

Research, Medicine and Public Health a potent brew

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MSTP Scientific Retreat
Seven Springs, Pennsylvania
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*Nothing stimulates more the creative
instincts than being on a journey,
endeavoring to achieve an objective, a
destination, and knowing that no one has
ever taken the path that you are pursuing.*

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My introduction to medicine

- Medicine, a family expectation
- The challenge of administration
 - Oberlin College – (a year book and a radio station)
- How to make a diagnosis
 - Rochester Medical School 1950-54
- An introduction to epidemiology
 - The George Corner Prize
- Internal medicine
 - The Bassett Hospital, Cooperstown

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An accidental introduction to public health --1955

- The draft
 - "Volunteer and be commissioned a lieutenant or be drafted as a private"
- CDC and the Epidemic Intelligence Service
 - Alexander Langmuir
 - Promotion comes rapidly
 - Influenza 1957
 - A first smallpox outbreak

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Surveillance & International Health-1960-66

- CDC Chief of Surveillance Section
 - A smallpox unit is formed
 - Research: jet injectors, multiple antigens, clam and oyster hepatitis
 - International challenges
 - A good idea goes awry
- CDC Director of a new Smallpox Eradication/Measles Control Project -- West and Central Africa

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Exile in Geneva 1966-77

- World Health Assembly decides on global smallpox eradication --May 1966
 - Goal – 10 years
- A new Director is named
- Strategy
 - Vaccination
 - Surveillance and containment
 - Research
- Management
 - Quantifiable targets
 - Quality control
 - Delegation

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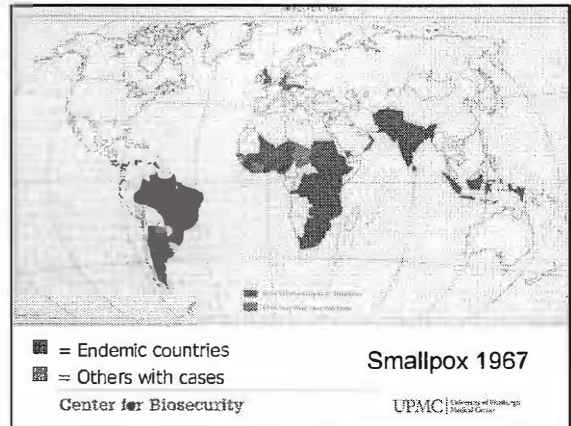
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The Challenge

- Global status of smallpox -- 1967
 - 10,000,000 –15,000,000 cases
 - 2,000,000 deaths
 - 43 countries reported cases
- WHO smallpox program
 - Budget -- \$2.5 million
 - Headquarters -- 9 persons (5 nationalities)
 - Never more than 100 international staff

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Challenges -- vaccine

- Freeze-dried vaccine
 - 300 million doses needed
 - 72 laboratories -- little quality control
 - US supply to West Africa ~30 million doses
 - 25 million doses supplied by USSR
- International testing
 - Canada and Netherlands
- Manual -- "How to produce vaccine"
 - Progress by 1982

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Problem of vaccination

- Need a more rapid and effective method
 - Traditional method -- scarification
 - Jet injector
 - Bifurcated needle
 - 25 dose vial becomes 100 doses
 - Simplicity, cost
 - Skin cleansing

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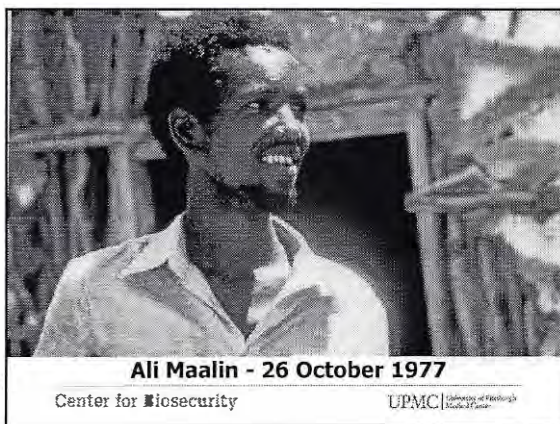
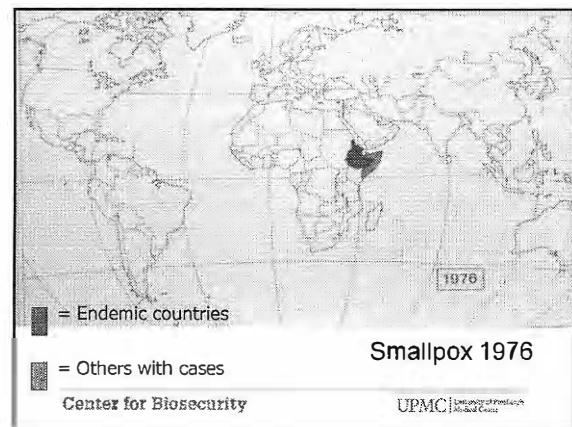
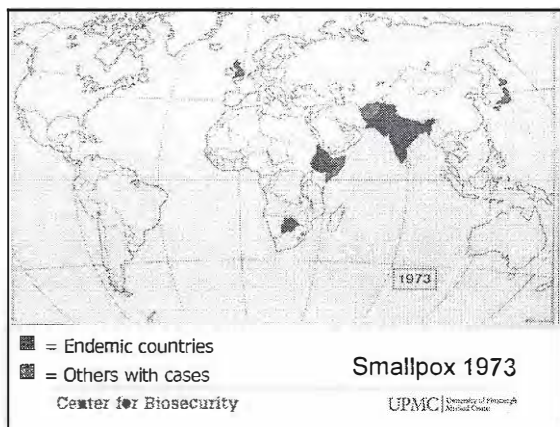
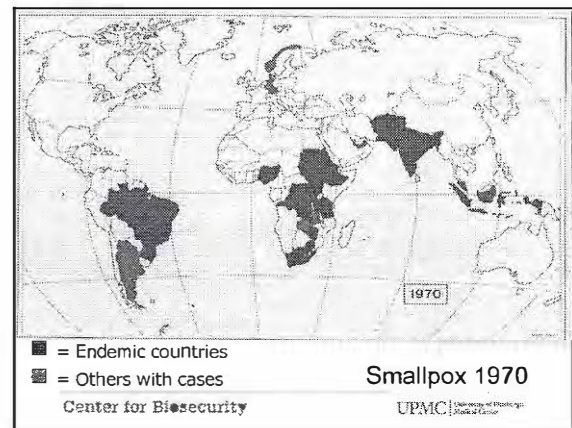
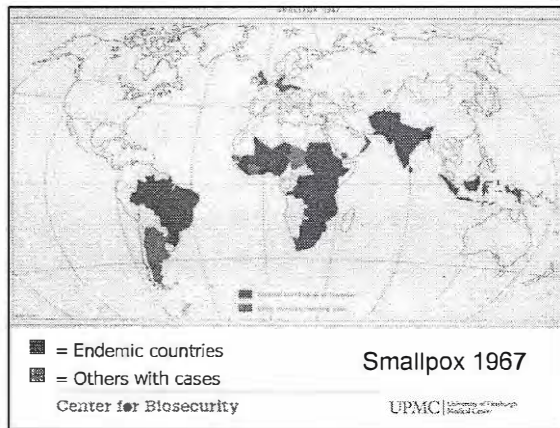


Other quandries

- How often to vaccinate?
 - Duration of protection- ? 3 or 5 or 10 yrs.
 - A discovery through surveillance and a field study
- How rapidly does smallpox spread?
 - ? Like a prairie fire
 - ? Highly contagious like measles
 - Careful surveillance > a surprising answer

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- ### Adventure at Hopkins 1977-90
- The reluctant Dean
 - New developments
 - AIDS
 - Immunization
 - Population information
 - Public health practice
 - The Search Committee and the Search and Find Committee
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Bush I and Clinton I 1990-95

- Life Sciences Advisor to the President
 - A novice in the White House or how policy is really created
 - The perks of the office
 - A “new” approach in policy development
- Deputy Assistant Secretary of Health

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Concern about the unspeakable— biological weapons 1995-2001

- 1995 – A Watershed Year
 - Aum Shinrikyo, Soviet Union, Iraq
 - Presidential Decision Directive
 - The “first responder” strategy
- Biological weapons – a repugnant subject to public health and medicine
 - DOD and DOJ assumed responsibility for training
- September 1997 – a decision to change
 - We live increasingly in a different world with major threats both to the U.S. and the world
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A Drought changes to a Monsoon

- Dark Winter
- 9/11
- The new Office of Public Health Emergency Preparedness
- A new term in Congress and the Executive-
“Public health infrastructure”

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The Strategy

- What does one do with \$3 billion?
- Response to biological weapons>
epidemic infectious diseases>
catastrophic events
- State and local infrastructure is key
- Research is absolutely essential

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Looking back

- No cases of smallpox for 30 years
 - Result – 60 million deaths prevented
- Birth of the global “Expanded Program on Immunization” – 1974
 - DPT, polio, measles, smallpox, BCG
 - Goal: 80% of children vaccinated by 1990
 - Vitamin A administration became a part
- Polio eradication launched – 1985
 - Now – only 7 endemic countries

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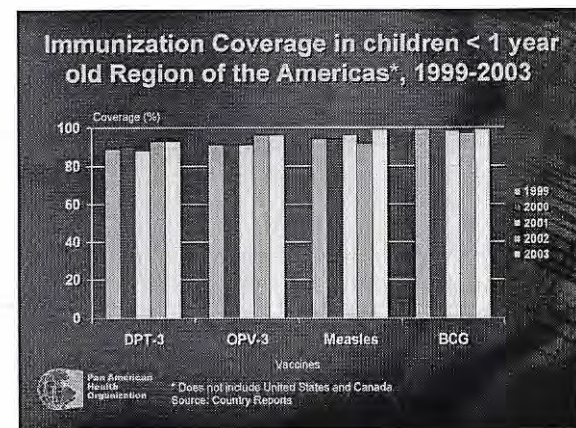
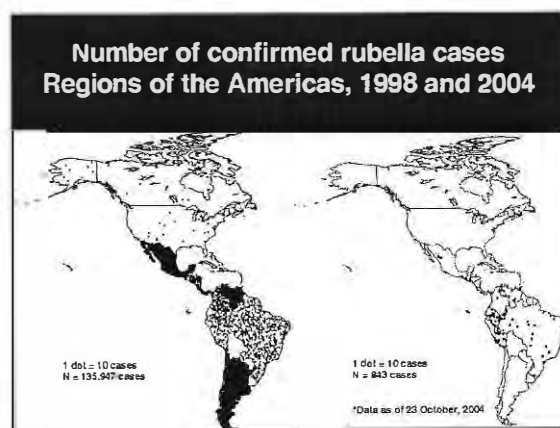
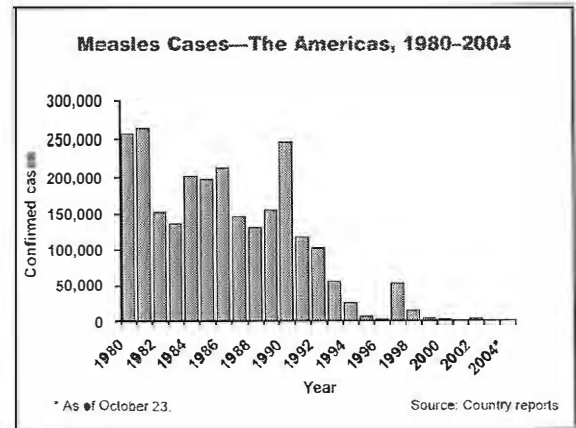
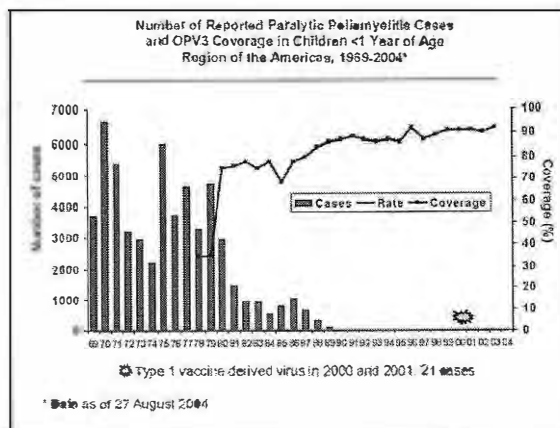
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Example – Central and South America

- 1977 – Limited immunization
 - ~ 10-15% coverage – DPT, polio, BCG, measles
- 2007 – Ten antigens
 - >90% coverage -- DPT, polio, BCG, measles, rubella, H. influenzae, hepatitis B
 - Yellow fever in endemic and at risk areas
- Vaccine expenditures/year –
\$2,000 million – 95 % from national budgets

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Overall outcome in the Americas

- Since 1980, under 5 year mortality rates have decreased at rate of 3 – 4 %/ year
 - Unprecedented decrease for any region
 - Fertility rate decline has paralleled this
- Unique transnational bridges among Caribbean and Latin-American countries

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Future for immunization

- The potential for immunization is only beginning to be realized
 - Dream – vaccines vs. HIV, malaria, TB, hookworm disease, dengue
 - New methods for application – effective jet injectors, foods, trans-dermal
 - Rapid on-site diagnostic methods
- Research support has burgeoned

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The International Scene

- A growing recognition that problems in every part of the world are important to all countries not only for humanitarian reasons but also for national and international security
- Increasingly strong movement for health to be recognized as an essential consideration on the political agenda

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Basic needs

- The effective joining of public health and medicine
- The integration of research and practice
- The development of effective bridges in international cooperation
- International security for the global village

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Subj: **Thanks**
Date: 8/26/2007 6:12:04 P.M. Eastern Daylight Time
From: claytonwiley@comcast.net
To: dahzero@aol.com

DA:

It was a pleasure to meet you and your wife in 7-Springs yesterday. Many thanks for committing the time and participating in the MSTP retreat. As I am sure you could tell, your talk was perfect. I have never heard the students so quiet, you truly had them spell bound. I know it is a weird indicator, but I have never seen a line in the men's room after a talk. No one was getting up from their seat until you were done. Of course another sign was the after talk crowd that inundated you. I hope you had a pleasant stay and drive back to Baltimore. Look forward to meeting again in the future.
Clayton

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