patients with a serious mental illness and metabolic syndrome

life saving information and strategies for the behavioral health professional
part I: overview of chronic disease
defining chronic illness

- (often) preventable
- non-communicable
- long lasting
- not “curable”
- lifelong treatment
- fluctuations in symptoms
- disability/death
common chronic conditions

- asthma
- arthritis
- heart disease
- diabetes
- stroke
- COPD
- hypertension
- obesity
- cancer
- high cholesterol
- substance abuse
percent of deaths worldwide are due to chronic disease, according to the World Health Organization
this is expected to increase by 17 percent between 2005 and 2015...
1 in 2 adults in the U.S. has a chronic condition, according to the Centers for Disease Control
this accounts for 75 percent of health care costs...
25\% \text{ percentage of adults in Arizona are obese, according to the CDC}

15\% \text{ percent of adults in Arizona smoke}

50\% \text{ percent report they do not get the recommended amount of physical activity}

18\% \text{ percent of Arizonans describe themselves in poor or fair health}
68% of patients with a serious mental illness use tobacco products.

40% of patients with a serious mental illness could be classified as obese.
individuals with a serious mental illness are disproportionately at risk for a chronic illness on average, these individuals die 25 years earlier than the general population, often from preventable or treatable medical conditions (Manderscheid, 2007)
part II: overview of metabolic syndrome
“...cardio-vascular disease (CVD) is the primary clinical outcome of metabolic syndrome. Additionally, risk for type 2 diabetes is higher, and diabetes is a major risk factor for CVD...”

6 components

- Abdominal obesity
- Atherogenic dyslipidemia
- Raised blood pressure
- Insulin resistance + glucose intolerance
- Proinflammatory state
- Prothrombotic state
<table>
<thead>
<tr>
<th></th>
<th>National Cholesterol Education Program</th>
<th>American Association of Clinical Endocrinologists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal Obesity</td>
<td>M &gt;40 in W &gt;35 in</td>
<td>BMI ≥25 kg/m</td>
</tr>
<tr>
<td>Triglycerides</td>
<td>≥150 mg/dl</td>
<td>≥150 mg/dl</td>
</tr>
<tr>
<td>HDL</td>
<td>M &lt;40 mg/dL W &lt;50 mg/dL</td>
<td>M &lt;40 mg/dL W &lt;50 mg/dL</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>≥130/≥85 mm Hg</td>
<td>≥130/≥85 mm Hg</td>
</tr>
<tr>
<td>Fasting Glucose</td>
<td>&gt; 110 mg/dL</td>
<td>110 – 126 mg/dL</td>
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<tr>
<td></td>
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<td>Plus additional risk factors</td>
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part III: metabolic syndrome among persons with serious mental illness
Approximately one in four patients with schizophrenia meet the criteria for metabolic syndrome

(McEvoy et al., 2005)
female patients with schizophrenia are at the greatest risk...

female patients with schizophrenia are at 140% larger risk of developing metabolic syndrome than is the general population; men are at an 85% greater risk (McEvoy et al., 2005)
patients with a serious mental illness are more likely to have **early onset** of MS, when compared to the general population, (often under *30 years of age*).

(McEvoy et al., 2005)
metabolic syndrome often goes undetected in persons with a serious mental illness

In one study of 71 previously unscreened inpatient and outpatient clients with a serious mental illness, 58% were found to meet the criteria for metabolic syndrome (Holt et al., 2010)
serious mental illness
Metabolic Syndrome
risk factors

{ sedentary lifestyle, antipsychotic medications, poor diet, smoking }
part IV: evidence-based strategies for treating metabolic syndrome
“...clinical management should focus first on **lifestyle changes**—particularly **weight reduction** and **increased exercise**. Even participants who emphasized the role of insulin resistance in the pathogenesis of the metabolic syndrome acknowledged that therapeutic lifestyle changes deserve **priority**. Some participants questioned whether such changes could successfully be implemented in clinical practice. Still, the potential for benefit certainly exists; **implementation is the challenge.**”

<table>
<thead>
<tr>
<th>Therapeutic Strategies</th>
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<tbody>
<tr>
<td><strong>Abdominal Obesity</strong></td>
<td>Weight reduction with increased exercise</td>
</tr>
<tr>
<td><strong>Triglycerides/HDL</strong></td>
<td>Statin medications – shown to reduce risk of CVD events in patients with MS</td>
</tr>
<tr>
<td><strong>Blood Pressure</strong></td>
<td>Lifestyle changes (diet, exercise) first line of defense. No class of antihypertensive drugs found to be efficacious in patients with MS</td>
</tr>
</tbody>
</table>
| **Insulin Resistance**  | 2 drugs currently available that reduce insulin resistance:  
  • Metformin  
  • Insulin sensitizers (thiazolidinediones (TZDs)) |

part V: managing metabolic syndrome for persons with serious mental illness
behavioral interventions

medication compliance

self-management

mutual aid

diet

monitoring

education

metabolically-neutral medications

smoking cessation

exercise

peer support
motivational interviewing

- Avg. effect size: .77
- 20-30% improvement in health behaviors
- Increased retention
- Increased adherence
- .78 effect size for diet and exercise at 12 month follow-up

**first-generation antipsychotic medications**

- **Pros:** address positive symptoms
- **Cons:** extrapyramidal symptoms, lethargy

**second-generation antipsychotic medications**

- **Pros:** address negative symptoms, fewer extrapyramidal symptoms
- **Cons:** weight gain
at 10 weeks, patients on antipsychotic medications typically gain between 1 and 11 pounds, compared to placebo
medications with the greatest risk

- olanzapine (Zyprexa)
- clozapine (Clozaril)

metabolically neutral medications

- ziprasidone (Geodon)
- aripiprazole (Abilify)
<table>
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<tr>
<th>Drug</th>
<th>Standard Dosing</th>
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<tbody>
<tr>
<td>olanzapine (Zyprexa)</td>
<td>5-20mg/day</td>
</tr>
<tr>
<td>olozapine (Clozaril)</td>
<td>12.5-900mg</td>
</tr>
<tr>
<td></td>
<td>(mean=300mg)</td>
</tr>
<tr>
<td>ziprasidone (Geodon)</td>
<td>40-160mg/day</td>
</tr>
<tr>
<td>aripiprazole (Abilify)</td>
<td>15-30mg/day</td>
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dosing concerns

Trend toward prescribing doses higher than the manufacturer recommendations

**intent:**
* to see a remission in symptoms not yet realized
* patient preference for that dosage (e.g. relaxation, improved sleep)
* reduce self-harm behaviors or harm to others

**unintended consequences:**
increase in dose = increase in side-effects (e.g. weight gain)
patient monitoring

- blood pressure
- waist circumference
- BMI
- fasting glucose
- fasting triglycerides
barriers

{ role confusion: who’s job is this anyway??
  lack of equipment/materials for testing
  uncertainty in the interpretation of results
  low reporting rates by patients}
next steps

- implement routine screening and monitoring
- monitor psychotropic dosages
- encourage the use of “metabolically neutral” antipsychotics
- incorporate diet, exercise, and smoking cessation goals into treatment plans (think Motivational Interviewing!)
- educate patients on the risk factors for metabolic syndrome