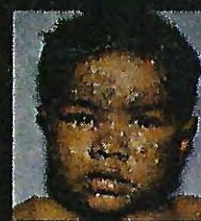
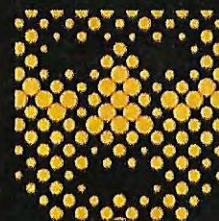


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TEXAS UNION • 12PM–8PM • THE UNIVERSITY OF TEXAS AT AUSTIN

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Exhibitors Schools of Public Health Emory University • Harvard University • Johns Hopkins University • Southern Illinois University • Texas A&M University • Tulane University • University of California, Berkeley • University of California, Los Angeles • University of North Texas • The University of Texas: Houston, Austin Regional Campus, Brownsville Regional Campus • Washington University in St. Louis • Yale University Graduate School The University of Texas School of Health Information Sciences
Organizations Association of Public Health Laboratories • Association of Schools of Public Health • Austin/Travis County Health and Human Services Department • Centers for Disease Control and Prevention, Office of Scientific Education and Professional Development • Doctors Without Borders/Médecins Sans Frontières • Engineers Without Borders • Texas Department of State Health Services: HIV/STD Program and Laboratory Services Section • Mobile Analytical Laboratory System, operated by the 6th WMD Civil Support Team Training Programs APHL/CDC Emerging Infectious Diseases Fellowship Program • CDC Epidemic Intelligence Service • Peace Corps Masters International Degree • U.S. Public Health Service
UT Austin Public Health Internship Program and Public Health Major • Life Science Library • School of Nursing • Texas Public Health • Health Education Program, Department of Kinesiology & Health Education

Union Ballroom 3.202

Activity Center
in the Ballroom

Santa Rita Room 3.502

Quadrangle Room 3.304

Sinclair Suite 3.128

Governor's Room 3.116

EXHIBIT HALL OPENS
*Bring your friends! Learn
about graduate programs,
fellowships, public health
careers and more!*

OPENING KICKOFF!
Italian Sub Sandwich Lunch
Global Health Equals
Global Prosperity
EDUARDO SANCHEZ

1:00pm	VISIT THE EXHIBITS/ ACTIVITY CENTER	Public Health Jeopardy DENNIS PERROTTA	Working in Global Health— What Does It Take? D.A. HENDERSON, HANNA GOULD, MEHRAN MASSOUDI, SHARON SHUGAREK	The H1N1 Pandemic: Was This a Dress Rehearsal? SUSAN FISHER-HOCH	College Students: What's Going to Get You...and What Can You Do About It? VINCENT FONSECA	Investigate Disease Outbreaks: Interactive Case Studies! EMILY ROWLINSON
2:00pm	VISIT THE EXHIBITS/ ACTIVITY CENTER <i>Meet the author!</i> D.A. HENDERSON Book signing: 2:30pm	Level 4: Virus Hunters of the CDC JOSEPH MCCORMICK, SUSAN FISHER-HOCH	CSI: Public Health— Tackling Emerging Diseases and More in the Laboratory SUSAN NEILL, EVA PERLMAN, DAVID CARPENTER, BRIAN MENEGAZ, NATALIE MILLS	Once Bitten, Twice Shy: Making Progress Towards Malaria Elimination HANNAH GOULD	Epidemiologists: Outbreaks Are Our Business! RACHEL WISEMAN, CAROL DAVIS	Investigate Disease Outbreaks: Interactive Case Studies! EMILY ROWLINSON
3:00pm	VISIT THE EXHIBITS/ ACTIVITY CENTER <i>Meet the author!</i> D.A. HENDERSON Book signing: 3:30pm	Public Health Jeopardy DENNIS PERROTTA	Ready to Take the Next Step? Graduate Education in Public Health MICHAEL WARD, ALLISON FOSTER, VINCENT JAMES, ABBY RINCON, SHANNON SHELTON, MATTHEW GOLDSHORE	Public Health in Action! The CDC Response to the Earthquake in Haiti MEHRAN MASSOUDI	Infectious and Chronic Disease: Two Old Friends Meet JOSEPH MCCORMICK	Investigate Disease Outbreaks: Interactive Case Studies! LINDA GAUL
4:00pm	VISIT THE EXHIBITS/ ACTIVITY CENTER <i>(ACTIVITY CENTER CLOSES AT 4:30PM)</i>	Level 4: Virus Hunters of the CDC JOSEPH MCCORMICK, SUSAN FISHER-HOCH	"Beating Back the Devil": The CDC Epidemic Intelligence Service ERIC MILLER, SHARYN PARKS, ARACELI REY	Chasing Viruses and Vaccines in Africa: Doctors Without Borders CAITLIN MEREDITH	On the Front Lines: Local Public Health! DAVID LURIE, PHILIP HUANG	Investigate Disease Outbreaks: Interactive Case Studies! LINDA GAUL

5:00–6:30pm

KEYNOTE SESSION

Smallpox—The Death of a Disease
D.A. HENDERSON

6:30–8:00pm

Enjoy PIZZA with your friends!
EXHIBIT HALL RE-OPENS!
*Meet with speakers and
public health professionals!*

Meet the author!
D.A. HENDERSON
Book signing: 6:30pm



This conference is generously supported under a cooperative agreement from the Centers for Disease Control and Prevention (CDC) through the Association of Schools of Public Health (ASPH). Sponsors: College of Natural Sciences; School of Biological Sciences, Career Services and Health Professions Office; University of Texas Libraries; The Centers for Disease Control and Prevention, Scientific Education and Professional Development Program Office; The Association of Schools of Public Health; The Association of Public Health Laboratories; The National Library of Medicine; The Texas Department of State Health Services, The Austin/Travis County Health and Human Services Department; The University of Texas School of Public Health.

Art Kean 0210

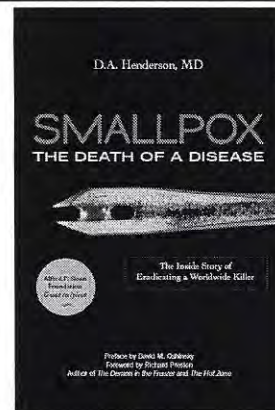
Smallpox

Once, the greatest killer – still a threat

D.A. Henderson, MD, MPH

Professor of Medicine and Public Health
University of Pittsburgh
Johns Hopkins University Distinguished Service Professor

24 January 2010



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

David Oshinsky – Winner of the 2006 Pulitzer Prize in History

Smallpox, the disease

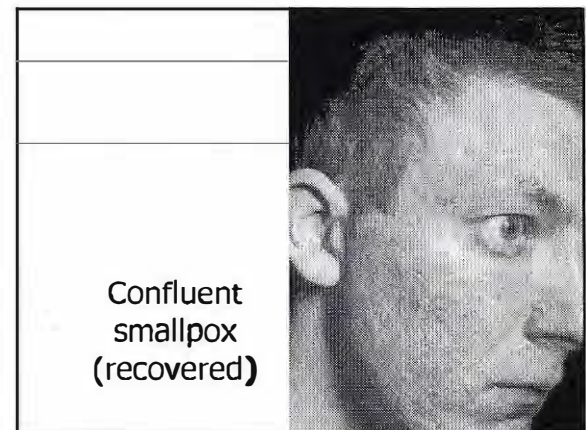
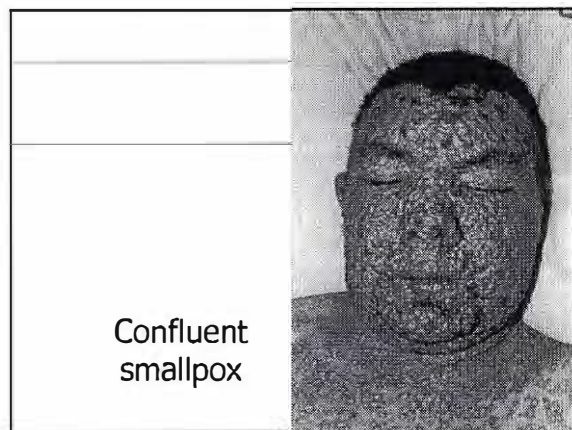
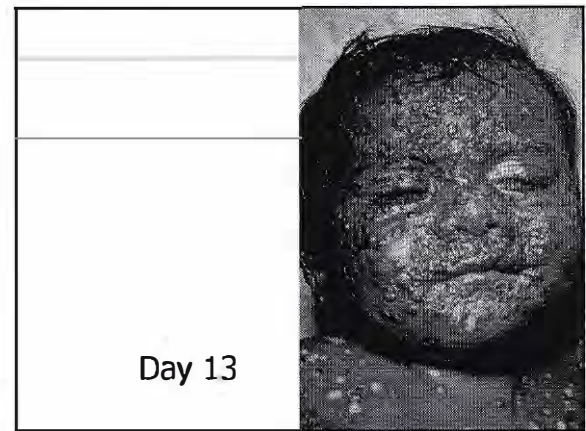
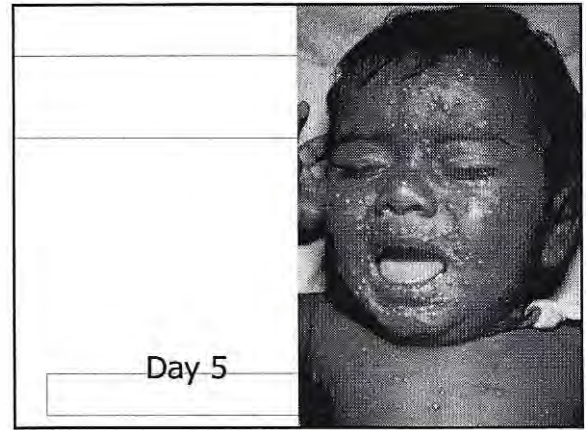
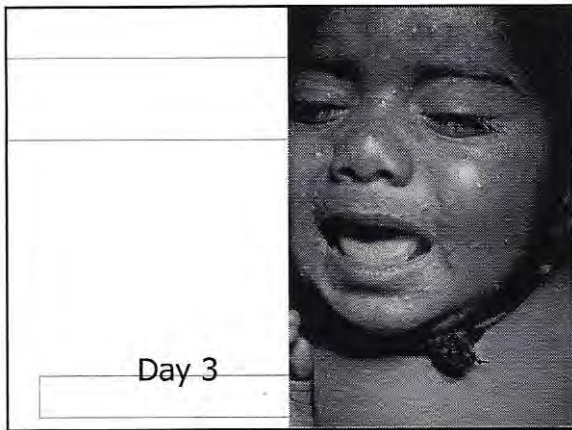
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 - Spread is by face-to-face contact during the time of rash
- Only humans can be infected
 - A chain of infection going back to the Pharaohs 3500+ years
- Death rate is 30%
 - There is no treatment

Sitala Mata



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



Global efforts to eradicate a disease

- Hookworm 1909-23 14 years
 - Treatment, sanitation
- Yellow fever 1915-32 17 years
 - Stop *aegypti* mosquito breeding
- Yaws – 1948-66 18 years
 - Penicillin treatment of patients
- Malaria – 1955-73 18 years
 - DDT insecticide

Smallpox as a target

1953 – Director General proposes

"...a practical world program, of importance and value to every country...demonstrating the importance of WHO to every Member State"

Rejected by Assembly as uneconomical and unfeasible

1959 World Health Assembly adopts USSR proposal for a global program but little progress is made

The birth of the WHO global program

- 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
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 - WHO and public health credibility was threatened
- He demanded that an American serve as Director
 - The candidate declined:
 - Responsibilities for new CDC African program
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The Challenge

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

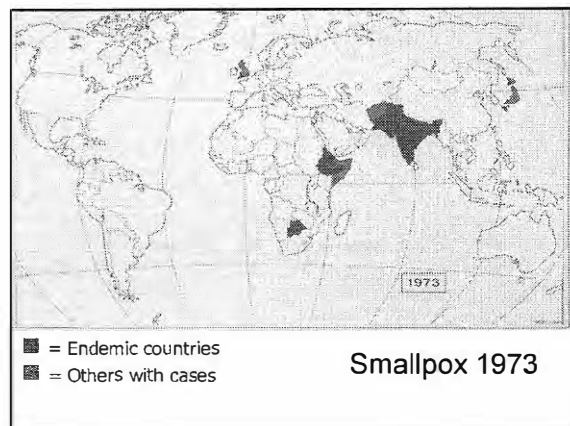
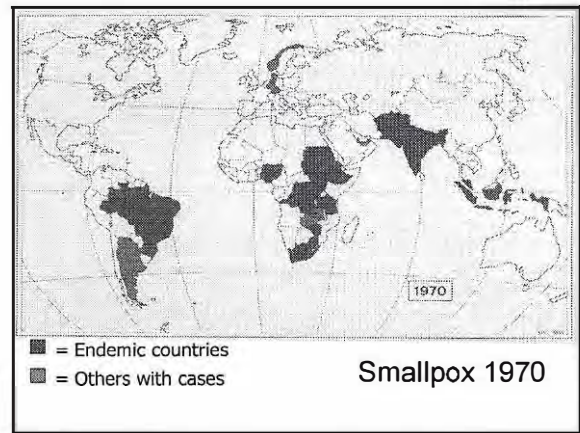
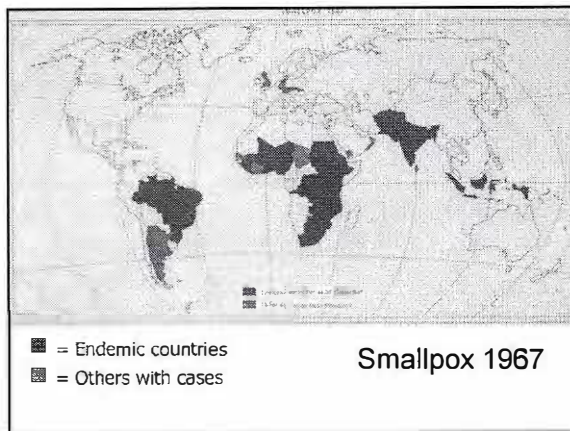
A new technique for vaccination

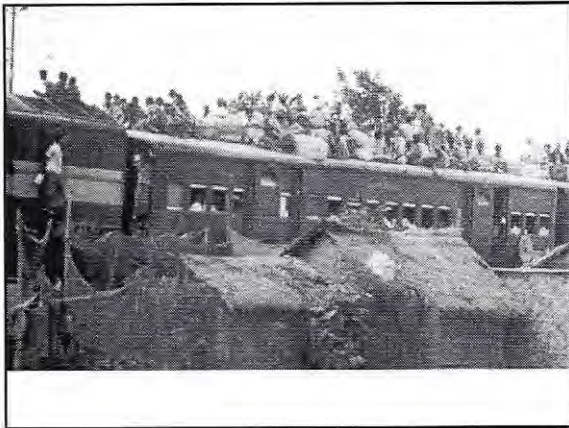
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The strategy

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





India – the pivotal challenge

1973-75

- India – 550 million and "the home of smallpox"
- A new strategy
 - Search every village in 10 days; 120,000 staff
 - Containment teams for 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

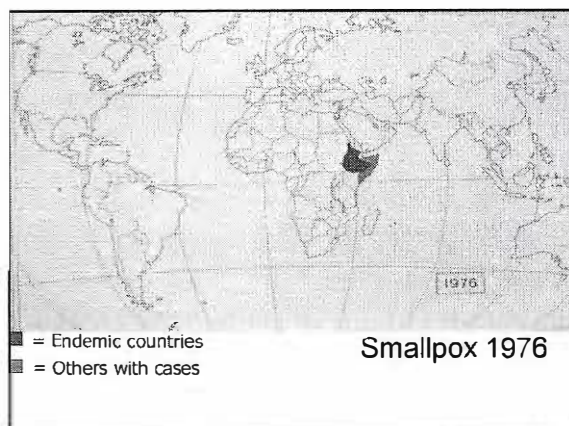


Indian Independence Day

August 15, 1975

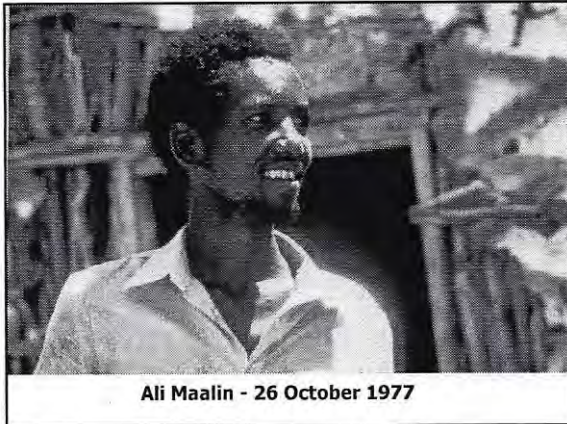
Prime Minister Indira Gandhi

- Salutes India on its 28th Anniversary
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The Final Chapter

- Ethiopia -- 25 million people
 - Size of France and Germany combined
 - Few roads – travel on foot and with donkeys
 - Marxist revolution and continuing civil wars
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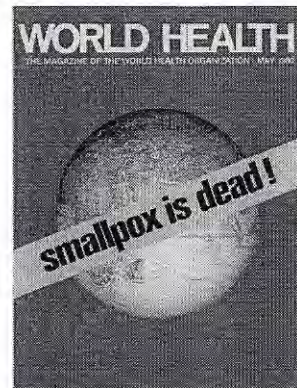
Ali Maalin - 26 October 1977



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



Meanwhile, horizons were expanded

- 1974--Expanded Program on Immunization
A global program to vaccinate all children with smallpox, measles, polio, DTP vaccines
Target: 1990 -- 80% coverage: achieved
- 1996 --Measles eradication in the Americas
Target: 2002 -- achieved

The Threat of Biological Weapons

- **Biological Weapons Convention—1972**
 - Cessation of research on offensive weapons
 - Destruction of existing stocks
- **Attitude until late 1990s**
 - Bioweapons are morally repugnant
Academic world— deliberate refusal to have anything to do with them
 - Only possible sources are sophisticated laboratories
 - A moral barrier against their use
Besides: "If used by someone, we would nuke them" R.Nixon

Clouds on the Horizon

- 1992 USSR Bioweaponer Alibek defects
 - USSR program 50 laboratories; 60,000 staff
 - Preferred agents: smallpox, anthrax, plague
 - Smallpox production capacity – 20+ tons per year
 - Laboratory research staff disperse – late 1990s
- 1995 Other centers with capability and intent
 - Aum Shinrikyo – anthrax, sarin gas
 - Iraq's 1980s program becomes known
 - Anthrax – drones, shells

A new reality– September 11, 2001

- September 16 meeting with Secretary
 - A possible second attack --smallpox or anthrax
 - Status of country
 - None <30 years of age have ever been vaccinated
 - Waning immunity
 - 75% of population susceptible
 - Vaccine availability
 - 15 million doses in storage
 - No vaccine manufacturer in the world
 - Earliest date for producing a new vaccine --5+ years

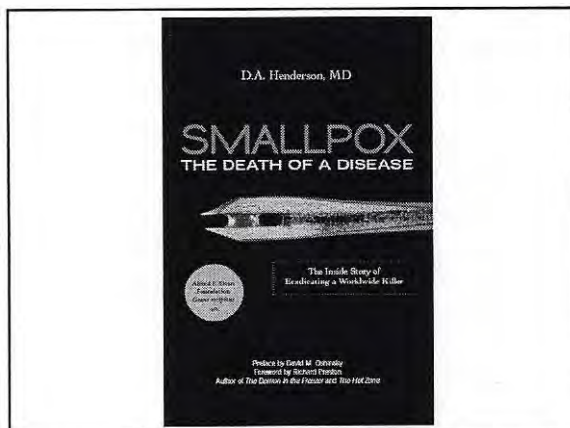
Post 9/11

- Vaccine – 200 million doses ready in 18 months
- Vaccine to be used only in emergency
 - Balance of risk of reactions and ability to respond
- Diagnostic labs increased from 2 to >100
- Reporting strengthened
- Increase rapid response capability

Coda

- From the book's introduction:

"We are only beginning to realize the potential of public health... It is a field begging for fresh, resourceful ideas and a new generation of professionals who are not constrained by 'knowing' what can't be done. So it was with so many who contributed so much to making smallpox eradication a possibility. Their stories, as well as mine, constitute the heart of the book."



Smallpox

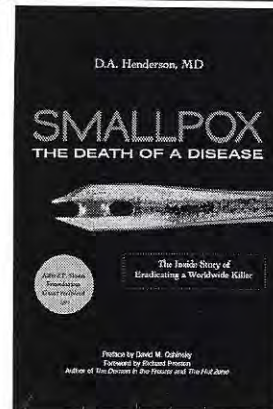
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D.A. Henderson, MD, MPH

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Johns Hopkins University Distinguished Service Professor

Austin, Texas

April 7, 2010



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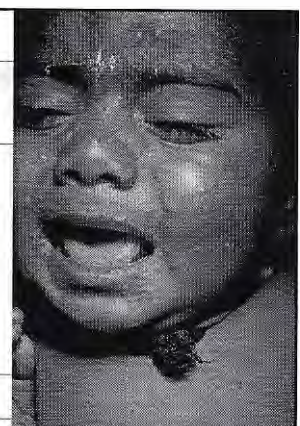
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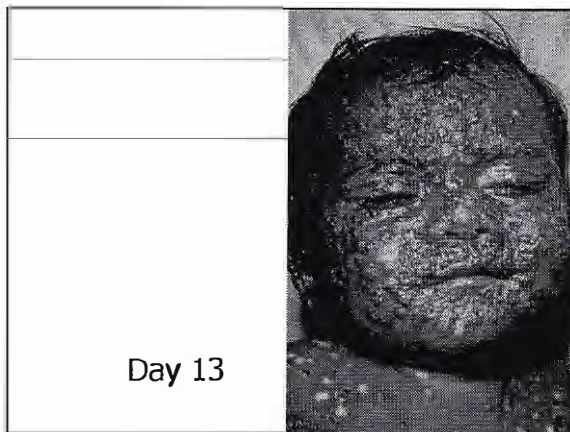
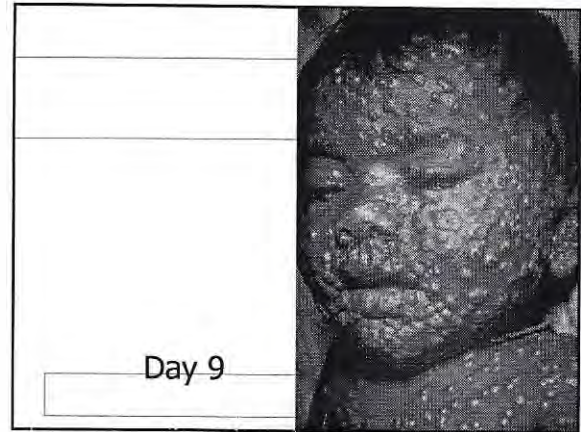
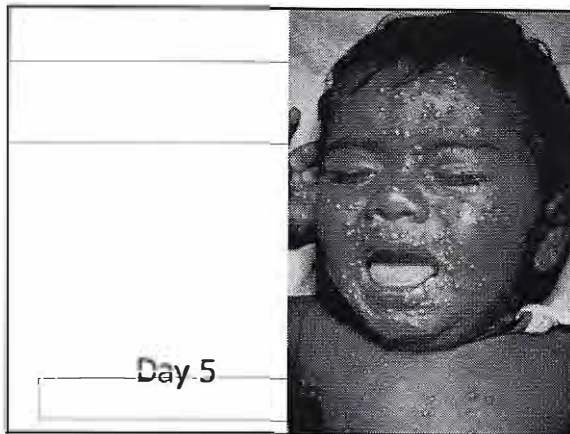
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Day 3





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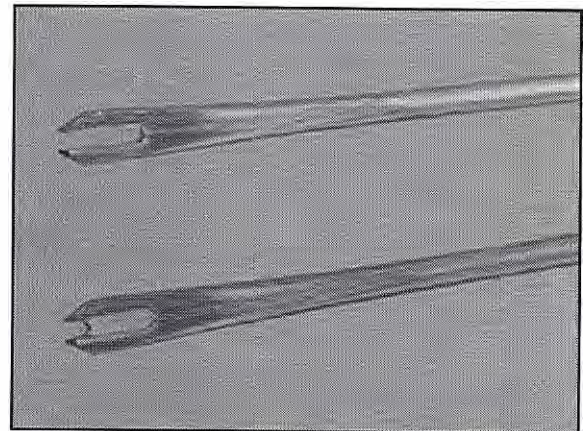
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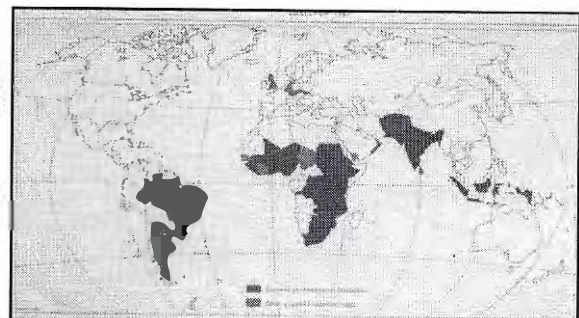
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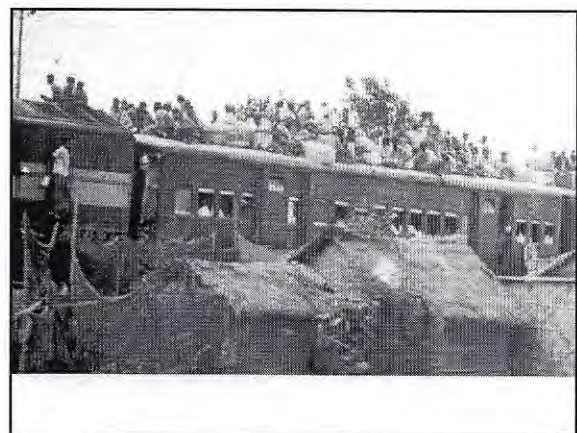
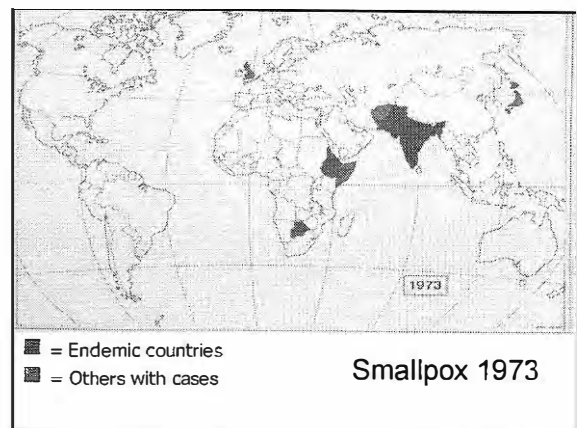
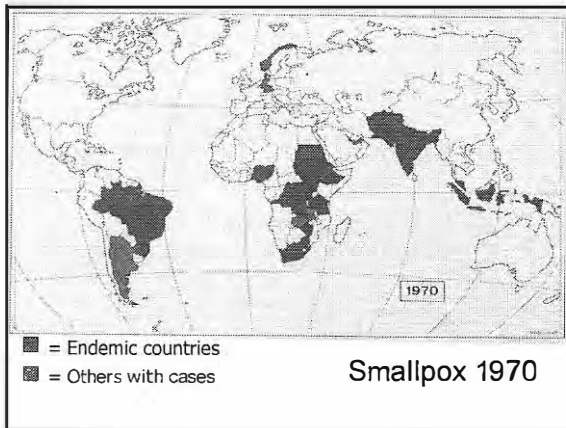
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■ = Endemic countries
 ■ = Others with cases

Smallpox 1967



India: a new strategy – June 1973

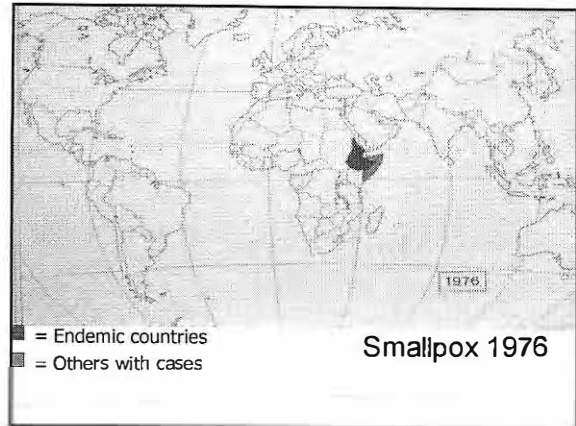
- "The home" of smallpox – 550 million people
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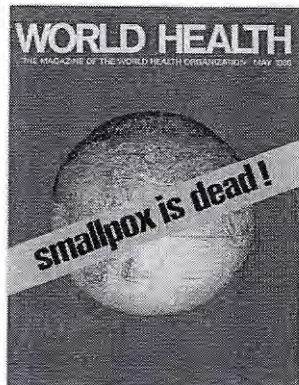
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Meanwhile, we expanded horizons

• 1974

An Expanded Program on Immunization

A global program to vaccinate all children vs. smallpox, measles, polio, DPT

Target: 1990 – 80% coverage: achieved

• 1986

Eradication of measles in the Americas

Target: 2001 -- achieved

But the saga was not finished

- 1972 – Biological weapons convention signed.
Assumption that BW was no longer a threat
- 1995 – USSR Program becomes known
60,000 people in 50 laboratories
Program is as large as for nuclear weapons
Smallpox is its number one preferred agent
- 2001 – World Trade Tower attack and anthrax release
Intercepts indicate another attack – smallpox?

Post September 11

- Sept. 16 – a meeting with the DHHS Secretary
Office of Public Health Emergency Preparedness
A new office and a new Director – Asst. Secretary
Emergency appropriation of \$3 billion
- The Challenge
Only 15 million doses of vaccine—no manufacturer
75% of population susceptible
- The Response
300 million doses of vaccine in 24 months
>100 diagnostic labs

Coda

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