DECLARING OUR RIGHTS: SOCIAL AND POLITICAL SOLUTIONS

THE 49th UNION WORLD CONFERENCE ON LUNG HEALTH

worldlunghealth.org  @TheUnionLungHealth  @UnionConference  #UnionConf
Rapporteur Report
49th World Lung Health Conference
<table>
<thead>
<tr>
<th>Session type</th>
<th>Abstracts submitted</th>
<th>Abstracts accepted for presentation at the conference</th>
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<tbody>
<tr>
<td>Oral abstract presentations</td>
<td></td>
<td>159 in 20 sessions, 24 in 3 Late Beaker sessions</td>
</tr>
<tr>
<td>Short oral abstract</td>
<td>2332</td>
<td>240 in 23 sessions</td>
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<tr>
<td>presentations</td>
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<td>652 in 59 sessions</td>
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<tr>
<td>Poster presentations</td>
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# Introduction to the Coordinating Committee of Scientific Activities, sub-Group 2

<table>
<thead>
<tr>
<th>Name</th>
<th>Section / sub-Section</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keren Middelkoop</td>
<td></td>
<td>Chair</td>
</tr>
<tr>
<td>James Seddon</td>
<td>Adult Child and Lung Health</td>
<td>Programme Secretary</td>
</tr>
<tr>
<td>Ingrid Schoeman</td>
<td>Civil Society/Community Connect</td>
<td>UCAP Representative</td>
</tr>
<tr>
<td>Katharina Kranzer</td>
<td>HIV</td>
<td>Programme Secretary</td>
</tr>
<tr>
<td>Sarwat Shah</td>
<td>Tobacco Control</td>
<td>Programme Secretary</td>
</tr>
<tr>
<td>Wendy Wobeser</td>
<td>Tuberculosis</td>
<td>Programme Secretary</td>
</tr>
<tr>
<td>Alaine Umubyeyi Nyaruhirira</td>
<td>Bacteriology &amp; Immunology</td>
<td>Programme Secretary</td>
</tr>
<tr>
<td>Amanda Christensen</td>
<td>Nurses and Allied Professionals</td>
<td>Programme Secretary</td>
</tr>
<tr>
<td>Simeon Cadmus</td>
<td>Zoonotic TB</td>
<td>Programme Secretary</td>
</tr>
</tbody>
</table>
## THANK YOU to Session Chairs who contributed to the report

<table>
<thead>
<tr>
<th>Lisa V. Adams</th>
<th>Daniela Maria Cirillo</th>
<th>Mustapha Gidado</th>
<th>Daniel Kass</th>
<th>Max Meis</th>
<th>Austin Obiefuna</th>
<th>Kevin Schwartzman</th>
<th>Kristian van Kalmthout</th>
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<tbody>
<tr>
<td>Tope Adepojibi</td>
<td>Vivian Cox</td>
<td>George Giovinazzo</td>
<td>Palwasha Yousafzai Khan</td>
<td>Keren Middelkoop</td>
<td>Pamela Orr</td>
<td>Valérie Schwoebel</td>
<td>Kitty van Weegenbeek</td>
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<tr>
<td>Mira Aghi</td>
<td>Julia Critchley</td>
<td>Sonu Goel</td>
<td>Aamir Khan</td>
<td>Juan Pablo Millet</td>
<td>Ralf Otto-Knapp</td>
<td>Lesley Scott</td>
<td>Julian Villalba</td>
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<td>Jan-Willem Alffenaar</td>
<td>Julio Croda</td>
<td>Delia Goletti</td>
<td>Faiz Ahmad Khan</td>
<td>Ignacio Monedero</td>
<td>Olivia Oxlade</td>
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<td>Kerri Viney</td>
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<td>Farhana Amanullah</td>
<td>Elif Dagli</td>
<td>Lorenzo Guglielmetti</td>
<td>Raspati Koesoemadinata</td>
<td>Kevin Mortimer</td>
<td>Nesri Padayatchi</td>
<td>Jean Claude Semuto Ngabonzizza</td>
<td>Elisabetta Walters</td>
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<td>Emmanuel André</td>
<td>Petra De Haas</td>
<td>Anthony D Harries</td>
<td>Inge Koppelaar</td>
<td>Christiaan Mulder</td>
<td>Deborra Pedrazzoli</td>
<td>Sarwat Shah</td>
<td>Maryse Wanlin</td>
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<td>Helen Ayles</td>
<td>Riitta Dlodlo</td>
<td>Rumina Hasan</td>
<td>Blessina Amulya Kumar</td>
<td>Olive Mumba</td>
<td>Frederik Quinn</td>
<td>Kerrie Shaw</td>
<td>Xiaolin Wei</td>
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<td>Hege Bjelkaroy</td>
<td>David Dowdy</td>
<td>Yaël Hirsch-Moverman</td>
<td>Sylvia LaCourse</td>
<td>Yamuna Mundade</td>
<td>Leen Rigouts</td>
<td>Ivan Solovic</td>
<td>Eric Wobudeya</td>
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<tr>
<td>Sarah Brode</td>
<td>Raquel Duarte</td>
<td>Robert Horsburgh Jr.</td>
<td>Pranay Lal</td>
<td>Brenda Mungai</td>
<td>Valeria Rolla</td>
<td>Imran Syed</td>
<td>Stella Zawedde</td>
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<td>E Jane Carter</td>
<td>Donald Enarson</td>
<td>Rumana Huque</td>
<td>Etienne Leroy-Terque</td>
<td>Ed Nardell</td>
<td>Nunurai Ruswa</td>
<td>Sabira Tahseen</td>
<td>Abbas Zezai</td>
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<tr>
<td>Martina Casenghi</td>
<td>Kathleen England</td>
<td>Akramul Islam</td>
<td>Yan Lin</td>
<td>Ruvandhi R. Nathavitharanaga</td>
<td>Edmund Rutta</td>
<td>Anete Trajman</td>
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<td>Chen-Yuan Chiang</td>
<td>Connie Erkens</td>
<td>Nazir Ismail</td>
<td>Ethel Maciel</td>
<td>Chaudhary Nawaz</td>
<td>Merry Samsuri</td>
<td>Arnaud Trébucq</td>
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<tr>
<td>Amanda Christensen</td>
<td>Dennis Falzon</td>
<td>Anne Jones</td>
<td>Peter Macpherson</td>
<td>Viet Nhung Nguyen</td>
<td>Fernando Sanches</td>
<td>Carrie Tudor</td>
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<tr>
<td>Gavin Churchyard</td>
<td>Paula Fujiwara</td>
<td>Netty Kamp</td>
<td>Robert Makome</td>
<td>Paul Nunn</td>
<td>Jerod N. Scholten</td>
<td>Frederik van Gemert</td>
<td></td>
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</tbody>
</table>
A to Z in 50 minutes

- Adult and Child Lung Health
- Bacteriology and Immunology
- Civil Society & Community Common
- HIV
- Nurses and Allied Professionals
- Tobacco Control
- Tuberculosis
- Zoonotic Tuberculosis
Pulmonary hypertension in a cohort of patients previously treated for Pulmonary Tuberculosis at Mulago Hospital in Kampala, Uganda

W Katagira¹, B Kirenga¹,², C Mondo², W Worodria¹,²

<table>
<thead>
<tr>
<th>Characteristic (n, %)</th>
<th>Post-PTB pulmonary hypertension (n=8)</th>
<th>No post-PTB pulmonary hypertension (n=94)</th>
<th>P-value (Fisher’s exact)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (IQR), years</td>
<td>34 (29-44)</td>
<td>34 (30-41)</td>
<td>0.72*</td>
</tr>
<tr>
<td>Biomass smoke exposure</td>
<td>2 (25)</td>
<td>22 (23)</td>
<td>1.00</td>
</tr>
<tr>
<td>Median sit to stand (IQR), repetitions in one minute</td>
<td>18 (16-28)</td>
<td>24 (21-26)</td>
<td>0.0001*</td>
</tr>
<tr>
<td>HIV positive</td>
<td>7 (88)</td>
<td>61 (65)</td>
<td>0.71</td>
</tr>
<tr>
<td>Treated twice or more for PTB</td>
<td>3 (38)</td>
<td>6 (6)</td>
<td>0.003</td>
</tr>
<tr>
<td>Lived near a water body</td>
<td>1 (13)</td>
<td>4 (4)</td>
<td>0.34</td>
</tr>
<tr>
<td>Ever smoked ≥100 cigarettes in your life</td>
<td>0 (0)</td>
<td>10 (11)</td>
<td>0.42</td>
</tr>
<tr>
<td>Alcohol consumption</td>
<td>4 (50)</td>
<td>53 (56)</td>
<td>0.73</td>
</tr>
<tr>
<td>MRC breathlessness score</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0 (0)</td>
<td>87 (93)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>2</td>
<td>7 (88)</td>
<td>7 (8)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>3</td>
<td>1 (13)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>PASP (mean, SD), mmHg</td>
<td>41 (1.17)</td>
<td>23 (5.5)</td>
<td>&lt;0.0001**</td>
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</table>

Spirometry diagnosis

<table>
<thead>
<tr>
<th></th>
<th>COPD</th>
<th>Normal</th>
<th>Restrictive pattern</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>0 (0)</td>
<td>2 (29)</td>
<td>5 (71)</td>
</tr>
<tr>
<td></td>
<td>5 (6)</td>
<td>70 (83)</td>
<td>9 (10)</td>
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</tbody>
</table>

Winceslaus Katagira

PS38-813-27
First respiratory culture as Reference

- Swab (2 tests)
- Swab (1 test)
- 0.6g (2 tests)
- 0.6g (1 test)

Sensitivity (%)
OA22-345-27
Erlend Grønningen

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Positive N (%)</th>
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<tbody>
<tr>
<td><strong>TB CASES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xpert</td>
<td>29</td>
<td>9 (32%)</td>
</tr>
<tr>
<td>Culture</td>
<td>29</td>
<td>10 (36%)</td>
</tr>
<tr>
<td>MPT64</td>
<td>29</td>
<td>24 (92%)</td>
</tr>
<tr>
<td><strong>NOT TB CASES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xpert</td>
<td>35</td>
<td>1 (3%)</td>
</tr>
<tr>
<td>Culture</td>
<td>35</td>
<td>0</td>
</tr>
<tr>
<td>MPT64</td>
<td>35</td>
<td>3 (17%)</td>
</tr>
</tbody>
</table>
SOA20-1201-27
Uzochukwu Egere

From health centers
182

Seen in the clinic
178 (97.8%)

Not TB
143 (80.3%)

TB disease
35 (19.7%)

Bact. confirmed
15 (43.0%)

Clin. diagnosed
20 (57.0%)

From contact tracing
1593

Seen in the clinic
1353 (85.0%)

TB disease
74 (5.5%)

Not TB
1279 (94.5%)

Bact. confirmed
20 (27.0%)

Clin. diagnosed
54 (73.0%)
Bacteriology and Immunology Subsection

Alaine Nyaruhirira
Basic Science – host biomarkers

Host biomarkers for diagnosis and treatment response. Host miRNA Signatures, **OA07-251-25**

![Portable Microfluidic Chip Development: To detect miRNA/small RNA biomarker]

Host microbiome as a possible future biomarker for TB disease status, **PS01-405-25 PS01-406-25**

7 host Immune biomarker profile as multiplex lateral flow assay **OA11-3213-26**

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Posters on the use of LF-LAM

Potential of LF-LAM with improved sensitivity (Fuji-LAM) **More sensitive** *(100x?)*

**PS07-468-25 LF-LAM**

**OA13-3449-26 Fuji-LAM**

A novel instrument free POC test on urine

![TB Test Procedure]

- **Urine** non-invasive and easy to collect
- **Rapid time-to-result** <60 minutes
- **Simple** for healthcare workers with minimal training
- **Instrument-free and safe**

Drug resistance developments

Importance of **Low level MICs** – BDQ efflux

**Disputed mutations in rpoB** low level - clinical significance  **OA11-3348-26**

<table>
<thead>
<tr>
<th>rpoB mutations (WGS)</th>
<th>RMR-TB (WGS) (n=29)</th>
<th>MDR-TB (WGS) (n=142)</th>
<th>Confidence level</th>
</tr>
</thead>
<tbody>
<tr>
<td>L511P</td>
<td>10 (34%)</td>
<td>0</td>
<td>Minimal</td>
</tr>
<tr>
<td>S531L</td>
<td>9 (31%)</td>
<td>104 (73%)</td>
<td>High</td>
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</table>

MIC of sensitive M. tuberculosis isolates against first-line anti-tuberculosis drugs in global settings with differing rates of drug-resistant tuberculosis: SloanOA07-250-25

**Correlation between routine phenotypic drug susceptibility testing, MIC using Middlebrook 7H9 media and genotypic resistance in consecutive MDR -TB isolates SOA 23-1229-27**

**Patient centred treatment:**

Individualised VS standardised therapy **SP36**

Correlation of gyrA mutations with MIC of ofloxacin- and Moxifloxacin. India **SOA 23-1230-27**
## How expert is expert

Other sample types / stool (CSF and Children)

- **PS27-692-26** CSF meningitis
- **SOA 20-1205-27** detection from stool in young children
- **OA17-3194-26** Oral swabs (Promising + non invasive)

**Deep sequencing** – also from “hacked” GeneXpert cartridge – **SOA 18-1182-27**

## Other molecular assays

- PCR on Oral swabs - **OA 17-3194-26**
- Non-invasive detection of tuberculosis by oral swab PCR analysis
- Stool in children **PS 07-466-25** novel stool-based TB diagnostic test in children in Mbeya, Tanzania

## Discrimination of specific mutations using GeneXpert Ultra

**SOA18-1179-27**

## Trace calls in GeneXpert Ultra

In previously treated cases vs new suspects **OA17-3415-26**
Improvement of access:
- Indonesia android-based application courier service on demand direct entry of patient info (TB05) SOA18-1187-27
- Sample transport after household screening in a CHW programme SOA02-1012-25

Quality management
- Uganda: continuous quality improvement (CQI) to increased Gene-Xpert utilization PS50-950-27
- Preparing TB, C&DST laboratories under the rntCp for naBl accreditation in India. PS50-951-27

Cost effectiveness
X-ray as triage for GenXpert save costs (automated X-ray CaD4) OA07-249-25

On route sample preservation
Omnigene – varied experiences
- After “long transport” 50% loss of MTB recovery by MGIT, SOA23-1233-27
- For use district level labs acceptable sub-optimal in remote health care facilities, SOA02-1018-25
Assessment of functionality of Xpert hub-and-spoke model Uganda **PS27-695-26**

- Xpert testing **test referral > results reporting > treatment initiation** - Truthful and dire picture of health system factors impeding effective implementation in many low-resource settings.

**Equipment maintenance and support**

Nigeria country evaluation. After seven years of implementing *prompt maintenance is key to enhancing utilization* **PS27-699-26**

**Increase in uptake of GeneXpert**

Ethiopia through strong monitoring and innovative interventions in Tigray region, Good planning, staff orientation/training, adequate supply of consumables, and technical support, including a weekly telephone monitoring system. M Abraha et al (**SOA02-1019-25**)
CIVIL SOCIETY

The community space has a new name
COMMUNITY CONNECT
Plenary: Human rights-based approach to lung health

Chairperson: Michael Frick, United States of America
Presentations:
Tuberculosis, human rights and international law
Coco Jervis, Netherlands
The ethics of immigration and health
Farhang Tahzib, United Kingdom
Data sovereignty: experience of North American indigenous people
Carrie Bourassa, Canada
Date: 24 October 2018
Towards zero hearing loss: access to new TB drugs and the right to enjoy the benefits of scientific progress

Chairperson: Anja Reuter, South Africa

Speakers: Nandita Venkatesan (India), Michael Frick (United States of America), Jonathan Stillo (United States of America), Jennifer Furin (United States of America), Michael Miiro (Uganda)

Date: 25 October 2018
Leave no one behind—ethical and human rights considerations in TB prevention and care among mobile populations

Chairpersons: Kathy Fiekert, Netherlands, Justin Timothy Denholm, Australia

Speakers:
Niesje Jansen, Netherlands
Nobu Nishikiori, Switzerland
Stephan John, Nigeria
Kathy Fiekert, Netherlands
Diego Silva, Canada
The need for quality tuberculosis sciences

Chairpersons: A. Obiefuna & D. Goletti

Short Oral Abstract session
1. Effective civil society and government partnership for improved TB case detection and treatment outcomes in Mulanje District, Malawi (Sameer Sah)

2. The strategic collaboration between NTP Mozambique and civil society partners through USAID-supported project to enhance TB case finding in Nampula and Zambézia Provinces, Mozambique (Sugata Mukhopadhyay)

Date: 27 October 2018
The importance of health workers and civil society organisations in finding tuberculosis in communities

Chairperson: Ruvandhi R. Nathavitharana, United States of America

E-poster session
Leaders wanted for a TB free world: exploring prospects of community influencers for TB case finding in low reporting districts in Akwa Ibom State, Nigeria (Chukwuemeka Austin Ihesie)
Community engagement to reach and support people with tuberculosis

Chairperson: B. Kumar

Poster discussion session
1. Community engagement a highly effective approach to increase TB case finding in four districts in Nias Island, Indonesia (Elvi Solita Siahaan, Indonesia)

2. Contribution of community health committees in detecting new TB cases in the Sughd Oblast, Tajikistan (Zumrad Maxumova, Tajikistan)
Tuberculosis advocacy for political commitment and accountability and critical areas for tuberculosis care

Chairperson: C. Nawaz

Poster discussion session

1. Involving TB survivors as TB champions and advocates: a report from India (Anupama Sirnivasan)

2. Additional nutritional support to TB and DR-TB patients provided under Chief Minister’s Flagship Food Support Programme improved treatment compliance and outcome of NTP in Chhattisgarh (Gayadhar Mallick)
The human right to health

Chairperson: O. Mumba

Poster discussion session

1. Lawyers' knowledge about tuberculosis patient's rights in India (Sukhwinder Singh)

2. Assessing and overcoming human rights-related barriers to TB in 11 countries (Hyeyoung Lim)
HIV Section
Katharina Kranzer
HIV/TB – diagnosis, side effects, outcomes

Sensitivity

- **84%** CD4 counts ≤100
- **44%** CD4 counts >200

Denkinger
Sensitivity
- **84%** CD4 counts ≤100
- **44%** CD4 counts >200

HIV/TB – diagnosis, side effects, outcomes

HR **3.25 (95%CI 1.87 – 5.66)** for grade 3 or 4 events

Denkinger, Tweed
Sensitivity

- 84% CD4 counts ≤100
- 44% CD4 counts >200

2HREZ/4HR

HR 3.25 (95%CI 1.87 – 5.66) for grade 3 or 4 events

Mortality in SA men

Mortality in SA women

Denkinger, Tweed, Claassens
LZD PK in HIV infected MDR-TB patients

Probability of efficacy target attainment

Wasserman
Probability of efficacy target attainment

Trough concentration

Wasserman

LZD PK in HIV infected MDR-TB patients

58%
HCV treatment in MDR-TB patients

Systematic HCV screening in Armenia 2016/17
- 29.8% HCV serology positive
- 19.2% active HCV (PCR positive)
  - 47.5% genotype 3a
  - 35.0% genotype 1b

<table>
<thead>
<tr>
<th>SVR 12 post treatment</th>
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<tbody>
<tr>
<td>HCV PCR Negative</td>
<td>17 (80.9)</td>
</tr>
<tr>
<td>HCV PCR Positive</td>
<td>2 (9.5)</td>
</tr>
<tr>
<td>HCV PCR not performed</td>
<td>2 (9.5)</td>
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</table>

Kirakosyan
Metformin in TB patients receiving HR

AUC +R : AUC post TX 1.28 (90%CI 1.13-1.44)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>With rifampicin (n=23)</th>
<th>Without rifampicin (n=21)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline blood glucose (mg/dL)</td>
<td>127 (81-283)</td>
<td>148 (75-353)</td>
</tr>
<tr>
<td>G-AUC (mg/dL*h)</td>
<td>777 (523-1488)</td>
<td>791 (509-1459)</td>
</tr>
<tr>
<td>G_max (mg/dL)</td>
<td>330 (223-597)</td>
<td>347 (214-595)</td>
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Side effect

<table>
<thead>
<tr>
<th>Side effect</th>
<th>With rifampicin</th>
<th>Without rifampicin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nausea</td>
<td>9 (39%)</td>
<td>5 (24%)</td>
</tr>
<tr>
<td>Vomiting</td>
<td>7 (30%)</td>
<td>4 (19%)</td>
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Intervention to optimize glucose control in TB/DM patients

Mean Hba1c (%)

<table>
<thead>
<tr>
<th>Months</th>
<th>Control</th>
<th>Intervention</th>
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<tbody>
<tr>
<td>0</td>
<td>11.6</td>
<td>11.6</td>
</tr>
<tr>
<td>3</td>
<td>9.7</td>
<td>9.7</td>
</tr>
<tr>
<td>6</td>
<td>9.8</td>
<td>7.6</td>
</tr>
</tbody>
</table>

Ruslami
Intervention to optimize glucose control in TB/DM patients

Percentage with HbA1c < 8%

Month 3
- 52
- 34

Month 6
- 66
- 38

p=0.001

p=0.035
TB incidence patient receiving dialysis

Cumulative TB incidence

ESRD patients

Gen population controls

Adjusted HR 4.39 (95% CI 3.60–5.37)
Nursing and Allied Health Sub-section
Amanda Christensen
Integrating support across the tuberculosis care cascade

SOA05-1045-25 – Application of nursing assessment and management job aid on patients side effects in MDR-TB treatment in China

• Assessment of a job aid to support nursing practice

Patient Centered Care

PS08-478-25 – Organization of patient-centred TB services: experience in Tajikistan; Asliddin, Rajabov
• To deliver patient centred care, we first need to understand the patient’s perspective

PS08-08-482-25 Patient-centered nurse care plan as a successful intervention in complicated tuberculosis patients, Herrera, Rosa
• Identifying and incorporating social and physiological factors into patient centred care plans
Building workforce capacity through education and training:

OA19-314-27 - Scaling up TB workforce around the globe: The ECHO experience; B Strumminger
• Creating a learning community for workforce development and provision of quality best practice care

OA19 – 321-27 – TB/MDR-TB Education and Training for Nurses Improving Quality of TB Services in Malawi; Harriet Chiomba
• Training for Transformation (TFT) aimed at educating and training nurses across the country to take a leading role in TB/MDR-TB activities
Digital Technology to improve treatment Adherence and Outcomes

SOA12-1119-26 Acceptability to patients and providers of 99DOTS, a cellphone-based TB adherence monitoring strategy; Beena Thomas

SOA12-1123-26 TB medication adherence using patient-centered, self-managed wirelessly observed therapy is superior to directly observed therapy; Sara Hope Browne

SOA12-1126-26 Integrated mHealth tool for nationwide scale-up of community-based TB services; Rachel Forse
Digital Technology to improve treatment Adherence and Outcomes

- Digital technology an adjunct tool, not a replacement for a skilled workforce and appropriately resourced TB Program
- Incorporating technology into practice
- Acceptability and validation
- Balance between technology and human contact
- Measuring the impact of digital technology is essential
- People and technology combined are required to END TB
Tobacco Control Section
Sarwat Shah
STOP project for Tobacco Control
1. Securing implementation of WHO FCTC Article 17 and 18

2. Exposing CTC green Investments Ex. SADP

3. Lobbying Politicians and policy makers

4. More scientific research (EIA) to calculate the environmental impacts

5. Revealing hidden subsidies enjoyed by the industry – grow public awareness

6. Develop Tobacco Taxation Tool (Mathematical Formula)
Brazil has taken important measures to protect people from tobacco smoke

Several states adopted complete indoor smoking bans from 2009.

A national 100% smoke-free law was adopted in 2014.

Effects of the smoking ban in São Paulo city

<table>
<thead>
<tr>
<th>2009 (PRE-BAN)</th>
<th>2013 (POST-BAN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% non-smokers who have noticed people smoking in restaurants in the past six months</td>
<td>30</td>
</tr>
<tr>
<td>% non-smokers who have noticed people smoking in bars in the past six months</td>
<td>79</td>
</tr>
</tbody>
</table>
### Predictor: Using solid Fuels

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Odds Ratio (OR)</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using solid Fuels</td>
<td>1.37*</td>
<td>1.22-1.53</td>
</tr>
</tbody>
</table>

*Denotes Statistical Significance

---

**Daily percentage of enrolled children with acute respiratory symptoms**

- **Wilcoxon, p-value=0.040**

- **High pollution days**
  - 0
  - 0
- **Low pollution days**
  - 0
  - 0
Europe

- DR Patients from Romania, Ukraine, Azerbaijan, Tajikistan and Belarus
  - HIV + 9.4%
  - Overall treatment success 58.6%
    - Auer OA18-306-26

- Armenia bedaquiline and delamanid use from compassionate to programmatic conditions
  - among 162 reported 55 serious adverse events with 12 deaths
    - Atshemyan PS34-773-26

- Health seeking behavior among migrants in UK
  - Fear and lack of knowledge regarding free TB treatment contributors
    - Potter SOA04-1034-25
Case finding

- Mass screening in the Marshall Islands

**Preliminary Results: Mass LTBI Treatment**

<table>
<thead>
<tr>
<th></th>
<th>Number completed screening</th>
<th>Latent TB diagnosis (TST ≥10mm)</th>
<th>Recommended for latent TB treatment</th>
<th>Started latent TB treatment</th>
<th>Leprosy (new cases)</th>
<th>Diabetes (all cases)</th>
<th>Diabetes (new cases)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paediatric (0-14)</td>
<td>5361</td>
<td>321</td>
<td>469</td>
<td>415</td>
<td>12</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Adult (15+)</td>
<td>10,058</td>
<td>3,491</td>
<td>3,132</td>
<td>2,976</td>
<td>33</td>
<td>753</td>
<td>318</td>
</tr>
<tr>
<td>Total</td>
<td>15,419</td>
<td>3,812</td>
<td>3,601</td>
<td>3,393</td>
<td>45</td>
<td>753</td>
<td>318</td>
</tr>
<tr>
<td>Comment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comment</td>
<td></td>
<td>25% of those screened had TST ≥10mm</td>
<td>6% not medically eligible for latent TB treatment</td>
<td>94% of eligible patients started latent TB treatment</td>
<td>Leprosy rate 29.2 per 10,000</td>
<td>23% of those screened for diabetes had HbA1c ≥6.5</td>
<td>10% of those screened for diabetes had a new diagnosis</td>
</tr>
</tbody>
</table>

- Duggan OA 17-3308-26
Care cascade

• TB Reach Indonesia –
  – Capacity building
    • HIV testing from 0 to 70%
      • Kusoworini EP08-178-27
  
• LTBI treatment initiation (contacts) (Brazil – ACT-4)
  – 7.7/10.2/184.3/225.0 per 1,000
  – (no intervention/Pt. education/HCW training/both)
    • Trajman OA15-290-26

• Impact of solution based intervention – contacts (Ghana – ACT-4)
  – Complete initial assessment 13/108 (12%) vs. 136/145 (94%)
  – Initiate LTBI 0/13 (0%) vs. 79/80 (98%)
    • Obeng OA15-292-26
Program advances

• Universal drug susceptibility testing (by LPA) Taiwan
  – 2013 to 2016
    • Proportion of smear + LPA tested
      – 27% to 79%
        • Lee PS35-783-27
    • Intensified case finding Dhaka, Bangladesh
        – NGO (BRAC) to centres in 132 slums for community awareness and sputum collection
          • 2014 to 2017 increase bacteriologically confirmed
            – 313 to 598 cases
              • Islam SOA11-1108
Program advances

• Social enterprise model to increase private engagement, Dhaka
  – Screening centers expanded an easily accessible link to private practitioners
    • In 4 years 1,311 cases registered for treatment 20% coming from private
    • 4% RMP resistant by Xpert
      • Ahmed SOA11-1112-26

• Patent Medicine Vendor (PMV) engagement – Nigeria
  – PMV’s trained in symptom detection and referral
    • ↑referral from 2,865 to 10,381 (1663 – 16%) with TB
      • Adelakun SOA11-1109-26
MDR

• Extension of bedaquiline and delamanid beyond 24 weeks – Mumbai
  – N=41 with 34 (83%) favourable response
    • Ferlazzo OA06-238-25

• Community based approach to reduce initial loss to follow up in Western Cape
  – Electronic drug-resistance register cross linked to those with Rifampin resistance and referred
    • 112 were found of which 76 were located and linked to care
      • Ramaliba OA06-240-25
MDR

• High dose Isoniazid in 90 cases of MDR – Bangladesh
  – Contributes to treatment success in the majority of MDR-TB patients
    • Lempens OA21-337-27

• Bedaquiline in Vietnam
  – Among 99 initiating therapy 75 were assessable at 6 months with 87% culture conversion
    • Hoang OA21-330-27
LTBI

– 1HP vs. 9H - BRIEF TB study
  • n=3000 HIV+
    – 65 reaching primary endpoint (TB or death)
  • Trend toward effect of CD4 not clearly demonstrated
    • Gupta OA02-207-25

– 3HP vs. 9H n=263 - Taiwan
  • Discontinuation rate
    • 10.6% vs. 22.1%
    • For ADR 9.1% vs. 5.3%
    • Wang OA02-206-25
LTBI

— Maternal IPT (IMPAACT P1078/TB APPRISE)

• RCT intrapartum vs. postpartum IPT

— No impact on infant TBI

• Wang OA02-208-25
Linezolid – work to do on optimal dose/duration

• In Georgia n= 60 treated with linezolid (600 mg od)
  – 1 discontinuation (peripheral neuropathy)
  – 5 dose reduction (peripheral neuropathy and thrombocytopenia)
    • Mikiashvili OA 18-307-26

• NIX –TB
  – Six months of bedaquiline/protomanid/linezolid
    » Durable cure in 88%
    » 29% discontinuation of Linezolid
      • Conradie OA03-213-25
Adherence

– NYC 4 types of DOT for 79 participants
  • Clinic based, field based, live video and recorded video
    – Issues common and primarily patient based and technical
      • Affolabi SOA14-1147-26

![Graph showing proportion of planned DOT observations with issues](image-url)
Catastrophic costs are common and require more than financial support

• **Multicenter survey in Brazil n=344**
  – Catastrophic cost common particularly
    » 29% classified as poor before treatment rising to 38% after
      (SOA09-1090-26)

• **Modeled strategies to mitigate (Indonesia)**
  – Catastrophic costs in 36% of TB and 83% in MDR
  – Financial support alone not enough – needed are novel social strategies
    • SOA09-1092-26
A now for something completely different....

- $N=1000$

- Wash and DNA extraction by Chelex-100 resin
- Loop mediated isothermal amplification
- Positive: 213/1000
  - Joon OA20-329-27
Zoonotic Tuberculosis Sub-section
Simeon Cadmus
Conclusions:

- *M. tuberculosis* is not a “clone”
- T cell epitopes is conserved: relevance for vaccines
- *M. tuberculosis* is attenuated in cattle
- *M. bovis*: 90% of human extra pulmonary TB cases in Tunisia
- *M. orygis*: an emerging pathogen in humans, cattle and primates in South Asia

Evolution and Ecology matter!

The Life Cycles of the MTBC

- Identify, catalog and model opportunity costs/drivers to inform policy and clinical decisions
- Correct diagnostic algorithm for *M. bovis* in labs
Rapid differentiation of *Mycobacterium bovis* by loop mediated isothermal amplification assay-EP01-100-25

Objectives and conclusions

- Identification of *M. bovis* (causative agent of zoonotic TB) is important for proper selection of anti-TB drugs.

- LAMP system targeting region of difference 4 (RD4) deletions for specific detection of *M. bovis*.

- LAMP was used for rapid detection of *M. bovis* in humans. This LAMP will be evaluated on human sputum samples-A proof of principle!
Mycobacterial infections in sedentary and trade cattle in Ogun State, southwestern Nigeria-EP01-102-25

Cross sectional study
Abattoir and sedentary herds
Lesions collected from abattoir, milk from herds
The study included usage of key diagnostic algorithm. Importantly, Lowenstein Jensen cultures using pyruvate were used for the isolation.

Major findings included the isolation of *M. bovis* (9) and *M. tuberculosis* (2) in lesions of slaughtered cattle-Evidence of classical zoonoses.
Human tuberculosis caused by *Mycobacterium bovis* in the South of Tunisia-EP01-104-25

**Aim and Methods**

- Study epidemiological, diagnostics aspects and risk associated with human TB due to *M. bovis*
- A prospective study about extrapulmonary TB in south of Tunisia between 2013 and 2014
- Direct examination, Culture (LJ + Coletos + MGIT), Molecular identification, DST (MP: LJ+MGIT)

**Major findings**

- *M. bovis* in 78.8% of EPTB, 12.2% of all TB cases, sex ratio= 0.34.
- 94.1% cervical lymph node TB
- Major risk associated was consumption of raw milk (61.8%) (30% of milk unpasteurised)
-Lab performance : Direct examination 15.7%, LJ 75.5%, Coletos 85.9%, MGIT 100%
- Conclusions: Coordinated strategy using the ZTB Road Map
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- Conclusions: Coordinated strategy using the ZTB Road Map
Major findings

- 2.2% prevalence of TB in farm workers screened
- 12.6% prevalence of TB in cattle screened
- *M. tuberculosis* caused generalised typical TB lesions in cattle
- Spoligotyping and Whole Genome Sequencing results indicated possibility of transmission of *M. tuberculosis* from humans to cattle
- Isolated *M. orygis* from cattle

Conclusions:
Urgent need for a coordinated multi sectoral One Health approach with focus on the environment, hosts and pathogens
Thank you