Reducing Global Oral Health Inequalities

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National Oral Health Conference
May 2, 2012
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

43 year gap
**International Oral Health and Oral Health Care Personnel Disparities**

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

- AMRO: 2.5
- EURO: 3.0
- WPRO: 3.5
- EMRO: 2.0
- SEARO: 1.5
- AFRO: 1.0

**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

Dahlgreen and Whitehead, 1993

Multiple Levels:
Individual
Family
Societal
Global

CSDH, 2008
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.
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

<table>
<thead>
<tr>
<th>Year</th>
<th>Organization</th>
<th>Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>UN</td>
<td>Millenium Development Goals for 2015</td>
</tr>
<tr>
<td>2008</td>
<td>WHO, CSDH</td>
<td>Commission on Social Determinants of Health (CSDH)</td>
</tr>
<tr>
<td>2011</td>
<td>USDHHS</td>
<td>Global Health Strategy</td>
</tr>
<tr>
<td>2012</td>
<td>USAID</td>
<td>Global Health Strategic Framework</td>
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# International Oral Health Action Plans

<table>
<thead>
<tr>
<th>Year</th>
<th>Plan</th>
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<tbody>
<tr>
<td>2002</td>
<td>WHO Global Oral Health Programme</td>
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</table>
| 2007 | 60th World Health Assembly Resolution  
“Oral health action plan for promotion and integrated disease prevention” (Petersen, CDOE, 2009) |
| 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

<table>
<thead>
<tr>
<th>Method</th>
<th>Country</th>
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<tbody>
<tr>
<td>Water Fluoridation</td>
<td>Malaysia, Singapore, Hong Kong, Brunei, Ho Chi Minh City (Vietnam)</td>
</tr>
<tr>
<td>Salt Fluoridation</td>
<td>Laos, Cambodia, being considered in Nepal</td>
</tr>
<tr>
<td>Milk Fluoridation, school-based</td>
<td>Thailand</td>
</tr>
<tr>
<td>Topical Fluoride, school-based</td>
<td>China, Korea</td>
</tr>
</tbody>
</table>
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.”

<table>
<thead>
<tr>
<th>Global Stats (2008)</th>
<th>In Billions</th>
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<tbody>
<tr>
<td>Global population</td>
<td>~ 7.0</td>
</tr>
<tr>
<td>Global mobile phone subscriptions:</td>
<td>~ 5.4</td>
</tr>
<tr>
<td>Actual # subscribers:</td>
<td>~ 3.9</td>
</tr>
</tbody>
</table>

U.N. Development Programme, 2012
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

<25%  25-50%  50-75%  75-100%  >100%  No data
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/](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
It's 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