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Reducing the Global Burden of Tobacco Use

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Global Burden of Tobacco

According to WHO current estimates, the annual number of tobacco-related deaths worldwide is projected to rise from 4.9 million in 2000 to more than 10 million by 2020, unless effective interventions take hold. The increase will be greatest in developing countries.

Source: World Health Organization (2006). *World health statistics 2006*. Geneva, Switzerland. Available at http://www.who.int/whosis/whostat2006.pdf

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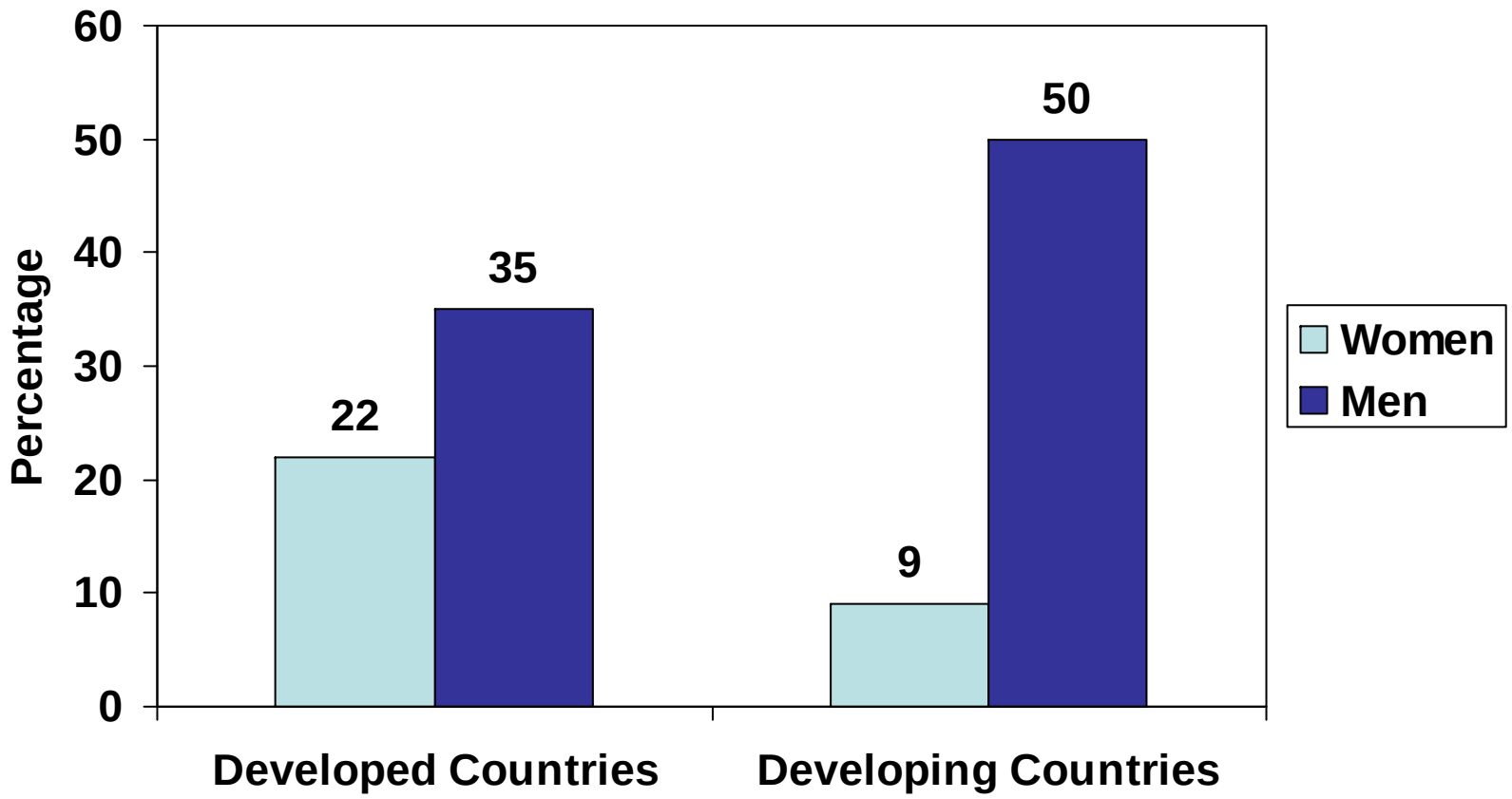
Percentage of Adult Smokers, by Sex, Developing vs. Developed Countries



Source: Mackay, J., Eriksen, M., & Shafey, O. (2006). *The Tobacco Atlas* (2nd ed.). Atlanta: American Cancer Society. Available at http://62.193.232.43:8080/statmap/

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Trends in Global Cigarette Consumption 1970, 1985, 2000

1970

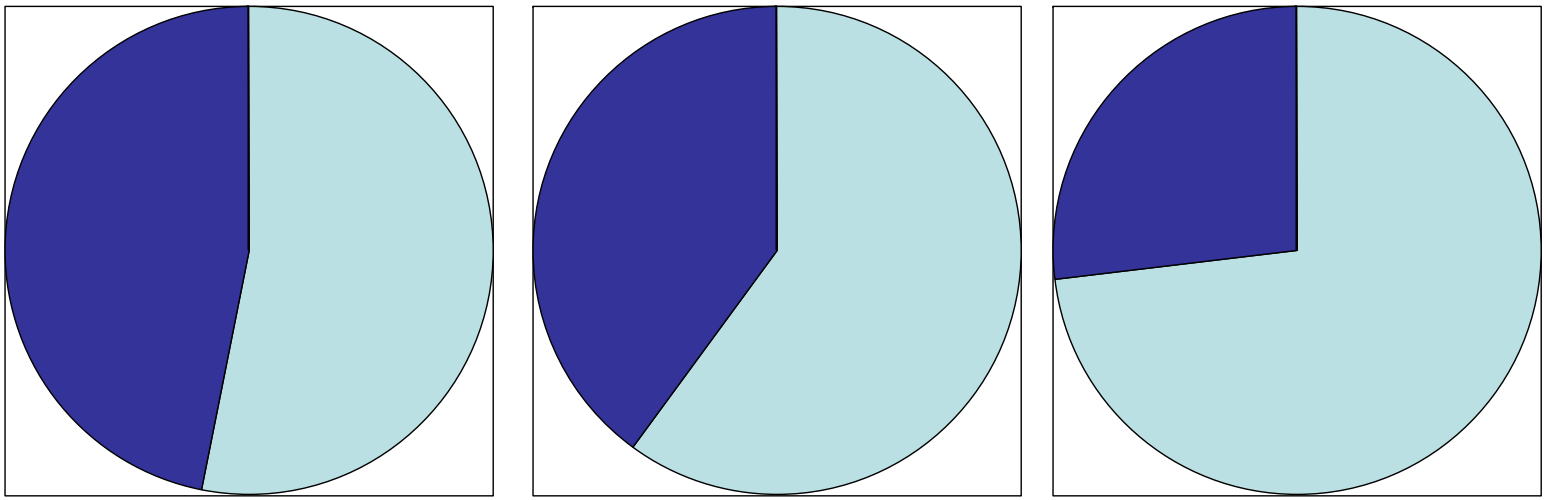
(3.26 Tr cigarettes consumed)

1985

(5.06 Tr cigarettes consumed)

2000

(5.71 Tr cigarettes consumed)



Developing Countries **Developed Countries**

Source: Guindon, G. E., & Boisclair, D. (2003). *Past, current and future trends in tobacco use: A health, nutrition, and population discussion paper*. Washington, D.C.: The World Bank. Available at http://www.paho.org/English/AD/SDE/RA/Past&current_trends_Eng.pdf

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Global Youth Tobacco Prevalence

- Cigarette Smoking
  - 8.9% students currently smoking
    (10.5% boys, 6.7% girls)
  - Highest prevalence:
    Europe and Americas

- Other Tobacco Product Use
  - 11.2% students currently using another tobacco product
    (13.8% boys, 7.8% girls)
  - Highest prevalence: Southeast Asia, Eastern Mediterranean

Girl harvesting tobacco
Argentina, 2005
Photo taken by E. Perez-Stable

Source: Global Youth Tobacco Survey, 2006 (Lancet 2006; 367: 749-53)

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Global Tobacco Mortality is Growing and Shifting … to the Developing World

Tobacco display
China, 2006
Photo taken by J. Samet

- Today
  - Annual global tobacco mortality:
    - 4.9 million deaths
  - Evenly distributed between developed and developing nations
- By 2020-2025
  - Annual global tobacco mortality:
    - 10 million deaths
  - 70% of deaths expected in developing world
- 20th century: 100 million deaths
  21st century: 1 billion deaths

Source: The Tobacco Atlas, 2nd Edition. American Cancer Society, 2006

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Global Burden of Tobacco Use

- Global cancer deaths
  - 1.4 million cancer deaths caused by tobacco use
  - 1 in 5 cancer deaths attributed to tobacco use
  - In men, lung cancer is leading cause of cancer death
  - In women, lung cancer surpassed breast cancer as leading cause of cancer death in a growing number of developed countries, including the U.S
  - In developing nations, female lung cancer remains low; this is expected to change as female tobacco use increases

Hookah smokers
Egypt, 2005
Photo taken by C. Loffredo

- Significant economic burden
  - Money spent on tobacco means less resources for food, shelter, education, health care, and basic needs

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The "Double Burden" of Disease

- Many developing nations now face "double burden" of disease:
  - Traditional problems of poverty, such as under nutrition and infectious diseases, AND health risks once limited to high-income nations, such as tobacco use, obesity and diabetes

- Factors involved
  - Global marketing of tobacco, alcohol and some processed foods, with low- and middle-income nations targets for expansion
  - Changes in food processing and food production, agricultural and trade policies
  - Changes in living and working patterns, leading to less physical activity and less physical labor
  - Consumption of tobacco, alcohol and processed or "fast" foods fits easily in to the new patterns of life

Source: The World Health Report, 2002. WHO

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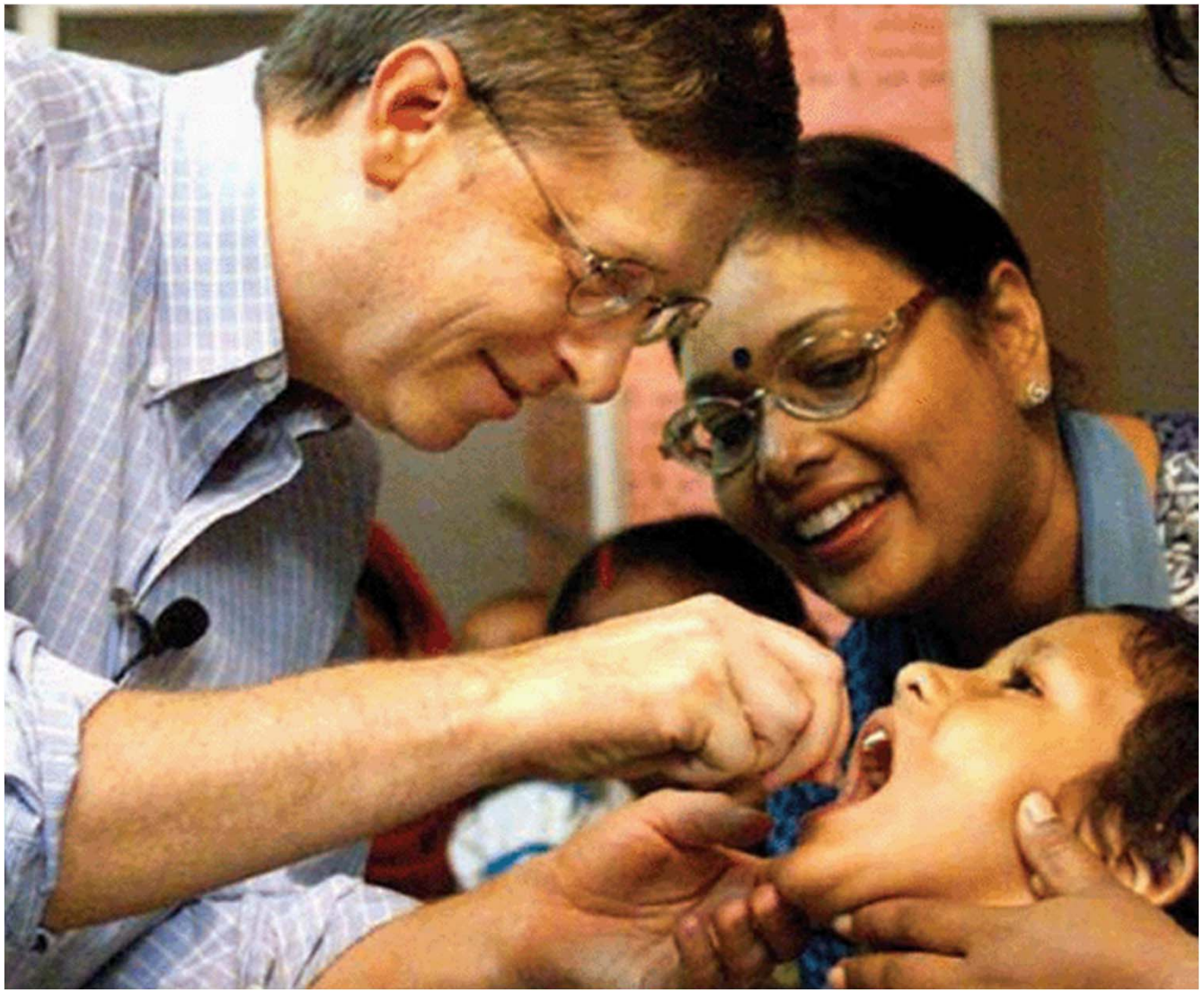
The New World of Global Health



Source: *Science* Vol. 311, Published by AAAS, January 13, 2006.

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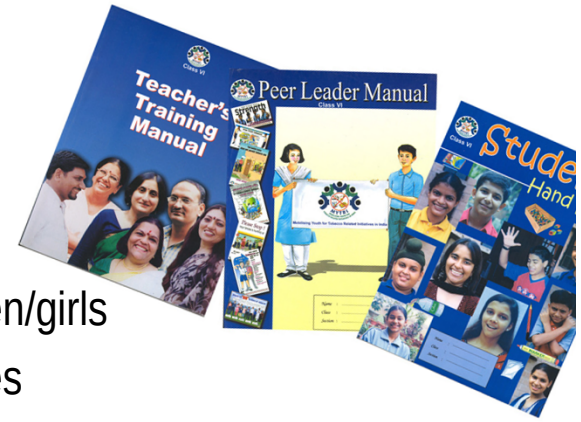
Challenges to Reducing Tobacco Use in the Developing World

- Poor public knowledge about health effects of tobacco use and secondhand smoke exposure



- Barriers to increasing knowledge:
  - Lack of resources for education campaigns
  - High rates of illiteracy, especially among women/girls
  - Governments dealing with more pressing issues
- Tobacco use rates among health professionals are high, and training in tobacco control and prevention is uncommon
- Quitting tobacco use is rare
- Tobacco industry presence in many developing nations is already strong and is still increasing

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WHO Framework Convention on Tobacco Control (FCTC)

- The first global health treaty negotiated by the World Health Organization (WHO) and the first "legal instrument" designed to reduce tobacco-related deaths and disease around the world
- Unanimously adopted by WHO's 192 Member States on May 21, 2003
  - Entered into force on February 2005
  - 143 nations have now ratified the treaty

Latest party
Kazakhstan
22 January 2007

- Treaty includes supply and demand reduction provisions
- "The WHO FCTC negotiations have already unleashed a process that has resulted in visible differences at country level."
  - (Former WHO Director General, Dr. Jong-wook Lee)

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NIH International Tobacco and Health Research and Capacity Building Program

- RFA announced in June 2001. Led by the Fogarty International Center, with major support from NCI, and other NIH partners
- Overall goal: to address the burden of tobacco consumption in low- and middle-income nations by:
  - conducting observational, intervention and policy research of local relevance
  - building capacity in these regions in epidemiological and behavioral research, prevention, treatment, communication, health services and policy research
- RFA Requirements:
  - Collaboration between scientists in U.S. and low- or middle-income nation
  - Majority of research must be conducted “in-country,” and must have local support
  - Capacity strengthening an integral part of the program
  - Transdisciplinary approaches encouraged
- New RFA announced May 8, 2006; anticipate awards summer 2007

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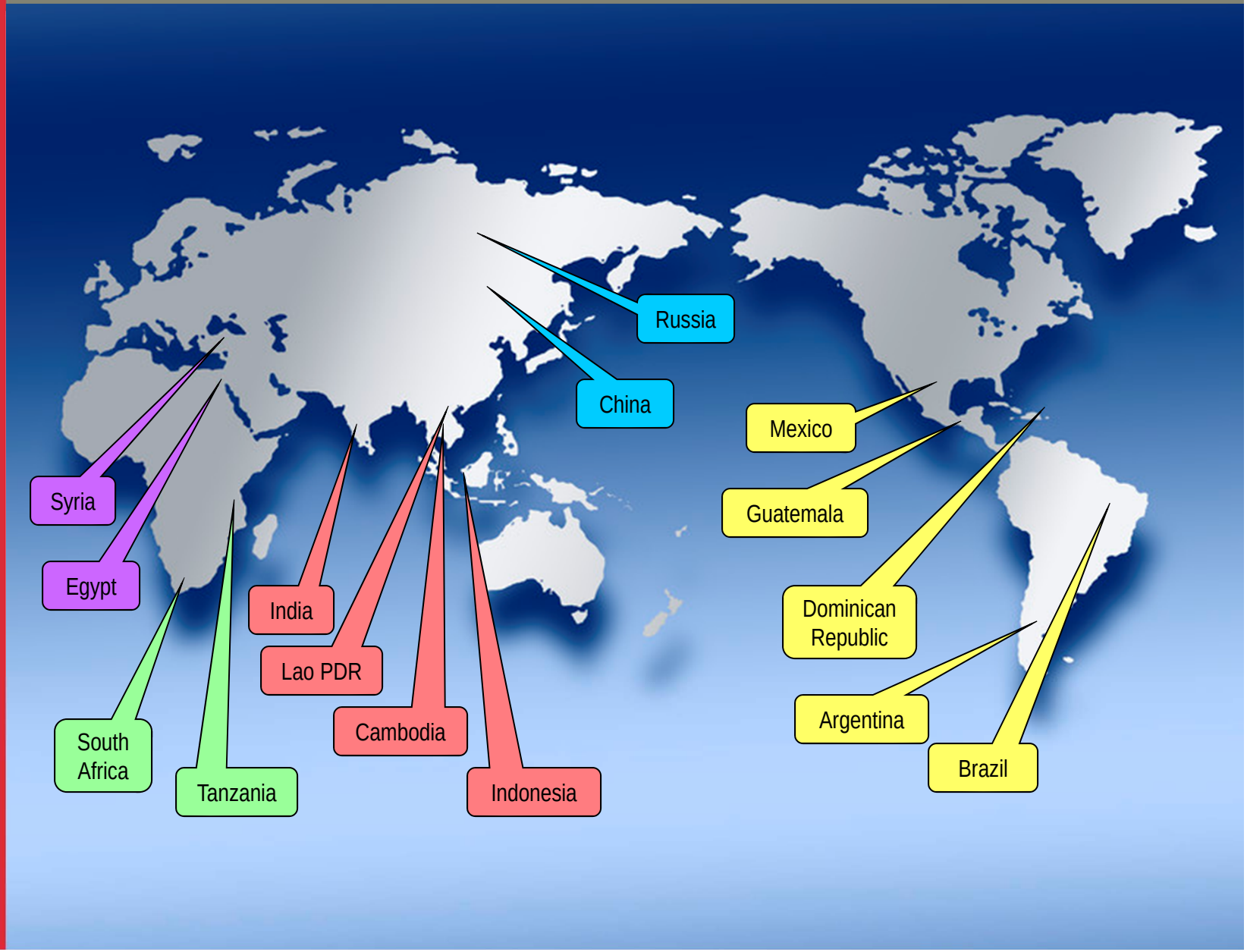
RFA Program Established Global Collaborations



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Waterpipes

(hookah, arghile, hubble-bubble, narghile, or shisha)

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Health Effects of Waterpipe Use

- Authors conducted comprehensive literature review to identify current knowledge, guide research and public policy on waterpipe use
  - Many perceive waterpipes to be “less risky” than cigarettes
  - Women especially positive about waterpipe – “traditional, familiar, social and attractive”
  - CO yield of waterpipe smoke equal to or greater than cigarettes. Smoke from waterpipe use contains about same amount of nicotine and “tar” as 20 cigarettes; tar is produced at lower temperature (450 degrees Celsius)
  - Waterpipe use likely increases risk of lung and other cancers, coronary heart disease and pulmonary disease
  - Likely risk factor for use during pregnancy
  - Waterpipe use produces secondhand smoke

- Conclusion:
  - Waterpipe use is increasingly common and potentially lethal; a concentrated and coordinated global research program may help guide policy and treatment efforts

Source: Maziak W, Ward KD, Soweid RAA, Eissenberg T. Tobacco smoking using a waterpipe: a re-emerging strain in a global epidemic. Tobacco Control 2004; 13: 327-333.

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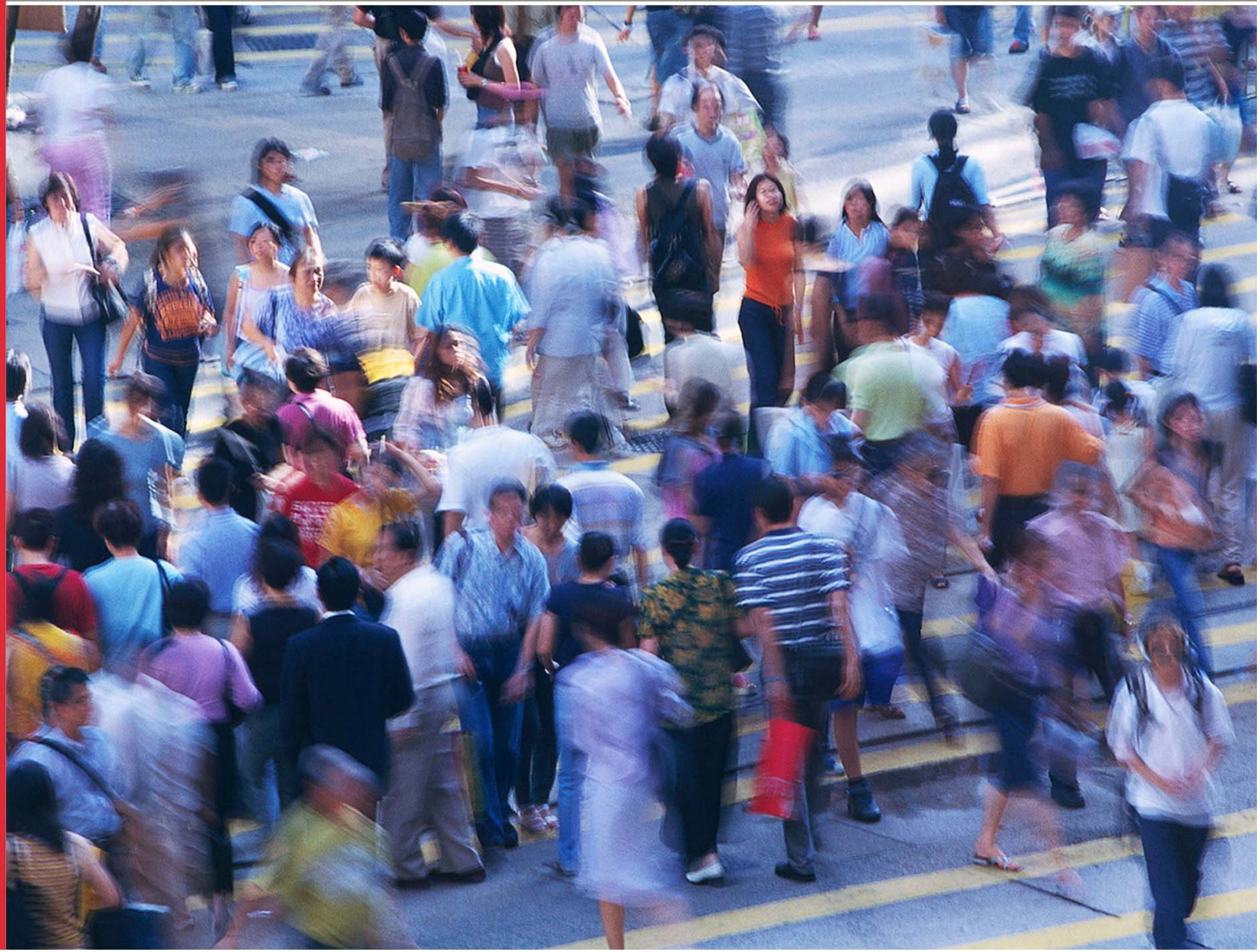
Smoking in China – Background



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Economics Costs of Smoking in China

- Authors estimated the smoking-attributable direct costs, indirect morbidity costs, and costs of premature deaths caused by smoking-related disease
  - Used the 1998 China National Health Services Survey (216,101 individuals)
- Economic costs (2000) were $5.0 billion, or 3.1% of national health expenditures
  - Direct costs: $1.7 billion (34%)
  - Indirect morbidity costs: $0.4 billion (8%)
  - Indirect mortality costs: $2.9 billion (58%)
- Conclusion:
  - Adverse health effects of smoking cause a huge economic burden to the Chinese society

Source: Sung HY, Wang L, Hu T-W, Jiang Y. Economic burden of smoking in China, 2000. Tobacco Control, 2006; 15 (supp 1): i5 – i11.

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Introducing Tobacco Cessation to Developing Countries - India and Indonesia

- Project Quit Tobacco International
  - High prevalence rates in both countries and tobacco use is increasing
  - Cessation rarely addressed
  - Goal: develop culturally appropriate approaches to cessation within the health sectors of India and Indonesia
- Phase 1: Baseline data collection
  - Formative research on cultural perceptions of tobacco use, perceptions of health effects, pre-testing of materials
  - Asses medical school curricula and clinical settings where interventions will take place
- Phase 2: Develop culturally appropriate patient tobacco education materials and curricula for health professionals

Source: Nichter, M. *Tobacco Control* (2006) Vol 15 (Suppl I); i12-i17.

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Introducing Tobacco Cessation to Developing Countries - India and Indonesia

- Phase 3: Intervention development and trial
  - Cessation lectures and materials for use in medical schools are designed, introduced, and evaluated
  - Pilot interventions for community and clinical settings are designed, implemented, and evaluated
- Phase 4: Outreach and dissemination efforts to build support for cessation
- Conclusion:
  - Authors described a process for developing culturally appropriate cessation programs in developing nations where these are sorely needed

Source: Nichter, M. *Tobacco Control* (2006) Vol 15 (Suppl I); i12-i17.

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Benefits of International Tobacco Research for the U.S.

- Allows U.S. investigators to gain experience working in low- and middle-income nations, which lays the groundwork for other international cancer research activities that may involve these countries
- Lessons learned in resource poor communities outside the U.S. may well be applicable to resource poor communities in the U.S.
- Understanding socio-cultural aspects of tobacco use internationally allows us to better address tobacco use in diverse populations within the U.S.
- Tobacco industry operates as a global enterprise, utilizing many of the same strategies in the U.S. that it does in other countries; international tobacco control research allows for global sharing of strategies and lessons

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New IOM Report: Cancer Control Opportunities in Low- and Middle-Income Countries

- IOM Recommendation for National Institutions
  - "The U.S. NCI and other established cancer research and funding organizations both in the U.S. (e.g. CDC) and in other countries should help to establish and facilitate relationships between U.S. cancer centers and centers in LMCs *and encourage U.S. researchers, through grant programs, to undertake collaborative research of relevance to LMCs*."

Source: Institute of Medicine, http://www.iom.edu/.

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Conclusions

- The burden of tobacco use and tobacco-caused disease is growing and steadily shifting to developing nations, which increasingly face a “double burden” of disease
  - These nations can ill afford the increased human and economic costs of increased tobacco use
- Particular concern that tobacco use by women in the developing world, which has historically been very low, is already rising
  - This poses grave risks for women, their families, and their communities
  - Undermines other efforts being made to improve maternal/child health
- Global tobacco control research benefits both the U.S. and the foreign nations involved
- Continued NCI investment in global tobacco control research will make an important contribution towards reducing the global burden of tobacco use

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Reducing the Burden of Global Tobacco