

Reasonable to say that all of you familiar to some degree with the overall program of SE - the role of WHO and contributions of NCDC. If not - perhaps have wandered into the wrong classroom.

As we all become more or less familiar with program - all tend to lose perspective a bit - to become immersed in the detail, in individual country problems and to lose sight of the program as a whole - how it came about, why it came about, where it is going and how it is progressing.

At the risk of some repetition for some of you, let me review the ~~program~~ ^{problem and the program} as a whole as perhaps an introduction to the detail which will follow during the coming weeks.

Let us forget

Smallpox was once a global problem - ~~a disease~~ ^{the most lethal, persistent, and prevalent} disease of all history - just a few items

- one of the few diseases for which devices have specifically been created
- Before the age of Jenner - the leading cause of blindness in Europe.
- Killing 1/2 to 1/3 of globe afflicted, it devastated ^{susceptible} Indian population throughout the Americas and opened the continent to European settlement.
- As recently as 1926/27, ~~40%~~ in outbreaks in Sweden and England, 40% of the unvaccinated died despite readily available excellent medical care.

Present quarantine attitudes and vaccination practices reflect this concern.

- Only disease for which immunization is required on a global basis
- Only disease for which vaccination is practiced in essentially every country throughout the world whether endemic or not.
- Venture to say that no. of vaccinations performed annually ^{throughout world} exceeds ^{total} all other vaccinations performed by several fold.
- Only disease in which ^{the introduction of} a single case into a non-endemic country ^{initiates} will trigger local, area-wide and sometimes national emergency measures.

Germany
U.K. - isolation hospital.

It was the extent and severity of this disease, particularly in its more severe form, variola major, which led to the progressively widespread application of vaccine, long before the development of organized health services, ~~and~~ almost a century before the development ~~before~~ of any other immunizing agent and long before the germ theory of disease had begun to be clarified.

During 1st half of this century - Europe and subsequently N. America became smallpox-free.
1950 PAHO embarked on eradication program in the Americas and over succeeding 7-8 yrs., countries in Central America became smallpox-free as well as most countries in S. America - except Brazil.

Global eradication raised several times in the ^{World Health} Assembly in the early '50's. Conceded by all that ~~this~~ of all diseases, ^{smallpox was} ~~was~~ ^{was} ~~potentially~~ ^{was} ~~most~~ ^{was} ~~easy~~ ^{was} to eradicate and with present technology probably only disease which could be eradicated on global basis.

Briefly - characteristics

1. Man to man - no insect or other reservoir
2. Infection for brief period only - rash & last scabs - no chronic carriers (unlike)
3. No subclinical cases
4. Spreads slowly

Incubation period
No. of cases from 1st case

5. Highly effective vaccine
3 yrs. generally thought but 15-20 yrs. -

Point raised - if eradicated - all countries would save money

U.S. - \$ 20 x 10⁶
Czech. - \$ 1 x 10⁶

The ~~desire for~~ global smallpox eradication was voiced by many countries but the primary impetus was provided by the Soviet Union. Cause of malaria eradication was also being fostered ~~at this time~~ in mid-'50's by USA and countries of the Americas.

ME resolution was passed and money appropriated. SE was elected upon as a voluntary program - no funds were provided. Why? Partly based on ^{erroneous} promise that SE was really a simple matter - provide good vaccine ^{vaccine available} and ^{and} ^{vaccine}.

From 1956-1966 - SE was program based on voluntary contributions. WHO - 1 staff member in Geneva; none in Regional Offices; ^{at various times} few each in Mali, Afghanistan, Nepal, ~~Sierra Leone and Liberia~~ ^{at few regional centers} some consultants provided to vaccine production laboratories - 1 to 2 million doses vaccine given WHO annually. Soviet Union give much bilaterally.

Some progress was recorded but it was limited. Countries of N. Africa; Middle Eastern countries and several in SE Asia.

Following Assembly in ~~1965~~ 1965, two things happened.

- USA / Soviet Union decided to propose a ^{SE} budget to the Assembly (financial problems of WHO) and to propose that it be decreed a principle program of WHO. If rejected - then, let's stop talking about eradication.

- Development of the West Africa Program - Initially an ill-conceived Mearns eradication project converted to SE/MC. 1966 Assembly passed resolution establishing the program - 10 year objective - principle program of the organization.

Program commenced then on 1 January, 1967. Unit created at HQ. (personnel). ~~Unit created unit at HQ. Briefly - the organization.~~

Regions

Problem itself - ~~Smallpox endemic in 29 countries~~

Defining where, in fact, smallpox is endemic. 5 Areas - (discuss China)

Year ago - 29 countries - most recently 27 countries. (China, S. Africa)

~~Strategy - attack~~ Eradicated in many countries.

Many countries smallpox free where few or virtually no organized general health services. limited manpower and budgets, difficult terrain and hostile populations.

Strategy - Attack when disease is end to bolster ^{to be} care detection - surveillance in neighboring areas as well as immunization level.

1 st 1/2 years (1) Basic technical groundwork ^{to be} laid. (Concept - vaccination program)

- Handbook
- Scientific Group
- Vaccine production
- Laboratory diagnosis

(2) Programs to be started - plans of operations & pricing of supplies of 27 countries - 22 with programs (17 in W. Africa) {survilled} S. Rhodesia, India & countries with no program - Ethiopia, {Melawi} of 40 countries at special risk - 27 with programs (12 in W. Africa)

(3) Vaccine problem - to be discussed in detail later. - force-donate vaccine ^{a) supply} 200 - 250 x 10⁶ doses from international sources needed (cost-purchase).

Donations to WHO and bilateral.

Bilateral - USSR	-	100 x 10 ⁶	India, Afghan, Burma.
USA	-	40 x 10 ⁶	West Africa.
WHO USSR		25	
		15	(Neth. Yugo, Hungary, Czech, New Zealand, Thailand)
Emergency reserves USA	-	25 x 10 ⁶	

Supplied to countries

1965	2.3
1966	3.8
1967	13.0
1968	56.0

b) Upgrading of laboratories - quality and quantity.

Quality - describe labor - poor. Production - far under capacity.
last year - consultants, ~~and~~ suppliers and fellowships to 26 laboratories in different countries throughout world.

Testing system established - Netherlands -
1965 - 12
1966 - 43
1967 - > 100
1968 - ~ 200

~~Essential research~~

Now - virtually no liquid vaccine in use

By end of 1968 - ^{anticipate} the liquid vaccine in use in any endemic country.

Contrast to two years ago when probably 30-40% fld. vaccine in Americas
1-2% in Africa
70% in Asia

a) ~~Essential~~ Essential research on vaccinia in devices, monkey pox and smallpox epidemiology
a) ~~Vaccinia in glycerol~~
b) Jet injectors -
Bifurcated needles -
} ~~by end of the year~~ with a year, as things now progressing - virtually all
vaccinations in endemic areas will be employing devices
which were not in field use at the beginning of the program

b) Monkey pox -

c) Epidemiology - W. Africa, Ind. + E. Pakistan - know India and Horn E. Africa,
WER + tech. papers Calcutta, Indonesia.

d) Establish communication exchange -

Meantime - WHO staff is expanding - note
Regional offices
+ 600 persons in countries

~~Progress has been made but many ^{problems} remain;~~

Where are we today and where are we going? Discuss each of 5 epi. areas.

West Africa - clearly the spearhead. With a year's start on the rest of the program and
aggressive, dynamic leadership, these countries are leading the way.

By now 50 of 115 mill. in have been vaccinated -

Targets established 2 yrs. ago are generally being met; one vaccine - case containment

Incidence has declined by ~ half despite probably much better reporting

Effective work in next 6 months ->

Americas -

Intensified activities in all countries except Paraguay -

Brazil the key -

Program started in ~~late~~ late '66 - scattered, did poorly, but did establish surveillance program

Early '68 - reorganized & more aggressive leadership.

- 100,000 per week in April
- 250,000 " - now
- 425,000 " - late August

Assessment personnel trained in every state

No. of cases reported has doubled.

At present rate - could become smallpox-free late in 1969, certainly in 1970

Indonesia - (Once open free 1934-1947)

Dec. '67

Until Dec. 67, little activity. After Conference in Bangkok, reconsidered problem.

early '68 ~~program~~ addressed by ~~the~~ legislative assembly & a of priority concerns.

~~Pilot program shifted to major program - national meetings conducted,~~

Surveys of immun. status in Bali and Java showed surprisingly good coverage in many areas with present control.

Pilot → major national effort

1. Surveillance - containment
2. Systematic vaccination

Commenced 1 July.

Jet guns (NDC help) West Java.

If aggressively carried out, 2 years minimum, ~~but~~ realistically 3 yrs. to achieve goal

↑ in most countries

East Africa - less favorable picture.

- ① Congo/Burundi -
- Tanzania -
- Ethiopia -

- ② Kenya - Good health services but -
- Uganda -
- Malawi -
- Mozambique -
- Zambia -

Asia - as yet, the most satisfactory picture of all.

- India -
- Pakistan -
- Nepal -
- Afghanistan -

Coming next years - several specific directions of the program required

1. Surveillance - containment - PRIORITY
2. Planning
3. Independent assessment teams -
4. Development of training courses

SE

Laboratory diagnosis.

Name of the game - not vaccination -
conducting
Appalled at concept - vaccinate them
we'll do something.

Look back at 1 1/2 yrs. and look ahead to 8 1/2 yrs. - satisfied ^{in 3 of 5 areas} progress but
~~most~~ troubled about E. Africa and 4 countries in Asia. Much to be done but it
can be done. ~~It will take the maximum effort and devotion on the part of all of us.~~

Quite clearly, the achievement of this goal ^{would} represent a milestone of achievement in public health,
in medicine and in international cooperation for never in history have the nations throughout
the world banded together ~~to achieve~~ in an effort to achieve a goal of this scope or type.
That it was ^{actually} launched in concert by the Soviet Union and the USA ^{seems} particularly appropriate.
I personally feel privileged and proud to be a part of an effort of this type. I hope you
similarly share this feeling.