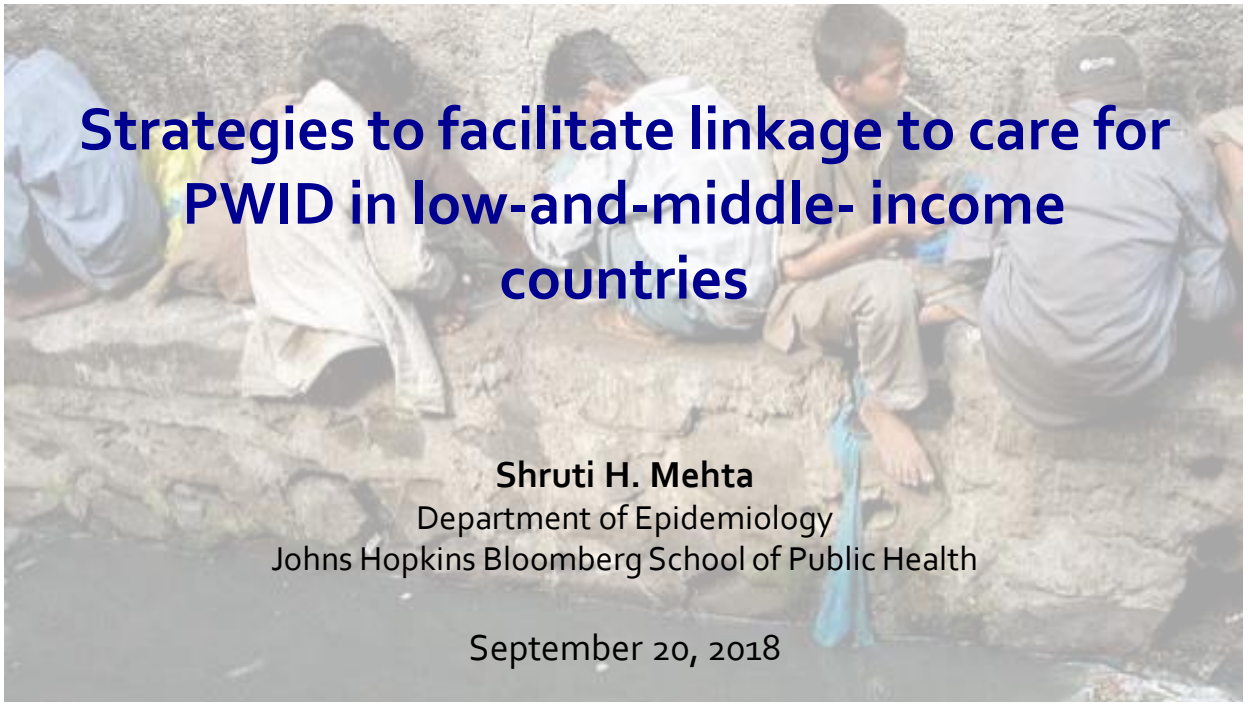
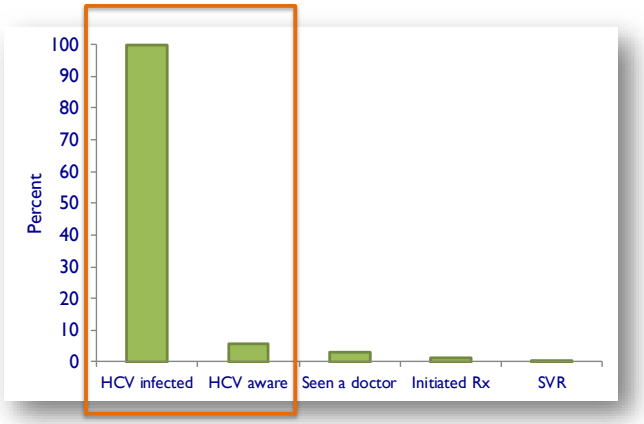


Strategies to facilitate linkage to care for PWID in low-and-middle- income countries

Shruti H. Mehta
Department of Epidemiology
Johns Hopkins Bloomberg School of Public Health

September 20, 2018

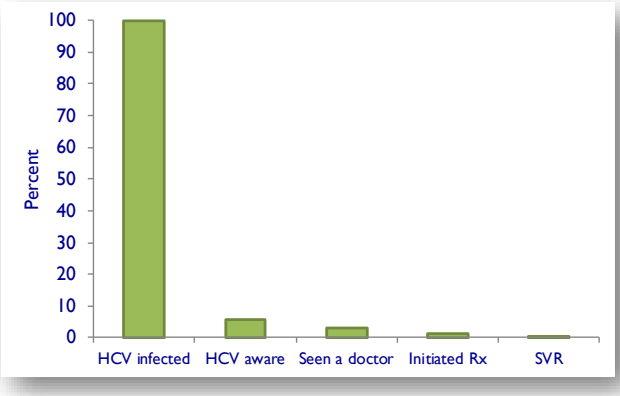
In most LMICs, the biggest drop off in the HCV care continuum is at diagnosis…



5,777 HCV-infected PWID from 15 cities across India (community-based sample)

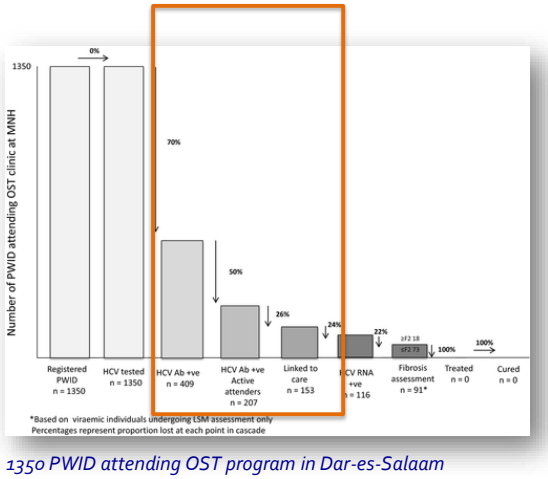
Solomon SS et al, Lancet ID 2015

….but as testing efforts expand globally, linkage to care will be the next largest drop off



5,777 HCV-infected PWID from 15 cities across India (community-based sample)

Solomon SS et al, Lancet ID 2015



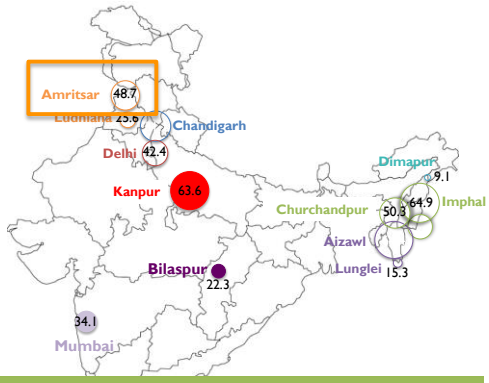
1350 PWID attending OST program in Dar-es-Salaam

Mohamed Z et al, Journal Vir Hep 2018

The importance of monitoring

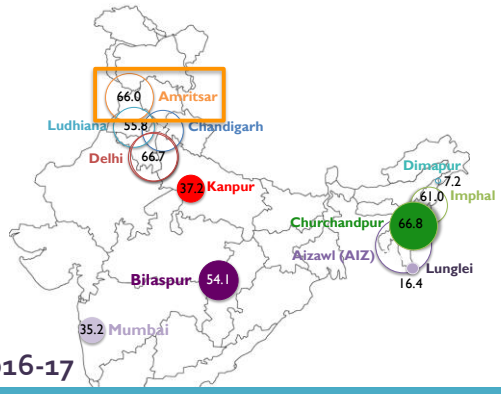
- Understanding **gaps in the continuum** will help to drive programs
- Need **community-based samples** – sampling from care / fixed venues will inflate estimates
  - Those at highest risk not using any services
  - Use sampling methods for identifying hidden populations (respondent-driven sampling)
- Leverage **HIV-focused efforts** where possible
  - No reason to re-invent the wheel
  - Conserve resources
- Epidemics are **diverse** even within a single country….and they *change over **time***

Diverse, changing epidemics within a single country



2013

	Imphal	Amritsar	Kanpur
Drugs injected prior 6 months			
- Heroin	98.1	35.1	14.9
- Buprenorphine	0.3	64.6	67.2
- Prescription painkillers	1.5	1.2	43.4
History of ever HCV test	16.5	9.2	0.2
Used OAT in prior 6 months	15.3	36.8	1.6



2016-17

	Imphal	Amritsar	Kanpur
Drugs injected prior 6 months			
- Heroin	82.7	87.6	28.4
- Buprenorphine	0	36.4	72.4
- Prescription painkillers	0.5	12.0	8.1
History of ever HCV test	52.7	28.0	0.9
Used OAT in prior 6 months	37.5	36.9	3.1

The importance of monitoring

- Understanding **gaps in the continuum** will help to drive programs
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  - Those at highest risk not using any services
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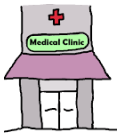
- Epidemics are **diverse** even within a single country….and they *change over **time***

Overcoming barriers for PWID in LMICs: *Structural*



Challenge	Opportunity
• Do not have access to the latest DAAs	• Generic medications available and CHEAP!
• Limited health insurance programs / unregulated private sector	• Government programs for related diseases (HIV, TB)
• Limited laboratory infrastructure	• Gene Xpert for HIV, TB
• Harm reduction availability uneven	• Community-based programs can be leveraged

Interventions for PWID in LMICs: *Structural*

Co-location / leverage existing programs	• **Integrate** HCV testing and treatment with other services (OAT programs, SSP, HIV care programs, TB, prisons) • Simplify **diagnostic testing /** monitoring

Integration with HIV programs: Ukraine example

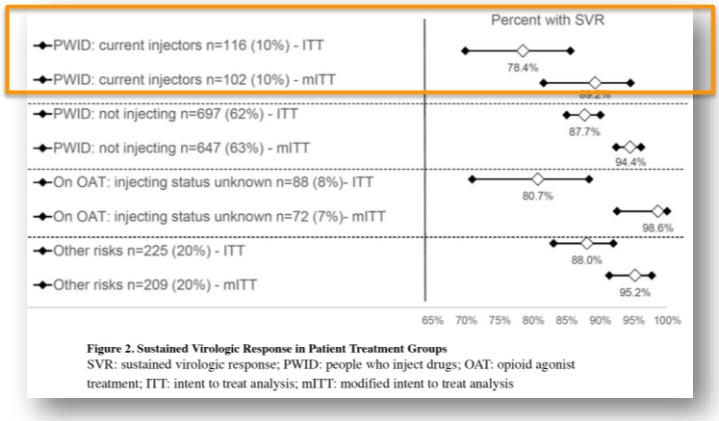


Figure 2. Sustained Virologic Response in Patient Treatment Groups
SVR: sustained virologic response; PWID: people who inject drugs; OAT: opioid agonist treatment; ITT: intent to treat analysis; mITT: modified intent to treat analysis

- HCV treatment scaled up in 16 locations primarily through **NGOs delivering HIV care/treatment**
- **Community-based** approach
- **Multidisciplinary team** delivering care: physicians, nurses, social workers
- Program **did not** reach many **active injectors**

Mazhnaya et al *Int J Drug Policy* 2017

Integration with OAT and other HIV prevention/treatment services: India example

TB Testing & Treatment
Symptom screen and sputum collection on-site; Testing and treatment from DMC/DOTS centers

General medical care: Glucose screening, blood pressure monitoring, doctor available for general health problems

HCT: rapid testing performed on-site; positive results confirmed at govt center

ART: delivered through a link model (ARVs provided by government but peer health worker picks up meds so clients can receive directly from ICC)

Syringe services
Field-based & on-site

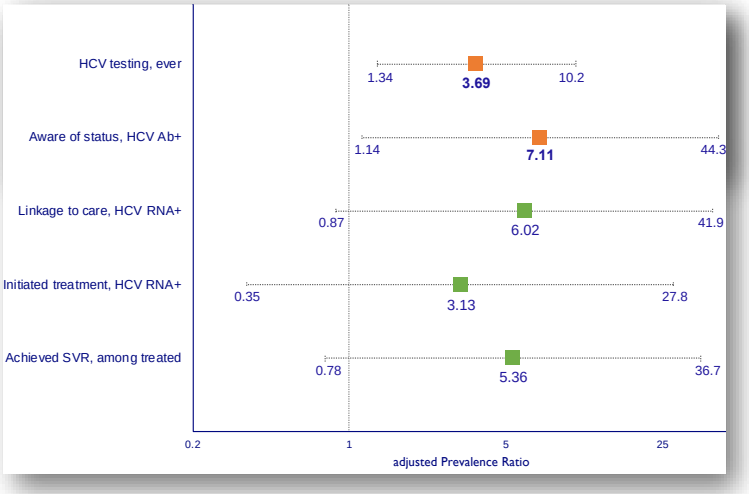
STI syndromic management
Government sponsored

Condoms

Counseling: Individual & group/ substance use, alcohol, adherence, couples, family etc

HCV testing: Rapid on-site HCV testing

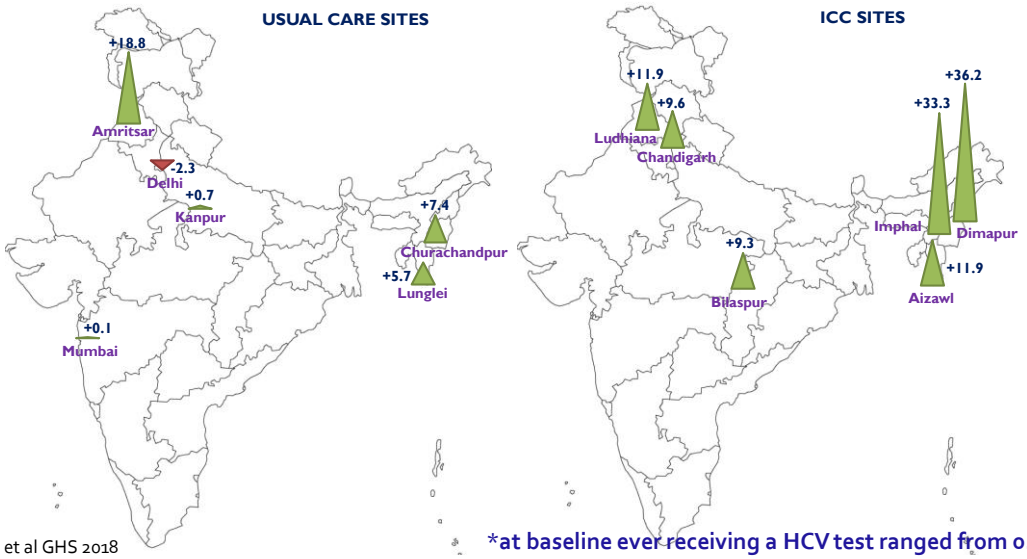
1. Integration of HCV testing improves 1st step of the care continuum (awareness) but need MORE



- **Significant impact** on community HCV testing and **awareness**
- **Modest** impact on **linkage** to HCV care, **treatment uptake, cure**
- Need **on-site** HCV treatment, other strategies (**peers, incentives**) for linkage

Solomon SS et al GHS 2018

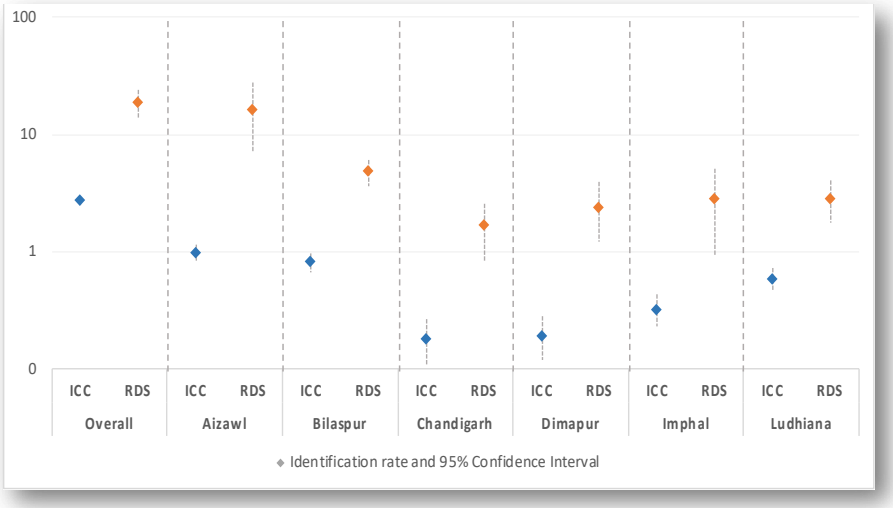
2. Impact of integrating HCV testing with HIV/harm reduction services depends on other factors



Solomon SS et al GHS 2018

*at baseline ever receiving a HCV test ranged from 0.2 to 28%

3. Integrating services on its own will not be enough to reach everyone (combine with network-based approaches)



- **Network-based referral strategy** with modest compensation more efficient at identifying PWID unaware of status than venue-based strategy
- **Highest risk, disengaged** PWID more often reached by network-based strategy

McFall AM et al IAS 2018

Overcoming barriers for PWID in LMICs: *Provider*

Challenge	Opportunity
• Do not have access to the latest DAAs	• Generic medications available and CHEAP!
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• Harm reduction availability uneven	• Community-based programs can be leveraged

• Training is limited; no continuing medical education	• Labor is cheap (the role of peer/community health workers)

Interventions for PWID in LMICs: *Provider*

Co-location / leverage existing programs

- **Integrate** HCV testing and treatment with other services (OAT programs, SSP, HIV care programs, TB, prisons)
- Simplify **diagnostic testing** / monitoring

Task shifting

- **Telemedicine** to link specialists to primary / community health care settings
- **Community health worker** - led models

ECHO program in Punjab, India

- **HCV treatment program in Punjab, India**
  - Universal treatment supported by Punjab government
  - Develop standardized algorithms for treatment:
  - Developed by medical gastroenterologists but being delivered via district hospitals with telemedicine support (ECHO)
  - ~50,000 patients treated for HCV with SVR~93%
- General population programs **will not reach** many PWID
  - In Ludhiana, Punjab, 1,197 HCV antibody positive PWID receiving care in an integrated care center → **<10 linked to care**

The role of telemedicine / mHEALTH in LMICs

- ECHO-like programs need to be expanded to **different** types of care settings: OAT clinics, HIV clinics, c**ommunity-based** settings
  - Find where PWID are accessing services and implement programs there = community buy-in
- Other mHealth strategies require even **less infrastructure**
  - Peer / community health workers with smart phones and tailored software
  - WhatsApp groups to support field-based treatment

Overcoming barriers for PWID in LMICs: *Patient*

Challenge	Opportunity
• Do not have access to the latest DAAs	• Generic medications available and CHEAP!
• Limited health insurance programs / unregulated private sector	• Government programs for related diseases (HIV, TB)
• Limited laboratory infrastructure	• Gene Xpert for HIV, TB
• Harm reduction availability uneven	• Community-based programs can be leveraged
• Training is limited; no continuing medical education	• Labor is cheap (the role of peer/community health workers)
• Poverty / daily wage earners	• Minimal incentive may be used to support transportation, lost wages
• Homelessness / instability	• Good mobile phone penetration, data cheap
• Substance use	• Family support may play an important role

Interventions for PWID in LMICs: *Patient*

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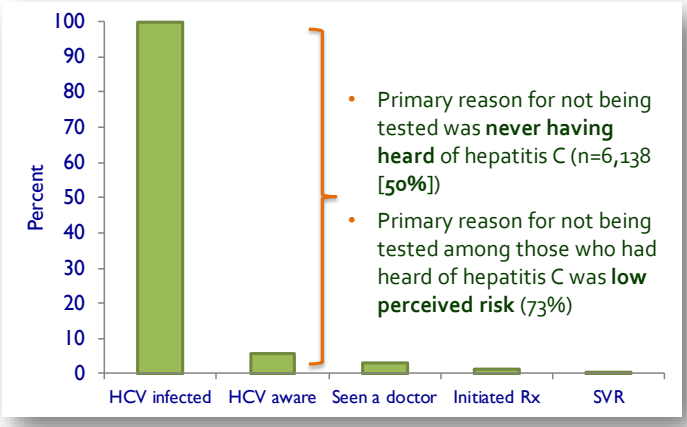
Increase Demand / Support

- **Education** / literacy

Education is a critical first step to generate demand…



5,777 HCV-infected PWID from 15 cities across India (community-based sample)

- Primary **patient-level barriers** to HCV treatment scale up for PWID in Ukraine
  - Expensive diagnostic testing
  - Costs of commuting to clinics
  - **Myths about low effectiveness of new therapies**
  - **Likelihood of fatality and adverse events**
  - **Fears of being experimented on**

Solomon SS et al, Lancet ID 2015; Mazhnaya et al *Int J Drug Policy* 2017

Interventions for PWID in LMICs: *Patient*

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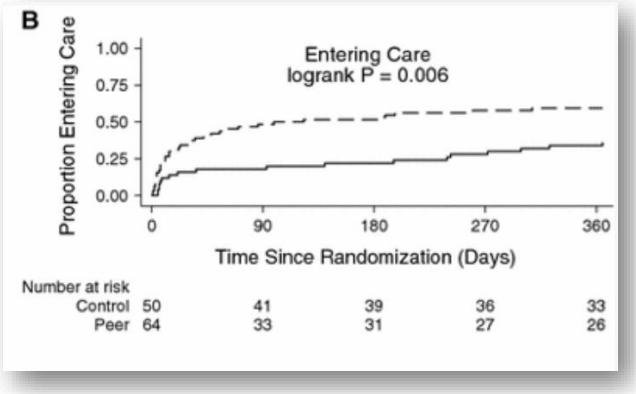
Increase Demand / Support

- **Education** / literacy
- **Peer/ community health worker** facilitated referral / navigation
- **Incentives**

PWID will need additional support

Impact of peer health workers on HIV linkage in Rakai, Uganda

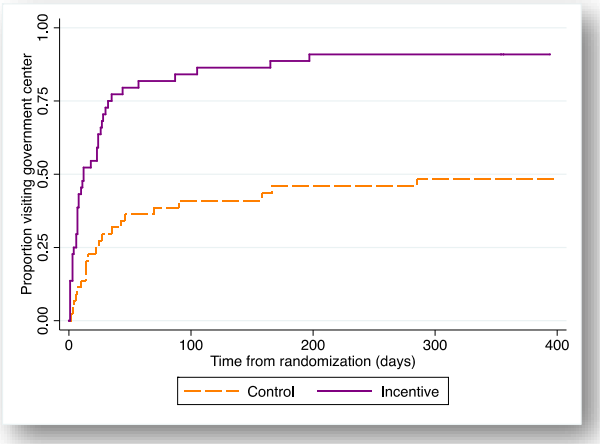


- Peers make visits to client's home or another location every **2 weeks-1 month**
  - Assessment, Support, Access
- Peers provided with **mobile phone**
- 1 peer to **~20 clients**
- Peers paid **~10 USD / month** and a transport stipend (~1 USD per client visited)

Chang LW et al AIDS and Behavior 2015

PWID will need additional support

Impact of modest incentive on HIV linkage among PWID in Chennai, India



- 200 INR (~4 USD – **daily wage** for PWID in India)
- **Voucher incentives for ART initiation**
  - 200 INR (~4 USD) for ART initiation and refills (monthly)
  - 400 INR (~8 USD) for viral suppression (semi-annual)
  - Vouchers could be traded for food/household items
- **Significant** impact on **linkage to HIV care** (government center)

Solomon SS et al *Clin Infect Dis* 2014

Interventions for PWID in LMICs

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Increase Demand / Support

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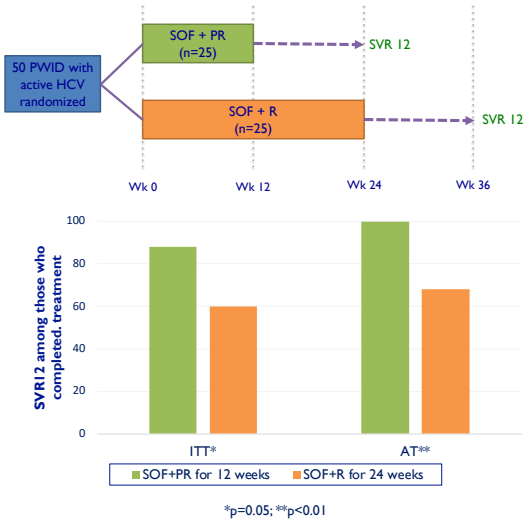
Field-based services

- Deliver testing and treatment by **mobile / field-based** approaches

Field-based treatment using directly observed therapy



Solomon SS et al, J Viral Hepat 2018

Summary

- We need to generate an **evidence-base** for which HCV interventions work and how they need to be tailored in LMIC settings
- **Integration of HCV services** with other HIV and harm reduction services is likely an important first step
- **Combination strategies** will be most successful
- Strategies need to consider the **local epidemic, existing programs** and **population needs** (community partnership is critical)
- Rigorous **monitoring** needs to be a component of any strategy

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