Magic of Vaccines

Women's Board of the Hospital
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DA Henderson

Appreciate the invitation to be with you today and to talk about a subject which has been my preoccupation since 1st becoming a physician nearly 40 years ago. ~~Progress over the past 25 years. The changes already~~

Before doing so, let me salute your organization for the support you have given and are giving to Johns Hopkins Hospital.

- Those who live in Baltimore and are not called upon to travel so much as some of us come to take the Hospital for granted. It's always there and can be counted upon to provide you the ~~best~~ world's best available care.
- I certainly take comfort in this when I contemplate illness — ~~and~~ but especially so when I find myself in Argentina or Kenya or India. I don't know how many of you have visited hospitals in other parts of the world. I can assure you such visits don't inspire great confidence but for far more than 95 % of the world's population, they will never be cared for in a hospital even approaching what we ~~have~~ often take for granted as part of the Baltimore environment.
- Two years at the White House ~~were~~ broadening — a political appointee / not think of self as political fact - act to stay on suggests no one else thought so [illegible]

  Two physicians — But Lee ch. — (BUSH STORY)

  Regularly had 2-3 consultations per week about medical care and usually ~~for~~ "can you refer me to someone at Johns Hopkins who would know about this problem".

  Washington tends to be somewhat self-centered with a well-known "inside the Beltway mentality". But when it came to medical care, they looked North.

- Initial months of planning for health care reform were troublesome ones. Many of the health planners seemed to have little knowledge as to how medical centers were financed and didn't seem to appreciate the extraordinary importance they ~~hold~~ occupy in our medical care environment.

We pointed out quite simply that the health of our entire medical system depended on the health of the academic health centers like Hopkins.

+ 90%+ of all biomedical research
+ Responsible for training all physicians, most nurses and other paramedical staff
+ 90%+ of all clinical research.

After those early tumultuous days, acad. hlth ctrs. have been singled out for special planning and special provisions.

Not to say that the outcome will necessarily be optimum. What with 5 different committees each now drawing up its own plan — hard to know what will emerge. Said: "~~don't~~ no one should be subjected to watching legislation being crafted any more than one should be subjected to watching a butcher make sausage."

But let me turn to the subject at hand — The Magic of Vaccines.

~~Like Hopkins~~, Like the Acad. Med Ctrs., they are too often taken for granted.

Look back to my last 2 years of med. school — U. of Rochester — 1953-54

So much ~~Summer~~ polio — so many patients c̄ resp. paralysis — med. students as nurses.

— Summer ~~Swimming~~ pools and theaters closed / so we were to learn c̄ serology postpone the inevitable

— our own concern caring for patients our own age — might we be susceptible.

Results of field trials of the Salk polio vaccine announced in April and widespread ~~Vaccine~~ vaccination began — vaccine rationed initially.

For families across the country, That vaccine transformed summer time.

Seven years later — The oral polio vaccine (Sabin) was licensed — more effective.

Two drops on a sugar cube.

S.O.S. Sabin on Sunday.

A year later — measles vaccine came on the scene, ~~to~~ be followed by German measles and mumps vaccine.

Last decade As biomedical research has progressed — a veritable tidal wave of vaccines

Hepatitis B and hemophilus vaccine (meningitis / middle ear infection) now in widespread use

Hepatitis A and chicken pox vaccine are imminent and at least 30 other vaccines now moving thru the pipeline.

Change is occurring rapidly but much less already happened — let me recount.

Our first major triumph was, of course, over smallpox. — take just a moment & put this in perspective

Program began — 1967 (27 years ago)

10 - 15 million cases and 2 - 2.5 million deaths every year.

Vaccination in U.S. for every one of school entry — do you have a scar?
LAST CASE U.S. 1949. Vac. virus is always not seen in 20 years!
Vaccination of all travelers every 3 years — recall the yellow card.

Special hospitals — Britain and Germany.

One can see why —

Illustrative problem

Last outbreak in Europe — 1972 — Yugoslavia — 45 years & a case.

Pilgrims returning from Mecca. 1st detected in mid-March

Disease spread widely 175 cases / 35 deaths.

Over 3 years
~~Beginning~~ — 18 million vaccinated.

>10 000 contacts isolated.

Strategy — vaccination and discovery and containment of outbreaks.
~~Vaccination~~
Vaccination in the program — bifurcated needle

— freeze dried vaccine — (cost 2¢ + 5-8¢ admin.)

~~Cost vaccinate — between 7¢ and 10¢~~

Utilization of health staff and volunteers.

How many vaccinations / day — 500 quota

— Burundi (Central Africa) 1200+

What did we do about mass / revolution?

Nigeria civil war —

Ethiopia - Somalia fight — advisers changed sides.

Even those engaged in active hostilities appreciated the import of vac.

Outbreak-containment - Knew we could not vaccinate everyone.

Disease spread to close contacts — find quickly and vaccinate. Protective ring.

At first — 30 houses around infected one

Later — India / Bangladesh —

5 miles / watch guards.

Discovery & spread - winter / summer.

10 years / 9 mos / 26 days = "0" cases as vaccination stopped!

~~From 10 mill~~

No longer did we have 10-15 million cases each year. ~~Can't project to be translated into numbers~~ were this)

Abstract number but that number is 200 times larger that the total of all admissions to Johns Hopkins Hospital in the course of a year.

Dick Ross - comment -

During program - visits to hospitals -

wards full of children & polio, dying of measles, tetanus or whooping cough.

Why are you not vaccinating?

Scarcely have enough money for drugs; can't afford vaccine.

1970 - international conference

1977 - program finally got under way.

Slowly strengthened - 1983 UNICEF got behind it in the Child Survival program. $\frac{1}{2} \times 10^6$

Rotary International $\$250 \times 10^6$ - Polio Plus

Mahatma Ghandi - "I am hard hearted enough to let the sick die if you could only show me how to prevent others from ~~having sick~~" DILEMMA

But why vaccines / why not drugs - ○ viral disease
○ protective response
○ drugs - one by one

Latin America - unquestionably the most energetic.

"Vaccination days" - Brazilians.

1985 - Polio eradication launched.

Strategy - cities - mop up.

August 1991 - last case in Western Hemisphere

1989 Global polio eradication

1990 Child Survival Summit in NY 73 heads of state.

80% target achieved. - extent of outreach (postal) - system set.

3×10^6 deaths prevented every year.

600 times as many deaths prevented ~~as~~ as patients admitted to JHH.

Birth rate ↓ - fewer, healthier babies

Prior to
the Summit – discussion of CVI and decision

Can give many vaccines simultaneously.

Sustained release preparations – 1 dose vs. many

and perhaps by mouth.

Can we produce a vaccine, given at birth, which will protect for life vs. as many as 30 different diseases? Think so.

Today – polio, measles, mumps, German measles, tetanus, whooping cough, diptheria – all rare diseases in the U.S.

But – many challenges – malaria / typhoid / [illegible] fever (schistosomiasis) / cholera. and AIDS. All taking a heavy toll.

We've come a very long way in a very few years / Our work is just begun

Words of the Chilean poet, Gabriela Mistral

Many of the things we need can wait
The Child cannot
Right now is the time his bones are being formed, his blood being made and his senses are being developed
To him we cannot answer "Tomorrow"
His name is "Today".

~~Progress has been rapid (I'd like to [illegible]) – we are impatient.~~

Under Pres Bush and now Clinton – much more money given for vaccine R+D and this year $ for polio eradication is part of Pres. Summers [illegible] initiative.

Still progress has been less than ~~we hoped~~ optimal. ~~A~~ ↑ support for int'l. development vaccine research / production.

Last month – a change – ~~[illegible]~~

② Arita / int'l. found. / pres. of fund.
└ Japan Prize / natural Hosowo.

Mrs. Hosokawa – $300 x 10⁶

U.S. – Japan Cooperative development conference