

Seminar on Mental Health Policy

精神病的疾病負擔

Disease burden of mental illness

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- **Global** burden of mental illness and self-harm
 - Findings from the Global Burden of Disease Study 2010
- **Local** studies on the social cost of suicide and mental illness
 - The burden of suicide studies done by the CSRP
 - Cost of depression in China and Taiwan
- **No** local studies on disease burden of mental illness in Hong Kong

Global burden of mental illness and self-harm

Findings from the Global Burden of Disease Study 2010

Murray CJL, Vos T, Lozano R, et al. **Disability-adjusted life years (DALYs)** for 291 diseases and injuries in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *The Lancet*. 2012;380(9859):2197-2223.

Lozano R, Naghavi M, Foreman K, et al. Global and regional **mortality** from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010. *The Lancet*. 2012;380(9859):2095-2128.

Vos T, Flaxman AD, Naghavi M, et al. **Years lived with disability (YLDs)** for 1160 sequelae of 289 diseases and injuries 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *The Lancet*. 2012;380(9859):2163-2196.

Salomon JA, Vos T, Hogan DR, et al. Common values in assessing health outcomes from disease and injury: **disability weights** measurement study for the Global Burden of Disease Study 2010. *The Lancet*. 2012;380(9859):2129-2143.

What is disease burden?

- **DALYs = YLLs + YLDs**
 - **DALYs**: disability-adjusted life years (失能調整存活人年數)
 - **YLLs**: years of life lost due to premature mortality (生命損失人年數)
 - YLLs = (number of deaths at each age x) X (standard life expectancy at age x)
 - e.g. a man who dies at age 25 loses 45 years of life if his life expectancy is 70 years
 - **YLDs**: years lived with disability (失能損失人年數)
 - YLDs = (prevalence of different disease-sequelae and injury-sequelae) X (disability weight for that sequela)
 - **disability weight**: from 0 to 1
 - » 0 = no loss of health
 - » 1 = a health loss equivalent to death
 - e.g. prevalence of severe major depression = 0.5% at age 60-65 (hypothetical); disability weight of depression = 0.655; 0.5% of people aged 60-65 'lose' 0.655 year of their life at age 60-65 due to the disability of severe major depression

Global burden of mental illness: conclusion 1

- Mental disorders and self-harm are important causes for DALYs
 - Major depressive disorder, ranked 11th globally
 - Self-harm, ranked 18th globally
- Suicide is an important cause of premature death globally
 - Particularly in men and women aged 15-49, ranked 6th in men and 5th in women
 - Self-harm, ranked 13th globally

Global burden of mental illness: conclusion 2

- Mental disorders, in particular major depressive disorders, are main contributors to global YLDs
 - Particularly in men and women in productive years
 - Major depressive disorder, rank 2nd globally
- Many mental disorders cause severe disability
 - In particular schizophrenia, severe major depression, opioid dependence, severe alcohol use disorder, severe anxiety disorder

Mental disorders and self-harm are important causes for DALYs, in particular in productive years

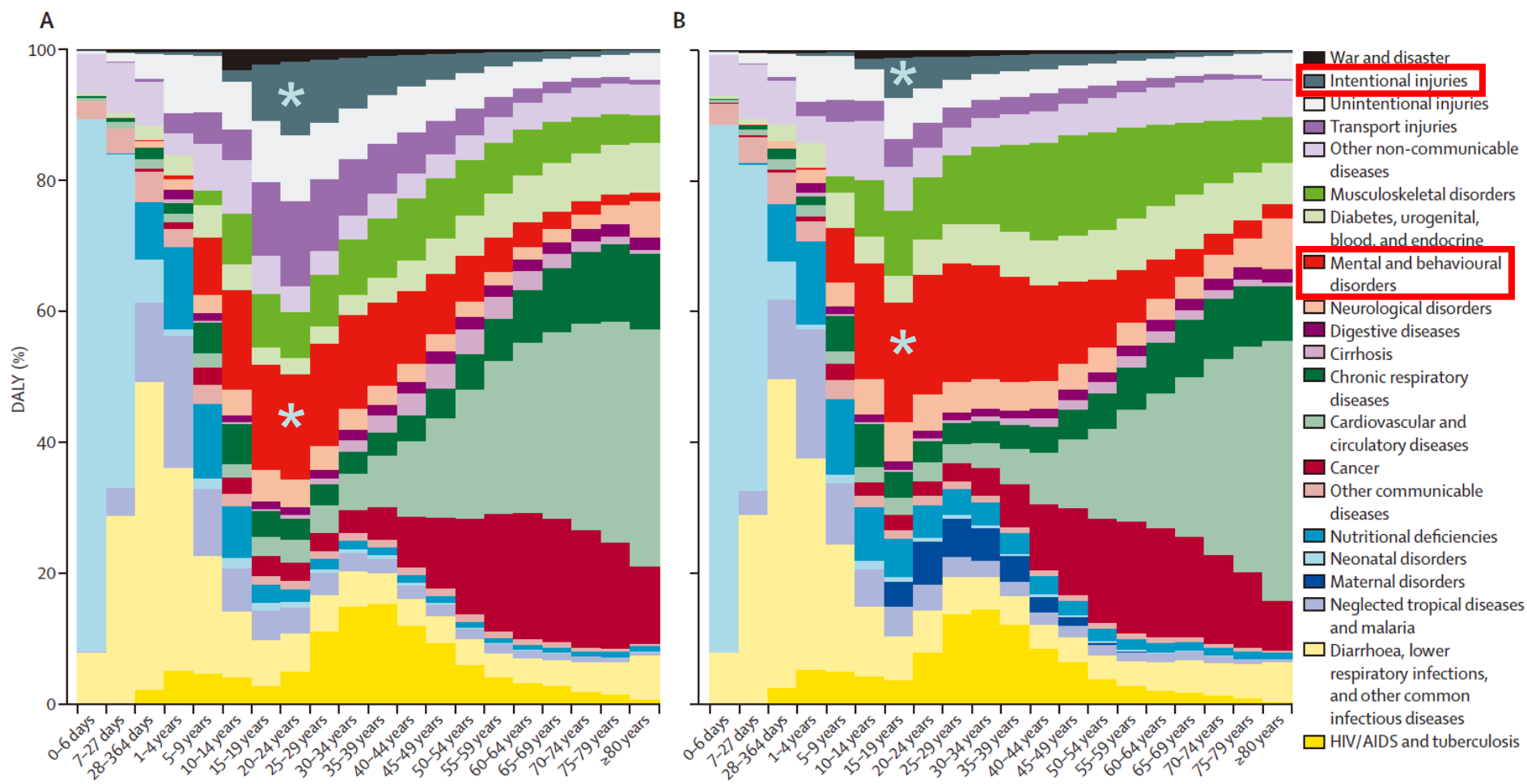


Figure 2: Percentage of global disability-adjusted life years by age, sex, and cause in 2010

Distribution of DALYs for male individuals (A) and female individuals (B). DALY=disability-adjusted life years. An interactive version of this figure is available online at <http://healthmetricsandevaluation.org/gbd/visualizations/regional>.

DALYs: **major depressive disorder**, ranked 11th globally; **self-harm**, ranked 18th globally, in 2010

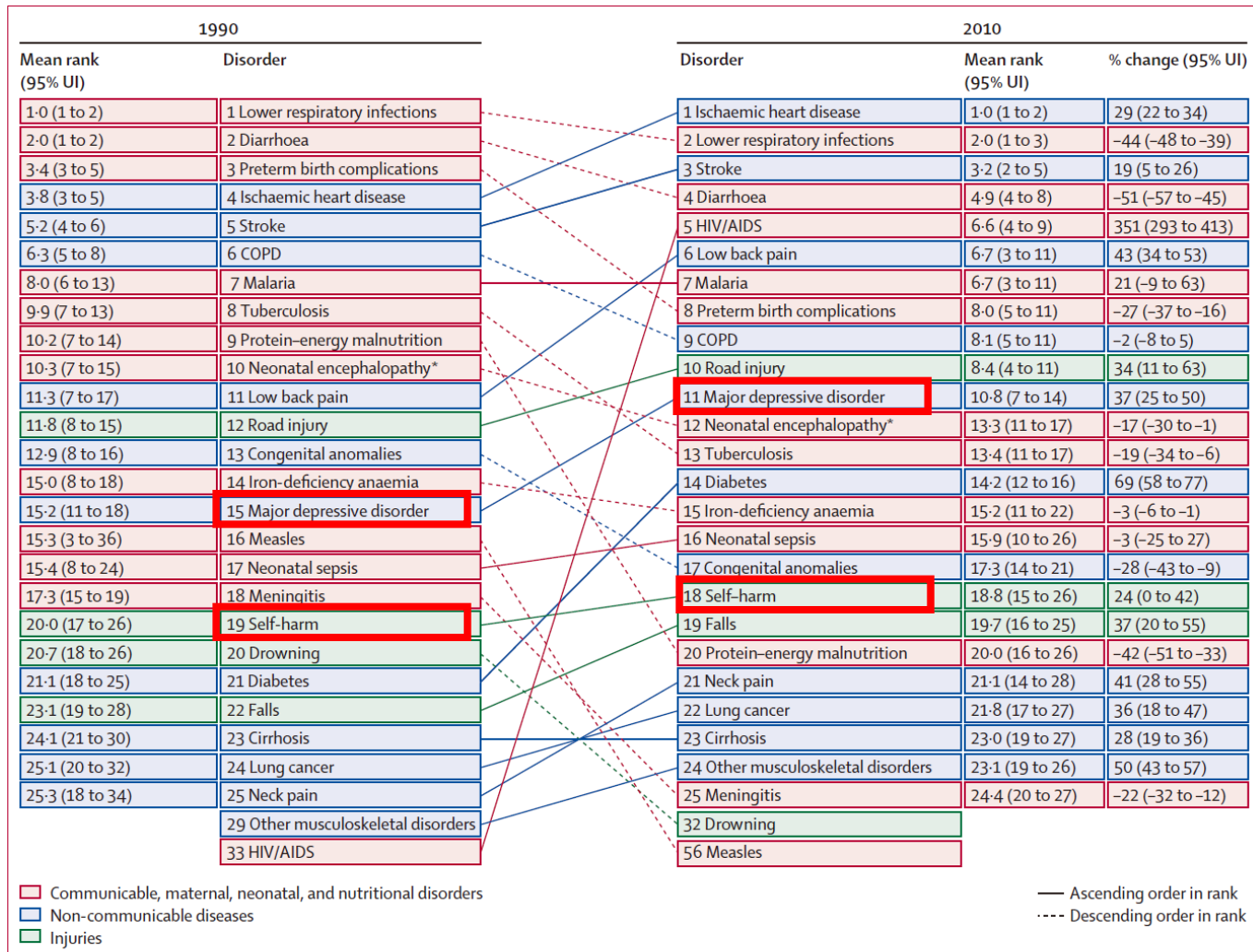


Figure 5: Global disability-adjusted life year ranks with 95% UI for the top 25 causes in 1990 and 2010, and the percentage change with 95% UIs between 1990 and 2010

UI=uncertainty interval. COPD=chronic obstructive pulmonary disease. *Includes birth asphyxia/trauma. An interactive version of this figure is available online at <http://healthmetricsandevaluation.org/gbd/visualizations/regional>.

Suicide: 6th leading cause of death in men, 5th in women amongst those aged 15-49, globally in 2010

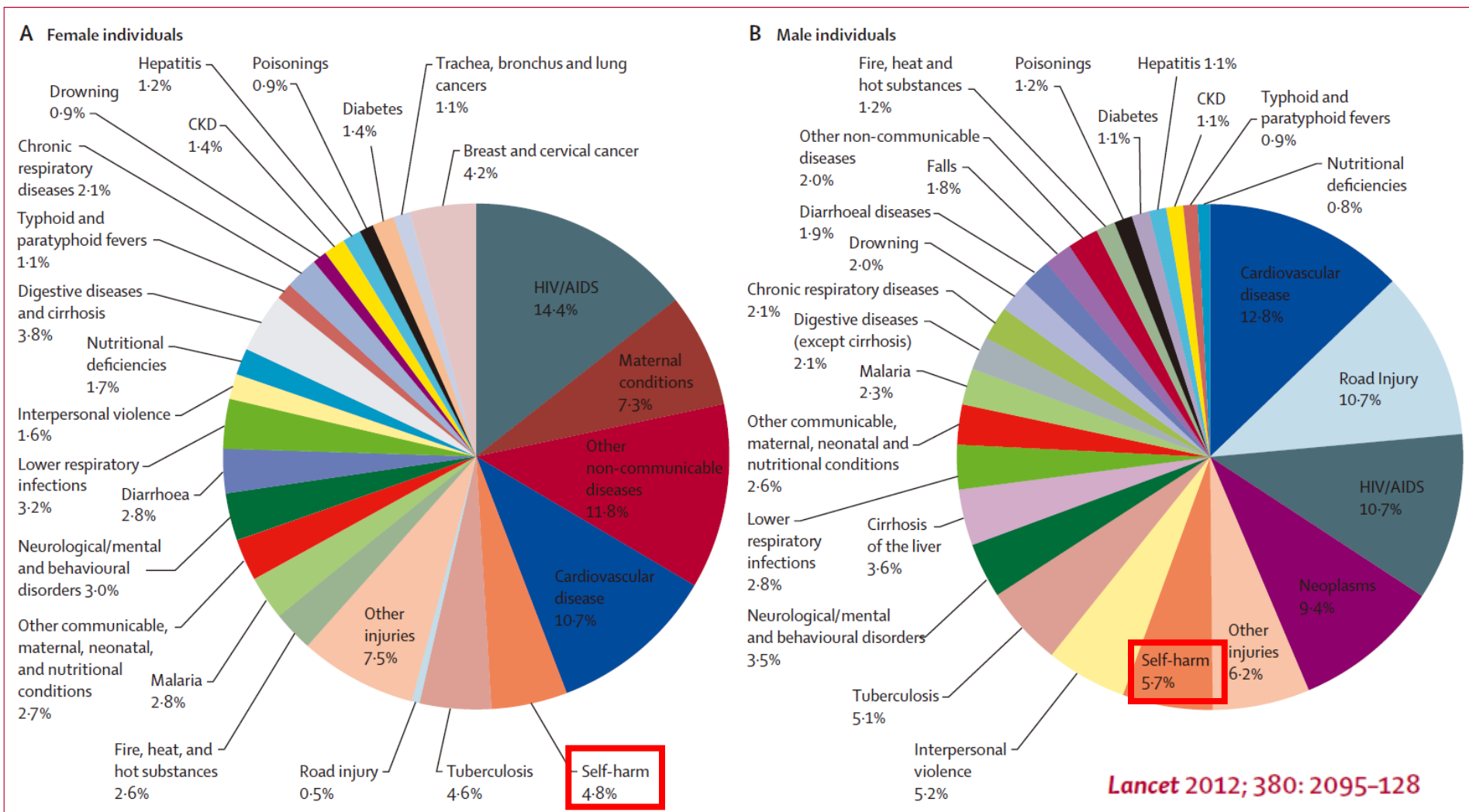
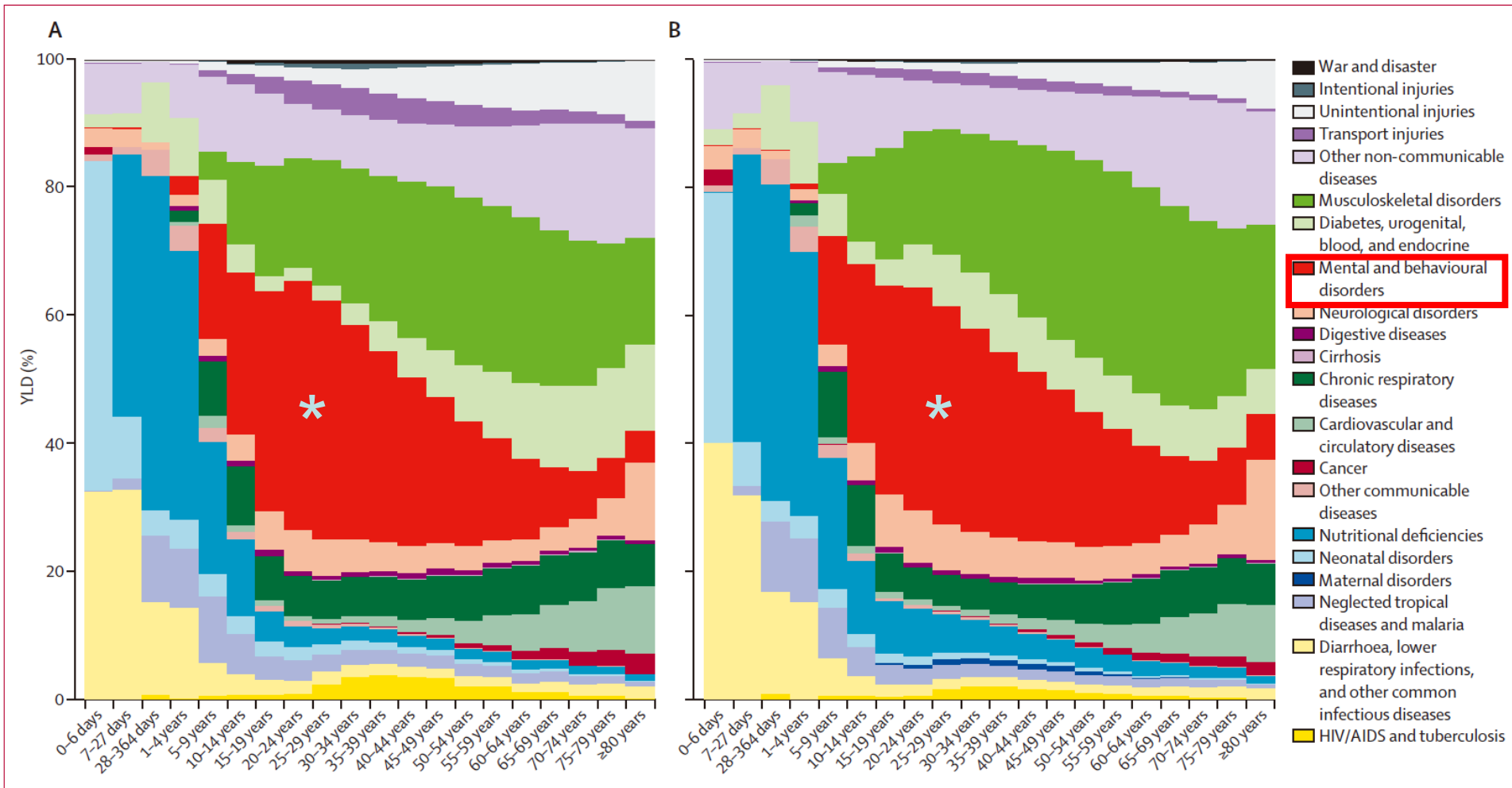


Figure 3: Global deaths in 2010 for individuals aged 15-49 years

(A) Female individuals, 3 496 480 total deaths. (B) Male individuals, 5 741 344 total deaths. CKD=chronic kidney disease.

Mental illness is an important cause of **years lived with disability (YLDs)**, as it usually first occurs early in life and causes significant disability



Major depressive disorder ranked 2nd as the cause of YLDs globally in 1990-2010

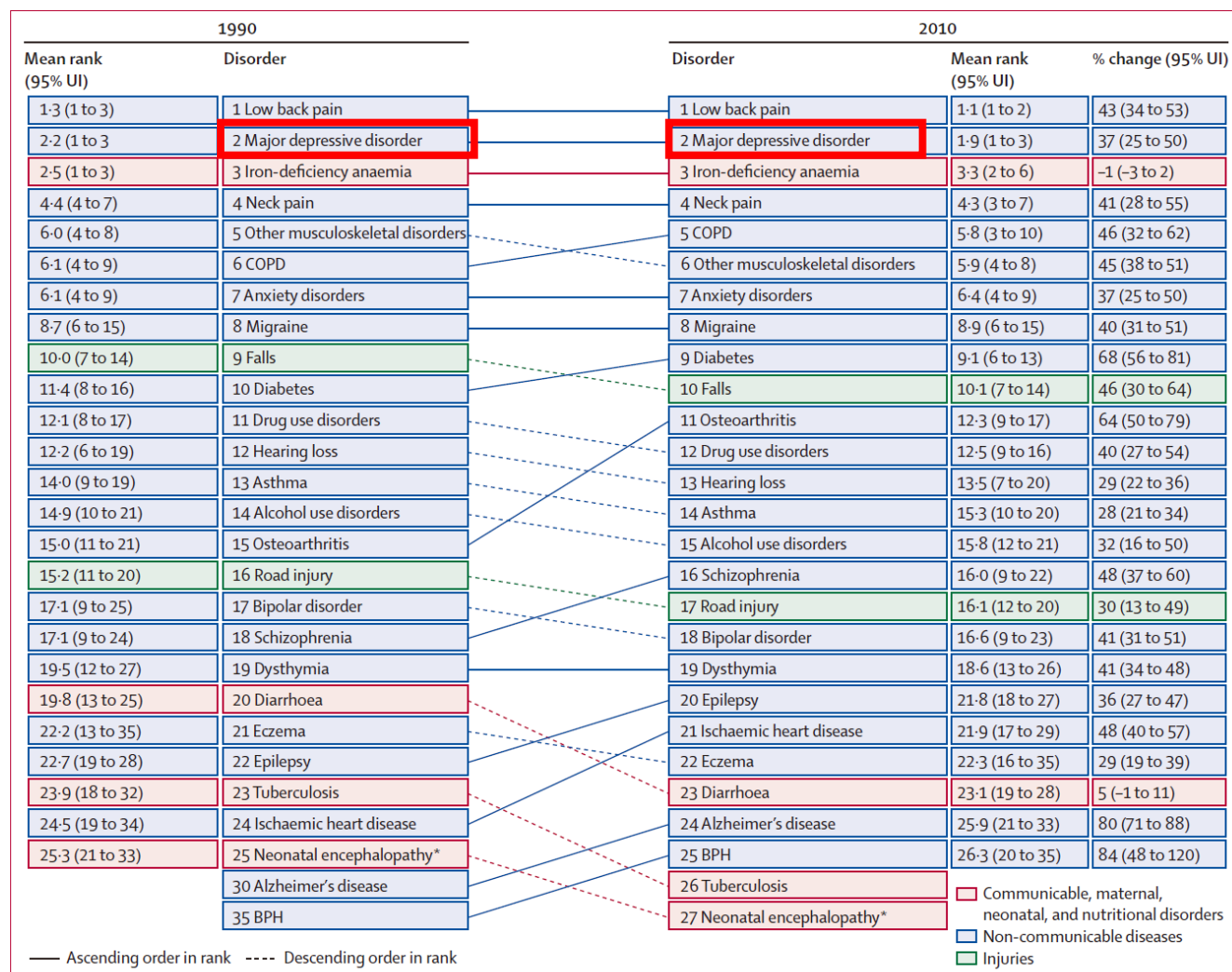


Figure 4: Global years lived with disability (YLDs) ranks with 95% uncertainty intervals (UI) for the 25 most common causes in 1990 and 2010
 COPD=chronic obstructive pulmonary disease. BPH=benign prostatic hyperplasia. *Includes birth asphyxia/trauma. An interactive version of this figure is available online at <http://healthmetricsandevaluation.org/qbd/visualizations/regional>.

Many **mental disorders** cause even greater disability than **terminal cancer**

Mental, behavioural, and substance use disorders

Alcohol use disorder: mild	0.259 (0.176–0.359)
Alcohol use disorder: moderate	0.388 (0.262–0.529)
Alcohol use disorder: severe	0.549 (0.384–0.708)
Fetal alcohol syndrome: mild	0.017 (0.008–0.032)
Fetal alcohol syndrome: moderate	0.057 (0.036–0.087)
Fetal alcohol syndrome: severe	0.177 (0.117–0.255)
Cannabis dependence	0.329 (0.223–0.455)
Amphetamine dependence	0.353 (0.215–0.525)
Cocaine dependence	0.376 (0.235–0.553)
Heroin and other opioid dependence	0.641 (0.459–0.803)
Anxiety disorders: mild	0.030 (0.017–0.048)
Anxiety disorders: moderate	0.149 (0.101–0.210)
Anxiety disorders: severe	0.523 (0.365–0.684)
Major depressive disorder: mild episode	0.159 (0.107–0.223)
Major depressive disorder: moderate episode	0.406 (0.276–0.551)
Major depressive disorder: severe episode	0.655 (0.469–0.816)
Bipolar disorder: manic episode	0.480 (0.323–0.642)

Bipolar disorder: residual state	0.035 (0.021–0.055)
Schizophrenia: acute state	0.756 (0.571–0.894)
Schizophrenia: residual state	0.576 (0.399–0.756)
Anorexia nervosa	0.223 (0.151–0.313)
Bulimia nervosa	0.223 (0.150–0.310)
Attention-deficit hyperactivity disorder	0.049 (0.031–0.074)
Conduct disorder	0.236 (0.154–0.337)
Asperger's syndrome	0.110 (0.073–0.157)
Autism	0.259 (0.177–0.362)
Intellectual disability: mild	0.031 (0.018–0.049)
Intellectual disability: moderate	0.080 (0.053–0.114)
Intellectual disability: severe	0.126 (0.085–0.176)
Intellectual disability: profound	0.157 (0.107–0.221)

Cancer

Cancer: diagnosis and primary therapy	0.294 (0.199–0.411)
Cancer: metastatic	0.484 (0.330–0.643)
Mastectomy	0.038 (0.022–0.059)
Stoma	0.086 (0.055–0.131)
Terminal phase: with medication (for cancers, end-stage kidney or liver disease)	0.508 (0.348–0.670)
Terminal phase: without medication (for cancers, end-stage kidney or liver disease)	0.519 (0.356–0.683)

disability weight: from 0 to 1

0 = no loss of health

1 = a health loss equivalent to death

Most updated prevalence of mental illness in Hong Kong is **yet** to become available

- 2010 香港精神健康調查The Hong Kong Mental Morbidity Survey 2010
- 隨著香港社會急速的發展，市民在日常生活中面對重大壓力，精神健康變成了非常重要的課題。[香港特別行政區食物及衛生局](#)，為了解香港市民對精神健康方面的需要，資助本研究計劃於2010年至2013年，為全港約五千七百戶，年齡介乎十六歲至七十五歲之華裔市民進行精神健康評估。本研究由[香港大學](#)精神醫學系、[香港中文大學](#)精神科學系、[醫院管理局](#)精神健康服務單位協辦，目的是為了搜集有關精神健康方面資料，讓我們對本港市民的精神健康狀況有更深入的了解，從而計劃未來的精神健康服務發展。
- The HKMMS10 is the **first territory-wide mental health survey** in Hong Kong. The results will have significant impact on service planning. Amid the changes in demographic structures and psychosocial situations, and the rising problems of drug abuse, a large-scale mental health survey is required so that mental health services could be planned from an evidence-based perspective.
- <http://www.hkmms10.org.hk/>

Social and Economic Burden of **Suicides** in Hong Kong SAR

- Yip, P.S., Law, C.K. and Law, Y.W., Suicide in Hong Kong: epidemiological profile and burden analysis, 1981 to 2001. *Hong Kong Medical Journal*, 2003. **9**: 419-426.
- Yip, P.S., Liu, K.Y., Law, C.K. and Law, Y.W., Social and economic burden of suicides in Hong Kong SAR: a year of life lost perspective. *Crisis*, 2005. **26**: 156-159.
- Law, C.K., Yip, P.S. and Huo, Y., Assessing the quantitative impact of suicide on life expectancy in Hong Kong: 1986-2006. *Arch Suicide Res*, 2010. **14**: 284-290.

The total years of life lost attributable to **suicide** deaths increased from **3.6%** to **8.1%** (1981-2001) and is still increasing, especially among the middle age-groups (30-59 years).

Table 2a. Ten leading causes of death in terms of absolute number of deaths, Hong Kong, 1981, 1991, and 2001

Rank	1981	Rank	1991	Rank	2001
1	Diseases of the circulatory system	1	Neoplasm	1	Neoplasm
2	Neoplasm	2	Diseases of the circulatory system	2	Diseases of the circulatory system
3	Diseases of the respiratory system	3	Diseases of the respiratory system	3	Diseases of the respiratory system
4	Injury and poisoning (excludes suicide)	4	Diseases of the genito-urinary system	4	Diseases of the genito-urinary system
5	Symptoms, signs and ill-defined conditions	5	Diseases of the digestive system	5	Diseases of the digestive system
6	Diseases of the digestive system	6	Infectious and parasitic diseases	6	Suicide
7	Diseases of the genito-urinary system	7	Injury and poisoning (excludes suicide)	7	Infectious and parasitic diseases
8	Infectious and parasitic diseases	8	Suicide	8	Diseases of blood and blood-forming organs
9	Suicide	9	Symptoms, signs and ill-defined conditions	9	Injury and poisoning (excludes suicide)
10	Certain conditions originating in the perinatal period	10	Endocrine nutritional and metabolic diseases and immunity disorders	10	Diseases of the nervous system and sense organs

Table 2b. Ten leading causes of death in terms of years of life lost, Hong Kong, 1981, 1991, and 2001

Rank	1981	Rank	1991	Rank	2001
1	Neoplasm	1	Neoplasm	1	Neoplasm
2	Diseases of the circulatory system	2	Diseases of the circulatory system	2	Diseases of the circulatory system
3	Diseases of the respiratory system	3	Diseases of the respiratory system	3	Diseases of the respiratory system
4	Injury and poisoning (excludes suicide)	4	Injury and poisoning (excludes suicide)	4	Suicide
5	Certain conditions originating in the perinatal period	5	Suicide	5	Injury and poisoning (excludes suicide)
6	Diseases of the digestive system	6	Diseases of the digestive system	6	Diseases of the digestive system
7	Diseases of the genito-urinary system	7	Diseases of the genito-urinary system	7	Diseases of the genito-urinary system
8	Suicide	8	Certain conditions originating in the perinatal period	8	Infectious and parasitic diseases
9	Infectious and parasitic diseases	9	Infectious and parasitic diseases	9	Diseases of blood and blood-forming organs
10	Congenital anomalies	10	Congenital anomalies	10	Diseases of the nervous system and sense organs

The middle age group (25-39) contributed most to the burden of disease due to suicide in Hong Kong.

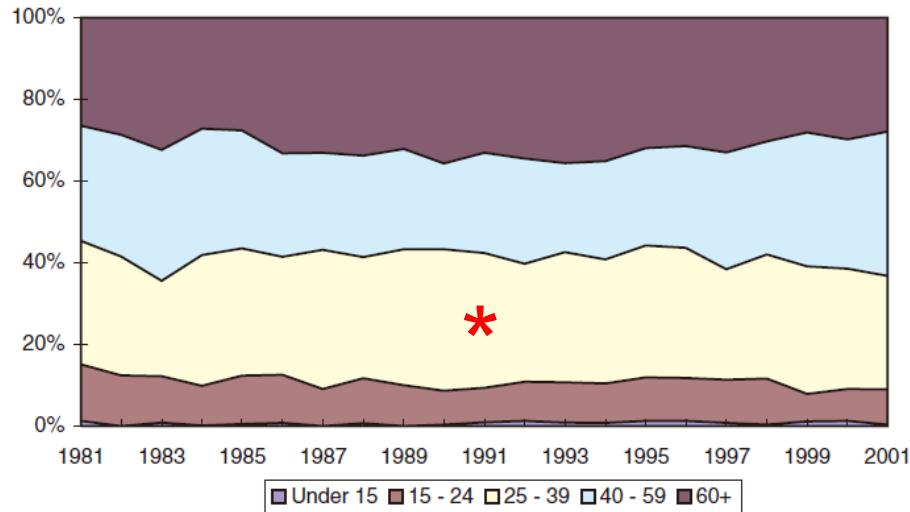


Figure 2. Age distribution of suicide deaths in Hong Kong, 1981–2001.

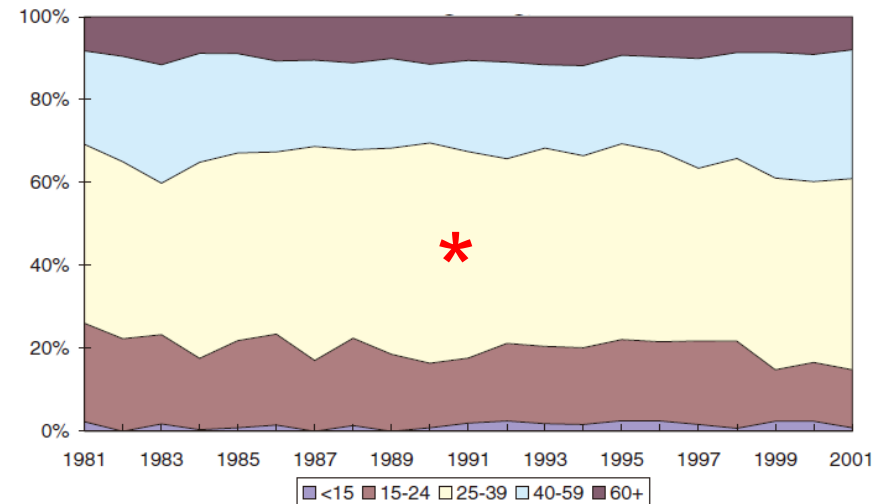


Figure 3. Age distribution of years of life lost due to suicide death in Hong Kong, 1981–2001.

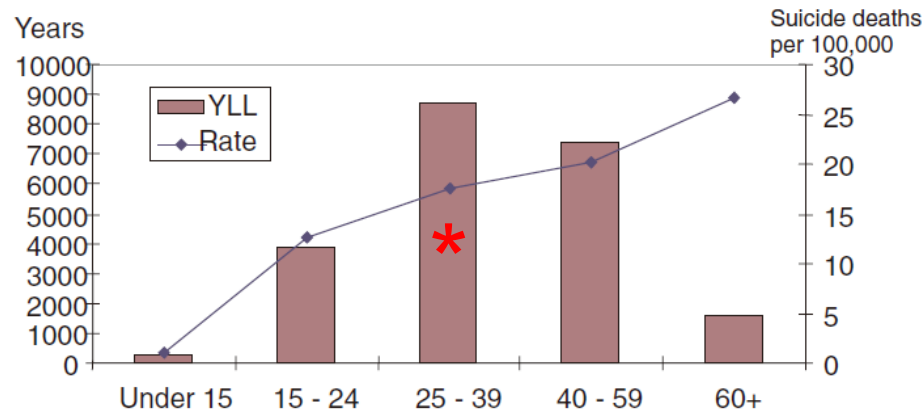


Figure 4. Years of life lost (YLL) and suicide rates by age in Hong Kong, 2002.

Yip, P.S., Liu, K.Y., Law, C.K. and Law, Y.W., Social and economic burden of suicides in Hong Kong SAR: a year of life lost perspective. *Crisis*, 2005. **26**: 156-159.

Depression led to a loss of 51 billion RMB in China in 2002

Table 5 Total cost of depression in China, 2002 (million RMB)^a

Direct costs	Mean (%)
Treatment costs	5,619 (11)
Financial costs incurred by caregiver	2,471 (5)
Subtotal	8,090 (16)
Indirect costs	
Morbidity costs incurred by patient	35,102 (68)
Indirect costs incurred by caregiver	2,380 (5)
Value of damaged properties/personal injuries	684 (1)
Mortality costs	5,114 (10)
Subtotal	43,280 (84)
Total cost	51,370 (100)

^aU S\$ = 8.20 RMB

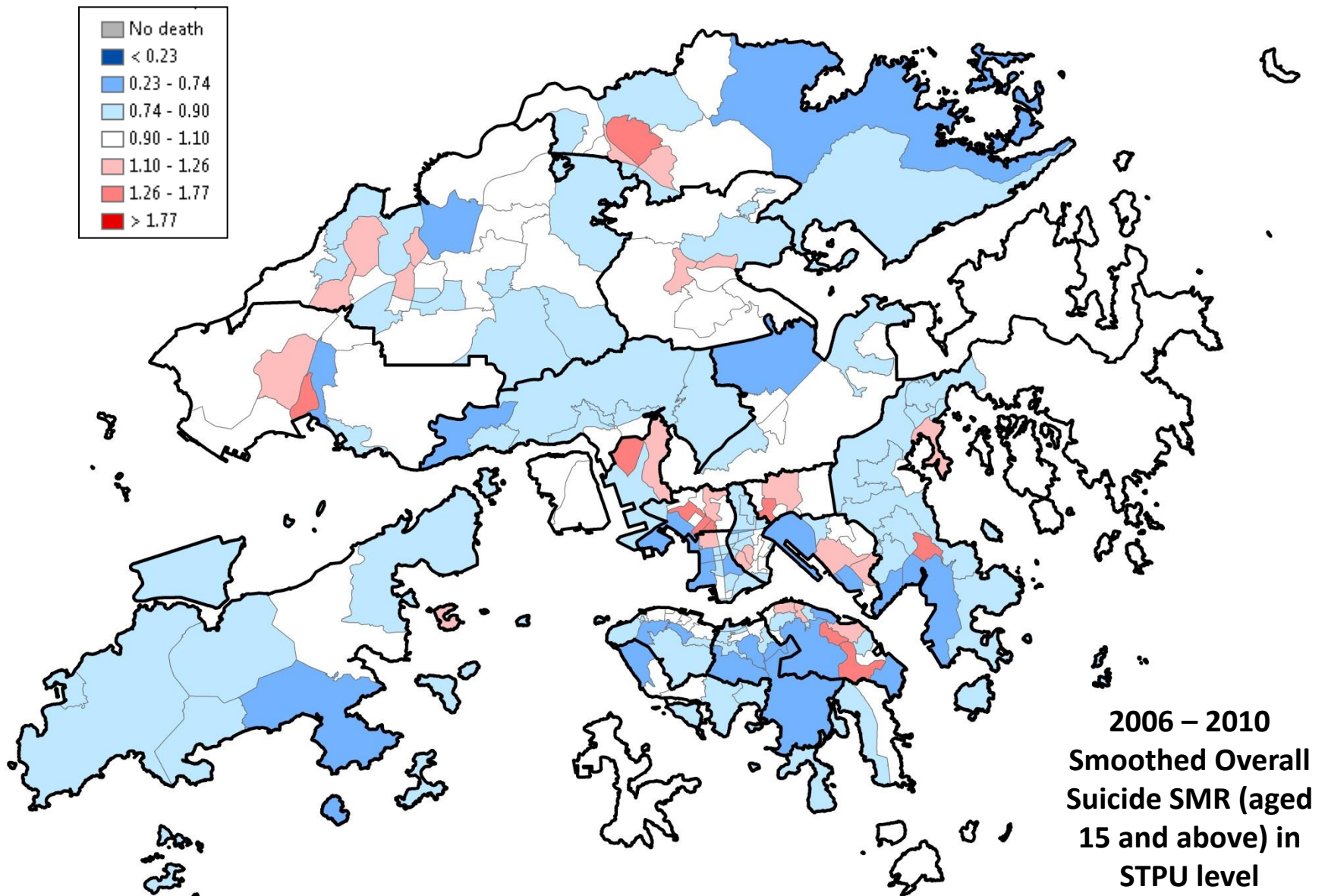
Hu, T.W., He, Y., Zhang, M. and Chen, N., Economic costs of depression in China. *Social Psychiatry and Psychiatric Epidemiology*, 2007. **42**: 110-116.

In Taiwan, the prevalence of depression was 4-5%, and **116.6 million USD** were spent in treating depression annually (**1.2%** of total expenses of the national health insurance)

Table 1. Components of Direct Medical Costs of Depression

Direct costs	US\$					
	2000	(%)	2001	(%)	2002	(%)
Inpatient care	21,703,143	23.3	28,880,138	24.6	36,147,559	25.67
Rehabilitation	562,597	0.6	345,697	0.3	500,913	0.36
Day care	6,277,711	6.7	8,182,174	7.0	8,977,371	6.37
Pharmacy services	2,829,607	3.0	3,601,275	3.1	4,389,501	3.12
Medication	46,417,709	49.0	56,691,789	48.3	68,173,785	48.41
Outpatient care	15,309,594	16.4	19,596,078	16.7	22,633,969	16.07
Total	93,100,361		117,297,151		140,823,098	

There were substantial area variations in **suicide** incidence in Hong Kong, but the pattern for **self-harm** and **mental illness** is still unknown



Conclusion

- **Mental illness** and **self-harm** lead to substantial disease burden
- **Suicide** leads to substantial loss of life and productivity in Hong Kong, as many die at age of the most productive years
- We need support from the Government, in particular the Hospital Authority, to provide relevant **data** for analyses that will inform policy making
- Thanks for your attention