Zero TB Karachi: Targeting Multiple Diseases from a Single Disease Platform

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Cast out by HIV
How hundreds of children have been infected

The WALL STREET JOURNAL

Reused Syringes, Drips Infected Hundreds of Pakistani Children With HIV

By Preetika Rana
Updated June 18, 2019 10:12 am ET

Unsafe, but common, practices such as reusing syringes and drips caused hundreds of Pakistani children to be infected with HIV, according to a World Health Organization team investigating an outbreak in a poor southeastern town.

The WHO's preliminary findings, reviewed by The Wall Street Journal and presented to Pakistani health officials Friday, offer a window into how more than 650 children tested positive for HIV in one town during six weeks of government tests, while nearly all their parents tested negative.

RECOMMENDED VIDEOS
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2. U.S. Talks with Taliban: Are There Any Backdoors?
3. Hong Kong Protests Take to Streets

The Pakistan city where almost 700 people have been infected with HIV

By Ziafryar Khan, Sophie Scott and Julia Huttonworth, CNN
Updated 05:40 GMT (13:40 HKT) May 30, 2019

The Guardian

Pakistan doctor held diagnosed with HIV

Authorities investigating if Muzaffar Gill knowingly spread virus

This article is more than 3 months old

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September 8-11, 2019

Barbican Centre
Outbreak Response: community-based TB/HIV screening

Zero TB Working with Provincial HIV program

- HIV outbreak response - collaboration across public and private sector
- Concurrent TB & HIV screening camp
- 1000 HIV positive individuals found
  - >800 were children
- 3 MTB positive individuals identified
- Continued active screening for TB/HIV
Zero TB CITIES is a global initiative targeted at creating “islands of elimination” with strong local ownership in high burden settings.

Zero TB implements evidence-based Search, Treat & Prevent approaches from around the world shown to be successful in controlling TB.
Zero TB Cities and districts – current, new and potential

Almaty, Kazakhstan**
Balti, Moldova
Bangkok, Thailand**
Chennai, India
Dhaka, Bangladesh*
Geissen, Germany
Hai Phong, Vietnam
Hanoi, Vietnam
Ho Chi Minh City, Vietnam
Indore, India**
Karachi, Pakistan
Kathmandu, Nepal**
Kano, Nigeria**
Kisumu, Kenya
Lagos, Nigeria **
Lima (Carabayllo), Peru

Manila, Philippines**
Melbourne, Australia**
Mexicali, Mexico
Mtata, South Africa**
Mumbai, India**
Muscat, Oman**
Odessa, Ukraine
Pattaya, Thailand**
Peshawar, Pakistan
Quetta, Pakistan**
Shenzhen, China*
Sofia, Bulgaria**
Tbilisi, Georgia**
Ulaanbaatar, Mongolia
Vladimir, Moscow

* First of multiple cities planned
** Discussions of alignment underway
Pakistan’s Zero TB Initiative
Global Fund Support
2016-2017 USD 40m – Zero TB Karachi +32 districts
2018-2020 USD 40m – Zero TB Karachi, Peshawar, Quetta + 32 districts
3 Zero TB
CITIES / 32 districts

> 3 million symptom screened

> 1.5 million Screened by CXR

> 61,000 TB patients notified

~1200 staff

55 mobile X-ray vans
Public Health Facilities

- 18 FAST Sites
- 60 NTP Reporting Sites
- 320 UVGI lights
- 8 Mobile X-ray Digital Vans
- 27 GeneXpert Machines
- 2 Dedicated Call Center
- 3 Comorbidities Management Sites
- 7 Childhood TB Management Sites
- 1 PMDT Site
- 300+ Dedicated Field & Medical Personnel across all sites
Karachi: All Forms TB Notifications
2008 – 2018

<table>
<thead>
<tr>
<th>Year</th>
<th>Notifications</th>
</tr>
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<tbody>
<tr>
<td>2008</td>
<td>16,104</td>
</tr>
<tr>
<td>2009</td>
<td>14,470</td>
</tr>
<tr>
<td>2010</td>
<td>15,993</td>
</tr>
<tr>
<td>2011</td>
<td>17,545</td>
</tr>
<tr>
<td>2012</td>
<td>19,336</td>
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<td>2016</td>
<td>20,560</td>
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<tr>
<td>2017</td>
<td>25,064</td>
</tr>
<tr>
<td>2018</td>
<td>25,339</td>
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</tbody>
</table>
TB-HCV Integrated Screening and Treatment
### HCV Testing and Treatment Cascade
**Jan to July 2019**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Number of Individuals</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Eligible for screening</td>
<td>20371</td>
<td></td>
</tr>
<tr>
<td>Verbal screening</td>
<td>10078 (49%)</td>
<td></td>
</tr>
<tr>
<td>RDT screening</td>
<td>9598 (95%)</td>
<td></td>
</tr>
<tr>
<td>Anti HCV +ve</td>
<td>806 (8%)</td>
<td></td>
</tr>
<tr>
<td>PCR testing</td>
<td>745 (92%)</td>
<td></td>
</tr>
<tr>
<td>PCR positive</td>
<td>475 (64%)</td>
<td></td>
</tr>
<tr>
<td>Baseline evaluation</td>
<td>324 (68%)</td>
<td></td>
</tr>
<tr>
<td>Treatment initiation</td>
<td>245 (76%)</td>
<td></td>
</tr>
</tbody>
</table>

- Verbal screening: 10,078 (49%)
- RDT screening: 9,598 (95%)
- Anti HCV +ve: 806 (8%)
- PCR testing: 745 (92%)
- PCR positive: 475 (64%)
- Baseline evaluation: 324 (68%)
- Treatment initiation: 245 (76%)
Karachi HCV Micro-Elimination Plan: Korangi, Landhi, Ibrahim Hyderi

No. of people screened* 203,593

7% prevalence

Anti HCV +ve 14,252 (7%) 10% drop out rate

Baseline PCR testing 12,826 (90%)

50% active viremia

Diagnosed 6413 (50%)

Started on Treatment 5772 (90%)

Treatment complete 5599 (97%)
Integrated HCV-TB Diagnostic Services

Expansion of HCV services via integration with **GeneXpert** testing facilities throughout the private and public sector

Number of GeneXpert machines 157
Integrated Practice Units (IPU)

Integration of mental health and diabetes services with 6 existing TB facilities to improve adherence, treatment outcomes and provide holistic care

- Mass screening for Depression & Anxiety
- TB Adherence & Mental Health Counseling
- Psychologist-Severe Case Consultation
- Diabetes Screening and Consultation
- Diabetes Medication and Counseling

Supported by the Harvard Medical School-Center for Global Health Delivery-Dubai
Psycho-Social Support Interventions (PSSI)

IPUs developed across public and private hospital settings

Counselors trained and deployed

Screened for Depression and Anxiety. 30% Symptomatic

Enrolled and given baseline adherence counselling. 562 completed MH intervention

Screened for Diabetes. 21% Symptomatic
92% of patients who completed the mental health intervention also completed TB treatment, compared to a 75% TB treatment completion rate in those who did not complete the mental health intervention (Unpublished data).
Gavi Pilot - Integrating Immunization & Mobile Van TB Screening Services in Pakistan

Gavi supported immunization services being integrated into private sector TB diagnostic centres supported by Global Fund.

Sehatmand Zindagi Centres across Pakistan:
- 64 centres

Mobile Screening Vans across Pakistan:
- 55 vans

Pooling resources with TB vans instead of buying new immunization only vans.
Conclusions

Targeting Multiple Diseases from a Single Disease Platform

• Demonstrated feasibility in Zero TB Karachi context
  – TB, HIV, mental health, routine immunization, diabetes

• Responsive to needs of patients and communities
  – Improved community engagement and treatment outcomes

• Synergizes investments from multiple sources
  – Cost savings, more efficient use of testing platforms, pooled procurement

• More focus required from donors and governments for multi-disease platforms (i.e. health systems strengthening)