

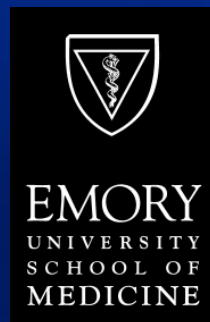
Immunizations in the United States Success, Structure and Stress

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Walter A. Orenstein, M.D.

**Director, Emory Vaccine Policy and
Development**

Associate Director, Emory Vaccine Center



Comparison of 20th Century Annual Morbidity and Current Morbidity, Vaccine-Preventable Diseases

Disease	20th Century Annual Morbidity	2004**	Percent Decrease
Smallpox	48,164	0	100*
Diphtheria	175,885	0	100*
Measles	503,282	37	99.99*
Mumps	152,209	236	99.85*
Pertussis	147,271	18,957	87.13
Polio (paralytic)	16,316	0	100*
Rubella	47,745	12	99.97
Congenital Rubella Syndrome	823	0	100*
Tetanus	1,314	26	98.02
<i>H. influenzae</i> , type b and unknown (<5 yrs)	20,000	172	99.14

•Record lows

** Provisional

Immunization Successes

- **Smallpox eradication**
- **Polio elimination**
- **Measles elimination**
- **Rubella elimination**

- **Only 1 of 30 clinical preventive services recommended widely by the US Preventive Services Task Force to receive a perfect score on clinically preventable burden and cost-effectiveness**

Diseases Prevented by Vaccination of Children

1984

**Diphtheria
Tetanus
Pertussis
Polio
Measles
Mumps
Rubella**

2004

**Diphtheria
Tetanus
Pertussis
Polio
Measles
Mumps
Rubella
Hib
Hepatitis B
Varicella
Pneumococcal disease
Influenza**

Selected Vaccines in the Pipeline

Meningococcal Conjugate Vaccine – licensed and recommended for adolescents

Acellular Pertussis Booster – licensed for adolescents

Rotavirus – completed trials

Shingles vaccine – completed trials

Human Papilloma virus – in pivotal trials

Components of the Vaccine System - I

- **Health Burden Assessment**
- **Basic Vaccine Research (Vaccine Discovery)**
- **Vaccine Development**
- **Vaccine Production and Distribution**
- **Regulation**
- **Vaccine Policy**

Components of the Vaccine System - II

- **Vaccine Financing**
- **Vaccine Administration (Delivery)**
- **Monitoring Vaccine Use**
- **Monitoring Vaccine Effectiveness**
- **Monitoring Vaccine Safety**
- **Vaccine Injury Compensation and Liability**

Major Participants in the Vaccine System

- **Federal Government – NIH, FDA, CDC, HRSA, CMS, DoD, USAID**
- **Academia**
- **Vaccine Manufacturers and Distributors**
- **Medical Societies**
- **State and Local Governments**
- **Private Physicians**
- **3rd Party Payers**
- **Others**

Challenges to the Vaccine System - I

- **Vaccine Supply** – since 2000 shortages against 9/12 vaccine-preventable diseases of childhood
 - 4 companies make vaccines for young children
 - single manufacturer for vaccines against 7 diseases

Challenges to the Vaccine System - II

- **Vaccine Financing**
- **Adult Immunization**
- **Vaccine Research and Development**
- **Addressing Vaccine Safety Concerns**
- **Bioterrorism Preparedness**

Summary

- **Vaccines have been one of the most effective and cost-effective prevention measures**
- **Vaccine successes are the result of a complex structure and process involving multiple public and private sector partners**
- **The vaccine system is facing some major challenges that threaten to disrupt its successes**