

30th anniversary
100
mistaken

Smallpox Eradication: highlights

Malloch Circle Dinner

New York Academy of Medicine
December 9, 2010

"There has been no greater medical – or humanitarian – miracle in modern times than the eradication of smallpox... (The program) offers a winning blue print for the great medical challenges to come."

David Oshinsky – Winner of the 2006 Pulitzer Prize in History

Smallpox: the disease

- **Caused by a virus**
Spread is by face-to-face contact during the time of rash
- **Only humans can be infected**
A chain of infection going back to the Pharaohs 3500+ years
- **Death rate is 30%**
There was no treatment

Sitala Mata

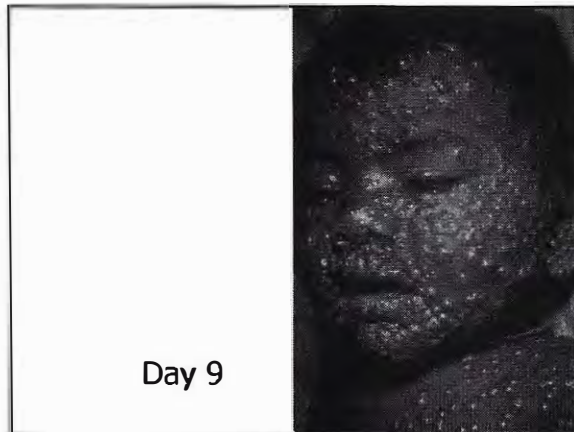


Day 3

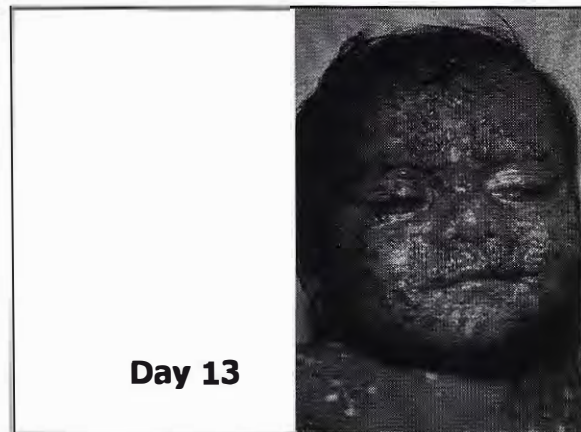


Day 5





Day 9



Day 13

Smallpox in the 20th Century

- Deaths – 300,000,000 before 1978
 NYTimes: 120,000,000 died either directly or indirectly as a result of armed conflict
- Compulsory vaccination in the U.S. until 1972
 Last U.S. case was 1949
- International travelers carried a "yellow booklet" documenting vaccination in past 3 years

The birth of the a WHO global program

- USSR Proposal -- 1959
- Director General submits a plan to World Health Assembly-- May 1966
 10 year program – WHO budget of \$ 2.4 million/year
- Objections by delegates
 - Not feasible
 - Demand for no further increases in WHO budget
- 58 votes needed to pass; 60 voted in favor

A Director is selected

- Director General believed program would fail
 Malaria eradication program was collapsing
 WHO and public health credibility was threatened
- He demanded that an American serve as Director
 - The candidate declined:
 - Responsibilities for new CDC African program
 - Limited resources
 - Not enough even to buy the vaccine required
 - He received a career option

The Challenge

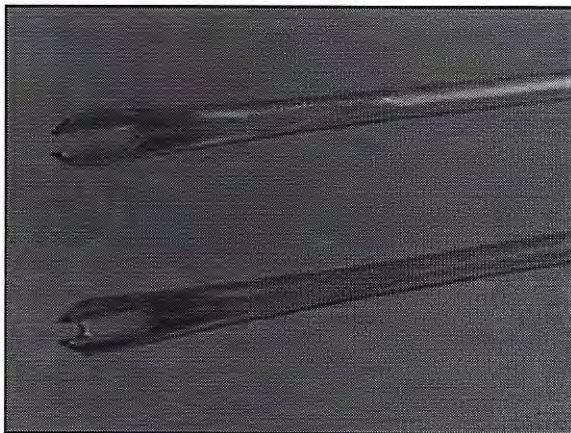
- Status of smallpox – 1967
 - >10,000,000 cases
 - 2,000,000 deaths
 - 43 countries reported cases
- Program staff
 - Headquarters – 6 medical and admin, 3 secretaries
 - Regions – one each in 4 WHO Regions
 - International staff – never more than 150

Bureaucracies

- World Health Assembly agreements
 - Binding or advisory?
- Country responses – a spectrum
 - Nigeria
 - South Africa
 - Ethiopia
- World Health Organization
 - Director General's involvement
 - "Association of Regional Offices"

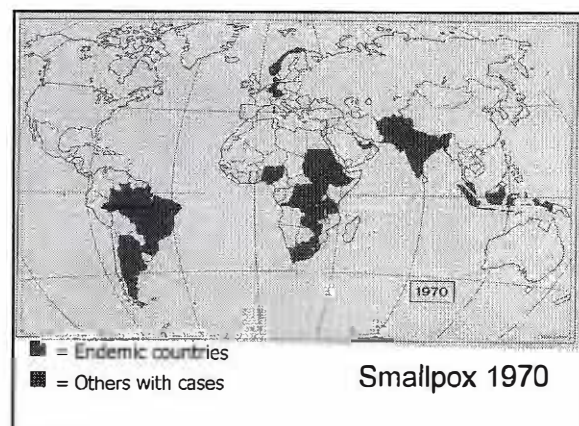
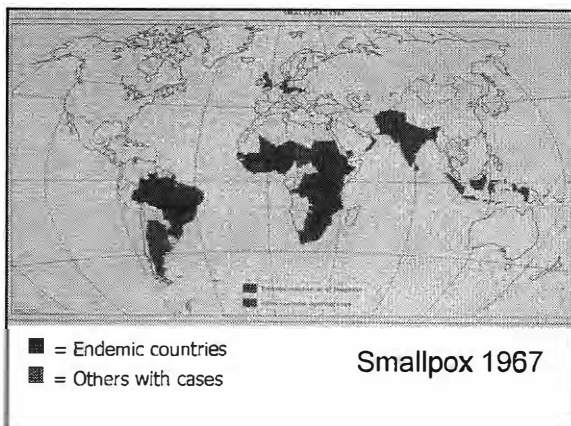
A new technique for vaccination

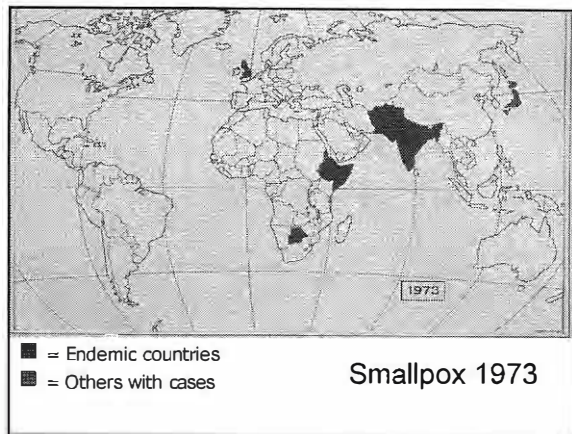
- Need for a more rapid, effective method
 - Traditional
 - scratch through a drop
 - Bifurcated needle—multiple puncture method
 - One-fourth as much vaccine required
 - Training time -- 15 minutes
 - Easily sterilized and reused
 - Cost -- \$5 per thousand



The strategy

- Vaccination of 80%
- Surveillance
 - To obtain a weekly report from every health center and hospital
- Containment
 - "Fire-fighting teams"
 - Investigate every case
 - Contain outbreaks with ring-vaccination





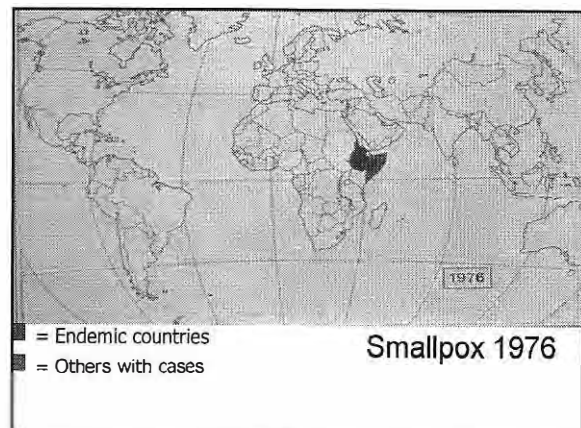
A new strategy – June 1973

- Search every village in India in 10 days
120,000 health staff
Containment teams to go to every outbreak
By the third round, every house was being visited
- Catastrophic problems Jan to May 1974
 - Gasoline crisis
 - Railroads, airlines, finally health workers on strike
 - Worst floods in three decades
 - India detonates an atomic weapon—May 1974

Indian Independence Day August 15, 1975

Prime Minister Indira Gandhi

- Salutes India on its 28th Anniversary
- Announces India's freedom from smallpox for the first time in written history



The Final Chapter

- Ethiopia -- 25 million people
 - Size of Sweden, France, Germany combined
 - Few roads -- travel on foot and with donkeys
 - Marxist revolution and continuing civil wars
 - Teams kidnapped on nine different occasions
 - Program helicopter captured and held for ransom
 - Smallpox staff -- only foreigners allowed out of Addis
- Somalia
 - Nationwide epidemic -- government suppressed reports
 - A race to finish before the Hajj migration

Somalia

...realm of the final inch

- A Marxist, secretive government
- Importations of smallpox from Ethiopia
- CDC reports smallpox virus in two specimens
 - Past rumors
 - Soviet Embassy
 - Search for cases in Mogadishu
- The Hajj -- November 1977
- Search for cases
- October 26, 1977 -- the last case in a 3500 year old chain of infection



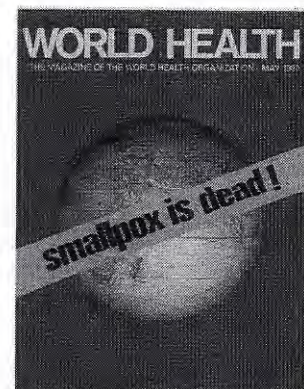
Ali Maalin - 26 October 1977



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



Subject: **RE: Dec 9**
 From: Jeremiah Barondess
 Date: Friday, December 03, 2010 3:45 PM
 To: dahzero@aol.com
 CC: Peggy Yuen

D.A.—If you get to the Academy by 4:30 or 5 we would have an hour or more before the evening begins. Peggy can easily have your room held for late arrival. I've invited Tom Morris, current board chair here and at the Bassett, so he can see what an internship there does for the world. Hope he can make it.

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From: Dahzero [mailto:dahzero@aol.com]
Sent: Friday, December 03, 2010 3:16 PM
To: Jeremiah Barondess
Subject: Re: Dec 9

Jerry,

I am looking forward to being with you and would appreciate the opportunity to talk separately with you. I might plan to arrive in New York on the Acela which gets in at 2:45 and I suppose to the Academy about half an hour later. Does that seem reasonable -- or should I take one arriving an hour earlier or an hour later? Peggy has me booked into a hotel but, as I think about it, I guess she had better schedule me for late arrival as I wouldn't plan to get there until after the dinner.

Best regards,

D.A.

In a message dated 12/03/10 11:52:59 Eastern Standard Time, JBarondess@nyam.org writes:

DA---I'm just delighted that you'll be with us on December 9 at our Malloch Circle dinner. The group is small, probably not more than 15 or 20, primarily people interested in the history of medicine and public health. Drinks around 6, dinner about 6:45, then the talk. Peggy Yuen here will be in touch (she may already have been) about your AV needs, your hotel and other arrangements. I'd like to find a little time beforehand to catch up with you if that fits with your plans.

Jerry

Jeremiah A. Barondess, M.D.