

Measurement of Health Status for People with Serious Mental Illness

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Overview- THE PROBLEM

- Increased Morbidity and Mortality Rates Associated with Serious Mental Illness (SMI)
- Increased Morbidity and Mortality Rates Largely Due to Preventable Medical Conditions
 - Metabolic Disorders, Cardiovascular Disease, Diabetes Mellitus
 - High Prevalence of Modifiable Risk Factors
 - Epidemics within Epidemics
- Some Psychiatric Medications Contribute to Risk
- Established Monitoring and Treatment Guidelines to Lower Risk Are Underutilized in SMI Populations

Overview - PROPOSED SOLUTIONS

- Prioritize the Public Health Problem
- Track Morbidity and Mortality in Public Mental Health Populations
- Implement Established Standards of Care for Prevention, Screening and Treatment
- Improve Access to and Integration of Physical Health and Mental Health Care

Why Should we be Concerned About Morbidity and Mortality?

- Recent data from several states have found that people with serious mental illness served by our public mental health systems die, on average, at least 25 years earlier than the general population.

Recent Multi-State Study Mortality Data: Years of Potential Life Lost

Year	AZ	MO	OK	RI	TX	UT	VA (IP only)
1997		26.3	25.1		28.5		
1998		27.3	25.1		28.8	29.3	15.5
1999	32.2	26.8	26.3		29.3	26.9	14.0
2000	31.8	27.9		24.9			13.5

- Compared to the general population, persons with major mental illness typically lose more than 25 years of normal life span

Lutterman, T; Ganju, V; Schacht, L; Monihan, K; et.al. Sixteen State Study on Mental Health Performance Measures. DHHS Publication No. (SMA) 03-3835. Rockville, MD: Center for Mental Health Services, Substance Abuse and Mental Health Services Administration, 2003.

Total YPLL by Primary Cause for Public Mental Health Patients with Mental Illness

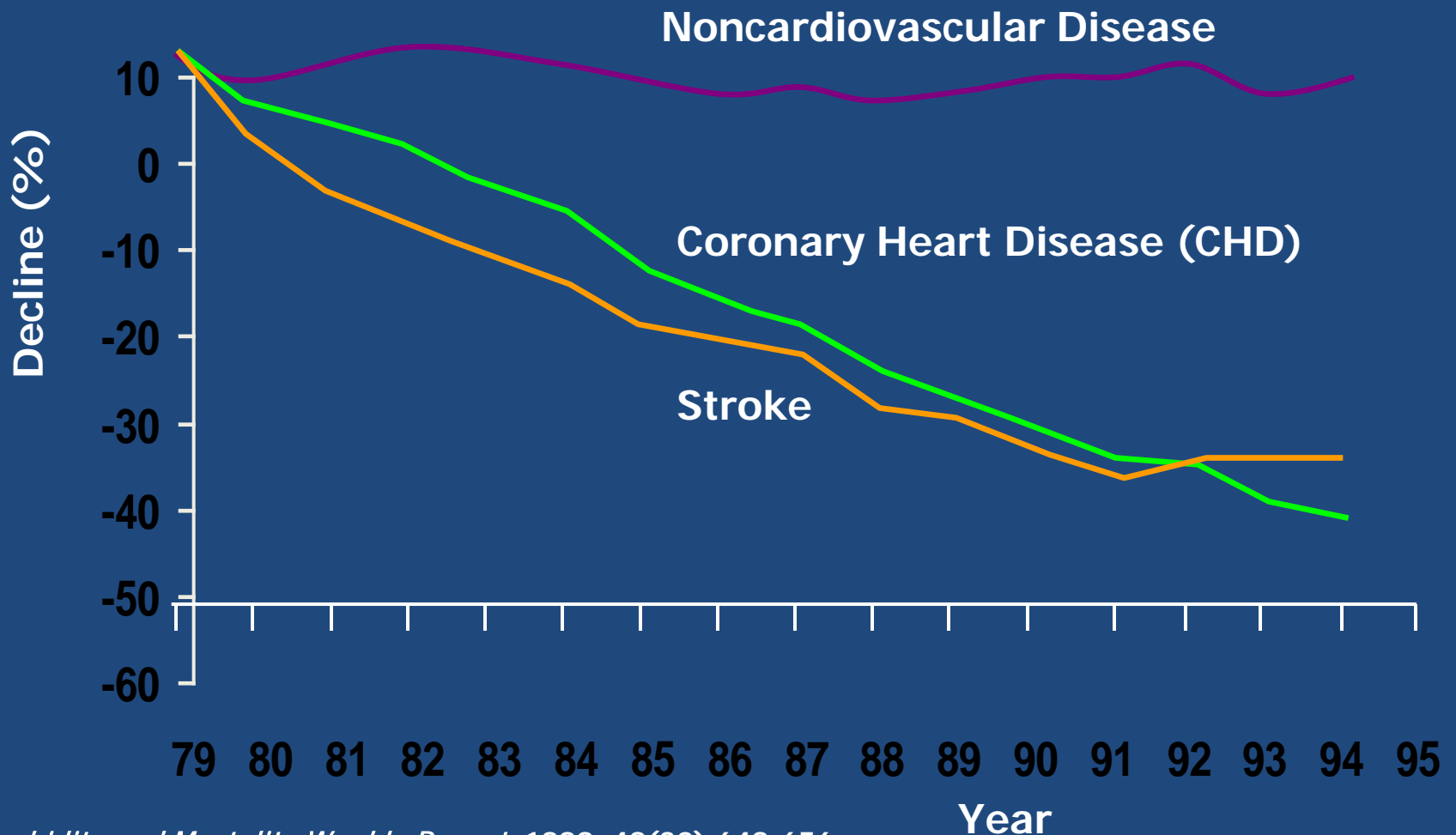
Combined data for schizophrenia and schizoaffective disorder from 5 US states (MO, OK, RI, TX and UT) from 1997 to 2001

Primary cause of death	Total YPLL (Person-years lost)	Deaths (n)
Heart disease	14,871.2	612
Cancer	5,389.9	241
Suicide	4,726.1	115
Accidents, including vehicles	3,467.0	98
Chronic respiratory	2,700.9	113
Diabetes	1,419.6	61
Pneumonia/influenza	1,254.2	67
Cerebrovascular disease	1,195.9	58
All causes of death*	47,812.2	1,829

*Note: Includes deaths from causes not listed; YPLL = years of potential life lost

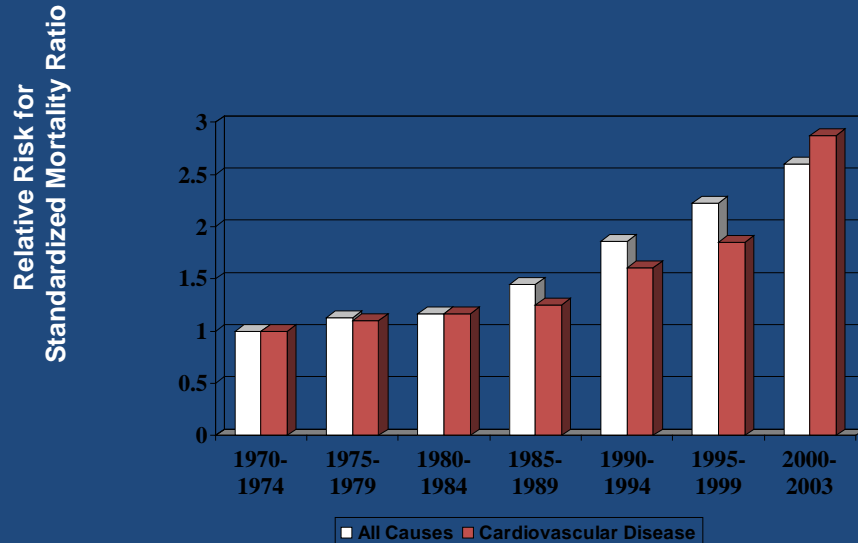
Unpublished results courtesy of CW Colton

Change in US General Population Age-Adjusted Mortality (1979-1995)

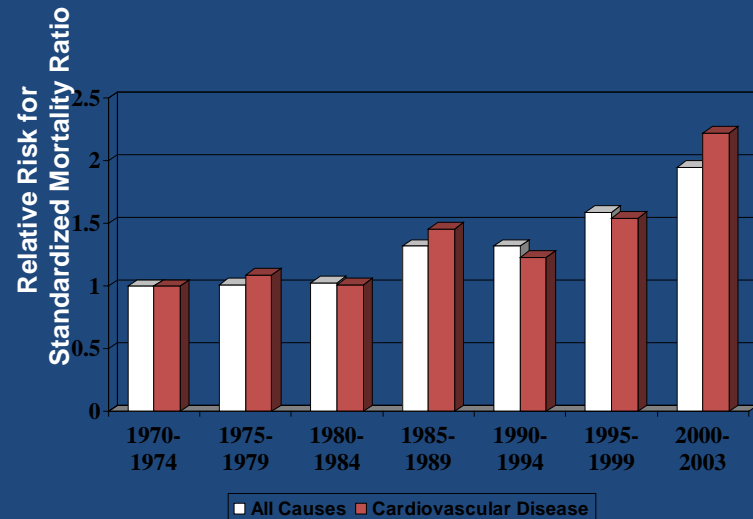


Mortality Risk From All Causes and From CVD Patients With Schizophrenia Between 1970-2003

Men



Women



Test for time trends of excess relative risks for SMRs were statistically significant ($P < 0.001$) for all cause mortality and mortality due to cardiovascular disease.

Ösby U et al. BMJ. 2000;321:483-484, and unpublished data courtesy of Urban Osby.

Ohio Study-Discharged Inpatients Standardized Mortality Ratios

<u>Cause</u>	<u>Overall</u>	
	<u>N</u>	<u>SMR</u>
All causes of death	608	3.2†
Intentional self-harm (suicide)	108	12.6†
Symptoms, signs, & abnormal clinical & laboratory findings, NEC	32	9.7†
Pneumonia & Influenza	16	6.6†
Chronic lower respiratory diseases	31	5.5†
Accidents (unintentional injuries)	83	3.8†
Diseases of heart	126	3.4†
Diabetes mellitus	18	3.4†
Assault (homicide)	10	1.7
Cerebrovascular diseases	10	1.5
Malignant neoplasms (cancers)	44	0.9

† P<0.001

What are the Causes of Morbidity and Mortality in People with Serious Mental Illness?

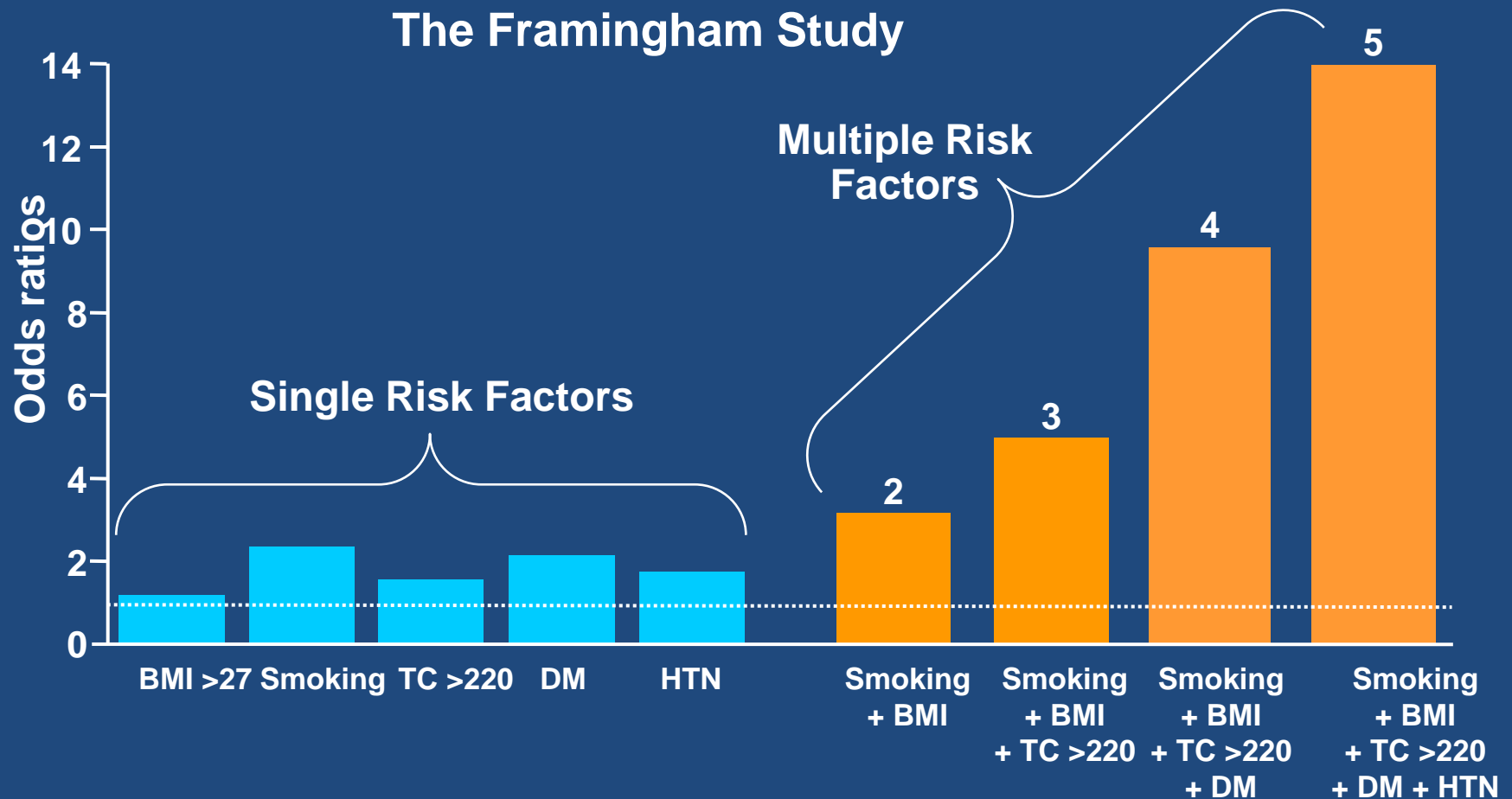
- *While suicide and injury account for about 30-40% of excess mortality, about 60% of premature deaths in persons with schizophrenia are due to “natural causes”*
 - Cardiovascular disease
 - Diabetes
 - Respiratory diseases
 - Infectious diseases

Schizophrenia: Natural Causes of Death

- Higher standardized mortality rates than the general population from:
 - Diabetes 2.7x
 - Cardiovascular disease 2.3x
 - Respiratory disease 3.2x
 - Infectious diseases 3.4x
- Cardiovascular disease associated with the largest number of deaths
 - 2.3 X the largest cause of death in the general population



Cardiovascular risk factors – overview



BMI = body mass index; TC = total cholesterol; DM = diabetes mellitus; HTN = hypertension.

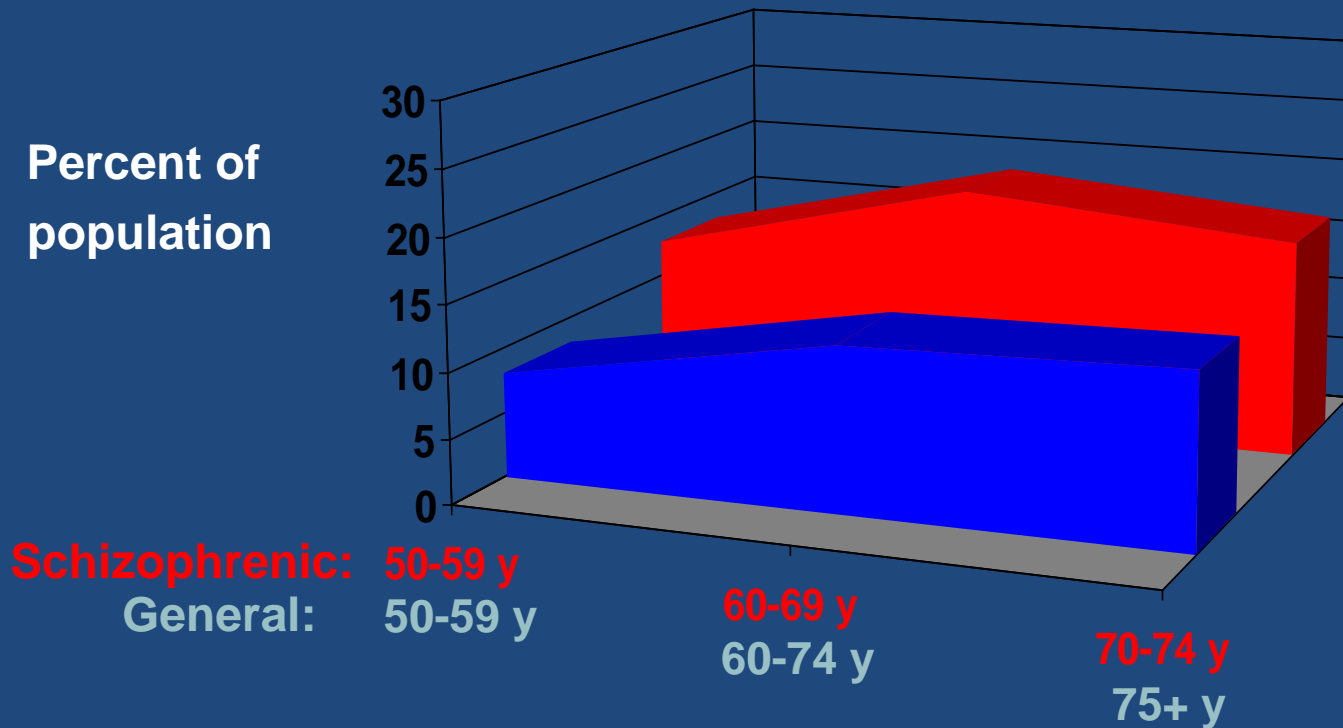
Wilson PWF *et al. Circulation.* 1998;97:1837–1847.

Mental Disorders and Smoking

- Higher prevalence (56-88% for patients with schizophrenia) of cigarette smoking (overall U.S. prevalence 25%)
- More toxic exposure for patients who smoke (more cigarettes, larger portion consumed)
- Smoking is associated with increased insulin resistance
- Similar prevalence in bipolar disorder

Prevalence of Diagnosed Diabetes in General Population Versus Schizophrenic Population

- Diagnosed Diabetes, General Population
- Diagnosed Diabetes, Schizophrenic Patients



Harris et al. *Diabetes Care*. 1998; 21:518.

Mukherjee et al. *Compr Psychiatry*. 1996; 37(1):68-73.



How Does This Relate to What is Happening in the General Population?

- *There is an “epidemic” of obesity and diabetes, increasing risk of multiple medical conditions and cardiovascular disease.*
 - Obesity
 - Diabetes
 - Metabolic Syndrome
 - Cardiovascular Disease

Identification of the Metabolic Syndrome

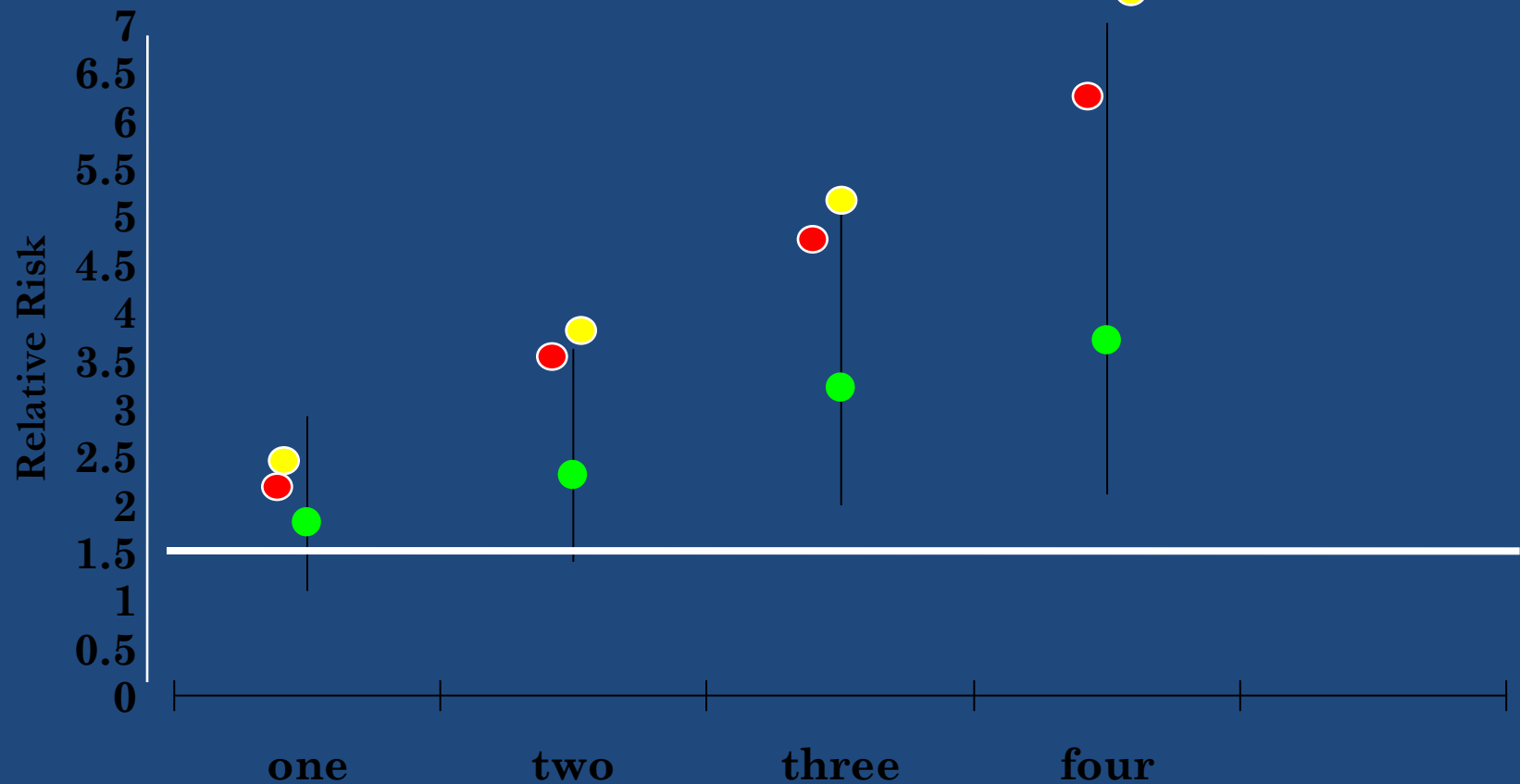
≥3 Risk Factors Required for Diagnosis

Risk Factor	Defining Level
Abdominal obesity Men Women	Waist circumference >40 in (>102 cm) >35 in (>88 cm)
Triglycerides	≥150 mg/dL (1.69mmol/L)
HDL cholesterol Men Women	<40 mg/dL (1.03mmol/L) <50 mg/dL (1.29mmol/L)
Blood pressure	≥130/85 mm Hg
Fasting blood glucose	≥110 mg/dL (6.1mmol/L)

HDL = high-density lipoprotein.

NCEP III. *Circulation*. 2002;106:3143-3421.

CHD Risk Increases with Increasing Number of Metabolic Syndrome Risk Factors



- Sattar et al, *Circulation*, 2003;108:414-419
- Whyte et al, *American Diabetes Association*, 2001
- Adapted from Ridker, *Circulation* 2003;107:393-397

Comparison of Metabolic Syndrome and Individual Criterion Prevalence in Fasting CATIE Subjects and Matched NHANES III Subjects

	Males			Females		
	CATIE N=509	NHANES N=509	<i>p</i>	CATIE N=180	NHANES N=180	<i>p</i>
Metabolic Syndrome Prevalence	36.0%	19.7%	.0001	51.6%	25.1%	.0001
Waist Circumference Criterion	35.5%	24.8%	.0001	76.3%	57.0%	.0001
Triglyceride Criterion	50.7%	32.1%	.0001	42.3%	19.6%	.0001
HDL Criterion	48.9%	31.9%	.0001	63.3%	36.3%	.0001
BP Criterion	47.2%	31.1%	.0001	46.9%	26.8%	.0001
Glucose Criterion	14.1%	14.2%	.9635	21.7%	11.2%	.0075

Meyer et al., Presented at APA annual meeting, May 21-26, 2005.

McEvoy JP et al. *Schizophr Res.* 2005;(August 29).

Reasons for Increased CVD Mortality in SMI

- ↑ Modifiable health risk factors
 - ↑ Lipid abnormalities
 - ↑ Hypertension
 - ↑ Metabolic syndrome
 - ↑ Physical inactivity
 - ↑ Smoking
- ↓ Access to and/or utilization of medical care
- ↓ Adherence with therapies
- ↓ Economic capabilities

Obesity Recommendations

- **Adopt ADA- APA Second Generation Antipsychotic (SGA) monitoring as a standard of care practice illness**
- **Implement a national obesity surveillance/monitoring systems for persons with serious mental illnesses**
 - Weight, BMI, and Waist Circumference
 - Glucose Control and Lipids
 - Impact of Psychotropic Medications

ADA/APA/AACE/NAASO Consensus on Antipsychotic Drugs and Obesity and Diabetes: Monitoring Protocol*

	Start	4 wks	8 wks	12 wk	qtrly	12 mos.	5 yrs.
Personal/family Hx	X					X	
Weight (BMI)	X	X	X	X	X		
Waist circumference	X					X	
Blood pressure	X			X		X	
Fasting glucose	X			X		X	
Fasting lipid profile	X			X		X ←	X

*More frequent assessments may be warranted based on clinical status

METABOLIC SCREENING AND MONITORING FORM

NAME: _____

There is a growing awareness that some psychiatric illnesses and atypical antipsychotics can increase metabolic risks. Frequency of monitoring for modifiable risk factors depends on level of risk present at baseline screening.

OBESITY SCREENING ^{1,2}

Consider BMI (weight/height in kg/m²) at each visit.
Normal (18.5-24.9); Overweight (25-29.9); Obese (≥30)

BASELINE		Dates/Values From Subsequent Visits					
Height _____	Date	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___
	BMI	_____	_____	_____	_____	_____	_____
	Wt	_____	_____	_____	_____	_____	_____

LIPID SCREENING — CHOLESTEROL, TRIGLYCERIDES (TG)³

						BASELINE		Dates/Values From Subsequent Visits							
	Optimal/ Desirable (mg/dL)	Near/Above Optimal (mg/dL)	Borderline High (mg/dL)	High/ Undesirable (mg/dL)	Very High (mg/dL)	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___
Total	<200		200–239	≥240											
LDL	<100	100–129	130–159	160–189	≥190										
HDL	≥60			<40		Enter values as indicated in the Metabolic Syndrome (MS) Screening section of the form below.									
TG	<150		150–199	200–499	≥500*										

* ≥500 for TG requires immediate pharmacotherapeutic intervention without waiting for therapeutic lifestyle changes.

METABOLIC SYNDROME (MS) SCREENING³

	BASELINE		Dates/Values From Subsequent Visits					
Risk Criteria:	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___
Abdominal Obesity measured in waist circumference (men >40 inches, women >35 inches)								
Triglycerides (mg/dL) (≥150; or drug treatment)								
HDL Cholesterol (mg/dL) (men <40, women <50; or drug treatment)								
Blood Pressure (mmHg) (≥130/≥85; or drug treatment)								
Fasting Plasma Glucose (≥100 mg/dL; or drug treatment) ⁴								
Total Criteria for each visit (≥3 = MS Diagnosis*)								

* Risk for cardiovascular disease increases with each criterion present, motivating intervention for any single criterion.⁵

TYPE 2 DIABETES MELLITUS (T2DM) SCREENING¹

Risk Factors:

<input type="checkbox"/> Age (≥45)	<input type="checkbox"/> Overweight (BMI ≥25 kg/m ²)†	<input type="checkbox"/> Family history
<input type="checkbox"/> Habitual physical inactivity	<input type="checkbox"/> History of GDM or delivery of baby >9 lbs.	<input type="checkbox"/> Previously identified IFG or IGT
<input type="checkbox"/> Race/ethnicity*	<input type="checkbox"/> Hypertension (>140/90 mmHg in adults)	<input type="checkbox"/> HDL ≤35 mg/dL and/or triglyceride ≥250 mg/dL
<input type="checkbox"/> Polycystic ovary syndrome	<input type="checkbox"/> History of vascular disease	

	BASELINE		Dates/Values From Subsequent Visits					
Diagnostic Criteria for Prediabetes and T2DM ‡ ¹	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___
Fasting Plasma Glucose (FPG)§ Normal: <100 mg/dL; Prediabetes: 100-125 mg/dL; T2DM: ≥126 mg/dL								
Two-hour Postload Glucose (OGTT)§ Normal: <140 mg/dL; Prediabetes: 140-199 mg/dL; T2DM: ≥200 mg/dL								
Symptoms of T2DM [Yes + casual (random) PG ≥200 mg/dL]								
Random Plasma Glucose (≥100 mg/dL requires formal screening with FPG or OGTT) ⁶								

* Includes African Americans, Hispanic Americans, Native Americans, Asian Americans, Pacific Islanders

† May not be correct for all ethnic groups

‡ Screen at 3-year intervals beginning at age 45, particularly for those with BMI of ≥25; test at <45 or more frequently when overweight and have 1+ other risk factors.¹

§ FPG and OGTT are the **only** measures currently approved by the ADA for diabetes screening/diagnosis; ADA recommends preferential use of FPG due to ease of use/acceptance.¹

|| Diagnosis must be confirmed on a subsequent day with FPG, 2-h PG, or casual (random) PG if symptoms (e.g., polyuria, polydipsia) are present, unless unequivocal hyperglycemia with acute metabolic decompensation is present.¹

ATP-III recommends therapeutic lifestyle changes (TLC) for those with prediabetes,⁷ hypertension,⁸ 0-1 CHD risk factor and LDL ≥160 mg/dL,⁹ 2+ CHD risk factors and LDL ≥130,³ MS³ and perhaps syndromal MS.⁵ Follow-up monitoring of 6- to 12-week intervals to monitor TLC response³ is recommended and pharmacotherapy intervention if TLC fails after 3 months — unless lipid, blood pressure, or glucose values demand immediate drug treatment.³

ADA/APA Consensus Statement recommends considering antipsychotic medication switch for those who gain ≥5% of baseline body weight.⁹

Recommendations for States

- **State mental health authorities should collaborate with State health authorities to address physical health assessment, health monitoring, and improvement options for the population with serious mental illness.**
- **Bridge the collaboration gap between physical and mental health care**

Access and Quality of Care

- SMI may be a health risk factor because of:
 - Patient factors, e.g.: amotivation, fearfulness, homelessness, victimization/trauma, resources, advocacy, unemployment, incarceration, social instability, IV drug use, etc
 - Provider factors: Comfort level and attitude of healthcare providers, coordination between mental health and general health care, stigma,
 - System factors: Funding, fragmentation

Goals: Lower Risk for CVD

- Blood cholesterol
 - 10% ↓ = 30% ↓ in CHD (200-180)
- High blood pressure (> 140 SBP or 90 DBP)
 - 4-6 mm Hg ↓ = 16% ↓ in CHD; 42% ↓ in stroke
- Cigarette smoking cessation
 - 50%-70% ↓ in CHD
- Maintenance of ideal body weight (BMI = 25)
 - 35%-55% ↓ in CHD
- Maintenance of active lifestyle (20-min walk daily)
 - 35%-55% ↓ in CHD

Measurement of Health Status

- 16th Technical Report
- Released October 16. 2008
- Joint Project with NRI

Principles and Vision

- *Overall health is essential to mental health*
- *Recovery includes wellness*

Vision: *Integrated Health Care in the Mental Health System for Persons with Serious Mental Illness*

Treat the Problem like an Epidemic

- Work with the CDC to designate people with SMI as a Health Disparities Population
- Work with the CDC, in partnership with SAMHSA, to develop a national surveillance program to monitor the Health Status of people with SMI by enhancing current general surveys
- Establish a National Goal to reduce the death rate of people with SMI
- Establish person-level health indicators that are collected in aggregate by states for quality improvement and by NRI for population data

Principles for Selecting and Implementing Health Indicators

- The SAMHSA Fundamental Components of Recovery are foundational principals.
- The intent is to adopt one set of indicators for all parts of the system that serve individuals with SMI. A phased/incremental continuum of health indicators and process indicators will provide a roadmap for the future.
- The intent is to measure what is important at the person-level and aggregate that information for population-level data, quality improvement and planning.

Principles for Selecting and Implementing Health Indicators

- The implementation will require a person-centered healthcare home where ongoing, trusting relationships are developed to support the consumer.
- The implementation will require transparent, shared access to person-level data to make use of it for individual consumer decision making. The decision making is shared and in the best interest of the consumer as defined by the consumer.
- Use of person-level indicators will be individualized with a graduated process that is based on risk and the person's condition

	Inpatient Settings	Outpatient Settings	Measure
Health Indicators			
1. Body Mass Index (BMI)	Yes	Yes	Calculated value using weight and height
2. Blood Pressure	Yes	Yes	Systolic/diastolic reading
3. Fasting Blood Glucose or HbA1C	Yes	If on antipsychotic medications or BMI > 25	Lab value
4. Lipid Profile	Yes	If on antipsychotic medications or BMI > 25	Lab value
5. Smoking history	Yes	Yes	TBD

1. Substance abuse history	Yes	Yes	TBD
2. Personal history of Diabetes, Hypertension, Cardiovascular Disease	Yes	Yes	TBD
3. Family history of Diabetes, Hypertension, Cardiovascular Disease	Yes	Yes	TBD
4. Medication history (not just psychotropic)	Yes	Yes	TBD
5. Social supports	Yes	Yes	LOCUS/IV. Recovery Environment (Level of Stress, Level of Support) score

Process indicators

1. Screening and monitoring in MH settings	Yes	Yes	TBD
2. Access and utilization of primary care services (medical and dental)	Yes	Yes	TBD

Testing Activity	Level I	Level II	Level III
Test implementation and reporting of the indicators in hospitals and community services	X	X	X
Describe the barriers identified and lessons learned	X	X	X
Describe the changes in work flow, clinical practice and documentation	X	X	X
Incorporate the indicators into the hospital discharge communication process (e.g., the handoff) per Joint Commission ORYX requirements and communicate to both the mental health provider and the primary care provider in the community		X	X
Describe the barriers identified and lessons learned		X	X
Describe the changes in work flow, clinical practice and documentation		X	X
Utilize Medicaid data for independent verification of provider encounters, lipid and glucose testing			X

Add BRFSS Questions to MHSIP

- States submit outpatient MHSIP data to NRI in order to meet their Block Grant requirements for uniform reporting to CMHS
- Maine has piloted the addition of questions from the BRFSS to the MHSIP and was able to compile this data in relationship to general population BRFSS data gathered by the public health system
- They are also able to correlate health status with data from the consumer survey

Recommendations

- Provisionally adopt the proposed set of basic health and process indicators for the purposes of testing their feasibility.
- Authorize an Environmental Scan of all SMHAs to understand their current activities and data in light of the proposed set.
- Authorize development of a proposal to support the pilot testing model, at increasing levels of investigation, based on states' interest and willingness to participate. Development of the proposal should include staff analysis of and recommendations for indicator measurement methods.

Recommendations

- Revise MHSIP with selected BRFSS and other health indicators.
- Involve ATHSO in ongoing collaboration to address SMHA consumers in their initiatives
- Continue to advocate with CDC and HRSA to designate persons with SMI (SMHA consumers) as a Health Disparities Population and to start a Collaborative on Prevention and Management of Chronic Medical Conditions in Persons with SMI.

Co-location of Primary Care and Mental Health Care

- Pass legislation to co-locate primary health care services within community mental health and addiction treatment provider agencies.
- Require collaboration and referral MOUs between CMHCs and FQHCs that serve the same community
- Participate in patient-centered medical home discussions in your state

National Association of State Mental Health Program Directors

Medical Directors Council

- www.nasmhpd.org/medical_director.cfm