

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% |
| <i>Haemophilus influenzae</i> 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

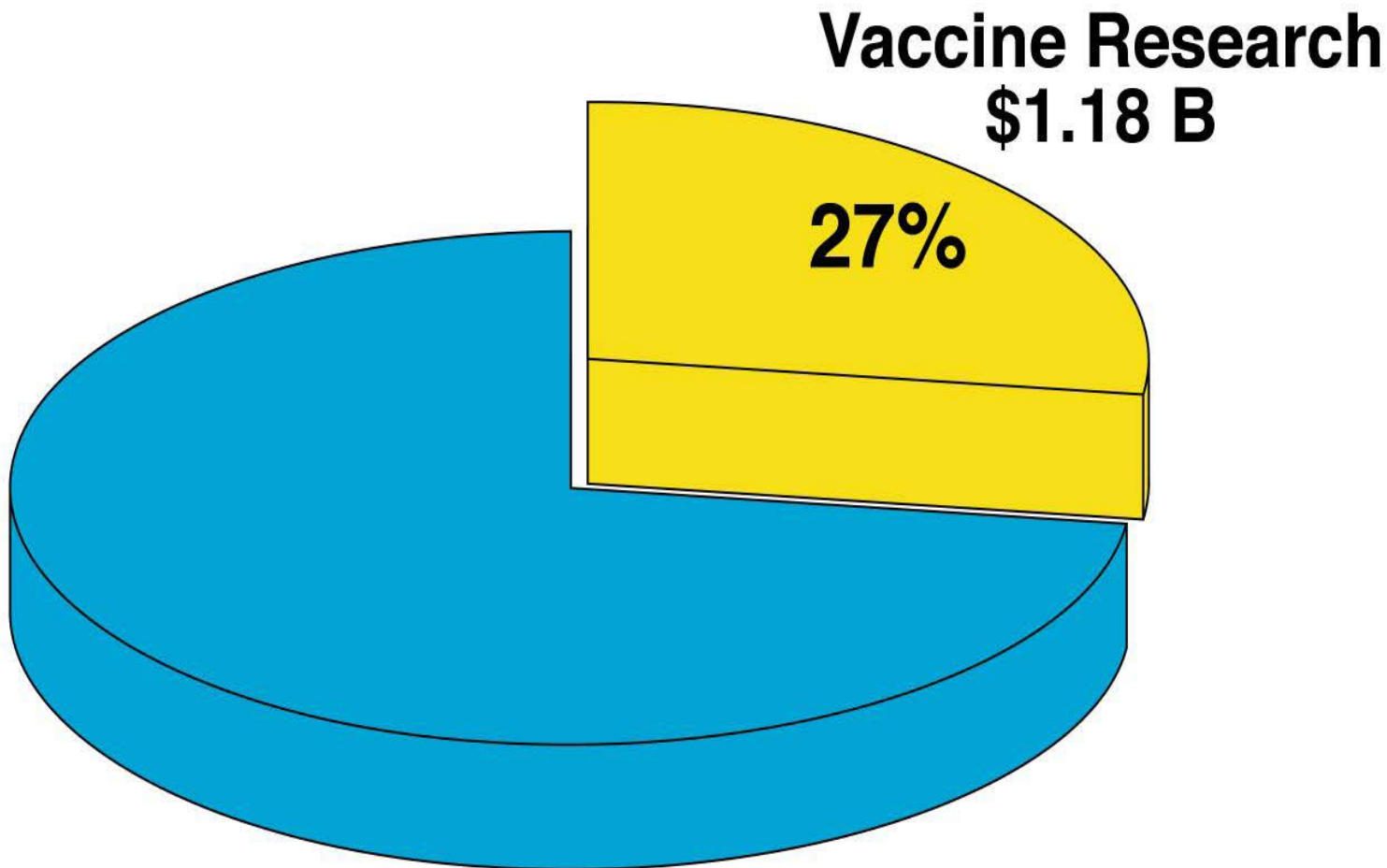
[†] of 42 cases, 30 were indigenous, and 12 were imported from another country

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.**