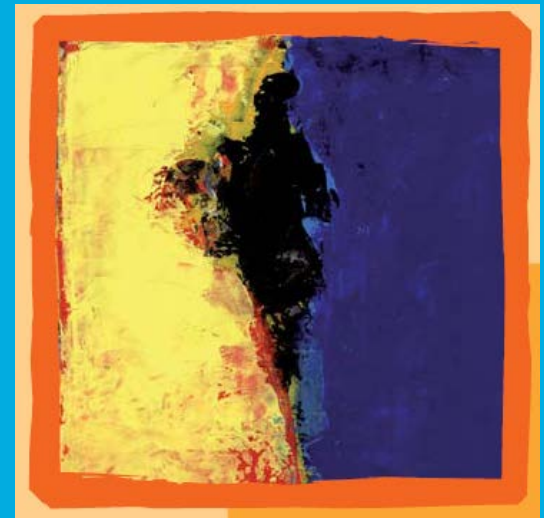




PHYSICAL HEALTH PROBLEMS IN SERIOUS MENTAL ILLNESS: POSSIBLE SOLUTIONS

Marc De Hert



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- Advisory boards: Astra Zeneca, BMS, Eli Lilly, Janssen Pharmaceutica, Lundbeck, Pfizer, Sanofi-Aventis

Physical illness in patients with severe mental disorders.

I. Prevalence, impact of medications and disparities in health care

MARC DE HERT¹, CHRISTOPH U. CORRELL², JULIO BOBES³, MARCELO CETKOVICH-BAKMAS⁴, DAN COHEN⁵, ITSUO ASAI⁶, JOHAN DETRAUX¹, SHIV GAUTAM⁷, HANS-JURGEN MÖLLER⁸, DAVID M. NDETEI⁹, JOHN W. NEWCOMER¹⁰, RICHARD UWAKWE¹¹, STEFAN LEUCHT¹²

Table 1 Physical diseases with increased frequency in severe mental illness (from 15)

Disease category	Physical diseases with increased frequency
Bacterial infections and mycoses	Tuberculosis (+)
Viral diseases	HIV (++) , hepatitis B/C (+)
Neoplasms	Obesity-related cancer (+)
Musculoskeletal diseases	Osteoporosis/decreased bone mineral density (+)
Stomatognathic diseases	Poor dental status (+)
Respiratory tract diseases	Impaired lung function (+)
Urological and male genital diseases	Sexual dysfunction (+)
Female genital diseases and pregnancy complications	Obstetric complications (++)
Cardiovascular diseases	Stroke, myocardial infarction, hypertension, other cardiac and vascular diseases (++)
Nutritional and metabolic diseases	Obesity (++) , diabetes mellitus (+) , metabolic syndrome (++) , hyperlipidemia (++)

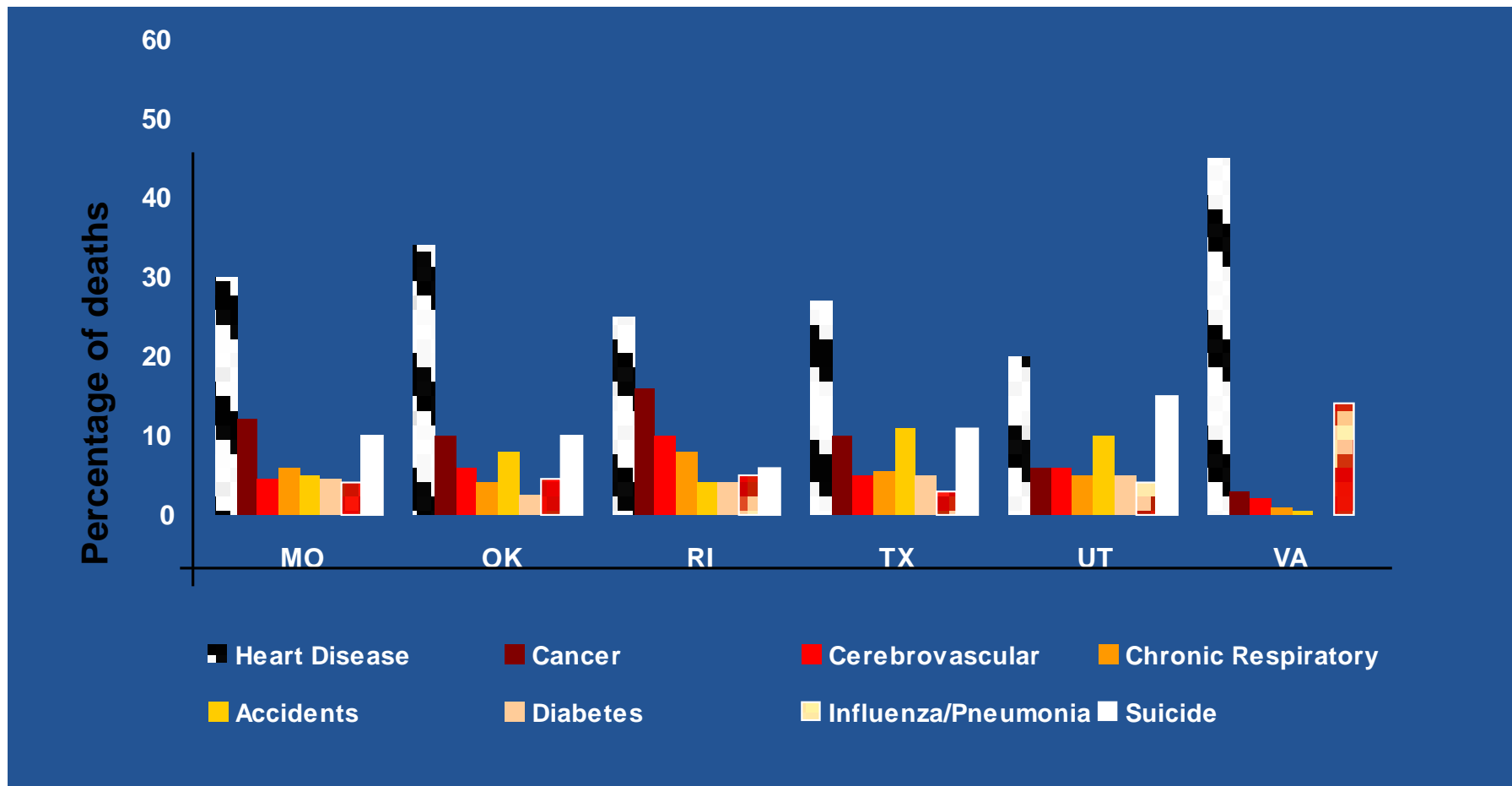
(++) very good evidence for increased risk, (+) good evidence for increased risk

Mortality Associated with Major Mental Disorders: Mean Years of Potential Life Lost

Year	AZ	MO	OK	RI	TX	UT
1997		26.3	25.1		28.5	
1998		27.3	25.1		28.8	29.3
1999	32.2	26.8	26.3		29.3	26.9
2000	31.8	27.9		24.9		

Compared with the general population, persons with major mental illness lose 25–30 years of normal life expectancy

Cardiovascular Disease Is Primary Cause of Death in Persons with Mental Illness*



*Average data from 1996-2000.

Lutterman et.al. DHHS Publication No. (SMA) 03-3835. Rockville, MD: Center for Mental Health Services, Substance Abuse and Mental Health Services Administration, 2003. Colton CW, Manderscheid RW. Prev Chronic Dis [serial online] 2006 Apr [date cited]. Available at URL: http://www.cdc.gov/pcd/issues/2006/apr/05_0180.htm

11-year follow-up of mortality in patients with schizophrenia: a population-based cohort study (FIN11 study)

Jari Tiihonen, Jouko Lönnqvist, Kristian Wahlbeck, Timo Klaukka, Leo Niskanen, Antti Tanskanen, Jari Haukka

- N death = 19,735 or 29.5%
- 4,128 died before age 50 y (20.9%)
- After start FU 637 suicides in current use sample (15.5%)
- CVD main cause of death

Estimated prevalence and relative risk (RR) of modifiable CVD risks factors in schizophrenia and bipolar disorder compared to the general population

Modifiable risk factors	Schizophrenia		Bipolar Disorder	
	Prevalence	RR	Prevalence	RR
Obesity	45-55%	1.5-2	21-49%	1-2
Smoking	50-80%	2-3	54-68%	2-3
DM	10-15%	2-3	8-17%	1.5-3
Hypertension	19-58%	2-3	35-61%	2-3
Dyslipidemia	25-69%	≤ 5	23-38%	≤ 3
MetS	37-63%	2-3	30-49%	2-3

Correll *CNS Spectr* 2007; De Hert et al., *World Psy* 2009

DM in SMI patients

- Prevalence of DM in SMI patients is higher compared with the general population
 - schizophrenia, bipolar disorder and schizoaffective disorder: 2-3 times higher
 - depression: 1.2-2.6 times higher
- Increase in 'well-established' DM risk factors probably accounts for much of the increased risk in these patients

CVD in SMI patients

- Patients with SMI are at significantly higher risk for cardiovascular morbidity and mortality than their counterparts in the general population
 - schizophrenia and bipolar disorder: up to 3 fold higher
 - depression: up to 5 fold higher
- Excess CVD is multifactorial and likely includes genetic and lifestyle factors as well as disease specific and treatment effects

Coronary heart disease (CHD) in SMI

- Will become the leading cause of death in developing countries and emerge as the leading cause of death in the world during the 21st century
- Risk of CHD higher in SMI patients
 - schizophrenia: 2 to 3.6-fold increased risk
 - bipolar disorder: 2.1-fold increased risk
 - major affective disorder: 1.7 to 4.5-fold increased risk of myocardial infarction
- Depression increases risk of death or nonfatal cardiac events approximately 2.5-fold in patients with CHD

Cerebrovascular disease (CVD) in SMI

- Risk of CVA higher in SMI patients
 - schizophrenia: 1.5 to 2.9- fold increased risk
 - bipolar disorder: 2.1 to 3.3 fold increased risk
 - major affective disorder: 1.2 to 2.6 fold increased risk
- Obesity, diabetes, CVD as well as depressive symptoms are recognized as risk factors for CVA

Sudden cardiac death (SCD) and psychotropics

- Patients with schizophrenia are three times as likely to experience SCD as individuals from the general population
- Dose-related increased risk of SCD found for both conventional and atypical antipsychotics
 - 1.31 vs. 1.59 (low dose, CPZ equivalents <100 mg)
 - 2.01 vs. 2.13 (moderate dose, CPZ equivalents 100-299 mg)
 - 2.42 vs. 2.86 (high dose, CPZ equivalents \geq 300 mg)
- Dose-related increased risk of SCD found in current users of tricyclic antidepressants

Weight liability of psychotropic agents used in SMI

Drug class	Weight loss	Relatively weight neutral	Weight gain
Antidepressants	Bupropion Fluoxetine	Citalopram Duloxetine Escitalopram Nefazodone Sertraline Venlafaxine	<u>Substantial</u> Amitriptyline Imipramine Mirtazapine <u>Intermediate</u> Nortriptyline Paroxetine
Anticonvulsants/ Mood stabilizers	Topiramate Zonisamide	Lamotrigine Oxcarbazepine	<u>Substantial</u> Lithium Valproate <u>Intermediate</u> Carbamazepine Gabapentin
Antipsychotics	Aripiprazole (in pre-treated individuals) Molindone (in pre-treated individuals) Ziprasidone (in pre-treated individuals)	Amisulpride Aripiprazole Asenapine Fluphenazine Haloperidol Lurasidone Perphenazine Ziprasidone	<u>Substantial</u> Chlorpromazine Clozapine Olanzapine <u>Intermediate</u> Iloperidone Quetiapine Risperidone Thioridazine Zotepine

Approximate relative likelihood of metabolic disturbances with antipsychotic medication

Medication	Risk for MetS
Chlorpromazine	High (?, limited data)
Clozapine	High
Olanzapine	High
Quetiapine	Moderate
Amisulpride	Mild
Iloperidone	Mild (?, limited data)
Paliperidone	Mild
Risperidone	Mild
Sertindole	Mild
Aripiprazole	Low
Asenapine	Low (?, limited data)
Haloperidol	Low
Lurasidone	Low (?, limited data)
Perphenazine	Low
Ziprasidone	Low

Physical illness in patients with severe mental disorders. II. Barriers to care, monitoring and treatment guidelines, plus recommendations at the system and individual level

MARC DE HERT¹, DAN COHEN², JULIO BOBES³, MARCELO CETKOVICH-BAKMAS⁴, STEFAN LEUCHT⁵, DAVID M. NDETEI⁶, JOHN W. NEWCOMER⁷, RICHARD UWAKWE⁸, ITSUO ASAI⁹, HANS-JURGEN MÖLLER¹⁰, SHIV GAUTAM¹¹, JOHAN DETRAUX¹, CHRISTOPH U. CORRELL¹²

Physical disorders are, compared to the general population, more prevalent in people with severe mental illness (SMI). Although this excess morbidity and mortality is largely due to modifiable lifestyle risk factors, the screening and assessment of physical health aspects remains poor, even in developed countries. Moreover, specific patient, provider, treatment and system factors act as barriers to the recognition and to the management of physical diseases in people with SMI. Psychiatrists can play a pivotal role in the improvement of the physical health of these patients by expanding their task from clinical psychiatric care to the monitoring and treatment of crucial physical parameters. At a system level, actions are not easy to realize, especially for developing countries. However, at an individual level, even simple and very basic monitoring and treatment actions, undertaken by the treating clinician, can already improve the problem of suboptimal medical care in this population. Adhering to monitoring and treatment guidelines will result in a substantial enhancement of physical health outcomes. Furthermore, psychiatrists can help educate and motivate people with SMI to address their suboptimal lifestyle, including smoking, unhealthy diet and lack of exercise. The adoption of the recommendations presented in this paper across health care systems throughout the world will contribute to a significant improvement in the medical and related psychiatric health outcomes of patients with SMI.

Key words: Physical illness, severe mental illness, physical health, health care, barriers, health disparities, monitoring and treatment guidelines

(World Psychiatry 2011;10:138-151)

Potential barriers to addressing CVD risk in patients with SMI



Psychiatrist related barriers¹⁻³

- Lack of awareness of cardiovascular risk as a problem, screening not done routinely
- Not oriented towards treating whole patient, mental illness is at forefront
- Not aware of risks associated with atypical antipsychotics
- Lack of experience in providing medical care

Potential barriers to addressing CVD risk in patients with SMI

Patient related barriers

- Lack of support regarding medication compliance
- Generally poor and hard-to-change lifestyle: diet, smoking, sedentary, etc
- Delay in obtaining medical care, or lack of continuity of care
- Impaired cognition and ability to communicate, wariness, fear and distrust of health care professionals



Potential barriers to addressing CVD risk in patients with SMI

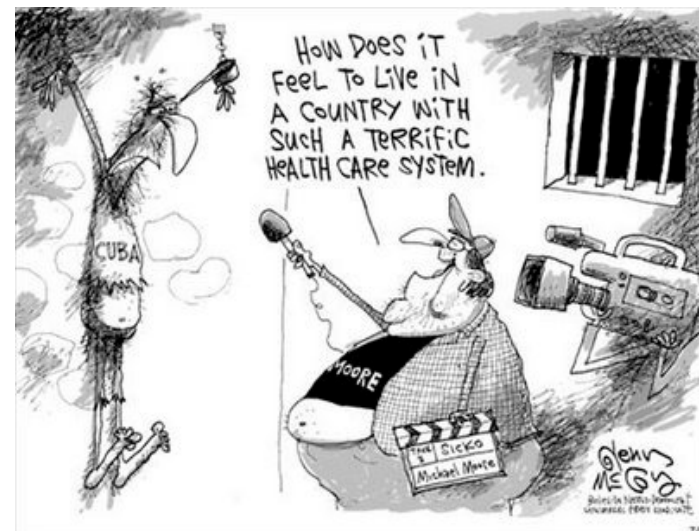
Primary care physician related barriers¹⁻³

- Primary care physicians uncomfortable or fearful of caring for patients with severe mental illness
- Lack of communication between mental health professionals and primary care physicians
- Lack of awareness of physical health problems in patients with severe mental illness
- The stigma of severe mental illness

Potential barriers to addressing CVD risk in patients with SMI

Health care system related barriers

- Time constraints
- Financial constraints
- Limited resources within mental health units, such as laboratories
- Access to physical health care for patients with severe mental illness



European Psychiatric Association (EPA): Monitoring Guidelines

The EPA, supported by the EASD and the ESC published this statement with the aim of improving the care of patients with severe mental illness

Ask	Measure	Decide
<ul style="list-style-type: none">▶ Personal/family history<ul style="list-style-type: none">▪ Diabetes▪ Hypertension▪ CHD (MI or Stroke)▪ Smoking▪ Diet▪ Activity	<ul style="list-style-type: none">▶ Height▶ Weight▶ Waist circumference▶ Blood pressure▶ Fasting glucose▶ Fasting lipids	<ul style="list-style-type: none">▶ Behavioural treatments (eg, obesity, prediabetes)▶ Smoking cessation▶ Referral<ul style="list-style-type: none">▪ External▪ Internal▶ Switch medications

At minimum, the psychiatric provider should take responsibility for the monitoring of metabolic side effects of psychotropics

Routine measurements for use in monitoring and evaluation of physical health in SMI patients with normal baseline values

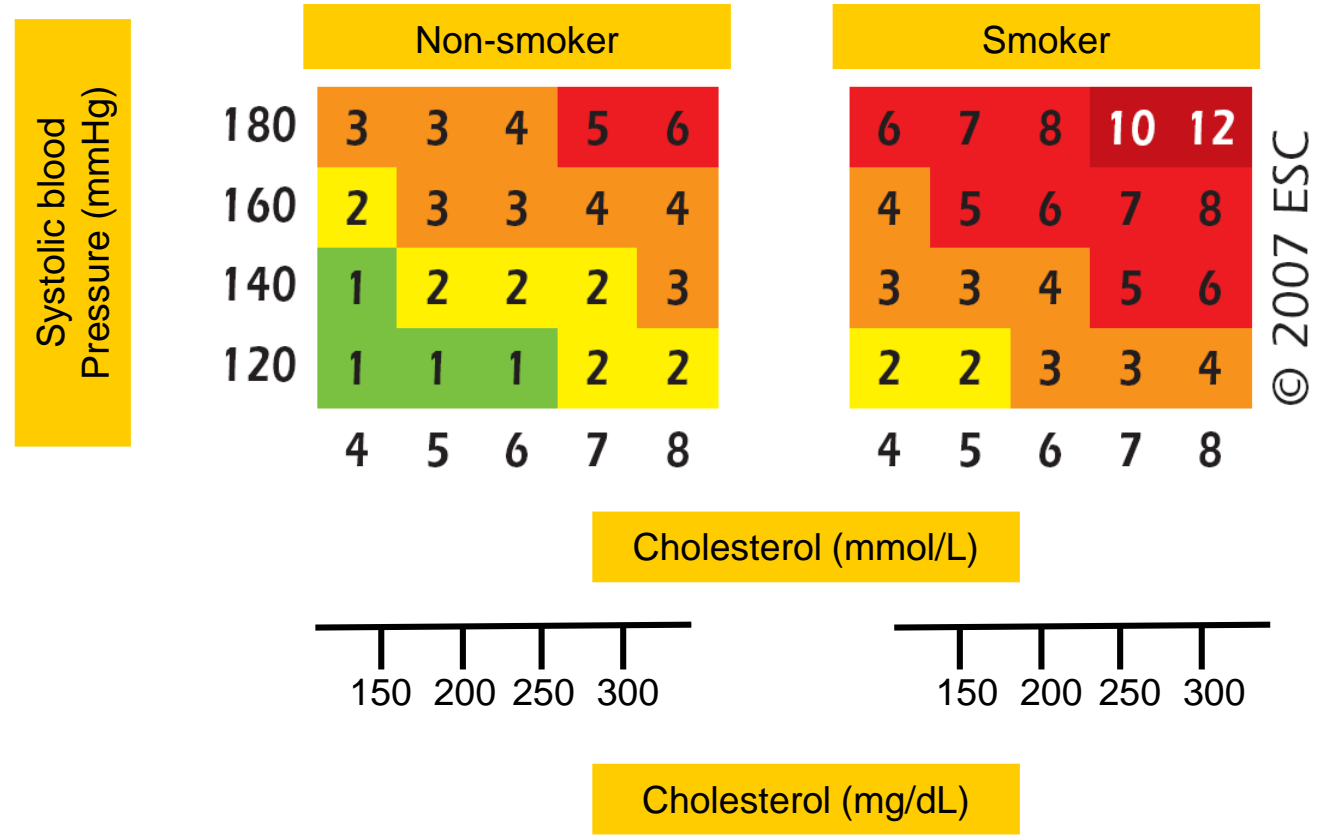
	Baseline	6 weeks	3 months	At least at 12 months and annually thereafter
Personal and family history	X			
Smoking, exercise, dietary habits	X	X	X	X
Weight	X	X	X	X
Waist circumference	X	X	X	X
Blood pressure	X	X	X	X
Fasting plasma glucose	X	X ¹	X	X
Fasting lipid profile	X	X ¹	X	X
ECG parameters	X			
Prolactin	X ²		X ³	X ³
Dental health	X			X

1 This early blood sugar and lipids assessment has been recommended in Europe, but not in the US

2 If possible to have some reference values, or, if this is too expensive, only in case sexual or reproductive system abnormalities are reported

3 Only in case of sexual dysfunction that coincided with antipsychotic treatment or dose change

Relative risk chart CVD risk



Impact of health actions on overall health

Health act	Impact on one's overall health
Maintenance of ideal body weight Weight loss 4-5% 5-7% 6-7% 10%	35-60% ↓ CHD Eliminate the need for anti-hypertensive medications in adults and elderly 58% reduced risk for type 2 DM in adults Improvement of the MetS by decreasing LDL-cholesterol and fasting insulin Reduction lifetime risk for heart disease up to 4% and increase life expectancy for up to 7 months
10% ↓ blood cholesterol	30% ↓ CHD
4-6 mmHg ↓ high BP (>14/9 mmHg)	16% ↓ in CHD and 42% ↓ in CVA
Stop smoking	50-70% ↓ in CHD
Maintenance of active lifestyle (+/- 30 min walk daily)	35-55% ↓ in CHD (women) 18% ↓ in CDH (men) 27% reduction in CVA 40-50% ↓ in risk of cancer 33-50% ↓ in risk of developing DM

CHD – coronary heart disease; DM – diabetes mellitus; MetS – metabolic syndrome; BP – blood pressure; CVA – cerebrovascular accident



Comorbid somatic illnesses in patients with SMI: Clinical, policy and research challenges

- Taking responsibility for the patient
- Implementing systematic education
- Improving parity in health care access and provision
- Forging collaborations with other medical specialists
- Studying different aspects of somatic comorbidity in patients with schizophrenia and other severe mental disorders