

The National Immunization Survey: An Evaluation Tool to Monitor Immunization Coverage

Lawrence Barker, PhD

National Immunization Program

Centers for Disease Control and Prevention



DEPARTMENT OF HEALTH AND HUMAN SERVICES

The National Immunization Survey (NIS)

- The nation's primary tool for assessing immunization coverage in young (19-35 month old) children
- The nation's 'earliest warning system' for changes in immunization coverage

SAFER • HEALTHIER • PEOPLE™



Immunization™

The National Immunization Survey

- An extremely large ongoing survey
 - ~1,000,000 households/year identified
 - ~35,000 households/year complete interview
 - ~23,000 households/year used in analyses
- The NIS is:
 - The largest ongoing telephone survey
 - The only national level health care survey that does not rely on patient recall



Immunization™

SAFER • HEALTHIER • PEOPLE™

NIS is More Than One Survey...



SAFER • HEALTHIER • PEOPLE™



Strengths of the NIS

- The NIS provides very precise national level coverage estimates (typically, standard errors are less than 0.5%)
- Comparability of methodology means results are comparable among states and urban areas over time
- Results are provider-verified (do not rely on parental recall)



NIS Methods

- Random digit dialing survey
- Households with age eligible children are identified
- Permission to contact providers is obtained



Immunization™

SAFER • HEALTHIER • PEOPLE™

NIS Methods

- Adjustments in sampling weights for
 - Households with multiple telephones
 - Households without current telephone coverage
 - Differences between demographics of sample and population (raking)



Immunization™

NIS Methods

- Provider-verified immunization histories are collected
 - Only provider-verified vaccinations are used for analyses
 - Survey instruments are mailed to providers, who mail or fax back responses



What Does NIS Tell Us?

- Immunization coverage by antigen, vaccine, and series, for:
 - The nation
 - The states
 - Selected urban areas
 - Selected demographic groups (by race/ethnicity, urbanicity, household income, etc.)



NIS Helps Us Identify. . .

- Trends in immunization coverage
- Factors contributing to under-immunization
- Areas and populations with low immunization coverage
- Extent of extra immunization and late or delayed vaccinations



Immunization™

SAFER • HEALTHIER • PEOPLE™

Selected National Level Coverages, July 2000 – June 2001

- DTP/DT/DTaP, 4 + doses: 82.0 ± 0.8%
- Hib, 3 + doses: 93.3 ± 0.5%
- MMR, 1 + dose: 91.3 ± 0.6%
- 4:3:1:3, complete series: 77.2 ± 0.9%
- 4:3:1:3:3, complete series: 74.2 ± 0.9%

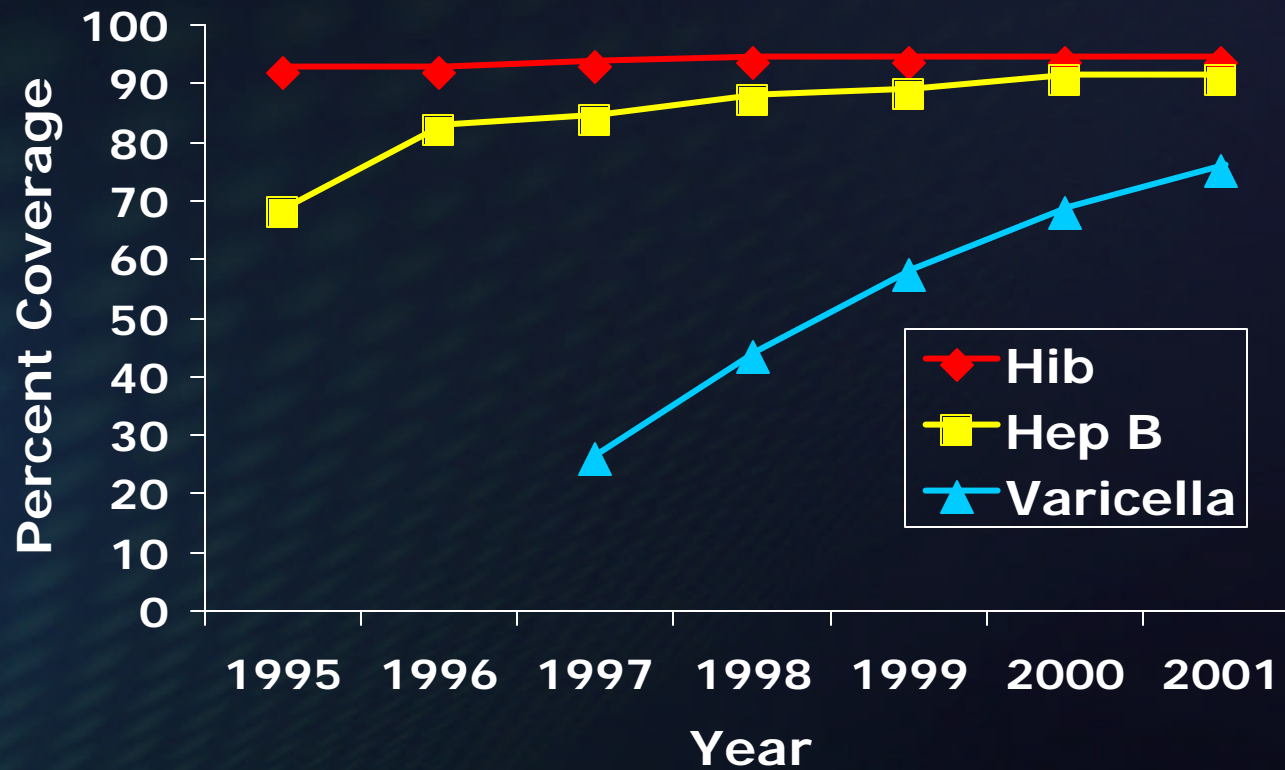


Selected State Level Coverages, July 2000 – June 2001 (HI)

- DTP/DT/DTaP, 4 + doses: $80.0 \pm 5.2\%$
- Hib, 3 + doses: $91.8 \pm 3.8\%$
- MMR, 1 + dose: $90.8 \pm 4.0\%$
- 4:3:1:3, complete series: $74.2 \pm 5.7\%$
- 4:3:1:3:3, complete series: $72.8 \pm 5.8\%$



National Coverage Trends: 1995 – June 2001



SAFER • HEALTHIER • PEOPLE™



NIS Key Findings

- The prevalence of extra-immunization decreased steadily from $21.1 \pm 0.9\%$ (1997) to $10.6 \pm 0.6\%$ (2000)
- Coverage for all recommended vaccines would be 93% if all children who needed only one more immunization visit to be up to date received that visit
- States with more intensive interventions in the Women, Infants, and Children (WIC) program have greater immunization coverage among WIC participants



Immunization

SAFER • HEALTHIER • PEOPLE™

NIS Key Findings

- Receipt of early doses of DTaP later than recommended is a strong predictor of not receiving a sufficient number of doses by age 19-35 months
- Foreign born children residing in the US have immunization coverage comparable to US born children for some vaccines, but substantially lower coverage for others



Immunization™

SAFER • HEALTHIER • PEOPLE™

NIS Applications: Some Highlights

- States have used NIS results to assess changes in immunization programs (MI, ID, NM)
- Improved estimates of future burden of disease
- Greater understanding of vaccine safety concerns (in process)



Future Challenges

- Maintaining high response rates:
 - Parents
 - ⊗ Increasing cellular phone use
 - ⊗ Consumer electronics which block RDD calls
 - Healthcare Providers



Immunization™

SAFER • HEALTHIER • PEOPLE™

Future Challenges

- Taking full advantage of all the information provided by the NIS



Conclusions

- The NIS is a critical evaluation tool for national and state immunization programs
 - Evaluate overall success
 - Identify coverage trends and potential problems
- Overall, the NIS helps serve the broader needs of the public health community

