BACKGROUND

The Sustainable Development Goals (SDGs) envision to end all preventable neonatal deaths by 2030. Learning from the Millennium Development Goal (MDG) experience, where there was no newborn specific target, SDGs have set a specific target (target 3.1) for reducing neonatal mortality to 12 per 1,000 live births or below by 2030. To achieve this, the majority of countries will have to accelerate their progress towards improving newborn survival by focusing on scaling up evidence-based interventions with quality. The majority of high-impact interventions are facility-based, and the effective delivery of these interventions depends on a core set of functions (skills and services) delivered by the health service providers and health facilities. These functions can be regarded as signal functions which can be used in categorizing health facilities based on availability, readiness and functionality of newborn services. Newborn Signal Functions (NSFs), could be used to guide program planning and monitoring. Unfortunately, till date, there are no globally and nationally recognized standards for newborn services or NSFs.

OBJECTIVES

- To identify a set of NSFs for Bangladesh
- To assess the service availability, readiness and functionality of public health facilities based on NSFs

METHODOLOGY

We adopted the Delphi method, developed by Dalkey and Helmer at the Rand Corporation in the 1950s, to identify and finalize the NSFs. The Delphi technique is a valid and widely used method for achieving convergence of opinions concerning real-world knowledge solicited from relevant experts and stakeholders.

This study was carried out between August 2017 and June 2019. We followed three main steps.

Step 1- Listing: We conducted desk-review including 15 global, regional, and national strategies and guidelines addressing the major causes of newborn deaths and identified 79 newborn interventions.
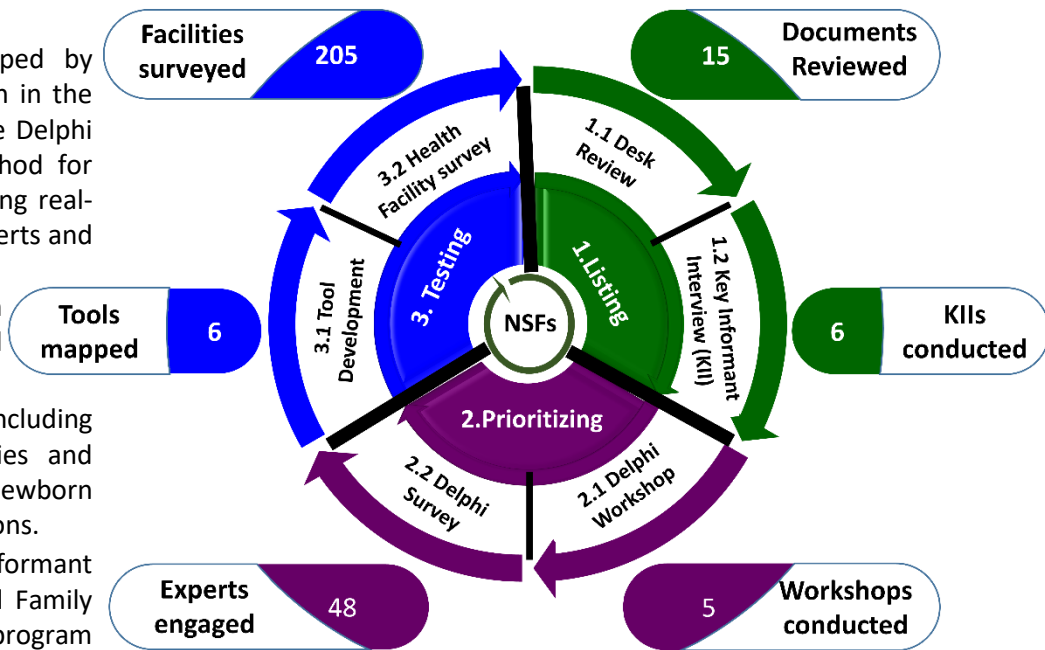
Afterwards, we conducted 6 key informant interviews with the Ministry of Health and Family Welfare (MOH&FW) policy makers and program managers and clinical experts and identified additional 11 newborn interventions.

Step 2- Prioritizing: We conducted a consultative workshop with MOH&FW representatives and National Technical Working Committee on Newborn Health (NTWC-NB) members to review, update, and finalize the list of newborn interventions and Delphi expert panel. The Delphi expert panel included representatives from MOH&FW, NTWC-NB, professional bodies, UN agencies, and development partners working in newborn health.

Afterwards, we conducted three rounds of Delphi surveys with 48 experts to score and rank the newborn interventions. Finally, 20 functions were identified through this process as the NSFs for Bangladesh.

Step 3-Testing: We reviewed 6 globally accepted health facility assessment tools to map variables related to the NSFs for Bangladesh. The new variables were checked for content and construct validity through field testing and incorporated in tools used in the Bangladesh Health Facility Assessment Survey (BHFS) 2017.

Afterwards, we conducted a health facility survey using the updated tools. We randomly selected 41 districts for the survey. The District Hospital and Mother and Child Welfare Centers (MCWC) along with one randomly selected Upazilla Health Complexes (UHC), Union Health and Family Welfare Center (UH&FWC), and Community Clinic (CC) from each of the selected districts were surveyed.

NEWBORN SIGNAL FUNCTIONS (NSFs) IN BANGLADESH

NEWBORN SIGNAL FUNCTIONS IN BANGLADESH: *PERFORMED IN LAST THREE MONTHS*

Newborn Signal Functions	DH (%)	MCWC (%)	UHC (%)	UH&FWC (%)	CC (%)
Primary					
1. Iron and Folic Acid supplement	92.5	100.0	100.0	58.5	9.8
2. Hand washing before touching baby	100.0	100.0	100.0	53.7	9.8
3. Immediate drying	100.0	100.0	100.0	53.7	9.8
4. Delayed cord clamping	100.0	100.0	100.0	53.7	9.8
5. Clean cord cutting	97.5	97.6	97.6	53.7	9.8
6. Application of 7.1% CHX for cord care	100.0	100.0	100.0	53.7	9.8
7. Resuscitation-Bag and Mask	97.5	100.0	92.7	46.3	4.9
8. Early initiation of breast feeding	97.5	100.0	100.0	51.2	9.8
9. Early initiation of skin to skin care	100.0	100.0	100.0	53.7	9.8
Basic					
10. Tetanus toxoid	85.0	95.1	80.5	26.8	2.4
11. Suction of newborn	100.0	95.1	97.6	43.9	2.4
12. Oral antibiotics for infections	22.5	14.6	19.5	4.9	0.0
13. Inj. antibiotics (IM) for infections	47.5	34.1	36.6	0.0	0.0
Comprehensive					
14. Oral or Inj. antibiotics for PROM	97.5	73.2	75.6	0.0	0.0
15. Oxygen therapy	97.5	100.0	95.1	0.0	0.0
16. Inj. antibiotics (IV) for infections	77.5	39.0	56.1	0.0	0.0
17. Phototherapy	87.5	2.4	9.8	0.0	0.0
18. Kangaroo Mother Care (KMC)	62.5	39.0	29.3	0.0	0.0
Advanced					
19. Inj. ACS for preterm birth	77.5	56.1	51.2	0.0	0.0
20. Incubator	50.0	0.0	2.4	0.0	0.0

Delphi Workshop

Implications

This is the first study to identify NSFs in Bangladesh based on inputs and consensus of national stakeholders.

The NSFs will help policymakers and health managers in categorizing health facilities as primary, basic, advanced and comprehensive care, and use this categorization in program planning and performance monitoring

The results of the health facility survey using the updated tool will reflect the current status of service availability, readiness and functionality of public health systems regarding newly identified NSFs.

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Health Facility Survey-Districts and Upazilas

Partners and Collaborators