:

Structured diagnostic interviews

- Kiddie-SADS-Present and Lifetime Version (K-SADS-PL)

Symptom questionnaires

- Brief Psychiatric Rating Scale for Children (BPRS-C)

Links to clinical tools listed above are available at ***http://medicaidmentalhealth.org/***.

Level 1

Monotherapy with an antipsychotic agent FDA-approved to treat schizophrenia in adolescents:

- Risperidone, aripiprazole, quetiapine, lurasidone (ages 13 years and older)
- Paliperidone (ages 12 years and older)
- Haloperidol (age 3 years and older), perphenazine, thiothixene (ages 12 years and older)

First-line medication choice is based on side effect profile, patient/family preference and cost.

For all antipsychotic trials, monitor side effects systematically, including:

- Extrapyramidal side effects
- Metabolic monitoring per ADA guidelines

Note: Adjunctive agents may be indicated to treat/prevent EPS or metabolic side effects.

A therapeutic trial is generally defined as 4 to 6 weeks with doses up to FDA- approved dosages in adults (with allowances for children < 13 years of age), as tolerated.

If there is no response after two weeks at a therapeutic dose, consider changing to a different agent (see Level 2).

Youth with schizophrenia and their families also need intensive support and case management services, including:

- Psychoeducational therapies addressing treatment options
- Safety planning
- Relapse prevention and adherence challenges
- Special education and/or vocational programs
- Resiliency training
- Refer to first-episode psychosis specialty program if available.

Helpful links:

- NAVIGATE program: NAVIGATE is a comprehensive program that provides early and effective treatment to individuals who have experienced a first-episode psychosis. For more information, visit *https://navigateconsultants.org/.*
- National Institute of Mental Health Recovery After an Initial Schizophrenia Episode (RA1SE) Resource page: *https://www.nimh.nih.gov/health/topics/schizophrenia/raise/raise-resources-for-patients-and-families.shtml*

Notes:

1. *Olanzapine is FDA approved to treat schizophrenia in adolescents (ages 13 years and older). However, given the risk of metabolic side effects, olanzapine is not recommended as a first-line treatment.*
2. *Although the traditional neuroleptics, e.g., haloperidol, perphenazine, and thiothixene are FDA approved for use in adolescents, they have not been as well studied as the newer second generation medications in the pediatric population.*

Above website links were updated at the time of publication.

Level 2

Monotherapy with alternative drug FDA approved to treat schizophrenia in adolescents (from Level 1 above or olanzapine) if the first agent tried is not effective or poorly tolerated.

Continue psychosocial interventions.

Level 3

Monotherapy with alternative drug FDA approved to treat schizophrenia in adolescents (from Level 1 above or olanzapine), or with an antipsychotic FDA approved for adults, but not approved for children and adolescents.

Notes:

1. For nonresponses to second generation agents, consider trial of first generation agent.

2. Ziprasidone (Findling et al., 2013) and asenapine (Findling et al., 2015) were not found to be statistically superior to placebo for treating adolescent schizophrenia, and therefore are not recommended for treating schizophrenia in this age group.

3. Clozapine is reserved for treatment refractory cases (Refer to Level 5).

For patients with treatment failure characterized by ongoing psychotic symptoms exacerbated by noncompliance, psychosocial strategies should be enhanced to address adherence, including developing strategies to better monitor medication administration.

Treatment with a long-acting depot antipsychotic agent should be considered as clinically appropriate.

Available long-acting agents include risperidone microspheres, paliperidone palmitate, aripiprazole extended-release injectable suspension, haloperidol decanoate, fluphenazine decanoate. None of these agents are FDA approved for use in youth.

Note: Olanzapine pamoate(Zyprexa Relprevv) is a long-acting agent that has been linked with a potentially life-threatening post injection syndrome. Use with children and adolescents is not

FDA approved and is NOT recommended. For more information, visit http://www.fda.gov/Safety/MedWatch/SafetyInformation/SafetyAlertsforHumanMedicalProducts/ucm357601.htm.

Above website link was updated at the time of publication.

Level 4

Using a single antipsychotic, adjunctive treatment with a mood stabilizer or an antidepressant may be considered to target comorbid mood symptoms, aggression, or negative symptoms.

Continue psychosocial interventions.

Level 5

Clozapine trial for treatment refractory schizophrenia.

Notes:

1. *Treatment refractory defined as failing at least two therapeutic trials of an antipsychotic agent.*
2. *Clozapine can only be prescribed through the Clozapine Risk Evaluation and Mitigation Strategy (REMS) program, www.clozapinerems.com.*

Level 6

For patients that have failed to respond to multiple different antipsychotics, diagnostic reevaluation and consultation are indicated. Electroconvulsive therapy (ECT) may be considered for adolescents with schizophrenia who do not adequately respond to or cannot tolerate antipsychotic medications, or those suffering from catatonia.

For a full list of references, visit ***http://medicaidmentalhealth.org/***.

Table 13.

Dosing Recommendations for Treatment of Schizophrenia in Children and Adolescents			
Medication	**Starting Dose**	**Maximum Dose**	**FDA Approved Age Range**
Haloperidol*	3–12 years: 0.05-0.15 mg/kg/day in divided doses two to three times daily >12 years: 0.5-2 mg/day in divided doses two to three times daily	3–12 years: 0.15 mg/kg/day in divided doses >12 years: 20 mg/day**	Ages 3 and older
Aripiprazole*	2–5 mg/day	10 mg/day	13–17 years old
Lurasidone	40 mg/day	80 mg/day	13–17 years old
Olanzapine*	2.5–5 mg/day	10 mg/day	13–17 years old
Paliperidone*	3 mg/day	12 mg/day	12–17 years old
Quetiapine	25 mg twice per day	800 mg/day	13–17 years old
Risperidone*	0.5 mg/day	6 mg/day	13–17 years old

** Medications indicated with an asterisk (*) are available in long-acting injectable (LAI) formulations. Paliperidone LAI requires trial of oral risperidone prior to initiation of LAI. Most aripiprazole LAI formulations require trial of oral aripiprazole prior to initiation of LAI.*

**Please note: the printed version of these guidelines list the haloperidol maximum dose for >12 years at 100 mg/day. The FDA maximum for haloperidol is 100 mg/day, but doses over 20 mg/day are not generally recommended in children and adolescents unless benefits clearly outweigh risks.