

# DETECTION OF NON-COMMUNICABLE DISEASES THROUGH COMMUNITY-BASED SCREENING



## Study Overview & Key Findings

Non-communicable diseases (NCDs), particularly diabetes and hypertension, are increasing rapidly in Bangladesh. However, many individuals remain undiagnosed until serious complications develop. To address this challenge, SMC introduced community-based health screening sessions in village marketplaces, bringing essential NCD screening services closer to underserved populations. These sessions aimed to measure blood glucose and pressure levels of the people, increase awareness, and facilitate timely referral for care. This study evaluated how effectively community-based screening identified undiagnosed NCD cases and connected individuals with service centers as required across 95 upazilas.



**1,751**

People Screened



**95**

Upazilas Covered



**44.8**

Average Age (Years)

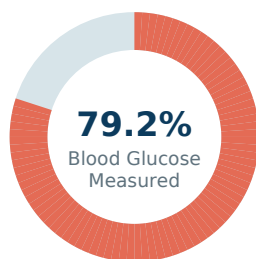
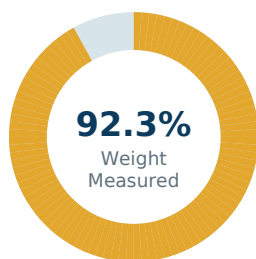
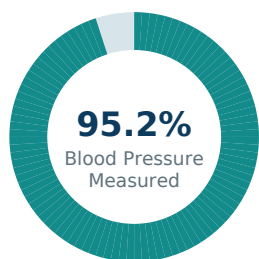


**BDT 22,500**

Monthly Income

## Screening Coverage

Of the total sample, blood pressure measurement was done by 95.2% attendees, weight measurement was done by 92.3% attendees, and blood glucose measurement was done by 79.2% attendees.



Uptake of Screening Services by Participants

### Screening Coverage (%)



Blood Pressure



Weight Measure



Blood Glucose

## Screening Procedures and Operational Classifications

### Blood pressure

Blood pressure was measured once for each participant in mmHg using a standard automated device after an appropriate resting period. Participants were classified according to the higher-risk category when either the systolic or diastolic threshold was met:

- **High blood pressure:** systolic blood pressure  $\geq 140$  mmHg and/or diastolic blood pressure  $\geq 90$  mmHg
- **Low blood pressure:** systolic blood pressure  $< 100$  mmHg and/or diastolic blood pressure  $< 60$  mmHg, provided that the participant did not meet the high blood-pressure threshold
- **Within the normal reference range:** systolic blood pressure 100–139 mmHg and diastolic blood pressure 60–89 mmHg

Because blood pressure was measured only once, these categories indicate screening results and not a confirmed diagnosis of hypertension.

### Random blood glucose

Random, non-fasting blood glucose was measured during the screening session and classified using the following operational thresholds:

- **Normal blood glucose reference level:**  $< 7.8$  mmol/L
- **Pre-diabetic reference level:** 7.8– $< 11.1$  mmol/L
- **Diabetic reference level:**  $\geq 11.1$  mmol/L

These classifications were used only to identify participants requiring counseling, referral, or further clinical assessment. They do not represent definitive diagnoses of prediabetes or diabetes.

## Revealing Hidden NCD Burden

### Diabetes & Pre-Diabetes

Among participants who received blood glucose testing (n=1,389):

- 22.2% screened have diabetes
  - ↳ 22.9% of diabetes cases were newly identified
- 19.2% screened have pre-diabetes
  - ↳ 59.4% of pre-diabetes cases were newly identified

### Hypertension

Among participants who received blood pressure measurements (n=1,667):

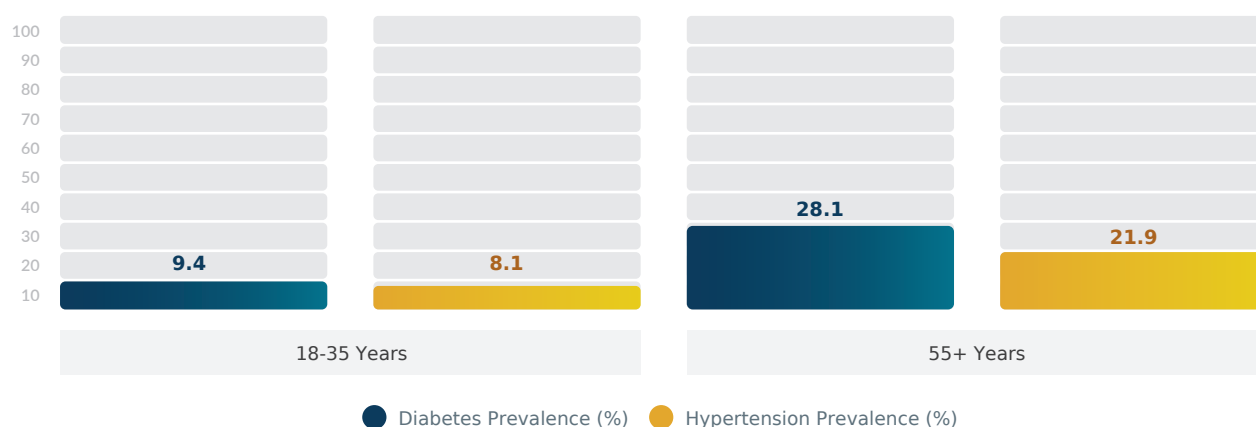
- 13.3% screened have hypertension
  - ↳ 39.2% of hypertension cases were newly identified

- Together, these results show that many people with NCD risk factors were unaware of their condition before screening. These highlighting a major gap in routine detection and access to preventive care.

## Association Of NCD With Age

Diabetes prevalence rose from 9.4% among adults aged 18–35 years to 28.1% among adults aged 55 years and above. Hypertension showed a similar pattern, reaching 21.9% among older adults. Adults aged 55+ were nearly three times more likely to have diabetes than those aged 18–35. These findings underscore the importance of routine NCD screening for adults aged 35 years and above.

## Prevalence Of Diabetes And Hypertension By Age Group



## Public Health Implications And Recommendations

These findings have direct implications for public health program design and policy in rural Bangladesh. Community-based paramedic screening offers a scalable, cost-effective model for earlier NCD detection and referral.



### Prioritize Adults 35+

Since there are a number of undiagnosed cases in the community, routine NCD screening should be systematically offered to all adults aged 35 and above, with intensified outreach for those 55+ who face the highest risk.



### Strengthen Paramedic Capacity

Invest in training and equipping community paramedics to deliver standardized blood pressure and glucose screening during routine home visits.



### Build Strong Referral Pathways

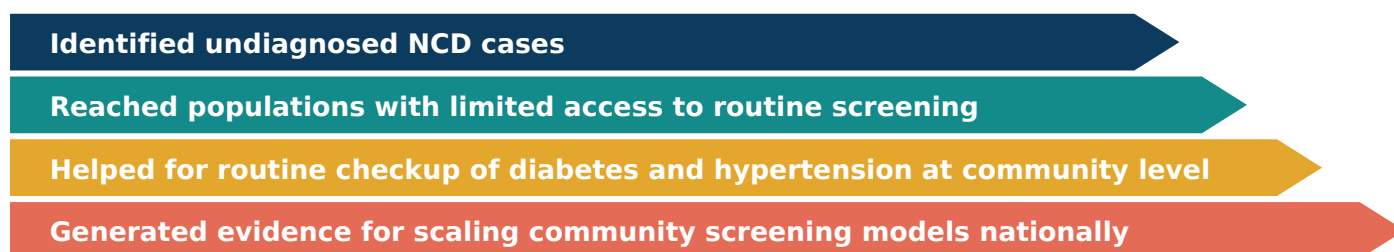
Screening must be paired with clear referral protocols so newly identified cases can receive timely confirmation, follow-up, and ongoing management.



### Expand to Underserved Areas

Extend community screening to Upazilas without services, prioritizing areas with the lowest healthcare access and highest poverty rates.

## Why This Matters



- **Key Takeaway:** Community-based screening identified a substantial burden of previously undiagnosed diabetes, pre-diabetes, and hypertension. Nearly 1 in 5 participants had undiagnosed diabetes or pre-diabetes, while more than 1 in 8 had undiagnosed hypertension, demonstrating the value of scaling community-based NCD screening across rural Bangladesh.