

Hearing Impairment: Epidemiology and Challenges to Prevention

The National Ear and Hearing Health Care Program

Global Perspective

- Hearing loss
 - hidden disability
 - increasing rapidly
 - most prevalent sensory disability

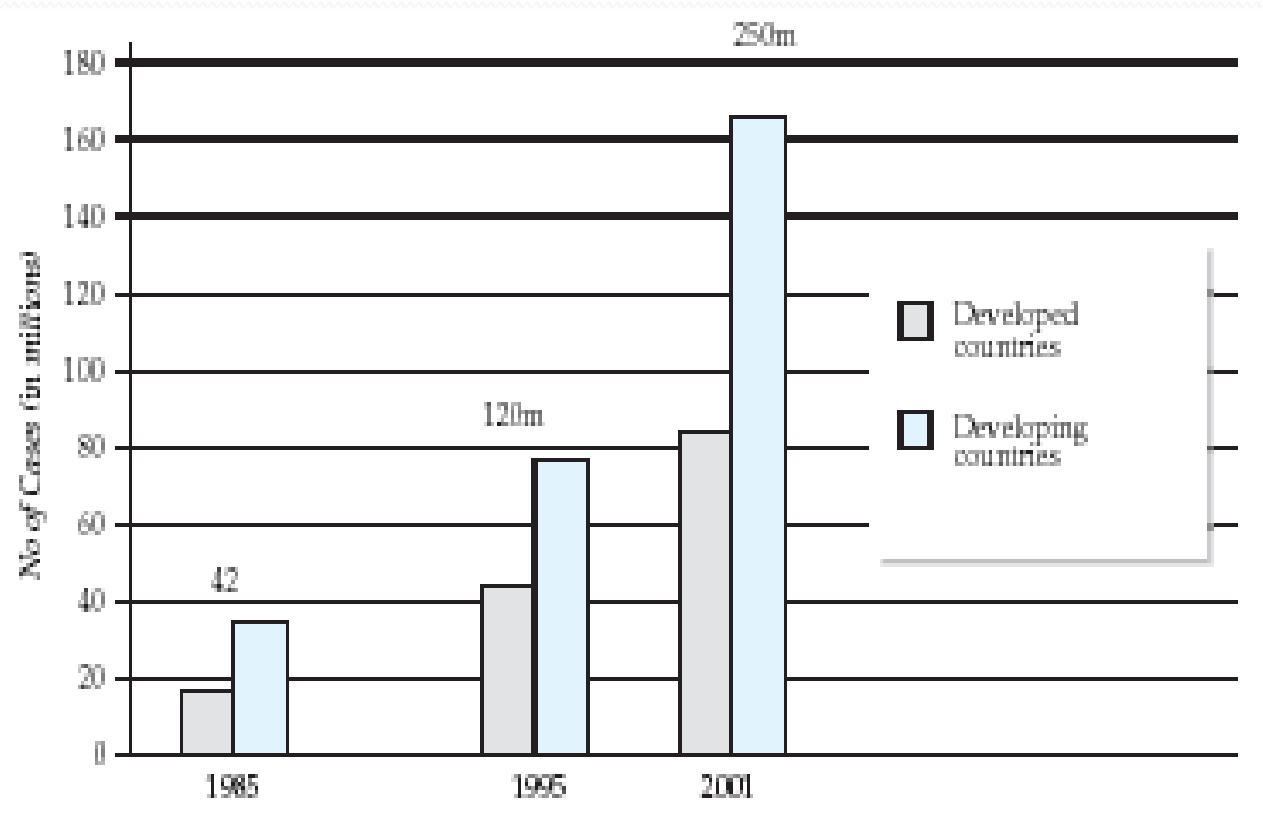


Figure 1. Changing Estimates of Disabling Hearing Impairment

Global Perspective

- Estimates have increased progressively since they were first made in 1985 and is attributed to:
 - Combination of improved diagnosis
 - Earlier detection
 - Longer survival of elderly people who have the highest prevalence of deafness (presbycusis, NIHL)

Global Perspective : WHO


- Estimate for 2005:
 - 278 million people in the world with disabling hearing impairment.
 - Of the 278M, 68 million (24%) had hearing loss since childhood while the rest (76%) had hearing loss in adulthood
 - 364 million people with mild hearing loss
 - 2/3 of the burden of HI is in developing country
 - highest estimate for any disability
- Disabling impairment
 - Adult: ≥ 41 dB average in the better ear
 - Children (≤ 15 years old) : ≥ 31 dB

Grades of Hearing Impairment

Grade 0 None	25 dB or less Hears whispers	No slight problems
Grade 1 Slight	26-40 dB	Hears/repeats words in normal voice at 1m
Grade 2 Moderate	Child 31 – 60 dB Adult 41 – 60 dB	Hears/repeats words in raised voice in 1m
Grade 3 Severe	61 -80 dB	Hears words shouted into better ear
Grade 4 Profound	81 dB or more	Cannot hear/understand shouted voice

Disabling hearing impairment

Average of 0.5, 1, and 2 kHz in the better ear

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- The major preventable causes of hearing impairment in low- and middle-income countries are:
 - middle ear infections
 - excessive noise
 - inappropriate use of certain drugs
 - problems during childbirth
 - vaccine-preventable infections

Burden of the Disease

- Since 2001, WHO has included adult-onset hearing loss as a contributor to the “global burden of disease” (GBD) in its annual World Health Report.
- The two most commonly-used tools are:
 - 2005: ranked 3rd at 4.8% of total years lived with disability (YLD), after depressive disorders and other unintentional injuries which rank first and second with 12.1% and 4.8% of the total.
 - 2005: ranked 12th, coming after perinatal conditions, lower respiratory infections, HIV/AIDS, depression, heart disease, diarrhea, strokes, road accidents, tuberculosis, malaria, chronic lung disease

Table 1. Leading Causes of Disease Burden (DALYs)
among Adults Worldwide, 2002

Adults Aged 15-59			Aged 60+		
Rank	Cause	DALYs (1000)	Rank	Cause	DALYs (1000)
1	HIV/AIDS	68 661	1	Ischaemic heart disease	31 481
2	Unipolar depressive disorder	57 843	2	Cerebrovascular disease	29 595
3	Tuberculosis	28 380	3	Chronic obstructive pulmonary disease	14 380
4	Road traffic injuries	27 264	4	Alzheimer and other dementias	8 569
5	Ischaemic heart disease	26 155	5	Cataracts	7 384
6	Alcohol disorders	19 567	6	Lower respiratory infections	6 597
7	Hearing loss adult onset	19 486	7	Hearing loss, adult onset	6 548
8	Violence	18 962	8	Trachea, bronchus, lung cancer	5 952
9	Cerebrovascular disease	18 749	9	Diabetes mellitus	5 882
10	Self-inflicted injuries	18 522	10	Age-related and other vision disorders	4 766

South East Asia Perspective

- Recent estimates for SEA:
 - 668 552 400 persons with moderate to severe hearing impairment
 - 110 000 000 persons with disabling hearing impairment
- SEAR had disproportionately high burden of deafness among all WHO regions
- Hearing loss accounts for 2.3 % of all Disability-adjusted-life-years (DALYs) in SEA

Table 2. Prevalence of Moderate to Severe Hearing Impairment in the SEA Region, by Countries

	Prevalence Rate %	Population in 1000	Estimated number of hearing impaired
Bangladesh ²	6.9	130,000	8,970,000
Bhutan ⁵	6.0	600	36,000
DPR of Korea ⁵	4.0	22,260	890,400
India ¹	6.3	1,009,000	630,567,000
Indonesia ¹	4.6	210,000	9,660,000
Maldives ⁵	6.0	300	18,000
Myanmar ¹	8.4	52,000	4,368,000
Nepal ³	16.2	23,000	3,726,000
Sri Lanka ¹	8.8	19,000	1,672,000
Thailand ⁴	13.3	65,000	8,645,000
* Timor Leste has not been included in this publication since data is not available			
Total			668,552,400

1. Population-based studies using WHO Protocol; hearing loss > 41 dB^{HL}, 2. Population-based study⁽²⁰⁾, hearing loss > 41 dB, 3. Population-based study⁽²⁰⁾, also includes hearing loss between 21-40 dB, 4. Population-based study⁽²²⁾, also includes hearing loss below 40 dB, 5. Estimate based on prevalence in neighbouring countries.

HI in Children: South East Asia

- WHO estimates that every year about 38 000 deaf children are born in South-East Asia. This would mean that every day over 100 deaf infants are born in the Region.

Table 2. Estimates of Childhood and Adulthood Onset Deafness in SEAR

<i>Country</i>	<i>Adult-onset Deafness</i>	<i>Childhood-onset Deafness</i>
Bangladesh	7.1	1.8
India	7.6	2.00
Indonesia	7.1	0.80
Myanmar	8.6	3.82
Nepal	8.7	2.00
Sri Lanka	10.0	3.53
Thailand	11.6	5.40

HI in Adult: South East Asia

- Hearing impairment in the elderly or presbycusis can start from the age of 50 years and is most prevalent in the SEAR study (4.1 to 10.3% of the population have hearing loss from non-infectious causes, of which ageing is apparently the most prominent).
- Until 2000, population ageing was slower in the less developed regions where fertility is still relatively high.
- Recently, the proportion of older persons in the Region has increased from 6% to 8%.

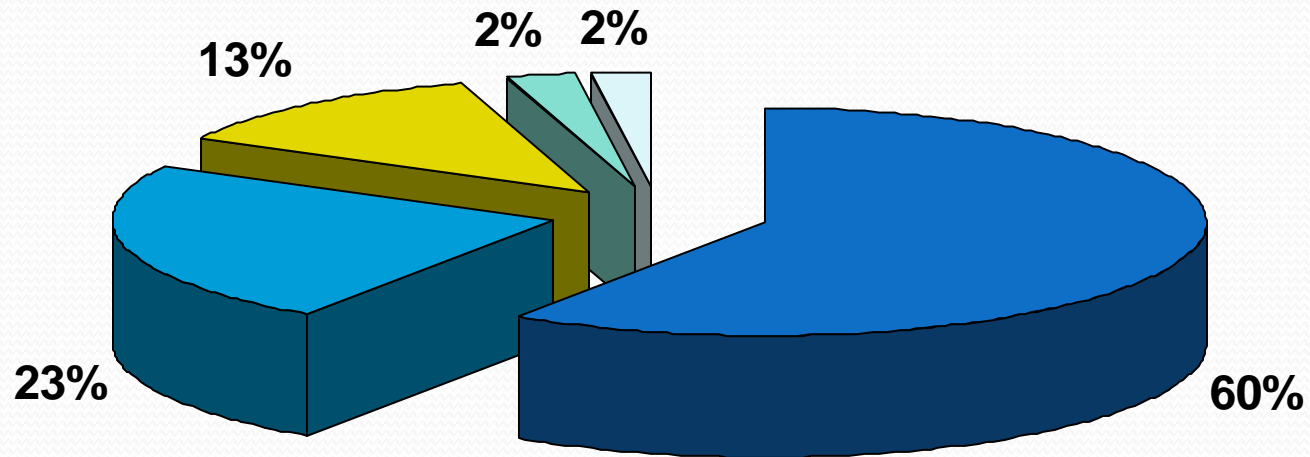
Local Perspective

- The Prevalence Rate for Disability is at 2.9% covering a total sample population of 59,443 (The Philippine Disability Survey; Guzman, CZ; Baltazar, JP; Mancao, BD; Baquilod, MM; Trinidad, FE)
- From the 2.9%, hearing impairment ranked second comprising 33% of all persons with disabilities (The Philippine Disability Survey; Guzman, CZ; Baltazar, JP; Mancao, BD; Baquilod, MM; Trinidad, FE)
- In a Province-wide Survey conducted in Quezon province involving 3,431 participants (WHO ear and Hearing Disorders Survey of Quezon Province; Martinez, NV; Lopez, MC; Trinidad FE; 2001) :
 - disabling hearing impairment was observed on 20.7% of cases.
 - wax (70.3%) and middle ear infections (18.8%), were observed to be the most prevalent disorders of the ear

Local Perspective

- In a survey conducted in 1997, 17% of 579,345 individuals with disabilities were listed as having varying forms of hearing impairment (Non-communicable Disease Control Service – Department of Health; 1997)
- In an almost similar registry of 919, 292 persons with disabilities, 115, 375 (12%) had hearing impairment (National Registry of Persons with Disabilities - National Statistics Office; 1995)
- National Prevalence of Ear Disorders and Hearing Disability (Martinez, Ramos, del Prado), covering nearly 6000 participants, 27.7% had hearing impairment and 9% of which were disabling

Common Ear Diseases



■ Wax

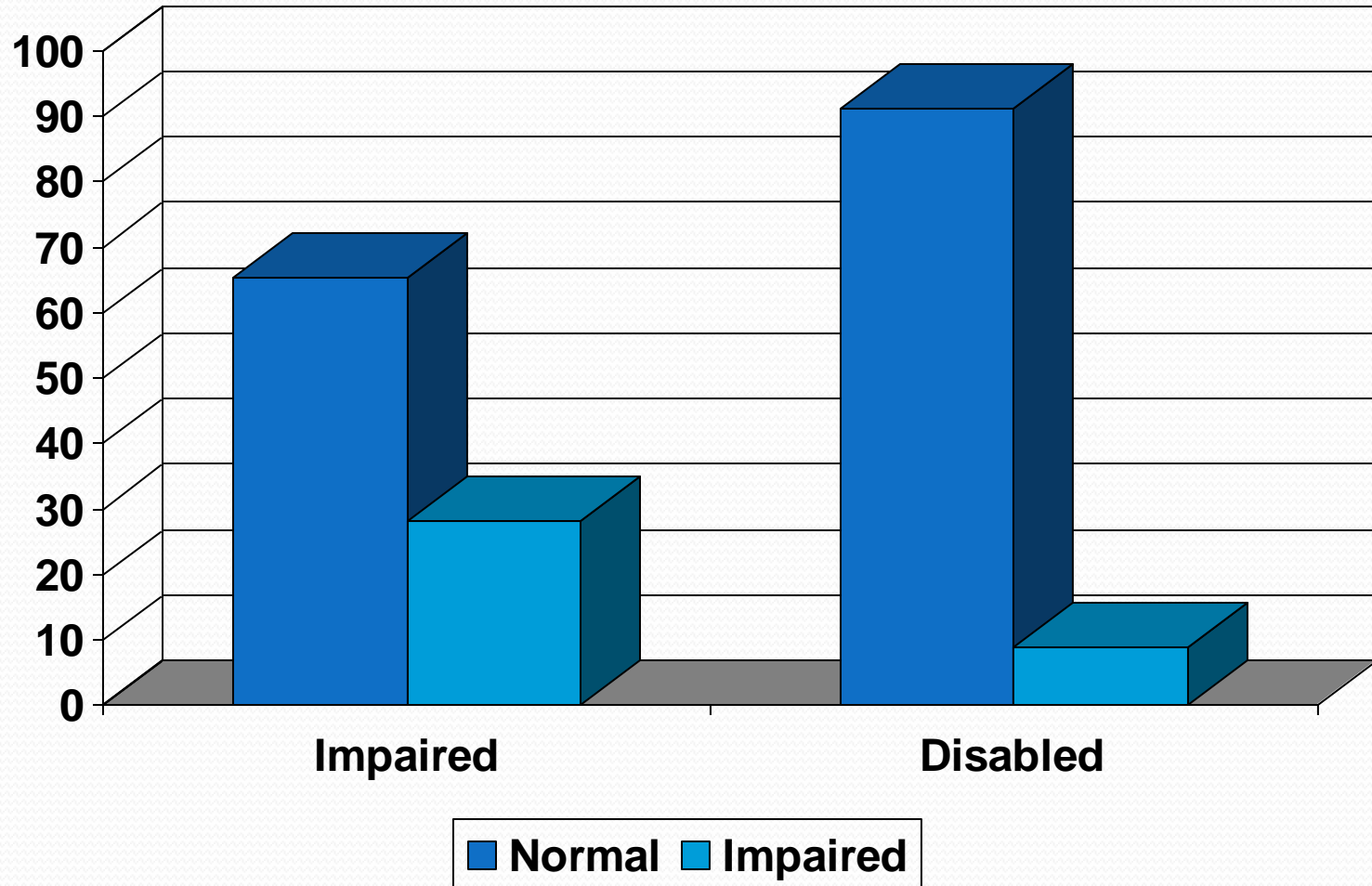
■ Otitis Media

■ Otitis Externa

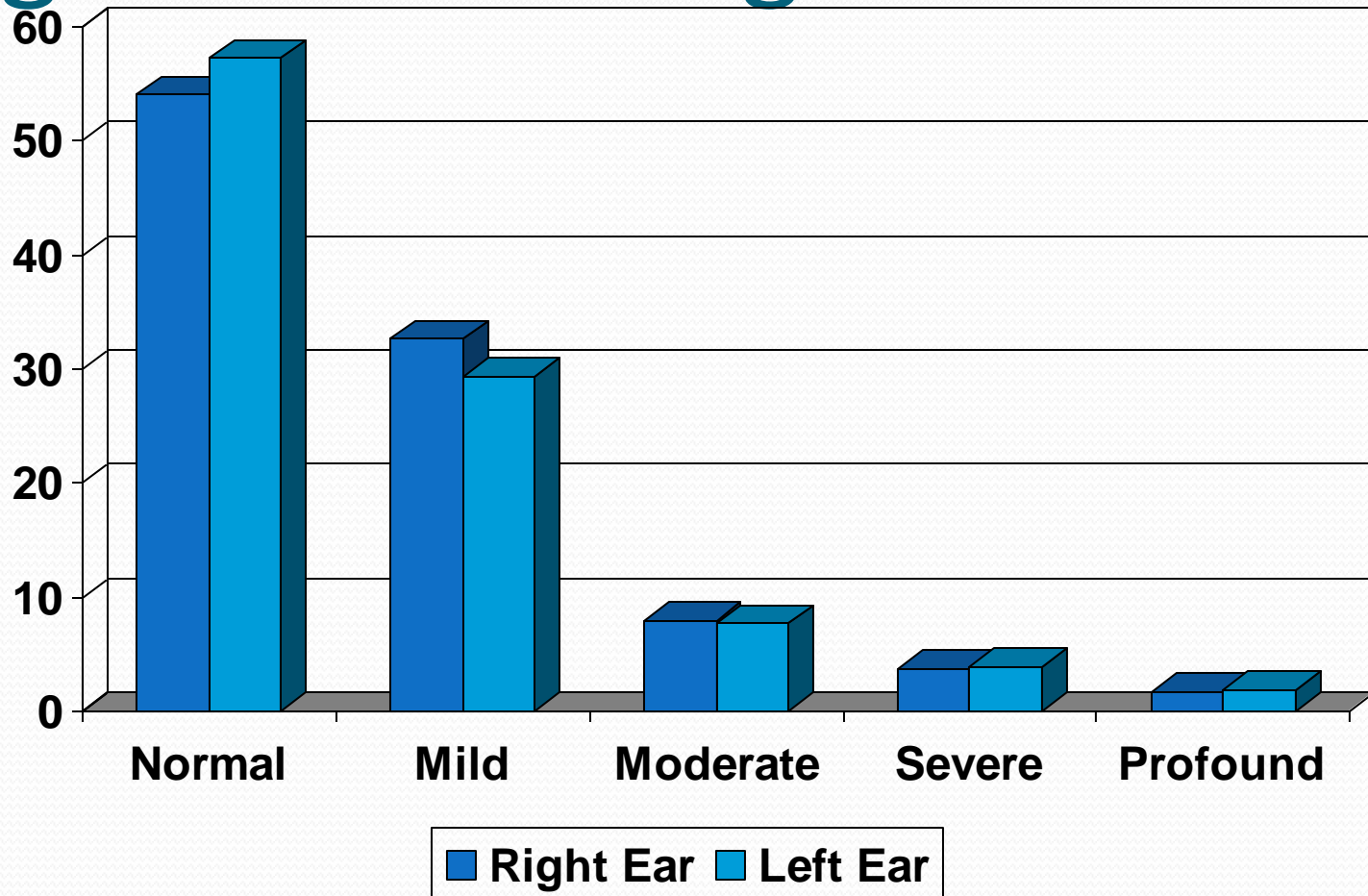
■ Infectious Condition

■ Non-infectious Condition

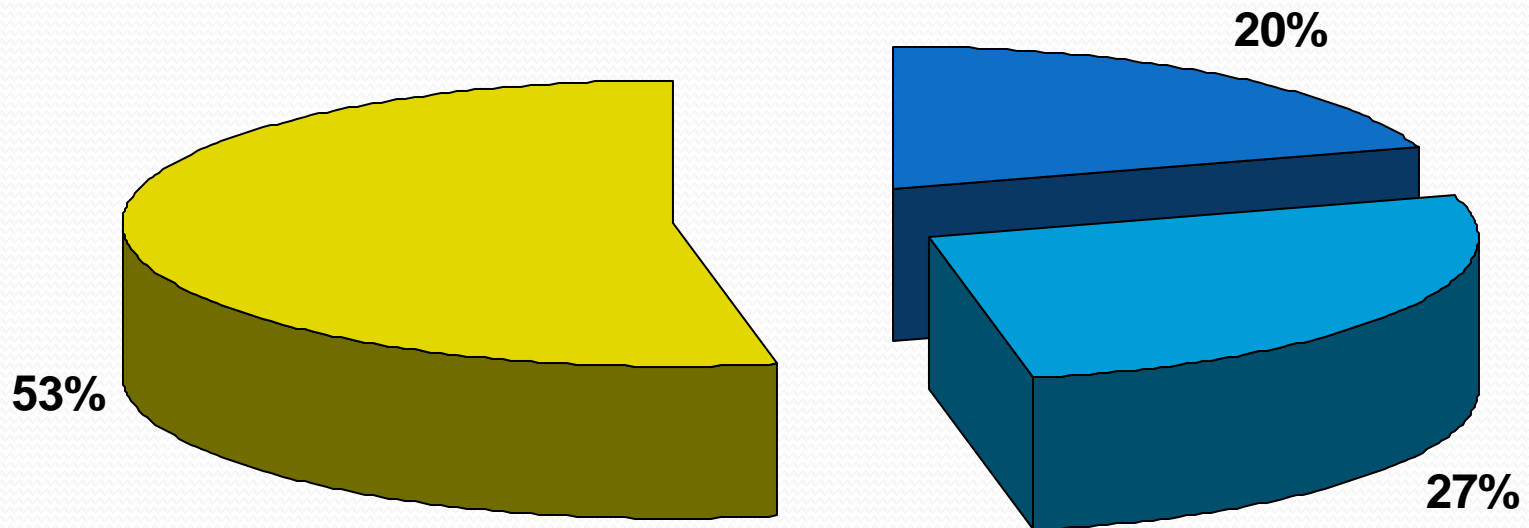
Hearing Impaired / Disabled



Degree of Hearing

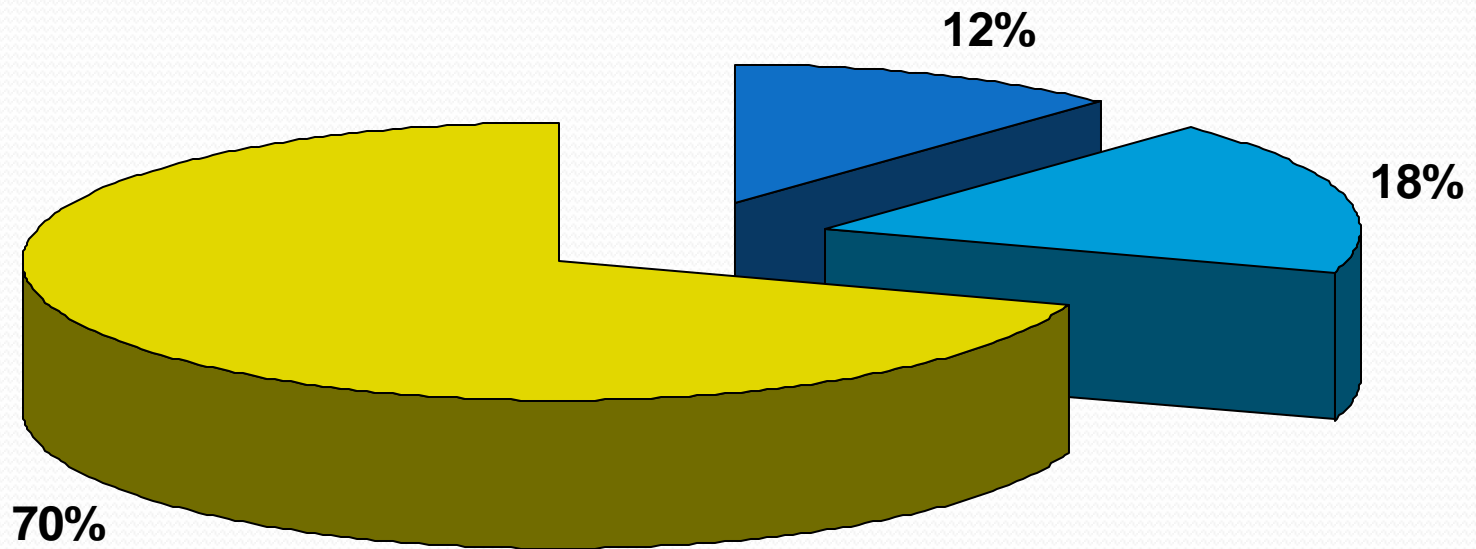


Hearing Impaired by Age



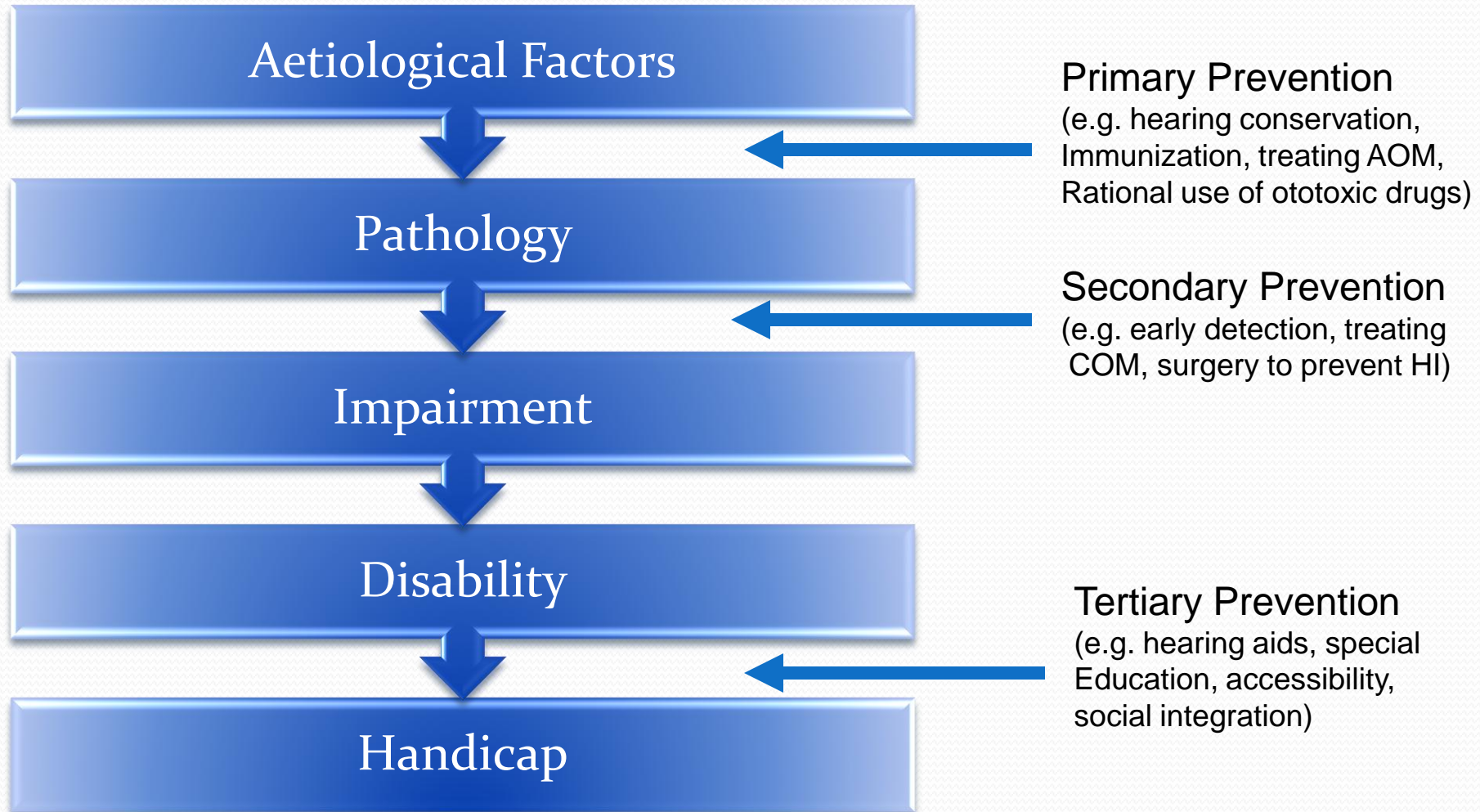
■ Age 5 - 14 ■ Age 15 - 59 ■ Age 60 Above

Hearing Disabled by Age



■ Age 5 - 14 ■ Age 15 - 59 ■ Age 60 Above

Prevention of Deafness and Hearing Impairment



Challenges to Prevention

- Lack of human resources
- Lack of policy
- Lack of facilities
- Lack of awareness
- Low priority in national health development plans

Challenges to Prevention

- *Lack of Human Resources*
 - 350 Board Certified ENTS
 - 50 Audiologists
 - Can be addressed by adopting a Primary Care Approach to preventing hearing impairment and extensive training of secondary and tertiary care givers

Challenges to Prevention

- *Lack of Policy*
 - 50 % of the causes of deafness is actually preventable and about 30% though not preventable, is treatable or can be managed with assistive devices. In other words, 80% of all deafness is avoidable. This would strongly indicate the need to strengthen ear care services.

Challenges to Prevention

- *Lack of Facilities*

- Unable to address early screening, diagnosis and management
- Insufficient provision of hearing aids due to its prohibitive prices
 - In developing countries, 1 in 40 people who need a hearing aid have one
 - Current annual production of hearing aids is estimated to meet less than 10% of global need.
- No reliable service for maintenance and calibration of equipment and hearing aids

Challenges to Prevention

- *Lack of awareness*
 - People are not aware of effects on individuals, costs to society, and opportunities for intervention
 - Knowledge on the true size of the problem is unknown
 - Lack of political will, programmes, and resources
 - Inability to prioritize

Challenges to Prevention

- *Low priority in national health development plans for ear care and prevention of deafness*
 - lack of awareness
 - weak advocacy and
 - lack of strong commitment of professionals
 - Will lead to lack of resources to programs

The National Ear and Hearing Health Care Program



VISION:

“BETTER HEARING FOR ALL IN 2024”

MISSION:

Ensure affordable, accessible, available, and quality services for the prevention of hearing impairment and rehabilitation of hearing disability

GOAL:

Reduce by 50% the preventable causes of hearing impairment by 2010

Program Components

1. Policy Development

Activities 2005-2010:

- Inclusion of Hearing Disability among compensable diseases in health insurance
- Development and implementation by LGUs of ordinances and resolutions on Ear and Hearing Health

Program Components

2. Social Mobilization

Activity 2005-2010:

- Evaluation of awareness campaign

3. Research and Information System

Activities 2005-2010:

- Burden of disease
- Development of database on National Ear and Hearing Care Program

Program Components

4. Service Delivery

Activities 2005-2010:

- Institutionalization of ear and hearing screening in elementary schools and in the communities
- Provision of low cost hearing aids
- Strengthening of referral system among health facilities and health workers

Program Components

5. Capability Building

Activity 2005-2010:

- Implementation of the National Ear and Hearing Health Care Program EARS Training Workshop across all levels of the Primary Health Care System