Ending preventable deaths in the first four weeks of life (the neonatal period) is central to achieving Sustainable Development Goal (SDG) 3—to ensure healthy lives and promote well-being for all at all ages. In 2017, an estimated 2.5 million newborns died during the neonatal period (1). Approximately 80% of these newborns were low birth weight (LBW) and two-thirds were born prematurely (before 37 weeks gestation) (2). Prematurity and LBW are major indirect contributors to disability and non-communicable diseases globally including cerebral palsy, cognitive delays, sensory (vision and hearing) problems, respiratory difficulties, and diabetes in adulthood. Each year an estimated 1 million newborns survive with some sort of long-term disability (3). This is a result of shortened gestation age at birth, but this can also be a direct reflection of the quality of care the newborn received. While all newborns require essential newborn care (ENC) at birth and over the first days of life, globally, approximately 30 million newborns will need some level of inpatient care each year (4). Access to good-quality inpatient care varies dramatically between and among countries and even within countries. Good-quality care is defined as evidence-based, safe, well organized, accessible, adequately resourced, efficient, provided in a timely manner, and people-centered (5). All levels of care require competent and dedicated staff, equipment and other medical commodities, strong infrastructure, and reliable referral networks. In order to achieve the SDG neonatal mortality rate target of 12 deaths per 1,000 live births by 2030, countries will need to improve the quality of inpatient care for small and sick newborns based on an accurate understanding of the service delivery landscape.

In 2017 Every Preemie—SCALE led the development of a study protocol and tools for a situation analysis to provide a better understanding of the landscape of inpatient care for small and sick newborns in low- and middle-income countries. The protocol and tools were designed to facilitate their adaptation and use at the country level; and in 2018 and 2019, the Situation Analysis of Inpatient Care of Newborns and Young Infants1, was implemented in Bangladesh, Ghana, Nepal, Pakistan, Rwanda, Tanzania, and Uganda. The assessment used a framework based on the six building blocks defined by the World Health Organization (WHO) for well-functioning health systems and included community systems as a 7th component. The assessment also incorporated the WHO Standards for Improving Quality of Maternal and Newborn Care in Facilities (5) and evidence-based interventions. Also, given the centrality of nurturing care to neurosensory development (touch, taste, smell, hearing and vision) and newborn well-being, particularly in the small and sick newborn, elements of developmentally supportive or nurturing care were included (6).

This multi-country summary provides an overview of key findings for Ghana, Rwanda, Tanzania, and Uganda2 and features country demographic data; the types and numbers of facilities included by country; available policies, guidelines, strategies and standards of care for inpatient newborns; service readiness and availability; elements of nurturing care; and data available through Ministry of Health facility registers. Ministries of Health and other stakeholders will use their comprehensive findings to inform policy and guidelines, and service delivery and related inputs for improved inpatient care of newborns and young infants. Country-level service improvements can be harmonized with existing and forthcoming international standards and guidelines3 to ensure a whole of health system response for good-quality inpatient newborn care.

1Young infants are defined as newborns who are up to 59 days of age.
2Data for Bangladesh, Nepal and Pakistan were not available at the time this document was developed.
3Including current WHO Standards for Improving Quality of Maternal and Newborn Care in Facilities; WHO Recommendations on interventions to improve preterm birth outcomes; and, forthcoming WHO Clinical Standards of Care for Small and Sick Newborns (in development).

References
(2) Lawn JE, Blencowe H, Oza S, You D, Lee AC, Waiswa P, et al. Every newborn: progress, priorities, and potential beyond survival. Lancet. 2014;384(9938):189–205.
### Births attended by skilled providers
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<thead>
<tr>
<th>Country</th>
<th>Percentage</th>
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<tr>
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<tr>
<td>Rwanda</td>
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</tr>
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<td>Uganda</td>
<td>74%</td>
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### Annual number of preterm births
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<th>Number</th>
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<td>Uganda</td>
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### Annual number of stillbirths
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</tr>
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<td>Rwanda</td>
<td>5,900</td>
</tr>
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</tr>
<tr>
<td>Uganda</td>
<td>34,200</td>
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</table>

### Policies Addressing Newborn and Young Infant Health
- **National Plan or Strategy that includes newborn health and expanding/improving inpatient care for small/sick newborns**
  - Ghana: ✔
  - Rwanda: ✔
  - Tanzania: ✔
  - Uganda: ✔
- **National budget item for inpatient care of newborns and young infants**
  - Ghana: ✔
  - Rwanda: ✔
  - Tanzania: ✔
  - Uganda: ✗
- **Essential newborn commodities on essential drug list**
  - Ghana: ✔
  - Rwanda: ✔
  - Tanzania: ✔
  - Uganda: ✔

### WHO Standards of Care for Improved Preterm Outcomes
- **MgSO4 for pre-eclampsia/eclampsia**
  - Ghana: ✔
  - Rwanda: ✔
  - Tanzania: ✔
  - Uganda: ✔
- **Safe oxygen use**
  - Ghana: ✗
  - Rwanda: ✔
  - Tanzania: ✔
  - Uganda: ✗
- **Antibiotics for pPROM**
  - Ghana: ✔
  - Rwanda: ✔
  - Tanzania: ✔
  - Uganda: ✔

### Guidelines/Standards of Care Related to At-Risk Newborns
- **Low birth weight (threshold identified)**
  - Ghana: ✔
  - Rwanda: ✔
  - Tanzania: ✔
  - Uganda: ✔
- **Premature (gestational threshold identified)**
  - Ghana: ✔
  - Rwanda: ✔
  - Tanzania: ✔
  - Uganda: ✔
- **Birth asphyxia/respiratory problems**
  - Ghana: ✔
  - Rwanda: ✗
  - Tanzania: ✔
  - Uganda: ✗
- **Management of hypothyroid**
  - Ghana: ✔
  - Rwanda: ✗
  - Tanzania: ✔
  - Uganda: ✗
- **Management of Rh incompatibility**
  - Ghana: ✔
  - Rwanda: ✗
  - Tanzania: ✔
  - Uganda: ✗

### Situation Analysis Facility Data
#### Facility Management
- **Government managed**
  - Ghana: 6/9
  - Rwanda: 13/15
  - Tanzania: 8/11
  - Uganda: 20/28
- **Non-government managed**
  - Ghana: 3/9
  - Rwanda: 2/15
  - Tanzania: 3/11
  - Uganda: 8/28

#### Facilities with Specific Units
- **NICU**
  - Ghana: 6/9
  - Rwanda: 0/15
  - Tanzania: 1/11
  - Uganda: 0/28
- **Special Care Unit**
  - Ghana: 6/9
  - Rwanda: 14/15
  - Tanzania: 1/11
  - Uganda: 2/28
- **Basic Care Unit**
  - Ghana: 7/9
  - Rwanda: 12/15
  - Tanzania: 7/11
  - Uganda: 3/28
- **KMC**
  - Ghana: 4/9
  - Rwanda: 14/15
  - Tanzania: 5/11
  - Uganda: 8/28
- **Well Newborn**
  - Ghana: 1/9
  - Rwanda: 2/15
  - Tanzania: 0/11
  - Uganda: 0/28
- **Well Baby Rooming In**
  - Ghana: 1/9
  - Rwanda: 14/15
  - Tanzania: 11/11
  - Uganda: 13/28

#### Facilities with Neonatal Specialist Staff
- **Neonatologist**
  - Ghana: 0/9
  - Rwanda: 0/15
  - Tanzania: 0/11
  - Uganda: 0/28
- **Pediatrician**
  - Ghana: 4/9
  - Rwanda: 10/15
  - Tanzania: 3/11
  - Uganda: 0/28
- **Ophthalmologist**
  - Ghana: 0/9
  - Rwanda: 4/15
  - Tanzania: 0/11
  - Uganda: 0/28
- **Neonatal Nurse Specialist**
  - Ghana: 2/9
  - Rwanda: 5/15
  - Tanzania: 1/11
  - Uganda: 0/28
## Situation Analysis of Inpatient Care of Newborns and Young Infants

Total number of facilities surveyed = 9

### Service Readiness

- **Sufficient availability of service providers with skills for newborn and young infant care:** NO
- **% of facilities providing training to new or rotating staff while working on the unit:** 89%
- **% of facilities with consistent supply of electricity:** 67%
- **% of facilities with running water:** 100%
- **Drug shortages in past 3 months:** 47%
- **Equipment breakdown in past 3 months:** 59%
- **Nursing staff shortage in past 1 month:** 47%

### Specific Practices Reported by Facilities

- Thermal management/KMC: 100%
- Feeding and lactation support: 100%
- Administer oxygen: 89%
- Infection prevention: one infant per cot: 100%

### Facility Support for Nurturing Care

- % of facilities with linkages to community health workers for follow-up post-discharge: 89%

#### % of facilities maintaining low stimulation environment for newborns and young infants

- Maintaining quiet/low noise: 56%
- Maintaining low light: 33%

#### % of facilities with functioning toilet for parents/visitors: 22%

#### % of facilities with chair/s for mothers to provide skin-to-skin and to feed baby in the units: 22%

### Management

- **External supervision in past 3 months:** 8/9
- **Perinatal death audits:** 7/9
- **Neonatal death audits:** 9/9
- **Discharge system in place:** 8/9

### Equipment Available (observed and functional)

- Stethoscope: 7/9
- CPAP: 3/9
- Radiant warmers: 6/9
- Continuous temperature monitoring: 6/9

In Ghana, the assessment was implemented by University Research Co., LLC (URC) under the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project and was supported by the Ghana Health Service and USAID.
Situation Analysis of Inpatient Care of Newborns and Young Infants

Total number of facilities surveyed = 15

Service Readiness

- Sufficient availability of service providers with skills for newborn and young infant care

- % of facilities providing training to new or rotating staff while working on the unit: 87%

- % of facilities with consistent supply of electricity: 87%

- % of facilities with running water: 100%

- Drug shortages in past 3 months: 53%

- Equipment breakdown in past 3 months: 63%

- Nursing staff shortage in past 1 month: 47%

Specific Practices Reported by Facilities

- Thermal management/KMC: 93%

- Feeding and lactation support: 93%

- Administer oxygen: 100%

- Infection prevention: one infant per cot: 87%

Facility Support for Nurturing Care

- % of facilities with linkages to community health workers for follow-up post-discharge: 60%

- % of facilities maintaining low stimulation environment for newborns and young infants:
  - Maintaining quiet/low noise: 87%
  - Maintaining low light: 47%

- % of facilities with functioning toilet for parents/visitors: 0%

- % of facilities with chair/s for mothers to provide skin-to-skin and to feed baby in the units: 27%

Management

- External supervision in past 3 months: 12/15

- Patient case reviews: 7/15

- Perinatal death audits: 14/15

- Neonatal death audits: 14/15

- Discharge system in place: 13/15

Equipment Available (observed and functional)

- Stethoscope: 13/15

- CPAP: 12/15

- Radiant warmers: 13/15

- Continuous temperature monitoring: 14/15

The assessment in Rwanda was implemented by USAID’s Maternal and Child Survival Program, and supported by USAID and the Rwandan Ministry of Health.
Situation Analysis of Inpatient Care of Newborns and Young Infants

Total number of facilities surveyed = 11

Service Readiness

Sufficient availability of service providers with skills for newborn and young infant care

- No

% of facilities providing training to new or rotating staff while working on the unit

- 91%

% of facilities with consistent supply of electricity

- 73%

% of facilities with running water

- 100%

% of 45 interviewed providers from 11 facilities who reported maintaining a low stimulation environment for newborns and young infants

- 33%

Drug shortages in past 3 months

- 18%

Equipment breakdown in past 3 months

- 49%

Nursing staff shortage in past 1 month

- 64%

Specific Practices Reported by Facilities

- Thermal management: 82%
- Feeding and lactation support: 91%
- Administer oxygen: 100%
- Infection prevention: one infant per cot: 73%

Facility Support for Nurturing Care

- % of facilities with linkages to CHWs for follow-up post-discharge
- % of facilities maintaining low stimulation environment for newborns and young infants
- Maintaining quiet/low noise
- Maintaining low light
- % of facilities with functioning toilet for parents/visitors
- % of facilities with chair/s for mothers to provide skin-to-skin and to feed baby in the units

Management

- External supervision in past 3 months: 6/11
- Patient case reviews: 9/11
- Perinatal death reviews: 11/11
- Neonatal death reviews: 11/11
- Discharge system in place: 6/11

Equipment Available (observed and functional)

- Stethoscope: 9/11
- CPAP: 0/11
- Radiant warmers: 2/11
- Continuous temperature monitoring: 1/11
- Bag and mask (preterm): 2/11

In Tanzania, Jhpiego implemented the assessment with support from the Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC).
Situation Analysis of Inpatient Care of Newborns and Young Infants

Total number of facilities surveyed = 28*

Service Readiness

- Sufficient availability of service providers with skills for newborn and young infant care: NO
- % of facilities providing training to new or rotating staff while working on the unit: 71%
- % of facilities with consistent supply of electricity: N/A
- % of facilities with running water: 68%
- Drug shortages in past 3 months: N/A
- Equipment breakdown in past 3 months: N/A
- Nursing staff shortage in past 1 month: N/A

Specific Practices Reported by Facilities

- 79%: Thermal management/KMC
- 93%: Feeding and lactation support
- 32%: Administer oxygen
- 61%: Infection prevention: one infant per cot

Facility Support for Nurturing Care

- % of facilities with linkages to community health workers for follow-up post-discharge: 78%
- % of facilities maintaining low stimulation environment for newborns and young infants: 99%
- % of facilities maintaining quiet/low noise environment: 89%
- % of facilities maintaining low light environment: 93%
- % of facilities with functioning toilet for parents/visitors: 56%
- % of facilities with chair/s for mothers to provide skin-to-skin and to feed baby in the units: 32%

Management

- External supervision in past 3 months: 22/28
- Patient case reviews: 7/28
- Any perinatal or neonatal death reviews: 19/28
- Discharge system in place: 4/28

Equipment Available (observed and functional)

- Stethoscope: 21/28
- CPAP: 1/28
- Radiant warmers: N/A
- Continuous temperature monitoring: 22/28

Services Available

- Prenatal
  - ACS: 22/28
  - Ultrasound: 7/28
  - MgSO4 (for eclampsia): 20/28
  - Antibiotics for PROM: 27/28
- Neonatal Illness
  - Antibiotics for neonatal infections: 28/28
  - Treat respiratory distress: 26/28
  - Diagnose/treat neonatal sepsis: 28/28
  - Hypothermia: 13/28
  - Jaundice: 14/28
  - Treat seizures: 0/28
  - Screening for ROP: 0/28

In Uganda, the assessment was implemented by the Centre of Excellence for Maternal, Newborn and Child Health of Makerere University School of Public Health in collaboration with UNICEF and the Uganda Ministry of Health. The assessment was funded through the Swedish International Development Agency.

*This assessment was implemented in only one remote region in Uganda, and therefore does not provide a national overview.
### Indicator and Source Table

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<th>Indicator</th>
<th>Source</th>
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<td>Every Preemie—SCALE Country Profiles of Preterm and Low Birth Weight Prevention and Care. Updated July 2019 and available at <a href="http://www.everypreemie.org/country-profiles">www.everypreemie.org/country-profiles</a></td>
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<td>Births attended by skilled providers (2014)</td>
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<td>Annual number of stillbirths (2015)</td>
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<tr>
<td>National Plan or Strategy that includes newborn health and expanding/improving inpatient care for small/sick newborns</td>
<td>Tool 2, A.02</td>
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<td>Essential newborn commodities on essential drug list</td>
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<thead>
<tr>
<th>WHO Standards of Care for Improved Preterm Outcomes</th>
<th>Every Preemie—SCALE Country Profiles of Preterm and Low Birth Weight Prevention and Care. Updated July 2019 and available at <a href="http://www.everypreemie.org/country-profiles">www.everypreemie.org/country-profiles</a></th>
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<td>ACS</td>
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<th>Guidelines/Standards of Care Related to At-Risk Newborns</th>
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<td>Low birth weight (threshold identified)</td>
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<td>Equipment breakdown in past 3 months</td>
<td>Percentage of interviewed providers reporting this issue in Tool 8, 3.202</td>
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<tr>
<td>Nursing staff shortage in past 1 month</td>
<td>Percentage of interviewed providers reporting this issue in Tool 8, 3.203</td>
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</table>

The protocol and tools, as well as resources for country implementation, are available here: https://www.everypreemie.org/technical-materials/

For more information on nurturing care in your country, see https://nurturing-care.org/?page_id=703.