DPBH POLICY

POLICY ID	TITLE	EFFECTIVE DATE
01-139	Metabolic Syndrome Evaluation and Management	05/27/2026

1. Policy Overview

The policy provides guidelines and evidence-based recommendations to DPBH medical staff for the evaluation and management of metabolic syndrome in patients treated with second-generation antipsychotics. Because individual patient circumstances vary, the information in this policy is not intended to be, and should not be considered, a substitute for professional medical judgment when formulating a patient-centered treatment plan.

2. Purpose

to improve awareness of the DPBH medical staff of the metabolic side effects associated with the prescription of second generation antipsychotic medications and provide guidelines for evaluation and management of the metabolic syndrome consistent with evidence-based practice.

3. Scope

Medical Staff Department.

4. Policy Details / Procedures

1. The DPBH medical staff is expected to
    a. Maintain awareness of the metabolic side effects associated with the prescription of second generation antipsychotic medications;
    b. Detect metabolic disturbances such as metabolic syndrome, insulin resistance, dyslipidemia as early as possible among mentally ill patients treated with second generation antipsychotic medications;
    c. Comply with the consensus guidelines jointly developed by the American Psychiatric Association, the American Diabetes Association, the American Association of Clinical Endocrinologists, and the North American Association for the Study of Obesity.
2. Assessment: Measures should be obtained before, or as soon as clinically feasible after, the initiation of any antipsychotic medication. These include:
    a. Personal and family history of obesity, diabetes, dyslipidemia, hypertension, cardiovascular disease (e.g. heart attack, stroke). Smoking status should be ascertained as tobacco use increases risk of cardiovascular disease.
    b. Weight and height; so that BMI can be calculated;
    c. Waist circumference;
    d. Blood pressure;
    e. Fasting blood sugar (FBS); or Hemoglobin A1c (HgbA1c)
    f. Fasting lipid profile.
3. Metabolic Syndrome Parameters include:
    a. Elevated Body Mass Index (BMI)

(i) < 20 Underweight
(ii) 20 to 24.9 Normal weight
(iii) 25 to 29.9 Overweight
(iv) 30 to 34.9 Grade I obesity
(v) 35 to 39.9 Grade II obesity
(vi) 40 and above Grade III obesity

b. Increased waist circumference (central adiposity) be measured at the level of the umbilicus

(i) Women: > 35 inches (88 cm)
(ii) Men: > 40 inches (102 cm)

c. Hypertension measured twice at rest with measurements separated by at least 30 minutes

Blood Pressure >= 130/80 mm Hg

d. Dyslipidemia

(i) Total cholesterol	>	200 mg/dl
(ii) LDL cholesterol	>	130 mg/dl
(iii) Triglycerides	>	150 mg/dl
(iv) HDL cholesterol in women	<	50 mg/dl
(v) HDL cholesterol in men	<	40 mg/dl

e. Glucose intolerance

(i) Impaired fasting glucose: FBS 100 to 125 mg/dl
(ii) Pre-diabetes: FBS >=110 mg/dl or HgbA1c 6.0-6.4%
(iii) DM: FBS > 125 mg/dl or HgbA1C > 6.5%

4. DPBH medical staff must be aware of the following recommendations:

a. Educate individuals, family members and caregivers to the health risks associated with excess weight and emphasize the risks of developing diabetes and dyslipidemia when therapy with second generation antipsychotics is initiated.

b. Encourage individuals to monitor and chart their weight.

c. Provided nutrition and physical activity counseling for all individuals who are overweight or obese (BMI > 25) or who present with waist circumference > 35 inches for a woman and > 40 inches for a man.

d. Refer to a healthcare professional or program with expertise in weight management may also be appropriate.

e. Educate served individuals, family members and caregivers about the signs and symptoms of diabetes, especially those with acute decompensation of diabetes such as diabetic keto-acidosis (DKA).

f. Ensure that patients with diagnosis of diabetes (FBS >125 mg/dl or HgbA1c >=6.5%) are followed by a health care professional who is knowledgeable about diabetes. Close communication is necessary between primary care

and mental health care providers especially when changes in medication may affect glucose control. These individuals should carry diabetes identification.

g. Maintain awareness of the National Cholesterol Education Panel/ Adult Treatment Panel III guidelines-NCEP/ATP III report for screening and treatment of dyslipidemia and refer their patients to a primary care provider or an internist for follow-up. ATP III recommends a two-step approach to cholesterol management; priority goes to attaining the goal for LDL-cholesterol; thereafter emphasis shifts to management of the metabolic syndrome and other lipid risk factors.

h. Identify individuals who fulfill the criteria for the metabolic syndrome and ensure that a primary care provider closely monitors them.

5. Initiation of treatment:

a. Potential for weight gain and increase coronary heart disease risk factors should be considered in the choice of any antipsychotic medication.

b. For persons with, or at higher risk for diabetes, dyslipidemia and metabolic syndrome and in those treated with medications that may increase these risks (e.g., Valproic acid, lithium, Depo-Provera) it may be preferable to initiate treatment with a second generation antipsychotic that appears to have lower propensity for weight gain, glucose intolerance and lipid disturbances.

6. On-going treatment:

a. Monitoring:

(i) Personal and family history should be reassessed annually. Smoking status reassessed and treatment addressed.

(ii) Mental health providers should monitor weight and chart BMI for every patient at 4, 8,12 weeks after initiating second generation antipsychotic therapy, and once the weight stabilizes at least quarterly thereafter at the time of routine visits or more often if the patient is overweight.

(iii) Waist measurements should be taken annually.

(iv) Fasting glucose (FSB) should be followed at 12 weeks, annually or more frequently for those who have a higher baseline risk for diabetes. During each visit, a patient treated with a second generation antipsychotic should be asked about polydipsia and polyuria. Hemoglobin A1c should be considered for those with unstable FBS findings.

(v) Blood pressure should be measured at 12 weeks, annually or more frequently for those who have a higher risk for hypertension.

(vi) Fasting lipids testing should be performed at 12 weeks and at 5-year intervals or more frequently if clinically indicated. As a group, individuals with schizophrenia should be considered at high risk for coronary heart disease; as a result, in these patients, lipids screening should be carried

out at least once every year when LDL level is normal, and once every 6 months when LDL level is greater than 130 mg/dl.

b. The therapeutic goals for individuals with metabolic syndrome:

(i) Treat underlying causes by reducing weight and increasing physical activity.

(ii) Treat cardiovascular risk factors if they persist despite lifestyle modification.

c. Recommendations for intervention:

(i) A gain of one BMI unit in a normal-weight or overweight patient should lead to an intervention. Multicomponent interventions that include behavioral changes with individualized goal setting, environmental modification, and attention to adherence over time are most likely to be effective. Interventions may include extensive nutritional counseling, initiation of a personal exercise program, and use of an adjunctive treatment to reduce weight.

(ii) Referral to a healthcare professional or program with expertise in weight management may also be appropriate.

(iii) Mental health care givers should also initiate an intervention if the individual's waist circumference is 35 inches or greater for a woman and 40 inches or greater for a man.

(iv) All individuals who develop diabetes (FBS >126mg/dl) when on second generation antipsychotic medication should be referred to an ADA-recognized diabetes self-management education program if available. Referral to a clinician with experience in diabetes treatment is recommended. These patients should carry diabetes identification.

(v) Consultation with an internist or other primary care physician is required for patients presenting with symptomatic or severe hyperglycemia (random glucose values > 300mg/dl) or symptomatic hypoglycemia. The presence of DKA symptoms requires immediate evaluation and treatment.

(vi) Mental health providers should ensure that NCEP III guidelines are followed for all individuals who develop dyslipidemia while on antipsychotic medication. A referral to a primary care physician is recommended. If second generation antipsychotic treatment is continued, then treatment with statin and/or fibrate medication should be considered.

d. Change of second generation antipsychotic medications:

(i) If an individual gains > 5% of his/her initial weight at any time during therapy, one should consider switching the second generation antipsychotic. In such situation the panel recommends cross-titration to be the safest approach. The profile of the subsequent drug will determine the initial dose and escalating strategy. Particular consideration should be given before discontinuing Clozapine because of the potential for serious psychiatric sequelae.

(ii) In case of worsening glycemia while on antipsychotic medication, experts recommend considering switching for an second generation antipsychotic that has not been associated with significant weight gain or diabetes.

(iii) In case a patient develops hyperlipidemia (LDL > 130 mg/dl) or dyslipidemia of the metabolic syndrome while on antipsychotic medication, experts recommend considering switching for a second generation antipsychotic that has not been associated with significant dyslipidemia.

7. Other considerations:

a. Benefits of modest weight loss:

(i) Increased life expectancy
-2.2lb weight loss increased survival by 3 to 4 months

-2.2 weight loss could restore 35% of reduction in life expectancy

(ii) Loss of 15-30lb (10%) in obese subjects reduced glucose by 29 g/dl and HbA1c by 1.1%

(iii) Loss of 10lb (5%) reduced diastolic blood pressure by 5 %

(iv) Loss of 6 lb (3%) in obese men decreased:
-Total cholesterol by 17 %

-LDL-C by 9%

-Triglycerides by 35 %

b. Risk Factors for Metabolic Syndrome:

(i) High fat/high sugar diet.

(ii) Sedentary lifestyle.

(iii) Female gender. Risk increases especially post menopause.

(iv) Ethnicity. Latino and African-American groups show elevated risk that may be related to both genetic and cultural subfactors.

(v) Chronic mental illness. Elevated risk related to poor diet, sedentary lifestyle, and exposure to certain medications.

(vi) Increasing age. The prevalence of metabolic syndrome increases in both sexes after age 65 years.

c. Considerations for medication interventions:

(i) Medication interventions may include dose adjustment, change in medication, or adjunctive medication.

(ii) Medication interventions should be considered in following situations:

1. Ongoing weight gain after three months of lifestyle intervention;
2. Weight gain of more than 5% over the baseline weight within one month of starting medication;
3. The patient is unwilling or unable to execute a lifestyle intervention;

4. The patient prefers to start and adjunctive medication at the same time as starting an antipsychotic.

(iii) For most patients prescribed antipsychotics and experiencing metabolic syndrome, metformin is often the first choice as an adjunctive medication. Metformin is first-line treatment for glycemic control in prediabetes and diabetes.

In a double-blind RCT 24-week trial of 25 olanzapine-treated patients who were prescribed Metformin 2000 mg/day v. placebo experienced lower weight gain (5.5 lb. v. 12.8 lb.) and lower BMI increase (0.85 kg/m2 v. 2.02 kg/m2).

A meta-analysis, including 20 studies with 1070 patients, revealed that metformin significantly surpassed placebo in attenuating weight gain in patients receiving antipsychotics. The mean weight change with metformin was −3.32 kg with decrease in body mass index −1.24 kg/m2. Metformin could maintain the effects from 12 to 24 weeks.

(iv) For patients in whom metformin is clinically undesirable ineffective (e.g., failure to lose >5 percent of baseline weight after a three-month trial in individuals with obesity taking an antipsychotic, or the failure to prevent >5 percent weight gain within three months of starting metformin in conjunction with the initiation of a new antipsychotic), a glucagon-like peptide-1 (GLP1) agent should be considered as an alternative or an adjunct agent.

In a randomized trial investigating the effect liraglutide on individuals with schizophrenia, obesity and prediabetes, participants who were taking either olanzapine or clozapine and assigned to treatment with liraglutide vs. placebo for 16 weeks lost more weight (-4.7 v. 0.5 kg, respectively), and had a greater reduction in BMI (-1.6 v. 0.08 kg/m2, respectively).

In a randomized trial, patients with schizophrenia, prediabetes, and obesity who were assigned to once-weekly treatment with subcutaneous semaglutide versus placebo for 30 weeks experienced reductions in hemoglobin A1c (mean difference hemoglobin A1c -0.46) and body weight (mean difference body weight -9.21 kg). A hemoglobin A1c of less than 5.7 percent was achieved in a greater percentage of individuals treated with semaglutide as compared with placebo (81% v. 19%).

d. Comparison of metabolic effects of atypical antipsychotics

Antipsychotic	Weight gain	Hyperlipidemia	Glucose abnormalities
FGA			

Chlorpromazine	++	+	++
Fluphenazine	++	+	+
Haloperidol	++	+	+
Loxapine	+	+	+
SGA			
Aripiprazole	+	+	+
Asenapine	++	++	++
Brexpiprazole	+	++	+
Cariprazine	++	+	+
Clozapine	+++	+++	+++
Iloperidone	++	+	++
Lurasidone	+	++	++
Olanzapine	+++	+++	+++
Paliperidone	++	++	+
Quetiapine	++	+++	++
Risperidone	++	+	++
Ziprasidone	+	+	+

Note. + = seldom; ++ = sometimes; +++ = often.

Source. Credible Meds 2019; Hirsch et al. 2017; La Torre et al. 2013; Lexicomp 2019; Micromedex 2019; Pisani et al. 2002; Procyshyn et al. 2019; van Dijk et al. 2018.

5. Definitions (Optional)

FGA – first generation antipsychotics. A class of medications also known as typical antipsychotics. It is characterized by exhibiting its antipsychotic action through selectively inhibiting D2 receptor.

SGA – second generation antipsychotics. A class of medications also known as atypical or novel antipsychotics. It is characterized by exhibiting its antipsychotic action through various mechanisms of action in addition to or instead of inhibiting D2 receptor.

6. Related Documents or Policies (Optional)

N/A

7. References (Optional)

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Version History

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