



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

**HOWARD J. HOFFMAN**

**EPIDEMIOLOGY & STATISTICS PROGRAM, NIDCD, NIH**

**HEARING LOSS AND HEALTHY AGING:  
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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.**”

Quotes from: Green & Fielding, 2012.

# 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/>

# Healthy People 2020 Federal Interagency Workgroup (FIW) Roster

10/22/2013

## **Administration for Children and Families**

Rochelle Rollins, PhD, MPH  
Senior Advisor to Chief Medical Officer

## **Administration for Community Living**

Rosaly Correa-de-Araujo, MD, MSc, PhD  
Administration for Community Living, DHHS

## **Agency for Healthcare Research and Quality**

Bob McNellis, MPH, PA  
Center for Primary Care, Prevention, & Clinical Partnerships

## **Centers for Disease Control & Prevention/OD**

J. Stan Lehman, MPH  
Office of the Director

## **CDC - National Center for Health Statistics**

Rebecca Hines, MHS  
Chief, Health Promotion Statistics Branch

## **Centers for Medicare & Medicaid Services**

Denesecia Green  
Health Insurance Specialist

## **Food and Drug Administration**

Kara Morgan, Ph.D.  
Director, Public Health Measurement and Analysis

## **Health Resources & Services Administration**

Emily DeCoster  
Office of Planning and Evaluation

## **Indian Health Service**

Lucie Vogel, MS, MBA  
Div. of Planning, Evaluation and Research

## **National Institutes of Health**

Denise Stredrick, Ph.D.  
Office of Disease Prevention

Martina V. Taylor, MT, ASCP  
National Cancer Institute

## **Substance Abuse & Mental Health Admin.**

Anderson A. Tesfazion, MPH  
Div. Evaluation, Analysis & Services Research

## **OS/Assistant Secretary for Administration and Management**

Gene Migliaccio, Dr PH  
Director, Federal Occupational Health

## **OS/Assistant Secretary for Planning and Evaluation**

Caroline Taplin  
Office of Health Policy

## **OS/Assistant Secretary for Preparedness and Response**

Lisa G. Kaplowitz, MD, MSHA  
Director, Office of Policy and Planning

## **OS/Office of Global Health Affairs**

Cecilia Rosales MD, MS  
Assoc Prof, University of Arizona

## **OS/Office of National Coordinator for Health IT**

Kelly Cronin  
Health Reform Coordinator

## **OASH/National Vaccine Program Office**

Guillermo J. Avilés-Mendoza, J.D., LL.M., LCDR

## **OASH/Office of Adolescent Health**

Wilma M. Robinson, PhD, MPH  
Deputy Director

## **OASH/Office HIV/AIDS & Inf Dis Policy**

Timothy Harrison, Ph.D.  
Senior Policy Advisor

## **OASH/Office of Minority Health**

Minh Wendt, PhD  
Public Health Analyst

## **OASH/Office Disease Prevention and Health Promotion**

Carter Blakey  
Deputy Director and Director, Community Strategies Division

## **OASH/Office of Population Affairs**

Vanessa A. White, MPH  
Public Health Advisor

## **OASH/Office on Women's Health**

Barbara B. Disckind, Senior Writer and  
Marian Mehegan, DDS, MPH, CAPT, USPHS  
Regional Women's Health Coordinator

## **OASH/President's Council on Physical Fitness, Sports & Nutrition**

Lauren R. Darensbourg, MPH  
Technical Information Specialist

## **OASH/Regional Health Administrators**

Dalton G. Paxman, PhD,  
Regional Health Administrator, Region III

Laurie Konsella, M.P.A., Dep. Regional Health Administrator  
Region VIII (CO, MT, ND, SD, UT, WY)

## **Other Federal Agencies**

### **Department of Education**

Margaret L. Campbell, Ph.D., NIDRR

### **Department of the Interior**

CAPT Charles L. Higgins, MS, REHS, USPHS  
Director, Office of Public Health, National Park Service

### **Department of Transportation**

Melanie L. O'Donnell  
National Highway Traffic Safety Administration

### **Environmental Protection Agency**

William Sonntag, Office of Environmental Information

### **Housing and Urban Development**

Matthew Ammon, MS, Deputy Director  
Office Healthy Homes & Lead Hazard Control

### **US Department of Agriculture**

David P. Goldman, MD, MPH, CAPT USPHS  
Office of Food Safety and Inspection Service  
Timothy C. (Tim) Ihry, DVM, MSA, DACVPM  
Applied Veterinary Epidemiology Division/FSIS/OPHS

### **Veterans Affairs**

Adam Darkins, MChB, MD, MPH, FRCS  
Care Coordination Services  
Office of Patient Care Services



# 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 ( $n \approx 5,300$ )
- **NHANES, 1999–2004**
  - Adults, 20–69 years ( $n \approx 5,300$ )
- **NHANES, 2005–2006 & 2009–2010**
  - Older Adults, 70–85+ years ( $n \approx 1,700$ )
- **NHANES, 2005–2010**
  - Adolescents, 12–19 years ( $n \approx 3,600$ )
- **NHANES, 2011–2012**
  - Adults, 20–69 years ( $n \approx 4,000$ )



# 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)

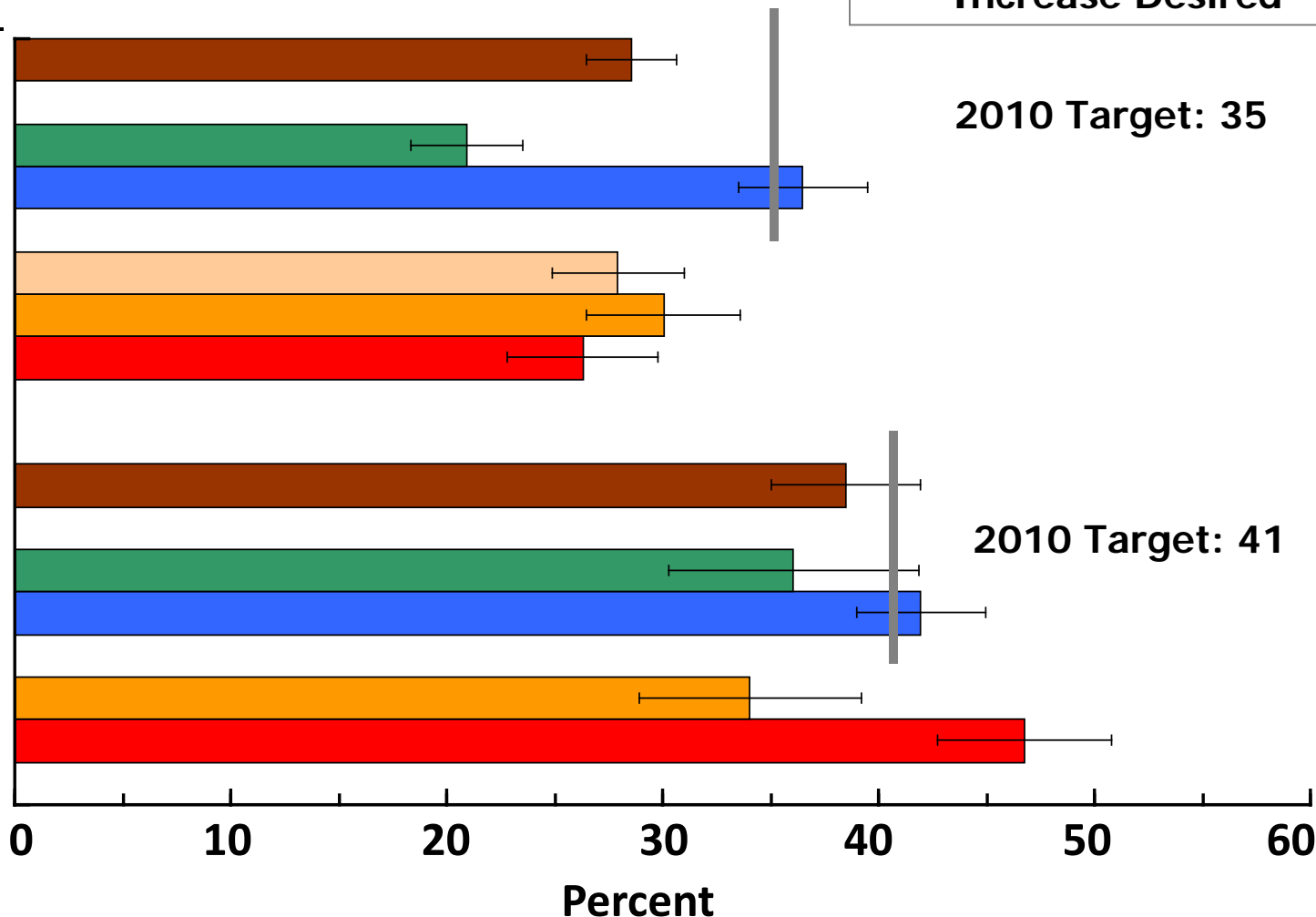
# Hearing Examination in the Past 5 years Among Adults, 2003-04

## Adults 20-69 years

→ Increase Desired

2010 Target: 35

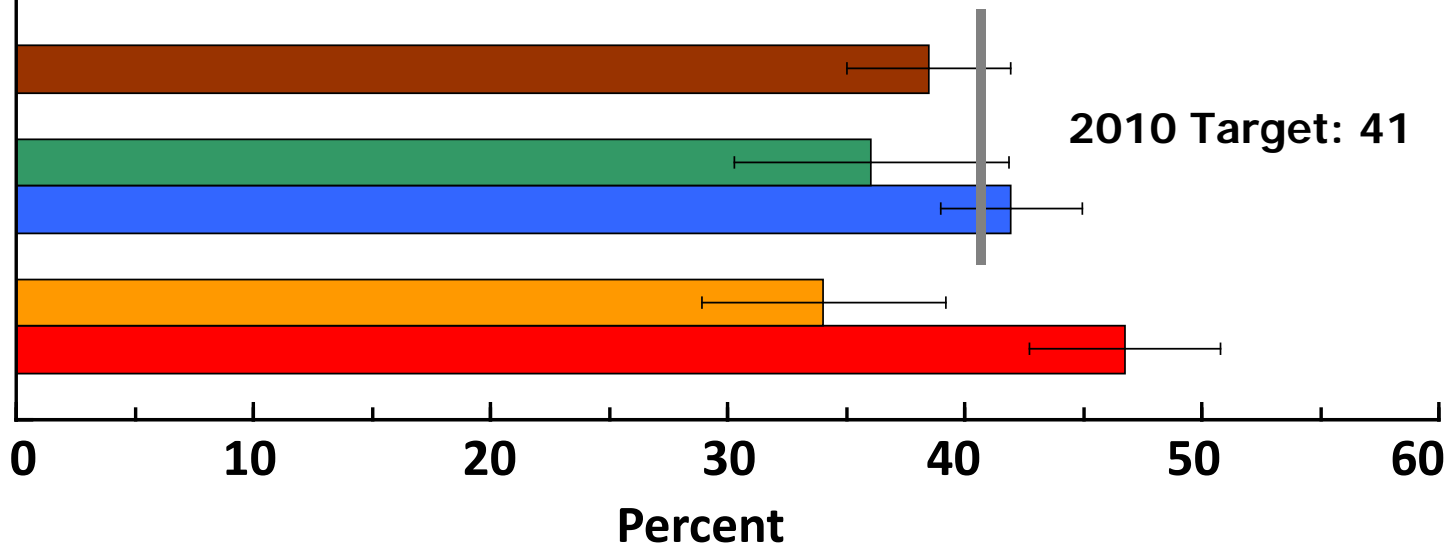
Total  
Female  
Male  
  
20-39 years  
40-59 years  
60-69 years



## Adults 70+ years

2010 Target: 41

Total  
Female  
Male  
  
70-79 years  
80 + years



Note: I = 95% confidence interval. Data are for adults aged 20 years and over who have had a hearing exam within the past 5 years. Except for age-specific estimates data for adults ages 20-69 years old are age adjusted to the 2000 standard population. Source: National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. Slide courtesy of Asel Ryskulova, NCHS, 2008; Progress Review Meeting for HP Chapter 28 – Vision and Hearing Progress Review, October 2008.

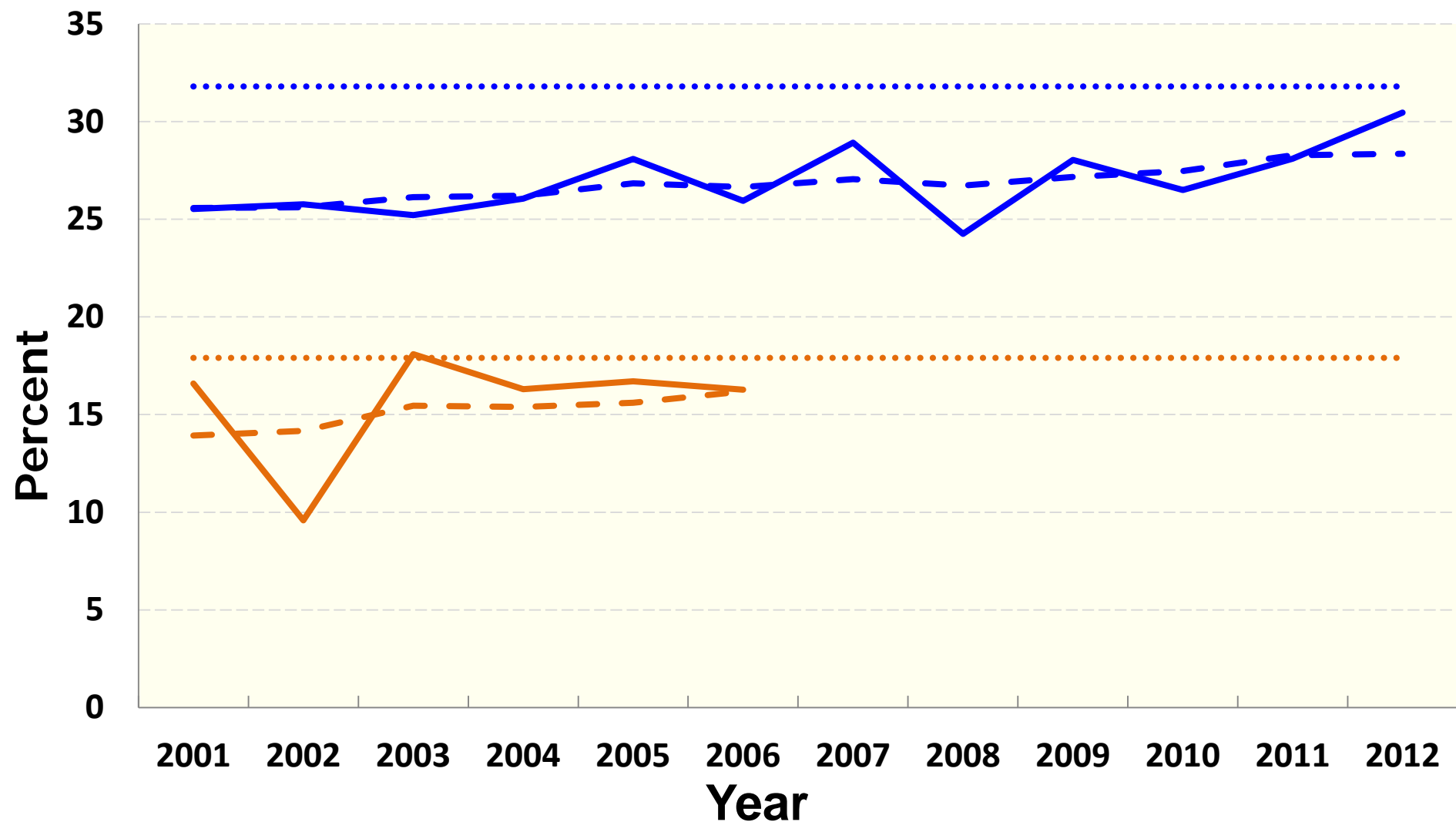
Obj. 28-14a, b

# 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



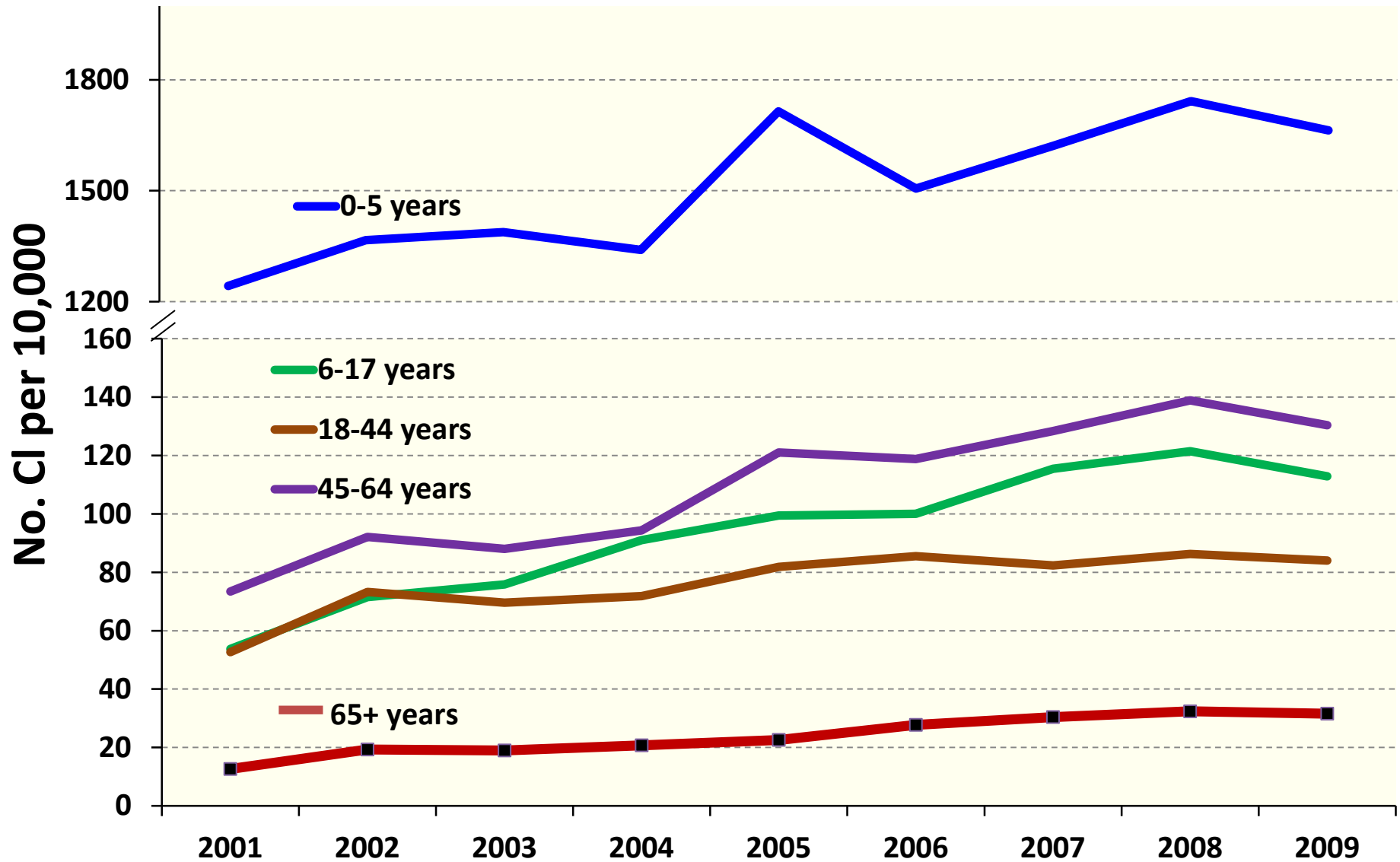
*Note:* Data are preliminary. Data are for adults aged 20+ years with hearing impairments (defined as pure-tone average of thresholds at 1, 2, 3, and 4 kHz  $\geq$  35 dB HL in either ear) who have ever used a hearing aid. For adults 20-69 years old data are age adjusted to the 2000 standard population.

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



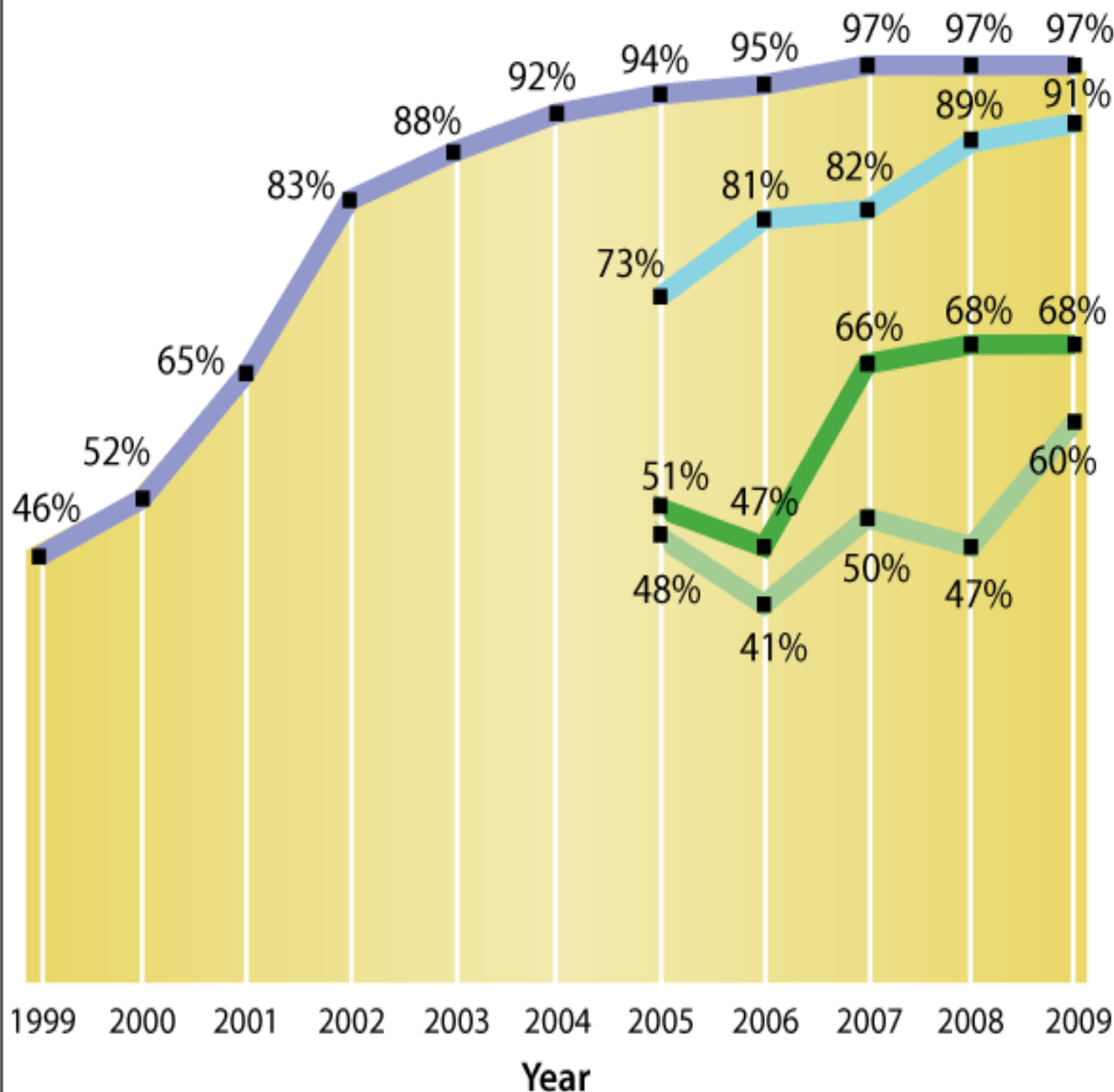
a. **Newborn hearing  
screening**  
age <1 month



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



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



Data collected by the EHDI 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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# Acknowledgements of HP Hearing Health Contributors

## NIDCD, NIH

### *Epidemiology and Statistics*

Kathleen Bainbridge  
May Chiu  
Howard Hoffman\*  
Chia-Wen (Kiki) Ko  
Chuan-Ming Li  
Katalin Losonczy

### *Scientific Program*

Judith Cooper  
Amy Donahue  
Gordon Hughes  
Roger Miller  
Christopher Platt  
Daniel Sklare  
Bracie Watson

### *Health Communications*

Marin Allen  
Jo Bagley  
Patricia Blessing  
Susan Dambrauskas  
Linda Joy  
Robin Latham  
Lonnie Lisle\*  
Jenny Wenger

## HP 2020 Working Group

### Hearing Health Consultants

|                        |                        |
|------------------------|------------------------|
| Lucille Beck           | Alice Holmes           |
| Margaretha Casselbrant | David Lee              |
| Daniel Choo            | William (Billy) Martin |
| Kathleen Daly          | Deane Meinke           |
| Robert Dobie           | Bevan Yueh             |
| Greg Flamme            |                        |

## OS/HHS; NCBDDD, NCHS, NIOSH/CDC

|                        |                              |
|------------------------|------------------------------|
| Rosaly Correa-DeAraujo | Debra Nichols <sup>§</sup>   |
| Charles Dillon         | Emmeline Ochiai <sup>§</sup> |
| John Eichwald          | Christina Perez              |
| Richard Klein          | Asel Ryskulova <sup>†</sup>  |
| Marcus Gaffney         | Christa Themann              |
| Michael Marge          | Kathleen Turzyn <sup>†</sup> |
| Ledia Martinez         | Jean Williams                |

## Professional Associations

Brenda Battat, HLAA  
Carmen Brewer, AAA  
Steven Epstein, Joint Committee on Infant Hearing  
Victoria Keetay, AAA  
Pamela Mason, ASHA  
Diane Paul, ASHA  
Kristine Schulz, AAO-HNS