LET’S NOT REINVENT THE WHEEL*: RESPONDING TO NCDS WITH LESSONS FROM HIV

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"The medical issues in treating people with HIV have changed. We're no longer as worried about infections that come from being immunocompromised. Now we worry about diseases related to ageing, like cardiovascular disease, neurocognitive impairment and liver problems."  Howard Fox, Study Co-Author*

*An Epigenetic Clock Measures Accelerated Aging in Treated HIV Infection
Table 2. Estimated Temporal Trends in Coefficient of Association in Deaths with HIV Cause and Select Non-AIDS-related Condition or AIDS-defining Condition Causes

<table>
<thead>
<tr>
<th>Condition</th>
<th>Trend in coefficient of association</th>
<th>11-year % change</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart disease</td>
<td>0.10</td>
<td>115.7</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Cerebrovascular disease</td>
<td>0.05</td>
<td>56.4</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Chronic liver disease</td>
<td>0.02</td>
<td>22.2</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>0.07</td>
<td>79.8</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Kidney disease</td>
<td>-0.002</td>
<td>-2.2</td>
<td>0.55</td>
</tr>
<tr>
<td>Lung cancer</td>
<td>0.21</td>
<td>257.0</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Liver cancer</td>
<td>0.18</td>
<td>216.9</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Colon cancer</td>
<td>0.18</td>
<td>216.9</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Melanoma</td>
<td>0.15</td>
<td>178.0</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Anal cancer</td>
<td>0.15</td>
<td>178.0</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Oropharyngeal cancer</td>
<td>0.27</td>
<td>341.0</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Pneumocystis pneumonia</td>
<td>-0.04</td>
<td>-43.1</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Non-Hodgkin’s lymphoma</td>
<td>-0.08</td>
<td>-84.6</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Mycobacterium avium complex</td>
<td>-0.10</td>
<td>-104.7</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Cryptococcosis</td>
<td>-0.04</td>
<td>-43.1</td>
<td>0.01</td>
</tr>
<tr>
<td>Cytomegalovirus</td>
<td>-0.08</td>
<td>-84.6</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Toxoplasmosis</td>
<td>-0.002</td>
<td>-2.2</td>
<td>0.91</td>
</tr>
<tr>
<td>Kaposi’s sarcoma</td>
<td>0.001</td>
<td>1.1</td>
<td>0.97</td>
</tr>
<tr>
<td>Candidiasis</td>
<td>-0.06</td>
<td>64.1</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Histoplasmosis</td>
<td>-0.07</td>
<td>-74.4</td>
<td>0.02</td>
</tr>
</tbody>
</table>
The Context

Figure 1: Premature (Under Age Sixty) Deaths From NCDs

Leveraging the huge investment in HIV/AIDS

NCDs 50% of the global disease burden
1% of DAH (US $377 Million)

HIV/AIDS 4% of the global burden
33% of DAH (US$ 12 Billion)

*WHO Global coordination Mechanism on the prevention and control of NCDs – Working group on how to realize governments commitment to provide financing for NCDs Policy Brief Bilateral and Multilateral Financing for NCDs by Rachel Nugent  February 15, 2015
Some similarities ..........

- Chronic diseases
- Millions of people living with the diseases
- Millions of people dying from diseases where there are known effective prevention strategies and treatments
- Require diagnosis and life-long treatment
- Require behavioral and biomedical approaches
- Require global support mechanisms
Some differences……..

- NCDs are a complex of diseases, not just one disease
- Risk factors
- Populations at risk
- Advocacy groups
- Funding
- Crisis? Emergency?
Now specific lessons…. Innovations in Care: People

**Barrier for HIV/AIDS:** Shortage of Health Care Workers

**Innovation from HIV/AIDS:**
- Task Shifting
- Novel curricula and training with simple algorithms
- Provide mentorship for quality improvement
- Research—data to show that RNs can perform many tasks for ART treatment that MDs commonly perform*
- MEPI, NEPI

**Considerations for NCDs:**
- What do nurses, CHW, patients want?
- When is the burden too much?
- Payment?
- Learning from CVD—community health workers give lifestyle recommendations and medication in India and China, lower BP**

Innovation in Care: The System

Barrier for HIV/AIDS: Millions of people needed access to HIV/AIDS treatment; people with HIV/AIDS in rural areas had little access to health care.

Innovation from HIV/AIDS: Public Health Approach

- Simplification: Following simple standardized guidelines, treatment protocols and clinical monitoring at every level of the health system prevention care and treatment.
- Decentralization: Shift care from urban health clinics and hospitals to primary care centers and communities.

Considerations for NCDs:

- NCDs complex of diseases
- Role of Integration
- Differentiated care
Innovation in Medical Commodities

Barrier for HIV/AIDS: High cost of medicines and diagnostics, stock outs, low retention and adherence

Innovation from HIV/AIDS:

- Cost of medicines should be low enough for people to afford
  - 2001 $10,000  
  - 2014 $100  
  - 2030 $100 all regimes
- Medicines should be easy to take
  - 2001 8 pills/day  
  - 2013 1 pill day  
  - 2030 1 pill three months
- Testing – Fast POC testing
  - 3 days in 2001  
  - 30 minutes in 2014  
  - 2030 3 minutes
- Robust supply chain
- Robust laboratories

Considerations for NCDs:

- Can these commodities be combined (polypill, HbA1C)?
- Role of research?
- PPPs

Innovations in Retention and Adherence

Barrier for HIV/AIDS: Patients don’t take meds and follow regimen long-term

Innovations from HIV/AIDS:
- Remove Socioeconomic Barriers – payment and transportation
- Patient groups, peer support and education
- Community based models
- EMR; mobile technology; pill box
- Referral Networks, Appointment books

Considerations for NCDs:
- NCDs unlikely to be free – need other insurance or financing
- Educational materials need to be developed and peer support groups organized
- Self management (NCD) might be useful for both HIV and NCD
Innovations in Global Funding & Organization

**Barrier for HIV/AIDS:** Not enough funds for treating the HIV/AIDS epidemic

**Innovations from HIV/AIDS:**
- Global Fund
- PEPFAR
- UNAIDS

**Considerations for NCDs:**
- Are new mechanisms needed or more efficient use of current ones?
- Data for treating NCDs in LMICs?
- World Bank trust fund? *

*Global Financing Facility: where will the funds come from? Ann Danaiya Usher DOI: http://dx.doi.org/10.1016/S0140-6736(15)00813-2*

**Global Fund Investment Case Fifth Replenishment 2017-2019**
Innovations in Monitoring and Evaluation

**Barrier for HIV/AIDS:** No data system to use for monitoring and reporting prevention, treatment and care of HIV/AIDS patients.

**Innovations from HIV/AIDS:**

- Creating a system of medical records including EMR
- UNAIDS three ones, one country level monitoring and evaluation system
- Key indicators for reporting and evaluation
- Same language throughout the world for the effort
- Surveys for monitoring progress

**Considerations for NCDs:**

- What can be modified to include NCDs – what needs to be created?
- If this is not implemented how can progress be tracked and reported?
- Who will fund this effort?
National Policy Innovation

Barrier for HIV/AIDS: No national policies to standardize treatment and reach all in need

Innovation from HIV/AIDS:
- The ‘three ones’ approach: one national coordinating body, one national guideline, one national M&E system
- Prevalence-based enrollment targets at facility, district, province and national levels
- Development of an ‘essential package of care’ for facilities at each level of the health system (hospitals, clinics, health centers)
- Use of a public health approach and standardized step-by-step protocols (not just guidelines) for diagnosis, care and treatment

Considerations for NCDs:
- NCD policy makers must be appointed and supported, they must develop a constituency and contacts
- They may want to work with the HIV folks to learn and integrate – may be difficult
- They need to develop their own source of funds and Public Private Partnerships

And…..

- Emergencies limit choices
- Consider sustainability, capacity
- Lots of moving parts
- Global and national partnerships necessary
- Research integral, implementation research important
- Strengthen rather than build parallel systems
How shall we proceed?

Adapted from: Rabkin, Kruk and El-Sadr, AIDS 2012, 26 (Suppl 1):S77–S83
MOH Integrated Chronic Care Management
Chronic Care Policy Integration
MOF Integrated Health Care Funding/Insurance
Integrated Chronic Care Medical Education

Community Chronic Care Education

• Central

• Tertiary Care

• District Hospitals

• Primary Care Centers

• Community Health

Integrated Chronic Care Clusters

Medical Subspecialties

Advanced Services: NCD, ID, Rehab

Integrated Chronic Care – task-shifting, screening, care management by non physician health care workers

Acute Care, integrated detection, screening, linkage to care of chronic diseases, adherence and retention support for chronic disease management, educational materials

Adapted from Gupta, N., Bukhman, G., Healthcare 3 (2015) 215-220
The levers of tiered/differentiated care

- Monthly
- Bimonthly
- Every three months
- Every six months
- Clinical Monitoring

Service frequency

- Service intensity
  - Art initiation/refills
  - Other refills
  - Clinical Monitoring
  - Adherence support
  - Laboratory tests
  - Psychosocial support
  - Educational support

Service location

- Person
  - Health worker cadre
  - HIV Clinic/Hospital
  - Primary Care clinic
  - Community
  - Home
  - Other clinic

Clinical Determinants
  - Disease status
  - Adherence

Psychosocial Determinants
  - Distance to care site

Figure 1. Four levels to tailor or adapt care to peoples needs (service frequency, location, intensity and cadre)

Adapted from Duncombe, Chris, Rosenblum, Hellmann, Holmes et al. Reframing HIV Care: Putting People at the Centre of ARV Delivery, Tropical Medicine and International Health Volume 20 no 4 pp 430–447 April 2015