The Impact of Vaccines in the United States

Disease	Baseline 20th Century Annual Cases	2003 Cases*	Percent Decrease
Measles (1963)	503,282	42 †	99.9%
Diphtheria (1923)	175,885	1	99.9%
Mumps (1967)	152,209	194	99.9%
Pertussis (1926)	147,271	8,067	94.5%
Smallpox (1800)	48,164	0	100%
Rubella (1969)	47,745	8	99.9%
Haemophilus influenzae type b, invasive (1985)	20,000	20	99.9%
Polio, paralytic (1955)	16,316	0	100%
Tetanus (1927)	1,314	14	98.9%

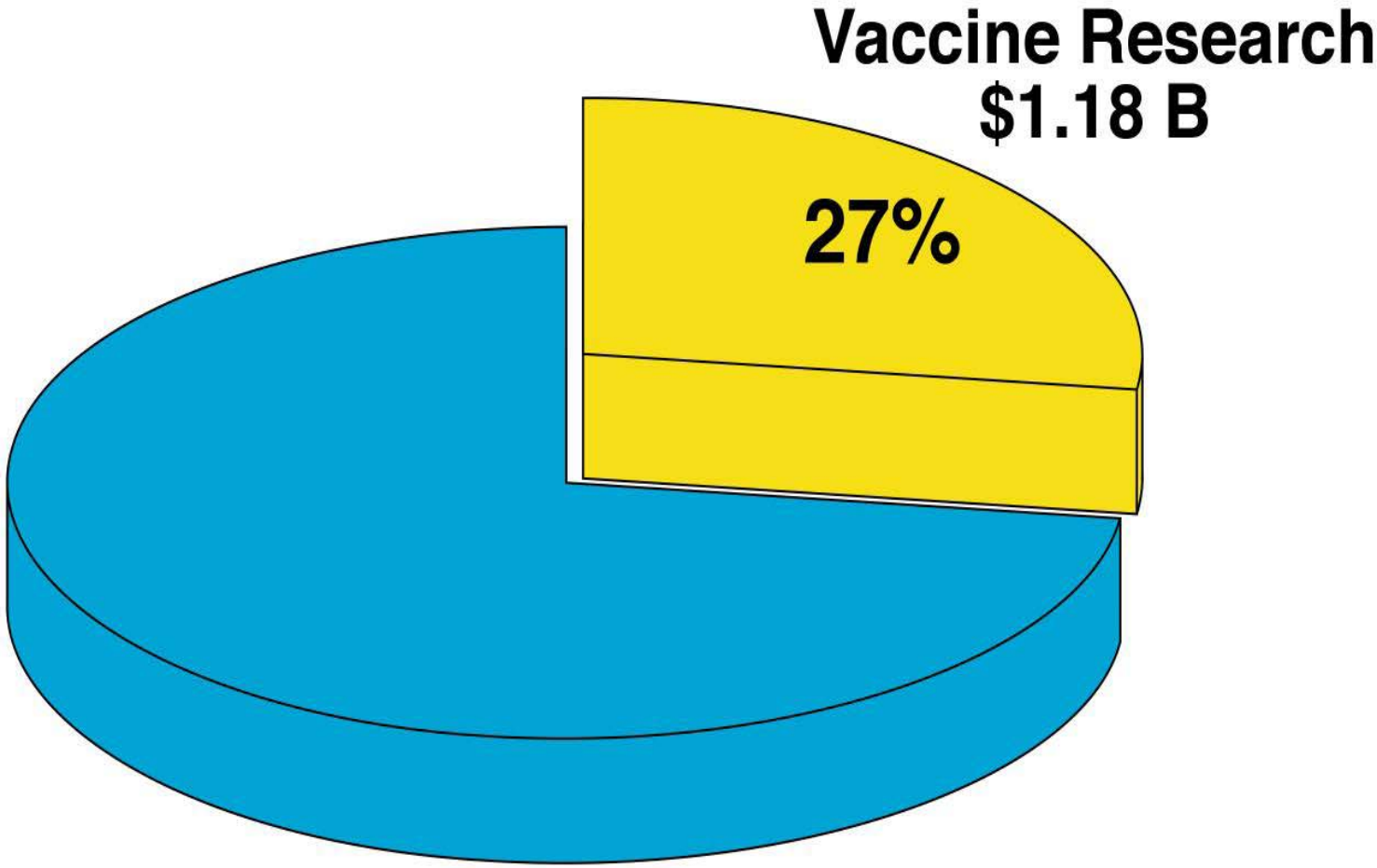
* Provisional data
† of 42 cases, 30 were indigenous, and 12 were imported from another country

Source: *MMWR* 4/2/99, 1/02/04

NIH Vaccine Research Goals

- Identify new vaccine candidates
- Improve the safety and efficacy of existing vaccines
- Design novel vaccine approaches (e.g., new vectors and adjuvants)

NIAID FY 2004 Budget



FY 2004 NIAID Budget
$4.30 B

Importance of Vaccine Safety

- Historically, vaccines have been one of the most effective tools to prevent disease, disability and death.
- There is a low public tolerance for vaccine risks, and public confidence in vaccine safety is important for the widespread use and effectiveness of vaccines.

NIH Thimerosal Research

Important Findings

- Mercury levels in blood and urine below safety guidelines and mercury excretion significant in stool in infants receiving routine immunizations
- Studies in monkeys demonstrated:
  - Mercury from thimerosal is removed more quickly from blood and brain when compared to mercury from methyl mercury
  - Minimal accumulation between exposures to thimerosal

Current and Future Plans

- Perform studies to further define mercury excretion in newborns
- Perform epidemiologic study of environmental factors in etiology of autism

Summary and Conclusions

- Weight of scientific evidence suggests that thimerosal in vaccinations has no deleterious effects.
- Because of public concerns, we are moving rapidly towards thimerosal-free vaccinations.
- Despite the movement towards thimerosal-free vaccines and because of the public concerns about vaccine safety, NIH will continue to support research on effects of thimerosal.