

Smallpox eradication - 25% of population in 1950s applicable to present day
 re: ethical & legal issues - and disease details
 - Simple answer - 1980
 - 25 yrs. / 80 yrs.

The Smallpox Eradication Campaign

Ethical and Legal Considerations
in Mitigating Pandemic Disease

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Outline for discussion

- Smallpox – the disease
- Summary overview of the campaign
- Ethical issues
 - Eradication or control
 - “Basic health services” vs. a targeted program
 - Implementation methods
 - Mandatory vaccination
 - Isolation
 - Quarantine
- Detection and reporting of cases

lights

“That disease was the most terrible of all the ministers of death. The horror of the Plague...visited our shores only once or twice within living memory but the smallpox was always present, filling the churchyards with corpses...and making the eyes and cheeks of the betrothed maiden objects of horror to the lover.”

Macaulay, A History of England



Sitala Mata



Sapona

Deaths in the 20th Century

Due directly or indirectly to armed conflict:

100,000,000

Due to smallpox

300,000,000+

Smallpox -- characteristics

- Time -- infection to illness is 12 days
- Fever, flu-like symptoms then rash
- No therapy available
- Case fatality rate --30 %

Day 1



Day 3



Day 5

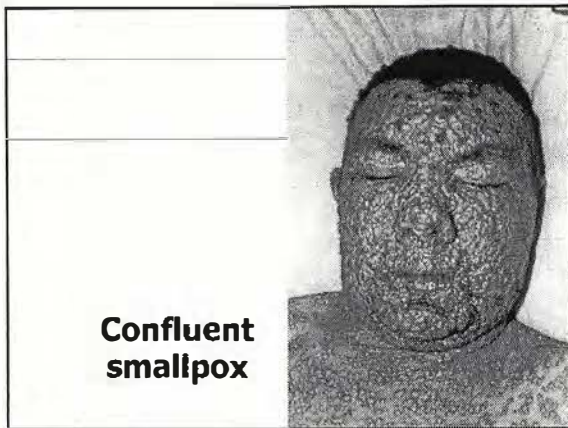


Day 9



Day 13

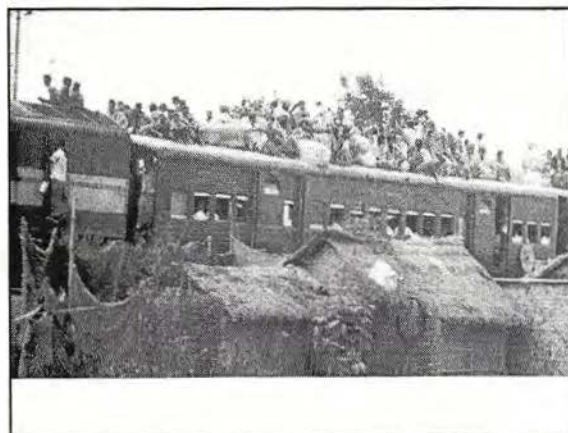
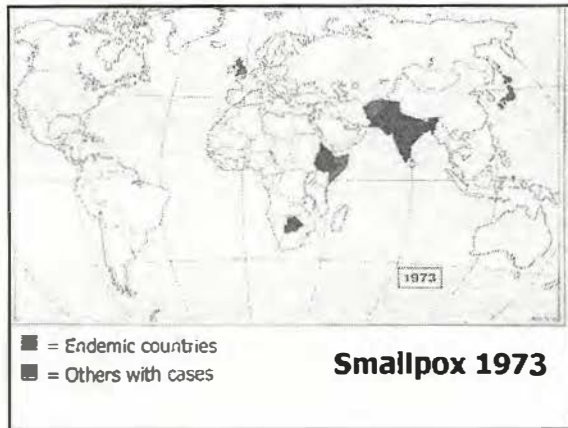
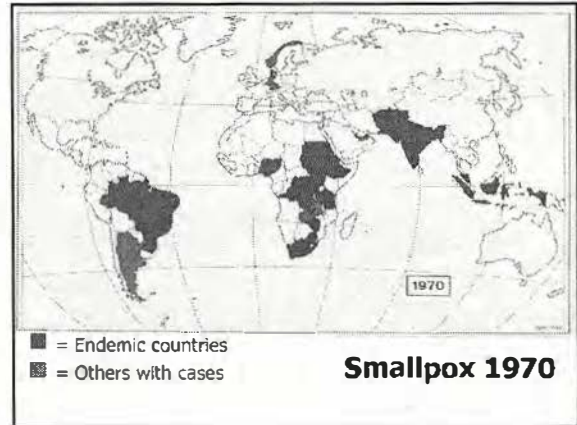
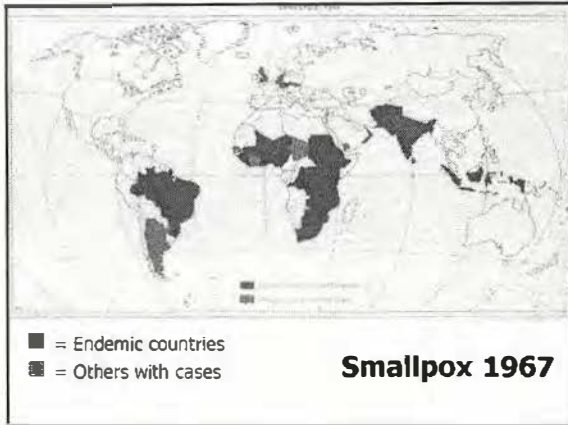


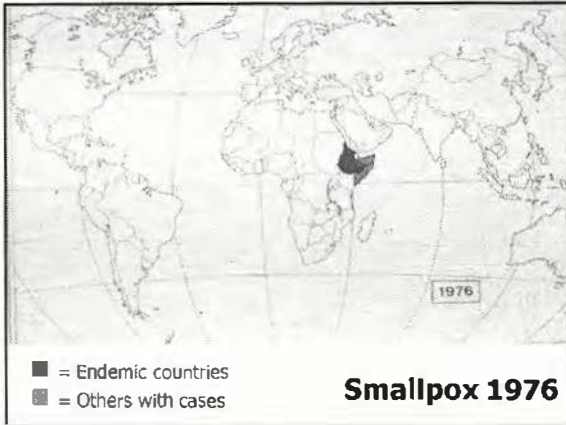


- ### Characteristics Favoring Eradication
- Only man can be infected
 - Not infectious until patient is ill and with rash
 - Virus spreads by face-to-face contact
 - Permanent immunity after recovery
 - Surveillance is comparatively simple
 - All infected patients have obvious rash
 - Vaccine provides long-lasting protection

- ### The Challenge
- 1966 World Health Assembly approves program
 - A two day debate; a 2 vote majority
 - The goal: eradication in 10 years
 - Global status of smallpox -- 1967
 - ~15,000,000 cases; 2,000,000 deaths
 - 43 countries report cases
 - Budget and personnel
 - Budget -- \$2.5 million
 - Headquarters -- 10 persons (5 nationalities)
 - Never more than 100 international staff
 - 73 nationalities - 40% under age 40

- ### The Strategy
- Vaccination
 - Target: 80% of population
 - Freeze-dried vaccine
 - Quality control
 - Surveillance-containment
 - Report every week from each health center
 - Team to investigate and do "ring vaccination"







World Health Assembly --1980

- Declares solemnly that the world and all its peoples have won freedom from smallpox
- Smallpox vaccination should be discontinued in every country

• Thirty-third World Health Assembly, 8 May 1980

Meanwhile

- Expanded Program on Immunization adopted in 1974
 - Goal: By 1990, vaccination of 80 % of children throughout the world with other vaccines -- measles, polio, diphtheria, whooping cough, tetanus, tuberculosis
- Polio eradication began in 1985

Ethical issues

eradication or control

- Eradication - a force for distributive justice
 - Requires extension of measures to everyone throughout the community
 - Health services often sparse outside of urban areas
 - Curative services dominate in most health centers
 - Underserved populations identifiable by surveillance
 - Moslem populations in India
 - Rural areas in Afghanistan, Congo, Amazon basin, etc.

Ethical issues

eradication or control

- Eradication can be highly cost-effective
 - Smallpox
 - U.S.
 - India
 - "Eradication is more saleable than "control" to government officials
 - A failed eradication program can be a disaster to WHO and to public health

Ethical issues

program execution

- Eradication vs. "basic health services"
 - A complement or a competitor?
 - Malaria
 - Smallpox
 - Common problems with basic health services
 - Curative, "doc in the box" Western model
 - Extension of services into community -- limited
 - Supervision and quality control -- nil
 - Vaccination -- low priority
 - Storage of vaccine and proper use a problem

Ethical issues

implementation

- Vaccination
 - Mass vaccination methods
 - Securing cooperation
 - Screening for contraindications
 - Mandatory vaccination
 - Quarantine
 - Endemic areas and borders
 - International travelers

U.S. Quarantine Service.

Ethical issues

implementation

- Isolation of patients
 - Hospitals
 - Compulsory isolation
 - Home
 - Native traditions
 - Vaccination of contacts
 - Provision of food

Hide cases

Detection and reporting of cases

- Reports to WHO of smallpox cases
 - Required under IHR
 - Ratio of cases:reports ~100:1
 - National suppression of cases
Iran, Iraq, Somalia
- Reporting of cases from the field
 - Health centers and hospitals – weekly
 - Reporting from other sources – nil
 - Sub-national suppression of cases - some
 - Surveillance teams - critical

*Constant contact to encourage
dedicated staff.*

Detection and reporting of cases

- Techniques that improved reporting
 - Program directors assume responsibility for speed and accuracy of reports
 - At WHO, Smallpox Unit is made responsible for data
 - Surveillance teams investigate and contain outbreaks
 - Frequent field supervision at all levels by senior staff
 - Regular, widespread dissemination of surveillance reports showing current data on cases
 - Rewards to person reporting a case and the health worker who investigated (beginning 1974)

Future reporting and cooperation

- Strong, respected leadership in WHO
 - Advocacy
 - Convening function
 - Current reports and public communication
- Network of epidemiological/lab centers with multi-national support and staffing
 - National epidemiological response teams
 - Education and training programs
- Legal provisions – not a primary issue

The future

- An HHS Office of International Health adequately staffed by respected professionals
- Recognition of the international importance of health issues by representation of HHS on the National Security Council
- An effective *World Health Organization* to replace the "Association of WHO Regional Offices"
