

2 months after DNH took over Global PROGRAM in WHO GENEVA

Pleasure for me to be here with you to ~~discuss~~ ^{participate} in these discussions of smallpox eradication. As you know - only joined WHO staff a month ago. My interest goes back, however, many years.

^{6 yrs. responsible}
Past 11 yrs. - CDC - ~~most of them~~ ^{for the} ~~in mind~~ ^{staff} of 70 epid. who were concerned with surveillance of infectious dis. in the U.S., ^{field} ~~then~~ ⁱⁿ ~~investigation~~ and ~~the~~ ^{various} states and local communities, their control. Included was s.pox. - no cases since 1949 but each yr. 20 to 50 reported to us - R_x as emergency - staff sent, spec. sent by air and all thoroughly investigated. For 4 yrs., one unit of 4 M.D. devoted solely to smallpox - studies of vaccination response, ~~eval.~~ ^{invest.} of vaccination, invest. of introduced cases into non-endemic ^{countries (Europe)} ~~areas~~, etc.

Of. app - Pres. Johnson offered assistance to 19 West + Cent. African countries for SE. Detailed to ^{sub} this up - happy to say, programs ^{are} under way in 10 of these ~~to~~ ^{to} begin in a matter of a month or two and 4 others in about a year.

Meantime, working closely ~~is~~ ^{is} ~~with~~ ⁱⁿ development of ~~the~~ ^{the} ~~prog.~~ ^{prog.}, to coordinate ~~is~~ ^{is} ~~with~~ ^{with} act. and the considerations dealing ~~is~~ ^{is} ~~with~~ ^{with} ~~the~~ ^{the} ~~prog.~~ ^{prog.} as a whole

Introduce this seminar - discuss ~~is~~ ^{is} ~~with~~ ^{with} you the smallpox problem as ~~is~~ ^{is} ~~seen~~ ^{seen} it today, and to present brief overview of certain of the principles pertaining ^{to} ~~to~~ ^{its} ~~epidemiology~~, virology, etc. which bear on the strategy of the global program. ~~Dr. T~~ ^{to} ~~follow~~ ^{is} ~~disc.~~ ^{disc.} ~~Reg. Prob.~~

Several topics to be touched on, ~~will be~~ ^{are discussed} in greater depth later.

Apologize for lack of slides, formal papers, etc. - many of my papers still in transit between ATL - OMA + time has been lacking.

? Problem today -

Divide into several eras:

I Pre-1950 - Vaccination sev. countries ^{to extent that disease was eliminated} ~~Most~~ ^{Most} Western Europe; U.S.; Canada. ^{eradicated smallpox free status} ~~control~~ ^{control} vaccination in other areas.

II 1950-59 - PAHO started to begin eradication efforts. -

Many ~~is~~ ^{is} ~~poorly~~ ^{poorly} developed health structures, bad transport, weak admin. structures, limited supplies of ^{stable} ~~freeze-dried~~ ^{freeze-dried} vaccines.

In this period ~~is~~ ^{is} ~~all~~ ^{all} countries except Brazil became free.

No program in Brazil.

C.A. ^{is} ~~now~~ ^{now} free for 12-14 yrs.

~~Over several yrs. however, little maintenance was~~

Other countries ^{in the world} ~~in~~ ⁱⁿ ~~industrial~~ ^{industrial} ~~prog.~~ ^{prog.} as separate projects. No area-wide effort

III 1959 - 1966 -

W-F-

USSR intro. resolution, Assembly advocating global eradication
 Unanimously passed; voluntary contributions requested (but trickled in).
 Programs begun in several African countries, ^{and} in many Asian countries.
 Handicapped by lack of vaccine - altho, as you know, USSR made substantial
 donations. Much donated from other countries failed to meet standards.
 Handicapped by lack of vehicles, tech. assistance, etc.
 1965 - Assembly decreed that smallpox erad. should become a major activity and
 requested WHO to draw up a long term plan. (Dr. Lal was selected
 as one of the ^{special} consultants to work on this program).
 1966 - Assembly voted a budget of \$2.4 million to assist countries in the
 program; ^{addit. voluntary contributions} substantial bilateral assistance was also requested.

IV 1967 - ?

Status of smallpox
1966

~ 55000 - 60000 cases ↓ ~ 1/3 from 1959

Americas - Brazil, Colombia, Peru, Paraguay, Bolivia - scattered cases.

Europe - totally free

Africa - 5 North Africa, low incidence in Ghana, I.C., ~~Senegal~~ Senegal, Mauritania, Chad, C.A.R., Gabon. Nigeria - problem area
 + most countries in East Africa.

Mid-East - 0 spox.

Asia - 5 countries: Japan, Pak, Nepal, India, Indonesia
 75% of all cases reported from Asia - the majority from India
 (Burma - virtually smallpox free)

but - 4 sick free are Japan, Taiwan, Mainland China (?), ~~Thailand~~ Thailand, Cambodia, Laos, Vietnam. →

* Significant - major strides have been made in many countries ē limited facilities, personnel and transportation.

Program - 1967

Americas - Brazil ^(\$2,000,000 approx) + 5 yrs.

Africa - mentioned 19 countries in 1967 + Congo Kinshasa, Zambia, Sudan, Kenya, (possibly Uganda, Tanzania if funds can be found)

Asia - leave to Dr. Ignatovic.

Is Eradication Feasible

Question posed particularly by ~~managers~~ ^{admin.} & limited knowledge of smallpox epid.

They recall the malaria program which has met serious stumbling blocks of recent date and say - please - not another eradication program

~~Eradication is one meaning - absolutely no disease.~~

Smallpox - totally different problem.

That it is possible today in countries with limited resources, limited prof. personnel and limited funds has already been demonstrated - in Central + S. America, in Africa, in the Middle Eastern countries and in Asia.

No question but of all the infectious diseases, this is the one most susceptible to eradication.

1. Man-to-man only
2. No subclinical cases - detected readily
3. Transmission for 2-3 wks. - no carrier
4. Permanent immunity
5. Transmission - comparatively ineffective -
2 wks. incubation period
< 5 → 10 cases from one case. (not explosive like flu or cholera)
6. Good vaccine -

<u>Expert Comm. -</u>	<u>1° vaccination</u>
to 1 yr. -	99.9%
to 3 yrs.	99.5%
to 10 yrs.	87.5%
to 20 yrs.	50.0%
after 20 yrs.	?

One of best vaccines we have - Y.F. + measles, may be in same category.

To achieve eradication

Simply \uparrow no. of immunes such that transmission is interrupted.
? How far immunity - no one answer. - man to man - contacts.

Densely crowded area
vs.
Remote area
To prevent epidemic - spec requires a reasonably large susceptible population
transmission cannot persist indefinitely - e.g. Iceland 57,000 persons.

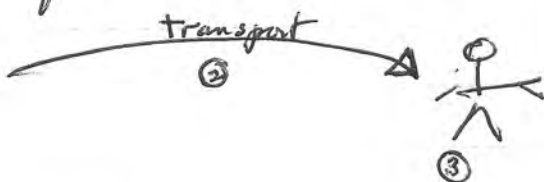
? % - don't know. -

Today -
Persistence in cities and larger villages - spread to neighboring areas
Experience - migrant workers, floating population, newborn children in these areas. - Dr. Rao has described this very well as the situation in Madras.

In brief - if the cities, villages, towns (the most accessible areas are well vaccinated and maintained for a few yrs. - problem in the distant areas, areas difficult to reach will disappear (even a limited program).

Schematically - Problems of concern

① Vaccine



- ① Potent vaccine - transport + storage (hyp.)
- ② ~~Hygienic + stable~~ - preferably transported and stored in the refrigerated state
- ③ Technique at application -

② OPERATIONAL PLAN -

- Supervision + training
- Motivated vaccinators. (pay + morale)
- Education of the populace

③ ASSESSMENT - INDEPENDANT

- To determine coverage
- adequacy of vaccine as used in the field

④ SURVEILLANCE - END PRODUCT. IF A FAILURE, A PLAN SOMETIME.

Form of assessment -

⑤ MAINTENANCE - PROBLEM, VARIES ACCORDING TO NEED

- Necessity to vaccinate large population annually
- a) Adequacy of surveillance + epi. services
 - b) Proximity to problem.
- U.S. - 8%
 U.K. - 5%
 PERU -
 COLOMBIA -

If ^{not a} tight surveillance system + large movement of people across borders -
 plants vaccinate 1/2 annually -

- a) Vaccinate newborns where possible
- b) School children at entry where possible
- c) Urban areas, ^{market} towns, and villages - g. 2-3 yrs.
- d) Remote, scattered populations - g. 4 yrs.

Surveillance + ^{prompt} intensive investigation of every case.

? Does this differ from the "attack phase" - No. Just ↓ intensity of activity

The importance of

Regional Program and Coordination is ^{critical} ~~important~~ - no where more evident than in S.A. (described)
~~so I believe you can see~~ - Need for an
 intelligently applied program. More emphasis on the places where the problem is.
 Apologizing for time - brief overall sketch of a few of the basic principles as now appreciated.

These points I'm sure you have all viewed as separate entities at one time or another -
 We are ^{doing this week} anxious to have your thoughts + ideas in the context of your own programs and to know how
 best to provide assistance to you.
 Dr. J.