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Report for them at the operational meeting only
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Public Health

threats and plagues in a modern era

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Nothing better serves to stimulate the creative juices than embarking on a journey to a destination — knowing that there is no good map and that that you must find the path

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Pre- public health

- Oberlin College
 - Introduction to management
 - a year book and a radio station
- Rochester Medical School 1950-54
 - An introduction to epidemiology
 - The George Comer Prize
- The Bassett Hospital, Cooperstown
 - Internal medicine residency

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Beginning of a public health career

- The draft (1955) –post Korea
 - Public Health Service is an option
- Epidemic Intelligence Service (CDC)
 - Alexander Langmuir
 - Promotion comes rapidly
 - A first smallpox outbreak

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Surveillance & International Health

1960-66

- MPH Johns Hopkins -- 1960
- CDC Chief of Surveillance Section
 - A smallpox unit is formed
 - Research: jet injectors, multivalent vaccines
 - International health interests
 - A good idea goes awry
- CDC Director of a new Smallpox Eradication/Measles Control Project -- West and Central Africa --1965

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A base in Geneva 1966-77

- World Health Assembly decides on global smallpox eradication -- May 1966
 - A 10 year goal
 - A new Director is named
- Strategy
 - Vaccination
 - Surveillance and containment
- Management
 - Quality control
 - Delegation

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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
 - WHO Budget -- \$2.4 million (<5% of expected cost)
 - Headquarters -- 9 persons (5 nationalities)
 - Never more than 150 international staff

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Challenges -- vaccine

- Freeze-dried vaccine
 - 300 million doses needed
 - US supply to West Africa ~30 million doses
 - 25 million doses supplied by USSR
 - 72 laboratories -- little quality control
- International testing
 - Canada and Netherlands
- Manual -- "How to produce vaccine"
 - Progress by 1972

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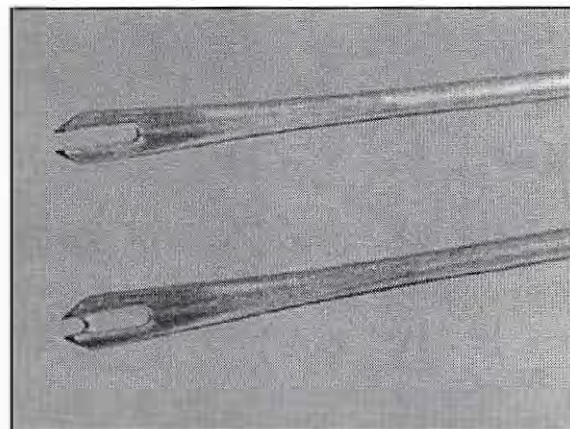
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Problem of vaccination

- Need a more rapid and effective method
 - Traditional method -- scarification
 - Bifurcated needle
 - A new multiple-puncture technique
 - 2.5 dose vial becomes 100 doses
 - Simplicity, cost

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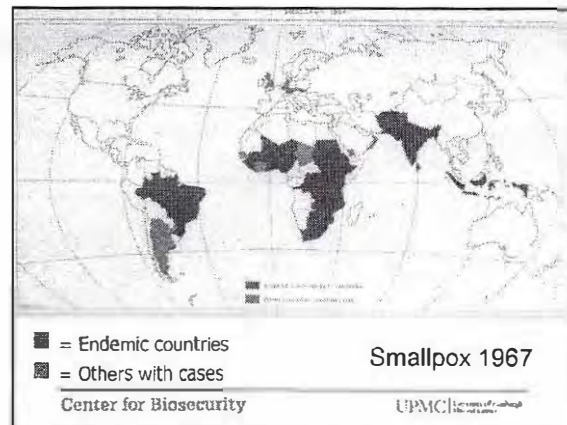


Other quandaries

- How often to vaccinate?
 - ? Duration of protection - 3 or 5 or 10 yrs.
- How rapidly does smallpox spread?
 - ? Like a prairie fire
 - ? Highly contagious like measles

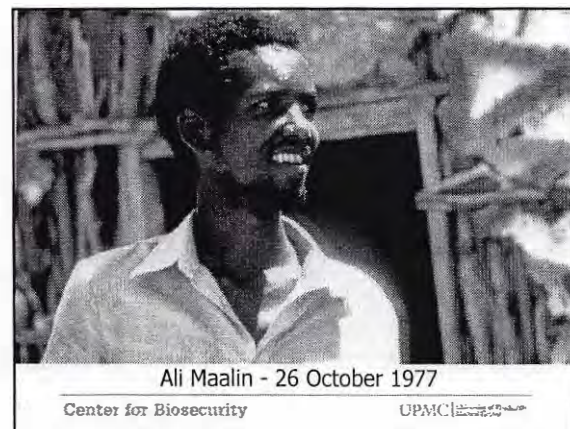
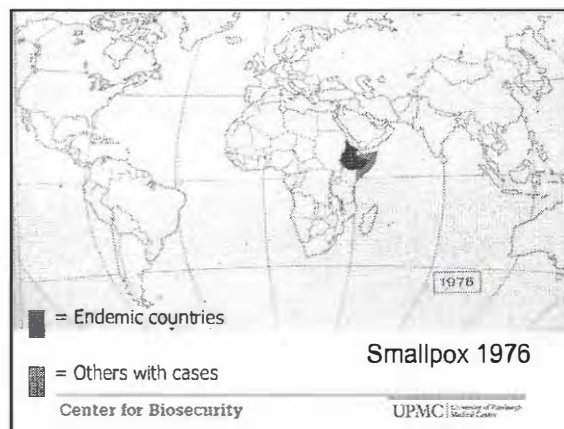
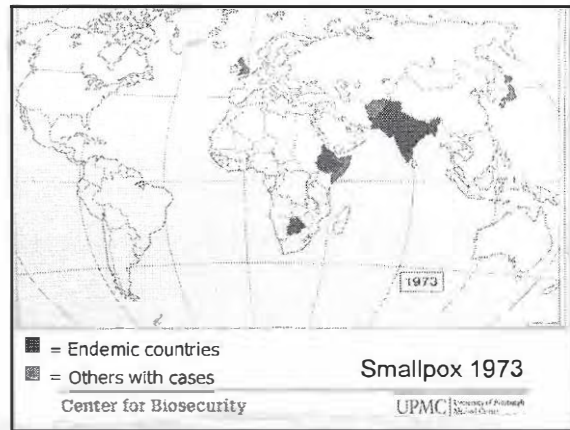
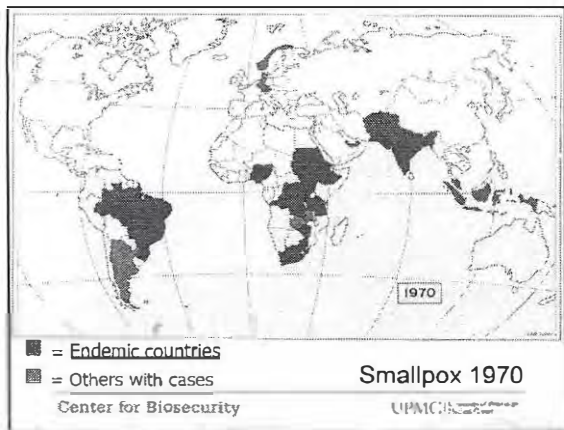
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Adventure at Hopkins 1977-90

- The reluctant Dean
- New developments
 - Public health practice
 - AIDS
 - Immunization
 - Population information
- The number 1 School of Public Health

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Bush I and Clinton 1990-95

- Life Sciences Advisor to the President
 - Political credentials
 - A novice in the White House or how policy is really created
- 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 responsible for training
- The Center for Biosecurity is created 1998
 - The threat of bioweapons and new diseases

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Biological Weapons

- A threat, largely ignored until 1995
 - Too difficult to grow organisms
 - A problem to disseminate
 - A moral barrier against use
 - So destructive as to be unthinkable

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Russia and bioweapons

- USSR Bioweapons Program (50+ labs and 60,000+ persons) is reduced in size-1992. Half the scientists leave for other places.
- The major production lab for smallpox virus remains a secret facility
- Former Vice-Minister of Health admits that aerosolized smallpox was tested on Voz Island in 1971

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Criterion Rating of Bioagents

Anatoliy Voroboyov –April 1994

- Smallpox 26
 - Plague 23
 - Anthrax 21
-
- Naturally occurring pathogens
 - Anthrax and plague
 - In 2002, anthrax available from 46 labs
 - Former Soviet bioweapons labs

Center for Biosecurity 80 metric tons of anthrax in storage

A drought changes to a monsoon

- September 11, 2001
- A new Office of Public Health Emergency Preparedness and I return to Washington
- 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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Newly Emergent Challenges

- West Nile encephalitis -- U.S.
- Foot and mouth disease
- Monkeypox
- H5N1 influenza
- SARS

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Fertile Ground for New Microbes

- Rapidly growing urban populations
 - 1800 2 %
 - 1950 20 %
 - 2010 67 %
- Urban areas with large populations
 - >7.5 million – 1950 – 2 cities
 - 2003 – 30 cities
 - >15 million – 2003 – 7 cities

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Response to events with large numbers of casualties

- Communities – the basic foundations for response – cities/ counties/ states
 - Planning that incorporates all sectors—public health, hospitals, physicians, voluntary agencies, police, private sector, emergency medical units, et al
 - Command center for decision and communication
 - Response plan for vaccine or antibiotic distribution
 - Provision of medical care on a large scale
- Federal resources may supplement activities if not otherwise occupied but local resources and organization are key

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Public health has shown what it can do -- far more is possible

- No cases of smallpox for 30 years
 - Result -- 65+ million deaths prevented
- Birth of the global “Expanded Program on Immunization” – 1974
 - DPT, polio, measles, smallpox, BCG
 - Goal: 80% of children vaccinated by 1990
- Measles, polio and soon rubella -- no longer endemic in the western hemisphere
- Global polio eradication is in progress

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