Advancing Innovation for Older Persons: Mapping needs for medical and assistive devices

12 June 2014
12th International Federation of Ageing
Hyderabad, India

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Acknowledgements

- WHO Kobe Centre: Loic Garcon, Jaz Lapitan

- WHO: Francis Moussy, Adriana Velazquez, Chapal Khasnabis, Yukiko Nakatani, Anjana Bhushan, John Beard (WHO HQ, Western Pacific Regional Office)

- Australia: Lloyd Walker, Wendy Babidge, David Haley, Kylie Mines
  - Royal College of Australian Surgeons, Motivation Australia, Tech4Life

- HelpAge International: Matthew Cherian, Paul Ong

- All participating countries, participants
WHO Goals

- Ensure ageing with dignity, quality of life, health
- Delay, manage, reduce functional and cognitive decline for as long as possible
- Early diagnosis, prevention and treatment of prevalent diseases (e.g., non-communicable diseases), reduction of their risk factors,
- Create socially supportive and inclusive environments whilst reducing inequities.
- Non-institutionalization
- Develop/adapt health and social delivery systems
- Integrated approaches
  - Urban planning
WHY INNOVATE?
Young Children and Older People as a Percentage of Global Population: 1950-2050

Tipping point

Time taken for population aged 60 years and above to double, selected countries, Western Pacific Region

Morbidity and disability in older people

Top 10 causes of DALYs lost for men, 60-79 years, Western Pacific Region (2004)

Top 10 causes of DALYs lost for women, 60-79 years, Western Pacific Region (2004)

Source: World Health Statistics, WHO
Labor force participation of population 65 years and above, selected countries, Western Pacific Region (2010)

Source: United Nations, Department of Economic and Social Affairs. World Population Ageing 1950-2050
The feminization of ageing

Sex ratio of population aged 60 years & above, Western Pacific Region (2010)

Sex ratio of population aged 80 years & above, Western Pacific Region (2010)

Source: United Nations, Department of Economic and Social Affairs. World Population Ageing 1950-2050
Literacy in population aged 60 years and above, selected countries, Western Pacific Region (2000)

<table>
<thead>
<tr>
<th>Country</th>
<th>60-64</th>
<th>65-69</th>
<th>70+</th>
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<td>60</td>
<td>50</td>
<td>40</td>
</tr>
</tbody>
</table>

Source: United Nations, Department of Economic and Social Affairs. World Population Ageing 1950-2050
Leading causes of death, low and middle income countries, by age.

- 0-4 years
- 5-14 years
- 15-44 years
- 45-59 years
- >60 years

- Noncommunicable conditions
- Injuries
- Communicable diseases, maternal and perinatal conditions and nutritional deficiencies

Maintaining functional capacity over the life-course

Source: Kalache and Kickbusch, 1997
Percentage of labour force participation by people 65 and older, by region

LAmC: Latin America and the Caribbean
NAm: North America

Source: ILO, 2000
The number of people over 60, in less and more developed regions.

Source: UN, 2001
Ageing and functional limitation

- Ageing and functional limitation (physical & mental) are synonyms

- 46% of people over the age of 60 are disabled.

- Disabled people are living longer due to improvements in health care etc. – a double burden - if poor then triple burden

- Rehabilitation, assistive devices can improve and maintain functioning
Health condition – hospitalization – catastrophic disability

- Catastrophic disability: loss of independence in ≥ 3 ADL
  - 72% who experience catastrophic disability have been hospitalized

- Leading causes of catastrophic disability
  - Strokes
  - CHF
  - Pneumonia and influenza
  - Ischemic heart disease
  - Hip fracture
In all countries, and in developing countries in particular, measures to help older people remain healthy and active are a necessity, not a luxury.
So…

- Many years of ill-health in elderly in all regions…
- Need for health and social support services
- Health technologies are essential tools…
• Focused, prioritized set of technologies needed

• Government/overall strategy needed

• Ethnography/mapping of the needs and preferences of elderly
  – Their needs; culture; language; literacy
  – Identify key obstacles and challenges to accessing technologies

• Affordability
Innovation: Medical and assistive devices
What are health technologies?

- For
  - Diagnosis
  - Prevention
  - Treatment
  - Rehabilitation

- Medicines and vaccines

- Medical and assistive devices

- Information technology
Technological Innovation

● Tools that can significantly
  – Increase quality of life and dignity
  – Prevent and manage co-morbidities; functional and cognitive decline;
  – Enable health preventive, promotion, treatment, rehabilitation and palliative services
  – Reduce institutionalization and keep people at home
  – Reduce social isolation

● A holistic approach: Must be integrated with health and community delivery systems; ecosystem for innovation

● Listening to the elderly: respond to their needs and preferences
Technological Innovation

- Frugal

- 6 key parameters
  - Affordable
  - Available
  - Acceptable
  - Adaptable
  - Accessible
  - Quality (safe and effective)
Opportunities

- Link disability and ageing communities
  - Community based rehabilitation systems

- Universal Health Coverage

- Integrating health and social (welfare) delivery systems

- Respond to demographic shifts
AN ecosystem for innovation

Key GOALS for ageing populations:
-- Increased quality of life
-- Prevention and compression of morbidity
-- Increased independence and productivity
-- Reduced social isolation
-- Reduced health and social costs

Increased availability of affordable, accessible, acceptable, adapted, safe and effective health technologies for ageing populations
In the context of universal health coverage

- Current increased attention on universal coverage has created some kind of momentum and platform for developing national health financing systems.

- Services = promotion, prevention, treatment, rehabilitative, palliation.

- Who? Everyone!

- Financing: Innovation.
To ensure improved access of safe, quality medical devices

Research and development

Regulations: Medical devices Registration and premarket approval

Assessment

Health Technology Assessment

Needs Assessments Selection

Approved list of devices for interventions

Management

Installation, Inventories; User training Maintenance

Post market surveillance and Adverse event reporting

Decommissioning
Some examples of frugal innovations for ageing populations

- Low cost smart phones – easy to see and use
- A solar powered hearing aid
- Low cost vision solutions (including cataract)
- Assistive solutions: streamlined availability and maintenance
- Appropriate wheelchair
- The cane, with sensors
- GIS and sensors: cognitive decline
- Utility companies – homes – early warning
- Social innovation (e.g. housing, social media, etc)
  - Older persons associations
- Senior centers = social participation, meals, self care
- Many others
Thank you

http://www.who.int/kobe_centre