



# Reducing Global Oral Health Inequalities

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# Outline of Presentation

- Background information
- What is being done?
  - Past global success
  - Current activities
  - Trends and Ideas for the Future

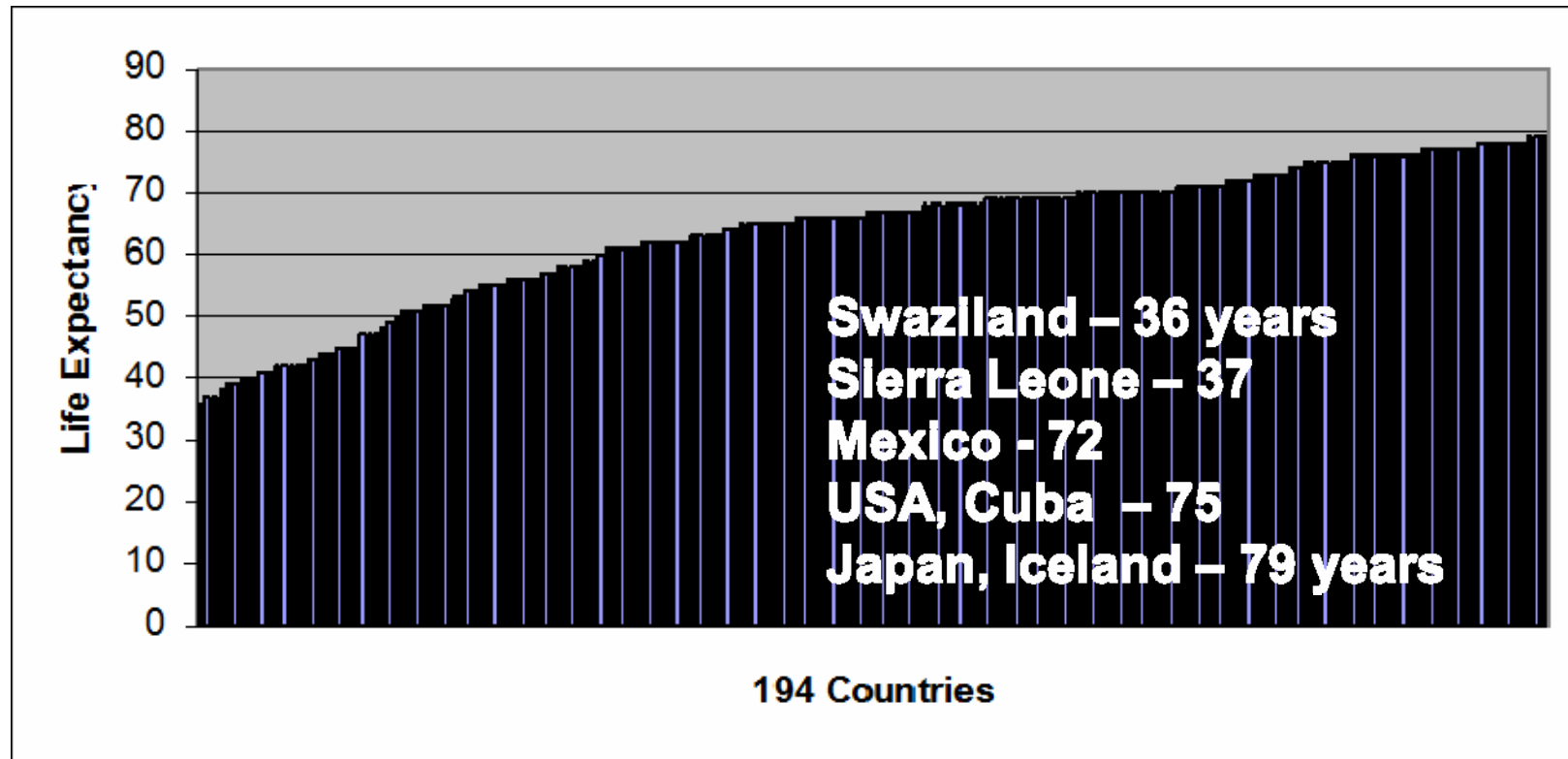
# Global Health Challenges

- Goal: Healthy earthlings
- Border Crossing Challenges:
  - Pathogens and disease outbreaks
  - Food and drugs (commerce)
  - Environmental factors  
(volcanic ash, radiation, oil spills)
  - People (humanitarian, terrorist)
- Global health transcends individual nations
- We are increasingly interconnected...  
but not equal with respect to ability to be healthy.



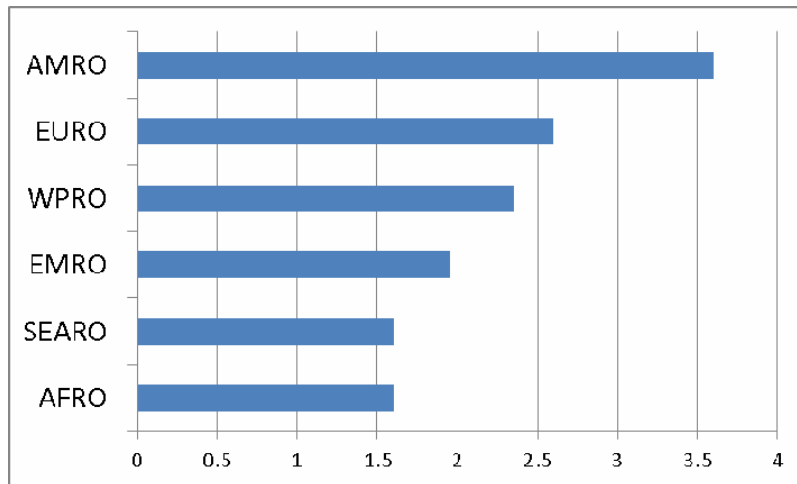
# Life Expectancy at Birth by Country

## World Health Report, 2006



# International Oral Health and Oral Health Care Personnel Disparities

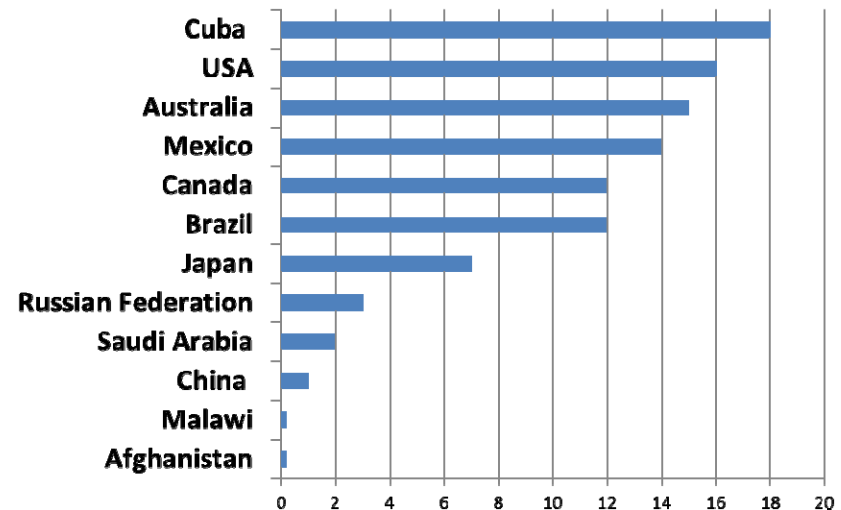
**DMFT of 12 year-olds by WHO Region, 2000**



**DMFT**

Source: WHO Oral Health Report, 2003

**Dentistry Personnel Density by Selected Countries**



**Density per 10,000 pop.**

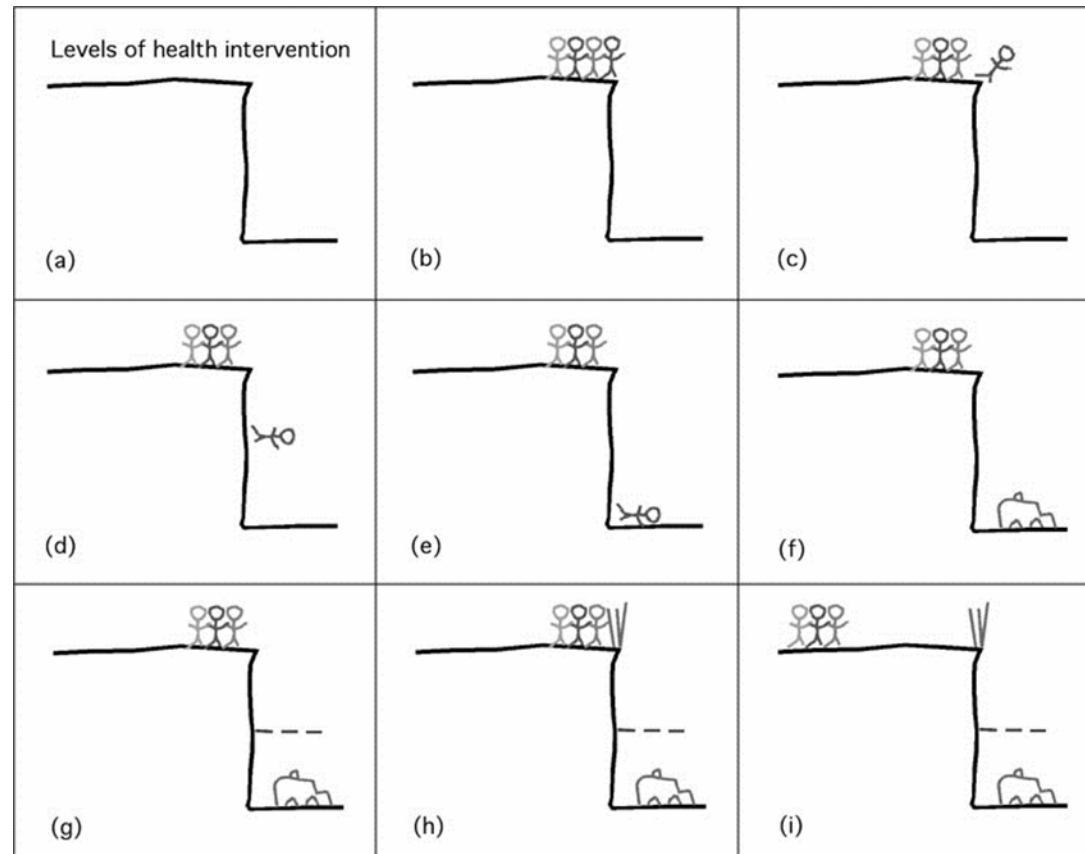
Source: WHO World Health Statistics, 2010

# How do disparities arise?

- “Differences in the quality of care received within the health care system
- Differences in access to health care, including preventive and curative services
- Differences in life opportunities, exposures, and stresses that result in differences in underlying health status.” [social and environmental determinants]

– Camara Phyllis Jones, MD, MPH, PhD

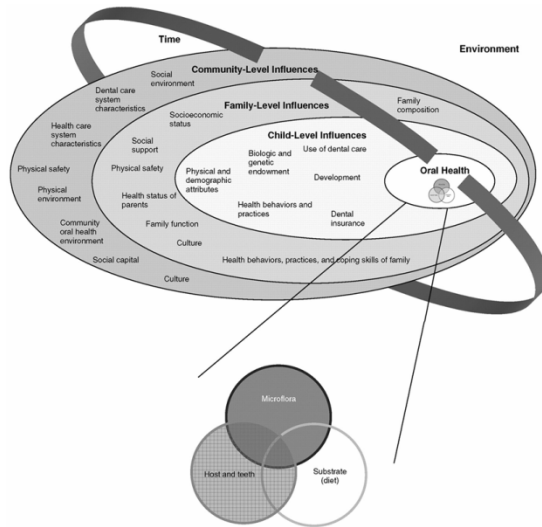
# “Cliff Analogy” to explain H.D. To Help People Falling off the Cliff of Good Health



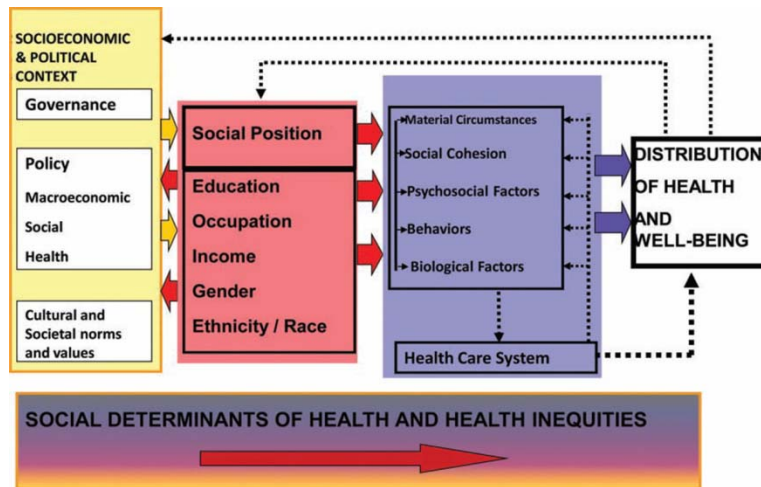
Jones, CP et al. J Health Care Poor Underserved, 2009

# Theoretical Models

Fisher-Owens, et al., 2007



Dahlgren and Whitehead, 1993



CSDH, 2008

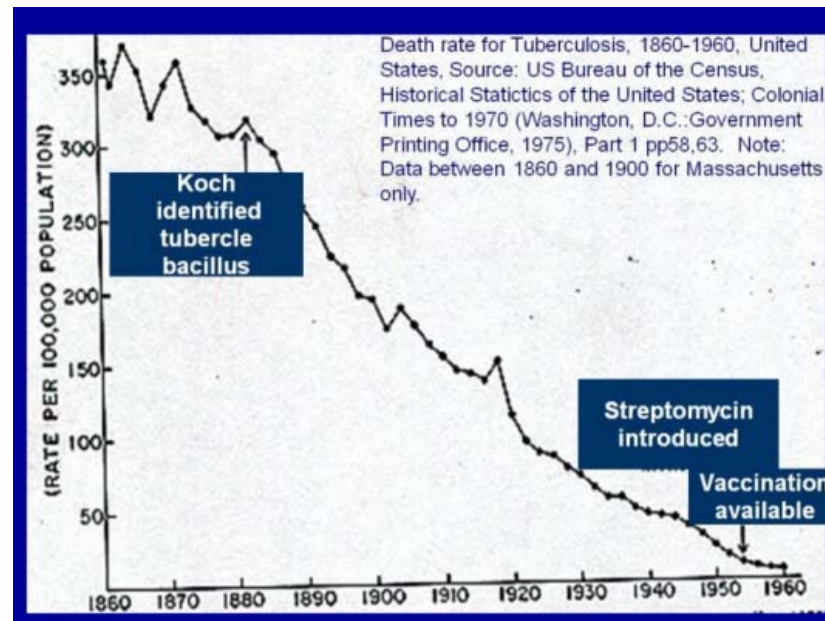
**Multiple Levels:**  
Individual  
Family  
Societal  
Global



# Past Worldwide Public Health Successes

# Tuberculosis

- Improvement in social determinants - sanitation, housing, nutrition, health literacy - led to Tb decline long before vaccination was available.



<http://www.pitt.edu/~super1/lecture/lec10511/010.htm>

Diagram from Last, J.



UNC  
DENTISTRY

# Smallpox eradication

- In 1967, smallpox, afflicted up to ~15 million people annually, ~2 million died, millions more left disfigured and sometimes blind.
- WHO Global vaccination effort started
- In 1980, WHO was able to certify that the disease had been eradicated.

(WHO <http://www.who.int/topics/smallpox/en/> )

# Current Activities

# International and U.S. Health Strategies

Year	Organization	Policy
2000	UN	Millenium Development Goals for 2015
2008	WHO, CSDH	Commission on Social Determinants of Health (CSDH)
2011	USDHHS	Global Health Strategy
2012	USAID	Global Health Strategic Framework



# International Oral Health Action Plans

Year	Plan
2002	WHO Global Oral Health Programme
2007	60th World Health Assembly Resolution “Oral health action plan for promotion and integrated disease prevention” (Petersen, CDOE, 2009)
2009	WHO Global Conference on Health Promotion – towards integration of oral health. Nairobi, Kenya, (& 2010 Call to Action) (Petersen and Kwan, CDOE, 2010)
2011	IADR-Global Oral Health Inequalities: the Research Agenda (GOHIRA) (Williams, JDR, 2011)



# Examples of Principles for Global Health Strategies

- Use evidenced-based knowledge to inform decisions
- Develop community partnerships and intersectoral coordination and integration
- Build local capacities, shared infrastructure, share data and analysis
- Provide sustainable, measurable impact
- Emphasize prevention
- Improve health equity
- **Advance communication and Information Technology**

# 2010 Nairobi Call to Action Key Messages

1. Oral health is a **human right** and essential to general health and quality of life.
2. ...**Integrated approaches** are the most cost-effective and realistic way to close the gap
3. National and community **capacity building** . . . requires policy and appropriate human and financial resources to reduce the gap between the poor and rich.



# Oral Health “Upstream” Measures

- Legislation, Regulation and Policies
  - Fluoridation programs
  - Prevention and Control of Non-communicable diseases (i.e., tobacco, food safety, labeling, advertising)
- Workforce and Prevention Programs
  - Include oral health services as part of primary care, school programs and prevention programs (i.e. HIV/AIDS, cancer control, trauma prevention, immunization, nutrition)
- Surveillance and monitoring
  - Incorporate oral health
- Multi-national Research
- **Communication and Dissemination of Knowledge**

# Caries Prevention Programs in Asia

Method	Country
Water Fluoridation	Malaysia, Singapore, Hong Kong, Brunei, Ho Chi Minh City (Vietnam)
Salt Fluoridation	Laos, Cambodia, being considered in Nepal
Milk Fluoridation, school-based	Thailand
Topical Fluoride, school-based	China, Korea

# Fluoride Varnish Program Example

- Adapt to local conditions, resources, community needs and preferences
- Conduct in conjunction with immunization, vitamin distribution, or other public health program
- US programs – single unit dose FV application packets often preferred
- Developing countries – concern about excess trash, environmental impact

## Trends and Ideas for Future Global Efforts:

- Millennium Development Goal:  
**Make benefits of Information and  
Communications Technology available to all.**
- Increasing utilization of World wide web,  
mobile technologies and open source  
information.

# Mobile Technologies

- “Globally, more people now have access to a mobile device than to justice or legal services.”

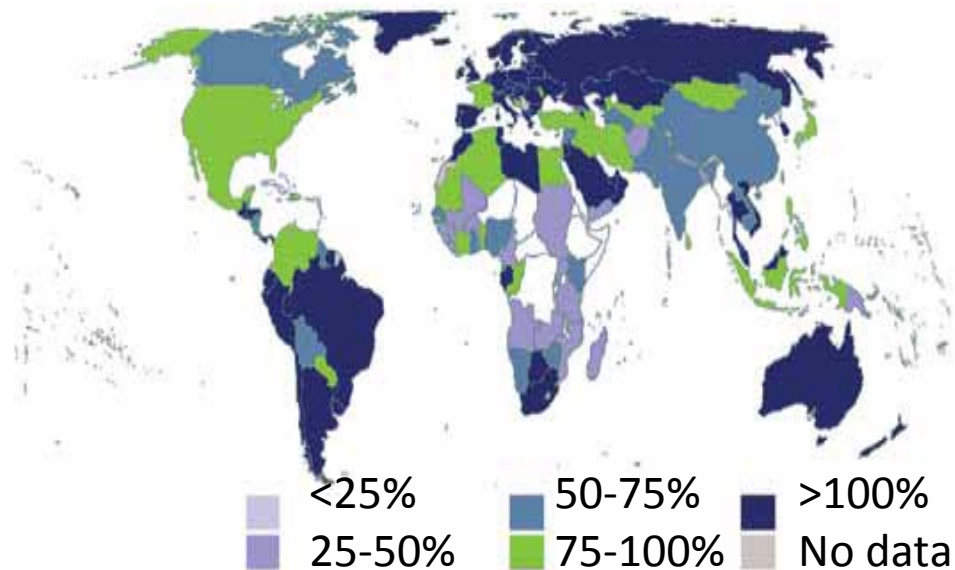
Global Stats (2008)	In Billions
Global population	~ 7.0
Global mobile phone subscriptions:	~ 5.4
Actual # subscribers:	~ 3.9

# Mobile Phone Subscribers

- 45% in low-income countries
- 76% in lower middle-income countries
- Sometimes an entire village shares 1 or 2 cell phones
- 80 million subscribers in developing countries have no access to electrical grid

Source: UN Development Programme 2012

# Mobile Subscriptions 2010



Source: UN Development Programme 2012

# Improve Global Information Sharing

- **OpenCourseWare** - “free and open digital publication of high quality educational materials, organized as courses.”
- Supercourse website
- <http://www.pitt.edu/~super1/>
- Share information to prevent disease
- Transcend boundaries and borders



# Telepreventive Medicine

- “Inexpensive low bandwidth systems designed to reach large numbers of healthy people to prevent disease.
- If institutionalized would be sustainable, and likely to lead to improved global health.”

From Supercourse <http://www.pitt.edu/~super1/lecture/lec10431/008.htm>

# Technologies: Smartphones, Text Messages, Apps, Skype and More

- Oral Health Screening
- Health Information and Messages
- Tooth brushing Reminders
- Appointment Reminders
- Biosensors to monitor saliva
- Virtual dental home (Glassman)

# Oral Health Education and Promotion Opportunities

- **Add to Supercourses**
  - Oral Health Science
  - Best practices
  - Ways to integrate and incorporate oral health into health and public health programs
- **Telepreventive Dentistry**
  - Health education and promotion messages in multiple languages and dialects

# Let's Better Utilize These Technologic Tools to Reduce Inequalities

- Develop and foster global communication and information exchange
  - Intersectoral
  - Interprofessional
  - Collaborative
- Conduct multi-national oral health research and disseminate findings
- Develop and share culturally appropriate interventions and best practices at multiple levels to improve health.

# We are the World

Michael Jackson and Lionel Richie, 1985

*[Chorus]*

We are the world, we are the children  
We are the ones who make a brighter day  
So lets start giving  
There's a choice we're making  
We're saving our own lives  
Its true we'll make a better day  
Just you and me



Recording sold >20 million copies and raised  
\$63 million for humanitarian aid for African famine relief