Reducing Deaths from TB & Tobacco Together

A multi - country Survey

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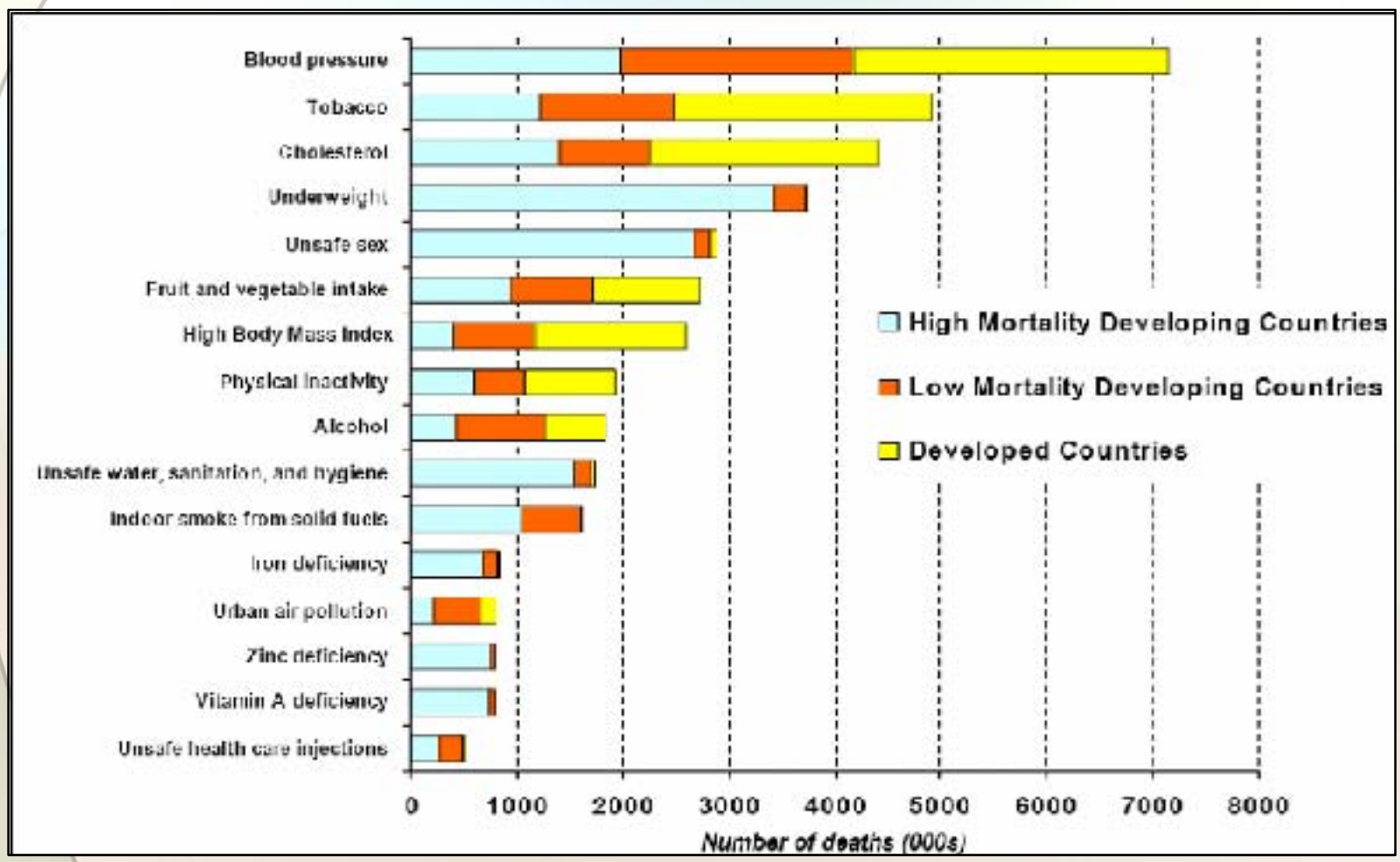
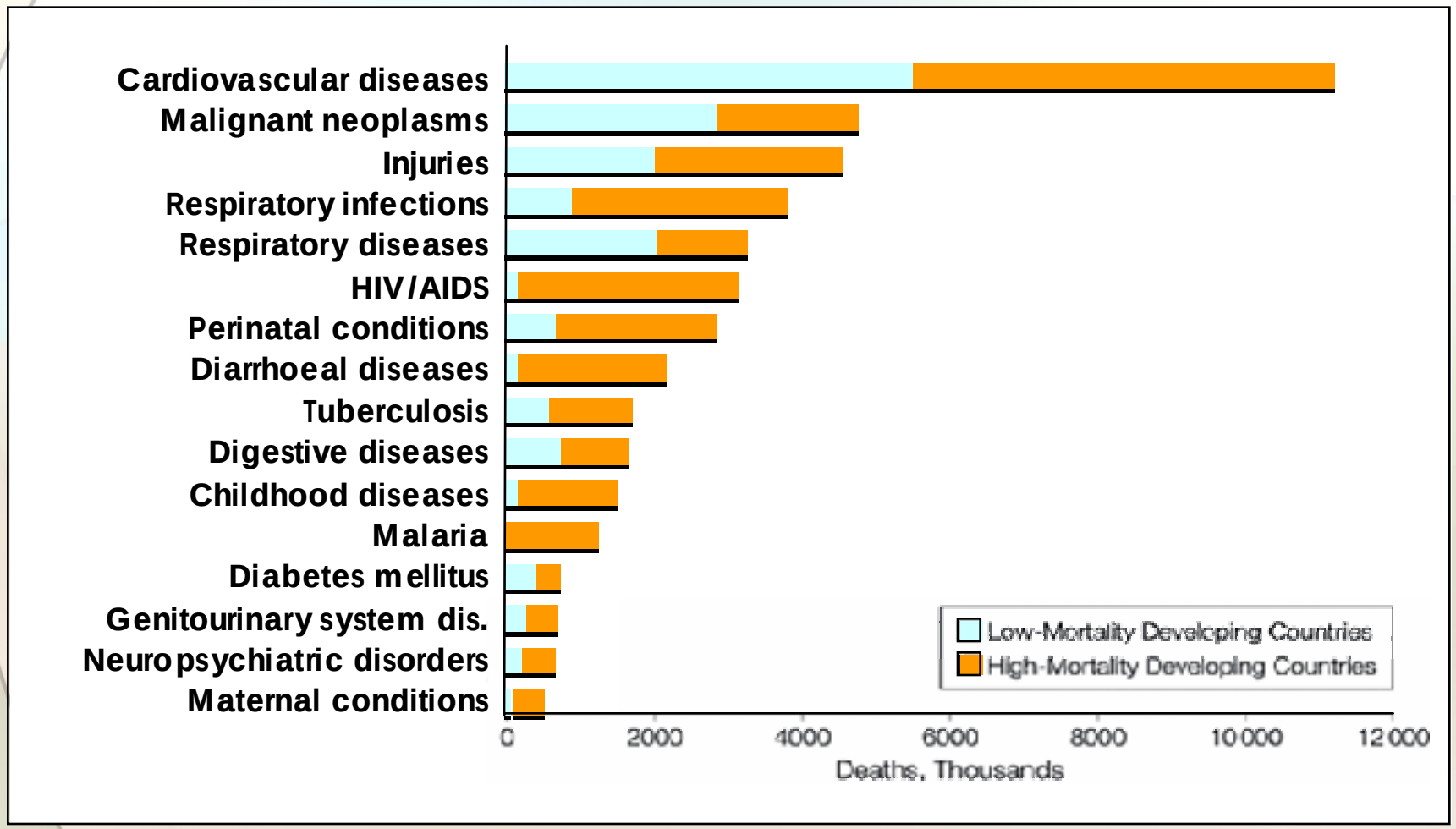
Deaths attributable to selected leading risk factors: World 2000



Source: World Health Report, 2002.

Deaths attributable to selected leading causes: Developing Countries 2001



Source: Yach, D. et al. JAMA 2004;291:2616-2622.

Is tobacco a risk factor for TB?

- India (1998): Smoking significantly increases the risk that people with subclinical TB will progress to clinical. (OR=2.9)
- South Africa (2004): Risk of death among those infected with TB is significantly greater for smokers than non-smokers. (OR = 1.6)
- Chennia, India (2003): More than half of all deaths from TB is attributed to smoking, with four times higher risk of TB deaths among smokers compared to nonsmokers. (OR=4.5)
- Hong Kong, China (2004):
  - Current smokers had a significantly higher risk of pulmonary TB compared to nonsmokers (adjusted hazard ratio 2.87)
  - Investigation revealed a dose-response relationship between number of cigarettes smoked daily and risk of active TB.

Reducing Deaths from TB and Tobacco Together

Objectives:

- To assess (a) the prevalence of tobacco consumption and (b) access to cessation services among TB patients in treatment settings around the world

- To explore the attitudes of care providers to inclusion of cessation practices into TB clinics

Patients' Survey-Methods

- A cross-sectional multi-center study
- Study sites: China, India, Iran, Mexico, & Russia
- Study participants:
  - Approximately 300 newly diagnosed outpatient TB cases from each country, who were undergoing therapy for the six months prior to study start date
- Measures: Demographic, tobacco consumption and exposure history, and quitting behavior

Patients' Survey - Results

- Sample= 1431
- Average age was 35 years (SD=17.5)
- Majority newly diagnosed patients (88%), and reported their general health to be fair (41%)
- Primary source of health included doctors offices (64%) for India and Primary Health Care Centers (67%) for the rest of the countries
- Most were male (65%), had less than 12th grade education (55%), employed (48%), and married (65%)

Smoking History among males by study site (N=940)

	No. of Participants (%)					
	China (n=227)	India (n=221)		Russia (n=227)	Mexico (n=150)	Iran (n=115)
		Cigarettes	Bidis			
Lifetime smoker						
Yes	145 (64)	158 (71)	115 (53)	207 (91)	84 (56)	58 (50)
Smoking onset (age)						
Median, (range)	20 (7, 40)	18 (7, 35)	18 (7, 35)	17 (6, 46)	17 (7, 40)	20 (9, 46)
Current smoker						
Yes	75 (34)	51 (23)	42 (19)	201 (89)	18 (12)	36 (32)
Average number of cigarettes/day						
Median, (range)	20 (1,95)	5 (1,90)	8 (3,40)	20 (2,95)	3 (1,20)	10 (1,45)
Number of years smoked						
Median, (range)	27 (1,60)	32 (3,70)	32 (2, 62)	10 (7,55)	9 (7,43)	20 (1, 47)
Exposure to second hand smoke						
Yes	63 (28)	60 (27)		95 (42)	49 (32)	11 (10)
Other tobacco products used						
Yes	27 (12)	26 (12)		24 (10)	1 (1)	18 (16)
Smokeless tobacco used						
Yes	8 (4)	69 (31)		16 (8)	1 (1)	9 (8)

Smoking History among females by study site (N=494)

	No. of Participants (%)					
	China (n=87)	India (n=84)		Russia (n=92)	Mexico (n=126)	Iran (n=105)
		Cigarettes	Bidis			
Lifetime smoker						
Yes	5 (6)	2 (2)	1(1)	66 (72)	20 (16)	7 (7)
Smoking onset (age)						
Median, (range)	26 (26,26)	---	---	17 (9,40)	17 (9,39)	32 (15, 42)
Current smoker						
Yes	4 (5)	2 (2)	0	59 (64)	2 (2)	3 (3)
Average number of cigarettes/ day						
Median, (range)	8 (8,8)	8 (8,8)	---	15 (1,40)	2 (1,3)	5 (3,10)
Number of years smoked this amount						
Median, (range)	---	---	---	7 (1,35)	9 (9,9)	7 (5,30)
Exposure to second hand smoke						
Yes	36 (42)	28 (33)		95 (42)	54 (59)	37 (29)
Other tobacco products used						
Yes	0	5 (6)		24 (10)	5 (5)	2 (2)
Smokeless tobacco used						
Yes	2 (2)	11 (14)		16 (8)	5 (5)	2 (2)

Smoking Cessation Behavior in the RD - TTT Report

	No. of Participants (%)				
	China	India	Russia	Mexico	Iran
Quit smoking in the last year					
Yes	16 (20)	18 (27)	101 (38)	37 (45)	18 (29)
No	63 (80)	48 (73)	168 (62)	45 (55)	45 (71)
Last time smoked, among those who have quit					
Within past months	15 (94)	18 (95)	80 (79)	5 (9)	1 (6)
Within past 6 months	1 (6)	0	19 (19)	11 (19)	8 (45)
Within past year	0	0	2 (2)	21 (36)	9 (49)
More than a year ago	0	1 (5)	0	20 (36)	0
Number of times healthcare provider advised quitting in the last year					
None	36 (94)	46 (85)	177 (81)	19 (56)	38 (67)
1-10 times	1 (3)	8 (15)	33 (15)	11 (32)	18 (32)
10+ times	1 (3)	0	8 (4)	4 (12)	1 (1)

Comparison of the SuRF and RD - TTT reports on smoking history

	Current Smokers The SuRF Report ζ, %		Current Smokers RD-TTT Study, %		Lifetime Smokers RD-TTT Study, %	
	Male	Female	Male	Female	Male	Female
China	45	1.9	34	5	64	6
India	46	27	29	3	76	4
Iran	22	2.1	32	3	50	7
Mexico	12.9	4.7	12	2	56	16
Russia	41.2	6.9	89	64	91	72

ζ Current daily user--Tobacco type: smoking tobacco (general/multiple sources)

Source: Strong K, Bonita R. The SuRF report. 2. Surveillance of chronic disease risk factors: Country-level data and comparable estimates Geneva, World Health Organization, 2005

Predictors of quitting in the last year

	Adjusted OR	P Value	95%CI
Quit smoking in the last year (N=402)			
Received medical counseling			
No	1.00	--	--
Yes	2.9	0.0002	(1.66,4.95)
TB status			
New	1.00	--	--
Relapse	1.34	0.5670	(0.49, 3.63)
Gender			
Male	1.00	--	--
Female	2.06	0.0125	(1.16, 3.65)
Study Site			
China	1.00	--	--
India	0.79	0.4826	(0.41,1.53)
Iran	0.62	0.1662	(0.31,.122)
Mexico	6.94	<.0001	(2.69,17.94)
Russia	1.04	0.9123	(0.48,2.27)

Summary Findings from Patients' Survey

- High prevalence of lifetime and current smoking among TB patients in all study countries
- Majority of those who smoked (78%) had not received tobacco cessation counseling
- Conversely, quitting smoking was significantly associated with receiving cessation advice
- Compared to national statistics on smoking, our study found a significantly higher smoking rate among TB patients

Future research needs

- To what extent smoking increases the risk of *Mycobacterium tuberculosis* infection, the risk of progression from infection to disease, TB treatment outcomes, or the risk of death among TB patients.
- Level of tobacco control education and access to cessation services among TB patients
- Whether pharmaceutical cessation products have any adverse reactions with TB drugs used in typical DOTS programs
- Comparison of effectiveness of single intervention programs vs. integrated ones on TB control and treatment outcomes

Opportunities for A Holistic Approach to TB and Tobacco Control

- Opportunity for scaling up the coverage and effectiveness of TB programs
- Using tobacco taxation to subsidize DOTS???
- Integration requires marginal extra effort
- Support national training for TB providers
  - Increase awareness of interaction btw TB and tobacco use
  - Ask, advice, assess, and refer
  - Collect data on exposure to tobacco and passive smoking

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Thank you!