

# Journey of the icddr,b Q-mat

## The 1<sup>st</sup> Generation icddr,b Q-mat | 2005 – 2010

### Development and Testing | 2006 – 2007

Under the leadership of Mohammad Abdul Quaiyum, a team of icddr,b researchers developed the first-generation Q-mat, using locally available materials.

**Outcome:** Laboratory and hospital testing confirmed the mat's practicality and objective measurement capacity, addressing the inaccuracy of visual estimation.

### Feasibility, acceptability and program effectiveness of misoprostol in preventing post-partum haemorrhage (PPH) in rural Bangladesh | 2007 – 2008

Supported by: **USAID**

A quasi-experimental study was conducted among 2,159 women between in the Abhoynagar subdistrict of Jessore district, Bangladesh.

**Outcome:**

- Over 90% of women who used the Q-mat with misoprostol found it beneficial, confirming its relevance and appeal in rural home births.
- One article has been published in a peer-reviewed journal

### Scaling up of Misoprostol for prevention of postpartum haemorrhage in 29 upazilas of Bangladesh | 2009 – 2010

Supported by: **Venture Strategies Innovations (VSI), Bixby Center for Population, Health and Sustainability, University of California**

An operations research study was conducted in service areas of RDRS, covering 29 upazilas in Lalmonirhat, Kurigram, Dinajpur, and Thakurgaon districts. Over 77,000 home births were included, attended primarily by trained traditional birth attendants (TBAs).

**Outcome:**

- Around 80% of home births used Q-mat, standardising blood loss assessment, supporting early PPH recognition, and referral.
- One article has been published in a peer-reviewed journal

## The 2<sup>nd</sup> Generation icddr,b Q-mat | 2010 – 2021

### Development and Testing | 2010 – 2012

Supported by: **Bill & Melinda Gates Foundation**

Developed with a motivation to make the mat biodegradable to avoid environmental pollution from synthetic materials and to reduce the risk of infection from reusing non-disposable Q-mats.

**Outcome:** Successful development and laboratory validation of a biodegradable, single-use mat, reducing environmental and infection risks.

### Validating a simple tool to measure postpartum blood loss for early recognition of postpartum haemorrhage and referral in rural Bangladesh | 2010 – 2012

Supported by: **Bill & Melinda Gates Foundation**

A quasi-experimental study was undertaken between in Shahjadpur sub-district of North West Bangladesh among 3089 women (intervention: 1530, control: 1559) to validate Q-mat as a simple tool for PPH recognition

**Outcome:** Usage showed high sensitivity and specificity (93% each) for PPH detection, with strong agreement between laypersons and physicians; 82% adoption rate.

### Feasibility of using icddr,b birthing mat during facility deliveries for identification of post-partum haemorrhage (PPH) in Bangladesh | 2020 – 2021

Supported by: **UNFPA Bangladesh**

An implementation research was conducted among pregnant women in labor coming to the facilities for normal deliveries with a before-after study design in nine public health facilities providing delivery services from Gaibandha, Munshiganj, and Bogra districts of Bangladesh. A total of 707 women who had normal vaginal deliveries were enrolled across nine primary and secondary public health facilities in Bangladesh.

**Outcome:** 82% acceptability and 97% diagnosing ability in public facilities; healthcare providers reported improved PPH identification, standardised care, and high acceptability.

## Next step for icddr,b Q-mat | 2024 – Present

Ongoing Study:  
**Demonstration of the icddr,b Q-mat integrated in Maternal Health SOP in selected public health settings of Bangladesh | 2025 – 2026**

Supported by: Global Affairs Canada

Next Step:  
**Effectiveness Trial**