



# Technology Intervention Framework: A practice-based approach to understanding digital health interventions

Community Working Session #1

14 September 2023

**Welcome! Please introduce yourself in the chat.**



HIV Treatment Continuity  
Technology Intervention  
Framework (TIF) ▼

Outside the Visit ▶

During the Visit ▶

Missed Appointment  
Interventions ▶

Patient Identity Management  
Toolkit ▶

How to Provide Feedback and Input  
on the TIF and Toolkit

# HIV Treatment Continuity Technology Intervention Framework (TIF)



v0.3

⚠ This copy is a work in progress. The interactions described are a moment in time snapshot of the interventions that are being used to help HIV patients stay in treatment. To provide input or feedback see [How to Provide Feedback and Input on the TIF and Toolkit](#)

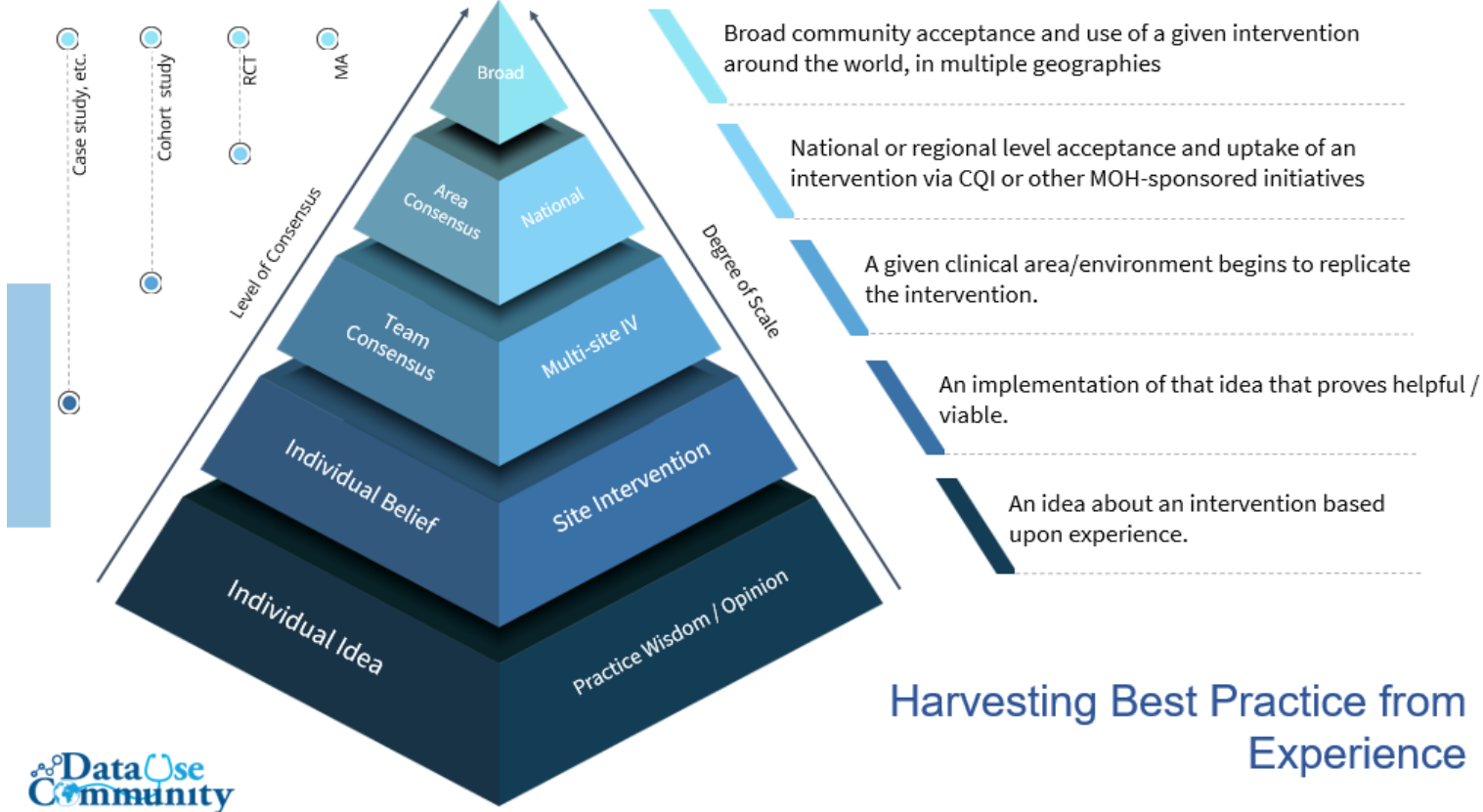
## HIV TIF Framework Overview and Structure

The TIF was created as a way to describe the technology interventions for HIV retention in care. The TIF is a snapshot of the intervention in time as described. The framework for cataloging interventions is intended to be applicable to broader topics.



# Why are we here?

- Kickstart a series of community working sessions to iteratively refine the TIF with community input
  - Share, Engage, Learn!



# Background: Technology Intervention Framework (TIF)

- **The Situation**: Multiple technology-based interventions and approaches for a given health issue
  - Since 2021, 25 DUC community events showcasing various digital health interventions supporting HIV treatment continuity
- **The Problem**: Difficult to understand the implementation considerations and impact of these interventions due to lack of shared language/perspective of assessing technical attributes and capabilities
- **The Solution**: Technology Intervention Framework (TIF) offers a practice-based approach to bring together different pieces via shared understanding and common language to describe implementer approaches/technical attributes for addressing the same health challenge

# What is the TIF?

- Offers decision-makers a framework to examine the **intersection of data exchange and clinical/public health touchpoints, and the technology interventions** available to support this.
  - Touchpoints can be a point of interaction between parties involved in care delivery at the individual- and systems-level
    - > Individual → Patient and Health System (e.g. patient information collected via EMR during visit registration)
    - > System → System and Health System (e.g. facility-level EMR transmitting data to the national data repository)
- Surfaces common digital health interventions/technical attributes for the same health challenge
- Provides practice-based approach for assessing digital health interventions – reducing time and resources needed to assess impact and technical pain points
  - Support peer-to-peer learning via sharing of best practices and lessons learned using common language to describe technical approaches



# Use Case #1: HIV Treatment Continuity

**Before Interaction**

- [Pre-Appointment Support](#)
- [Population-Based Scheduling](#)
- [Congestion Redistribution](#)

**During Interaction**

- [Proactive Adherence Counseling](#)
- [Reactive Adherence Counseling](#)
- [Visit Management](#)

**After Interaction**

- [Anticipatory Guidance](#)



<b>Data Indicators of Leaks</b>	<b>Potential Causes</b>
<ul style="list-style-type: none"> <li>• Missed Appointments</li> <li>• Missed Dispensing</li> <li>• Clinic Wait Times</li> </ul>	<ul style="list-style-type: none"> <li>• Silent Transfers</li> <li>• Patient Deceased</li> <li>• Clinic Wait Times</li> <li>• Poor Care Quality</li> <li>• Low Patient Satisfaction</li> <li>• Data Quality Issues/Gaps</li> </ul>

**Missed Interaction**

- [Missed Appointment Reminder](#)
- [Intensive Outreach](#)
- [Targeted Adherence Support](#)

# Knowledge Sharing: TIF Repository of Digital Health Interventions

- Scheduling Interventions >
- Congestion Redistribution
- Pooling Patient Data >
- Anticipatory Guidance
- During the Visit v
- Proactive Adherence >
- Counseling Interventions
- Reactive Adherence >
- Counseling Interventions
- Visit Management >
- Interventions
- Missed Appointment >
- Interventions
- Missed Appointment >
- Reminder
- Two-way Texting Patient reminders and tracking (Zimbabwe)**
- Patient Reminders and Tracking (Kenya)
- EMR-ART Missed Appointment Reminder (Ethiopia)
- Person-Centered Public Health for HIV Treatment (PCPH)
- Missed Appointment Management (Western Kenya)
- Rwanda Biomedical Center EMR (RBC EMR)
- Intensive Outreach >
- Intervention
- Targeted Adherence >
- Support Interventions
- Patient Identity Management >
- Toolkit
- How to Provide Feedback and Input on the TIF and Toolkit

## Two-way Texting Patient reminders and tracking (Zimbabwe)

iTech and Medic Mobile, Zimbabwe (January 2021)

[Link to presentation.](#)

Countries:  Zimbabwe


### Intervention Description

Two-way texting (2WT) between patients and providers with embedded alerts, referrals, and healthcare worker tasks improves patient retention and data quality. 2wT assists patients by sending personalized appointment reminders and missed appointment alerts, referring swiftly for tracing. 2wT also facilitates transfer reporting and proactive visit rescheduling, reducing unnecessary tracing and improving data quality.

Presenter: Caryl Feldacker, Phiona Marongwe (I-TECH and Medic)

### Intervention Details

 Data Elements	Appointment Date (history) Appointment Date (scheduled (prospective)) Confirmed visit Date Demographic details Phone contact details Tracing outcomes (Lost to Follow Up, dead, treatment interruption, etc.) Reason for Missed Appointment
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 Evidence	From related 2wT system with CHT: Babigumira, J. et al (2020). "Cost-effectiveness analysis of two-way texting for post-operative follow-up in Zimbabwe's voluntary medical male circumcision program." PLoS one 15(9): e0239915. Feldacker, C. et al (2020). "Usability and acceptability of a two-way texting intervention for post-operative follow-up for voluntary medical male circumcision in Zimbabwe." PLOS ONE 15(6): e0233234. Feldacker, C. et al (2020). "Reducing Provider Workload While Preserving Patient Safety: A Randomized Control Trial Using 2-
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- ON THIS PAGE
- Countries: Zimbabwe
  - Intervention Description

Additional interventions documented found here: TIF GitBook Page: [HIV Treatment Continuity Technology Intervention Framework \(TIF\) - Data Use Community \(ohie.org\)](#)



# What is the TIF?

- **What the TIF is**

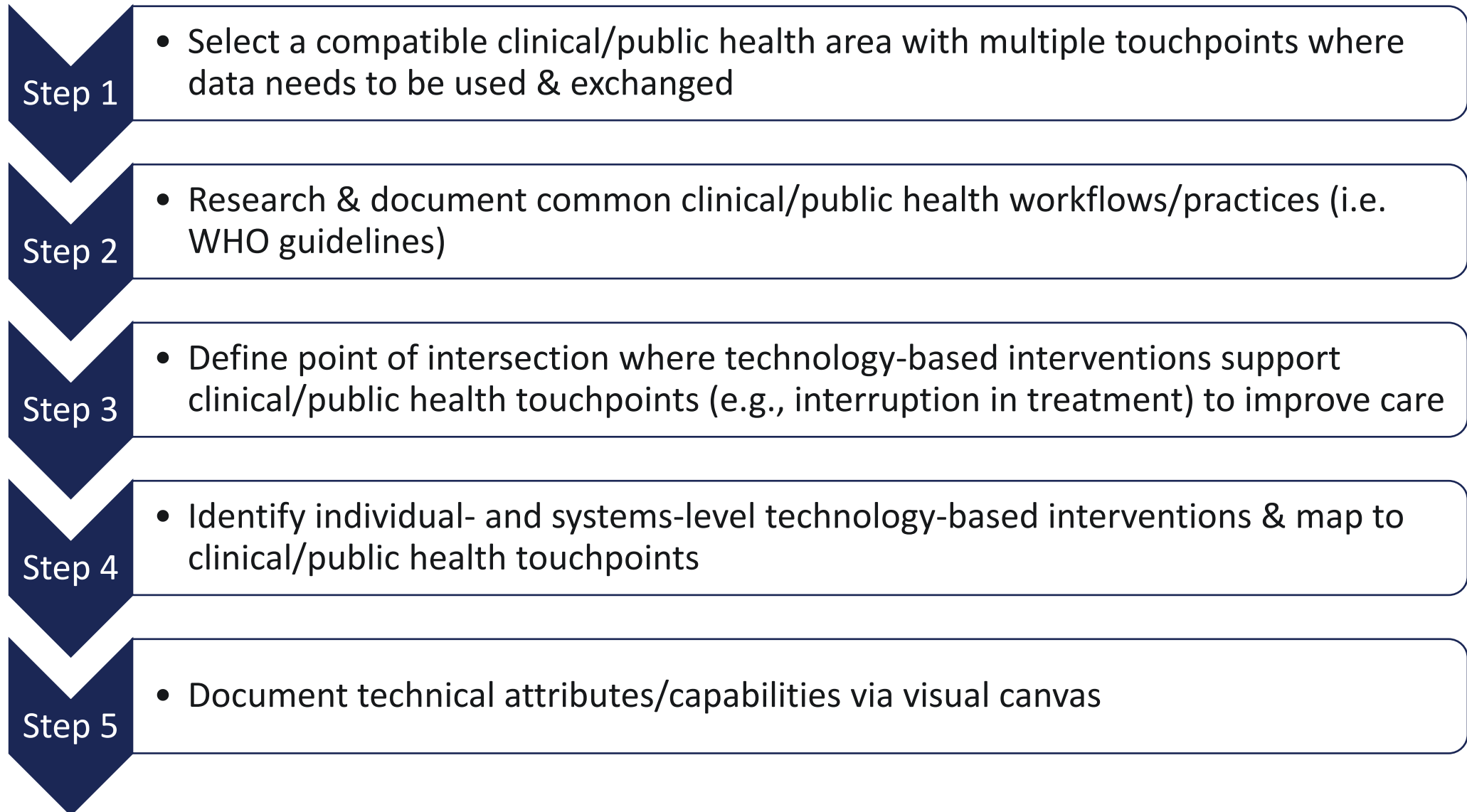
- A tool for surfacing common digital health interventions for a given health challenge
- A tool for comparing and contrasting data/digital interventions
- Framework for understanding implementer approaches through agreeing on a common language to communicate/examine technology interventions
- Resource to assess trends and synthesizing practice-based evidence

- **What the TIF is not**








- A tool that describes the entire clinical cascade
- Formal conceptual model or an academic model
- Resource that describes data/information flows
- Inclusive of all interventions



# TIF Methodology





<p><b>Data Elements</b> </p> <p>Data elements required to support the intervention.</p> <p>May include data elements produced by the intervention.</p>	<p><b>Evidence</b> </p> <p>Information about effectiveness, costs...</p>	<p><b>Technology &amp; Interoperability</b> </p> <p>-Type of digital health asset it's implemented in</p> <p>Infrastructure required to support the intervention</p> <p>-Which systems it needs to interact with</p> <p>-Standards required</p>	<p><b>Calculations/Algorithms</b> </p> <p>Information about how specific data elements are calculated (for example, a patient determined to be "low-risk" for X)</p>	<p><b>Factors to Reach Scale</b> </p> <ul style="list-style-type: none"> <li>- Current scale/status (eg # of sites, messages, etc)</li> <li>- Challenges for reaching scale</li> </ul>
<p><b>Implementation Considerations</b> </p> <ul style="list-style-type: none"> <li>- Description of the optimal environment</li> <li>- Context needed to be successful</li> <li>- Potential pitfalls</li> <li>- Technology penetration</li> <li>- Language considerations</li> <li>- Workforce training needed</li> </ul>		<p><b>Governance Considerations</b> </p> <ul style="list-style-type: none"> <li>- Privacy &amp; Security concerns/processes needed</li> <li>- Description of consent needed</li> <li>- Data use/sharing agreements</li> </ul>		

Questions?