Is hepatitis C elimination a possibility in resource constrained settings? A case study from Myanmar

Associate Professor Mark Stoové
Centre for Population Health, Burnet Institute
Is hepatitis C elimination a possibility in Myanmar?
Is hepatitis C elimination a possibility in Myanmar?

Nuh!

(in the short to medium term at least)
• $$$ - health infrastructure, drug costs

• Priority disease - historical focus HIV, TB, malaria by government, INGOs & donors

• Local health priorities and practices

• Coverage and acceptability of harm reduction
Myanmar at a glance

Geographically the largest country on mainland SEA
• 52 million people
• 70% rural

Maternal mortality rate
• 200/100,000

Infant mortality rate
• 43/1,000
Myanmar at a glance

Figure 1. HIV Prevalence among population groups in Myanmar, 2015

HIV prevalence among populations in Myanmar

<table>
<thead>
<tr>
<th>Group</th>
<th>HIV Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FWID</td>
<td>28.5</td>
</tr>
<tr>
<td>FSW</td>
<td>14.6</td>
</tr>
<tr>
<td>MSM</td>
<td>11.6</td>
</tr>
<tr>
<td>Adult Male (15+)</td>
<td>0.81</td>
</tr>
<tr>
<td>Adult Female (15+)</td>
<td>0.40</td>
</tr>
<tr>
<td>Total Adult (15+)</td>
<td>0.59</td>
</tr>
</tbody>
</table>

Sources: AEM model prevalence based on IBBS (FWID 2014, FSW & MSM 2015) and HSS
Myanmar at a glance

Hepatitis C prevalence estimates – general populations

• General population surveys
  – 2.5% to 26.2% (2000-2005)

• Blood donors
  – 3.1% to 10.1% (1992-2000)

• Antenatal care
  – 1.2% (2012)
Myanmar at a glance

Prevalence estimates – Key Affected Populations

• People who inject drugs (PWID)
  – 66.3% to 93.5%

• Multiple transfusion recipients
  – 15.3%

• HIV+ MSM (2014)
  – 5.7%
  – cf 59.7% in HIV+ PWID
## Myanmar at a glance

### Prevalence estimates – Proportion anti-HCV+ at Burnet Institute Drop in Centres - 13,369 unique clients, 2015

<table>
<thead>
<tr>
<th></th>
<th>Thingangyun</th>
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<th>Mandalay</th>
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<tbody>
<tr>
<td><strong>HIV</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% tested</td>
<td>29.4</td>
<td>23.0</td>
<td>40.0</td>
<td>32.7</td>
<td>51.7</td>
</tr>
<tr>
<td>% positive</td>
<td>13.4</td>
<td>9.1</td>
<td>7.2</td>
<td>5.9</td>
<td>11.4</td>
</tr>
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<td><strong>HCV</strong></td>
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<tr>
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<td>8.4</td>
<td>2.1</td>
<td>3.3</td>
<td>3.7</td>
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<tr>
<td>% positive</td>
<td>80.6</td>
<td>70.1</td>
<td>26.2</td>
<td>26.0</td>
<td>46.8</td>
</tr>
<tr>
<td># co-infected</td>
<td>57 (299)</td>
<td>17 (129)</td>
<td>4 (27)</td>
<td>1 (13)</td>
<td>5 (37)</td>
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Myanmar at a glance

Largest poppy producer outside Afghanistan

Part of the Golden Triangle

Shan State and Kachin State

2 billion dollars a year

83,000 PWID

~50,000+ active PWID living with HCV

(+ prevalent cases in other populations)
Barriers to HCV prevention in resource constrained settings like Myanmar

- Legislative
- Lack of priority attention
  - Local priorities and strategic plans
  - International donors (e.g., HIV, TB, malaria)
  - $$$
- Transitioning of health systems – fragmentation between government and NGO services
- Patchy coverage of harm reduction services
- Other service access
- Stigma of disease and risk behaviour
Opportunities for HCV prevention in resource constrained settings like Myanmar

- Changing policy, practice and legislation/policing practices
- Health systems decentralisation
  - Trust in NGOs to control and deliver services
- GFATM dispersement through local Ministry of Health
- International transition from MDGs to SDG
  - MDG single disease and/or priority population focus (e.g., HIV, TB, malaria, maternal health)
  - SDGs more general focus on diseases and/or health systems (e.g., end epidemics by 2030)
- Country-specific negotiations of DAA pricing
Target generic price of sofosbuvir (12 weeks)

- **Cost of API = $1,094/kg**
- **API per 12 weeks = $37**
- **API needed per person = 34g (400mg x 84 days)**
- **Formulation + excipients = $0.04 per pill**
- **Formulated drug = $40**
- **Packaging = $0.35/month**
- **Packaged drug = $41**
- **Profit margin = 50%**
- **Final generic price = $62**
Target generic price of daclatasvir (12 weeks)

Cost of API = $998/kg

API per 12 weeks = $5

API needed per person = 5g (60mg x 84 days)

Formulation + excipients = $0.04 per pill

Formulated drug = $8

Packaging = $0.35/month

Packaged drug = $9

Profit margin = 50%

Final generic price = $14

Gotham D, Barber M, Fortunak J, Pozniak A, Hill A.
Abstract number A-792-0516-01639, presented at AIDS2016, Durban.
Hepatitis C Elimination in Myanmar
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Harm Reduction Targeting PWID in Myanmar NSP

- 2014 – 2015, increased from 167 to 223 syringes per year per PWID
  (WHO recommend 200 syringes per PWID per year)

Harm Reduction Targeting PWID in Myanmar

NSP

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Distribution of drop-in-centres by township in 2014

DIC
Township with
Existing DIC
New DIC during 2014

Burnet Institute
Harm Reduction Targeting PWID in Myanmar

NSP

Burnet Institute Myanmar – 5 DiCs
- Fixed site needle and syringe program
- Peer outreach
  - NSP
  - Harm reduction/sexual health information
- A place for clients to relax
- Clinical Services
  - HIV, syphilis, HCV & HBV VCT
  - Basic health care
  - TB screening
- Counselling services
  - HIV, HBV, HCV
  - MMT referral & counselling
Harm Reduction Targeting PWID in Myanmar

OST

Barriers

- Remains largely government controlled
- Not low threshold:
  - Limited take away
  - Initiation centralised and monitored
- Poor/inconsistent coverage
  - Barrier to integrated care

Hepatitis C Elimination in Myanmar
Laboratory capacity to support testing and care of hepatitis C in Myanmar

• Three systems of laboratories
  – Government
  – NGO
  – Private sector

• Increasing general capacity within government and NGO sector
  – Hepatitis-related laboratory capacity extremely limited

• Private sector can do a wide range of tests
  – No regulation
  – Unaffordable for most
  – No government or external body controlling or monitoring quality
Laboratory capacity to support testing and care of hepatitis C in Myanmar

• Diagnosis is normally limited to lab-based RPOC Ab tests
  – Not present in all hospital laboratories
  – Not present below hospital level
  – Not available at urban, rural health centres or sub-centres

• National Health Laboratory (Yangon)
  – Real time PCR for HBV diagnosis
  – One 4 module machine for HCV diagnosis
  – Molecular diagnosis is not a routine test at this stage

• Top-level specialist hospitals have Fibroscan (or planning to get it)
• Otherwise, the APRI score is used to stage disease

• No national diagnostic algorithm for HBV and HCV
Capacity in the NGO sector to support testing and care of hepatitis C in Myanmar

GFATM & 3MDG supported sites have some access to HBV and HCV RPOC tests for key population groups

- **MSF (Holland and Swiss)**
  - RPOC ab tests to screen for HCV and HBV
  - Genexpert in two sites (Yangon and Dawei)
  - Fibroscan in Yangon

- **Medical Action Myanmar**
  - RPOC Ab tests for HCV and HBV
  - Genexpert (but are not yet using it for HCV)

- **Burnet Institute**
  - RPOC ab tests for HCV and HBV in all sites
  - Plans for Genexpert at one site (Yangon)
  - No plans for fibroscan
Capacity in the NGO sector to support testing and care of hepatitis C in Myanmar

Local and INGO clinical capacity exists

• Requires:
  – $$$
  – Compassionate access and pricing of DAAs
  – Shifts in priorities (e.g., HIV, HIV/HCV co-infection)
  – Cultural shift
    • how health services can be provided
    • who can provide them
    • who they can be provided to
Development of integrated models of care
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Activities currently underway to address hepatitis C in Myanmar

- HBV & HCV sero-prevalence & genotype distribution study
- MSF HIV/HCV co-infected treatment study
  - Based at mainstream MSF clinical services
- National surveillance – PWID IBBS
- Clinician training
- National Hepatitis Program quality assurance
- WHO testing & treatment guidelines
Activities currently underway to address hepatitis C in Myanmar

Significant government led policy development

• National Hepatitis Program
• National Strategic Plan & draft budget
• Clinical guidelines
• Procurement of new HCV treatments
• Working groups formed
Acknowledgments

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• Drug user community in Myanmar

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