

The Poor Health Status of Consumers of Mental Healthcare Behavioral Disorders and Chronic Disease

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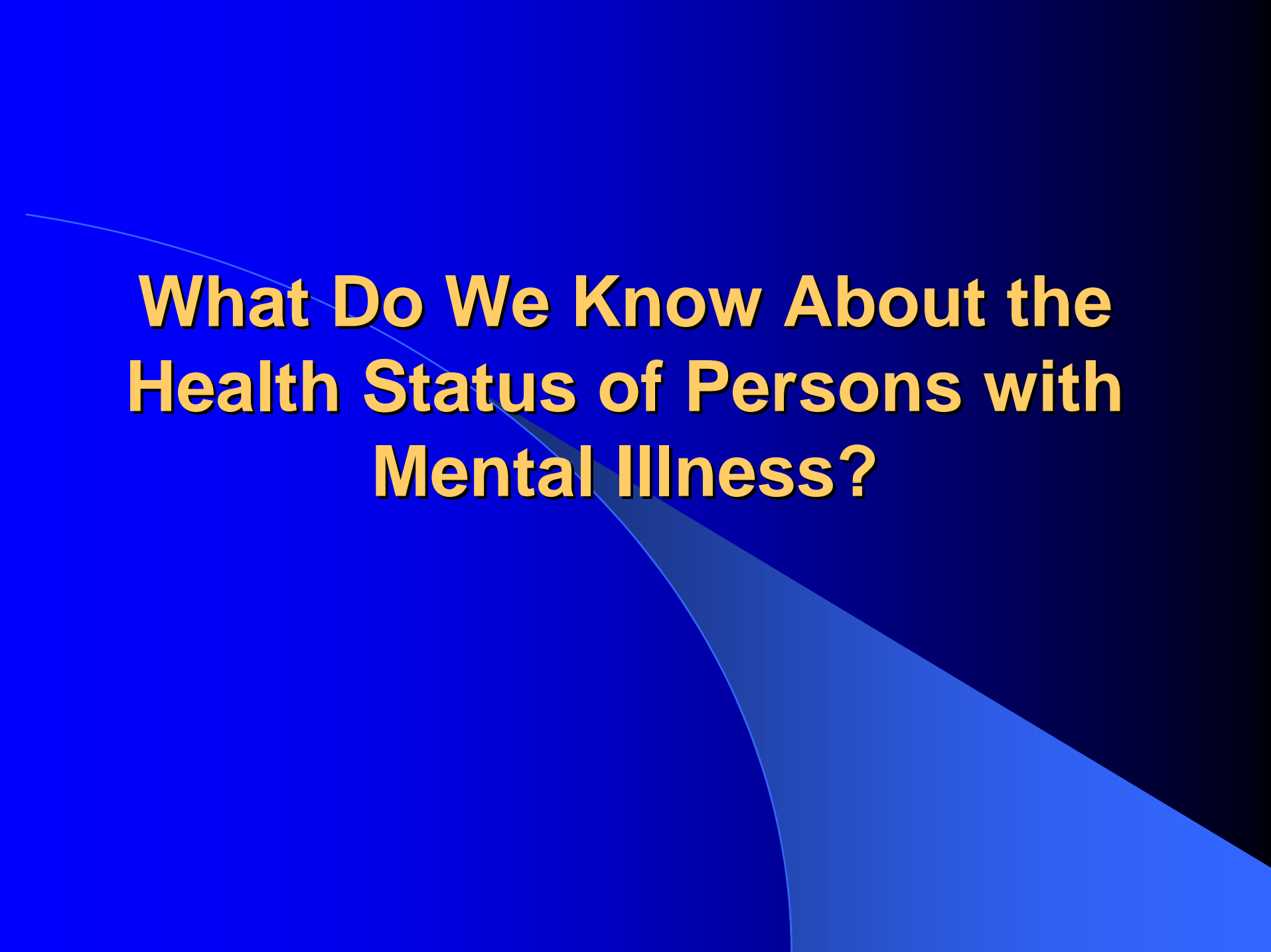
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**Paper Presented at 16th Annual Conference on State
Mental Health Agency Services Research, Program
Evaluation & Policy.**

Baltimore, MD

February 13, 2006

The background is a solid blue color. A white curved line starts from the top left and curves downwards towards the center. A white circular shape is partially visible in the bottom right corner, overlapping the blue background.

What Do We Know About the Health Status of Persons with Mental Illness?

Increased Mortality: Schizophrenia and Bipolar Disorder

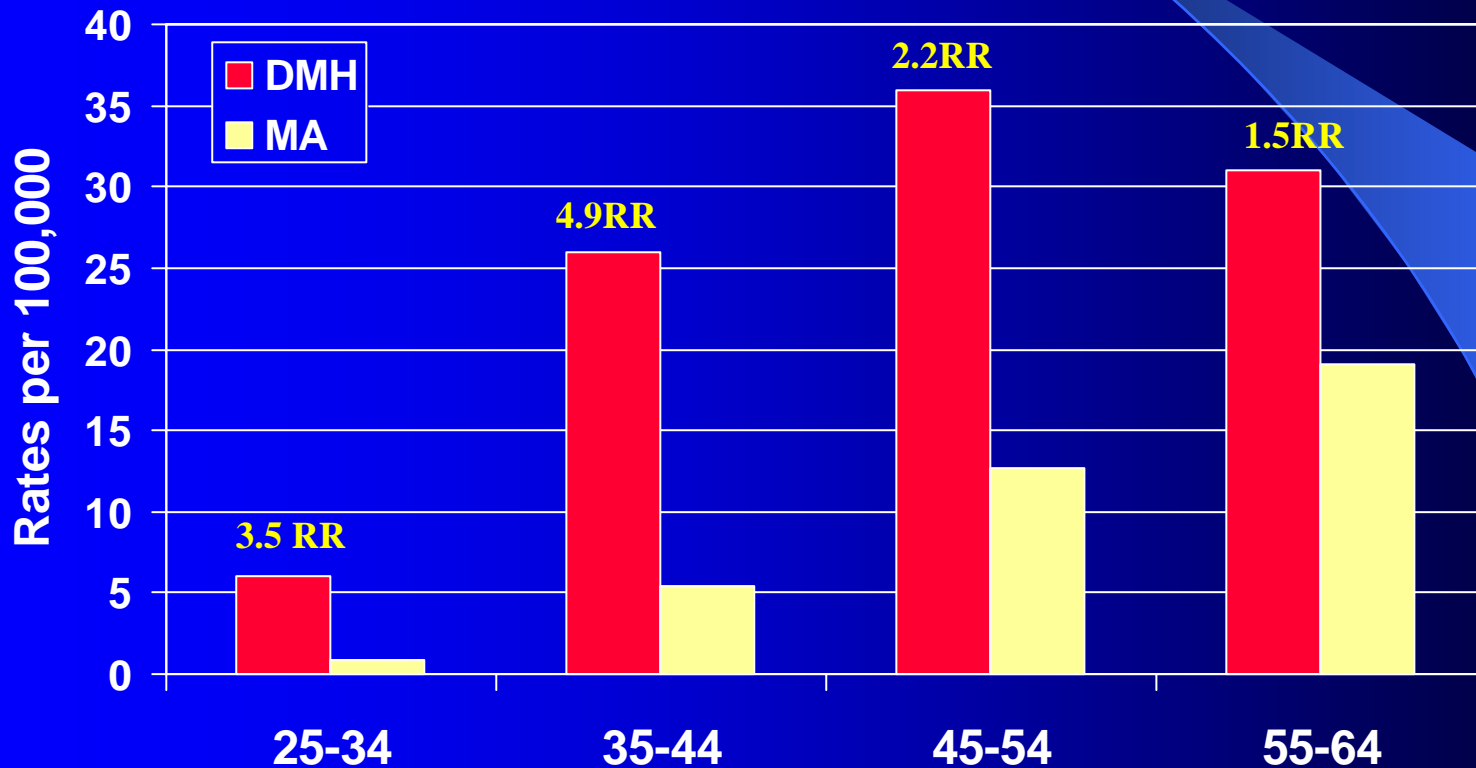
- Mortality: 1.6-2.6 times greater than general population
- Life Expectancy: 20% less than general population
- Average Age of death 61 vs. 76 years
- Analysis of >150 reports shows an increase in mortality from natural deaths across a variety of psychiatric conditions
- Massachusetts mortality study: excess deaths from heart disease > excess deaths from suicide

Harris, Barraclough. *Br J Psychiatry*. 1998; 173:11

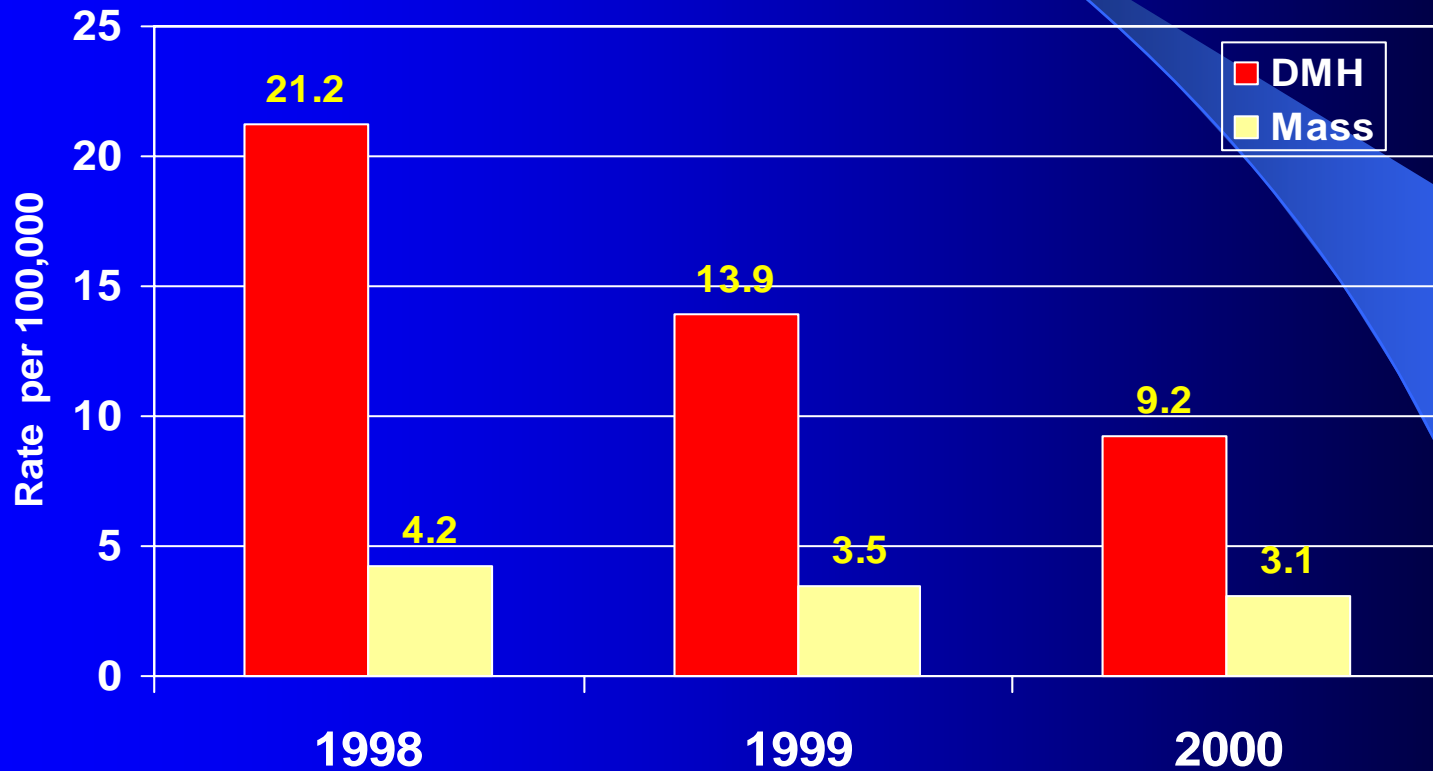
Newman, Bland. *Can J Psychiatry*. 1991; 36:239

Goff et al. *Med Clin North Am*. 2001;85:663; Tsuang and Woolson, *Brit J Psych*, 1977; F elker et al, *Psychiatric Services*, 1996; Osborn, *BMJ* 2001

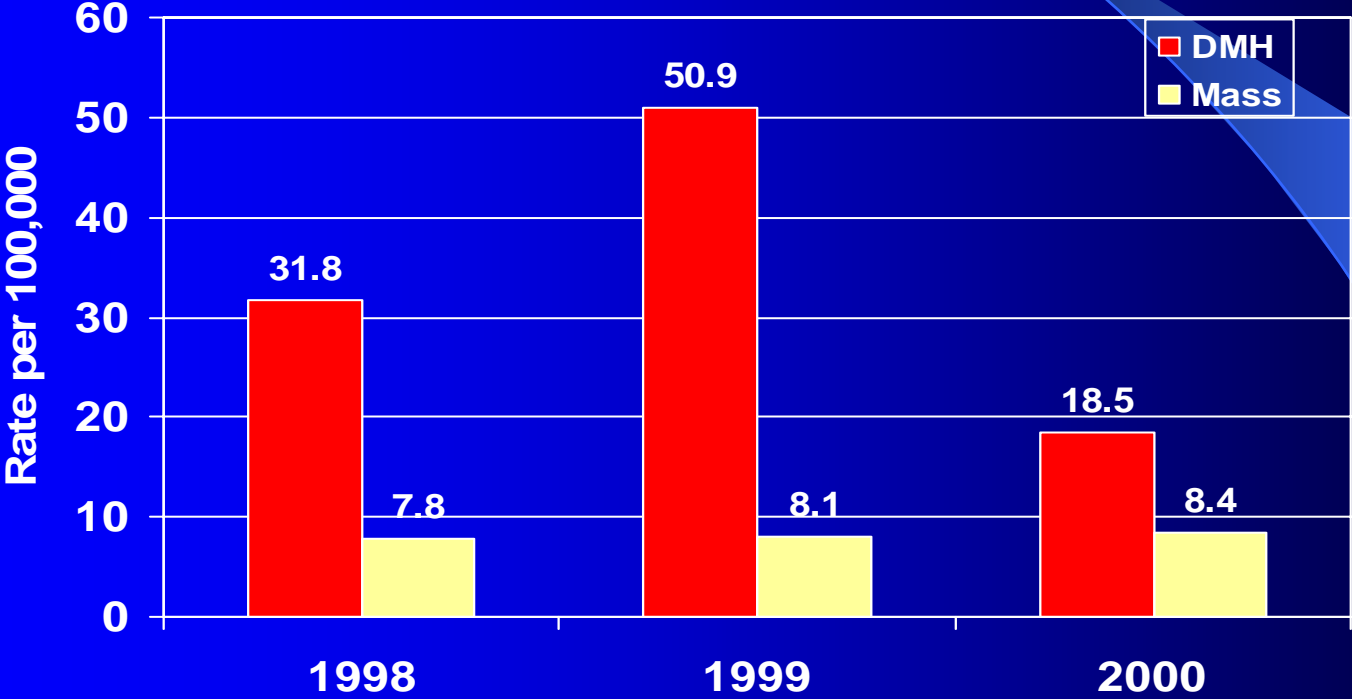
Deaths from Heart Disease by age group. DMH Enrollees with SMI compared to Massachusetts 1998-2000



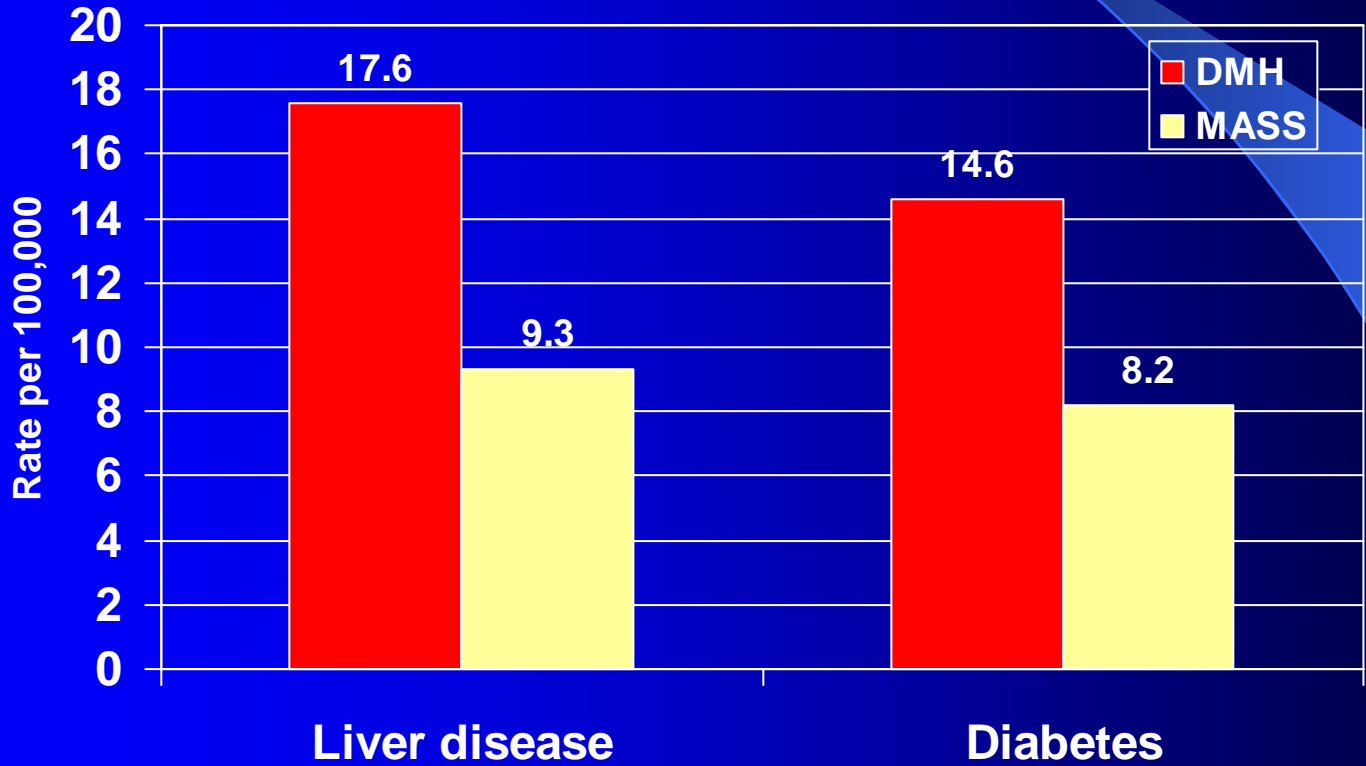
Mortality from Pneumonia/Influenza DMH clients, ages 25-64



Mortality from Lower Respiratory Disease DMH clients, ages 25-64



Deaths from Liver Disease and Diabetes DMH and Massachusetts



Schizophrenia and Cardiovascular Risk

- **Smoking: 50-80% vs 25%**
- **Obesity: BMI>27 = 42% vs 27% general population**
- **Diabetes: 2x risk compared to general population**

Dixon et al, *J Nerv Ment Dis*, 1999;187:496-502; Allison et al, *J Clin Psychiatry*, 1999;60:215-220; Herran et al, *Schizophr Res*, 2000;41:373-381

Metabolic Syndrome

NCEP ATP III Definition/ WHO

- Obesity: High waist circumference
BMI > 30
- Dyslipidemia
- Hypertension
- High fasting glucose (>110mg/dL)

- 2/3 of obese people in US have metabolic syndrome
- High risk for cardiovascular disease

Atypical Antipsychotics and Metabolic Syndrome

- Weight gain
- Insulin resistance-diabetes
- Worsening lipid profile

Depression is a risk factor for stroke and coronary artery disease

- Independent of age, gender, lifestyle
- Likelihood of developing myocardial infarction 4X
- Likelihood of stroke 2.6 X general population
- Increased Platelet Activation

Larson et al, *Stroke*. 2001;32:1979; Yamanaka et al, *Biomed Pharmacother*. 2005 Oct; 59 Suppl 1:S31; Marzari et al, *J Gerontol A Biol Sci Med Sci*. 2005;60(1):85-92

Depression Increases the Risk of Diabetes

- 13-year prospective community-based follow-up study: Depressed subjects 2.2 times as likely to develop diabetes
- 8-year Japanese workplace follow-up study: Depressed men 2.3 times as likely to develop diabetes

Eaton WW. *Diabetes Care*. 1996; 10:1097-1102.

Kawakami N, et al. *Diabetes Care*. 1999; 7:1071-1076

Impact of Medical Illness on Mental Health in Persons with SMI

- **Greater number of medical problems = increased risk for:**
 - ✓ **Severe psychosis**
 - ✓ **Depression**
 - ✓ **Suicide attempts**

(Dixon et al., 1999)

Impact of Mental Illness on Outcomes of Physical Conditions

Impact of Depression on Outcome of Cardiovascular Disease

Cardiovascular Illness	Impact of Depression
Coronary artery disease	40% ↑ risk of cardiac events
Unstable angina	3x ↑ of cardiac death at 1year
Post-MI	↑ mortality 4-6x
Congestive heart failure	50% survival vs. 78% survival

Frasure-Smith, et al., Circulation; 1995:999; Lesperance, et al. J. Am Coll Cardiol. 1998;
Freedland. Psychosom Med.. 1998

Impact of Depression on Stroke Outcome

- DECREASED BENEFIT FROM REHAB
- INCREASED INPATIENT AND OUTPATIENT UTILIZATION
- INCREASED MORTALITY

Ghose et al. *Med Care*. 2005 Dec;43(12):1259-64

Impact of Depression on Diabetes Outcome

- Increased functional impairment
- Decreased glycemic control
- Increased vascular complications

Williams et al. *Ann Int Med.* 2004;140:1015-1024

Elders: Depression and Physical Decline

	DEPRESSION CARE	USUAL CARE
➤ 50% Symptom Reduction	44.6%	19.3%
➤ Fair or Poor Health	37.4%	52.4%
↓ Depression		
↑ Physical Function		

Callahan, C. *J Am Geriatr Soc* 2005; 53:367-373.

Impact on Cost

- Depressed plus chronic medical condition: more outpatient visits and hospital days than patients without depression
- Medical/surgical costs attributable to depression in HMO: 1.4 times higher, \$1498 per patient per year
- Myocardial infarction plus depression: 41% higher costs

Pearson et al. *J Gen Intern Med.* 1999; 14: 461; Henk et al. *Arch Gen Psychiatry.* 1996; 53: 899; Frasure-Smith et al. *J. Psychosom Res.* 200; 48: 317

Medical Expenses for MaineCare service users, 2002 (Muskie)

MH/SA Behavioral Services	MH/SA Medical Services	General MaineCare Medical Services
\$359 PUPM	\$422 PUPM	\$163 PUPM

Persons with Severe Mental Illness may not be getting appropriate care

- Lower rates of preventive care
- Lower rates of detection
- Lower rates of appropriate care for risk
- Lower rates of appropriate care, angioplasty, cardiac bypass after myocardial infarction
- 59% report other barriers: transportation, cost of meds etc

Salsberry et al. *Psychiatric Services*. 2005; 56: 458-62; Druss et al. *JAMA* 2000; 283: 506-511; Young and Foster. *JAMA* 2000; 283: 3198, Druss et al 2001, Koranyi et al 1979, Dickerson et al 2003

Maine SMI Health Study

Methods Highlights

Maine Study Methods Highlights

- **Cross-Sectional Observational Study**
- **Sample of 16,579 Medicaid/MaineCare Beneficiaries 18 to 64 years of Age**
 - ✓ Of these 9223 had received treatment services for severe mental illness in FY 2004.
 - ✓ 7356 were randomly selected from MaineCare recipients without mental health diagnosis 20% sample.
- **12 month prevalence rates established.**
- **12 month per member expenditures calculated for identified health conditions.**
- **Data obtained from Maine Claims - Management System (MECMS) and DHHS Office of Adult Mental Health Enrollment Data System.**

Maine Study Methods Highlights

➤ Health Diagnostic ICD-9 Categories

- ✓ Heart Disease
- ✓ Hypertension
- ✓ Cancer
- ✓ Chronic Obstructive Pulmonary Disease
- ✓ Gastro-Intestinal Disorders
- ✓ Diabetes
- ✓ Obesity/Dyslipidemia
- ✓ Liver Disease
- ✓ Pneumonia/Influenza
- ✓ Infectious Diseases
- ✓ Skeletal-Connective Tissue Disorders

Study Methods Highlights

- **Health Diagnostic ICD-9 Categories (Continued):**
 - ✓ **Injury Related Conditions**
 - ✓ **Ill-Defined Conditions**
 - ✓ **Dental Disorders**
 - ✓ **Pregnancy & Childbirth**

Maine SMI Health Study

Preliminary Results

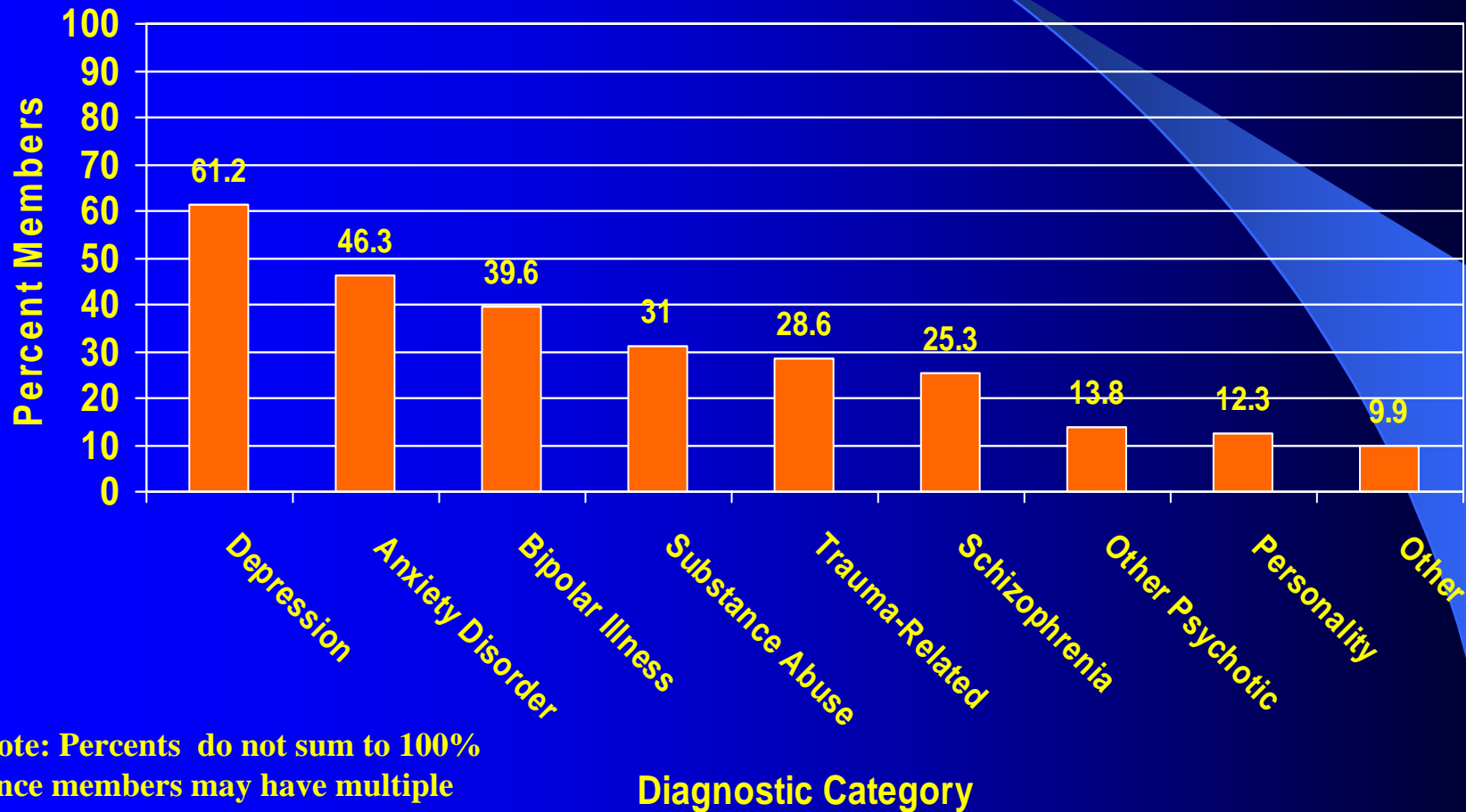
Study Results: Sample Characteristics

Gender *	SMI (9224)	Non-SMI (7356)
Females	56.5%	64.0%
Males	43.5%	36.0%
Age (Years) *		
18 to 25	15.6%	23.6%
26 to 35	22.1%	22.9%
36 to 45	30.3%	23.4%
46 to 55	23.0%	16.7%
56 to 64	9.0%	13.4%
Mean Age:	39.36 (11.6)	37.96 (13.3)
Race/Ethnicity		
Black/African American	1.2%	2.4%
American Indian	1.6%	1.3%
Hawaiian/Pacific Islander	<1%	<1%
Other Race	<1%	1.3%
White	96.6%	95.0%
Non-White*	3.4%	5.0%
Treated Medical Disorder		
One or More Disorders *	68.8%	51.2%
Two or More Disorders *	45.8%	27.3%

*P < .001

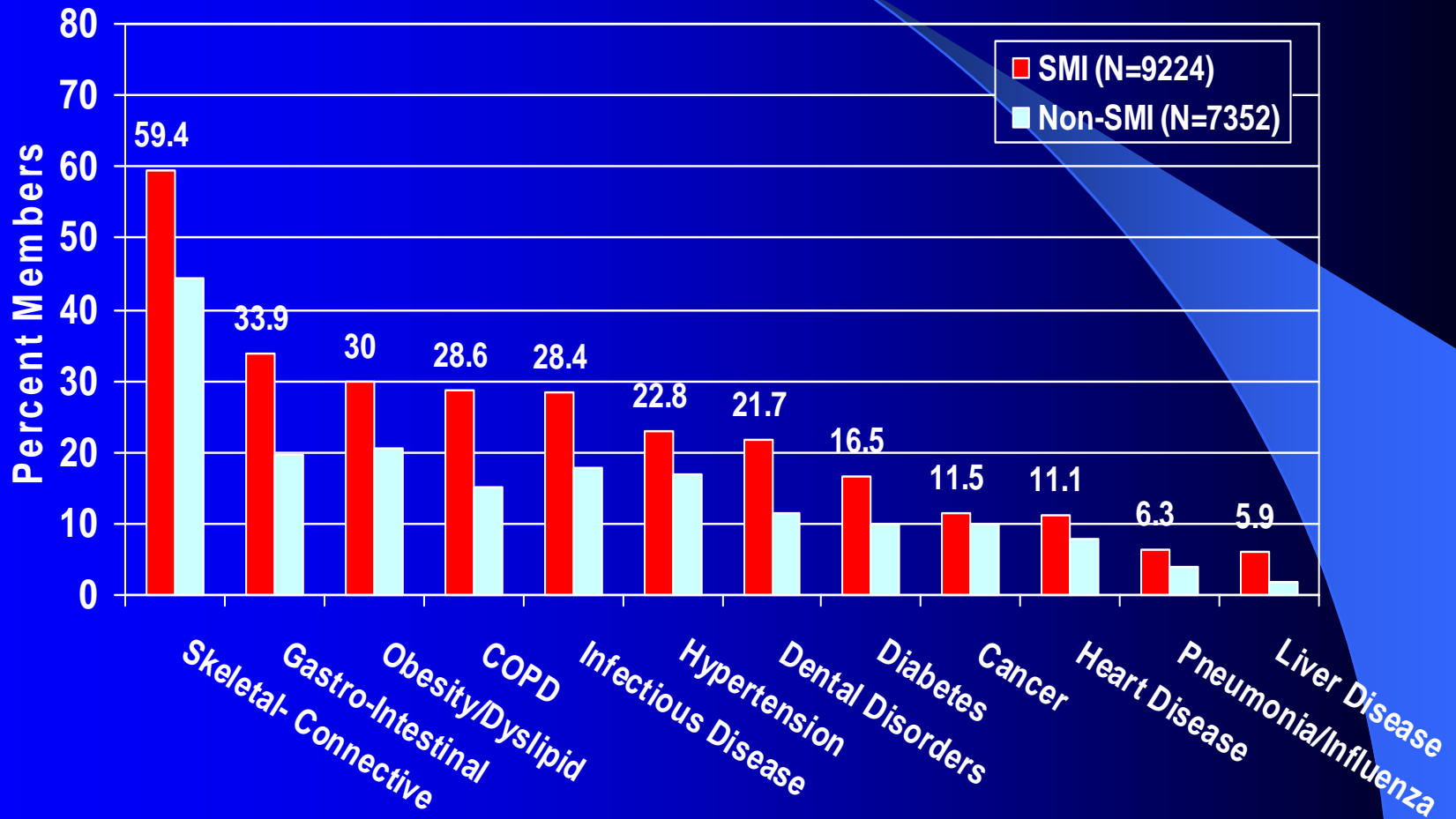
Note: Number in parentheses reflects Standard Deviation

Study Results: SMI Sample Diagnostic Profile

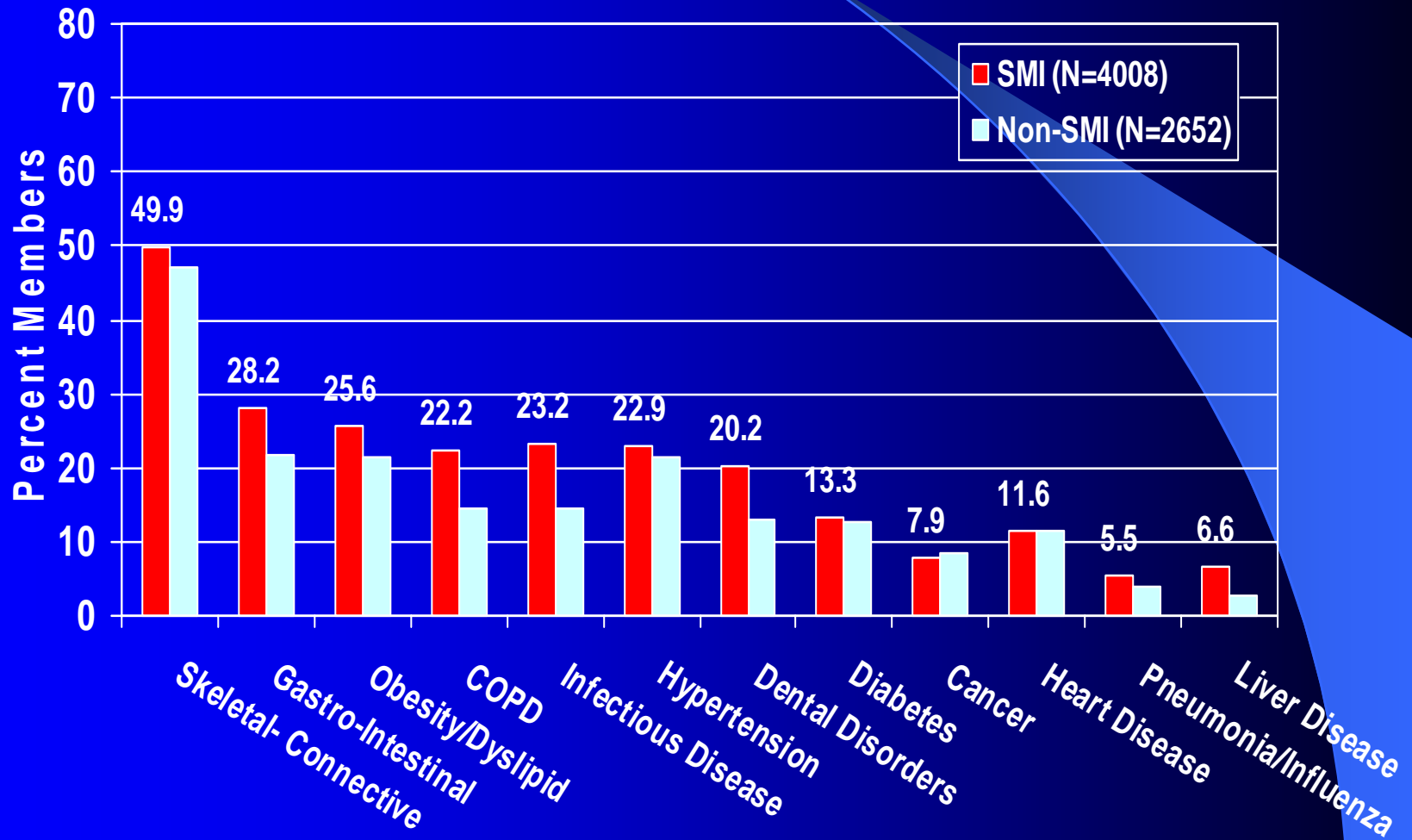


Note: Percents do not sum to 100% since members may have multiple diagnoses. SMI members have on average 2.44 diagnoses.

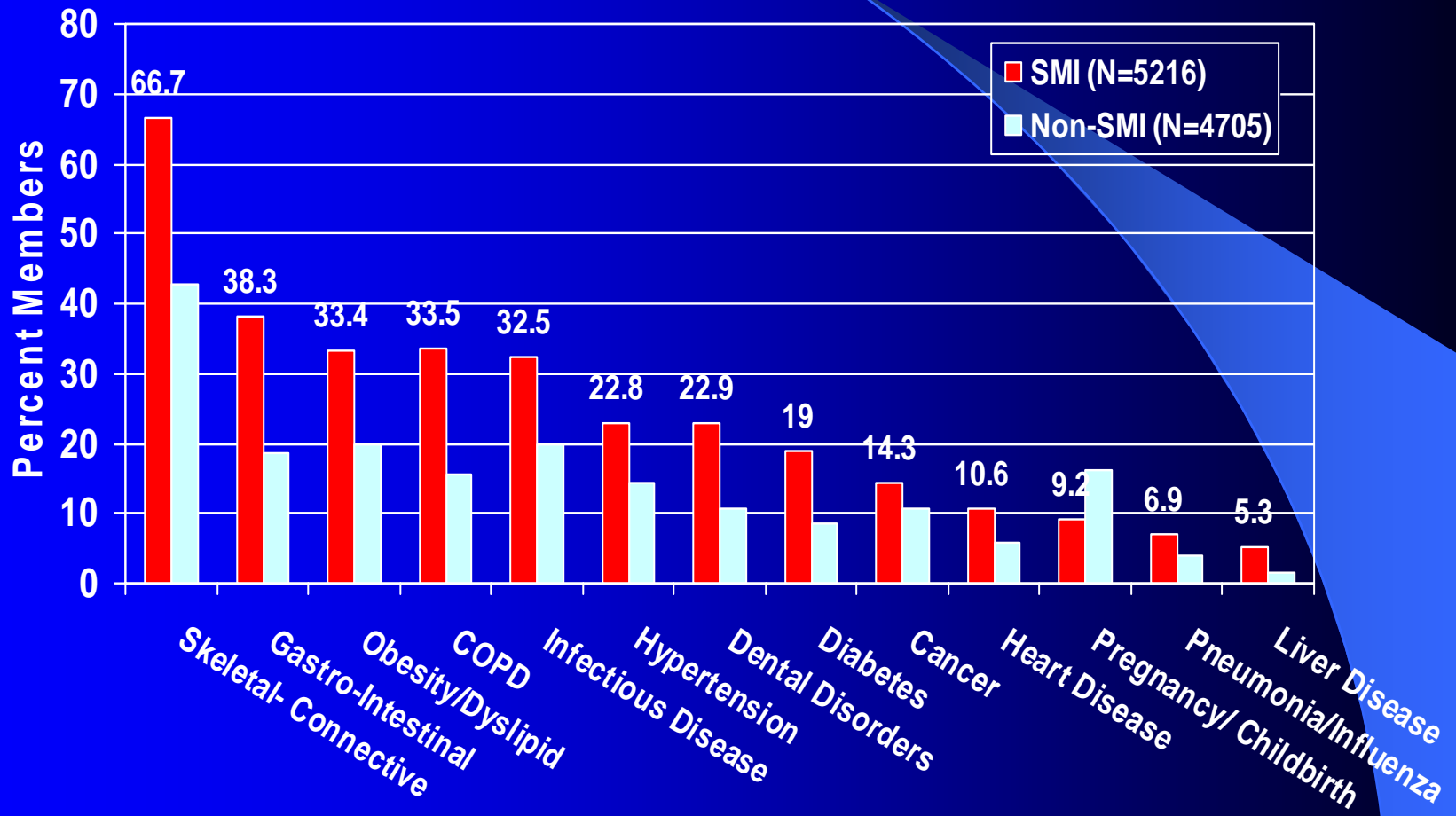
Study Results: Comparison of Health Disorders Between SMI & Non-SMI Groups



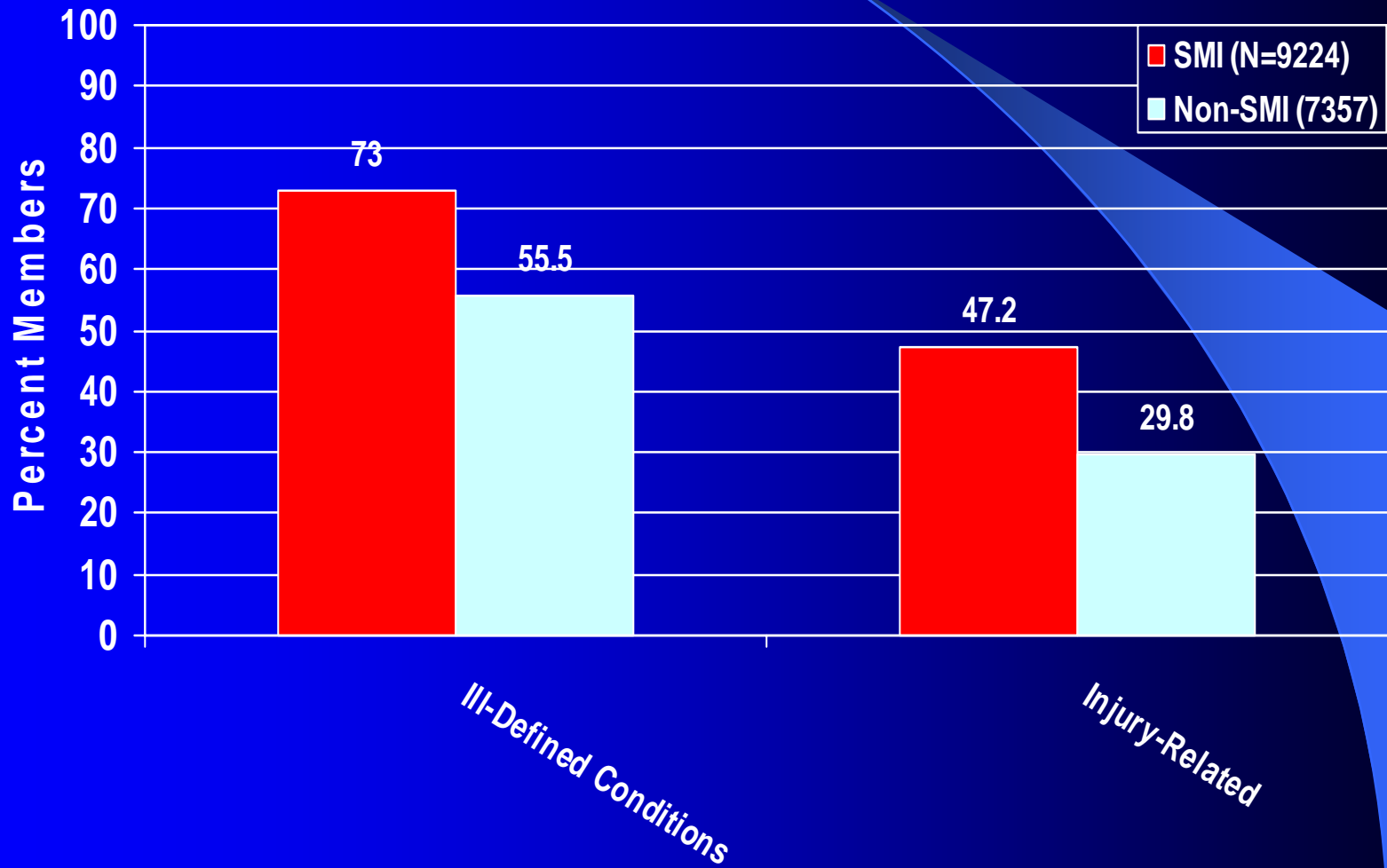
Study Results: Comparison of Health Disorders Between SMI & Non-SMI Groups (Males)



Study Results: Comparison of Health Disorders Between SMI & Non-SMI Groups (Females)

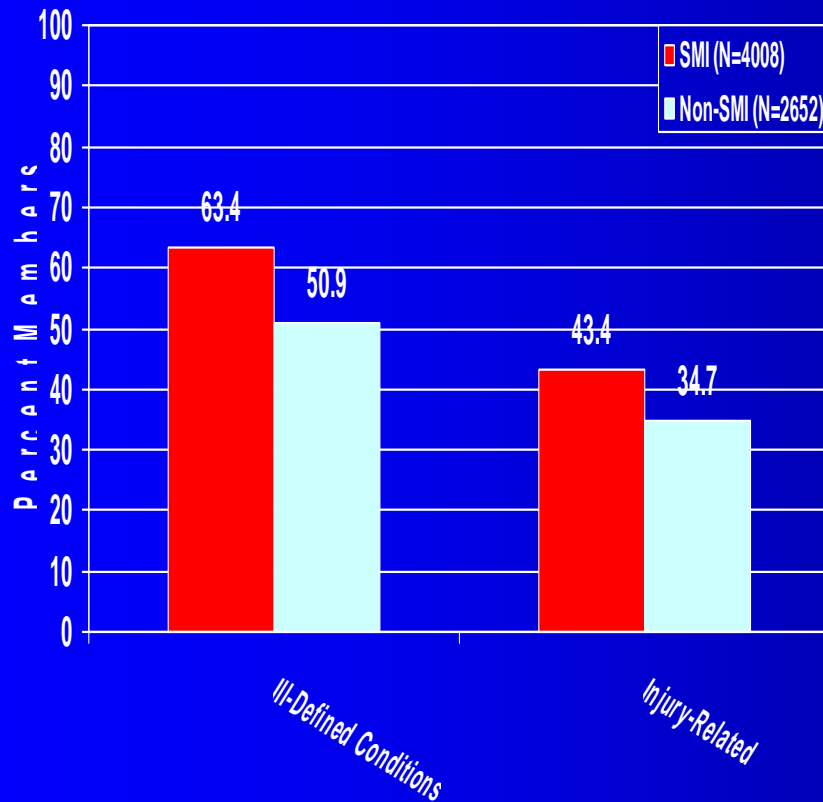


Study Results: Comparison of Health Disorders Between SMI & Non-SMI Groups

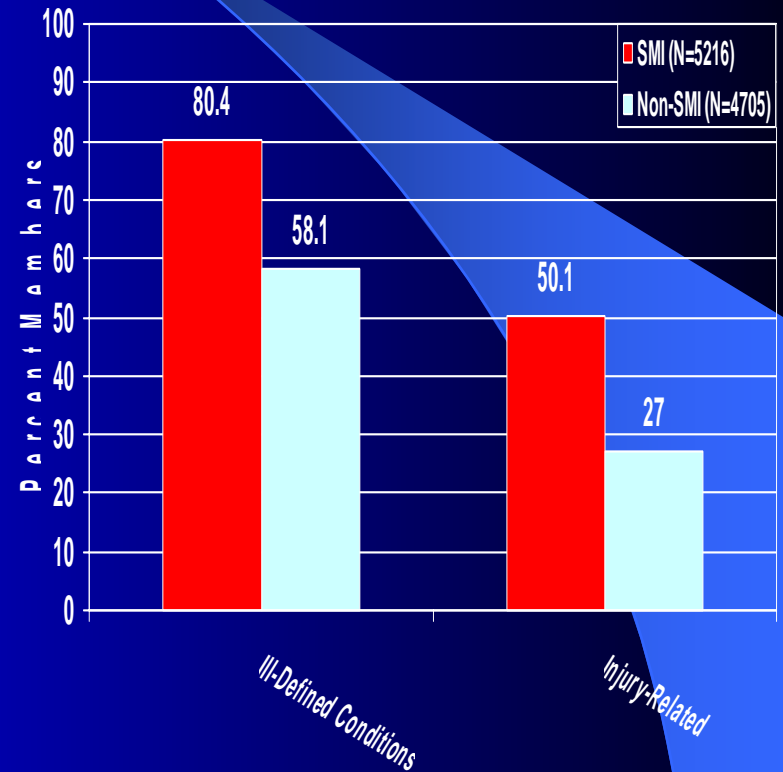


Study Results: Comparison of Health Disorders Between SMI & Non-SMI Groups

Males



Females



Study Results: Prevalence of Health Conditions Between SMI & Non-SMI Groups

Health Condition	SMI	Non-SMI	Odds Ratio
Skeletal- Connective Disorder	59.4%	44.4	1.84 **
Gastro-Intestinal	33.9%	19.7%	2.10 **
Obesity/Dyslipidemia	30.0%	20.4%	1.67 **
COPD	28.6%	15.2%	2.24 **
Infectious Disease	28.4%	17.9%	1.83 **
Cancer	11.5%	9.9%	1.18 **
Heart Disease	11.1%	7.9%	1.44 **
Hypertension	22.8%	17.0%	1.44 **
Pneumonia/ Influenza	6.3%	3.9%	1.66 **
Diabetes	16.5%	10.1%	1.77 **
Liver Disease	5.9%	1.9%	3.16 **
Dental Disorders	21.7%	11.5%	2.13 **
Pregnancy/ Childbirth	9.2%	16.3	.520 **
Ill-Defined Conditions	73.0%	55.5%	2.17 **
Injury-Related	47.2%	29.8%	2.11 *

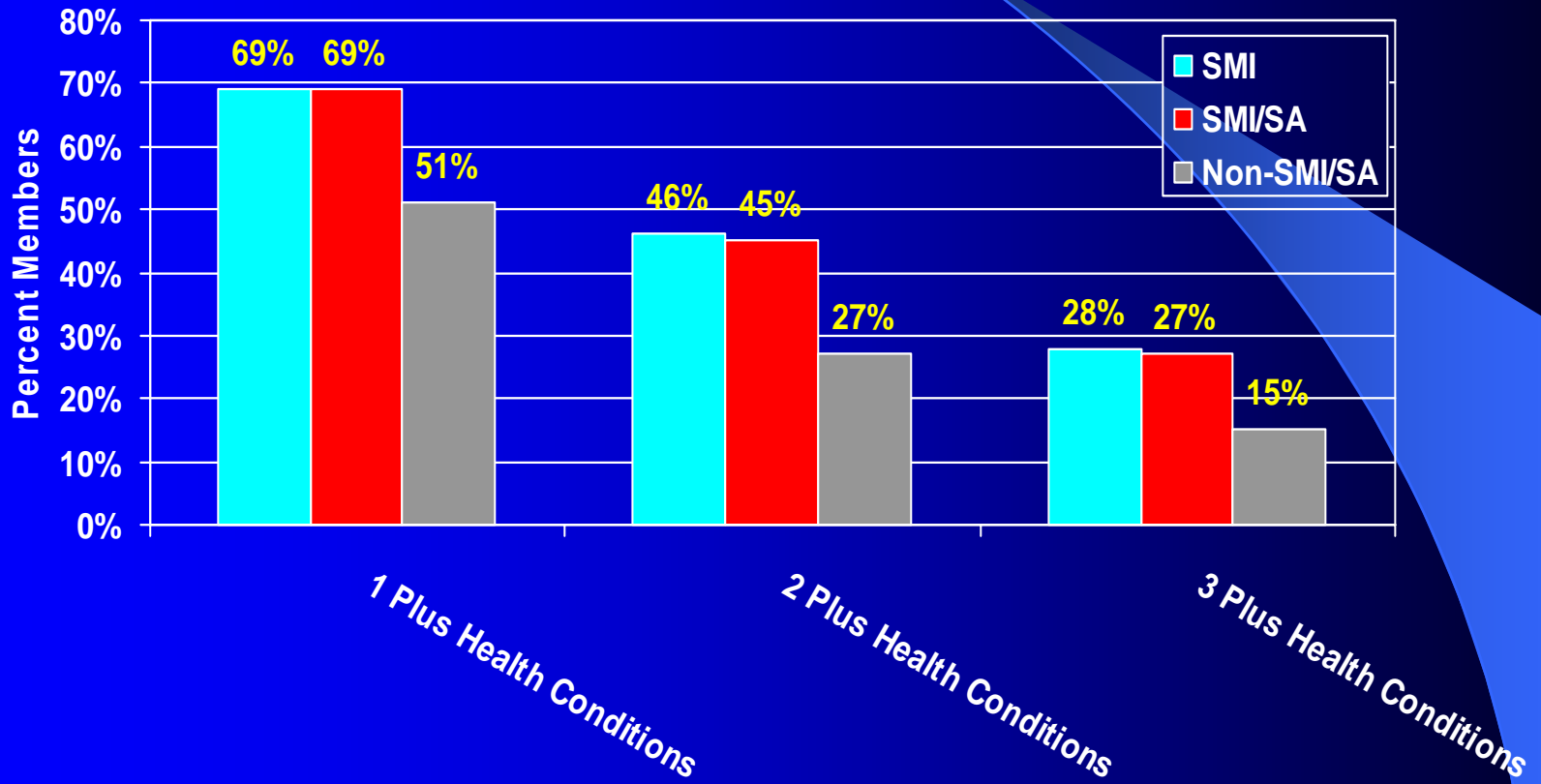
Study Results: Gender Comparison of Health Conditions Among Individuals with SMI

Health Condition	Females (N=5216)	Males (N=4008)	Odds Ratio
Skeletal- Connective Disorder	66.7%	49.9%	2.01 **
Gastro-Intestinal	38.3%	28.2%	1.58 **
Obesity/Dyslipidemia	33.4%	25.6%	1.45 **
COPD	33.5%	22.2%	1.76 **
Infectious Disease	32.5%	23.2%	1.59 **
Cancer	14.2%	7.9%	1.94 **
Heart Disease	10.6%	11.6%	ns
Hypertension	22.8%	22.9%	ns
Pneumonia/ Influenza	6.9%	5.5%	1.27 **
Diabetes	19.0%	13.3%	1.52 **
Liver Disease	5.3%	6.6%	.79 *
Dental Disorders	22.9%	20.2%	1.16 *
Pregnancy/ Childbirth	9.2%		
Ill-Defined Conditions	80.4%	63.4%	2.36 **
Injury-Related	50.1%	43.4%	1.31 **

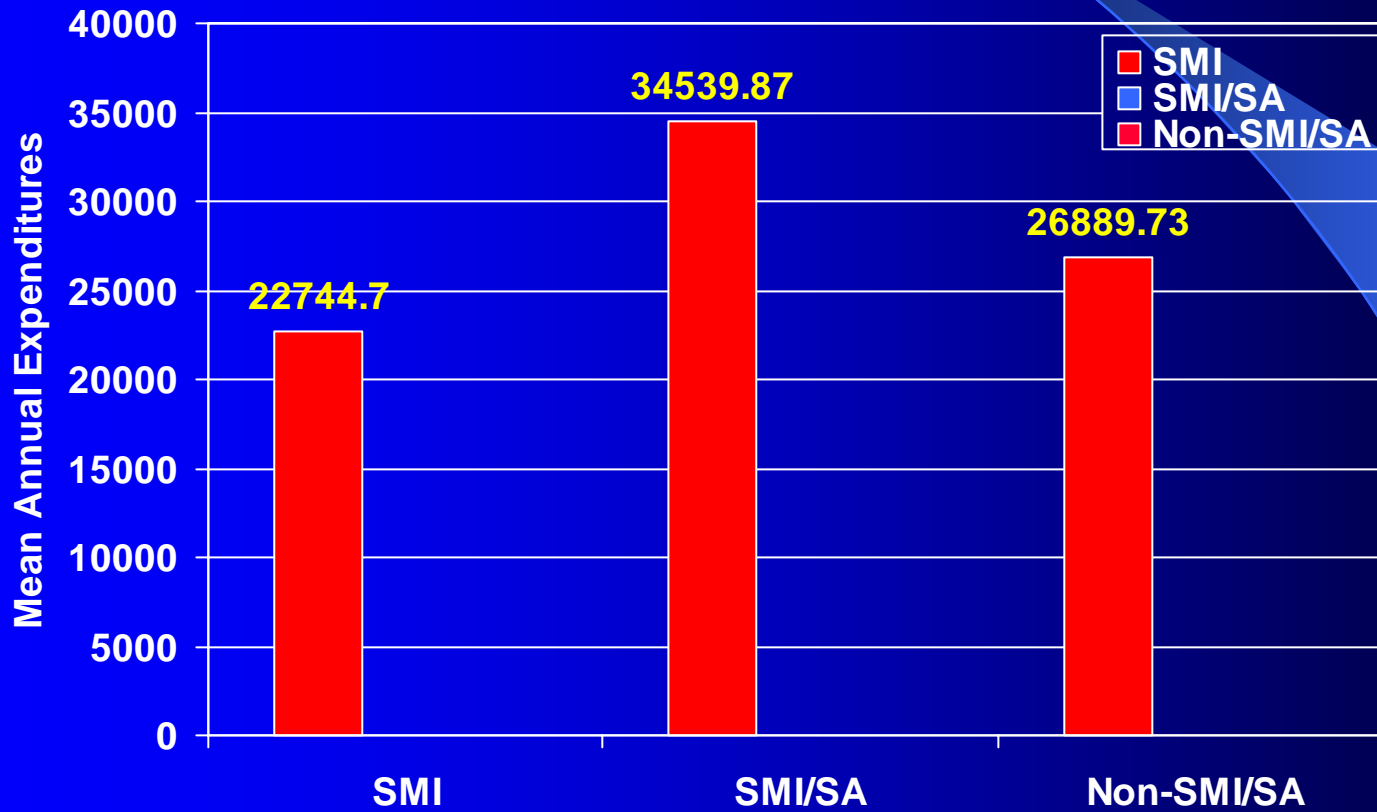
Study Results: Comparison of Mean Per Member Expenditures Between SMI & Non-SMI Groups

Health Condition	SMI (N=9224)	Non-SMI (N=7357)	F (P Value)
Skeletal- Connective Disorder	2015.42	1594.97	6.22, p<.013
Gastro-Intestinal	2634.62	3486.09	4.47, P<.03
Obesity/Dyslipidemia	1435.16	1221.65	NS
COPD	2954.13	2939.70	NS
Infectious Disease	2052.90	1616.92	NS
Cancer	2877.58	6667.77	11.8, p<.001
Heart Disease	7232.91	12452.42	6.88, p<.009
Hypertension	2292.76	2080.27	NS
Pneumonia/ Influenza	4002.76	3513.89	NS
Diabetes	5294.71	3738.88	4.97, p<.026
Liver Disease	2959.42	5332.35	NS
Dental Disorders	643.02	613.85	NS
Pregnancy/ Childbirth	9898.96	11565.02	NS
Ill-Defined Conditions	2372.25	1696.39	14.91, p<.001
Injury-Related	2631.83	2535.71	NS

Burden of Medical Illness



Study Results: Comparison of Health Care Expenses Between SMI & Non-SMI MaineCare Members



Next Steps

- Utilization of care overall and by medical condition: ER, outpatient, hospital
- Quality of care: diabetes, heart disease, dyslipidemia, cancer, pregnancy
- Preventive care
- Medical home
- Potentially adverse drug interactions (including pregnancies)
- Follow-up of children born to SMI mothers

So what do we know....

- SMI clients have a high degree of risk and prevalence of chronic medical conditions
- They are probably not getting optimal care for their medical conditions
- Inappropriate medical utilization adds to the total cost of care
- The burden of their medical conditions must impede their full recovery from their psychiatric illness

And what should we doing about this?

Expect mental health service systems to assess and respond to health risks?

- Screening and programs to address smoking, obesity, lack of exercise
- Screening for diabetes, hypertension, metabolic syndrome (actually touching clients...)
- Integrating client specific health information into medication decision making
- Health related goals in ISP
- Improvement of physical health becomes part of mental health QI activities

Stick with our present separate systems of mental health and health care?

Or move to fuller integration of mental health and health care:

- Track health data as part of mental health performance and outcome measurement
- Health care issues become an essential part at every level of mental health planning, policy and culture (health care competency as important as cultural competency...)

Integration...

Will better communication and release of information between separate systems work?

Perhaps we need new models of care:

- co-location of health providers in mental health systems
- Mental health clinics as providers of primary care
- Development of protocols, programs and treatments specific to SMI
- Expectation that MH system is accountable for health outcomes

What can we learn from the transformation in health care?

- Chronic care model in MH ?
- Case managers cross trained in both medical and psychiatric care management?
- Electronic records in MH care with registries of patients with specific health conditions?
- Decision support tools for MH providers for health care issues?
- Pay for performance for better health outcomes for mental health providers