



## Assessing the feasibility of collaborating with factories to improve work safety in Kamrangirchar, Dhaka, Bangladesh: participatory before-and-after intervention study

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# *Where, what and why?*

Study location & rationale

Kamrangirchar is a densely populated per-urban ('slum') area of Dhaka, Bangladesh

Home to hundreds of informal small-scale factories operating in hazardous working conditions

Occupational disease and injury has been declared a national priority, however; lack of evidence on interventions to mitigate risks



# Study aim and ethics

## *Aim*

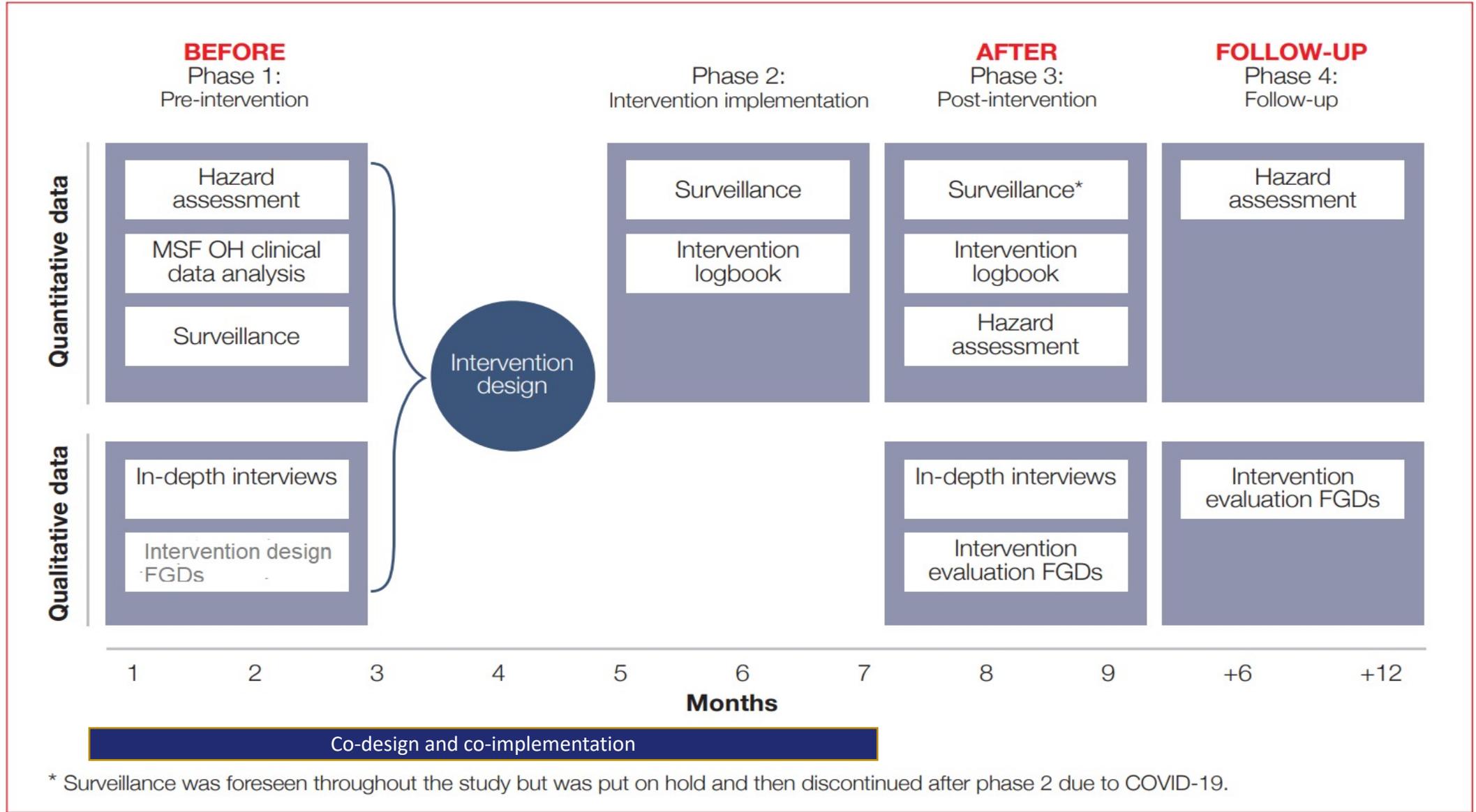
- Assessing the feasibility of collaborating with two factories to design and implement occupational health interventions to improve work safety in Kamrangirchar, Dhaka.

## *Ethics*

- Approved by MSF Ethics Review Board and locally approved by CIPRB (Centre for Injury Prevention and Research, Bangladesh)

# How?

## Study methodology



# What did we find out?

## Study findings

### PHASE 1: BEFORE

- 67 worker participated at outset with 41.5% turnover during study
- Frequent injuries amongst young workers
- Hazard risk scores (HRS) of 54% and 36%
- Workers perceived work as risky but prioritized work over health

### PHASE 2: INTERVENTION

- Intervention co-designed
- Packages implemented
- Not possible to implement some interventions

### PHASE 3: AFTER

- Two-fold reduction in the HRS in one factory (24%) and 1.5-fold reduction in other (21%)
- Workers positively perceived interventions and observed improvements in workplace safety and general wellbeing

### PHASE 4: FOLLOW UP

- Improvement sustained in one factory: reverted to pre-intervention in other
- Workers noted challenges in sustainability, but valued 'voice' and role in the process

### THROUGHOUT

- Power, dependency, indebtedness
- Particular risks and challenges for female and <18 workers
- Social bonds of solidarity, support, and shared responsibility

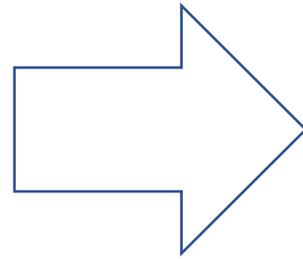
*“When we shape [pots] it creates a toxic gas which we inhale. This is unhealthy for us, but we have to work anyway. What can we do? We are poor and we need to survive.... Although we know this work is harmful for our health, still we do it for survival.”*  
adult male worker

*“...before, I used to feel shakiness in my head, not having concentration at work, not having appetite. These fumes used to create problems in my stomach. Now, it has been one year no fumes are going inside my stomach. [Before] my hair dropped out, the skin of my feet was damaged, [it] usually came off if the water falls on them. These have been very much changed for me. I am safe now.”*  
adult female worker

# Renovation of floor, walkway, chemical drainage



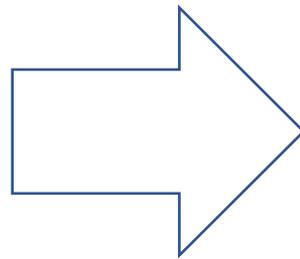
Before



After

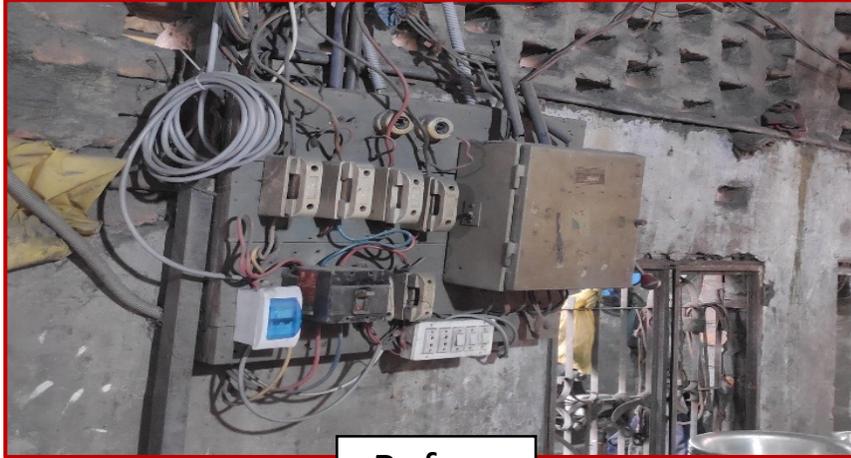


Before

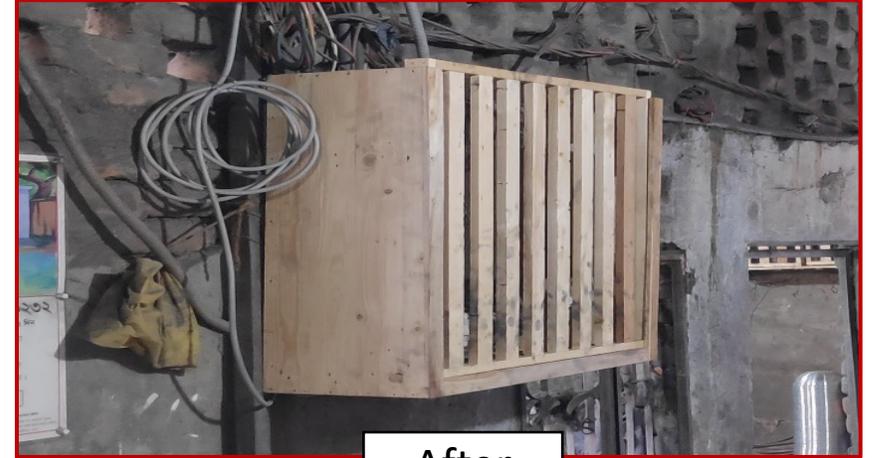
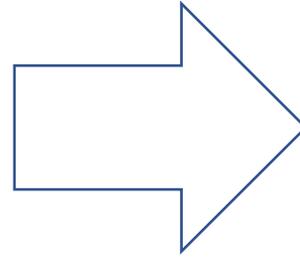


After

# Electrical and engineering intervention



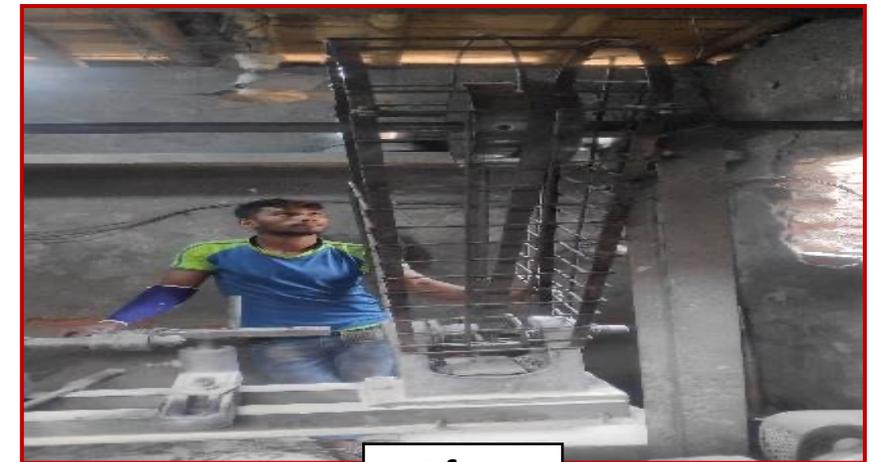
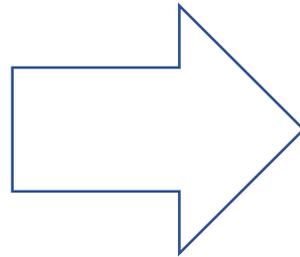
Before



After



Before

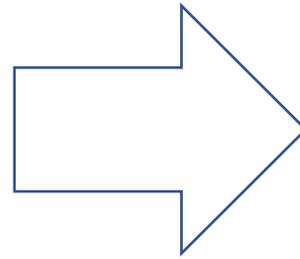


After

# Usage of PPE and chemical storage



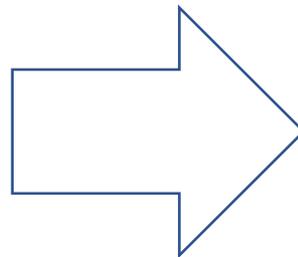
Before



After



Before



After

# Safety measures



Fire safety training



Haz-Com training



First Aid treatment



TT campaign

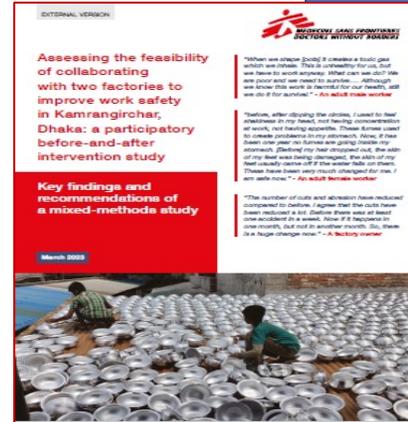
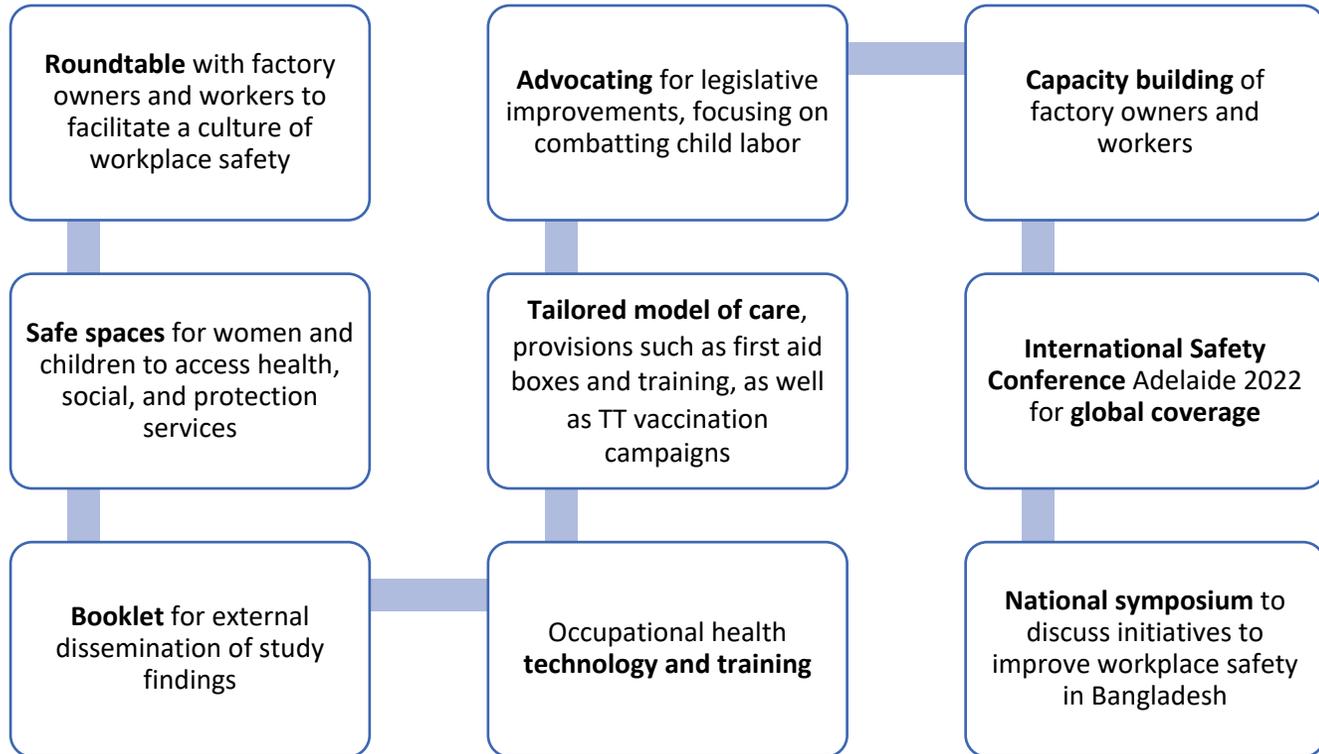
## Limitations

- Partial surveillance data
- Study limited to two factories
- Possibility of bias
- High turn over of workers
- Participation of consenting factories

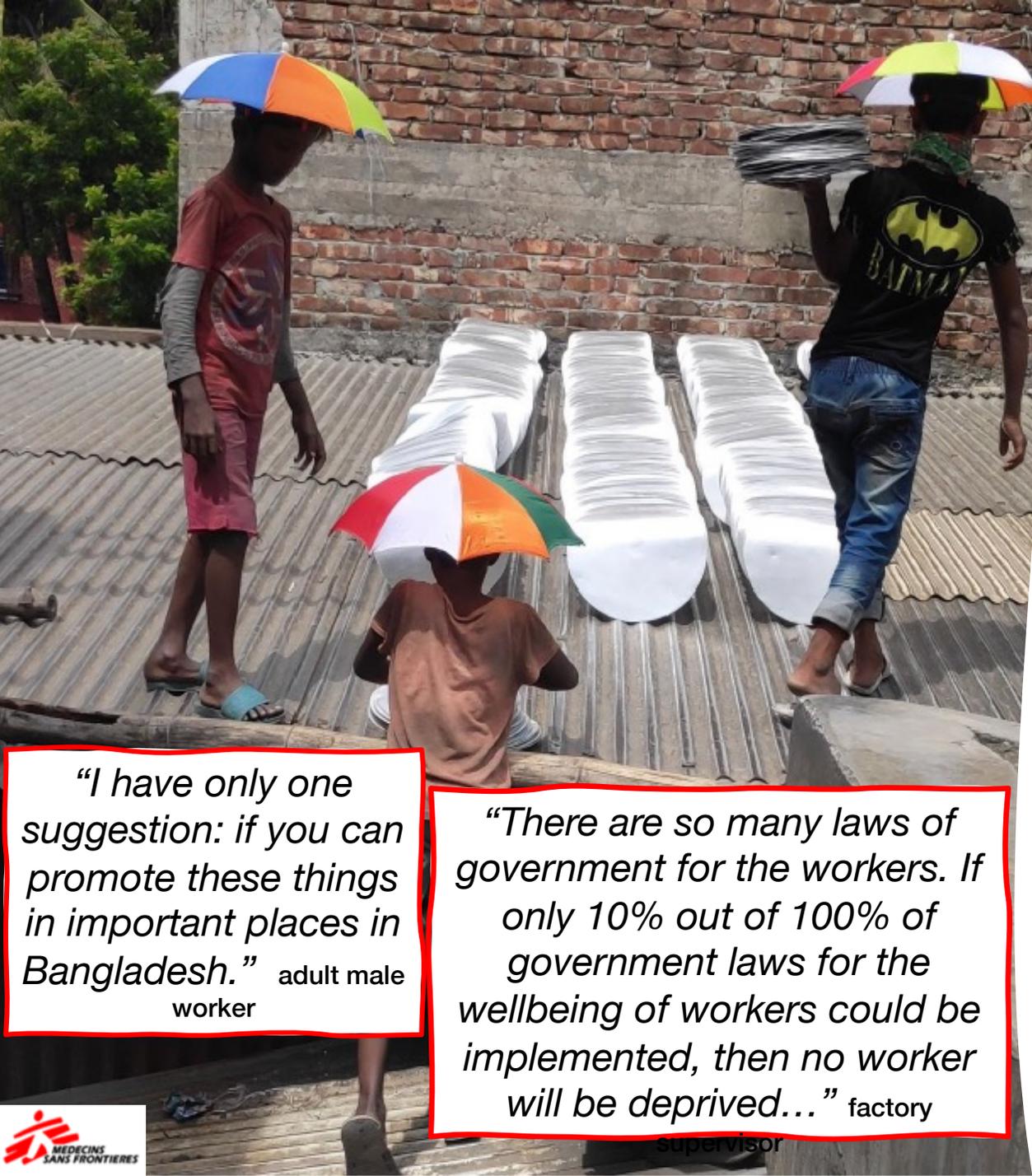
## Strengths

- Triangulation of different data sets
- Novel methodology
- Co-design
- Multidisciplinary approach
- Contributes to evidence on feasibility and practices

# Local and National Implications



Play Video



## Conclusions

- **Feasible** to co-design and co-implement interventions
- Interventions reduced hazards, but **sustainability** over time varied by factory
- **Motivation** to improve safety, but workers **prioritise** income over health; factories productivity and profit over safety
- Long-standing **structural factors and inequities** remain
- Need to create **feasible policy and practices** to enhance Health, Safety, Protection and Social inclusion
  - Collaborative efforts with workers to improve legislation and implementation
  - Support to national occupational health training and technologies
  - Specific social, inclusion and protection interventions for female and <18 workers

*“I have only one suggestion: if you can promote these things in important places in Bangladesh.”* adult male worker

*“There are so many laws of government for the workers. If only 10% out of 100% of government laws for the wellbeing of workers could be implemented, then no worker will be deprived...”* factory supervisor

# Thank you!

## Acknowledgements:

First and foremost, we would like to thank the workers and owners of the factories who collaborated with us on this study. The time they gave to share their opinions, experiences, preoccupations, priorities and suggestions is invaluable.

Thank you to Joy Kumahor, Holly Baker, Ida Leonhardt, and Natalie O'Connell for their logistical assistance; Sam Sullivan for support with infographic design; Laurie Boobier for support with mapping, and Emma Veitch for editing assistance.

Finally, a special thank you to the MSF teams in Bangladesh (past and present) for their ongoing enthusiasm, commitment and support throughout the duration of the study.

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