How has the Polio Eradication Initiative ‘influenced’ the global AIDS response?

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Presentation Outline

• “Big history” of global HIV epidemic
• Current status of HIV and the global AIDS response
• Lessons learnt from PEI
• Challenges for HIV ‘epidemic control’
• Moving forward
1981: First Clinical Description of AIDS

In the period October 1980-May 1981, 5 young men, all active homosexuals, were treated for biopsy-confirmed *Pneumocystis carinii* pneumonia at 3 different hospitals in Los Angeles, California. Two of the patients died. All 5 patients had laboratory-confirmed previous or current cytomegalovirus (CMV) infection and candidal mucosal infection. Case reports of these patients follow.

MMWR 1981:30:250-252
1983: Discovery of HIV as the cause of AIDS

**Isolation of a T-Lymphotropic Retrovirus from a Patient at Risk for Acquired Immune Deficiency Syndrome (AIDS)**

Abstract. A retrovirus belonging to the family of recently discovered human T-cell leukemia viruses (HTLV), but clearly distinct from each previous isolate, has been

**Frequent Detection and Isolation of Cytopathic Retroviruses (HTLV-III) from Patients with AIDS and at Risk for AIDS**

Abstract. Peripheral blood lymphocytes from patients with the acquired immunodeficiency syndrome (AIDS) or with signs or symptoms that frequently precede AIDS
1996: Discovery of “Highly Active Anti-Retroviral Therapy” (ART) for AIDS

Highly active antiretroviral therapy (HAART)
2011: Emergence of HIV Treatment as Prevention

HPTN 052: HIV-1 Transmission

Total HIV-1 Transmission Events: 39

Linked Transmissions: 28
- Immediate Arm: 1
- Delayed Arm: 27
  - \( p < 0.001 \)

Unlinked or TBD Transmissions: 11

- 18/28 (64%) transmissions from infected participants with CD4 >350 cells/mm\(^3\) and VL >50,000 copies/ml at transmission
- 23/28 (82%) transmissions in sub-Saharan Africa
- 18/28 (64%) transmissions from female to male partners

Cohen NEJM 2011
By 2020...

- 90% of all people living with HIV will know their HIV status.
- 90% of all people diagnosed with HIV will receive sustained antiretroviral therapy.
- 90% of all people receiving antiretroviral therapy will have durable suppression.
Adults and children estimated to be living with HIV  |  2016

**Total:** 36.7 million [30.8 million–42.9 million]
20.9 million people on treatment

Number of people (all ages) accessing antiretroviral therapy, global, 1990 to mid-2017

CLOSING IN ON A FAST-TRACK TARGETS

- 70% [51–84%] of people living with HIV know their status
- 77% [57–>89%] of people living with HIV who know their status are on treatment
- 82% [60–>89%] of people on treatment are virally suppressed

PROGRESS TOWARDS THE 90–90–90 TARGETS, GLOBAL, 2016

Source: UNAIDS special analysis, 2017; see annex on methods for more details
18% reduction in HIV incidence since 2000
33% reduction in annual AIDS-related deaths since 2000
10.5% increase in Persons Living with HIV since 2000

Adults and children estimated to be living with HIV

Range of uncertainty
Goal 4: Network of Public Health Reference Laboratories

- Foster networks between laboratories for surveillance and early disease detection
- Improve assessment of new products and regulatory harmonization
- Build a south-south training programmes
- Establish an international network for proficiency testing
What HIV has learned from Polio

1. Careful surveillance is key
2. Goals determine strategies
3. Coverage x Effectiveness = Impact
4. Laboratory plays central role
5. Campaigns complement routine services
6. Community mobilization & service delivery
7. The challenge of sustainability
Challenges for HIV epidemic control

- HIV incidence > HIV mortality = growing epidemic
- Weak health and laboratory infrastructure in high burden countries
- Key Populations
- Competing health priorities (e.g., Ebola, diabetes, cancer)
- Long-term financing??
- Assuring **lifelong** treatment to all PLHIV? Adherence?
- No vaccine or cure in short-term
- Ongoing stigma, discrimination & marginalization
- Gender inequality and assuring respect for human rights
Moving forward

- Incredible progress since 1981; identified agent, diagnostic tools developed and effective prevention and treatment strategies available

- Although very different viruses & diseases, the Polio Eradication Initiative has greatly influenced the global AIDS response

- Community engagement is key

- ART very effective in preventing AIDS-related deaths and reducing HIV transmission, but no “magic bullet” to end the global AIDS epidemic

- Sustainability is a combination of country ownership, capacity development and financing. Need to develop and sustain national & regional institutions

- Whether the global community can end the global AIDS epidemic by 2030 remains an open question……