



# **Healthy People 2001–2020: Tracking Age-Related Measures of Hearing Health in the New Millennium**

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**HEARING LOSS AND HEALTHY AGING:  
AN INSTITUTE OF MEDICINE (IOM) AND  
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National Institute on  
Deafness and Other  
Communication Disorders



# The U.S. Healthy People Initiative: Its Genesis and Its Sustainability

“Unlike most government initiatives in health, the Healthy People initiative of the U.S. federal government was **crafted and sustained not as a federal initiative, but as a ‘national initiative’** eliciting participation from **nongovernmental national organizations, state health agencies, professional associations, multiple agencies of the U.S. Department of Health and Human Services, and other federal agencies, such as Agriculture,** and increasingly engaging academia and state and local stakeholders in adapting the objectives for their own efforts to enact and evaluate state and local policies and programs.”

“The **quantified objectives** at the center of the initiative were a product of **continuous balancing of changing science and political or social concerns** and priorities along with national and state or **special population needs.**”

# Genesis of U.S. Healthy People Initiative

- 1973 – Laframboise, *Can Med J* - conceptual framework and Lalonde report introducing “**the new public health**” or “the third epidemiological revolution”
- 1979 – WHO announces virtual eradication of smallpox
- 1979 – ***Surgeon General’s Report on Healthy People (HP)*** and ***IOM Report*** provide rationale for redirecting health policy towards prevention and health promotion.

First plan (drafted in June 1979 for HP 1990) included

- 5 objectives in health promotion
- 5 in health protection and
- 5 in preventive health services

- 1982 – Ed Brandt, Ass’t Sec Health, mandates the Public Health Service **prepare FY 1983 budget requests using Healthy People objectives as justification**, thus institutionalizing this procedure for future administrative cycles

# Healthy People 2020 Topics Areas (n=42)

## A

[Access to Health Services](#)

[Adolescent Health](#)<sup>New</sup>

[Arthritis, Osteoporosis, and Chronic Back Conditions](#)

## B

[Blood Disorders & Blood Safety](#)<sup>New</sup>

## C

[Cancer](#)

[Chronic Kidney Disease](#)

## D

[Dementias, Including Alzheimer's Disease](#)<sup>New</sup>

[Diabetes](#)

[Disability and Health](#)

## E

[Early and Middle Childhood](#)<sup>New</sup>

[Educational and Community-Based Programs](#)

[Environmental Health](#)

## F

[Family Planning](#)

[Food Safety](#)

## G

[Genomics](#)<sup>New</sup>

[Global Health](#)<sup>New</sup>

## H

[Health Communication and Health Information Technology](#)

[Healthcare-Associated Infections](#)<sup>New</sup>

[Health-Related Quality of Life & Well-Being](#)<sup>New</sup>

[Hearing and Other Sensory or Communication Disorders](#)

[Heart Disease and Stroke](#)

[HIV](#)

## I

[Immunization and Infectious Diseases](#)

[Injury and Violence Prevention](#)

## L

[Lesbian, Gay, Bisexual, and Transgender Health](#)<sup>New</sup>

## M

[Maternal, Infant, and Child Health](#)

[Medical Product Safety](#)

[Mental Health and Mental Disorders](#)

## N

[Nutrition and Weight Status](#)

## O

[Occupational Safety and Health](#)

[Older Adults](#)<sup>New</sup>

[Oral Health](#)

## P

[Physical Activity](#)

[Preparedness](#)<sup>New</sup>

[Public Health Infrastructure](#)

## R

[Respiratory Diseases](#)

## S

[Sexually Transmitted Diseases](#)

[Sleep Health](#)<sup>New</sup>

[Social Determinants of Health](#)<sup>New</sup>

[Substance Abuse](#)

## T

[Tobacco Use](#)

## V

[Vision](#)

Visit website:

<http://www.healthypeople.gov/2020/topicsobjectives2020/>

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10/22/2013

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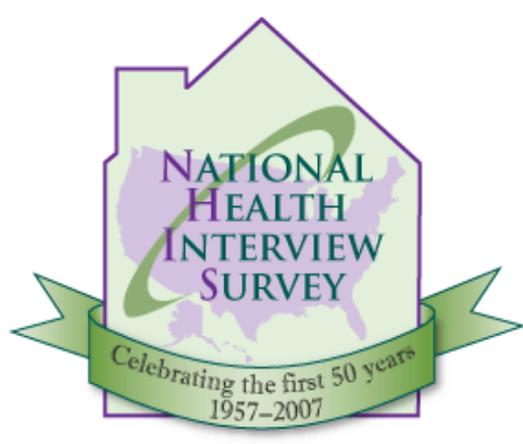
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# NHIS hearing supplements or periodic modules

## **1990–91 Hearing Supplements**

**1999 Hearing Module** – 9 questions; adult sample

**2002 Hearing Module** – 6 questions; adult & child

**2007 Hearing Module** – 54 questions; adult sample

**2014 Hearing Module** – adult & child samples  
(in the field now)

# Question: *What was the MAIN cause of your hearing loss or deafness?*

Present at birth (genetic, rubella, etc.)	3.1
Ear infections/other infections	8.8
Ear injury or surgery	3.1
Brief, loud sound	<b>10.3</b>
Noise exposure	<b>25.3</b>
Age/aging	<b>29.9</b>
Some other cause	10.7
Don't know cause	8.8
Total	100.0



# NHANES hearing exams & questions

- **NHANES III, 1988–1994**
  - Children, 6–19 years (n ≈ 5,300)
- **NHANES, 1999–2004**
  - Adults, 20–69 years (n ≈ 5,300)
- **NHANES, 2005–2006 & 2009–2010**
  - Older Adults, 70–85+ years (n ≈ 1,700)
- **NHANES, 2005–2010**
  - Adolescents, 12–19 years (n ≈ 3,600)
- **NHANES, 2011–2012**
  - Adults, 20–69 years (n ≈ 4,000)

# Hearing Health Information derived from NHIS and NHANES

- National estimates and age-specific prevalence(s) of...
  - Hearing loss (impairment; “hard-of-hearing”)
  - Tinnitus (bothersome; duration, frequency, etc.)
  - Hearing exams (how recent?)
  - Use of hearing protection with noise exposure
  - Use of hearing aids (by degree of hearing loss)
- Co-morbidities with other illnesses/conditions
- Risk factors using RR or ORs, confidence intervals



# Hearing and Other Sensory or Communication Disorders

or

Ear, Nose and Throat – Voice , Speech and Language (ENT-VSL)

- Newborn Hearing Screening
- Ear Infections (Otitis Media)
- **Hearing**
- Tinnitus (Ringing in the Ears or Head)
- Balance and Dizziness
- Smell and Taste (Chemosenses)
- Voice, Speech, and Language
- Internet Health Care Resources for ENT-VSL

# Hearing Objectives (selected) in Healthy People 2020

- ENT-VSL-3** Increase the proportion of persons with hearing impairments who have ever used a hearing aid or assistive listening devices or who have cochlear implants
- ENT-VSL-3.1** ➤ Increase proportion of adults aged 20–69 years with hearing loss who have ever used a hearing aid  
... Baseline in 2007: **16.3%**  
... Target in 2020: **17.9%** (10% improvement)
- ENT-VSL-3.2** ➤ Increase the proportion of persons (all ages) who are deaf or very hard of hearing and who have new cochlear implants  
... Baseline in 2004: **0.77%**  
... Target in 2020: **0.85%** (10% improvement)
- ENT-VSL-3.3** ➤ Increase proportion of adults age 70 years and older with hearing loss who have ever used a hearing aid  
... Baseline in 2007: **28.9%**  
... Target in 2020: **31.8%** (10% improvement)

# Hearing Objectives (selected) in Healthy People 2020

(cont'd)

**ENT-VSL-4**      **Increase the proportion of persons who have had a hearing examination on schedule**

**ENT-VSL-4.1**      ➤ Increase proportion of adults aged 20–69 years who have had a hearing examination in the past 5 years

... Baseline in 2003–04: **28.6%**

... Target in 2020:            **31.5%** (10% improvement)

**ENT-VSL-4.2**      ➤ Increase proportion of adults age 70 years and older who have had a hearing examination in the past 5 years

... Baseline in 2003–04: **38.5%**

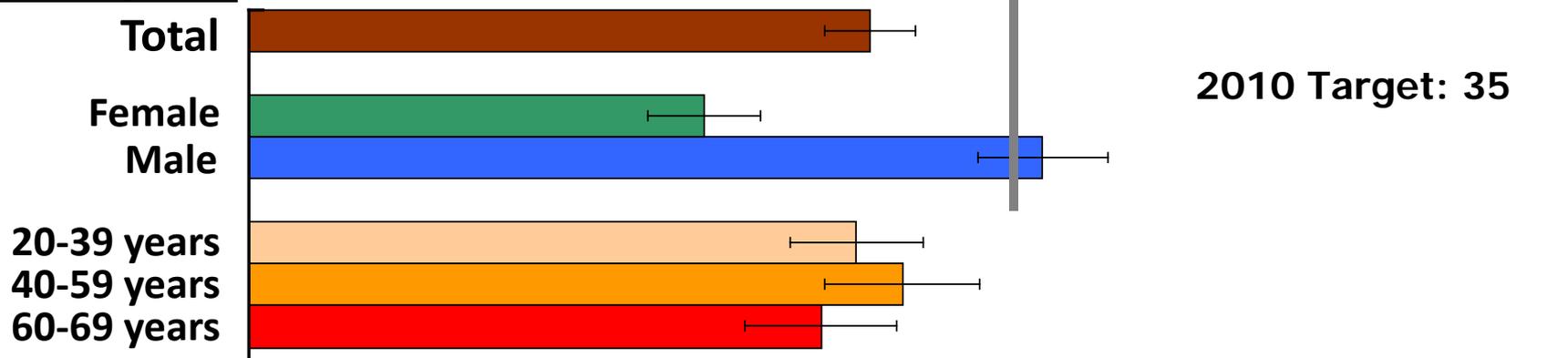
... Target in 2020:            **42.4%** (10% improvement)

# Hearing Examination in the Past 5 years Among Adults, 2003-04

## Adults 20-69 years

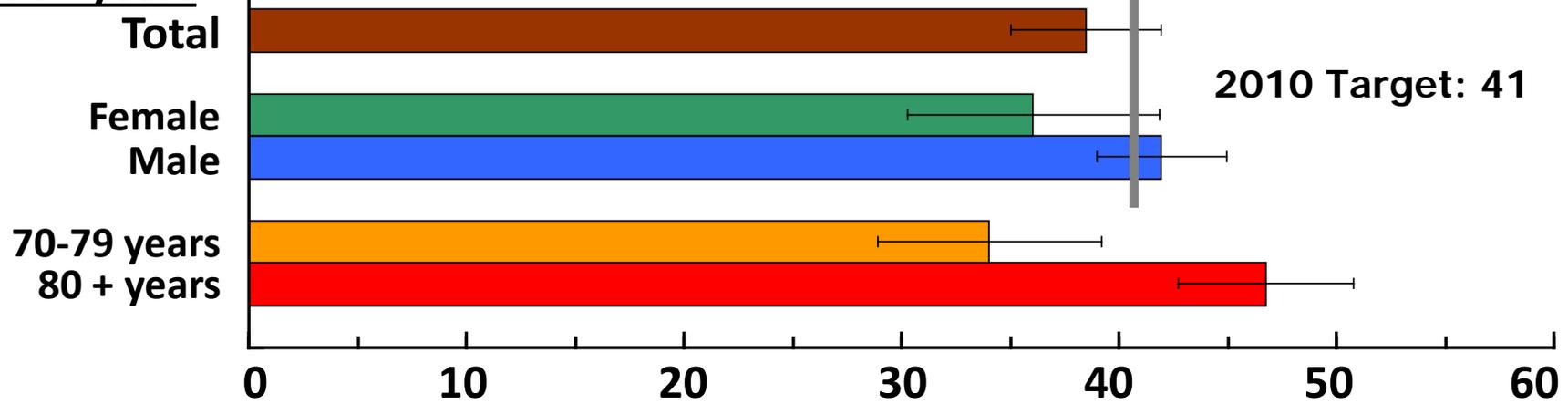
→ Increase Desired

2010 Target: 35



## Adults 70+ years

2010 Target: 41



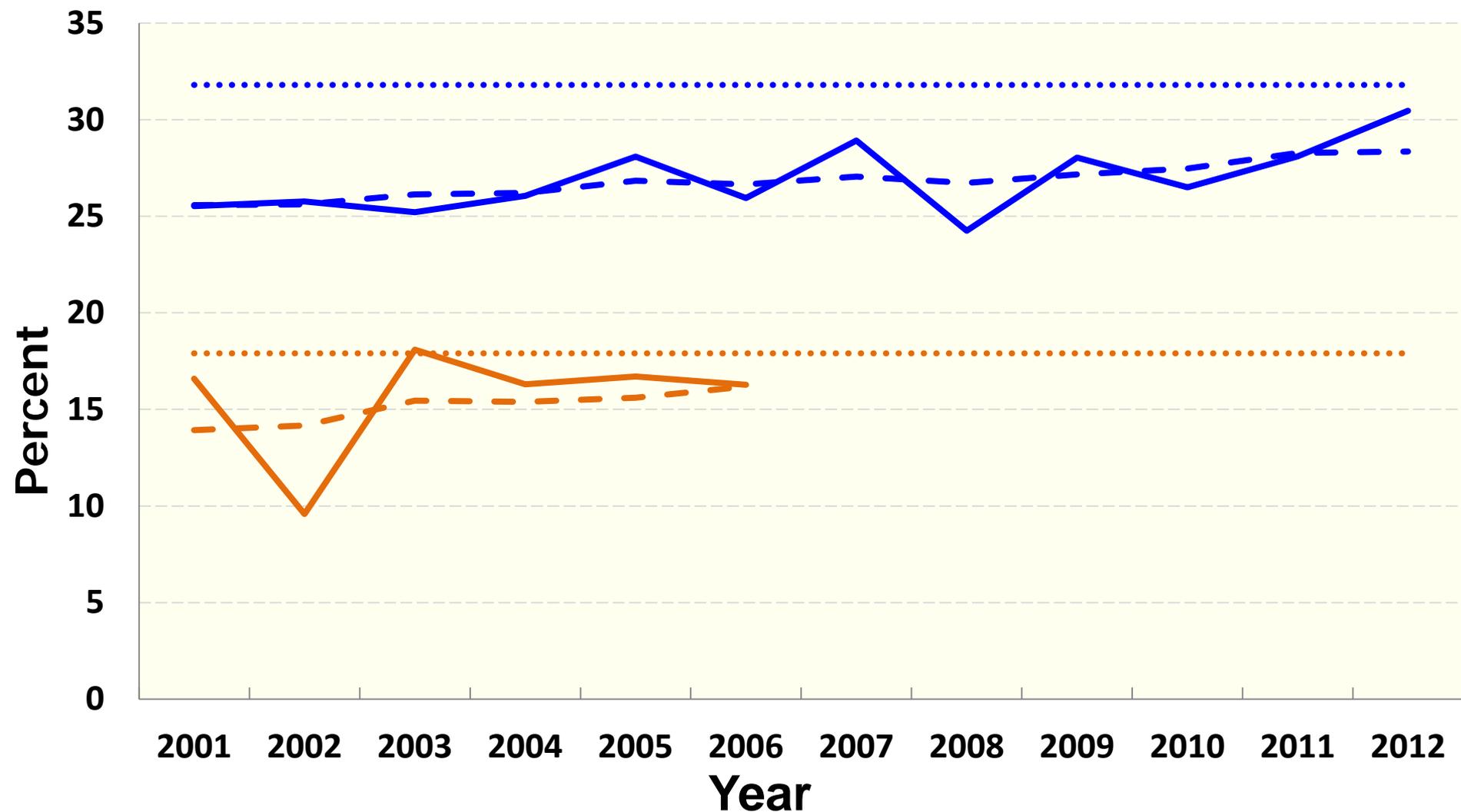
0 10 20 30 40 50 60  
Percent

# Healthy People 2010 Data Collection Template

<b>Race and ethnicity*</b>	<ul style="list-style-type: none"><li>▪ Non-Hispanic black</li><li>▪ Non-Hispanic white</li><li>▪ Hispanic or Latino</li><li>▪ American Indian or Alaskan Native</li><li>▪ Asian</li><li>▪ Native Hawaiian and other Pacific Islander</li><li>▪ Two or more races</li></ul>
<b>Education</b>	<ul style="list-style-type: none"><li>▪ Less than high school</li><li>▪ High-school graduate</li><li>▪ At least some college</li></ul>
<b>Income</b>	<ul style="list-style-type: none"><li>▪ Poor</li><li>▪ Near poor</li><li>▪ Middle/high income</li></ul>
<b>Gender</b>	<ul style="list-style-type: none"><li>▪ Male</li><li>▪ Female</li></ul>
<b>Geographic location</b>	<ul style="list-style-type: none"><li>▪ Urban or metropolitan</li><li>▪ Rural or nonmetropolitan</li></ul>
<b>Disability status</b>	<ul style="list-style-type: none"><li>▪ Persons with disabilities</li><li>▪ Persons without disabilities</li></ul>

\*These are the principal race/ethnicity groups outlined by the Office of Management and Budget. Ref: Sondik, et al., 2010.

# Use of Hearing Aids by Adults with Hearing Loss



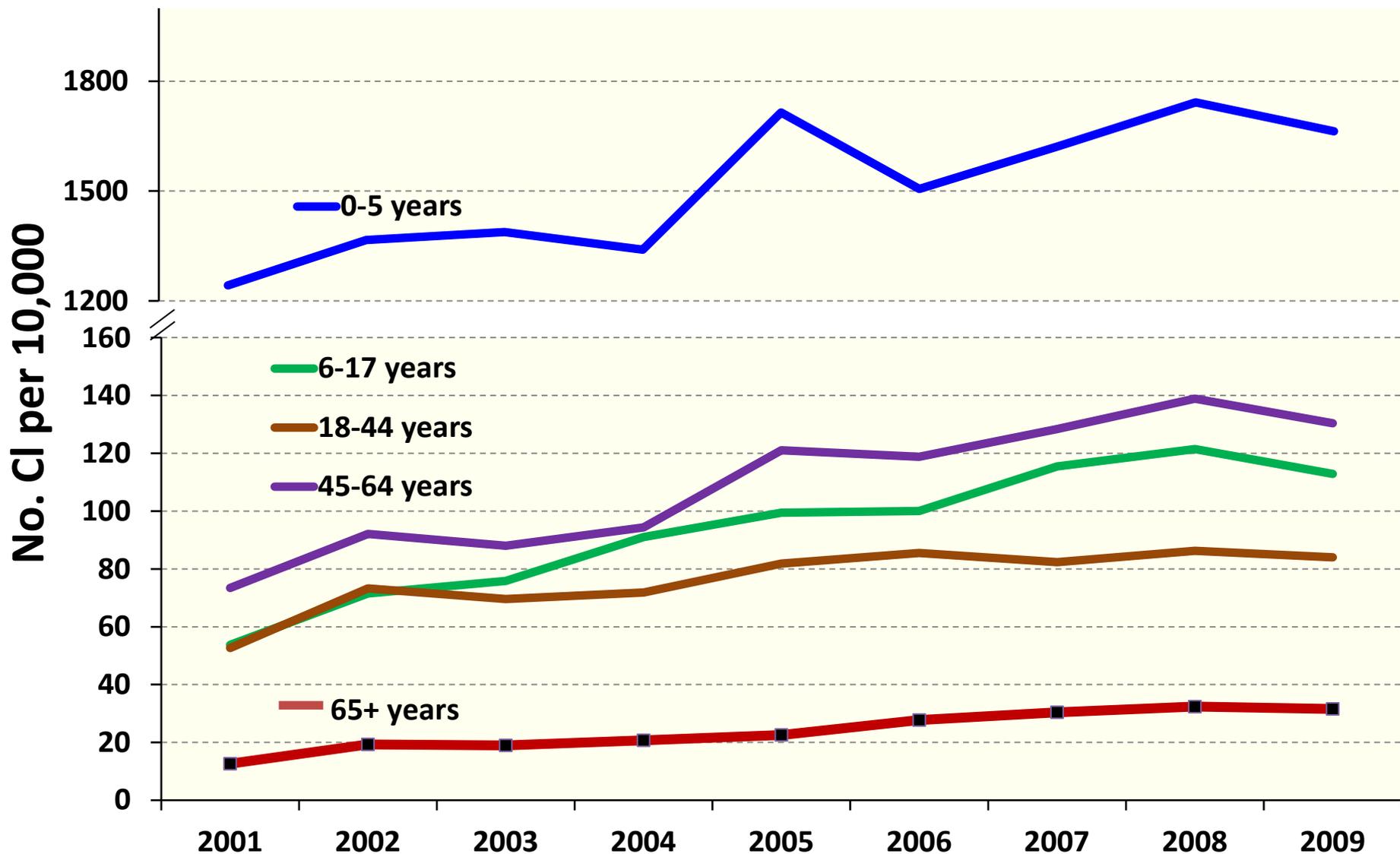
*Note:* Data are preliminary. Data are for adults aged 20+ years with hearing impairments (defined as pure-tone average of thresholds at 1, 2, 3, and 4 kHz  $\geq$  35 dB HL in either ear) who have ever used a hearing aid. For adults 20-69 years old data are age adjusted to the 2000 standard population.

Data sources: U.S. National Health and Nutrition Examination Survey (NHANES) and U.S. National Health Interview Survey (NHIS), CDC, NCHS.

Slide courtesy Asel Ryskulova, NCHS; updated from HP Progress Review Meeting, 10/2008.

**HP 2010 Obj. 28-13a, c**

# New Cochlear Implant (CI) Surgeries\* Each Year



\*Estimated number of CI surgeries per 10,000 people with severe hearing loss defined by bilateral PTA (.5,1,2,4)  $\geq 70$  dB HL, preliminary data based on HCUP & NHANES. Ref: Hoffman HJ, Li C-M, Steiner CA. *Epidemiology of Pediatric and Adult Cochlear Implants, U.S., 2001-09*. Abstract Book. San Diego, CA: Association for Research in Otolaryngology, Feb 2012. [[www.aro.org/mwm/documents/2012AbstractBook.pdf](http://www.aro.org/mwm/documents/2012AbstractBook.pdf)]

# Healthy People 2010

## Objective 28-11

Percent of infants with **hearing screening** during first year of life



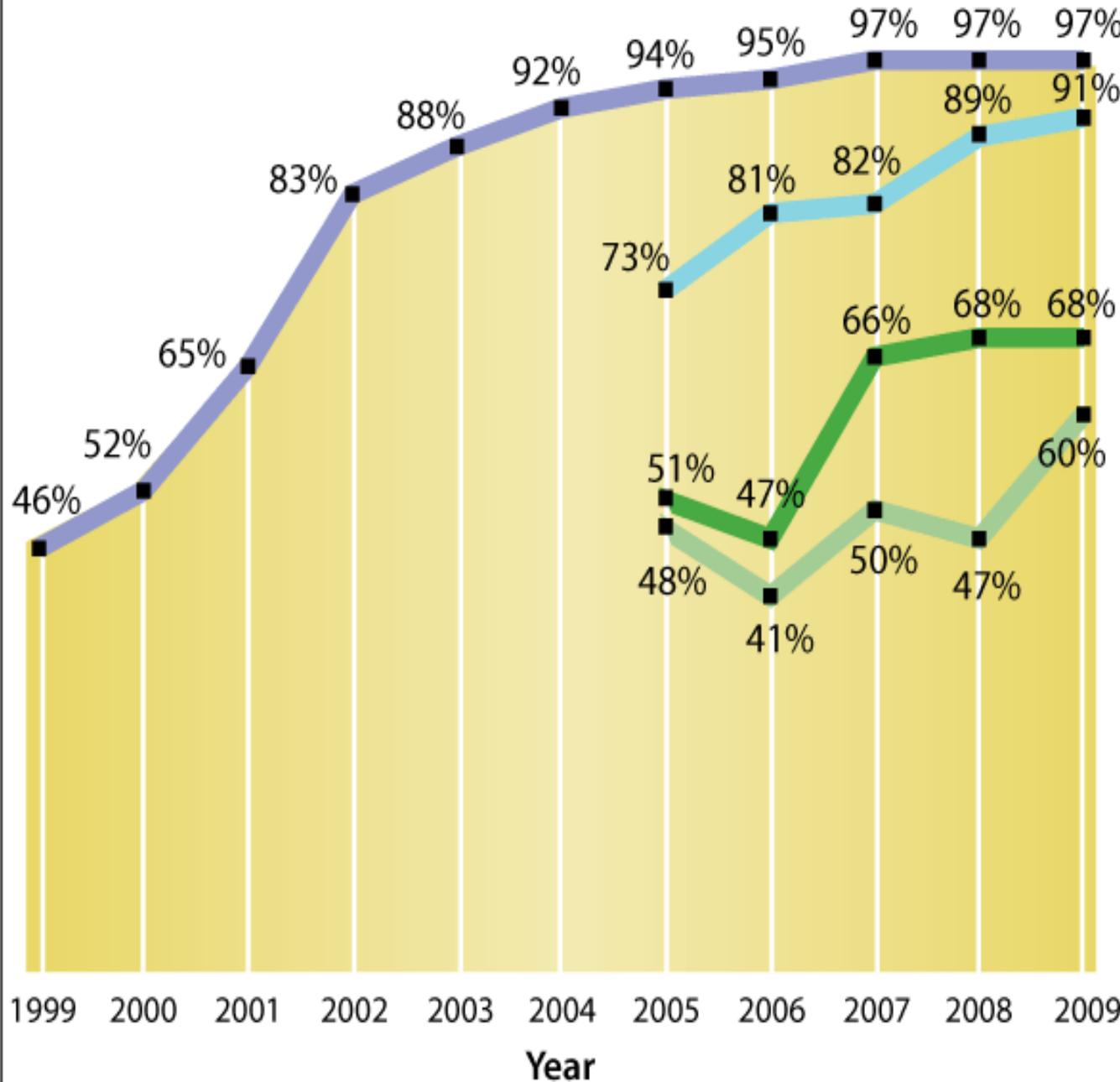
a. **Newborn hearing screening**  
age <1 month



b. **Audiological evaluation**  
age <3 months



c. **Enrolled in intervention services**  
age <6 months



Data collected by the EHDl Program, NCBDDD, CDC.

# DISCUSSION

- Healthy People 2010/2020 provides national focus on goals for Hearing Health & Other Communication Disorders.
- HP goals must be national in scope, objective, quantifiable and ascertained periodically across each decade.
- HP tracking charts and tables provide a quick summary of progress for objectives showing improvement (or not) over time and by key demographic groups: race or ethnicity, education, income, gender, geography, and disability status.
- Review of the HP 2010 Hearing objectives showed some made steady progress, e.g., **newborn hearing screening**, audiological evaluation, and treatment of infants born with hearing loss.
- How useful will HP tracking goals be in monitoring and improving hearing outcomes for older adults? Tracking of hearing aid use shows gradual improvement from 2001–2012 for adults aged 70+ years. **Are there strategies that can accelerate this trend?**

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