

# IMPROVING ACCESS TO PATIENT-CENTRIC TUBERCULOSIS CARE IN NEPAL

**Ms Anchal Thapa**  
**Health Economist**  
**Birat Nepal Medical Trust**

**BNMT NEPAL**



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# About BNMT



**Accelerating the  
elimination of  
infectious diseases**



**Improving mental and  
adolescent health**

**BNMT  
Strategic  
Pillars  
2020-2025**



**Strengthening  
health systems**



**Generate Evidence to  
inform policy**



**Building Resilient  
Prosperous  
Communities**



# Where we work?

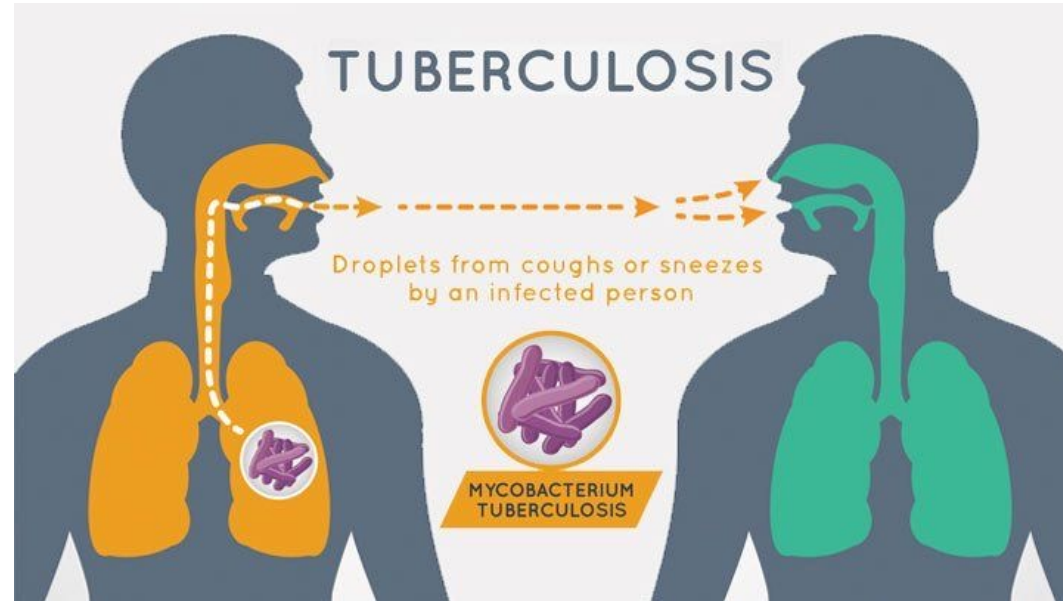
## BNMT NEPAL PROJECT COVERAGE DISTRICTS



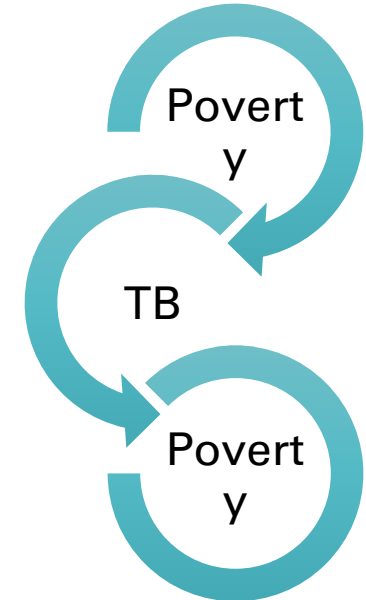
# TUBERCULOSIS (TB)

Globally, TB remains second leading infectious killer after COVID-19. Despite being preventable and curable disease

WHO End TB Strategy  
Unlikely to meet  
SDG's target of  
ending TB epidemic



1.5 million TB-related deaths every year. High burden in low- and middle- income countries – over 80% cases and deaths



# TB in Nepal

- TB is the eighth leading cause of death in Nepal
- Every year, 69,000 people develop TB
- Half of TB cases are 'missing' from notifications
- Socio-economic consequences can be devastating

416  
per  
100000

**Prevalence**

245  
per  
100000

**Incidence**

Top  
30

**WHO MDR/RR-TB  
Burden**





## Vision:

**A world free of TB**

*Zero TB deaths,  
Zero TB disease, and  
Zero TB suffering*

## Goal:

**End the Global TB epidemic**

*Reduction in number of TB deaths compared with 2015 (%)*

MILESTONES  
2020    2025

35%

75%

SDG\*  
**2030**

**90%**

**END TB**  
**2035**

**95%**

*Reduction in TB incidence rate compared with 2015 (%)*

20%

50%

**80%**

**90%**

*TB-affected families facing catastrophic costs due to TB (%)*

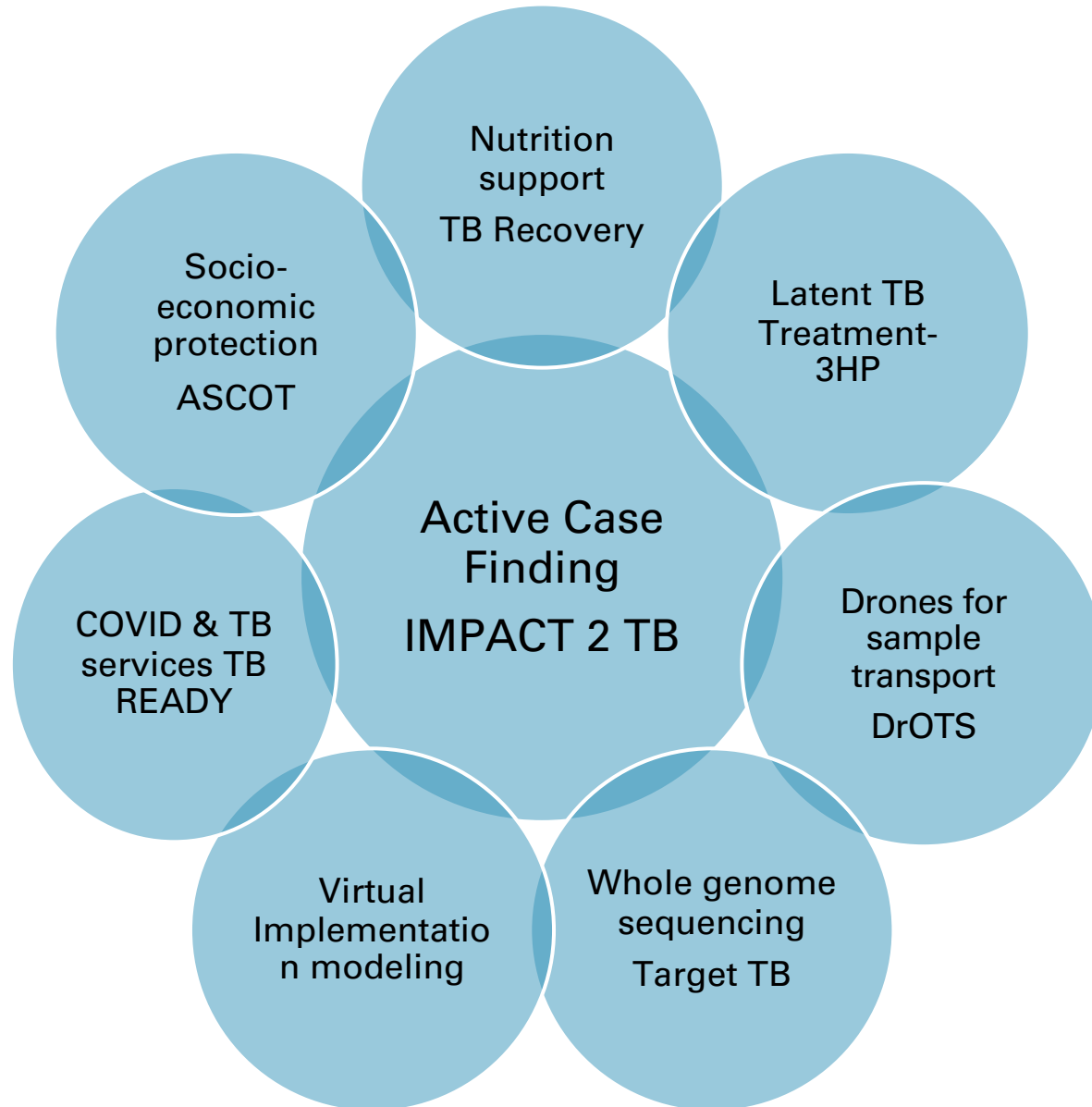
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# TB related projects



# IMPACT TB

- Evaluating different models of community active case finding and patient-centric care
- Close the case notification gap through geneXpert testing scale up
- Strengthen socio-economic support
- Reduce barriers to diagnosis and care
- Evaluate patient and health system costs to optimize interventions





Article

## Comparative Yield of Tuberculosis during Active Case Finding Using GeneXpert or Smear Microscopy for Diagnostic Testing in Nepal: A Cross-Sectional Study

Suman Chandra Gurung<sup>1,2,\*</sup>, Kritika Dixit<sup>1,3,\*</sup>, Bhola Rai<sup>1</sup>, Raghu Dhital<sup>1</sup>, P Shradha Acharya<sup>1</sup>, Gangaram Budhathoki<sup>1</sup>, Deepak Malla<sup>1</sup>, Jens W. Levy<sup>4</sup>, Kn Buddha Basnyat<sup>6</sup>, Anil Thapa<sup>7</sup>, Gokul Mishra<sup>1,2</sup>, Bishal Subedi<sup>8</sup>, Mohammad K and Maxine Caws<sup>1,2</sup>

Gurung et al. *Infectious Diseases of Poverty* (2019) 8:99  
<https://doi.org/10.1186/s40249-019-0603-z>

Infectious Diseases of Poverty

RESEARCH ARTICLE

Open Access

## The role of active case finding in reducing patient incurred catastrophic costs for tuberculosis in Nepal

Suman Chandra Gurung<sup>1</sup>, Kritika Dixit<sup>1</sup>, Bhola Rai<sup>1</sup>, Maxine Caws<sup>1,2</sup>, Puskar Raj Paudel<sup>3</sup>, Raghu Dhital<sup>1</sup>, Shradha Acharya<sup>1</sup>, Gangaram Budhathoki<sup>1</sup>, Deepak Malla<sup>1</sup>, Jens W. Levy<sup>3</sup>, Job van Rest<sup>3</sup>, Knut Lönnroth<sup>4</sup>, Kerri Viney<sup>4,5</sup>, Andrew Ramsay<sup>6</sup>, Tom Wingfield<sup>2,7</sup>, Buddha Basnyat<sup>8</sup>, Anil Thapa<sup>9</sup>, Bertie Squire<sup>2</sup>, Duolao Wang<sup>2</sup>, Gokul Mishra<sup>1,2</sup>, Kashim Shah<sup>10</sup>, Anil Shrestha<sup>10</sup> and Noemia Teixeira de Siqueira-Filha<sup>2,11\*</sup>

Health Policy and Planning, 2020, 1–12  
doi: [10.1093/heapol/czad156](https://doi.org/10.1093/heapol/czad156)  
Original Article



## How to reduce household costs for people with tuberculosis: a longitudinal costing survey in Nepal

Suman Chandra Gurung<sup>1,2,†</sup>, Bhola Rai<sup>1,†</sup>, Kritika Dixit<sup>1,3,†</sup>, Eve Worrall<sup>2</sup>, Puskar Raj Paudel<sup>1,4</sup>, Raghu Dhital<sup>1</sup>, Manoj Kumar Sah<sup>1</sup>, Ram Narayan Pandit<sup>1</sup>, Tara Prasad Aryal<sup>1</sup>, Govinda Majhi<sup>1</sup>, Tom Wingfield<sup>2,3</sup>, Bertie Squire<sup>2</sup>, Knut Lönnroth<sup>3</sup>, Jens W. Levy<sup>4</sup>, Kerri Viney<sup>3,5</sup>, Job van Rest<sup>4</sup>, Andrew Ramsay<sup>6</sup>, Rafaely Marcia Santos da Costa<sup>7</sup>, Buddha Basnyat<sup>8</sup>, Anil Thapa<sup>9</sup>, Gokul Mishra<sup>1,2</sup>, Julia Moreira Pescarini<sup>10</sup>, Maxine Caws<sup>1,2</sup> and Noemia Teixeira de Siqueira-Filha<sup>2,11,\*</sup>

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Original Article



PLOS ONE

SCOPING REVIEW

## Interventions pathways to reduce tuberculosis-related stigma: a literature review and conceptual framework

Charlotte Nuttall<sup>1†</sup>, Ahmad Fuady<sup>2,3,4†</sup>, Holly Nuttall<sup>1</sup>, Kritika Dixit<sup>5,6</sup>, Muchtaruddin Mansyur<sup>2</sup> and Tom Wingfield<sup>1,5,7,8\*</sup>

# Evidence

Meeting Report

## Developing Feasible, Locally Appropriate Socioeconomic Support for TB-Affected Households in Nepal

Bhola Rai<sup>1,†</sup>, Kritika Dixit<sup>1,2,†</sup>, Tara Prasad Aryal<sup>1</sup>, Noemia Teixeira de Siqueira-Filha<sup>3</sup>, Puskar Raj Paudel<sup>1</sup>, Job van Rest<sup>4</sup>, Suman Chandra Gurung<sup>1,3</sup>, Raghu Dhital<sup>1</sup>, S Bertel Squire<sup>3,5</sup>, Maxine Caws<sup>1,3</sup> and Tom Wingfield<sup>1</sup>

STUDY PROTOCOL

REVISÉD Research protocol for a mixed-methods study to characterise and address the socioeconomic impact of accessing TB diagnosis and care in Nepal [version 2; peer review: 2 approved]

Kritika Dixit<sup>1,2</sup>, Bhola Rai<sup>1,†</sup>, Tara Prasad Aryal<sup>1</sup>, Gokul Mishra<sup>1</sup>, Noemia Teixeira de Siqueira-Filha<sup>3</sup>, Puskar Raj Paudel<sup>4</sup>, Jens W. Levy<sup>4</sup>, Job van Rest<sup>4</sup>, Suman Chandra Gurung<sup>1,3</sup>, Raghu Dhital<sup>1</sup>, Olivia Biermann<sup>2</sup>, Kerri Viney<sup>2</sup>, Knut Lönnroth<sup>2</sup>, S Bertel Squire<sup>3,5</sup>, Maxine Caws<sup>1,3</sup>, Tom Wingfield<sup>2,3,5</sup>

RESEARCH ARTICLE

Active case-finding policy development, implementation and scale-up in high-burden countries: A mixed-methods survey with National Tuberculosis Programme managers and document review

Olivia Biermann<sup>1\*</sup>, Phuong Bich Tran<sup>1</sup>, Kerri Viney<sup>1,2</sup>, Maxine Caws<sup>3,4</sup>, Knut Lönnroth<sup>1</sup>, Kristi Sidney Annerstedt<sup>1</sup>

1 Department of Global Public Health, Karolinska Institutet, Stockholm, Sweden, 2 Research School of Population Health, College of Health and Medicine, Australian National University, Canberra, Australia, 3 Department of Clinical Sciences, Liverpool School of Tropical Medicine, Liverpool, United Kingdom, 4 Birat Nepal Medical Trust, Lazimpat, Kathmandu, Nepal

\* [olivia.biermann@ki.se](mailto:olivia.biermann@ki.se)



Open access

Original research

## BMJ Open Barriers and facilitators to accessing tuberculosis care in Nepal: a qualitative study to inform the design of a socioeconomic support intervention

Kritika Dixit<sup>1,2</sup>, Olivia Biermann<sup>2</sup>, Bhola Rai<sup>1</sup>, Tara Prasad Aryal<sup>1</sup>, Gokul Mishra<sup>1,3</sup>, Noemia Teixeira de Siqueira-Filha<sup>4</sup>, Puskar Raj Paudel<sup>1,5</sup>, Ram Narayan Pandit<sup>1</sup>, Manoj Kumar Sah<sup>1</sup>, Govinda Majhi<sup>1</sup>, Jens Levy<sup>5</sup>, Job van Rest<sup>5</sup>, Suman Chandra Gurung<sup>1,3</sup>, Raghu Dhital<sup>1</sup>, Knut Lönnroth<sup>2</sup>, S Bertel Squire<sup>3,6</sup>, Maxine Caws<sup>1,3</sup>, Kristi Sidney<sup>2</sup>, Tom Wingfield<sup>2,3,6</sup>



# Pathways to Policy- Active Case Finding



Locally



Nationally



Globally



Active Case Finding success demonstrated  
IMPACT phase I and TB REACH

✓ Active Case Finding  
policy research  
published

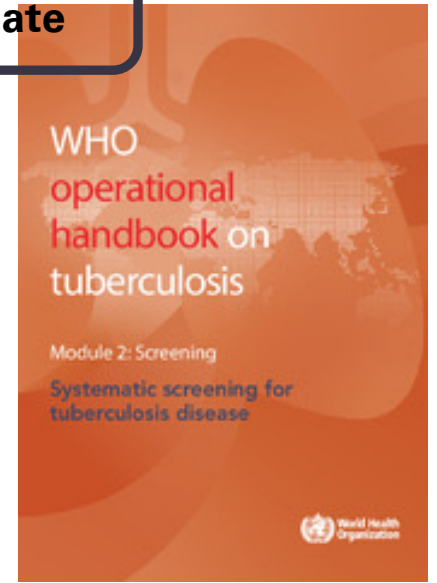
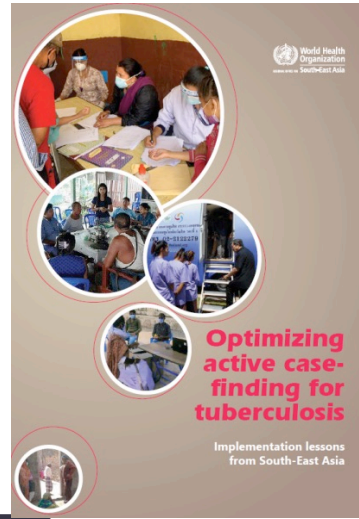
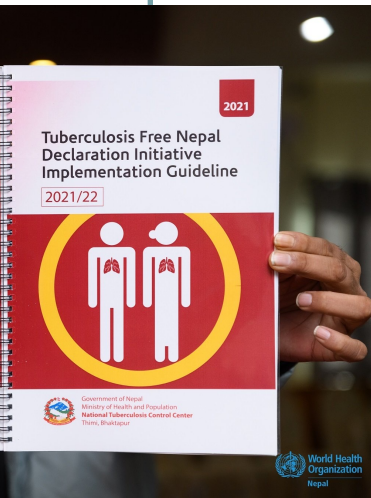
✓ Prioritised in government  
5-year National Strategic Plan for TB

✓ Findings included in WHO active case  
finding guidelines for LMIC update

✓ Partially taken up by Global Fund Nepal:  
✓ Household contact tracing  
✓ GeneXpert primary testing scale-up

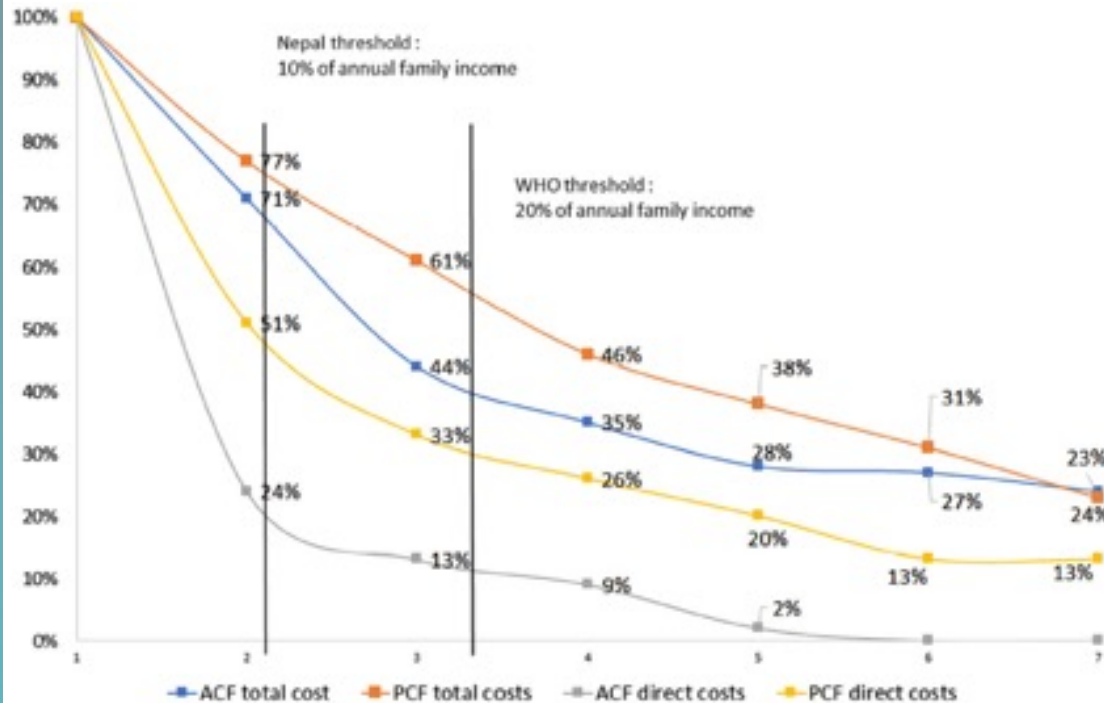
IMPACT phase II demonstrating intensified  
social Active Case Finding

✓ Social contact tracing included  
National Global Fund application  
✓ National patient costing survey  
planned by NTCC



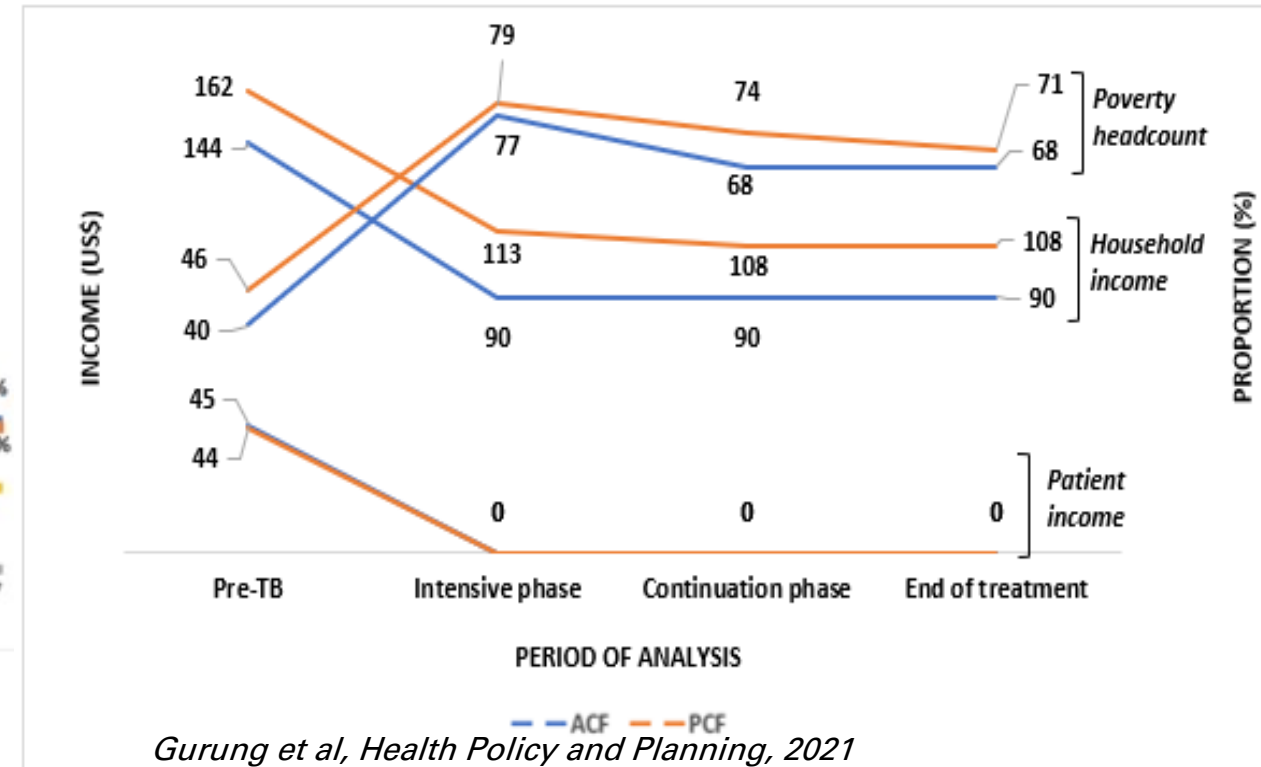
# Economic consequences of TB in Nepal

Catastrophic costs, TB-REACH Nepal



Gurung et al, Infectious Diseases of Poverty, 2020

f) Poverty headcount (%), median patient and household incomes (US\$)



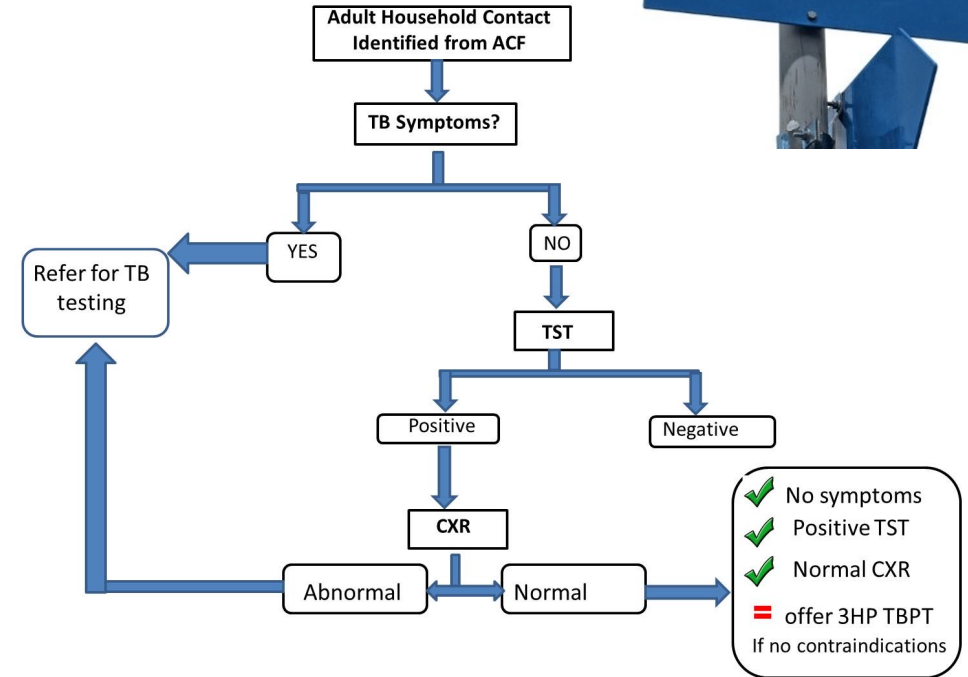
Gurung et al, Health Policy and Planning, 2021

**Most TB-affected households incur catastrophic costs and many become poorer due to TB**

# Latent TB Preventive Therapy – 3HP Regimen



- Over one-quarter (1.7 billion) of the world's population have LTBI
- Screen and treat high-risk population from the high reservoir of TB
- Feasibility and acceptability of WHO approved 3HP short regimen for TB preventative therapy in Nepal
- 3 months Isoniazid (H)/ Rifapentine (P) TB preventative therapy regimen
- Implementation districts – Chitwan and Pyuthan



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# Challenges

- Short-term project based fundings
- Limited skilled human resources
- Maintaining community networks in multiple districts
- Recruitment and retention of post-doctoral researchers



# Partnerships



TB Nepal

SH:24





**THANK  
YOU!**

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