1966 Dec. DELHI SPOX SEMINAR (1)

[8 months after DMH took over Global PROGRAM in WHO GENEVA]

Pleasure for me to be here with you to participate in these discussions of smallpox eradication.

As you know - only joined WHO staff a month ago. My interest goes back, however, many years.

Past 11 yrs. - CDC - 6 yrs. responsible for trained staff of 70 epid. who were concerned with surveillance of infectious dis. in the U.S., their field investigation and ☐ the various states and local communities, their control. Included was spox. - no cases since 1949 but each yr. 20 to 50 reported to us - Rx as emergency - staff sent, specs. sent by air and all thoroughly investigated. For 4 yrs., one unit of 4 M.D. devoted solely to smallpox - studies of vaccination response, eff. of vaccination, invest. of introduced cases into non-endemic countries (Europe), etc.

Yr. ago - Pres. Johnson offered assistance to 19 West + Cent. African countries for SE. Detailed to set this up - happy to say, programs now under way in 11 of these ☐ 4 to begin in a matter of a month or two and 4 others in about a year.

Meantime, working closely ☐ WHO in development of the African prog., to coordinate ☐ WHO act. and the considerations dealing ☐ planning for the global program as a whole

Introduce this seminar - discuss ☐ you the smallpox problem as see it today and to present brief overview of certain of the principles pertaining to its epidemiology, virology, etc. which bear on the strategy of the global program. Dr. T to follow ☐ disc. Roy. Prob.

Several topics to be touched on, are discussed in greater depth later.

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

? Problem today -

Divide into several eras:

I Pre-1950 - Vaccination serv. countries to extent that disease was eliminated. Most Western Europe; U.S.; Canada. Effected smallpox free status ☐ control vaccination in other areas.

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

Many ☐ poorly developed health structures, bad transport, weak admin. structures, limited supplies of stable freeze-dried vaccines.

In this period → all countries except Brazil became free.

No program in Brazil.

C. + Caribbean - now free for 12-14 yrs.

~~Over several yrs. travelers, little maintenance vacc.~~

Other countries in the world, industrial progs. as separate projects. No area-wide effort

III 1959 - 1966 -

USSR intro. resolution, W.H. 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 DG 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. vol. contributions and 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 - ō North Africa, low incidence in Ghana, I.C., Senegal, Mauritania, Chad, C.A.R., Gabon. Nigeria - problem area
+ Congo and most countries in East Africa.
Mid-East. - ō spox.
Asia - 5 countries Afghan, Pak, Nepal, India, Indonesia
75% of all cases reported from Asia - the majority from India
(Burma - virtually smallpox free)
but - + side, free are Japan, Taiwan, (mainland China (?)), ~~Thailand~~, Phil., Thailand + Cambodia, Laos, Vietnam.

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

Program - 1967 ~~Action~~

Americas - Brazil ($2,000,000 approp.) + 5 yrs.
Africa - mentioned 19 countries in 1967 + Congo Kinshasa, Zambia, Sudan, Kenya, (possibly Uganda, Zambia, Tanzania if monies can be found)
Asia - leave to Dr. Ignatovic.

Is Eradication Feasible

Question posed particularly by ~~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 = one meaning – absolutely no disease~~ . .

Smallpox – totally different problem. –

That it is possible today in countries & 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 –

Expert Comm. –	% 1° vaccination
to 1 yr. –	99.9 %
to 3 yr.	99.5 %
to 10 yrs.	87.5 %
to 20 yrs.	50.0 %
after 20 yrs.	?

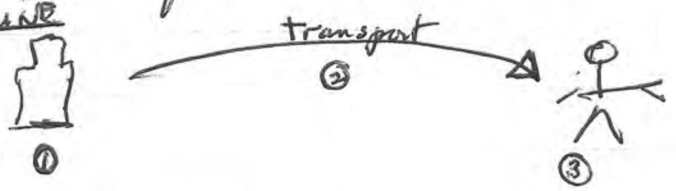
One of best vaccines we have – Y.F. + measles may be in same category.

To achieve eradication

Simply ↑ no. of immunes such that transmission is interrupted.
? How far of immunes – no one answer. – man to man – contacts.
Densely crowded area
vs.
Remote area
To remain endemic – spox requires a reasonably large susceptible population
Transmission cannot persist indefinitely – e.g. 1750 Iceland 57 000 persons.

? % – don't Know. –
Today – Persistence in cities and larger villages – spread to neighbouring 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 c̄ even a limited program).

Schematically – Problems of concern
① VACCINE



① Potent vaccine –
② ~~lyophilized + stable~~ transport + storage (hyp.) – 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 FLAW SOMEWHERE.
Form of assessment –

(5) MAINTAINANCE – PROBLEM, VARIES ACCORDING TO NEED

~~Necessity to vaccinate large proportion 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 – plan to vaccinate 1/3 annually –

a) Vaccinate newborns where possible
b) School children at entry when possible
c) Urban areas, market towns, and villages – q. 2-3 yrs.
d) Remote, scattered populations – q. 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~~ – as where more evident than in S.A. (described) ~~as I believe you can see~~ ~~Need for an intelligently applied program. More emphasis on the places where the problem is.~~

~~Apologize 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 most anxious during this week to have your thoughts + ideas in the context of your own programs and to know how best to provide ~~to~~ assistance to you.

Dr. L.