A Model for Sustainable Integration of Science, Technology and Innovation in HIV/AIDS Healthcare Service Delivery

Pamela McCauley, Ph.D., CPE
Jefferson Science Fellow
Office of Financial Sustainability
Office of the Global AIDS Coordinator
US Department of State
STI Factors in SDG

• Existing technologies, resources innovations and processes:
  – Service delivery/Healthcare
  – Education
  – Infrastructure
  – Primary economic drivers

• Technology Readiness Level (TRL)
  – Evaluation & Establishment
  – Strategic Advancement in TRL’s

• Determination of required enabling technology or TRL by sector

• Strategic Professional Development and Education of the Workforce

• Strategic Alliances and Collaborations
A Real World Example from PEPFAR

ASSESSING INNOVATION OPPORTUNITIES IN HIV/AIDS HEALTHCARE SERVICE DELIVERY
Test & Treat Draft Model

**TEST AND TREAT - HEALTHCARE DELIVERY VALUE CHAIN**

**PREVENTION**
- Prevention counseling on modes of transmission on risk factors

**TESTING**
- Explaining diagnosis and implications
- HIV testing for others at risk

**TREATMENT**
- Explaining medical instructions and side effects
- Primary care clinics
- Clinic labs/Testing centers
- Food centers/ Home visits
- Initial delivery of ART

**ONGOING CARE**
- Regular primary care assessments
- Home kit
- Testing centers
- Primary care clinics
- Pharmacy
- Support groups

**MONITORING/ MANAGEMENT**
- Counseling about adherence; understanding factors for non-adherence
- Response to drugs
- Managing complications

**RISK MITIGATION & MANAGEMENT**
- Resource tracking
- ART theft from clinics

**INFORMING & ENGAGING**
- MEASURING
- ACCESSING

**PREVENTION & SCREENING**
- Connecting patient with primary care
- Identifying high-risk individuals
- Testing at-risk individuals
- Promoting appropriate risk reduction strategies
- Modifying behavioral risk factors
- Creating medical records

**DIAGNOSING**
- Formal diagnosis
- Identifying others at risk
- TB, STI screening
- Pregnancy testing, contraceptive counseling

**INITIATING ART THERAPY**
- Initiating comprehensive ART therapy
- Preparing patient for disease progression, treatment side effects
- Managing secondary infections, associated illnesses

**ART DELIVERY**
- Timing of Delivery
- Delivery method
- Frequency of healthcare visits

**ONGOING DISEASE MANAGEMENT**
- Managing effects of associated illnesses
- Managing side effects
- Determining supporting nutritional modifications
- Preparing patient for end-of-life management

**RE-ENGAGING INCONSISTENT OR LOST PATIENTS**
- Treatment cascade
- Methods to reengage
What is IMPACT

• A methodology developed to evaluate, integrate and measure usefulness of technology, innovations and/or process in HIV/AIDS healthcare service delivery

• Includes an assessment of the potential to positively impact HIV/AIDS healthcare service delivery
IMPACT

- Innovative Methods
- Critical Technology
- Re-engaging
- Maintaining
- Processes
- HRH Efficiency
Bwalia ART Clinic
Health Passport
Woman Health Profile
Bwalia ART Clinic
PIH Facility
Laboratory at Kamuzu
IMPACT
Implementation Process

Technology Assessment Model
Technology Readiness Levels for Countries
Review Technology Audit & HRH Analysis by Facility
Propose implementation of high potential IMPACT outcomes
Measure of the potential for technology to address each 90.90.90 goal
Monitor and Track Outcomes
Proposed PEPFAR Technology Readiness Level (TRL)

- Establish Technology Readiness Level (TRL) ratings
- TRL will determine the level of technology that a region can support in healthcare service delivery
  - Technology infrastructure
  - Accessibility and reliability of power, internet access and other technology enabling resources
  - Human Resources to support implementation, maintenance and sustainability
  - Degree of technology integration and acceptance
- Establish TRL’s at various levels by:
  - Country
  - Within Country
  - Industry
  - Facility
Proposed PEPFAR Technology Assessment Model

Factors to be included in Technology Assessment Model

1. Name of Technology
2. Description of use
3. Cost (US$) and (Specific Country Cost)
4. Usefulness in other healthcare needs (i.e. TB)
5. What exactly does the technology accomplish
6. Required technology infrastructure
7. Required training level for use
8. Required maintenance/calibrations and updates
9. Vendors/availability of technology
10. Best practices and case studies for use of technology
11. Expected increase in output (i.e. efficiency gain with technology)
12. Reduction in resource requirement
13. Reduction/change in HRH requirement
14. Required Technology Readiness Level for use
15. Aspect(s) of 90.90.90 that technology will support
More Innovation work to do...

• Continue integration of IMPACT
• Support reaching 90.90.90 goals
• Reaching high risk populations
Thank you!

Questions?