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DE RELACIONES
EXTERIORES

Eleventh Meeting of the Expert Group on Demand Reduction

"Towards the development of comprehensive public policies on treatment for drug dependent people"

Drug consumption associated problems within public health
policies
(infections and injury)

Dr. Carlos Jose Rodriguez Ajenjo, Technical Secretary
National Council Against Addictions Technical Secretariat
Ministry of Foreign Affairs, Mexico City, october 1, 2009



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Background



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Background

- Medical illnesses are common among drug users.
- Some behaviors associated with substance use (injection, exchanging sex for money or drugs) pose an increased risk for specific conditions such as sexually transmitted diseases and endocarditis.



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Background

- Teratogenic effects in the short and long term (alcohol, nicotine, morphine, cannabinoids and cocaine)
- The use / abuse / substance dependence in the mother during pregnancy has been linked to childhood psychopathology: ADHD and aggression ...
- ...also with motor and cognitive deficits in newborns and infants.
- Cigarette smoking before conception, in both the mother and the father, and the gestational use of marijuana are associated with increased frequencies of some types of childhood cancers in offspring.



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Background

- The active use of alcohol and drugs has been identified as one of the few relatively consistent predictors of poor treatment adherence
- Particularly true for cocaine users
- The relative lack of access and effective use of care, as well as the disruption of daily routines by the continued use of substances negatively affect the clinical prognosis.
- Prevents self-care behaviors such as adherence to drug treatment and appointment follow-up



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Background

The relative lack of access and effective use of care, as well as the disruption of daily routines by the continued use of substances negatively affect the clinical prognosis.

Prevents self-care behaviors such as adherence to drug treatment and appointment follow-up



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Alcohol



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Background

- Increased alcohol attributable damage in developing countries.
- The relative level of damage is particularly high in developed countries or developing countries with low mortality.
- However, the lower relative severity of alcohol-related problems in some developing countries with high mortality should also be considered in relation to the absolute level of damage attributable to alcohol in these countries, changes in rates of abstention and how that the harmful use of alcohol can hinder social development.



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Background

- Alcohol and liver disease:
 - Cirrhosis
 - Hepatitis B and C
- Other gastrointestinal diseases.
- Hematological, metabolic and endocrine disorders.
- Osteoporosis and osteopenia.
- Cancers.
- Cardiovascular problems: cardiomyopathy, heart failure.
- Abuse / dependence: neurocognitive deficits.
- Reduced hippocampal volume in alcoholics.
- Acute intoxication.
- Poisoning (overdose).
- Respiratory depression and coma.
- Withdrawal syndrome.
- Delirium tremens and hallucinosis.

Baigent 2003; Stein 1999; Bruno 2003; Beresford et al. 2006; PARÉS, A.; CABALLERÍA, J.: *Patología orgánica*; ADICCIONES (2002), VOL. 14, SUPL. 1 ; GARCÍA-SEMPERE, A.; PORTELLA, E.: *Los estudios del coste del alcoholismo: marco conceptual, limitaciones y resultados en España*; ADICCIONES (2002), VOL. 14, SUPL. 1; Cohen PJ, 2004.



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Traffic Accident Deaths in the Americas: 1985-2001

- 1.26 million people died worldwide in 2000 due to road traffic injuries (RTI).
- 90% of them lived in low or medium income countries.
- That year, the mortality rate in the world by RTI was 20.8 deaths per 100,000 population.
- In the Americas, was 26.7 for men and 8.4 for women.
- Between 1997 and 2000 injuries in traffic accidents were the 10th leading cause of death in the general population.
- In youth is the 2nd cause of lost years of life.



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Traffic accidents in youth

- Injuries and accidents account for 9% of mortality worldwide, with over five million deaths a year.
- Each year two million teenagers in the world, suffer injuries from traffic accidents.
- Traffic accidents are the health problem that requires more days of hospital care per patient (5.2 days).
- 60% of those injured in traffic accidents are male.
- The main causes of accidents are speeding and excessive consumption of alcoholic beverages.
- The consequences are costing the country 120 billion pesos annually.



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Alcohol in Mexico

- There are about 3 ½ million people with alcohol dependence and serious problems.
- One and a half million of them already have other complications: physical, gastrointestinal, neurological and psychiatric disorders.
- Studies in different cities, show that one in five people admitted to emergency rooms by traumatic events, has alcohol in blood, and fewer than one in ten cases are alcohol dependent people.



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Alcohol in Mexico

- It causes a fifth of industrial accidents.
- Contributes to unemployment and absenteeism.
- I.M.S.S.: 1,000 cases of alcohol poisoning reported weekly.
- 1st. cause of death in people 15-30 years: road accidents (in 50-60% alcohol is involved).
- Family problems 11%, fights 6% and 3.7% trouble with police.
- 41.3% of those arrested were intoxicated.
- 25% men and 6% of women drank in the 6 hours prior to admission to the emergency room.
- 86% of those who drank in the previous six hours had a substance abuse disorder.



Mortality and disability indexes in Mexico adjusted for sickness and injury category in 2004

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Mortality

Ischemic cardiopathy	13.3%	Violence	2.2%
Diabetes Mellitus	9.9%	Thracheal, bronchial and lung cancer	16%
Cerebrovascular disease	6.1%	Prostate cancer (m)	2.0%
Hepatic cirrhosis	5.6%	Breast cancer (f)	2.3%
Road traffic accidents	4.4%	Cervical cancer (f)	2.3%
C.O.P.D.	4.0%		
Lower resp. infections	3.6%		
Hypertension	3.3%		
Birth asphyxia/trauma	2.9%		
Nephritis, nephrosis	2.7%		



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Mortality and disability indexes in Mexico adjusted for sickness and injury category in 2004

Disability

Unipolar depression	6.4%	Schizophrenia	2.1%
Traffic accidents	4.6%	Cerebrovascular diseases	2.1%
Birth asphyxia/trauma	4.2%	Congenital cardiac abnormalities	2.1%
Diabetes Mellitus	3.6%	Endocrine disorders (f)	2.1%
Ischemic cardiopathy	3.2%	Lower respiratory infections (m)	2.0%
Hepatic Cirrhosis	3.1%	Cataracts (f)	2.0%
Violence	2.9%	Migraine (f)	2.0%
Asthma	2.5%		
Alcohol related disorders	2.5%		



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Death and disability causes in Mexico adjusted for sickness and injury category in 2004

Mortality

Hyperglycemia	14.4%
High Body Mass Index	12.4%
Hypertension	10.1%
Alcohol use	8.4%
Tobacco use	4.8%
Low vegetable and fruit intake	4.7%
Sedentarism	4.4%
High blood cholesterol	3.6%



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Death and disability causes in Mexico adjusted for sickness and injury category in 2004

Disability

Alcohol use	7.5%
High Body Mass Index	5.3%
Hyperglycemia	5.2%
Hypertension	2.4%
Unsafe sex	1.9%
Low vegetable and fruit intake	1.5%
High blood cholesterol	1.2%
Sedentarism	1.2%
Tobacco use (m)	1.5%



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Tobacco



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Background

- High morbidity and mortality from cardiovascular and respiratory diseases.
- The problems can manifest from a relatively young age (around 30 years)



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Tobacco

- WHO: tobacco causes at least 80% of lung cancers in developed countries.
- Cigarette smoking and nicotine addiction are widely recognized as having a causal role in:
 - lung cancers (and other)
 - other lung diseases
 - and cardiovascular events
- In Mexico, ischemic heart disease and malignant tumors of the lung, bronchus and trachea, are in first place in overall mortality.



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Background

- In Mexico, three out of four lung cancer cases occurring in men and one in four cases occurring in women are due to smoking (Franco, Villalba, Cork, lung cancer Interagency Group, 2006).
- In 2004, the total number of annual deaths attributable to smoking by concomitant illness exceeded 60,000 (average 157 per day, 6 per hour).
- In Mexico, passive smoking is responsible for 17% of lung cancer cases in women and possibly of 5% for non-smoking men.



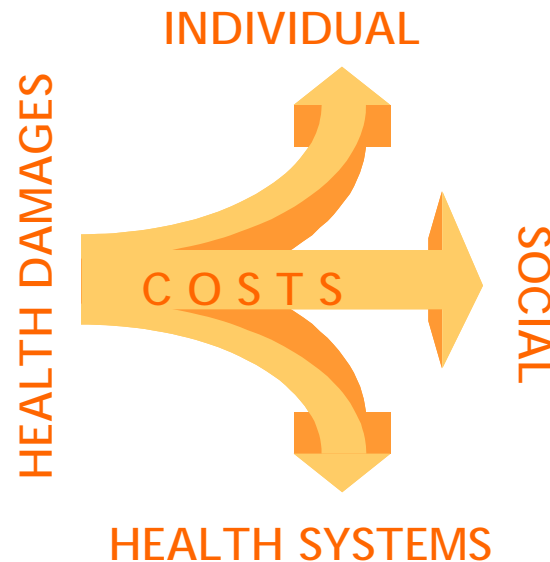
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Tobacco: the case in Mexico

More than 53,000 persons die every year



147 mexicans die each day for tobacco consumption associated conditions



The Mexican Government spends 45 billion pesos each year

36 million people exposed to the smoke produced by 17 million

6 out of 10 mexicans are exposed to tobacco smoke



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Tobacco consumption attributable fraction

- The tobacco consumption attributable fraction refers to the percentage of total hospital discharges that can be associated with statistical rigor to the consumption of tobacco, both smokers and former smokers.
- This figure does not consider the risks of nonsmokers associated with exposure to secondhand smoke.



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Acute myocardial infarction: hospital discharges 2004-2006

2004	2005	2006
13,670	14,241	13,633

FUENTE: Sistema Nacional de Información en Salud (SINAIS), disponible en www.salud.gob.mx



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Cerebrovascular disease: Hospital discharges 2004-2006

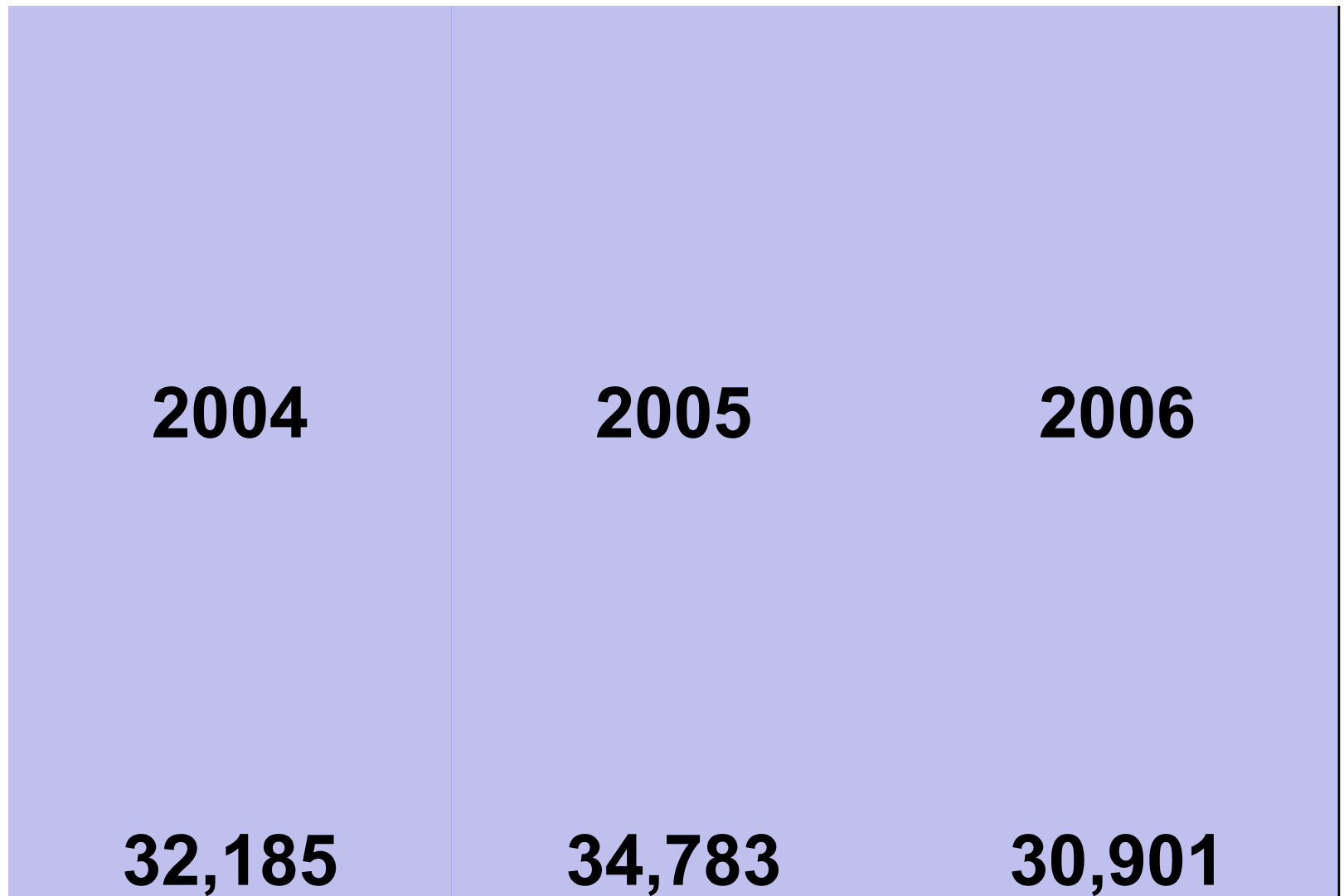
2004	2005	2006
39,816	41,426	42,201

FUENTE: Sistema Nacional de Información en Salud (SINAIS), disponible en www.salud.gob.mx



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Chronic Obstructive Pulmonary Disease: Hospital discharges 2004-2006



FUENTE: Sistema Nacional de Información en Salud (SINAIS), disponible en www.salud.gob.mx



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Lung cancer: Hospital discharges 2004-2006

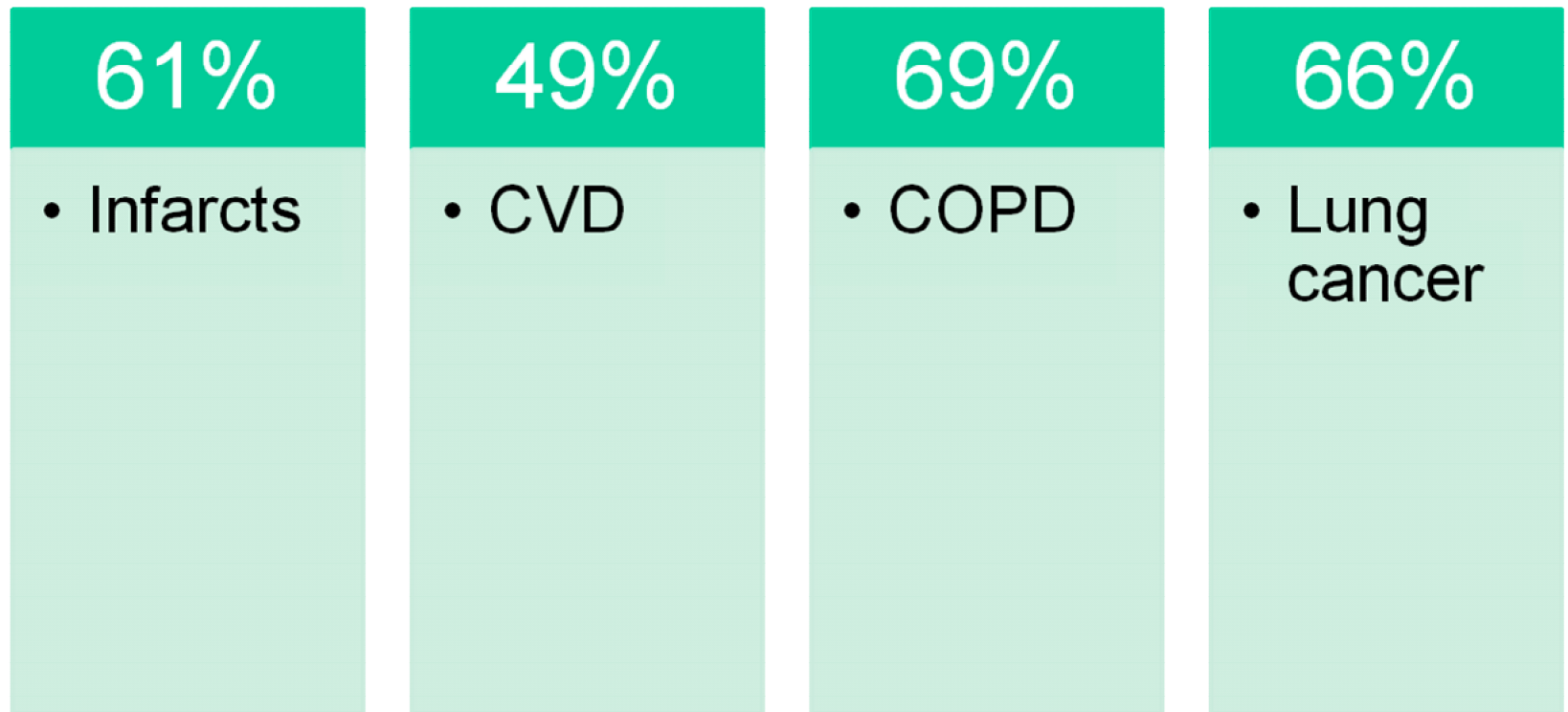
2004	2005	2006
6,022	5,944	5,883

FUENTE: Sistema Nacional de Información en Salud (SINAIS), disponible en www.salud.gob.mx



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Tobacco consumption attributable fraction 2004-2006

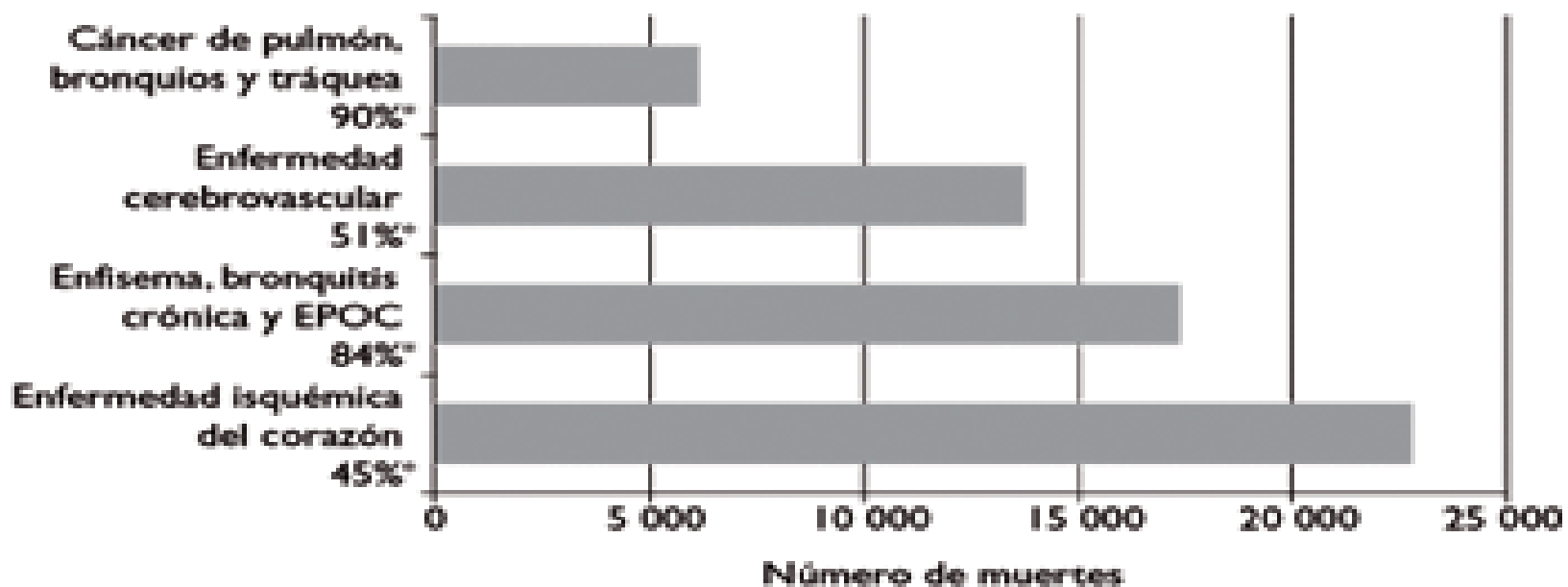


FUENTE: REYNALES, Luz Myriam, *et al*, (2006), p. S56



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Tobacco attributable mortality: Mexico, 2004



Fuente: Secretaría de Salud/INEGI



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Total of cases attributable to tobacco consumption in 2006

Acute myocardial infarction	9,407
Cerebrovascular disease	20,679
Chronic Obstructive Pulmonary Disease	21,322
Lung cancer	3,883
TOTAL	55,291



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Marijuana



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Background

- Airway inflammation
- Lung carcinoma?
- Potential (synergistic?) risk factor for hepatic cirrhosis
- Possible risk factor for testicular cancer.



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Background

- One study estimated that consumers have a 4.8 times greater risk of suffering a heart attack in the next hour after smoking
- This risk may be higher in populations of elderly and / or cardiovascular vulnerability.



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Cocaine



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Background

Complications associated with cocaine use include:

Heart arrhythmias

Heart attacks (24 times more likely to suffer a heart attack during the following hours to consumption),

Cerebral vascular events,

Angina pectoris,

Respiratory failure,

Convulsions

Headache,

Abdominal pain and nausea,

Malnutrition.



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Background

- Loss of sense of smell, nosebleeds, problems swallowing, chronic sore throat and runny nose.
- With ingestion: severe intestinal gangrene.
- Injected: acute allergic reaction, increased risk of contracting HIV and other blood-borne diseases.
- When combined with alcohol, cocaine produces ethylene, which enhances the euphoric effects and potentially increases the risk of sudden death.



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Synthetic Drugs



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Background

- Cardiovascular disorders / stroke.
- Seizures.
- Electrolyte imbalance (hyponatremia, with risk of cerebral edema).
- Important liver diseases (some lethal and fulminant hepatitis)
- Hyperthermic syndrome (disseminated intravascular coagulation, rhabdomyolysis, acute renal failure, and death).
- Most consumers use more than one substance simultaneously.



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Background: GHB

It is estimated that only in the last half of 2003 in the USA there were 990 visits to emergency rooms related to the use of gamma-hydroxybutyrate (GHB, "Georgia home boy," "liquid ecstasy", "x liquid").



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Background: PCP (phencyclidine)

High dose: hypotension, bradycardia and respiratory depression, nausea, blurred vision, nystagmus and loss of balance, convulsions, coma and death (death is often the result of accidental injury or suicide during an episode of intoxication).



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Background: PCP (phencyclidine)

Interaction with other central nervous system depressants such as alcohol and benzodiazepines, can also cause coma.

It is often necessary to go to the emergency room because of an overdose.



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Inhalants



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Background

Heart failure and death within minutes of a session.

This syndrome, "sudden sniffing death" can occur with a single session of consumption even in a physically healthy young man.

Is particularly associated with the abuse of butane, propane and chemicals in aerosols.



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Background

- Respiratory arrest.
- Death by suffocation.
- Loss of consciousness.
- The deliberate inhalation using a bag greatly increases the chance of choking.
- Hearing loss.
- Peripheral neuropathies.
- Damage to the central nervous system (brain)
- Bone marrow damage.
- Damage to the liver and the kidneys.
- Nitrites: unsafe sex, HIV, hepatitis.



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Methamphetamine



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Background: Methamphetamine

- Tachypnea,
- Tachycardia,
- Cardiac arrhythmias
- Hypertension
- Hyperthermia



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Background: Methamphetamine

Extreme weight loss,

Serious deterioration of dental health and skin,

Transmission of HIV and hepatitis B and C.

It can worsen the evolution and the clinical consequences of HIV.



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Others



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Background: Khat

Tooth decay and gum disease.

Constipation, gastritis, ulcers and increased risk of upper gastrointestinal tract tumors.

Cardiac arrhythmias, myocardial ischemia and infarction.



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Stimulants (prescription)

Hypertension,

Tachycardia,

Hyperthermia

Insomnia

Hyporexia (malnutrition and its consequences)

Hostility and paranoia.

At high doses, cerebrovascular events.



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Anabolic steroids

Liver damage

Fluid retention

Hypertension

High LDL cholesterol (atherogenic)

Low HDL cholesterol

Renal failure

Severe acne

Tremor



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Anabolic steroids

Men: testicular atrophy, reduced sperm production, infertility, baldness, enlarged mammary glands and increased risk of prostate cancer.

Women: facial hair growth, baldness, menstrual disorders, hypertrophy of the clitoris and deepening of the voice.

In adolescents: early cessation of growth and accelerated puberty changes.



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Intravenous drugs

- The most commonly injected illicit drugs are heroin, cocaine and methamphetamine
- Its use is associated with a range of physical complications, infectious and noninfectious.
- Drug injection is a major risk factor for HIV transmission worldwide.
- Contributes to nearly one third of all new cases outside sub-Saharan Africa.
- It is also common the co-infection with HIV and hepatitis C.

UNAIDS 2006; Hagan et al. 2005; Ruiz et al. 2007; ANTONIO TERÁN; ANA ÁLVAREZ; RAFAEL SÁNCHEZ; M^a ÁNGELES ALVARO: Complicaciones somáticas. Diagnóstico y manejo de la infección por VIH, VHB, VHC y tuberculosis en el paciente heroinómano. Interacciones farmacológicas. ADICCIONES (2005), VOL. 17, SUPL. 2



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Intravenous drugs

- Sexually transmitted diseases.
- Skin and soft tissue infections.
- Infective endocarditis.
- Tuberculosis.
- Pneumonia.
- Neurological complications.
- High risk practices.

UNAIDS 2006; Hagan et al. 2005; Ruiz et al. 2007; ANTONIO TERÁN; ANA ÁLVAREZ; RAFAEL SÁNCHEZ; M^a ÁNGELES ALVARO: Complicaciones somáticas. Diagnóstico y manejo de la infección por VIH, VHB, VHC y tuberculosis en el paciente heroinómano. Interacciones farmacológicas. ADICCIONES (2005), VOL. 17, SUPL. 2



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Intravenous drugs and HIV: the Americas

- Intravenous drug use (IVDU) is responsible for the increase of HIV infections in various parts of the world, including countries of Central Europe, South America and Southeast Asia.
- HIV infections among drug users and were reported in 120 countries.
- The nine countries with the highest prevalence of HIV AIDS in IVDU in the world are:

Estonia	(72.1%),
Argentina	(49.7%),
Brazil	(48.0%),
Kenya	(42.9%),
Myanmar	(42.6%),
Thailand	(42.5%),
Indonesia	(42.5%),
Ukraine	(41.8%),
Nepal	(41.4%)



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Intravenous drugs in Mexico

- Mexico is suffering an epidemic that is concentrated in men who have sex with men and IVDUs, the groups with highest prevalence rates, that is why the study of this group and their risk behavior is a priority
- Risk reduction regarding HIV / AIDS and drugs is a new concept in Mexico and only a few decision makers accept it.



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Intravenous drugs in Mexico

- The IVDU and have a high risk of acquiring blood-borne infections of bacteria and viruses like HIV / AIDS.
- The estimated risk of acquiring HIV among Mexicans drug injectors living in the United States is over 100 times that of being a recipient in an unprotected anal intercourse.

CENSIDA, (2008). Panorama Epidemiológico del VIH/SIDA e ITS en México. Consultado 5 septiembre 2008. www.salud.gob.mx./conasida; National Institute on Drug Abuse, (2008). Las drogas, cerebro y el comportamiento: La ciencia de la adicción. Estados Unidos, Departamento de Salud y Servicios Humanos de los Estados Unidos. Institutos Nacionales de la Salud, 2008.



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Intravenous drugs in Mexico

- The prevalence among IVDUs reaches 6%.
- In 1991, Güereña and colleagues reported 1.9%, and in 1997 Magis and colaboradores reported 1.5% infection among IVDUs.
- Mexican prisoners sentinel surveys conducted in 1991 and 1994 found an HIV prevalence of 1.15%, and 3.7% respectively.
- According to CENSIDA, in 2008 the highest percentage of cumulative cases of blood transmission is among the IVDUs (1.2%).

Magis, R. C., Bravo-García, E., & Rivera, R. P., (2000). El SIDA en México en el año 2000. En Uribe Zúñiga P. y Magis Rodríguez C. La Respuesta mexicana al SIDA: mejores prácticas. México. pp.13-22; Güereña, B. F., Benenson, A. S., Sepúlveda, A. J., (1991). HIV-1 prevalence in select Tijuana sub-population. American Journal of Public Health; 81(5): 623-625; Magis RC, Ruiz BA, Ortiz MR, Loya SM, Bravo PMJ, Lozada RR., (1997). Estudio sobre prácticas de riesgo de infección para VIH/SIA en inyectores de drogas de la Cd. de Tijuana, B.C. Journal of Border Health, 2(3):31-35; Magis CL, García ML, González MG, González L, Díaz D, Valdespino JL, et al. (1992). First data on a new national problem: I.V. drug use and HIV-1, prevalence in Mexico. Int Conf AIDS;(8)3:174. Abst No. PuC 8129; Magis RC, Del Río ZA, González G, García, Valdespino JL, Sepúlveda, (1994). HIV infection in Prisons. Int AIDS Conf AIDS.



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Intravenous drugs in Mexico

- The sentinel surveys conducted among the IVDU population concluded that in the period 1991-1996, HIV prevalence rate among 1,004 cases observed was 3.6%.
- In 2003 blood samples were obtained from 405 IVDUs in Tijuana; for 355 men the prevalence rate was 3.7%, and 6% among the 50 women studied.



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Intravenous drugs in Mexico

- In early 2005 was identified a prevalence of 1.9% and 4.1% in Tijuana (n = 207) and Ciudad Juarez (n = 197) respectively.
- Studies conducted in 2004 and 2005 with female sex workers (FSW) in Tijuana (n=412) and Ciudad Juarez (n=408), found that 21% and 12% respectively also were IVDUs and showed an HIV prevalence of 16%, against 4% in the non-IVDU FSW.



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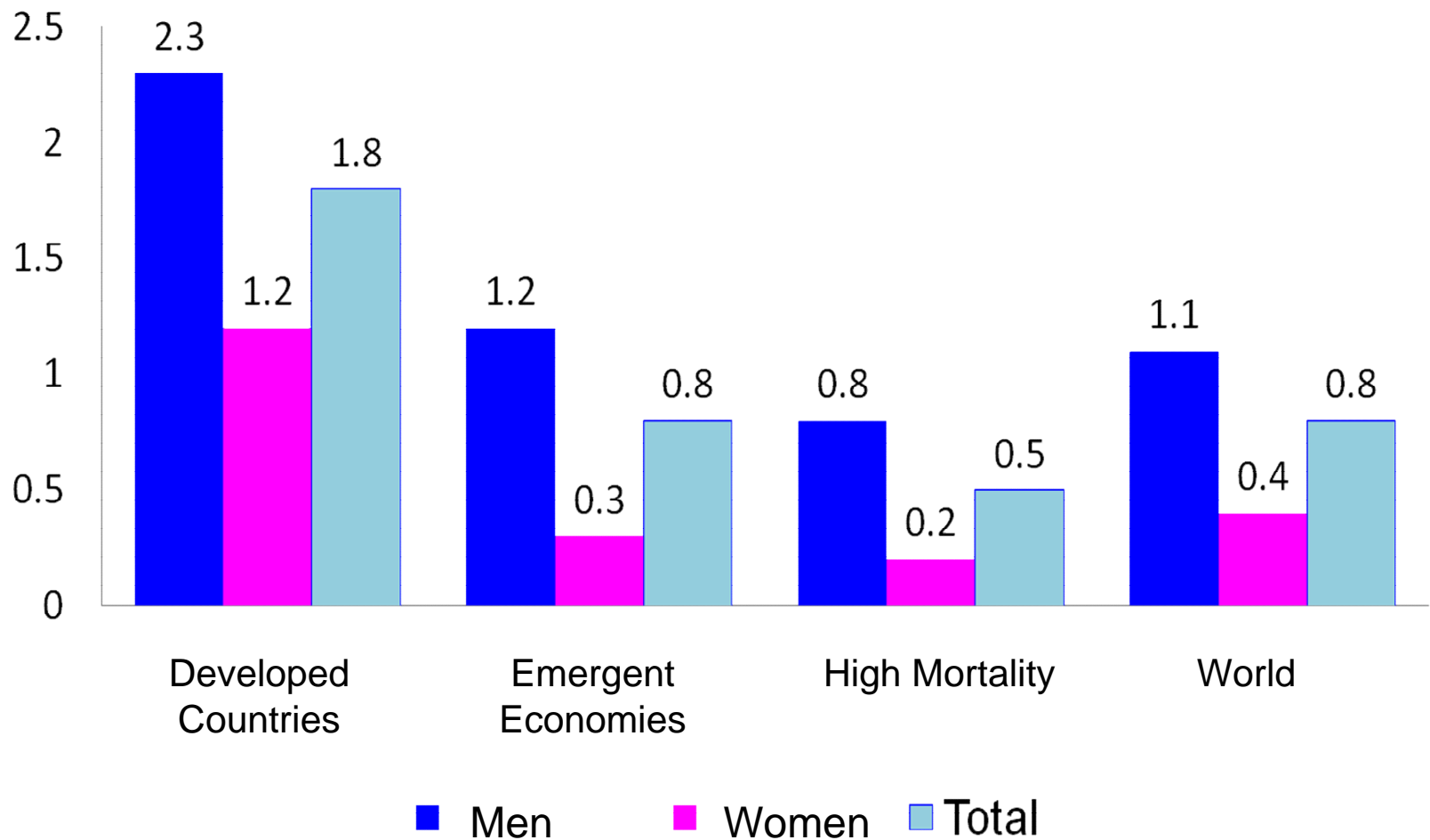
Heroin: cost of care

- Preliminary estimates indicate that the societal costs of heroin addiction to the United States in 1996 might range from \$15 billion to \$20 billion.
- Approximately 40 percent of these costs are due to the medical complications of heroin addiction, primarily treatment for HIV/AIDS and psychiatric comorbidities.
- Another 10 percent is associated with lost productivity.
- **CONCLUSIONS:** The costs associated with heroin use are significant and extend well beyond those related to treatment of the addiction.
- This study suggests that greater investment in prevention and treatment activities may be highly cost-effective.



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Illegal drug use attributable burden of disease



J. Rehm, et al., Drug and alcohol Review, 25, 503-513 2006



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Mexico: SISVEA–SEMEFO

SISVEA: Addictions Epidemiological Surveillance System

- The Forensic Medical Service (SEMEFO) provides information on the presence of substances in cases of deaths that occurred in unnatural circumstances
- In 2008 data were representative of 21 states
- Information was available from a total of 18,216 deaths
- 3,307 (18.1%) occurred under the influence of some substance.
- Of the total of deaths related to some kind of substance, 91.6% were in males.
- The age group where a greater number of deaths associated with substances was reported, was the 40 years and up group (36.6%)
- However, among deaths associated with cocaine use the highest percentage was that of young adults.



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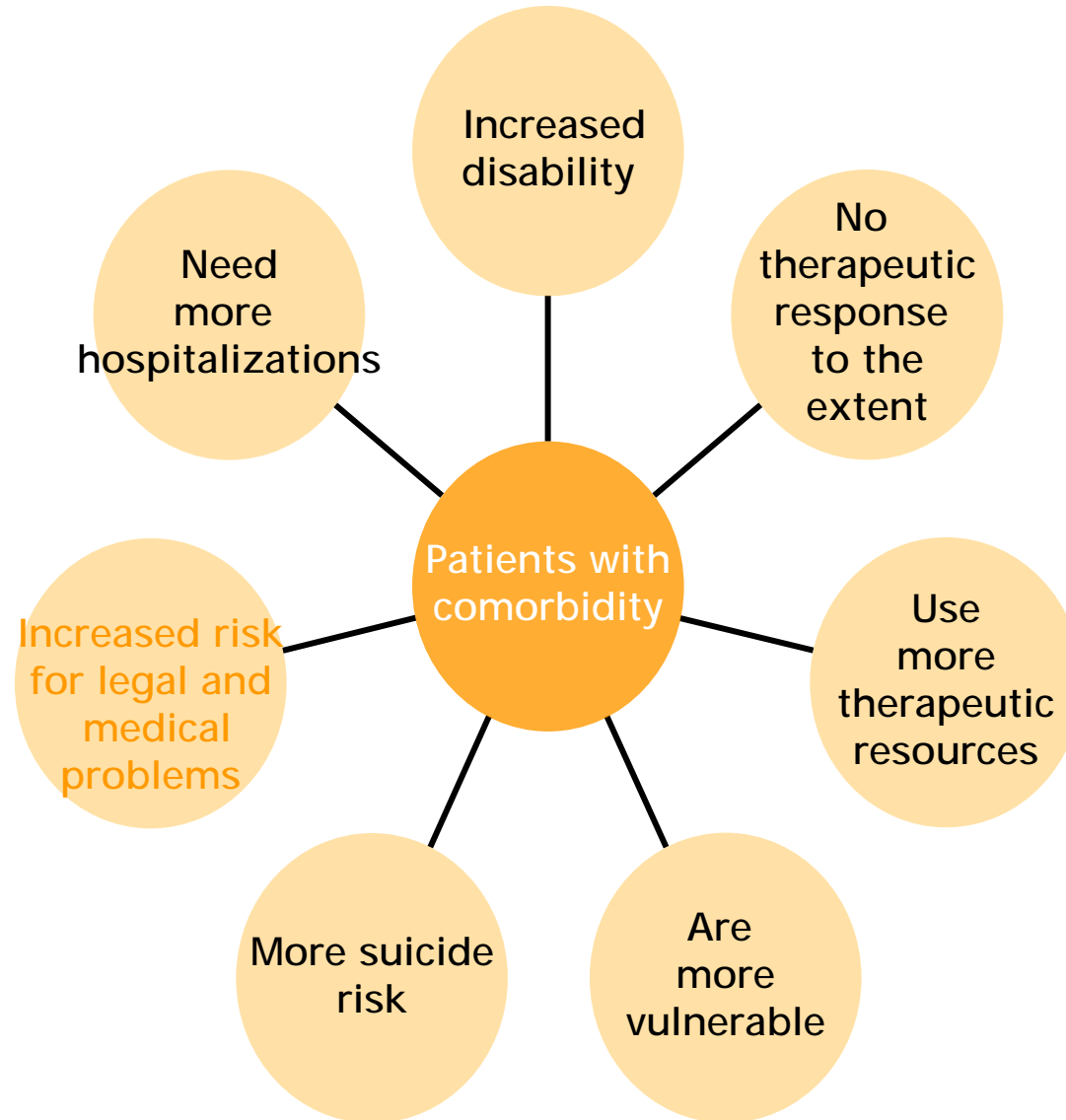
Mexico: SISVEA-ERs

- There were 17, 734 admissions
- In 7,293 cases the patient reported having used some substance in the past 30 days including tobacco (41.1%)
- Of those admitted, 5,332 (30.1%) had suffered an injury from external causes.
- Of those who had suffered injury from external causes, 445 (8.3%), were under the effect of at least one psychoactive substance at admission
- The most commonly mentioned substance was alcohol.
- Most of those who were under the influence of alcohol entered by falls, bruises, or automobile accidents.
- By contrast, most of those who entered under the influence of inhalants, tranquilizers, heroin or other medical drugs, required attention by poisoning or intoxication.



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Cost-benefit of treatment of comorbidity



Fuente: Woody, 1996



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Comprehensive care

- Comprehensive care improves prognosis in health care.

Therefore, it must be a goal for the managing of healthcare services that comorbid physical problems and addictions are addressed within the regular health services.

A disproportionate emphasis is placed on the isolated treatment rather than prevention.



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Comprehensive care

- Managing health services:

Despite an often fragmented access to services, drug users are heavy users of medical care when available.

A comprehensive primary care must include attention to medical and psychiatric comorbidity.



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Key answers

Psychiatric, medical and psychosocial comorbidity related with drug abuse and dependence are problems that are impacting significantly on health systems.

The solution begins with the comprehensive treatment (integrated) in the regular health services, with the same personnel but trained for these specific tasks, as well as with timely intervention and / or capitalizing "learning moments"

From the epidemiological point of view this association implies worse prognosis and higher costs in every way, in the short, medium and long term.