A Toolkit for Improving Delivery of TPT to Children and People Living with HIV: Study Results and Next Steps

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WEBINAR INTRODUCTION
Format

• One hour total
• Introduction
• Four presentations
  – Isoniazid Preventive Therapy (IPT) and Tuberculosis Preventive Therapy (TPT) background
  – Study 1: Patient-preferenced care models
  – Study 2: Mixed methods (quantitative and qualitative) study to identify predictors of IPT completion
  – Development and availability of a tool kit for roll out in other like settings
• Questions and Answers
  – Via audio and via chat
  – If there are time constraints, remaining text-based questions will be answered offline and sent with slides

This webinar is being recorded. The link will be shared with participants along with questions and answers after the webinar has concluded.
INTRODUCTION
Samson Haumba, URC eSwatini

CONTEXT
Background

• In eSwatini, URC works with the Ministry of Health and other stakeholders to provide technical assistance for scaling up provision and access to comprehensive, integrated and decentralized HIV/TB services

• URC is implementing the CDC-funded project Strengthening Local capacity to deliver sustainable quality assured Universal coverage of clinical HIV/TB services in Lubombo region and provision of central level technical assistance to SNAP in the Kingdom of eSwatini under PEPFAR, and announces a position opportunity for candidates with prerequisite skills and experience
B. To decrease the burden of TB in PLWHA

- B.1 Intensified TB case-finding
- B.2 Treatment of latent TB-infection (TB preventive therapy)
- B.3 TB infection control in health care and congregate settings
TPT Scientific Evidence

• Guidance (WHO, Stop TB Partnership)
• Individual Studies
• Results
  – **IPT reduces TB incidence, is cost effective and safe**
  – Reduce risk of TB 33-67% for up to 4 years
  – Recommended for all PLWH where TB prevalence >30%
IPT experience in Swaziland

- TB/HIV Integration in Primary care
  - 3 Is in primary care
  - Detection, management, treatment FIRST
- Intervention
  - Three health facilities: GSH/ Cabrini St Phillips, MGH, Baylor
  - Tool: TB Screening guidelines
  - Prevention flow chart
  - Recording and reporting tools
### CHALLENGES TO TPT UPSCALING

<table>
<thead>
<tr>
<th>Health System Factors</th>
<th>HCW Factors</th>
<th>Patient Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Lack of prioritization of TPT</td>
<td>▪ Knowledge and attitude towards TPT initiation and treatment monitoring</td>
<td>▪ Lack of adequate knowledge on benefits of TPT</td>
</tr>
<tr>
<td>▪ Data quality challenges (CMIS/APMR/Manual system)</td>
<td>▪ Poor TPT stock management</td>
<td>▪ Poor adherence leading to poor completion rates</td>
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<tr>
<td>▪ Inconsistent TPT commodity supply chain</td>
<td>▪ Poor documentation and reporting</td>
<td>▪ Wide scale alcohol abuse</td>
</tr>
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<td></td>
<td></td>
<td>▪ Use of traditional concoctions leading to hepatopathies</td>
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Implementation of TB Preventive Therapy

- In Swaziland, TB/HIV Collaborative activities started in 2007
- The Swaziland IPT programme started in 2009 with implementation of a six month INH regimen to be completed in 6-9 months
- **Uptake of IPT very low:**
  - < 10% of those eligible receiving IPT
  - 2014 review of IPT outcomes at 4 facilities, 32% completed a 6-month course
  
  (unpublished report, URC Swaziland).

- None of the other - even intuitive - interventions (e.g., changes in the setting/site of IPT delivery, use of quality monitoring mechanisms such as directly observed therapy (DOT) and use of lay health workers) consistently improved IPT adherence
Experience from one region in Swaziland in 2017/2018

Number of PLHIV initiating and completing IPT in 42 Health Facilities in Lubombo between...

Completion rate: 85%

5286
Initiated on IPT

4519
Completed
Evolution of TPT

• More recently, shorter and potentially more effective TPT regimens that utilize rifapentine (RPT) have been shown to be safe and effective in PLHIV, and are associated with better completion rates
• Three months of once-weekly high-dose INH (900mg) and RPT (900mg) – also known as 3HP is now included in WHO guidance
• Daily INH (300mg) and RPT (450-600mg) for one month – also known as 1HP – demonstrated similar efficacy to nine months of INH, with fewer adverse events and better completion
TPT Program Implementation

• This universal programmatic guide aims to improve IPT uptake and delivery within high TB-burden populations where IPT initiation in child contacts has been shown to be poor.

• Many programs consistently show disappointing IPT completion rates on the six/nine months INH regimens

• Only integration of TB and HIV services yielded high IPT completion rates in select settings

• A cohort study was performed in Swaziland demonstrated that high rates of IPT adherence and treatment completion among HIV-infected adults and children can be achieved and is the basis of this toolkit

• This model may improve outcomes and may be readily implemented in similar high TB/HIV burden settings, and even the new TPT regimens
Lisa Adams, Dartmouth Geisel School of Medicine
Elizabeth Talbot, Dartmouth Geisel School of Medicine

RESEARCH BACKGROUND, STUDY METHODS AND RESULTS
IPT Delivery Study: Intervention in HIV Clinics

• Patients prospectively selected (not assigned) the IPT delivery method they thought would work best for them
  – 3 delivery models determined via stakeholder and patient input
    • Routine facility-based delivery
    • Community-based delivery
    • Peer support model using Expert Client
  – Patients could switch delivery model
  – INH refills aligned with ART refills

• Healthcare worker training & routine supervision
  – Motivational interviewing techniques for clinicians
Methods – Definitions and Data

• Adherence measured as <50%, 50-80% or >80% of prescribed pills ingested
  – Pill counts
  – Self report via phone calls
  – Selected home visits

• Treatment completion
  – Completed 6 months of IPT in 9 months

• Data
  – Collected using standardized tools
  – Analyzed using Epidata, EpilInfo, Excel & STATA
Results of 908 Enrolled

- 66% females
- Median age 38 years (range 1-78 years)
- 39% urban
- 96% on ART
- IPT delivery model choice
  - Facility-Based: 797 (88%)
  - Community-Based: 111 (12%)
  - Peer Support Group: 0
IPT Treatment Outcomes

908 screened for enrollment, offered and accepted IPT

797 (88%) in FB model at enrollment

- 6 (0.8%) transferred out
  - 711 (89%) completed IPT
  - 51 (6%) stopped IPT
  - 28 (4%) LTF
  - 1 (0.1%) died

111 (12%) in CB IPT at enrollment

- 0 (0%) transferred out
  - 101 (91%) completed IPT
  - 6 (5%) stopped IPT
  - 3 (3%) LTF
  - 1 (1%) died
• Presumptive TB rare during follow-up
  – 19 screened + using symptom questionnaire
    • All ruled out TB with exam, chest x-ray, Xpert and/or culture
      – 17 resumed IPT

Conclusions

• High adherence and treatment completions rates
  – 94% - 98% had optimal adherence at first visit
  – 89% completed treatment
  – No difference between the two delivery model cohorts
• FB model most popular model: reasons?
• No cases of confirmed breakthrough TB
- Asked: *Why were they so successful?*
  - Designed a qualitative study to assess critical factors influencing adherence and treatment completion
Methods

• Mixed methods, retrospective, cross-sectional study design
• Study population
  – 150 selected stratified across delivery model, enrollment site & basic demographics
  – Since only 24 self-discontinued, focused on completers
• Survey tool
  – Semi-structured guide, face-to-face interviews by trained Swazi researchers at facilities
• Analysis
  – Thematic analysis
  – Descriptive analysis using STATA 14
Results

June - Oct 2017:
- 150 participants
- 14 excluded
  (did not recall being offered a choice)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>(%)</th>
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<tbody>
<tr>
<td>Sex: Female</td>
<td>77</td>
<td>56.6</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-17</td>
<td>22</td>
<td>16.1</td>
</tr>
<tr>
<td>18-35</td>
<td>42</td>
<td>30.8</td>
</tr>
<tr>
<td>36-49</td>
<td>47</td>
<td>34.6</td>
</tr>
<tr>
<td>≥50</td>
<td>25</td>
<td>18.3</td>
</tr>
<tr>
<td>IPT delivery model</td>
<td></td>
<td></td>
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<tr>
<td>Community-based</td>
<td>48</td>
<td>35.3</td>
</tr>
<tr>
<td>Facility-based</td>
<td>88</td>
<td>64.7</td>
</tr>
<tr>
<td>Switched between models</td>
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<td></td>
</tr>
<tr>
<td>Yes</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>No</td>
<td>125</td>
<td>92</td>
</tr>
</tbody>
</table>

Table 1. Demographics and IPT delivery model characteristics
### Table 3. Critical factors enabling IPT treatment completion

<table>
<thead>
<tr>
<th>Factor affecting IPT completion</th>
<th>IPT Delivery Model</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Facility-based</td>
<td>Community-based</td>
</tr>
<tr>
<td></td>
<td>N (88) %</td>
<td>N (48) %</td>
</tr>
<tr>
<td>Linking IPT with ART refills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>88 100</td>
<td>46 96</td>
</tr>
<tr>
<td>No</td>
<td>0 0</td>
<td>1 2</td>
</tr>
<tr>
<td>Don’t know</td>
<td>0 0</td>
<td>1 2</td>
</tr>
<tr>
<td>Being offered a choice of delivery helped me complete IPT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>75 85.2</td>
<td>47 98</td>
</tr>
<tr>
<td>No</td>
<td>4 4.5</td>
<td>1 2</td>
</tr>
<tr>
<td>Don’t know</td>
<td>9 10.2</td>
<td>0 0</td>
</tr>
<tr>
<td>I received special treatment from clinic staff compared to other patients not on IPT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>38 43.2</td>
<td>25 52.1</td>
</tr>
<tr>
<td>No</td>
<td>48 54.5</td>
<td>18 37.5</td>
</tr>
<tr>
<td>Don’t know</td>
<td>2 2.3</td>
<td>5 10.4</td>
</tr>
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</table>
Results

• Disclosure
  • 95% told someone they were in the study and receiving IPT
  • Whom did they tell?
    • Family member: 84%
    • Friend(s): 6%

• TB knowledge
  • Why motivated to be in the study and take IPT?
    • Didn’t want to get TB: 97%
    • Advised by HCW: 3%
  • Importance of taking IPT if living with HIV?
    • “Prevents TB”: 87%
    • “Live longer”: 7%
Results: 4 themes

1. **Linking ART and IPT delivery enhances uptake and completion of IPT**
   - “We are already used to taking ART” → added IPT to their “normal routine”
   - Linking refills saves time and transportation costs

2. **Having choice of IPT delivery matters**
   - Although most chose facility-based model (less stigmatizing), still valued having options
   - Community-based model preferred in rural areas

3. **Respectful education by HCWs sensitizes communities to value of IPT and TB risks**
   - Most participants were well informed of IPT risks & benefits
   - Thoughtful education cited as critical in gaining support of friends and family

4. **Disclosure empowered participants to engage with their treatment decisions**
   - Non-disclosure was associated with reports of less support, struggles with completing treatment, and a lack of motivation
Conclusions

• All 3 interventions seemed important for IPT completion
  – Aligning IPT with ART refills
  – Offering a choice
  – HCW communication, friendliness and effective patient education (related to the HCW training in motivational interviewing?)

• Disclosure common
  – Social support may have played a key role

• These interventions should be incorporated throughout eSwatini and in similar high TB/HIV burden settings

→ Need toolbox!
TOOLKIT FOR DELIVERY MODELS TO IMPROVE ISONIAZID PREVENTIVE THERAPY FOR CHILDREN AND PEOPLE LIVING WITH HIV
Purpose

Assist National Tuberculosis Programs in the planning, implementation and evaluation of the integration of IPT with their HIV services
The USAID TB CARE II Project is a cooperative agreement implemented by a wide consortium of health and development organizations.
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TOOLKIT FOR DELIVERY MODELS TO IMPROVE ISONIAZID PREVENTIVE THERAPY FOR CHILDREN AND PEOPLE LIVING WITH HIV

USAID

TB CARE II

URC

Dartmouth

GEISL SCHOOL OF MEDICINE
Audience

Stakeholders in the TB care continuum in high TB burden countries
- NTP staff
- Non-governmental TB program managers
- Facility directors
- HIV clinics
- TB clinics
- Patient advocacy groups
Patient-Centered Approach

- Methods of health promotion and preventive care that best fit the patient and are in accordance with what matters most to them
- Assume that the patient world is meaningfully different from the world of the clinician
Planning

- Readiness assessment
Planning

- Readiness assessment
- Stakeholder engagement
Planning

• Readiness assessment
• Stakeholder engagement
• Resource identification

1. Drug availability
   a. INH as a single drug, not in combination with other TB drugs
   b. sufficient quantity of INH to assure continuous supply for the anticipated number of patients
   c. quality assurance of INH in accordance with local pharmaceutical supply procedures
   d. delivery to local clinics or storage at local/regional facilities

2. Human resources
   a. national lead or point person
   b. dedicated committee or bureau
   c. regional lead
   d. local lead
   e. local clinical staff
   f. IPT pharmacist
   g. trainers
   h. data collectors
   i. data analyst

3. Facilities
   a. clinic space to enroll patients
   b. clinic space to perform exam to rule out TB disease
Planning

• Readiness assessment
• Stakeholder engagement
• Resource identification
• Protocol development

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* Every adult and adolescent should be evaluated for eligibility to receive ART. Infection control measures should be prioritized to reduce M. tuberculosis transmission in all settings that provide care.
* Chest radiography can be done if available, but is not required to classify patients into TB and non-TB groups. In high HIV prevalence settings with a high TB prevalence among people living with HIV (e.g., greater than 10%), strong consideration must be given to adding other sensitive investigations.
* Contraindications include; active hepatitis (acute or chronic), regular and heavy alcohol consumption, and symptoms of peripheral neuropathy. Past history of TB and current pregnancy should not be contraindications for starting IPT. Although not a requirement for initiating IPT, TST may be done as a part of eligibility screening in some settings.
* Investigations for TB should be done in accordance with existing national guidelines.
Planning

- Readiness assessment
- Stakeholder engagement
- Resource identification
- Protocol development
- Model definition

1. Routine clinic-based delivery (traditional approach) One way is that you come into this clinic each month for 6 months so that we can check to see if you are having any symptoms and then we will provide your INH refill. This is the traditional method.

2. Use of community health workers for home or community-based delivery (A Community Health Worker (CHW) approach) Another way is that you review any symptoms you are having with your community healthcare worker and then that person will give you your INH at your home or another public place you agree to. The public place might be a shop, a school, a church or an outdoor location.

3. Use of a community-based treatment group with rotating medication pick-ups. (Peer support approach) You can pick a friend, neighbor, or family member who is also taking IPT and you can alternate picking up each other’s INH from the clinic.
Training

• Knowledge example
Training

- Knowledge example
- Knowledge templates
Training

- Knowledge example
- Knowledge templates
- Motivational Interviewing
Training

- Knowledge example
- Knowledge templates
- Motivational Interviewing
- Video
Launch

- Pick a meaningful day
- Invite dignitaries
- Include patient spokesperson
- Press conference with focused message
- Promotional material
M&E

• Data collection form
M&E

- Data collection form
- M&E plan
TOOLKIT FOR DELIVERY MODELS
TO IMPROVE ISONIAZID PREVENTIVE THERAPY FOR CHILDREN AND PEOPLE LIVING WITH HIV

URC
University Research Co., LLC

Dartmouth
Geisel School of Medicine

QUESTIONS AND ANSWERS
Questions and Answers

• Has research being able to show benefit of repeating TPT after completion and after the four-year protection period? from Maxime, KI
  – This was answered real time, using the example of the Botswana experience (https://www.Ncbi.Nlm.Nih.Gov/pubmed/21492926)

• Very interesting about low self-discontinuation rates. All rests on good explanations and messaging. In SA need to focus on clinician and counsellor coverage of this much more.
  – We completely agree. It is our sincere hope that the availability of the motivational interviewing video and materials in the tool box might help with this.
Questions and Answers

• How did the NTP and the HIV/AIDS Control Programmes collaborate?
  – We had representatives at the table from the very early planning stages. Selected
    representatives then participated in initial stakeholder meetings and regular, formal
    update meetings that were provided at critical milestones throughout the project
    and at the conclusion. Results were also shared at a ministry of health research
    conference in a special session that was well attended by both programmes.

• Can you comment on how your results, particularly in terms of
  acceptance and patient focused care, can be applied to shorter TPT
  regimens e.g. 3HP?
  – We believe that the process of asking the patient how they want to receive their
    care may be pivotal to ownership, commitment and empowerment. So if offering
    3hp, it may be exactly analogous in terms of facility-based or community-based.
Questions and Answers

- for those who completed therapy, were there any who developed TB within 4 months of completion, if so was there any INH Monoresistance
  - We did not monitor patients beyond the duration of the IPT course. Published data, including a systematic review by Balcells et al (in Emerging Infectious Disease, 2006), do not show an increased risk of isoniazid-monoresistant TB following IPT.

- How many of those patients reported side effects of INH. they were given 2 to 3 months of INH and had a follow up in 2 to 3 months
  - Among the original 908 who received IPT, 57 patients (6%) discontinued ipt. The reasons were as follows: 29 due to adverse drug reactions (and were discontinued by their provider), 7 due to pill burden, 3 due to poor adherence, 3 due to the erratic INH supply, and 15 for other/various reasons (e.g., Pregnancy, incarceration). Of note, one adult developed serious hepatotoxicity that required hospitalized but this patient experienced a full recovery. Patients were seen in follow up based on their art follow up schedule which for most patients was every 2-3 months.
Questions and Answers

• Could you please link us to the lancet article mentioned i.e. longer better than shorter for INH? Thanks
  – The article can be found at: https://www.ncbi.nlm.nih.gov/pubmed/21492926
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