Challenges in prevention
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"Challenges in Prevention"

① M. Ghandi

At time - c̄ the few funds, little could be done -
~~Those~~ Things which so ↓ morb. + mortal. in industrial. world -
Better housing, H_2O, sewage systems - not affordable.
Spx. vac. was one of few activities which was affordable and could have impact.
but vac. was poor quality / ~~[illegible]~~ instr. were primitive + painful.
Substantial Funds were being expended for health care - hospitals + health centers / drugs + equipment
but, as was case in this country, these expenditures had ~~little~~ only a marginal impact on either
morbidity or mortality. Thus, Ghandi's very prescient plea.
Smallpox eradication ~~changed~~ was a watershed event which, in developing countries, has
begun to alter radically both views and strategy in health care. Prevention and
community-based programs have begun to assume ~~the~~ ~~appropriate~~ (as needed, important) role -
to complement the costly curative measures and services which are made available
only to those seeking them and able to pay.
Changes over the last decade have been dramatic, as I shall note and they
are now beginning to be echoed in the industrialized countries. We are at the
dawn of a new era for public health

~~To better understand the change~~,
What has occurred and how is best understood ~~[illegible]~~ in the context of the hx of ~~the~~
smallpox and its eradication and there I would propose to recapitulate before
looking to the future ~~describing more recent events~~ and what Johns Hopkins ~~role has been~~ is ~~is now doing~~ and
what ~~it~~ is ~~now doing~~ planned - for we are at the cutting edge of this second public health revolution.

② ③ ④ The disease
At one time prevalent in every country / like measles 20% c.f. rate.
Reduced pop. so greatly - Indust. Rev.
⑤ ⑥ Gods and goddesses

(7) Jenner 1796 –
milk maids

(8) Cowpox

Vaccination (from vacca) – 1st vaccine – Pasteur "vaccination" to
honor Jenner – applied to all vaccines – confused the terminology
Extraordinary develp. – carried round the world – often by orphans.
Problems in ~~keeping~~ sustaining the virus – technology not right for widespread applic.

(9) Cow Growth on flank of calf – late 1800's. – helped in indust. countries
But not until WW II were indust. countries – spx free. USA mid 30's – 30 000 cases.
~~(9)~~ This was 150 years after the vaccine was discovered

(10) Freeze drying – ~~late~~ early 1950's, commercially feasible process for freeze-drying.
Leslie Collier.

1958 – V. Zhdanov – WHA
Strategy – vaccination – 80% / Delhi problem / 100%
1966 – Frustration / skepticism / one final try – at least ↓ spx and
risk of importation (n.b. USA defense vs. smallpox)
• $\$2.5 \times 10^6$ — $50 000 / country
• 10 year program. — Man on the Moon.

(11) 1967 — $10 - 15 \times 10^6$ cases — 2×10^6 deaths
1 billion people

Two prong strategy ← Vacc.
← Surveillance / Target '0' (AOL/CDC) – reporting / containment

(12) Vaccine – Need for 250×10^6 doses.
Quality control – 2 labs (Canada & Netherlands)
All vaccine used in prog. to be tested – 1st time for int'l. qual. control prog.
< 10% in use met accepted standards. – some no virus at all.
Labs. who produced – also tested. Some did, some didn't.
No purchases. Concept of independent qual control lab. – USSR / France / India / Indonesia
Sought donations – at same time, ~~dev~~ helped dev. countries. (donors to others)
Principal donors USSR & USA — 1973 80% dev. countries

By 1970, progs. begun in all countries

⑬ 1967

⑭ 1970 – W. Africa free (poorest, unanticipated) ^ – CDC program. (Foege, Millar, Ralph Henderson, Lythcott Hopkins, Bob Hogan

⑮ 1973 – "Only problem" / ancient home of smallpox / 700 × 10⁶
Search strategy house by house / 120 000 people / 8 tons of forms / containment
Note: program was community-wide – involved village leaders, teachers, schoolchildren went to every house – not simply those who came to a health center
[contrast:] W. Azerbaijan – same year – WHO's phc. program.

⑯ U.P. – "surprise"
Program gradually improved but more resources needed –
Plea for help in Jan 74 for $ 500 000 (believe it or not – an all but impossible sum – donors willing to give 10s of $10⁶ for hosps. but little for prevention)
Arrived New Delhi – 1 Jan – 4 principal advisers –
herpes zoster / Czech foot fungus / Fred renal stone / atypical pneumonia
"things can't get much worse & must get better"
illustrates courage and dedication of a team.
Got the $ but they did get worse – / blackest day of prog. June 1974 (spx spread as never seen before)
c̄ Foege in Bihar (north India)
25% of villages infected – 300 new cases/day
Strike RR's / airlines / floods / famine / health workers
Foege & Dist H.O.
Foege optimism – "what do we do now?"
That summer – working 7 day weeks in 100–120° temp. – back of problem broken.

⑰ Rahima Banu – 16 Oct. 1975

⑱ Ethiopia

⑲ Highlands

⑳㉑ Roads

㉒ Kidnap.
End of spx in Ethiopia Aug 1976 → Somalia – another year

㉓ Ali Maalin 26 Oct 77

(24) WHO

(28) WHO

This yr marks the 10th anniversary.

Some believed an Army involved — in fact, a small cadre of absolutely dedicated people.

GVA HQ — at most, 5 prof. staff

All int. staff — 100 at any one time. 750 from 8 countries

Total exped /yr. ~ $8 ×10^6

Savings to USA alone

$150 ×10^6 (1968 $)

Every 42 days savings equivalent of total contribution to entire prog.

~~Even today, USA contributes only $60 million to WHO~~

~~but, ironically, last year failed to pay this assessment for 1st time in 30 yr.~~

~~and has failed to make any provision for paying 1987 assessment.~~

More important — show cost-effective prevention could be

Countries saw how much could be done by own health services

- Caused us to launch EPI —

DPT - polio - measles - BCG.

(26) (27) Vac. levels to predict

- 10 years ago = 2% / today 50% / goal 90% 1990
- Centerpiece of UNICEF's Child Surv. and Develop. Rev.
- Rotary International
- Rajiv Gandhi
- Success in America — polio eradication.
- Second major thrust — ORT

JHSHPH - packets of H_2O + sugar

1975 — 1st 1×10^6 packets = 18 mos.

(28) ORT dist. Today — 1×10^6 /day.

Third ~~revolutionary change~~ discovery – promising revolutionary change –

Al Sommer – Vitamin A story

Family planning – badly needed

Greater interest than ever before –

A Major impediment is our own government.

In USA, our appreciation of the need for preventive measures now lags behind developing countries but interest is growing

- ~~Health~~ care costs →
- Fitness and dietary initiatives – still poorly defined
- Env. hlth issues – Bhopal / Institute W.Va // Chernobyl // pesticides // lead.

That our health system is ill-prepared to deal c̄ probs. – ill by a recent measles epidemic in Miami Fla c̄ > 100 cases.

Immun. is the simplest of medical procedures and most cost-effective.

Yet, in a city c̄ an excess of M.D.'s – 50% of 2 yr. olds unvac.

WORSE – 17 of 18 unvac. (who got disease) in hlth care setting < 2 mos.

WORSE – over half contracted the disease in OPD. + clinic.

Basically have a curative care system and don't yet know how to deal c̄ prevention + com. based progs.

Thus, at the very dawn of a new era

SHPH is preparing to address issues

- Growth in 10 years from \$17 → \$80 × 10⁶
- Largest public hlth school in world
- Graduate 20% of all doctoral students
- EHS c̄ 60 f.t. faculty is larger than half SPH and a unique facility basic research → work site
- HPM – Of 12 acad. "movers and shakers" (McGraw-Hill) – 4 at Hopkins.
- Intl. health – largest acad. prog. in world with > 50 f.t. faculty 10 based abroad, 25 fellows by end of year.

Bldg
(1) East wing
(2) Hampton House –
(3) International House.

But, as we look to the future – let us ~~keep before us~~ be mindful of the injunction of Mistral

Now & and Beyond

- Mtg of USAID's policy adv. com – chair serious review of AID's research policy
- Chair – PAHO TAG/EPI in Guatemala.
- House & Senate testimony – WHO budget.
- 1st Mtg. of UNICEF's scientific adv. com.
- Principal paper for intl. group examining priorities for intl. research – Switzerland.
- Mtg of Internat'l Foundation in Munich
- Mtg in Mexico of the scientific advisors of its new Public Health Inst.
- Mtg in India of the and trustees of the new Indian Inst. for Hlth Mgt. Research

Finally

- Celebration of 10th Anniv. of [illegible] in Moscow
- Festschrift for and Ernst Jung Preis Laureates in Hamburg, Germany.