2018 PROGRESS REPORT:

REACHING EVERY NEWBORN NATIONAL 2020 MILESTONES

MARCH 2018

World Health Organization

unicef

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About the *Every Newborn Action Plan*

In 2014, at the Sixty-seventh World Health Assembly, 194 Member States of the World Health Organization (WHO) endorsed Every Newborn: an action plan to end preventable deaths (Resolution WHA67.10), a road map of strategic actions to end preventable newborn mortality and stillbirths and contribute to reducing maternal mortality and morbidity. The Every Newborn Action Plan presents evidence-based solutions and sets out a clear path to 2020 with eight specific milestones for what needs to be done differently to reduce mortality rates and improve maternal and newborn health by 2030. Member States requested that the WHO Director-General monitor progress and report periodically to the Health Assembly up to 2030.

Achieving the targets set out in the Sustainable Development Goals and the UN Secretary-General's Global Strategy for Women's Children's and Adolescent Health (2016-2030) is underpinned by achieving the Every Newborn milestones by 2020. For the Seventy-first World Health Assembly in 2018, progress on the Every Newborn resolution is included under reporting on the Global Strategy.

To complement that report, the present document provides a detailed look at progress in country leadership and action toward the Every Newborn milestones. It presents a compilation of data collected through use of the Every Newborn Tracking Tool in 2017, adopted by 75 countries, it highlights examples of specific country activity for each national milestone as well as relevant progress towards global milestones.

Contents

1. Executive summary 4

2. Introduction 6

3. ENAP Strategic objectives and national milestones 7

4. Methodology 8

5. Tracking country progress towards Every Newborn 2020 national milestones 9

5.1 Every Newborn milestone: National plans 10

5.2 Every Newborn milestone: Quality of care 20

5.3 Every Newborn milestone: Investment in health workforce 42

5.4 Every Newborn milestone: Health workforce capacity and support 43

5.5 Every Newborn milestone: Community engagement 48

5.6 Every Newborn milestone: Parents' voices and champions 51

5.7 Every Newborn milestone: Data 54

5.8 Every Newborn milestone: Research and innovation 60

6. Regional and global support to countries to accelerate progress towards Every Newborn 2020 milestones 64

7. Emerging areas 66

8. Discussion 68

Acknowledgements 70

Annexes 71

Annex 1: Simplified progress tracking tool for 2018 reporting 71

Annex 2: Tables on progress (75 countries, 2017-2018) of selected ENAP milestones 78

Annex 3: List of indicators for maternal and newborn health (under discussion) 98

List of Acronyms 100

References 102

1. Executive summary

Improving newborn health and preventing stillbirths are critical to achieving the Sustainable Development Goals (SDGs). This year, 2018, marks the fourth year since the launch of the *Every Newborn Action Plan: an action plan to end preventable deaths* (ENAP) at the Sixty-seventh World Health Assembly. Commitments made by national governments, the scaling-up of evidence-based interventions, coordinated international efforts and increased attention to improving newborn health in countries are leading the world towards significant progress. The progressive uptake of the Every Newborn Tracking Tool has reached 75 countries: 22 in Asia, 45 in Africa and eight in the Middle East. This is a substantial increase from 51 countries in 2016.

Newborn survival is firmly embedded within the SDG targets, and the UN Secretary-General's *Every Woman Every Child* (EWEC) monitoring framework includes both neonatal mortality and stillbirths. Visibility of the issue of newborn survival has been increased by the recent launch of the Quality of Care network, by the United Nations Inter-Agency Group for Mortality Estimation (IGME) 2017 report on Child Mortality that focused on newborn survival and by the launch of the "Every Child Alive" campaign, spearheaded by UNICEF.

Compared to previous years, more countries requested assistance in developing operational plans for improving newborn survival and reducing stillbirths. There were also increased numbers of requests for technical assistance to build capacity and scale up newborn-specific interventions such as early essential newborn care, Kangaroo mother care (KMC), management of newborn infections, relevant health management information systems (HMIS) indicators, and implementation of the revised guidelines on Managing possible serious bacterial infection (PSBI) in young infants when referral is not feasible.*

Given the increasing demand from countries for guidance on improving the availability and quality of inpatient care for newborns, there was coordinated action to develop concepts and tools for a multi-country situation assessment of care for small and sick newborns. Efforts to strengthen implementation in humanitarian settings also led to a review of data on the use of a WHO tool for hospital assessment of maternal and newborn care in countries and the development of the revised guidance manual on "Newborn Care in Humanitarian settings".

There was also an increased focus on building capacity and sharing experiences on KMC and on Maternal and perinatal death surveillance and response (MPDSR). Regional efforts were sustained in South and East Asia, the Middle East and North Africa, and West and Central Africa while new multi-country events were organized for the Eastern and Southern Africa region as well as the European and Central Asia regions. Findings from the use of the Every Newborn Tracking Tool show incremental, steady progress between 2016 and 2017 (see Table 1).

As more countries develop their costed newborn action plans, challenges are becoming apparent in settings that are fragile or have ongoing humanitarian crises. These include challenges in implementing maternal and newborn health programmes and in securing adequate, sustainable financing through both domestic and development partner resources. The Global Financing Facility (GFF) helps to mobilize additional funds and better target existing resources to health services. Expansion of the GFF to ten additional countries could be a good opportunity to link national newborn action plans with the country investment cases. Consistent indicator definitions and better data to measure and monitor progress and ensure quality of care (QoC) are cross-cutting needs for all newborn health programmes.

ENAP progress tracking has revealed some key lessons. Countries that conducted the bottleneck analysis in 2013 were early adopters, and the exercise helped to build consensus amongst key partners in the initial years of implementation. Knowledge management through the Healthy Newborn Network, opportunities for south to south learning, and regional workshops have proved useful in building capacity in countries. UNICEF's support at headquarters, regional and country levels for compilation of information from country progress tracking has stimulated organizational ownership and accountability. Technical assistance requests from countries have allowed global partners to align their support to actual country needs. Availability of some catalytic funding proved useful in responding swiftly to country requests. Routine progress tracking on an annual basis has meant that areas with the least progress, for example, target setting for stillbirth rates, newborn indicators in health management information systems (HMIS) and the inclusion of newborn health in emergency preparedness plans could be identified promptly, and this information can be used to advocate for change in countries.

* http://apps.who.int/iris/bitstream/handle/10665/181426/9789241509268_eng.pdf?sequence=1

Table 1: ENAP milestones achieved between 2016 and 2017

ENAP milestones achieved	2016	2017
Total number of countries reporting on ENAP progress tracking tool	51	75
Countries that have developed a national Every Newborn action plan	24	44
Countries with "newborn component" included in emergency preparedness plans	7	18
Countries with a defined Neonatal Mortality Rate (NMR) target	43	56
Countries with a defined Stillbirth Rate target	10	17
Countries that have a costed Every Newborn plan	21	40
Country quality improvement programmes that have a specific focus on maternal and newborn health (MNH)	26	40
Countries that have adopted policies on maternal death notification	34	61
Countries implementing maternal death surveillance and response	44	67
Countries with perinatal death review systems in place	23	38
Countries with policies on home based postnatal care	32	44
Countries with insurance schemes to cover maternal and newborn care, including sick newborn care	32	54
Countries that have included indicators for all four newborn-specific interventions in national HMIS	2	3
Countries with all essential commodities in national essential medicines list (NEML)	26	41
Countries with all essential commodities in logistic management information systems (LMIS)	12	22
Countries with MNH-related communication plans or community engagement strategies	27	37

Notes: NEML and LMIS exclude chlorhexidine as it is not a policy in all countries due to WHO recommendations, as well as ambu bags and masks, which may be listed under equipment/supplies rather than drugs in some countries.

Source: Every Newborn Tracking Tool

Going forward, a greater focus will be required to remove financial barriers to institutional childbirths and management of obstetric and newborn complications, including improving the availability of and access to quality inpatient care. More emphasis is also needed to include a strong newborn component in emergency preparedness and response plans. Country target-setting, particularly for stillbirth rates, needs to be supported further. Scaling up neonatal resuscitation, infection management and care of preterm and low birth weight infants, including KMC, as well as further research to explore effective models for reducing preterm mortality are required.

The response to findings of maternal and perinatal death reviews needs to be strengthened and linked to facility and district level quality improvement plans with broad health system support. Continued global- and national-level advocacy and community engagement strategies, including greater parental involvement, are critical for achieving an enabling environment for ENAP implementation. Disparities in access to high-quality inpatient care for small and sick neonates is a particular concern. The increasing contribution of the private sector to sick newborn care globally poses both challenges and major opportunities for ensuring that populations have access to affordable, equitable and high-quality newborn care services in future. The tracking tool needs to be simplified, since many ENAP milestones have already been achieved in countries and there is need to capture coverage indicators to monitor progress.

2. Introduction

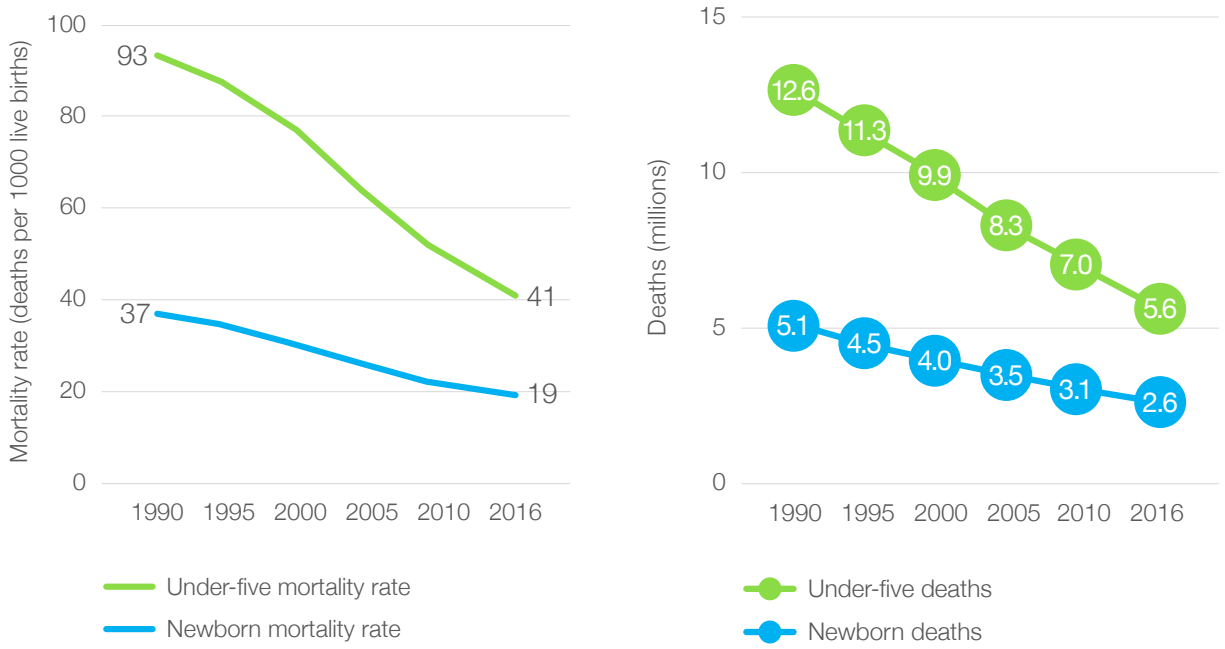
The Every Newborn Action Plan, a comprehensive multi-partner initiative launched in 2014 to prevent newborn mortality and stillbirth, estimated that the lives of 3 million women, newborns and stillborn babies could be saved each year by improving care around the time of birth and providing special care for small and sick newborns.[1]

The ENAP targets, aligned with the SDG target 3.2 and the Every Woman Every Child (EWEC) monitoring framework are:

- 12 or fewer neonatal deaths **per 1000 live births** in every country by 2030.
- 12 or fewer stillbirths **per 1000 total births** in every country by 2030.

To achieve these targets, a global Average Rate of Reduction (ARR) of 4.2% is needed, and 56 countries will currently need to double their ARR.[2] This will require a renewed and focused emphasis on research, programmes, policies and financing.[3]

Figure 1: Mortality rates and numbers of deaths, 1990-2016



Source: United Nations Inter-agency Group for Child Mortality Estimation, 2017

3. ENAP Strategic objectives and national milestones

Countries and development partners have developed and adopted the Every Newborn Tracking Tool to 1) measure progress towards the strategic objectives and 2) track the processes of country ownership and action for key facets of newborn health, as set out in the Every Newborn 2020 national milestones (Table 2).

The Strategic objectives for ending preventable maternal and neonatal mortality and stillbirths[4] are:

1. Strengthen and invest in care around the time of birth, with a focus on improving the quality and experience of care, while ensuring full integration of services for women and babies across the continuum of care.
2. Strengthen health systems to optimize the organization and delivery of care through the workforce, commodities and innovation.
3. Reach every woman and newborn by minimizing inequities in access to and coverage of care.
4. Harness the power of parents, families and communities, and engage with society.
5. Improve data for decision-making and accountability.

Table 2: Every Newborn 2020 National Milestones

National plans	Review and sharpen national strategies, policies and guidelines for reproductive, maternal, newborn, child and adolescent health (RMNCAH) in line with the goals, targets and indicators in the ENAP, including a clear focus on care around the time of birth and on small and sick newborns.
Quality of care	Adopt standards of quality and indicators for assessing quality of maternal and newborn care at all levels of the health system and ensure access to essential commodities for RMNCAH.
Investment in health workforce	Develop or integrate costed human resources for health strategy into RMNCAH plans and ensure sufficient financial resources are budgeted and allocated.
Health workforce capacity and support	Ensure the training, deployment and support of health workers, in particular midwifery personnel, nurses and community health workers.
Community engagement	Involve communities, civil society and other stakeholders to increase demand and ensure access to and coverage of essential maternal and newborn care.
Parents' voices and champions	Parents' voices and champions shift social norms so that it is no longer acceptable for newborns to die needlessly, just as it has become unacceptable for women to die when giving birth.
Data	Count every newborn by using and improving programmatic coverage data including equity and quality gap assessments. Institutionalize civil registration and vital statistics, adapt and use a minimum perinatal dataset, implement maternal and perinatal death surveillance and response.
Research and innovation	Develop, adapt and promote access to devices and commodities to improve care for mothers and newborns around the time of birth, and agree on, disseminate and invest in a prioritized and coordinated research agenda for improving preterm and newborn health outcomes. Particular focus is required on stillbirths, which have often been left out or left behind.

4. Methodology

The Every Newborn Tracking Tool, in use since October 2014, was initially applied in 20 countries having high rates of neonatal mortality and gradually expanded to others. Data collection is supported by in-country partners who populate the tool with inputs from the focal point in the ministry of health (MoH) when possible. The information is compiled through existing coordination mechanisms, such as a Technical Working Group (TWG) or a national steering committee for maternal and newborn health.

Findings are communicated to and discussed with partners. Once the Tracking Tool has been completed, and the validity and consistency of data have been checked by UNICEF and WHO country offices, it is submitted by UNICEF country and regional offices for compilation at the global level. The complete tool can be found in Annex 1.

Case studies highlighted in this report were collected from annual reports provided by UNICEF country offices and partner organizations (USAID, Save the Children, WHO, London School of Hygiene and Tropical Medicine [LSHTM], Maternal and Child Survival Program [MCSP]). A literature review was conducted to identify promising interventions for scale-up as well as newborn care innovations over the past year. Data sources used for this report include national RMNCAH strategies, plans and policies, national guidelines and standards, periodic programme reports, country reviews, and existing project survey data. Information on progress was also obtained from programme managers at the MoH and partners working in country.

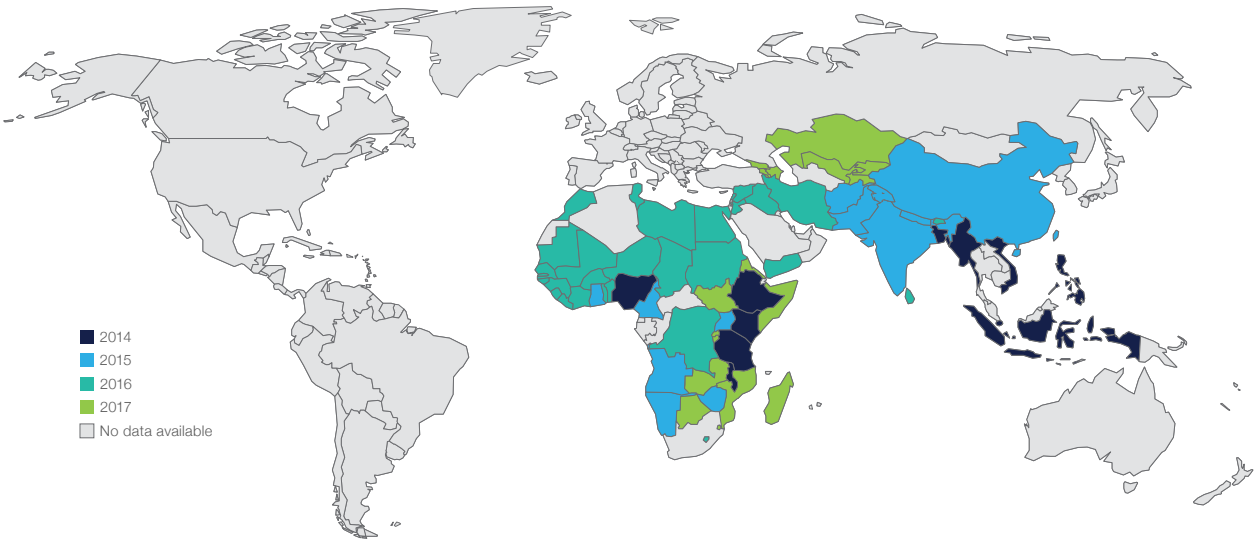
5. Tracking country progress towards Every Newborn 2020 national milestones

This section presents an overview of the adoption of the Every Newborn Tracking Tool and the compilation of data for each of the eight milestones. It spotlights specific country activity, as well as regional and global efforts that support national progress.

There has been a steady increase in the number of countries reporting use of the Every Newborn Tracking Tool, from ten countries in 2014 to 18 in 2015, to 51 in 2016 and 75 in 2017 (see Figure 2). In 2016, the increase was attributed to the uptake in the UNICEF regions of West Africa and the Middle East and North Africa. In 2017, twenty-four countries were added, mostly from the UNICEF regions of Eastern and Southern Africa, Europe and Central Asia and East Asia and the Pacific. This increase has been catalysed by regional meetings in those areas.

The 75 countries that report having completed use of the Every Newborn Tracking Tool in 2017 are Afghanistan, Angola, Armenia, Azerbaijan, Bangladesh, Benin, Bhutan, Botswana, Burkina Faso, Burundi, Cameroon, Chad, China, Comoros, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Egypt, Eritrea, Ethiopia, Gambia, Georgia, Ghana, Guinea, Guinea-Bissau, India, Indonesia, Iran, Iraq, Jordan, Kazakhstan, Kenya, Kyrgyzstan, Lao People's Democratic Republic, Lebanon, Lesotho, Liberia, Libya, Madagascar, Malawi, Maldives, Mali, Mauritania, Morocco, Mozambique, Myanmar, Namibia, Nepal, Niger, Nigeria, Pakistan, Palestine, Philippines, Rwanda, Senegal, Sierra Leone, Somalia, South Sudan, Sri Lanka, Sudan, Swaziland, Syria, Tajikistan, Timor-Leste, Togo, Tunisia, Turkmenistan, Uganda, United Republic of Tanzania, Uzbekistan, Viet Nam, Yemen, Zambia and Zimbabwe.

Figure 2: Progressive adoption of the Every Newborn Tracking Tool in countries



5.1. Every Newborn milestone: National plans

5.1.1. Status of developing national newborn action plans

Of the 75 countries, 44 reported having developed a national newborn action plan. Seven countries, including several that are affected by humanitarian crises and conflict situations (Sierra Leone, South Sudan, Syria and Yemen) reported that work was under way. However, 22 countries, 19 of which are in Africa, still do not have a national newborn plan.

Table 3. Countries reporting having developed national newborn action plans, 2017

Indicator	2017 (n=75)*		
	Yes (n=44)	In process (n=7)	No (n=22)
National newborn action plan developed	Afghanistan, Armenia, Azerbaijan, Bangladesh, Bhutan, Burkina Faso, Cameroon, Comoros, Egypt, Ethiopia, Georgia, Ghana, Guinea- Bissau, India, Indonesia, Iran, Iraq, Jordan, Kazakhstan, Kenya, Kyrgyzstan, Lao PDR, Lebanon, Madagascar, Malawi, Maldives, Morocco, Myanmar, Namibia, Nepal, Niger, Nigeria, Pakistan, Palestine, Papua New Guinea, Philippines, Rwanda, Sri Lanka, Sudan, Tajikistan, United Republic of Tanzania, Uzbekistan, Viet Nam, Zambia	Botswana, Chad, Democratic Republic of the Congo, Sierra Leone, South Sudan, Syria, Yemen	Angola, Benin, Burundi, China, Cote d'Ivoire, Eritrea, Gambia, Guinea, Lesotho, Liberia, Libya, Mali, Mauritania, Mozambique, Senegal, Somalia, Swaziland, Togo, Tunisia, Turkmenistan, Uganda, Zimbabwe

* Of the 75 countries having used the Every Newborn Tracking Tool, only 73 provided information on the status of newborn action plans

Case study: Ghana conducts a comprehensive review of its national newborn health strategy and action plan.

Ghana has made consistent progress in improving maternal and newborn health indicators since the launch of its National Newborn Health Strategy and Action Plan (NNHSAP) in July 2014.

Deliveries by skilled birth attendants increased from 51% in 2013 to 56% in 2015.

The proportion of first postnatal visits within 48 hours increased from 60% to 79% in the same time period, and there was a slight reduction in the institutional neonatal mortality rate (NMR), from 6 to 5 per 1000 live births. However, recent estimates indicate that the population NMR is 29 per 1000 live births, with most newborn deaths occurring outside facilities.

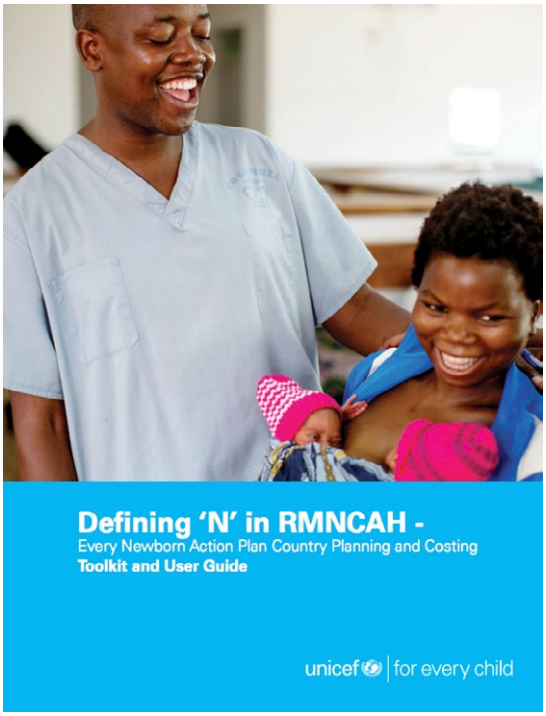
The 2018 NMR target is 21 per 1000 live births, in order to be on track to achieve the 2030 target of 12 per 1000 live births.

The Ghana Health services and partners conducted a comprehensive review of the NNHSAP in July 2016 to assess progress in implementation.

The review uncovered many gaps in the implementation of newborn care interventions. These included a lack of roll-out of standardized perinatal death audit guidelines, a lack of KMC scale-up, the absence of key newborn health indicators in the District Health Information System-2 (DHIS2), fragmentation of partner support and problems in the training on information management systems. Strategic recommendations to address these gaps were discussed and finalized during stakeholder consultations, and progress is visible: KMC has been rolled out to all regional hospitals and perinatal death audits have started to be conducted.

Case study: Defining 'N' in RMNCAH

In 2017, a user guide and costing toolkit entitled "Defining 'N' in RMNCAH" was designed to support countries in applying the latest available planning and costing tools when developing their national newborn action plans. This toolkit synthesises implementation experience and knowledge gained from forerunner countries that have been successful in strengthening newborn health in their national plans, policies, programmes and systems. The user guide aims to further accelerate progress so that mothers and newborns everywhere receive high quality care when they need it. The toolkit is available at: https://www.healthynewbornnetwork.org/hnn-content/uploads/ENAP-toolkit_layout-004_pages.pdf



5.1.2. Status of ENAP integration into national health strategies

In 2017, 47 of the 75 countries using the Every Newborn Tracking Tool reported that newborn health had been strengthened in national RMNCAH plans. This included the high-population and high burden countries with the exception of Indonesia. Twelve countries reported that work was under way to strengthen the newborn component. Nine countries (Gambia, Iran, Kyrgyzstan, Malawi, Somalia, Swaziland, Togo and Tunisia) reported that no work has been done yet to strengthen newborn health in RMNCAH plans.

5.1.3. Progress in preparing national plans in countries with the highest burden and rates of newborn mortality

Countries where urgent action is required can be identified by looking at currently available data on stillbirths and neonatal deaths. It is encouraging that two very heavily populated countries, India and Nigeria, have targets for both stillbirths and neonatal deaths included in their national ENAP. However, given the high numbers of stillbirths and neonatal deaths and the sub-national disparities in these countries, scaled up actions that focus particularly on the poorest and most marginalized will be critical.

South Asia has the highest absolute number of newborn deaths, while West and Central Africa has the largest number countries with high NMR. Conflict and humanitarian emergencies are posing the greatest challenge to newborn survival in Iraq, Libya, Syria, and Yemen. There are many countries, particularly in sub-Saharan Africa, that figure among the most fragile states. In these countries, crises including conflict and natural disasters, coupled with political instability and poor governance often hamper health systems and the ability of policymakers to formulate and implement policies that improve the quality of maternal and newborn care.

Table 4. Numbers and rates of stillbirths and neonatal deaths in high burden countries, and progress in adding national targets in the Every Newborn Action Plan

	Neonatal Deaths			Stillbirths		
Country	**Number of neonatal deaths (2015)**	**Neonatal mortality rate (per 1000 live births)**	**Neonatal mortality rate target included in the ENAP**	**Number of stillbirths (2015)**	**Stillbirth rates (per 1000 total births)**	**Stillbirth rate target included in the ENAP**
Afghanistan	46 000	40		20 100	26.7	
Bangladesh	74 400	23		83 100	25.4	
Central African Republic	7000	42.3		5 800	34.4	
Chad	22 000	35.1		25 200	39.9	
China	93 400	6		122 300	7.2	
Côte d'Ivoire	32 000	36.6		22 800	26.7	
Democratic Republic of the Congo	94 300	30		87 800	27.3	
Ethiopia	87 400	28		96 500	29.7	
Guinea Bissau	3 000	38.2		2500	36.7	
India	695 900	28		592 100	23	
Indonesia	73 900	14		73 400	13.2	
Lesotho	2000	38.5		1 200	19.5	
Mali	27 000	35.7		24 400	32.5	
Nigeria	240 100	34		313 700	42.9	
Pakistan	244 700	46		242 600	43.1	
Somalia	24 000	38.8		16 400	35.5	
South Sudan	17 000	37.9		13 400	30.1	

Source: Neonatal estimates: United Nations Inter-Agency Group for Child Mortality Estimation, 2017. Stillbirth estimates: Lawn et al. Lancet 2016

As shown in Table 4, many high burden and low-resource countries still need to define their stillbirth rate targets. National data is essential to track the burden of stillbirths, existing coverage of interventions to prevent stillbirths and the quality of those interventions. It is crucial to focus on intrapartum or fresh stillbirth rates, as the majority of stillbirths can be prevented with improved care at the time of birth. [5] Therefore, there needs to be greater investment in collecting usable data that drives national level action to close gaps in coverage, quality and equity.

Case study: Launching ENAP in Iraq

Newborn deaths make up an estimated 56% of the under-5 mortality rate in Iraq, and the NMR has reduced more slowly than infant mortality rates. According to MICS 4 estimates, the NMR in Iraq is 20 per 1000 live births, however, broad disparities exist across different governorates ranging from 32 per 1000 live births in Kirkuk to and 13 per 1000 live births in Missan.

In response, UNICEF Iraq supported a desk review, a rapid survey of health facilities to assess Quality of Care and a bottleneck analysis workshop in 2016. These were followed by a series of national consultations to develop and finalize the Iraq Every Newborn Action plan (IENAP) in 2017. The IENAP is expected to serve as the roadmap that redefines and focuses on national and sub-national strategies and activities until 2020, when Iraq will review the progress achieved and revise its plan accordingly. It is a vital step towards ensuring accessibility and availability of high-quality MNH services in Iraq and will move the country towards achieving the global ENAP targets by 2035.

5.1.4. Status of setting targets for reducing newborn mortality and stillbirths

As shown in Table 5, 56 countries reported having defined a target for reducing newborn mortality in their national newborn or RMNCAH plan in 2017; this is up from 43 in 2016. Sixteen countries reported that they did not have such an explicit target. Progress for setting a stillbirth reduction target was much slower: only 17 countries reported having a defined stillbirth target in their national newborn or RMNCAH plans in 2017 compared to ten countries in 2016. Of note, in 2017, 54 countries and territories that reported not having a specific target included countries with the highest numbers of stillbirths such as China, Democratic Republic of the Congo, Niger and Pakistan.

Table 5. Setting targets for reducing newborn mortality and stillbirths

Indicator		Countries
Defined a newborn mortality reduction target		Afghanistan, Angola, Armenia, Azerbaijan, Bangladesh, Bhutan, Burkina Faso, Burundi, Cameroon, China, Comoros, Côte d'Ivoire, Democratic Republic of the Congo, Egypt, Ethiopia, Georgia, Ghana, Guinea, Guinea Bissau, India, Indonesia, Iraq, Kazakhstan, Kenya, Lao People's Democratic Republic, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, morocco, Myanmar, Namibia, Nepal, Niger, Nigeria, Pakistan, Palestine, Papua New Guinea, Philippines, Rwanda, Sri Lanka, Sudan, Syria, Tajikistan, Timor -Leste, Turkmenistan, Uganda, United Republic of Tanzania, Uzbekistan, Viet Nam, Yemen, Zambia, Zimbabwe (56)
		Botswana (1)
		Benin, Chad, Djibouti, Gambia, Iran, Jordan, Kyrgyzstan, Mozambique, Senegal, Sierra Leone, Somalia, South Sudan, Swaziland, Togo, Tunisia (17)
Defined a stillbirth reduction target		Azerbaijan, Bangladesh, Bhutan, Ethiopia, Georgia, India, Indonesia, Iraq, Kenya, Madagascar, Malawi, Namibia, Nepal, Nigeria, Sri Lanka, United Republic of Tanzania, Yemen (17)
		Cameroon (1)
		Afghanistan, Angola, Armenia, Benin, Burkina Faso, Burundi, Chad, China, Comoros, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Egypt, Eritrea, Gambia, Ghana, Guinea, Guinea-Bissau, Iran, Jordan, Kyrgyzstan, Lebanon, Lesotho, Liberia, Libya, Madagascar, Mali, Mauritania, Morocco, Mozambique, Myanmar, Niger, Pakistan, Palestine, Papua New Guinea, Philippines, Rwanda, Senegal, Sierra Leone, Somalia, South Sudan, Sudan, Swaziland, Timor-Leste, Togo, Tunisia, Turkmenistan, Uganda, Uzbekistan, Viet Nam, Zambia, Zimbabwe (52)

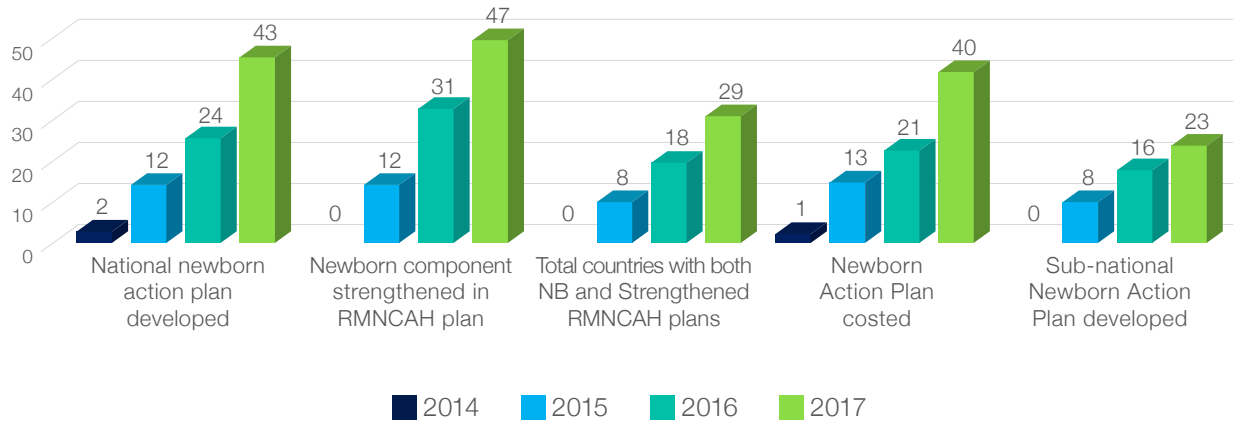
Yes In process No

5.1.5. Status of developing newborn plans at the sub-national level

Implementation of national newborn plans requires conforming to the centralized or decentralized governance and budgeting processes. Many countries are opting for regional or district-specific plans to increase efficiency and enhance accountability. Amongst the 75 countries that reported on the Every Newborn Tracking Tool, 23 (Afghanistan, Cameroon, China, Democratic Republic of the Congo, Egypt, Ethiopia, Ghana, India, Indonesia, Iran, Iraq, Kazakhstan, Kenya, Morocco, Namibia, Niger, Pakistan, Palestine, Rwanda, Sudan, Syria, United Republic of Tanzania and Zimbabwe) said that they had developed a sub-national plan for newborn health. Three countries (Bangladesh, Comoros and Sri Lanka) reported that work to develop a sub-national newborn health plan was under way.

Figure 3 depicts the trend of country progress on planning and costing from 2014 to 2017 among countries that submitted data. Once national newborn action plans are completed, countries use available tools to complete a costing exercise for scaling up newborn care. Forty countries reported that their plan had been costed; this is almost double compared to 2016 (21 countries). Afghanistan was the only country in 2017 that reported that work on costing was under way.

Figure 3. Country progress on planning and costing (n=75)



Case study: Government of Bangladesh starts implementation of a national newborn health programme

The Government of Bangladesh endorsed the first National Strategy for Neonatal Health in 2009, which emphasized the importance of rapidly accelerating and expanding life-saving, cost-effective newborn health interventions. Up to 2012, the focus of newborn care was primarily through community-based initiatives in rural areas. The government has now successfully scaled up two of the priority newborn health interventions throughout the country: Helping Babies Breathe (2011-2014) and application of 7.1% chlorhexidine solution to the newborn umbilical cord (2015-16). With support from the USAID-funded MaMoni Health Systems Strengthening Project, the Ministry of Health and Family Welfare (MOHFW) trained over 30 000 skilled birth attendants on Helping Babies Breathe and more than 85 000 health providers, supervisors and managers on essential newborn care, including the use of chlorhexidine.

Political commitment for ending preventable newborn deaths was reinvigorated through "A Promise Renewed: Child Survival Call to Action" in 2013. There was a growing need to develop effective models of service delivery through the MOHFW infrastructure, with an emphasis on generating local evidence to overcome operational challenges. In 2014, a comprehensive newborn care package (CNCP) was developed where essential newborn interventions – both tested and new – were defined, agreed and implemented. The CNCP was adopted for implementation at scale in the National Newborn Health program (NNHP), and costing was completed for scaling up. Under the leadership of the Government of Bangladesh, pro-active partners successfully advocated for mobilizing resources for the costed NNHP. Finally, the 4th Health, Population Nutrition Sector Programme 2017-2022 incorporated a costed NNHP with an allocation of US$ 50 million, which includes support from major development partners. For the first time in Bangladesh, dedicated Newborn Care Programme Managers have been deployed in the Directorate General of Health Services and the Directorate General of Family Planning to lead and manage implementation. The NNHP is a huge leap towards achieving the targets envisioned in the Bangladesh Every Newborn Action Plan.

5.1.6. Status of inclusion of specific activities for ENAP milestones and scaling-up of newborn-specific interventions in RMNCAH

In 2017, 34 countries, up from 16 in 2016, reported that they had specific activities for all ENAP milestones added to RMNCAH plans, including the scale-up of newborn-specific interventions. Seventeen countries (Benin, Côte d'Ivoire, Democratic Republic of the Congo, Gambia, Georgia, Guinea-Bissau, Lesotho, Mali, Mauritania, Nigeria, Senegal, Sierra Leone, Somalia, Tajikistan, Togo, Tunisia and Uzbekistan) did not have activities aligned with the ENAP milestones.

5.1.7. Status of positioning a focal person for newborn care at the national level

There has also been a steady increase in the number of countries reporting the presence of a focal person for newborn care. Forty-two countries reported having a newborn health focal person in 2017, compared to 28 countries in 2016. Having a dedicated focal person for newborn health ensures that research, advocacy, programme and policy efforts to support newborn health are prioritized.

5.1.8. Status of inclusion of newborn care within national plans for emergency preparedness

Humanitarian emergencies are challenging for all people living in affected areas, but are particularly difficult for pregnant woman and newborns. These emergencies may be rapid onset, slow onset or caused by a combination of complex and interrelated circumstances. They encompass situations of epidemic outbreaks, acute or chronic situations of conflict, war or civil disturbance, natural disasters, food insecurity and other crises. Health systems are at risk of collapsing during these times, along with governance mechanisms and other local and national infrastructure, resulting in the need for international assistance and aid by humanitarian organizations. Recent examples include the conflicts in the Democratic Republic of the Congo and South Sudan, the 2010 earthquake in Haiti, the 2010 floods in Pakistan, the 2015 Nepal earthquake and the Rohingya crisis, all of which resulted in massive population displacement, distress and casualties. Mothers and newborns are particularly vulnerable during these situations and their health requires special attention. Historically, care during labour and childbirth and care for neonates is often missing in emergency response assessments, supply kits, intervention packages and monitoring efforts. Rebuilding health facilities and systems, providing emergency care and training health workers form critical components of any humanitarian response, and maternal and newborn health services should be an important priority.

Eighteen countries (Armenia, Bangladesh, Burundi, Democratic Republic of the Congo, Iraq, Lesotho, Liberia, Madagascar, Myanmar, Nepal, Niger, Nigeria, Pakistan, Sri Lanka, Sudan, United Republic of Tanzania, Yemen and Zimbabwe) have to date reported including newborn care within their emergency plan. This is a significant increase since the previous year where seven countries reported having done so. China was the only country in 2017 that reported that work was under way to develop an emergency plan.

Case study: Newborn health in a humanitarian setting: the case of South Sudan

Despite the steady reduction in NMR in South Sudan, from 67 per 1000 live births in 1990 to 39 per 1000 live births in 2015, the rate remains high. This may be attributed to low rates of skilled birth attendance, inadequate access to emergency neonatal care interventions, early pregnancies, high malnutrition rates among pregnant women, and other sociocultural issues. In addition, long-standing, continuous conflict has had a detrimental impact on maternal and newborn health.

Health systems analyses show that newborn health in South Sudan has not received adequate political, policy and programme attention. Newborn health was mentioned in the country's Health Sector Development Plan 2012 – 2016 (HSDP), but there were no national targets to reduce neonatal mortality. The Reproductive Health Strategic Plan (2013 – 2016) did not address newborn health. The Emergency Obstetric and Neonatal Care (EmONC) assessment report conducted by the MoH in 2013 also revealed high intrapartum and very early neonatal mortality rates for all facilities (28.2 per 1000 deliveries), with huge disparities across states.

Piloting of the *Newborn Health in Humanitarian Settings: Field Guide* in South Sudan in 2015-2016 and the dissemination of findings sparked government interest in developing a national newborn health plan. A stakeholder workshop in September 2017 served to identify key bottlenecks to newborn health interventions and potential strategies to overcome them. These were compiled to inform the Every Newborn Action Plan for the country. The coverage of nine tracer interventions were classified as good, needs some improvement, needs major improvement, and inadequate (see Table 6).

Table 6. Overall findings from bottleneck analysis of maternal and newborn health interventions in South Sudan

Health system building blocks	Leadership and governance	Health financing	Health work force	Medical products	Health service delivery	Health information system	Community participation and ownership
Preterm birth	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate
Skilled birth attendance	Major Improvements	Inadequate	Inadequate	Some Improvements	Inadequate	Some Improvements	Inadequate
Basic emergency obstetric care	Major Improvements	Inadequate	Inadequate	Inadequate	Inadequate	Some Improvements	Inadequate
Comprehensive emergency obstetric care	Inadequate	Inadequate	Inadequate	Inadequate	Major Improvements	Some Improvements	Inadequate
Basic newborn care	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate
Kangaroo mother care	Inadequate	Inadequate	Inadequate	Major Improvements	Inadequate	Inadequate	Inadequate
Severe infection	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate
Inpatient care	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate

Good | Some Improvements | Major Improvements | Inadequate

Reflecting the country's commitment to newborn health, South Sudan's health policy 2016 – 2025 holds the MoH to the following objective: ensure reduction of maternal and neonatal mortality and morbidity through effective delivery of maternal, sexual and reproductive health services and rights with particular attention to vulnerable populations. In addition, the inclusion of newborn health in the revised RMNCAH Strategic Plan offers an important opportunity to increase the availability and accessibility of quality life-saving services at the facility and community level. Reaching the SDGs by 2030 will require considerable investment in South Sudan's health system, and the addition of newborn health into national level policies is a significant first step.

5.1.9. Status of policies supporting free maternal and newborn care

The global drive for Universal health coverage (UHC) provides a unique opportunity to advocate for free maternal and newborn health care services that include referral and care for mothers and newborns experiencing complications. Care of sick neonates often require significant out-of-pocket expenditures in many low- and middle-income countries (LMICs) where such services may be limited. This can be a major deterrent for poor families. Fifty-four countries reported having policies on free maternal and newborn care including care of sick newborns in 2017, up from 34 countries in 2016. Seventeen countries reported not having such insurance schemes or policies in place, while Burkina Faso, Eritrea and Nigeria reported that work was under way.

Table 7. Policies for free maternal and newborn care

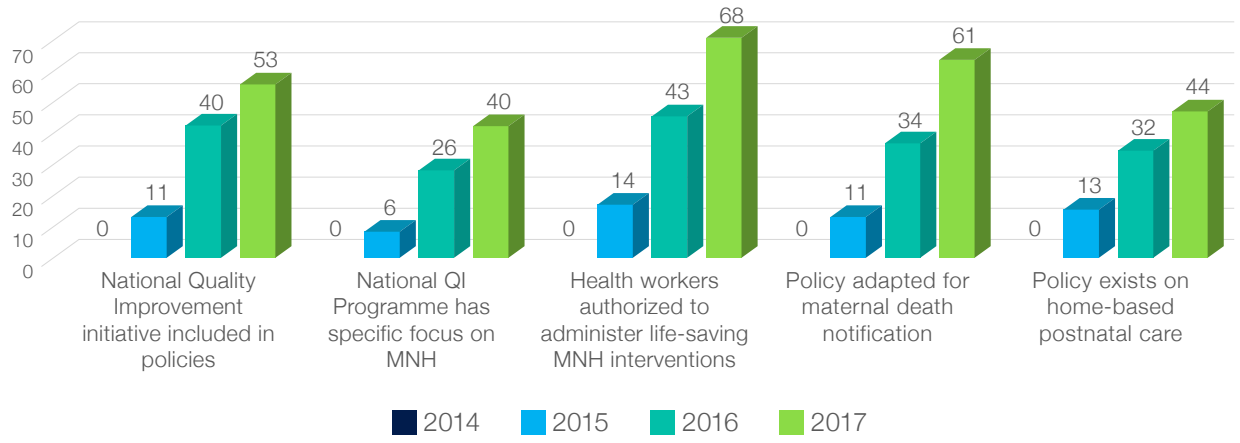
Indicator	Yes (n=54)	In process (n=3)	No (n=17)
National health insurance scheme/ free policy in place covering maternal and newborn care including sick newborn care	Afghanistan, Angola, Armenia, Azerbaijan, Bangladesh, Bhutan, Botswana, Burundi, China, Côte d'Ivoire, Egypt, Ethiopia, Gambia, Georgia, Ghana, Guinea-Bissau, India, Indonesia, Iran, Iraq, Kazakhstan, Kenya, Kyrgyzstan, Lao People's Democratic Republic, Liberia, Libya, Malawi, Maldives, Mali, Mauritania, Morocco, Myanmar, Nepal, Niger, Pakistan, Palestine, Philippines, Rwanda, Senegal, Sierra Leone, Somalia, South Sudan, Sri Lanka, Sudan, Syria, Tajikistan, Timor-Leste, Turkmenistan, Uganda, United Republic of Tanzania, Uzbekistan, Viet Nam, Zambia, Zimbabwe	Burkina Faso, Eritrea, Nigeria	Benin, Cameroon, Chad, Comoros, Democratic Republic of the Congo, Djibouti, Guinea, Jordan, Lebanon, Lesotho, Madagascar, Mozambique, Namibia, Papua New Guinea, Swaziland, Togo, Yemen

5.2. Every Newborn milestone: Quality of care

Quality of care is defined as "the extent to which health care services provided to individuals and patient populations improve desired health outcomes." In order to achieve this, health care needs to be safe, effective, timely, efficient, equitable and people-centred.[6]

Quality of care is a key component of the "Right to Health", and the route to equity and dignity for every women and child. Since 2014, countries have made steady progress in establishing appropriate policies and plans to improve the quality of maternal and newborn care at all levels of the health system and ensure access to essential commodities for RMNCAH. Between 2014 and 2017, there was a large increase in the number of countries preparing plans that focus on including quality improvement (QI) initiatives, updating policies required for QoC improvements, authorizing health workers at appropriate levels of care to administer life-saving interventions and commodities, adopting policies for maternal death notification and developing policies on postnatal care for the neonates (see Figure 4).

Figure 4. Country progress on national policies (n=75)



In 2017, 53 countries reported having national QI initiatives included in their health sector policies, and two high-burden countries (Nigeria and Pakistan) reported that work was ongoing. Thirteen of the 17 countries that reported not having QI initiatives included in their national policies were in sub-Saharan Africa.

Forty of the 53 countries reported that their QI programmes had a specific focus on MNH. However, 22 countries, the majority of which were in sub-Saharan Africa, reported that QI activities did not have this specific focus.

Sixty-eight countries reported that health workers at appropriate levels of care are authorized to administer life-saving interventions and commodities for MNH. Six countries (Angola, Iraq, Jordan, Kazakhstan, Libya and Papua New Guinea) reported that health workers are not authorized to administer life-saving MNH interventions, at their appropriate level.

Legislation or policies on the notification of maternal deaths within 24 hours was reported to have been adopted by 61 countries, compared to 34 in 2016. There remain 13 countries that still do not have a policy on maternal death notification in 2017 (Table 8).

Table 8. Countries that have adopted a policy for maternal death notification

Indicator	2017 (n=75 countries)		
	Yes (n=61)	In process (n=0)	No (n=13)
Policy adopted for maternal death notification	Afghanistan, Angola, Armenia, Azerbaijan, Bangladesh, Benin, Bhutan, Botswana, Burkina Faso, Burundi, Cameroon, China, Comoros, Cote d'Ivoire, Democratic Republic of the Congo, Djibouti, , Egypt, Eritrea, Ethiopia, Georgia, Ghana, Guinea- Bissau, India, Indonesia, Iran, Iraq, Jordan, Kazakhstan, Kenya, Kyrgyzstan, Lao People's Democratic Republic, Lebanon, Lesotho, Libya, Madagascar, Malawi, Maldives, Morocco, Mozambique, Myanmar, Namibia, Nepal, Niger, Nigeria, Palestine, Rwanda, Senegal, Sierra Leone, Sri Lanka, Sudan, Swaziland, Tajikistan, Timor-Leste, Tunisia, Turkmenistan, Uganda, United Republic of Tanzania, Uzbekistan, Viet Nam, Yemen, Zimbabwe		Chad, Gambia, Guinea, Liberia, Mali, Mauritania, Pakistan, Papua New Guinea, Philippines, Somalia, South Sudan, Syria, Togo

Case study: An initiative for improving quality of hospital services in Dominican Republic: The "Mothers and Babies in Good Care" project

Despite high coverage of antenatal care and institutional deliveries, high maternal and neonatal mortality rates point to poor QoC in health facilities in Dominican Republic. The Ministry of Public Health and UNICEF used the Monitoring Results for Equity System (MoRES) methodology to identify and measure the bottlenecks in hospital care for pregnant women and babies. Key bottlenecks were largely specific to context, service provision, demand and QoC. Based on the MoRES results, a joint action plan was developed for the initiative "Mothers and Babies in Good Care".

The initiative was designed to reduce maternal and neonatal mortality through the continuous improvement of quality and humanization of care for mothers and newborns. The major components of this initiative are (1) quality antenatal care, (2) mother-friendly care to reduce obstetric violence, (3) clean and high-quality delivery (4) immediate and early breastfeeding, (5) reduction of infections during immediate newborn care and (6) in-house birth registry.

Implementation guidelines have been developed and tools for quality control, monitoring results and evaluation have been designed and aligned with national protocols and norms, including antenatal care, delivery, pre-and post-delivery care, newborn care, breastfeeding and birth registration. Monitoring data from 2017 shows good progress in implementing standards of care, ranging from 70% in post-delivery care to 95% in antenatal care.

Having well-defined quality standards for each component helped to establish the baseline and was essential for monitoring and evaluation efforts. Even if challenges are known, improvements require a diagnosis and an improvement plan that has ownership from hospital staff and commitment from managers at the hospital. Supportive supervision and ongoing monitoring are important to encourage and maintain the commitment of hospital staff. The leadership from the MoH is central to ensure that any adopted policy is appropriate and integrated within the national systems for quality control of hospitals.

5.2.1. Policy on home based postnatal care

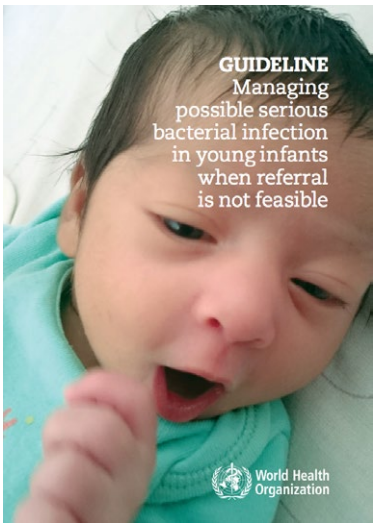
Providing basic care to newborns in the home has been identified as a critical intervention in preventing newborn deaths. In 2017, 44 countries reported having a policy on postnatal care home visits, up from 32 countries in 2016. However, 26 countries reported not having such a policy.

ENAP [7] articulates a 2020 target of a 20% increase in postnatal care coverage within two days of birth, for both the mother and the newborn, but progress is slower than expected in many countries. There is some improvement but the median coverage for postnatal care visits for babies (36%) lags behind postnatal care for mothers (62%).[8] Available data show that compared with other elements of the continuum of care, such as antenatal care or skilled care at birth, the coverage and quality of postnatal care for mothers and newborns tend to be relatively poor[9],[10] due to a variety of health system, socioeconomic and user related factors. For example, a substantial proportion of women leave the health facility too soon after delivery to allow adequate postnatal care during the first 24 hours.[11] Evidence also indicates that in LMICs the use of postnatal services remains highly inequitable and varies with socioeconomic status and between urban and rural residents.[3] Greater rates of facility deliveries in many countries provide a unique opportunity to provide pre-discharge postnatal counselling and care. This has been noted in multiple districts of Bangladesh, Ghana and the United Republic of Tanzania.

Case study: Postnatal home visits for active case detection for management of possible serious bacterial infection

Serious bacterial infection remains one of the major causes of newborn deaths in low income settings. Addressing neonatal infection requires strategies that result in timely case detection and prompt initiation of definitive treatment. A diagnosis of neonatal infection in low-resource settings is usually based on the presence of clinical signs, using the Integrated Management of Childhood Illness (IMCI) guidelines. The revised 2017 WHO/UNICEF guidelines for Managing PSBI are available at: http://apps.who.int/iris/bitstream/handle/10665/181426/9789241509268_eng.pdf?sequence=1

Recently, a cluster randomized trial in Ethiopia[12] evaluated these newborn sepsis treatment guidelines at the most peripheral health facility level. In both arms of the study, volunteers and government-employed Health Extension Workers (HEWs) conducted home visits to pregnant and newly delivered mothers. They assessed newborns and counselled caregivers on preventing newborn illness, recognizing danger signs and seeking care. Volunteers referred sick newborns to health posts for further assessment while HEWs referred newborns with PSBI signs to health centres. In the intervention arm only, HEWs treated newborns assessed identified as having PSBI with intramuscular gentamicin and oral amoxicillin for 7 days at health posts when referral to health centres was not possible or acceptable to caregivers. Intervention communities were informed of treatment availability at health posts to encourage careseeking.

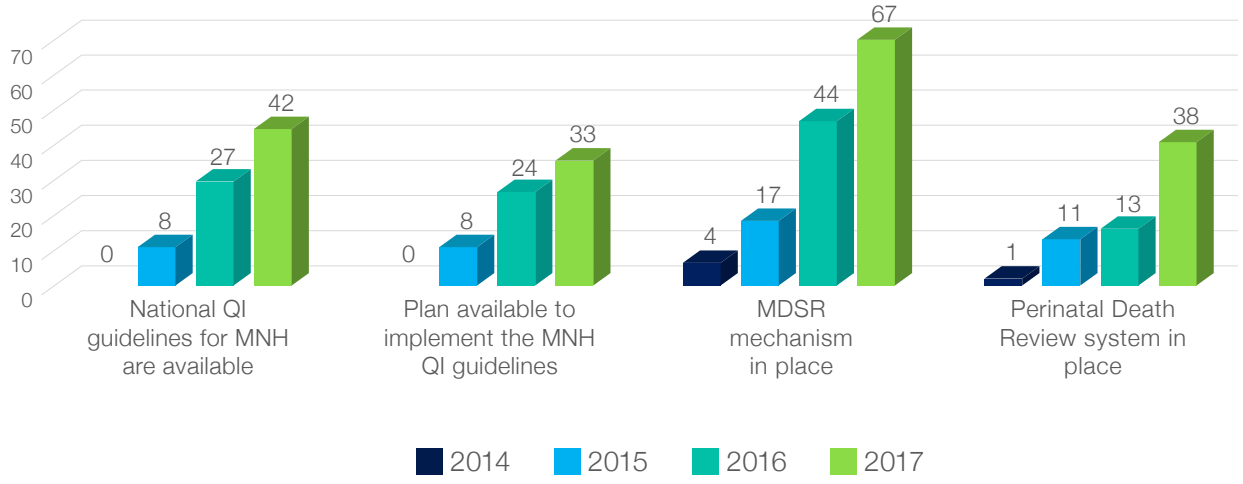


The results from this trial showed that despite considerable support, it was difficult to achieve and sustain adequate home visitation coverage and manage the volume of careseeking for possible newborn infections. Home visitation by community health workers may seem like a simple, low-tech approach to improving maternal and newborn outcomes, but doing it successfully takes considerable programme effort. Therefore, health sector planners and policy makers need to make a realistic determination of the circumstances in their settings, the availability of newborn care services, access to health centres, likelihood of attaining high coverage of postnatal home visits and whether or not active case detection strategies are feasible in their context.

5.2.2. Country progress on quality improvement

It is encouraging to note the increased number of countries that report having national QI guidelines and implementation plans for maternal and newborn health (Figure 5). Similarly, there has also been a steady increase in the number of countries reporting to have maternal death surveillance and response (MDSR) mechanisms implemented. The weakest areas for QI appear to be the availability of appropriate plans to implement QI guidelines and the establishment of perinatal death review systems. These two areas will need greater emphasis in 2017-2018.

Figure 5. Country progress on quality improvement (n=75)



In 2017, 42 countries reported having national QI guidelines available for maternal and newborn health; this is a significant increase from the 27 countries that reported in 2016. However, amongst these countries only 33 reported having an implementation plan. The launch of the Quality of Care network co-led by WHO, UNICEF and UNFPA has provided a platform for cross-country learning and has developed a standardized monitoring and evaluation framework for countries.

Case study: Within-24-hour paediatric hospitalization practice in Kyrgyzstan

An assessment of the quality of hospital paediatric and neonatal care in Kyrgyzstan in 2012 revealed important gaps, for example in admission to hospitals without referral from primary health care facilities, lack of adequate care for sick neonates and children in the admissions department, and unjustified hospitalizations. Furthermore, accuracy of the diagnosis of the admitted child was found to be problematic and often the prescribed treatment was not in compliance with recommended clinical protocols.

A technical working group established under the leadership of the MoH was tasked to decrease the under-5 mortality rate by improving the quality of paediatric in-patient care and reducing excess mortality attributed to practitioner errors. A situation analysis revealed that improving quality would be possible by minimizing cases of late hospital admissions, reducing medically unjustified hospitalizations, improving timeliness of service provision, shortening the average length of stay, ensuring compliance with clinical protocols and improving mother/caregiver satisfaction.

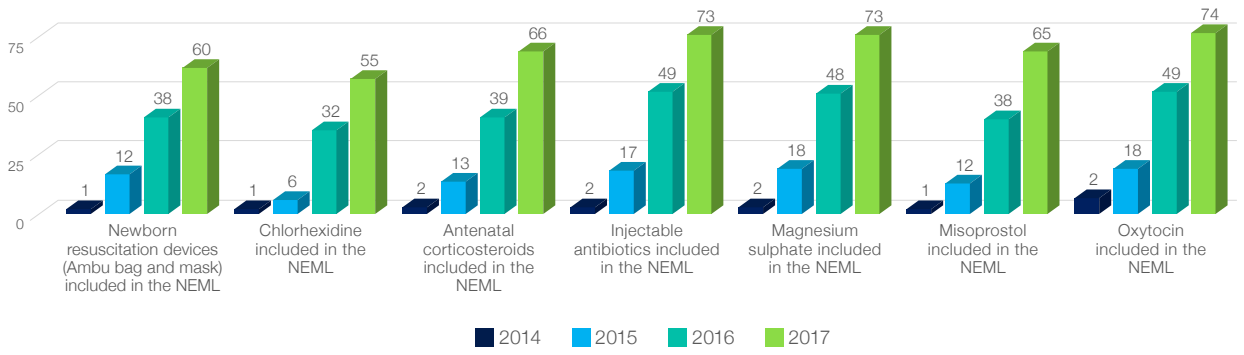
In a participatory process, a pilot project was implemented in five hospitals through the establishment of "one-day care units". In addition, to ensure quality of services, hospitals put in place continuous quality improvement systems and practices. UNICEF provided technical support, supported staff training and participated in joint monitoring and evaluation. Since the project was deemed to be effective, it was scaled up after one year with one-day care units established in 74 hospitals in all regions of the country. An evaluation conducted in 2017 found that the project had managed to fully staff the hospitals by internal rationalization of personnel without increasing the number of posts. It ensured improved access to medicines and laboratory services and increased admissions with referrals from primary health care facilities. Institutionalization of within-24-hour hospitalization practices resulted in a reduction of excess mortality due to practitioner errors. The project also minimized unjustified hospitalizations. Timeliness of treatment initiation and QoC improved with increased compliance to treatment guidelines. Increased satisfaction of caregivers with services received resulted in a drastic decrease of early discharges on caregiver's request. This initiative produced many important lessons: project success depended on the political will, ownership and commitment of the MoH, actions needed to be integrated into existing systems, and large-scale involvement of all hospital personnel including administrative, para-clinical and clinical staff was essential. Implementation required the establishment of QI teams at hospitals, targeted training of health workers and ongoing mentoring and supportive supervision.

5.2.3. Status of including essential medical products and technologies in the national essential medicines list

The addition of recommended essential medicines and commodities for high-impact interventions to the National Essential Medicines List (NEML) has been an area with the greatest progress since the start of ENAP tracking. In 2016, 26 countries reported having included all seven essential medical products and technologies in their NEML, and this number increased to 41 in 2017. Figure 6 shows the summary of progress for the reporting countries since 2014.

- Oxytocin, magnesium sulphate and injectable antibiotics have been incorporated in the NEML by all reporting countries.
- Misoprostol was reported to be a part of the NEML in 65 countries. Eight countries that did not have Misoprostol in the NEML were Comoros, Egypt, Georgia, Indonesia, Mauritania, Palestine, Philippines and Sri Lanka.
- Sixty-six countries reported that antenatal corticosteroids were included in their NEML. Seven countries (Cameroon, Georgia, Maldives, Mauritania, Myanmar, Papua New Guinea and South Sudan) reported not having antenatal corticosteroids in their NEML.
- Sixty countries reported that newborn resuscitation devices were included in the NEML. In 2017, 13 countries (Burkina Faso, Cameroon, Ethiopia, Georgia, Lao People's Democratic Republic, Madagascar, Maldives, Mozambique, Myanmar, Nepal, Philippines and Sri Lanka) reported not having such devices in their NEML.
- 7.1% chlorhexidine digluconate was reported to be a part of the NEML in 55 countries in 2017.

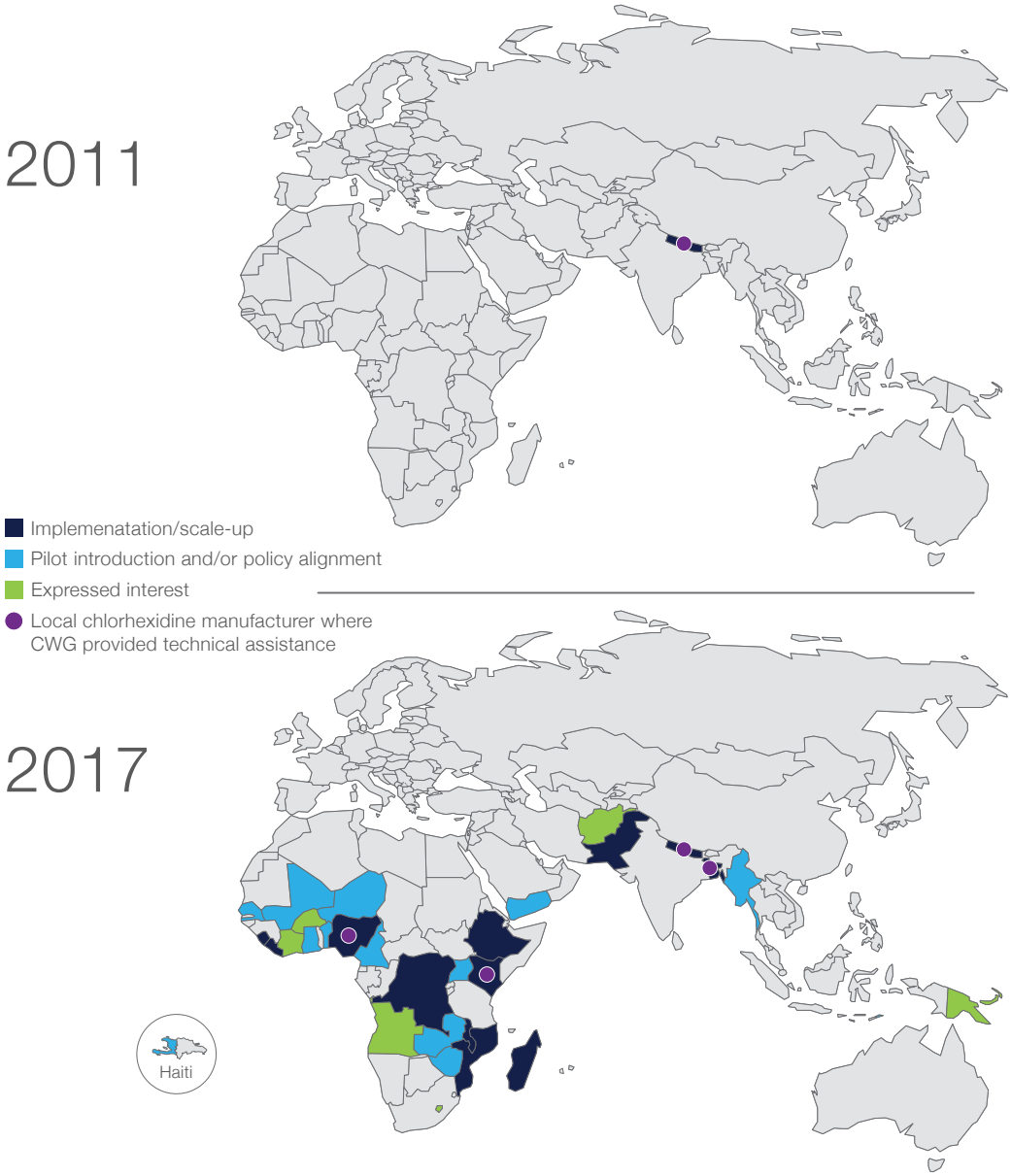
Figure 6. Country progress on inclusion of essential medical products and technologies in NEML (n=75)



Case study: Chlorhexidine for cord care

A baby's recently cut umbilical cord is a potential entry point for bacteria that can cause life-threatening newborn sepsis. Optimal cord care at birth and in the first week of life, especially in settings with poor hygiene, is important. People in many cultures also traditionally tend to apply various substances to a freshly cut cord stump such as ash, oil, butter, spice pastes, or mud which may be harmful. In January 2014, WHO issued a new recommendation for umbilical cord care for newborns who are born at home in settings with high neonatal mortality (30 or more neonatal deaths per 1000 live births): the daily application of chlorhexidine (7.1% chlorhexidine digluconate aqueous solution or gel, delivering 4% chlorhexidine) to the umbilical cord stump during the first week of life. Clean, dry cord care is recommended for newborns born in health facilities and at home in settings with neonatal mortality lower than 30 per 1000 live births. Over the past decade, chlorhexidine has moved rapidly from research studies to a part of programme efforts. Figure 7 shows the Chlorhexidine scale-up effort at initiation in 2011 and status in 2017. Further details are available at https://www.path.org/publications/files/DT_CHX_story_rpt.pdf.

Figure 7. Rapid expansion of chlorhexidine use, 2011 to 2017

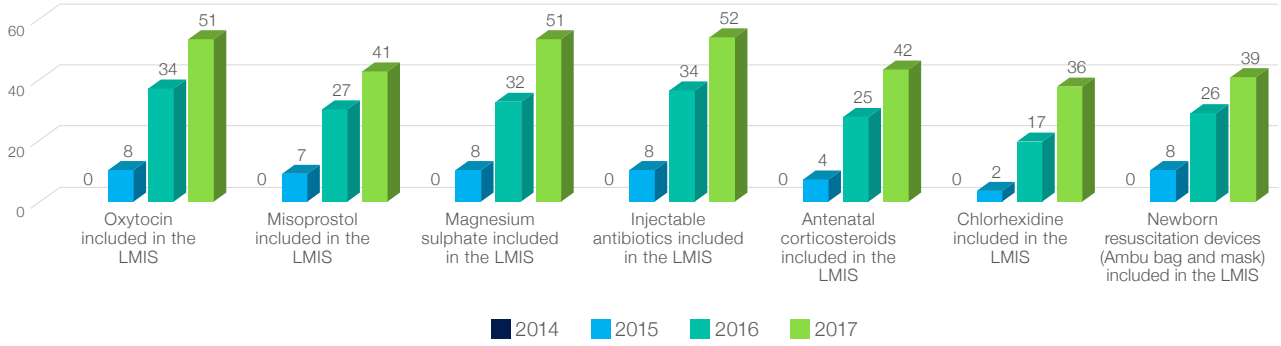


The chlorhexidine working group (CWG) has been crucial to accelerate the introduction and global scale-up of chlorhexidine for umbilical cord care.[13] A recent paper examined the effectiveness of the CWG and offers a very interesting case study on the effectiveness of such multiagency collaborative efforts in improving newborn health. The case study is available at: https://doi.org/10.9745/GHSP-D-17-00380

5.2.4. Status of essential maternal and newborn commodities in Logistics Management Information Systems

Including commodities in Logistics Management Information Systems (LMIS) is important to avoid stock-outs and ensure timely and quality supplies to appropriate levels of care. Figure 8 shows that in 2017, 52 countries reported having injectable antibiotics in their LMIS, and 51 reported having oxytocin and magnesium sulphate. Misoprostol was regularly tracked in the LMIS system of 41 countries and antenatal corticosteroids in 42. Chlorhexidine was reported as tracked by the LMIS in 36 countries and newborn resuscitation devices in 39 countries.

Figure 8. Country progress on inclusion of essential maternal and newborn commodities in LMIS (n=75)



5.2.5. Standards for improving quality of maternal and newborn care in health facilities

In order to achieve UHC, it is essential to deliver health services that meet specific quality criteria. The WHO QoC framework recognises that quality is a normative concept, therefore, standards for care are needed for assessment and improvement purposes.[14] In 2016, WHO published standards for improving the quality of maternal and newborn care in health-care facilities.[15] These standards place people at the centre of the care by improving both the provision of, and patients' experience of health care, and they are a critical part of strengthening health systems.

Case study: National leadership for quality of care

The Network for Improving Quality of Care for Maternal, Newborn and Child Health supported by WHO, UNICEF, UNFPA and partners is bringing together countries and development partners around the vision: "Every mother and newborn receives quality care throughout the pregnancy, childbirth and postnatal periods". This vision is underpinned by the core values of quality, equity and dignity. Under the leadership of the ministries of health, the Quality of Care Network plans to support implementation of national plans for quality improvement and pursue four strategic objectives:

1. Build and strengthen national institutions and processes for improving QoC in the health sector.
2. Accelerate and sustain implementation of QoC improvement packages for mothers, newborns and children.
3. Facilitate learning, knowledge sharing and generation of evidence on quality planning, improvement and control.
4. Develop, strengthen and sustain institutions and methods for accountability for quality of care.

Ten months after the Network's launch, representatives from the first member countries (Bangladesh, Côte d'Ivoire, Ethiopia, Ghana, India, Malawi, Nigeria, Uganda and United Republic of Tanzania) were joined by Kenya and Sierra Leone at a workshop in December 2017. Countries shared their progress on introducing a national QoC strategy in selected districts and facilities, establishing/strengthening quality of care management and response systems, and setting up systems to support the improvement of quality of care from sustaining clinical skills, to optimizing the use of resources, to motivating staff and equipping health workers to deliver respectful care.

Case study: Operationalizing the nine standards of quality improvement for the "Every Mother, Every Newborn" strategy in health facilities in the United Republic of Tanzania

The United Republic of Tanzania, with support from UNICEF, is implementing an Every Mother Every Newborn initiative that focuses on quality improvement to reduce preventable maternal deaths, neonatal deaths and stillbirths. Project activities during the first year focused on improving handwashing, ensuring the completeness and quality of documentation of clinical records and improving the management of maternal and newborn complications. External monitoring has shown significant improvements in adoption of standardized maternal and newborn care protocols in the intervention facilities. All health facilities now have functional QI teams. Availability of handwashing facilities and handwashing practices among health workers have increased from around 50% to 100%. Improved infection prevention and control and handwashing by health workers have reduced hospital-acquired infections amongst neonates. In intervention facilities, completion of clinical records has improved from 14% to 90%. The use of partographs to monitor progress of labour has increased from 40% to 80%. Health workers' perceptions and attitudes have improved, as shown by better interpersonal communication and efforts to ensure privacy and empathetic care to clients. Client satisfaction through self-reports has improved, and the proportion of maternal and perinatal deaths reviews that are completed has increased. Case fatality rates have improved for maternal complications. Further work is ongoing to operationalize sick newborn care units and KMC services.

Case study: WASH in in health care facilities -an important component of Quality of Care in Zambia

In Zambia, the Millennium Development Goal initiative, funded by the European Union, aimed to improve maternal and child health in Copperbelt and Lusaka provinces, primarily through its Infection Prevention and Control (IPC)-centred water, sanitation and hygiene components. Project activities focussed on reactivating infection prevention committees, on-site chlorine production and utilization, waste management, promotion of handwashing with soap and decontamination practices of surfaces and "hand-touch" sites. The project was piloted by UNICEF in 2015 in four selected public urban health facilities. The endline surveys showed improved hand hygiene practices among healthcare staff, an increased number of health services meeting "good hygiene" criteria and improved water quality with low levels of microbiological contamination. This pilot phase provided the necessary evidence for scaling up the WASH-IPC package to a total of 55 health facilities. The establishment of an inter-sectoral technical working group for coordinating activities between government agencies and implementing partners was important in generating ownership of the project. The project has shown that through dedicated advocacy, it is possible to rally the government at the central and decentralized levels to support IPC-WASH interventions.

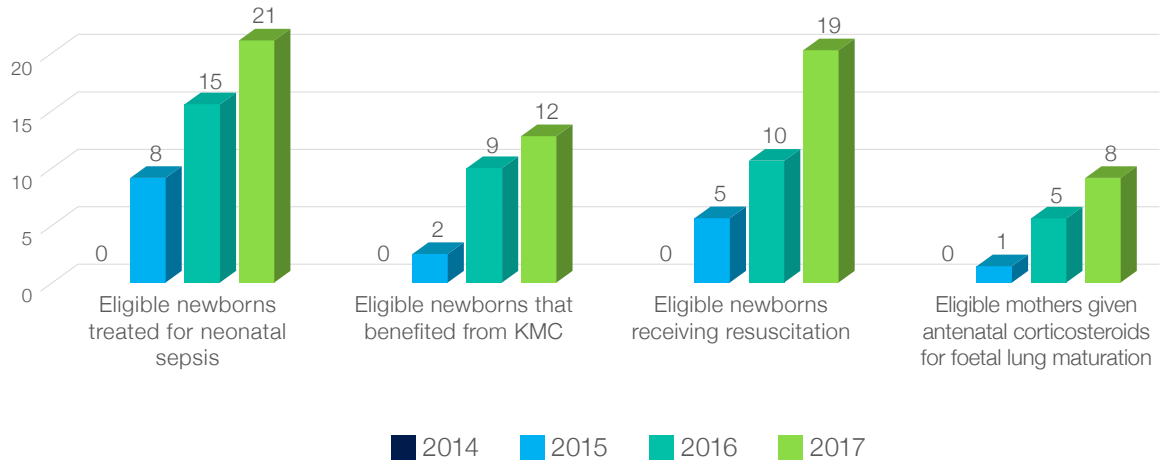
5.2.6. Country progress on newborn-specific interventions

Essential newborn care for all infants is now mainstreamed in many national newborn programmes in LMICs, and the priority is shifting towards increasing effective coverage and quality. The Every Newborn Milestones concerning national plans and quality of care both call for specific action for small and sick newborns.

The Every Newborn Tracking Tool maps the ability of countries to determine whether four high-impact interventions (neonatal resuscitation, treatment of serious neonatal infection, kangaroo mother care and antenatal corticosteroids) are monitored by the HMIS. It is important to note that these indicators require further refinement. The ENAP metrics group is assessing the validity of capturing the coverage of facility-based interventions and how these indicators can best be integrated within routine information systems.

Figure 9 shows the steady progress for all four indicators since 2014.

Figure 9. Country progress on newborn specific interventions (n=75 countries)



- Only three countries (Georgia, Guinea and India) reported having the four newborn-specific indicators included in the national HMIS.
- Bangladesh reported that work was under way to include all four indicators in their national HMIS.
- Armenia, Ethiopia, Iran, Pakistan and Palestine reported having data on three newborn-specific interventions. Armenia, Iran, Pakistan and Palestine did not have data on KMC, while Ethiopia did not have data capturing the use of antenatal corticosteroids.

5.2.7. Use of antenatal corticosteroids

Despite the fact that 66 countries reported that antenatal corticosteroids were included in their national essential medicines list, only eight reported having a relevant indicator in the national HMIS (Table 9). This is nonetheless an increase from previous years. In 2015 only one country reported tracking antenatal corticosteroid use, and in 2016 the number had increased to five.

Table 9. National HMIS includes an indicator for the use of antenatal corticosteroids

2017 (n=75 countries)		
Yes (n=8)	**In process (n=9)**	**No (n=57)**
Armenia, Georgia, Guinea, India, Iran, Jordan, Pakistan, Palestine	Bangladesh, Ethiopia, Ghana, Iraq, Kazakhstan, Nigeria, Sri Lanka, Tajikistan, Togo	Afghanistan, Angola, Azerbaijan, Benin, Bhutan, Botswana, Burkina Faso, Burundi, Cameroon, Chad, China, Comoros, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Egypt, Eritrea, Gambia, Guinea-Bissau, Indonesia, Kenya, Kyrgyzstan, Lao People's Democratic Republic, Lebanon, Lesotho, Liberia, Libya, Madagascar, Malawi, Maldives, Mali, Mauritania, Morocco, Myanmar, Namibia, Nepal, Niger, Papua New Guinea, Philippines, Rwanda, Senegal, Sierra Leone, Somalia, South Sudan, Sudan, Swaziland, Syria, Timor-Leste, Tunisia, Turkmenistan, Uganda, United Republic of Tanzania, Uzbekistan, Viet Nam, Yemen, Zambia, Zimbabwe

5.2.8. Neonatal resuscitation

In 2017, 19 countries reported having integrated an indicator on newborn resuscitation into their HMIS (Table 10). This is an improvement from 11 countries in 2016 and includes high-burden countries such as India and Pakistan. Bangladesh and Nigeria are among the 12 countries that reported ongoing work to include the neonatal resuscitation indicator in their national HMIS, and 43 countries reported not having this indicator.

Table 10. National HMIS includes an indicator for the performance of resuscitation

2017 (n=75 countries)		
Yes (n=19)	**In process (n=12)**	**No (n=43)**
Afghanistan, Armenia, Bhutan, Democratic Republic of the Congo, Ethiopia, Georgia, Guinea, India, Iran, Kyrgyzstan, Malawi, Mozambique, Pakistan, Palestine, Rwanda, Senegal, Uzbekistan, United Republic of Tanzania, Zambia	Bangladesh, Eritrea, Ghana, Iraq, Kazakhstan, Nigeria, Papua New Guinea, Sri Lanka, Sudan, Tajikistan, Togo, Uganda	Angola, Azerbaijan, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Chad, China, Comoros, Côte d'Ivoire, Djibouti, Egypt, Gambia, Guinea-Bissau, Indonesia, Jordan, Kenya, Lao People's Democratic Republic, Lebanon, Lesotho, Liberia, Libya, Madagascar, Mali, Mauritania, Morocco, Myanmar, Namibia, Nepal, Niger, Philippines, Sierra Leone, Somalia, South Sudan, Swaziland, Syria, Timor-Leste, Tunisia, Turkmenistan, Viet Nam, Yemen, Zimbabwe

5.2.9. Kangaroo mother care

Kangaroo mother care is an approach to the care of preterm and/or low birth weight infants, which engages and empowers mothers and families as the main providers of the biological (warmth and food) and psycho-emotional (contact, caring, bonding and comfort) needs of their newborn. The cornerstone of KMC is the kangaroo position whereby the infant is placed and held upright in direct skin-to-skin contact on the mother's chest. KMC should be initiated early and performed more than 18 hours per day, but the initiation, continuity and duration may vary according to the stability of the infant and the context of care. Other key components of KMC are support for exclusive and early breastfeeding and timely discharge from the hospital with appropriate follow-up. In 2017, only 12 countries (Table 11) reported that an indicator on KMC was included in the national HMIS compared to 11 in 2016. Amongst high-burden countries, work to include the KMC indicator was reported only in Bangladesh. In 2017, 51 countries including some with large number of neonatal deaths (Angola, China, Indonesia and Pakistan) reported that an indicator for KMC did not exist as a part of their national HMIS.

Table 11. National HMIS includes an indicator for Kangaroo Mother Care

2017 (n=75 countries)		
Yes (n=12)	**In process (n=11)**	**No (n=51)**
Democratic Republic of the Congo, Ethiopia, Georgia, Ghana, Guinea, India, Malawi, Mali, Nigeria, Rwanda, Senegal, United Republic of Tanzania	Armenia, Bangladesh, Eritrea, Iran, Kazakhstan, Liberia, Papua New Guinea, Sri Lanka, Sudan, Tajikistan, Togo	Afghanistan, Angola, Azerbaijan, Benin, Bhutan, Botswana, Burkina Faso, Burundi, Cameroon, Chad, China, Comoros, Cote d'Ivoire, Djibouti, Egypt, Gambia, Guinea-Bissau, Indonesia, Iraq, Jordan, Kenya, Kyrgyzstan, Lao People's Democratic Republic, Lebanon, Lesotho, Libya, Madagascar, Mauritania, Morocco, Mozambique, Myanmar, Namibia, Nepal, Niger, Pakistan, Palestine, Philippines, Sierra Leone, Somalia, South Sudan, Swaziland, Syria, Timor-Leste, Tunisia, Turkmenistan, Uganda, Uzbekistan, Viet Nam, Yemen, Zambia, Zimbabwe

Case study: Introduction of KMC and reduction in newborn deaths in Kenya

In Kenya, approximately 188 000 babies are born too soon every year. There is limited capacity to optimally manage preterm babies, due to health worker shortages, limited skills and lack of infrastructure including appropriate equipment, commodities and space. Where equipment is available, it is often inadequate and poorly maintained, or it cannot be used because the electricity source is not reliable.

With funding from the Government of the United Kingdom, UNICEF supported the Kenya MoH to roll out KMC in selected high-burden counties, including Kakamega county. In early 2016, UNICEF supported the training of 40 midwives in Kakamega in a 3-day skill-based workshop. The training covered theoretical components of KMC (establishing KMC at health facilities, nutrition, physical and emotional support, monitoring and evaluation, and essentials for scale up) and was followed by practical sessions in the newborn unit of a referral hospital. UNICEF and the Department of Health subsequently supported the trained midwives in rolling out KMC at their respective health facilities, including through the provision of KMC beds, digital weighing scales, guidelines, and supportive supervision.

KMC is now being practised in 20 health facilities in Kakamega county and shows promising results. Three hundred preterm babies have benefitted from the intervention to date, with an average reduction in neonatal mortality of 52% across the 20 facilities and a high point of 67% at one. Some of the benefits of KMC have gone beyond the newborn period, for example a monthly mother's support group meeting was formed in one health facility, where mothers discuss issues affecting their children's health including family planning, breastfeeding, and immunization.

Key lessons learnt from the implementation of KMC in Kenya include:

1. KMC introduction is facilitated by the presence of supportive health authorities at the county level and in all facilities.
2. KMC introduction can be done without significant resources nor additional staff at health facilities.
3. Continued supportive supervision and mentorship from UNICEF field staff was critical to ensure motivation and continued capacity building of health workers.

Case study: KMC implementation expands

War, population displacement and violence have dominated the news from the Middle East and North Africa. The ongoing humanitarian crises, destruction of existing hospitals and exodus of trained health workers have meant that some countries in this region have reversed the positive gains made in child survival over recent decades.

An estimated 454 000 neonates die annually in Middle Eastern and North African countries, with prematurity as the single most important cause. In September 2017, the first ever regional workshop on KMC was organized in Beirut, Lebanon for country teams from Iran, Iraq, Sudan, Syria, plus the Gambia. The workshop was part of regional efforts by H6 partners (UNAIDS, UNFPA, UNICEF, WHO, UN Women and the World Bank) to reduce preventable newborn deaths.

The workshop included competency-based training where health workers learnt clinical skills on managing preterm and low-birth-weight babies and ensuring that standards are met for quality of care. Country teams developed action plans for collecting facility-level baseline data, mobilizing local support and resources, translating training materials to local languages and initiating KMC in their respective hospitals. Participants also formed a social network group to exchange experiences and foster collaboration. All workshop participants have begun implementing intermittent KMC and used World Prematurity Day to raise awareness about the practice. Countries have requested that training materials be translated into Arabic to facilitate wider use.

Case study: Integrating newborn indicators into national HMIS: Experience with KMC in Malawi

Malawi has systematically scaled up KMC since the intervention became national policy for care of preterm and low birth-weight (LBW) babies in 2005. However, the absence of a national system of standardized indicators, registers and reports resulted in limited, poor-quality routine data for monitoring the availability and uptake of KMC. A pilot register and reporting form had been developed in 2011, but these were difficult to fill in, included unnecessary data and were not widely available or endorsed nationally.

Starting in 2014, the Malawi Reproductive Health Directorate and Central Monitoring and Evaluation Department with support from Save the Children, began a process of developing a national routine reporting system for KMC, including a simplified, user-friendly register and reporting form. The process followed four phases. In the first phase, five core indicators were prioritized and the initial list of 32 data elements was reduced to eight. In the second phase, the KMC register and reporting form were revised, with several improvements: data standardization using pre-coded data elements, page summaries to tally the sub-set of data elements required for reporting, improved tracking to distinguish follow-up from new cases, clarification of reporting for facilities with or without inpatient services, and detailed instructions on how to fill the registers and reports. In the third phase, the system was pilot-tested over a two-month period in 21 facilities across the country. In the fourth phase, the registers and reporting forms were finalized based on feedback from the pilot test. The full package was approved for national scale-up in mid-2015.

The final version of Malawi's national reporting system for KMC captures eight data elements (six from facilities with inpatient KMC and two from facilities without inpatient KMC) and five core indicators (Box 1), which were incorporated into Malawi's DHIS-2 in 2015. By October 2015, all KMC focal points in each district had been trained, and facility-level orientations completed. Analysis of DHIS2 data showed improved reporting, with 87% of hospitals submitting KMC reports in 2016 compared to 51% in 2014. Data completeness and timeliness remain a challenge. In 2016, an estimated 15 316 babies were initiated on KMC, representing about 21% of expected cases nationwide (calculated as 10% of expected live births) and 44% of reported preterm or LBW babies. The number of cases initiated on KMC and the estimated coverage varied widely by district.

The process revealed several important lessons. First, leadership of the MoH and early involvement of end-users (facility and HMIS staff) are critical to gain approval and uptake. Second, it is essential to prioritize indicators and data elements suitable for routine reporting to minimize reporting burden. Finally, substantial and sustained investment is needed to produce useable, quality data. Priorities for further strengthening of the national routine monitoring data for newborn health in Malawi include institutionalizing regular data quality audits, developing dashboards at national and district level to facilitate data use, and harmonizing routine data on maternal and newborn health. Currently, facility-based providers are required to complete multiple registers capturing information related to maternal and newborn health (labour and delivery, postnatal care, Helping Babies Breathe, sick neonate register), in several cases with overlapping data elements. The MoH and partners need to work together to minimize the burden of data collection and reporting and to strengthen data quality and use.

Box 1. Core KMC indicators in Malawi HMIS

1. **KMC initiation rate:** # of babies initiated on KMC (inpatient and/or ambulatory) per i) 100 live births at health facility and ii) 100 LBW/premature babies identified at health facility
2. **KMC referral completion:** Proportion of babies who were initiated on KMC and referred who completed referral and initiated on facility-based KMC
3. **Survival to discharge:** Proportion of babies initiated on facility-based KMC who are discharged alive
4. **Death before discharge:** Proportion of babies initiated on facility-based KMC who died before discharge
5. **Left against medical advice:** Proportion of babies initiated on facility-based KMC who left against medical advice or absconded

5.2.10. Treatment and management of severe neonatal infections

In 2017, 21 countries out of 75 countries reported having an indicator to capture the management of neonatal sepsis in their national HMIS; this is an increase of six countries since 2016. Amongst countries with a large burden of neonatal deaths, Angola, China and Indonesia were among the 43 countries that reported not having indicators to track the management of neonatal sepsis. Nine countries, including Bangladesh and Nigeria reported that relevant work was under way.

Table 12. National HMIS includes an indicator for the treatment and management of severe neonatal infections

2017 (n=75 countries)		
Yes (n=21)	**In process (n=9)**	**No (n=43)**
Afghanistan, Armenia, Burkina Faso, Democratic Republic of the Congo, Djibouti, , Ethiopia, Gambia, Georgia, Guinea, India, Iran, Namibia, Nepal, Pakistan, Palestine, Senegal, Sudan, Tajikistan, United Republic of Tanzania, Uzbekistan, Zambia	Bangladesh, Eritrea, Ghana, Iraq, Kazakhstan, Liberia, Nigeria, Sri Lanka, Togo	Angola, Azerbaijan, Benin, Bhutan, Botswana, Burundi, Cameroon, Chad, China, Comoros, Côte d'Ivoire, Egypt, Guinea-Bissau, Indonesia, Jordan, Kenya, Kyrgyzstan, Lao People's Democratic Republic, Lebanon, Lesotho, Libya, Madagascar, Malawi, Mali, Mauritania, Morocco, Mozambique, Myanmar, Niger, Papua New Guinea, Philippines, Rwanda, Sierra Leone, Somalia, South Sudan, Swaziland, Syria, Timor-Leste, Tunisia, Uganda, Viet Nam, Yemen, Zimbabwe

Case study: Characterizing appropriateness of care for sick young infants with PSBI in the private sector in Nepal

Possible severe bacterial infection is an important cause of neonatal deaths in Nepal. While outpatient treatment for PSBI has been available through public health facilities since 2005, there is evidence to suggest that the majority of sick young infants are treated in the private sector. Caregivers prefer the private sector because of convenient opening hours, availability of drugs, and perceived better quality of care. However, data on the quality and appropriateness of private sector care for sick young infants are limited. To address this gap, USAID Nepal and MCSP supported the MoH to conduct a large, nationally representative survey to provide a more definitive picture. The study was conducted between June and July 2017 in a representative sample of 25 districts, 400 medicine shops and 82 physician-run clinics.

The results showed that physician-staffed private clinics were concentrated in urban and peri-urban areas, whereas private medicine shops were more widespread, including in rural areas and were staffed by qualified paramedics. Almost all providers surveyed reported giving oral antibiotics as treatment for PSBI with more than 20% also reporting the use of injectable antibiotics. Incorrect dosing was common for both oral and injectable antibiotics. Use of age to determine dosages, and inaccurate weighing procedures, were common particularly in remote areas. Injectable treatment regimens were often shorter than recommended due to the family's failure to return to medicine shops or their inability to pay for the appropriate treatment.

About 21% of physicians and 11% of medicine shop providers reported using injectable steroids for treating sick young infants, most often "when the child has signs of critical illness." In almost all such cases, this is inappropriate and likely to increase the risk of neonatal death. Approximately half of providers reported routinely giving a pre-referral dose of oral antibiotics, but provision of pre-referral injectable antibiotics was considerably less frequent (fewer than 5% of providers). Fewer than half of all providers took action to check on infants who did not return for follow-up.

The study also uncovered some promising findings. The qualifications of providers in medicine shops were equivalent to those working within the peripheral public health facilities. These private sector health workers trusted the MoH and expressed an interest in using government treatment protocols and participating in formalized social franchising networks for treatment of sick young infants.

In response to this assessment the MoH, with support from partners, is working to test and develop strategies to address critical performance gaps among private sector providers. Improvements will address accurate weighing and dosing, avoiding harmful steroids, appropriate use of pre-referral injectable antibiotics and strengthening of referral systems to facilitate timely referral for more critically ill cases.

5.2.11. Inpatient care for small and sick newborns including family care and follow up

Inpatient care for small and sick newborns is emerging as an important priority for countries. Although not specifically tracked in ongoing global efforts due to lack of clarity on definitions and on what it entails, it can be conceptualized as being delivered across three levels at health facilities (see Figure 10). In a well-functioning health system, all three levels of care for newborns should be available. The majority of small and sick newborns will require special care at the secondary level whereas a small proportion will require neonatal intensive care, including ventilation support.

Global partners are undertaking multiple activities to advance the global agenda on small and sick newborn care. These include (a) a landscape analysis, (b) review of hospital assessments of quality of maternal and newborn care services conducted in 24 countries with WHO technical assistance, (c) a document to describe key systems issues related to the care of small and sick newborns and (d) the definition of signal functions (see section 5.7.6). The multi-country landscape analysis is looking at inpatient care for sick newborns and young infants in Bangladesh, Ghana, Malawi, Nepal, Pakistan, Rwanda, Uganda and the United Republic of Tanzania. Results, expected in 2018 and 2019, will provide a basis for strengthening care of small and sick newborns, building on the essential newborn care platform.

The document describing the global gap, need, and solutions to strengthen care for every small and sick newborn is expected to be launched on the 2018 World Prematurity Day, and will serve to galvanize the global community to do more for this extremely vulnerable population.

Figure 10. Health system requirements for inpatient care of small and sick newborns by level of care

More complex care

Place	• A special ward that includes neonatal care facilities • Incubators, resuscitaires • Space for kangaroo mother care and supporting breastfeeding
People	• Nurses with specialized neonatal skills • High nurse-newborn ratio e.g. 1:1 in the UK • At least one doctor with specialised neonatal training
Equipment and commodities	In addition to special care equipment and commodities (see below) • Availability of Continuous Positive Airway Pressure, Intermittent Positive Pressure ventilation and monitoring equipment • Surfactant therapy for extremely premature newborns, if appropriate
Support system	• 24 hour laboratory support • Transport and safe referral if needed • Space for mother and family to stay close to their baby

Place	• A special room or specially allocated corner of a warm facility, with specific areas for resuscitation, stabilisation and space for kangaroo mother care • Incubators/resuscitaires overhead heaters
People	• Specialized nursing and midwifery staff • High nurse/midwife to newborn ratio e.g. 1:4 in United Kingdom
Equipment and commodities	• Feeding support with nasogastric tubes and intravenous fluids • Infection prevention and management, including antibiotics • Some access to oxygen provision (with pulse oximetry), and effective phototherapy for jaundice case management
Support system	• Space and support for mothers including place to express breast milk

Basic care

Place	• Basic facility or home birth with skilled attendance
People	• Midwifery and nursing staff
Equipment and commodities	• Linen/towels for drying and wrapping and resuscitation bag and mask
Support system	• Warmth, cleanliness and breastfeeding support

Figure adapted from Moxon et al (2015) BMC pregnancy and childbirth [16]

Case study: Family-centred care in a neonatal intensive care unit in north India

Family-centred care (FCC) for sick newborns is emerging as a useful approach at health facilities. FCC seeks to transform traditional technology-driven, provider-centred care into a more client-centred model, and to build a stronger partnership between health providers and families. Often parental or family participation in caring and decision-making regarding the care of their babies is limited. In some settings family members, even mothers, are granted limited access to the inpatient care unit. This leads to anxiety and stress among parents and family members and limits essential practices such as KMC. In addition, there are widespread human resource shortages in hospitals in high-burden settings. Family-centred care for small and sick newborns seeks to develop and nurture the family's role in partnership with the care delivery team of doctors and nurses.

A randomized controlled trial conducted at the Post Graduate Institute, RML Hospital, New Delhi, during 2010-2012 aimed to adapt the principles of family-centred care to overcoming the problem of human resource constraints and improving neonatal outcomes in the tertiary referral neonatal unit. Researchers enrolled the accompanying parent or attendant of sick newborns to participate in delivering care to babies in addition to that provided by nurses and doctors. The objectives of the training, using developing culturally sensitive audio-visual training modules, were to improve awareness, educate, train and build capacities of accompanying parents or attendants in the domains of personal hygiene, handwashing, identification of danger signs, reporting of adverse events, feeding and KMC of low birth-weight or sick newborns.

The results of the trial were promising. There were no increases in infection rates, and better rates of breastfeeding were achieved prior to discharge of the neonate. Health workers and families found this intervention to be feasible, well-accepted and safe. The Indian government plans to scale up this initiative to other sites, and the FCC model has the potential of being useful in other low- and middle-income countries.

Case study: Comprehensive integrated care of small and sick neonates: Newborn Essential Solutions and Technologies (NEST) and the MacArthur Foundation

Although a large proportion of African mothers now give birth in hospitals, these hospitals often lack the life-saving technologies needed to provide comprehensive inpatient newborn care. These technologies are not available for two principal reasons: (1) equipment designed for high-resource settings cannot withstand the harsh environments of African hospitals, and (2) the distribution functions for medical devices in Africa are poorly coordinated or understood.

The Newborn Essential Solutions and Technologies (NEST 360°) project addresses these gaps through three complementary approaches: (1) ***Innovation:*** Providing a package of rugged technologies for quality, comprehensive newborn care, (2) ***Distribution:*** Ensuring the affordable delivery, installation, and maintenance of NEST360° technologies and (3) ***Measurement:*** Demonstrating cost effectiveness of NEST360° to unlock demand in the public and private sector hospitals.

NEST360° comprises a multi-disciplinary team of clinicians, engineers, manufacturers, distributors, and experts in newborn care programming and evaluation. Collaborators are from Rice University, Northwestern University, the University of Malawi, the London School of Hygiene and Tropical Medicine and 3rd Stone Design. NEST 360° builds on previous work done on expanding bubble continuous positive airway pressure (bCPAP) in Malawi. In December 2017, the NEST team was awarded US$ 15 million through the MacArthur Foundation's inaugural 100&Change competition. Additional partners have made commitments to this integrated approach.

NEST360° identified five key insights critical for scaling comprehensive newborn care in Africa:

1. A bundle of technologies is needed to end preventable newborn deaths across Africa
2. A bundle of technologies is needed to sustain distribution across Africa
3. Rigorous evaluation of a bundle of technologies, including cost effectiveness data, is required for global policy and country uptake
4. Providing financing for a bundle of technologies is critical for uptake, especially in private sector health facilities
5. Sustaining a bundle of technologies requires collaboration with local clinical and technical training institutions

Spotlight: Safe and effective oxygen use for inpatient care of small and sick newborns

Access to appropriate oxygen therapy can reduce death from childhood pneumonia and neonatal respiratory distress. Improved detection of hypoxemia and the safe administration of oxygen has resulted in a 35% reduction in the risk of death from childhood pneumonia in high-burden settings.[17] Historically, the administration and delivery of oxygen with pressure that helps maintain lung inflation has resulted in a dramatic improvement in survival of premature infants.[18] Oxygen therapy remains an essential element in the treatment of newborn respiratory distress, with specialized delivery methods being increasingly used in low- and middle-income countries.[19],[20] The requirements for safe oxygen use in newborns include:

- Systems for delivering different oxygen concentrations (blenders to provide 21% to 100% oxygen);
- Non-invasive systems for measuring oxygen levels in the blood (pulse oximetry);
- Adequate number of trained staff who understand the importance of controlling oxygen levels.

Without proper monitoring, however, oxygen may also be unsafe and cause harm. Injury may occur from high levels of oxygen in the blood, regardless of the administered oxygen concentration, and from exposure of the lungs to high concentrations of oxygen. The two main complications of oxygen use in newborns are retinopathy of prematurity (ROP) and lung injury. ROP is the abnormal development of blood vessels in the retina of the eye. In its most severe form, ROP can result in blindness. Exposure to supplemental oxygen also produces complications from direct oxygen toxicity to lung tissue. Chronic lung disease (also known as bronchopulmonary dysplasia) is a serious consequence in extremely preterm infants, but cumulative oxygen exposure also leads to lung problems in infancy among moderately preterm babies.[21]

What are the current evidence-based best practices?

- Prevention of unnecessary oxygen exposure: Appropriate administration of antenatal corticosteroids to women with threatened preterm birth from 24 to 34 weeks of gestation can reduce the incidence and severity of respiratory distress syndrome among their newborn infants.[22],[23]
- When oxygen therapy is required, during resuscitation or later during inpatient care, minimizing the concentration and duration of oxygen exposure through strict monitoring is key to avoiding an increased need for oxygen and resultant complications.
- Pulse oximetry provides non-invasive monitoring of blood oxygen levels episodically or continuously.
- Involving parents in skin-to-skin contact and developmentally supportive care of newborns can reduce agitation and desaturation, and thus limit unnecessary oxygen exposure.
- Nurses, midwives, physicians and other health professionals who care for newborns receiving oxygen therapy should have specific training and skills in the safe delivery of oxygen.

Facility-specific standard operating policies and procedures, as well as clinical treatment guidelines, and availability of blenders, pulse oximeters, gas heaters/humidifiers are key to improving the safe use of oxygen. Newborns who are treated with oxygen need to be monitored with pulse oximetry and have oxygen saturations kept in the safe range. Newborns who have received oxygen therapy must be screened for evidence of direct and indirect toxicity – specifically, lung injury and ROP. Biomedical engineers are needed for maintenance of delivery and monitoring systems for oxygen supplementation that require scheduled calibration, cleaning, electrical safety checks and repair/replacement of durable and consumable elements.

5.3. Every Newborn milestone: Investment in health workforce

Investment in the workforce requires developing or integrating costed strategies on human resources for health into RMNCAH plans and ensuring the allocation of sufficient financial resources. In 2017, 41 countries reported that they had developed a human resource plan or a strategy for skilled attendance at birth. This represents an increase of 11 countries since 2016 (Table 13).

Table 13. Health workforce strategies

Indicator	Yes (n=41)	In process (n=6)	No (n=25)
A human resource plan/ strategy for skilled birth attendance is in place	Afghanistan, Angola, Armenia, Bangladesh, Bhutan, Burkina Faso, Burundi, Cameroon, Chad, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Egypt, Ethiopia, Ghana, Guinea, Guinea-Bissau, India, Indonesia, Iran, Kazakhstan, Kenya, Lao People's Democratic Republic, Liberia, Libya, Morocco, Mozambique, Myanmar, Nepal, Niger, Pakistan, Palestine, Rwanda, Somalia, Sri Lanka, Sudan, Syria, Turkmenistan, United Republic of Tanzania, Viet Nam, Zambia	Eritrea, Jordan, Namibia, Nigeria, Senegal, Zimbabwe	Azerbaijan, Benin, China, Comoros, Gambia, Georgia, Iraq, Lebanon, Lesotho, Madagascar, Malawi, Maldives, Mali, Mauritania, Papua New Guinea, Philippines, Sierra Leone, South Sudan, Swaziland, Tajikistan, Timor-Leste, Togo, Tunisia, Uzbekistan, Yemen

5.4. Every Newborn milestone: Health workforce capacity and support

Table 14 shows the reported policies in place to support health worker competencies and retention in 75 countries. In 2017, 28 countries reported that a retention policy was in place for skilled birth attendance, compared to 18 countries in 2016 and 5 countries in 2015.

Sixty countries reported that competency and skill-based trainings for maternal and newborn health were available in 2017 compared to 44 countries in 2016.

Table 14. Countries reporting policies to support health workers retention and competencies

Indicator	Yes	In process	No
A retention Policy or strategies for skilled birth attendants or relevant cadres in place	Afghanistan, Burkina Faso, Burundi, Cameroon, Egypt, Ethiopia, Gambia, India, Iran, Kazakhstan, Kenya, Kyrgyzstan, Malawi, Nepal, Niger, Pakistan, Palestine, Rwanda, Senegal, Somalia, Sudan, Tajikistan, United Republic of Tanzania, Timor-Leste, Uganda, Viet Nam, Zambia, Zimbabwe (28)	Armenia, Bangladesh Eritrea, Liberia, Mozambique, Nigeria (6)	Angola, Azerbaijan, Benin, Bhutan, China, Comoros, Cote d'Ivoire, Djibouti, DRC, Georgia, Ghana, Guinea, Guinea-Bissau, Indonesia, Iraq, Jordan, Lao People's Democratic Republic, Lebanon, Lesotho, Libya, Madagascar, Maldives, Mali, Mauritania, Morocco, Myanmar, Namibia, Papua New Guinea, Philippines, Sierra Leone, South Sudan, Sri Lanka, Swaziland, Syria, Togo, Tunisia, Turkmenistan, Uzbekistan, Yemen (39)
Competency and skill-based service / training/ education for MNH available	Afghanistan, Angola, Armenia, Benin, Bhutan, Burkina Faso, Burundi, Cameroon, Chad, China, Cote d'Ivoire, Democratic Republic of the Congo, Djibouti, Eritrea, Ethiopia, Gambia, Ghana, Guinea, Guinea- Bissau, India, Indonesia, Iran, Iraq, Kazakhstan, Kenya, Kyrgyzstan, Lao People's Democratic Republic, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Morocco, Mozambique, Myanmar, Namibia, Nepal, Niger, Nigeria, Pakistan, Palestine, Senegal, Sierra Leone, Somalia, South Sudan, Sri Lanka, Sudan, Swaziland, Syria, Tajikistan, Togo, Tunisia, Turkmenistan, United Republic of Tanzania, Uzbekistan, Viet Nam, Yemen, Zambia, Zimbabwe (60)	Bangladesh, Lebanon (2)	Azerbaijan, Comoros, Egypt, Georgia, Jordan, Mauritania, Papua New Guinea, Philippines, Rwanda, Timor Leste (10)

Case study: Improving maternal and newborn health services in eastern Indonesia through a multifaceted programme including perinatal mentorship

Difficult geography, inequitable distribution of health personnel, infectious diseases such as malaria and basic resource limitations make preventable maternal and newborn deaths higher in eastern Indonesia than in other parts of the country.

In 2017, Indonesia embarked on three interrelated initiatives attempting to address these bottlenecks. First, malaria screening was performed for more than one-half million pregnant women attending antenatal care services, leading to the treatment of nearly 24 000 cases of malaria-in-pregnancy. Second, a referral system was established between health facilities in remote areas and urban areas, which led to a two-to-four-fold increase in appropriately managed obstetric and neonatal complications as well as shorter delays in accessing safe delivery services. Third, the perinatology mentorship initiative paired specialist paediatricians and paediatric nurses from better-developed parts of Indonesia with more poorly developed hospitals in remote areas. This led to enhanced capacity of health professionals in targeted perinatology units and increased ability to manage major causes of neonatal deaths.

Several lessons were learnt in this process. Applying a bottom-up approach that included designing a programme with local providers and health managers ensured that the method was appropriate to the local context. Promoting stakeholder engagement early on resulted in strong national and local ownership, enhanced effective implementation and facilitated programme sustainability. The programme succeeded in improving public awareness on critical health issues, and enhanced community participation has contributed to the programme's achievements. National and subnational policy guidelines have been developed for MNH, and local, national and external resources have been secured to ensure sustainability.

Investing in data generation and continuous monitoring and evaluation have been important not merely to measure programme achievements, but also to inform planning and to guide implementation. Strengthening of health stewardship across all levels is critical to maintaining programme sustainability and strategic direction.

5.4.1. Survey report on strengthening midwifery education

There is increasing evidence to indicate that a consistent barrier to improving maternal and newborn health has been the failure to create an environment that enables midwives, nurses, doctors and other health workers to provide quality care. A systematic mapping of barriers to the provision of quality care by midwifery personnel revealed that poor midwifery education, often reduced to a matter of weeks without qualified faculty and lacking in practical application, was a major constraint.[24] The State of the World's Midwifery Report 2014 notes that of the 73 countries from which data was gathered, only four had a workforce capacity to provide the care needed by newborns and by women in their reproductive years. Moreover, many of the programmes lacked basic training such as for infection prevention and for respectful care, leading to possible links between poor education, poor clinical care, sepsis and mistreatment of women in facilities.[25]

Efforts to improve the quality of education have been made by many partners under the leadership of the International Conference of Midwives (ICM), the International Federation of Gynaecology and Obstetrics and the International Paediatrics Association, as well as through UN agencies, donors, foundations and major international and national NGOs. Much of this has focussed on curriculum development and training (short and long term). More recently attention has been given to the potential for mHealth and e-learning opportunities. In 2015 WHO developed "Midwifery Educator Core Competencies", which sets out 19 competencies for all educators (midwives, nurses or doctors). WHO also developed "Global strategic directions for strengthening nursing and midwifery 2016-20", which highlights education along with policy development, leadership, intra- and inter-professional partnerships and greater investment in the workforce.[26] Yet educators remain challenged in providing learning opportunities that ensure that future practitioners acquire the practical skills needed to deliver quality maternal and neonatal care. In response, Bharj et al (2016) set out a new "Agenda" to improve the quality of education. This includes developing intensive, sustainable collaboration between education programmes, practice settings, and government systems. WHO has identified midwifery education as a priority and is leading work with UN agencies, professional organizations, academics and other partners to develop a global strategy for strengthening quality interprofessional midwifery education. Midwifery will be the theme for the 2019 report to the WHO Executive Board on the UN Secretary-General's Global Strategy for Women's, Children's and Adolescents' Health (2016-2030), with potential for this to be a key issue for discussion at the World Health Assembly.

5.4.2. Human resources for sick newborn care

The health workforce is a critical bottleneck for the provision of skilled care for mothers and newborns in most countries. Shortages are most apparent in low-income settings, and are compounded by inadequate deployment, poor retention and the misdistribution of health workers between urban and rural areas. Highly skilled personnel such as obstetricians, paediatricians, neonatologists, anaesthetists and midwives tend to be concentrated in urban areas or to migrate overseas to pursue better opportunities. Human resource shortages are particularly evident for neonatal nurses, with no programmes for training these cadres available in low-income settings. Other human resource challenges include a lack of supervision, poor salaries, low morale and motivation.[27],[28]

Effective human resource management requires strong leadership and comprehensive planning guided by needs on the ground. Mapping exercises can reveal the distribution of staff with specific skills, and gaps in service provision. The frequent transfer or rotation of specialty-trained staff can be detrimental to the quality of sick newborn care. Staff that have participated in specialized training on sick newborn care and who have experience working in neonatal intensive care units should be protected from mandatory rotation to ensure the quality of care and the best use of resources. Given the frequent shortages of skilled health workers and the disparities of skills available, task shifting has emerged as an important strategy in many settings to delegate tasks to lower level cadres by providing them focused training on key activities.[29] In many African countries, for example, non-physician clinicians have been employed to provide emergency obstetric services.[30] Task shifting is an important interim strategy, but needs to be implemented with regular supportive supervision and ongoing mentoring.

Case study: Establishing special newborn care units run by mid-level health professionals in Malawi

The NMR has decreased at a much slower pace than post-neonatal mortality rates in Malawi. Although 90% of women deliver at health facilities, the number of newborn deaths remains high, suggesting poor quality of care. The common causes of neonatal deaths are birth complications, prematurity and sepsis. In line with the ENAP, UNICEF worked with the Paediatric and Child Health Association of Malawi to establish Special Newborn Care Units (SNBCU) in ten hospitals that are primarily run by nurses with support from clinical officers. The initiative was designed and implemented to address four critical gaps in the care of sick newborns: the absence of dedicated space, limited staff, limited protocols and poor data capture.

In 2015 work began to identify rooms and staff in district hospitals who could be specifically dedicated for sick newborns, to renovate units and provide necessary equipment. A training package, Care of the Infant and Newborn (COIN), was developed to build capacity among mid-level health workers in the care of sick neonates; this was complemented by neonatal admission forms and other supporting tools.

Training was provided for 350 health workers and 43 pre-service lecturers. Nurse and midwife curricula were reviewed, and mentorship and supervision were provided. The MoH-developed newborn care register was printed and tested in the ten hospitals. All ten SNBCU are now fully operational and provided care for 14 596 newborns last year, reducing the need for referral and saving thousands of lives. Death audits were undertaken for 56% of newborn deaths; response actions contributed to improved care. The NMR in the ten hospitals has declined by one third within a one-year period, twice as fast as predicted. The key lesson learnt from the project is that tailored capacity-building interventions can be successful in enabling mid-level health workers to independently provide a comprehensive package of inpatient care for small and sick newborns.

Case study: The Regional Learning Network, a model for improving outcomes of maternal and newborn care in Uganda

As facility births have increased in Uganda from 58% in 2011 to 74% in 2016, the MoH has stepped up QI efforts to end preventable maternal and newborn deaths. Starting in 2016, the MoH piloted a Regional Learning Network (RLN) in Hoima, with support from Save the Children and the University Research Company (URC). The RLN is a network of 14 health facilities, including and within the catchment area of the regional referral hospital, linked to provide newborn care services based on national standards and guidelines.

The RLN aims to: 1) employ a QI methodology that includes a training lab based at the regional referral hospital to address critical gaps in providing high quality MNH care: 2) produce new knowledge and learning on the best approaches to improving MNH care; and 3) spread, share, and document lessons with other regional referral hospitals and lower-level facilities. The URC set up the training lab and carried out quality improvement activities, including plan-do-study-act cycles (PDSA), clinical coaching, and training of 137 frontline health workers. Save the Children conducted core network-building activities such as learning sessions, maternal and perinatal death surveillance reviews, training on RMNCH scorecard use, district coordination meetings, and quarterly data quality assessments. The early investment in and engagement of the local clinical leadership in this QI initiative served to support the sustainability and scalability of the RLN model.

Key changes made to improve the quality of care included establishing clinical mentorship and skill-building opportunities, fostering use of data for accountability, and ensuring the availability of appropriate communication, referral systems, supplies, commodities and infrastructure to support essential obstetric and newborn services. After just 12 months, vast improvements were seen including the availability of essential inputs, knowledge of evidence-based care among health care providers, and delivery of key maternal and newborn health services that improved the outcomes of mothers and newborns. The endline evaluation found that nearly all staff assessed were able to correctly identify the necessary procedures for essential newborn care and that the number of staff able to accurately describe KMC doubled. All facilities had an appropriate place for newborn resuscitation within the delivery room with functional Bag Mask devices available; this had been only 21% at baseline. Delivery of essential newborn care improved, including handwashing, skin to skin contact and support to initiate early breastfeeding.

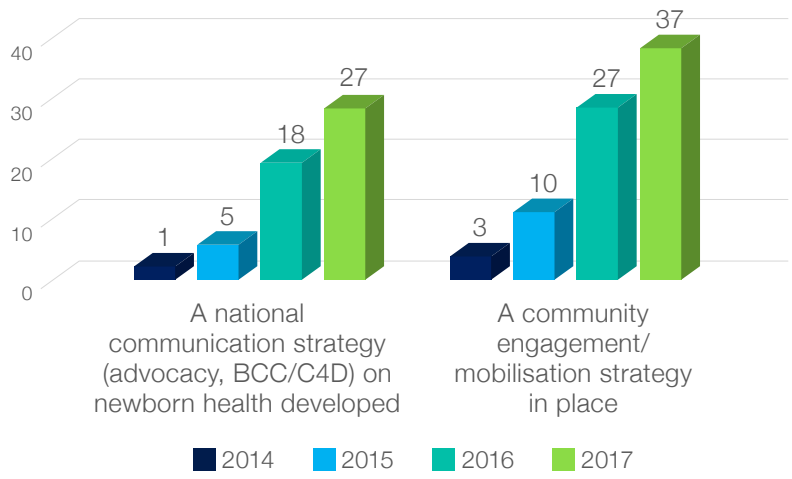
District coaches and midwife mentors led learning sessions and provided mentorship and supportive supervision. Health care providers and district management staff involved in the RLN found that the learning sessions served as a valuable network-building activity for sharing learning and building rapport; this work can be carried on after the pilot project ends.

High quality maternal and newborn care can be achieved when facilities have the infrastructure, personnel, equipment, drugs and skilled providers needed to follow evidence-based processes in a timely fashion for every patient, every time. Based on improvements in clinical outcomes, care processes, and shared learning under the RLN, the Uganda MoH can continue implementing mentorship and supportive supervision in Hoima and the 14 facilities of the RLN to test a version of quality improvement that is not partner-funded. Because a skills lab in Hoima has already been created, the main requirements to maintain quality improvement activities are mentorship and supportive supervision, along with the continued engagement of leadership.

5.5. Every Newborn milestone: Community engagement

Involving communities, civil society and other stakeholders to increase demand and ensure access to and coverage of the essential maternal and newborn care is an important milestone for ENAP. Fig 11 shows the progressive increase in the number of countries that have strategies in place for MNH engagement and communication.

Figure 11. Country progress on communication strategy and community MNH engagement



In 2017, 37 countries reported that a community maternal and newborn health engagement/ mobilization strategy had been developed, 33 countries reported that no such strategies were available.

Table 15. Status of national community maternal and newborn engagement strategies that were available

Indicator	Yes (n=37)	In process (n=2)	No (n=33)
A community MNH engagement/ mobilization strategy in place	Armenia, Bangladesh, Bhutan, Burkina Faso, Cameroon, Cote d'Ivoire, Democratic Republic of the Congo, Egypt, Eritrea, Ethiopia, Ghana, Guinea, Guinea-Bissau, India, Indonesia, Kazakhstan, Kenya, Kyrgyzstan, Liberia, Malawi, Morocco, Myanmar, Nepal, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Somalia, South Sudan, Sri Lanka, United Republic of Tanzania, Timor-Leste, Uganda, Uzbekistan, Yemen, Zambia	Palestine, Swaziland	Afghanistan, Angola, Azerbaijan, Benin, Botswana, Burundi, Chad, Comoros, Djibouti, Gambia, Georgia, Iran, Iraq, Jordan, Lao People's Democratic Republic, Lesotho, Libya, Madagascar, Mali, Mauritania, Mozambique, Namibia, Pakistan, Papua New Guinea, Philippines, Sudan, Syria, Tajikistan, Togo, Tunisia, Turkmenistan, Viet Nam, Zimbabwe

Case study: MCSP conducts a multi-country assessment on community engagement

In 2017, MCSP initiated a multi-county assessment on community engagement in Bangladesh, Ethiopia, Guatemala, Haiti, Kenya, Malawi, Mozambique, Pakistan and Rwanda. The primary objective of this assessment, scheduled to end in late 2018, is to document what actions at the community level have contributed to changes in practices in maternal and newborn health and nutrition. Secondary objectives are: 1) to share and disseminate experiences and lessons learned, 2) discuss the merits of institutionalizing the community health model and 3) promote the use of participatory community capacity strengthening approaches to improve demand creation and service uptake.

5.5.1. Every Child Alive: the urgent need to end newborn deaths

The Every Child Alive campaign is a joint effort launched by UNICEF and partners in February, 2018. The campaign is an urgent appeal for strong cooperation between governments, businesses, health care providers, communities, and individuals to fulfil the promise of universal health coverage and keeping every child alive.

The campaign was launched with a global report that describes the challenges of ending preventable newborn deaths. The report is available at: https://www.unicef.org/publications/files/Every_Child_Alive_The_urgent_need_to_end_newborn_deaths.pdf. This report received widespread coverage including a three-part feature from Japan, Malawi and India on BBC News at 10, which also ran online and across BBC News outlets including BBC World, BBC Arabic, BBC Africa and BBC World Service. Al Jazeera aired multiple segments and live interviews from the Central African Republic, as did AFP and RFI (radio and online). Additional field reports came from Rwanda (Mail and Guardian) and Somalia (RTL Radio). Further coverage, including interviews with UNICEF spokespeople, included 52 newspapers such as the Times, The New York Times, Daily Mail, The Guardian and others. Several outlets did multiple stories, including USA Today, TIME, BBC, Al Jazeera, CNN, and the Guardian. UNICEF placed an op-ed by UNICEF Goodwill Ambassador Serena Williams on CNN, which generated more than 32 articles including the Telegraph, The Guardian, BBC Sport, MailOnline, USA Today, E! News, Sports Illustrated, TMZ, ABC News, HuffPost, El Tiempo, Time Magazine, Fox News, CNN, Sky Sports, El Pais , Huffington Post , El Tiempo , People, E!News, Entertainment Tonight and more.

The campaign is making an urgent, global plea to invest in the “four P’s”: Places, People, Products and Power. Places means guaranteeing clean, functional health facilities with access to clean, running water, sanitation facilities and electricity. People means recruiting, training and managing doctors, nurses and midwives, and placing them where they are needed most. Products means making the top ten life-saving drugs and supplies available for every mother and baby. Power means giving mothers the power to demand and receive quality care at every stage of their children’s birth and development. These four Ps combined with a fifth P for “partnership” are vital to success. Governments, non-profit organizations, civil society, foundations, businesses, UN agencies, professional associations and parents’ groups all have to join hands to reduce neonatal mortality.

Case study: EVERY NEWBORN: An advocacy toolkit and guidance manual for ending preventable deaths

This toolkit offers practical instruments to help country programmes and stakeholders support advocacy for improving MNH and preventing stillbirths. It is especially important in countries with a high burden of newborn and maternal mortality. The document provides a repository of quick references and examples to show the user how to undertake advocacy and communication in various national and local contexts. The toolkit supports the global ENAP initiative by providing a wide range of options for outreach and advocacy activities tailored to specific audiences. It includes key messages on MNH, as well as examples of letters to policymakers, briefs, press releases, social media content and other relevant materials to make the case for improving the quality of care and scaling up interventions. Each country using the toolkit will need to update relevant data and adapt messages to its local context. The toolkit is available at the healthy newborn network website: https://www.healthynewbornnetwork.org/hnn-content/uploads/ENAP-A-toolkit-for-Advocacy-_0118_layout_002-2.pdf

Case study: Creating demand for MNCH services in Ethiopia

Despite the increasing availability of services in Ethiopia, neonatal and child mortality rates remain high, attributable in part to inappropriate recognition of illness and poor careseeking behaviours. The Government of Ethiopia has committed to ending preventable newborn deaths by scaling up Community-Based Newborn Care (CBNC), a package of preventive and curative services delivered at the community level and within lower levels of the health system, close to communities.

In partnership with the Government, Save the Children and other partners developed a strategy to increase demand for CBNC. The Demand Creation Strategy for Maternal, Newborn and Child Health/Community-Based Newborn Care (MNCH-CBNC) addresses the barriers families face to seeking appropriate care and improving newborn care practices. The strategy aims to create enabling social norms that support helpful MNCH-CBNC behaviours, improve MNCH-CBNC-related household practices and increase timely careseeking for maternal and newborn illnesses. The strategy was rolled out from 2015 to 2017 in 244 districts (Woredas) across 21 zones in four regions of Ethiopia.

Results of an evaluation showed that the Demand Creation Strategy contributed to improvements in MNCH by changing attitudes towards issues such as harmful traditional practices, breastfeeding and appropriate care of the umbilical cord. The evaluation reported increases in male involvement in decision-making and support for MNCH-related practices, including careseeking in communities where stronger implementation of Kebele Command Posts occurred. The strategy also contributed to supportive environments for earlier disclosure of pregnancies by women to family members, and increasing awareness about the importance of antenatal care, institutionalized delivery, and careseeking for sick newborns.

Implementation of the Demand Creation Strategy for MNCH-CBNC shows that increased community capacity and mobilization can catalyse action around maternal and newborn health. Sustaining the success of CBNC will require integrating the social and behaviour change strategy, community empowerment approaches and involvement of public health structures such as primary health care units and woredas. Community capacity strengthening using a multiple component approach is important to increase demand for and appropriate use of MNCH services. More information about this case study is available at https://www.healthynewbornnetwork.org/resource/demand-creation-mnch-cbnc-ethiopia/

5.6. Every Newborn milestone: Parents' voices and champions

Empowerment of communities, particularly parents and champions for newborn health, can bring about lasting change, shift social norms around the acceptance of newborn deaths, and keep health workers and governments accountable for providing high quality care.

Parents and families suffer emotional distress when there is a newborn death, illness or stillbirth. Engaging such parents and couples as advocates for better newborn care may be a way of shifting social norms away from accepting that babies die needlessly. Newborns and stillborn children do not have their own voice. Programmes thus need to cultivate champions who can be fierce advocates for newborn survival, such as clinicians, members of parliament, ministers, parents, journalists, celebrities, donors, public health leaders and researchers.

In 2017, 27 countries reported that they had developed a national communication strategy on newborn health; 42 countries reported that no such strategy existed.

Table 16. Status of national communication/advocacy strategies

Indicator	Yes (n=27)	In process (n=5)	No (n=42)
A national communication strategy on newborn developed	Afghanistan, Armenia, Bangladesh, Benin, Bhutan, Cameroon, Cote d'Ivoire, Djibouti, Ghana, Kazakhstan, Liberia, Madagascar, Morocco, Nepal, Niger, Nigeria, Pakistan, Rwanda, Senegal, Sri Lanka, Timor-Leste, United Republic of Tanzania, Uganda, Uzbekistan, Viet Nam, Yemen, Zambia	China, India, Kenya, Palestine, Swaziland	Angola, Azerbaijan, Botswana, Burkina Faso, Burundi, Chad, Comoros, Democratic Republic of the Congo, Egypt, Eritrea, Ethiopia, Gambia, Georgia, Guinea, Guinea-Bissau, Indonesia, Iran, Iraq, Jordan, Kyrgyzstan, Lao People's Democratic Republic, Lebanon, Lesotho, Libya, Malawi, Mali, Mauritania, Mozambique, Myanmar, Namibia, Papua New Guinea, Philippines, Sierra Leone, Somalia, South Sudan, Sudan, Syria, Tajikistan, Togo, Tunisia, Turkmenistan, Zimbabwe

Spotlight: Honouring midwife and nurse champions for newborns

Identifying and engaging strong leaders and champions can be a powerful advocacy tactic used in public health. As frontline health workers, nurses and midwives play a central role in preventing maternal and neonatal deaths and stillbirths. Save the Children has been partnering with international healthcare professional associations for over a decade to recognize and celebrate midwife and nurse champions for newborns. This includes two awards:

- **The International Midwife Award**, established in 2005, to acknowledge midwives who have championed newborn survival. The award, given by the ICM and Save the Children, is been presented at ICM's Triennial Congress, and recognizes two exceptional midwives from countries with the highest number of newborn deaths. Winners have come from Afghanistan, Bangladesh, Ethiopia, Malawi, Nigeria, South Africa and Uganda.
- **The International Neonatal Nursing Excellence Award**, established in 2010, recognizes the commitment of nurses working on the frontlines of newborn care in resource-challenged countries. The award, given by the Council of International Neonatal Nurses (COINN) and Save the Children, has been presented every three years at the International Neonatal Nursing Conference to two nurses working in newborn care in a low- or middle-income country where the burden is highest. Winners have come from Ghana, India, Kenya, Nigeria, Pakistan, and Viet Nam.

All of the midwife and nurse champions, as well as the hundreds of nominees, have impressive stories of dedication, determination and excellence. Award winners were provided the opportunity to attend the international midwifery or neonatal nursing conference in order to receive their awards, network with other nurses and midwives and learn new skills. Award winners also received support on how to become better spokespersons and advocates for maternal and newborn health and were expected to leverage the international attention to increase country-level action at home.

Follow-up with some of these champions shows how awards and recognition can support and encourage midwives and nurses in their work and elevate newborn health on political agendas. Catherine Ojo, 2011 International Midwifery Award winner from Nigeria, has been a tireless advocate for midwifery in Northern Nigeria and beyond. After receiving the award, she met with the President of Nigeria and multiple heads of state to advocate for more health workers. She also raised awareness about maternal, newborn and child health at the Commonwealth Youth Forum and has served on many international panels.[†] Christine Sammy, 2013 International Neonatal Nursing Excellence Award winner from Kenya, received the presidential "Order of the Grand Warrior of Kenya" and was profiled on a national television programme[‡], thus increasing awareness about newborn health and the importance of neonatal nursing. Future awards should be used strategically to drive change in countries by providing extended support to the winners and their national associations.

Spotlight on midwife and nurse champions for newborns

Loveluck Mwasha, 2017 International Midwifery Award winner from the United Republic of Tanzania, has been a steadfast advocate for and mentor to midwives through her work on the board of the Tanzania Nursing and Midwifery Council, at the Aga Khan Hospital and the University School of Nursing and Midwifery. Loveluck's mentorship and advocacy support important improvements in policy, funding, and the practice of midwifery. "My work is an opportunity to advocate for better support and training of midwives," Mwasha said. "We work with stakeholders to help them appreciate midwives' role in supporting women's reproductive health, from community groups to members of parliament."

Learn more about Loveluck at www.healthynewbornnetwork.org/blog/international-midwife-award-winner-fights-recognition-training-modern-facilities.

Nguyen Thi Minh Hong, 2016 International Neonatal Nursing Excellence Award winner from Viet Nam, works in the rural district of Tram Tau, where poor roads, local customs, and language barriers have impeded access to and knowledge of good health practices around the time of birth. Ms Hong has worked for the past 34 years, serving a primarily ethnic minority Hmong population.

"The work is hard, and travel is difficult," Mrs. Hong says, "But I love this job. When a delivery is done I feel so happy to welcome a new baby. And if the baby is not well, we take care of them and they get healthy after our care and I feel so honoured about that."

Learn more about Nguyen at https://www.healthynewbornnetwork.org/blog/international-neonatal-nursing-excellence-award-2016-nguyen-thi-minh-hong/

† https://www.theguardian.com/global-development-professionals-network/2014/may/16/rights-women-girls-development

‡ https://www.healthynewbornnetwork.org/blog/award-can-change-everything-neonatal-nurse-christine-sammy/

5.7. Every Newborn milestone: Data

The urgent need to improve national data was one of the main messages during the development of the ENAP, in particular, data is needed to measure coverage of facility-based interventions and to understand equity and quality gaps.

In addition, countries need to focus on collecting QoC indicators, to use innovative methods to collect data and to use data for making decisions. Countries are increasingly collecting data that will improve estimates of the burden of stillbirths and newborn deaths. Unfortunately, in most high-burden countries, Civil Registration and Vital Statistics systems (CRVS) are weak. In these settings, most stillbirths and up to half of all neonatal deaths may not receive a birth or death certificate and are not registered.[32] An understanding of the true number of deaths and their causes is essential for countries to improve the quality of care, prevent future maternal and perinatal deaths, improve national vital statistics systems, allocate resources efficiently and track progress for reaching national, regional and global targets. A minimum perinatal dataset ensures that all births and birth outcomes are in the HMIS and collated at higher levels. The ENAP specifies a minimum set of six essential pieces of information to collect on each birth and death. These are maternal age, place of delivery, mode of delivery, birth weight, gestational age and birth outcomes.

5.7.1. Audits of stillbirths and neonatal deaths

Since 2014 there has been a steady increase in the number of countries that report having a perinatal death review system in place: 38 in 2017 (Table 17), up from 23 in 2016, 11 in 2015 and just one in 2014. India and Turkmenistan reported that work was under way to institute a perinatal death review system. There is still a need to promote this system, since it is not in place in 31 countries, including Indonesia and Pakistan, two countries with a high burden of neonatal mortality. Overall, more information is needed on the quality of audits being conducted to promote links with counting maternal, neonatal and perinatal deaths and improving quality of care.

Table 17. Countries reporting a perinatal death review system in place

Indicator	Yes (n=38)	In process (n=2)	No (n=31)
Perinatal death review system in place	Angola, Armenia, Azerbaijan, Bangladesh, Bhutan, Botswana, Cameroon, Chad, China, Democratic Republic of the Congo, Egypt, Eritrea, Ethiopia, Gambia, Ghana, Indonesia, Iran, Kazakhstan, Kenya, Lebanon, Lesotho, Madagascar, Maldives, Morocco, Mozambique, Myanmar, Namibia, Nepal, Nigeria, Palestine, Rwanda, Sri Lanka, , Togo, Tunisia, United Republic of Tanzania Uganda, Uzbekistan, Zimbabwe	India, Turkmenistan	Afghanistan, Benin, Burkina Faso, Burundi, Comoros, Cote d'Ivoire, Djibouti, Georgia, Guinea, Guinea- Bissau, Iraq, Kyrgyzstan, Lao People's Democratic Republic, Liberia, Libya, Malawi, Mali, Mauritania, Niger, Papua New Guinea, Senegal, Sierra Leone, Somalia, South Sudan, Sudan, Swaziland, Syria, Timor-Leste, Viet Nam, Yemen, Zambia

Case study: Missing stillbirths means missing impact

An estimated 2.6 million stillbirths occur globally each year, yet the majority are preventable. Half of these babies were alive at the onset of the mother's labour. Reducing stillbirths is a sound economic investment with a 10-25-fold return in economic and social benefits,[33] and the full impact of investment is missed if stillbirths are not tracked through national and global monitoring systems. Attention to stillbirths is increasing, but progress is slow must be accelerated to reach the target of 12 or fewer stillbirths per 1000 total births by 2030. More than 60 countries need to at least double their rates of progress.

Whilst LMICs carry the heaviest burden of stillbirths (approximately 98%), the burden in high-income countries is also important. For example, the USA has more than 20 000 stillbirths per year, higher than the number of babies who die in their first year of life. The 2016 Lancet Stillbirth Series garnered international attention, including media coverage in almost 100 countries. A recent Lancet film highlighted actions taken.[34]

- **National targets:** So far only 17 of the 75 countries tracked by the Every Newborn Tracking Tool have set stillbirth targets for 2030. Some countries are showing ambition, largely driven by pressure from parents. For example in the United Kingdom, a target to halve the national still birth rate was brought forward from 2030 to 2025, and the Health Secretary announced an independent investigation into "What went wrong and why?" for every stillbirth.
- **Programme opportunities:** The 1.3 million intrapartum stillbirths each year could be prevented by better quality of care at birth, especially foetal monitoring and rapid response. Major impact is also possible through improved antenatal care addressing non-communicable conditions, and infections, especially syphilis and malaria. New research shows the potential for a maternal group B streptococcus vaccine to prevent stillbirths as well as maternal and neonatal deaths within an anticipated 5-year timeline.
- **Burden of stillbirths on women and families:** The burden of stillbirths affects women, families, caregivers, communities and society. The burden of emotional, psychological and psychosocial wellbeing remains largely invisible and unrecognized. Globally, at least 4.2 million women live with depression associated with stillbirth. Women often suffer grief, fear and isolation from the rest of their community – or even overt stigma. In El Salvador recently Teadora Del Carmen Vasques was freed after serving almost 11 years in prison for aggravated murder after experiencing a stillbirth, and a teenage rape victim sentenced to 30 years for murder after suffering a stillbirth.
- **Data:** WHO has now requested countries to regularly submit data on national stillbirth rates alongside reporting of deaths at other ages. WHO and UNICEF are working together to improve the quality of data and estimates. In Mexico, the classification of stillbirth was changed to increase the accuracy of reporting. There is still a major gap in national data for tracking intrapartum stillbirths, even though these data are collected in almost every hospital.

5.7.2. Maternal death surveillance and response (MDSR) mechanism in place

In order to end preventable maternal deaths, accurate information is needed on how many women died, where they died and how they died; this is currently not available from all countries. In 2017, 67 countries reported having a MDSR mechanism in place, up from 17 in 2015 to 44 in 2016. Three countries (Djibouti, Jordan and Pakistan) reported that work was under way. Five countries that are also fragile settings (Libya, Mauritania, Somalia, Syria and Yemen) reported not having such a mechanism.

Table 18. Countries reporting that MDSR mechanisms are in place

2017		
Yes (n=67)	In process (n=3)	No (n=5)
Afghanistan, Angola, Armenia, Azerbaijan, Bangladesh, Benin, Bhutan, Botswana, Burkina Faso, Burundi, Cameroon, Chad, China, Comoros, Cote d'Ivoire, Democratic Republic of the Congo, Egypt, Eritrea, Ethiopia, Gambia, Georgia, Ghana, Guinea, Guinea- Bissau, India, Indonesia, Iran, Iraq, Kazakhstan, Kenya, Kyrgyzstan, Lao People's Democratic Republic, Lebanon, Lesotho, Liberia, Madagascar, Malawi, Maldives, Mali, Morocco, Mozambique, Myanmar, Namibia, Nepal, Niger, Nigeria, Palestine, Papua New Guinea, Philippines, Rwanda, Senegal, Sierra Leone, South Sudan, Sri Lanka, Sudan, Swaziland, Tajikistan, Timor-Leste, Togo, Tunisia, Turkmenistan, Uganda, United Republic of Tanzania, Uzbekistan, Viet Nam, Zambia, Zimbabwe	Djibouti, Jordan, Pakistan	Libya, Mauritania, Somalia, Syria, Yemen

Case study: County mortality forums as a key step to strengthening maternal and perinatal death surveillance and response in Kenya

Maternal and perinatal death surveillance and response (MPDSR) is an important strategy to reduce deaths. In Kenya, county mortality forums bring together the county leadership, health managers, healthcare workers and development partners to synthesise qualitative and quantitative evidence on maternal and perinatal deaths and generate actions to prevent them. Participants develop key advocacy messages that they can use to lobby county leaders to address the priority causes of maternal and perinatal deaths. County leaders then give focused and actionable commitments to improve the situation. The participatory county mortality forum is a promising strategy to institutionalize MPDSR at the county level. It empowers health workers to demand action on persistent health system gaps, while at the same time giving leaders and policy makers a chance to better understand the key drivers of maternal and perinatal deaths and priority actions to address them.

Case study: Experience of Mozambique in implementing MPDSR

Improving maternal and newborn health is a priority for the Government of Mozambique. In 2011, the MoH established Maternal, Perinatal and Neonatal deaths (MPND) review committees at country, provincial, district and health facility levels. These committees are responsible for studying the factors and circumstances behind maternal and newborn deaths. As a part of this process, appropriate tools for collecting data were developed, reproduced and distributed. These included a notification record, a maternal and neonatal death data collection form and orientation guidelines to assist committees on how to collect, analyse and report on maternal and neonatal deaths. The International classification of diseases for maternal mortality (ICD-10 MM) was adapted and included in the orientation guidelines.

The rules and responsibilities of committees at national, provincial, district and facility levels are well defined. The notification of all maternal and neonatal deaths occurring at health facilities is mandatory and the national committee must receive detailed information within seven days of the event. Although, the notification process initially started as a paper-based system, it is now done as a part of the DHIS2 online database.

There has been good progress to date. For the first time, Mozambique is utilizing the information and data provided by the provincial committees. Six out of the 11 provincial MPND audit committees are reporting maternal and neonatal deaths and investigating the causes using ICD-10 and reporting them in the HMIS systems. In 2017, the National MPND Audit Committee produced its first annual report using routine data from the committees.

Some important lessons were also learnt from this implementation experience. First, it is essential to involve and get support from all partners to support national committees effectively. Second, a dedicated officer is required for data management, communication and support to the national MPND committees. Third, there needs to be ongoing technical assistance to support the national committees; lastly, the government needs to mobilize adequate resources to support performance of the programme.

Some of the remaining challenges include limited availability of human resources, weak national capacity, limited funding and resources, delayed response to gaps identified, poor follow-up of recommendations and the challenge of expanding these programmes to community and private sector hospitals.

5.7.3. Improved estimates and improved input data

Work is under way to improve data on LBW babies and to develop systematic estimates. The LSHTM is working in close coordination with WHO, UNICEF and the John Hopkins University to systematically review LBW rate data sources, assess data quality, and refine methodologies to adjust survey-based LBW data. National estimates and time trends will be estimated and published, with uncertainty ranges.

Registering all facility births with birth certificate and all deaths (stillbirths, neonatal and maternal deaths) with death certificates would substantially increase data availability and timeliness. WHO is currently coordinating work to improve stillbirth data, working with the UN Inter-agency Group for Child Mortality Estimation and the LSHTM.

5.7.4. EN- INDEPTH STUDY

Household survey data remain problematic for capturing stillbirth rates. With funding from the Children's Investment Fund Foundation (CIFF) and as part of The Every Newborn measurement improvement roadmap[§], the EN-INDEPTH study, led by LSHTM and Makerere University School of Public Health is comparing two household survey approaches, pregnancy history and birth history, in five sites capturing 75 000 births. Results will be used to inform possible changes to the core Demographic and Health Survey (DHS) module. The research has three objectives: 1) improve household survey capture of stillbirths and neonatal deaths in terms of assessing pregnancy history compared to live birth history modules, 2) improve household survey capture of birth weight and gestational age by assessing various methods for measuring these outcomes in surveys and 3) optimize the Health and Demographic Surveillance Sites (HDSS) data capture of pregnancy outcomes (stillbirths, neonatal deaths, birth weight and gestational age) to link and compare with survey data to examine who is missing and why.

5.7.5. Every Newborn-Birth Indicators Research for Tracking in Hospitals (EN-BIRTH study)

EN-BIRTH is a large-scale observational research study that will capture information on 20 000 facility births in Bangladesh, Nepal and the United Republic of Tanzania. This study is coordinated by the LSHTM, is in line with the Ending Preventable Maternal Mortality and is a part of the Every Newborn measurement roadmap. It aims to test validity of routine programme measurement (coverage, quality and safety) for selected specific newborn and maternal care indicators. These indicators include: uterotonic use, Essential Newborn Care, newborn resuscitation, KMC, treatment for neonatal infections and use of antenatal corticosteroids. The validity of routine register records and maternal recall survey of maternal and newborn care at the time of birth will be assessed by comparison with a "gold standard" of direct observation. Different denominator options for these coverage indicators will be compared. Content and QoC will be evaluated focussing on timing of interventions as well as barriers and enablers to routine recording of these indicators and the perceived utility of the data to improve decision-making, coverage and QoC at all levels of the health system.

5.7.6 Signal functions for inpatient care of small and sick newborns

Standardized measurement of emergency obstetric care (EmOC) has improved tracking and accountability, using indicators based on "signal functions" to monitor the availability and use of EmOC services. However, signal functions to track service readiness to provide inpatient care of small and sick newborns are not consistently defined or routinely tracked. As an input for the ENAP metrics measurement improvement roadmap, a global survey on signal functions and levels of inpatient care for small and sick newborns was carried out in 2017 in collaboration with WHO, the LSHTM, Saving Newborn Lives, Save the Children, Averting Maternal Death and Disability (AMDD) and UNICEF. The global survey was launched as a follow-up to an expert focus group held by the ENAP metrics group in April 2016 that identified 13 core newborn interventions that services should be ready to provide at an inpatient care level. The results of the global survey will be available in the global report on inpatient care of small and sick newborns that will be launched in November 2018. Signal functions for maternal health are also under revision in 2018 and 2019.

[§] The ENAP Measurement roadmap is available at: http://apps.who.int/iris/bitstream/handle/10665/184225/9789241509381_eng.pdf;jsessionid=CB53107806057EC24C5B795CE2F64330?sequence=1

5.7.7. Mother and Newborn Information for Tracking Outcomes and Results (MONITOR)

In 2015, WHO established the technical advisory group Mother and Newborn Information for Tracking Outcomes and Results (MoNITOR). MoNITOR is comprised of 14 independent global experts from a variety of disciplines and regional representation, selected through a competitive process. The vision of MoNITOR is to facilitate, harmonize and coordinate measurement and metrics for maternal and newborn health. MoNITOR held two meetings in 2017 to review ongoing measurement efforts, map maternal and newborn indicators and data sources, and assess gaps. Emerging issues include a lack of consistent definitions for key indicators across varying data collection platforms. Over the next two years, MoNITOR will provide recommendations for priority indicators, norms and standards for data collection platforms, a coordinated research agenda, and will contribute to building regional capacity. WHO is also building a simpler, real-time, integrated database for maternal and newborn indicators included in the UN Secretary-General's Global Strategy.

5.7.8. HMIS indicators workshop and other efforts by ENAP metrics group

UNICEF, WHO, UNFPA, LSHTM, the Bill & Melinda Gates Foundation and USAID convened a joint workshop on metrics for maternal and newborn care and HMIS in Kathmandu in 2017. Eighty participants from 12 countries met to discuss how existing national data systems can be improved to help end preventable maternal and newborn deaths. Robust measurement of programmes using validated indicators can help accurately identify whether pregnant and postpartum women and their newborns are receiving effective interventions. It can also support context-specific programming and targeted approaches that will lead to better programme measurement, improved tracking of progress and better evidence to support policy-making.

During the workshop, partners provided technical updates on progress on maternal and newborn metrics. Countries shared their experience and best practices on HMIS and DHIS2 and developed follow-up actions and monitoring and evaluation plans. Partners reaffirmed their commitment to facilitate technical assistance to countries. A consensus was reached on a short list of MNH indicators for inclusion in HMIS, on a relevant concept note, and on next steps including further consultations by the ENAP Metrics group.

In addition, the Health Data Collaborative is developing a set of modules for strengthening routine health information systems, including MNCH. The short list of maternal and newborn indicators discussed at the Kathmandu workshop will be included in this module as well as recommendations for data analysis and visualization.

5.8. Every Newborn milestone: Research and innovation

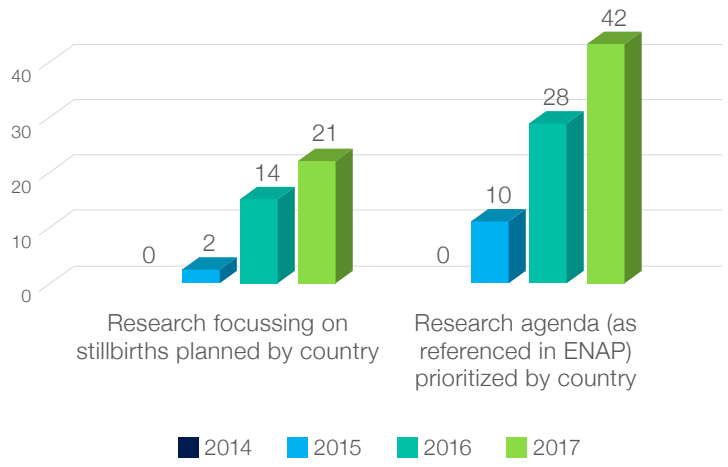
A research agenda for MNH has been prioritized in 42 of the 75 countries in 2017, compared to 28 countries in 2016. However, research on stillbirths still needs greater traction at the country level particularly in high burden settings. In 2017, 21 countries reported that they were conducting research focused on stillbirths compared to 14 countries in 2016 (Figure 12).

Existing knowledge gaps include effective interventions to prevent stillbirths, focusing on what works in low-resource and conflict settings, for marginalized groups in all settings, and in underserved populations. More support and investment are needed in implementation research and robust monitoring and evaluation of programme activities, ensuring integration of stillbirth outcomes as well as other pregnancy and birth outcomes. In high-burden settings, it is extremely important to develop research capacity to assess the needs of women and families that suffer from pregnancy and childbirth complications including neonatal deaths and stillbirths.

Lastly, there needs to be a better understanding of how best to support health workers affected by care of women undergoing stillbirths.

The 2016 Lancet Stillbirth Series identified the following as priority actions to prevent stillbirths: (1) intentional leadership, especially from policy makers, which is identified as the biggest challenge, (2) increased voice, especially of women, (3) implementation of integrated interventions with commensurate investment, (4) indicators to measure the effect of interventions and to monitor programmatic progress and quality of care and (5) investigation into crucial knowledge gaps.

Figure 12. Country progress on the research agenda



5.8.1. Every Newborn- Simplified Measurement Integrating Longitudinal Neurodevelopment & Growth (EN-SMILING)

This study follows up newborns observed in the EN-BIRTH study and exposed to newborn interventions. Since many existing early childhood development (ECD) tools are complex and require specialists to use them, this study will test simplified ECD tools to be applied at 3 months, 3 years and 5 years of age. The study offers an important opportunity to answer priority questions such as child developmental outcomes after basic resuscitation.

5.8.2. Estimates for Group B streptococcus published in Clinical and Infectious diseases

A series of 11 papers (https://academic.oup.com/cid/issue/65/suppl_2) were published in the Clinical and Infectious diseases journal funded by a grant from the Bill & Melinda Gates Foundation. The researchers found that Group B Streptococcus (GBS) is present among pregnant women in all regions of the world, with 21.7 million pregnant women colonized worldwide. This translates to a global average of 18%, or nearly one in five pregnant women, most of whom are unidentified and untreated. Regionally, this ranges from 11% in eastern Asia to up to 35% in the Caribbean. In 2015, the highest numbers of colonized pregnant women were found in India (2.5 million), China (1.9 million), Nigeria (1.1 million), the USA (0.9 million) and Indonesia (0.8 million). There are multiple GBS-related health outcomes, for women themselves as well as infants including, stillbirth, neurodevelopmental impairment, prematurity, neonatal sepsis, neonatal encephalopathy and neonatal death.

These are the first-ever estimates of the worldwide burden of GBS infection in pregnant women. This work has more than doubled previously available data, through comprehensive systematic reviews as well as the use of previously unpublished data from collaborators worldwide. Gaps remain, notably for stillbirths (especially in Asia), disability (especially after GBS sepsis), and maternal GBS disease. Evidence of the association of preterm births with maternal GBS colonization also needs further work.

Currently, GBS prevention focuses on providing antibiotics to women in labour, aiming to reduce early onset infections in newborns. At least 60 countries have a policy for this, however, implementation varies around the world and would not be feasible for many low-income countries where the burden is highest. There is some modelling to suggest that a GBS maternal vaccination with 80% efficacy and 90% global coverage could prevent 231 000 infant and maternal GBS cases, 41 000 stillbirths and 66 000 infant deaths annually. Work is planned to develop an effective maternal GBS vaccine and a comprehensive evaluation of cost-effectiveness.

5.8.3. PREgnancy Care Integrating translational Science Everywhere (PRECISE) network

PRECISE is a collaborative network of researchers, policy actors and advocates for the global women and children's health community. The Network is funded by the Research Council UK Global Challenge Research Fund, and aims to build global, interdisciplinary research and policy partnerships to better understand placental disorders of pregnancy, in particular hypertension, foetal growth restriction and stillbirth.

The first phase of PRECISE will establish a cohort of 12 000 pregnant women in the Gambia, Kenya and Mozambique. Biological samples and information about the women's lives, contexts and stories will provide a unique and holistic data set that will be analysed to inform future research questions, clinical and community interventions and evidence-based policy to improve their lives.

The primary objectives of PRECISE are to:

- Develop a unique cohort of pregnancies affected by placental disease and assess the prevalence of these disorders in women attending antenatal care in centres representative of urban and rural communities in three sub-Saharan African countries;
- Develop cohorts of women with normal pregnancies, and non-pregnant women of reproductive age, for comparison;
- Investigate sociocultural and health system barriers preventing access, effective management and care pathways;
- Investigate the potential for introducing novel methods to assist with diagnosis and management of placental disorders in sub-Saharan Africa;
- Support skills and capacity development for researchers and institutions collaborating in The PRECISE network.

5.8.4 Child Health and Mortality Prevention Surveillance (CHAMPS)

There is limited information about the specific causes of neonatal and under-five mortality in high-mortality geographic regions, due largely to a lack of primary data and dependence on inaccurate tools such as verbal autopsy. Better approaches are needed to determine specific causes of death so that prevention and treatment interventions can be strengthened and focused. Minimally invasive tissue sampling (MITS) is a technique that uses needle-based post-mortem sampling, followed by advanced histopathology and microbiology to definitely determine cause of death.

The Bill & Melinda Gates Foundation is supporting a new surveillance system called the Child Health and Mortality Prevention Surveillance (CHAMPS) network, which will determine causes of death using MITS in combination with other information, and yield cause-specific population-based mortality rates in up to 15 sites in sub-Saharan Africa and south Asia.[35] Each site will determine the causes of childhood death using MITS, verbal autopsies and medical record abstractions, within demographically defined populations. Comprehensive anthropological work will be carried out to promote community engagement and sensitization, and to increase the likelihood that MITS is welcomed by the communities and healthcare providers, as well as religious, cultural, and political leaders.

Staff of the MoH and/or National Public Health Institute at each CHAMPS site will be engaged in implementation, analysis, and reporting to maximize the use of evidence for public health policy decision-making. Local laboratory and pathology capacity will be built and supported to enable long-term sustainability and expansion. Protocols will be standardized across sites, and data will be uploaded to cloud-based servers for rapid dissemination. In addition, CHAMPS seeks to integrate with existing surveillance by aligning protocols and combining data with complementary systems, such as sample registration systems and HMIS to provide a current, comprehensive, and statistically valid view of childhood mortality. CHAMPS is coordinated by Emory University in association with the International Association of National Public Health Institutes, U.S. Centers for Disease Control and Prevention, and the Public Health Informatics Institute of the Task Force for Global Health.

BEMPU Hypothermia alert device

Hypothermia is an important cause of neonatal deaths. The Hypothermia Alert Device is a band worn on the infant's wrist for the first four weeks after discharge from the hospital. . The bracelet alarm signals low body temperature. As part of the education around the innovation, parents are taught how to respond to the low temperature through KMC. If the device continues to alarm despite KMC, the parents are instructed to seek medical attention. The current cost of the device is approximately US$ 29.

Independent evaluations of the BEMPU are being carried out by the Government of Papua New Guinea and by UNICEF Benin. These assess KMC performance and careseeking behaviour (seeking early clinical attention and adherence to hospital follow-up) in low birth-weight and preterm neonates, as well as health outcomes at four weeks post-discharge (weight, length, head circumference, hospital admission, death). Several states in India will also pilot the device.

Case study on implementation of the bubble continuous positive airway pressure (bCPAP) in Malawi

Malawi has the world's highest estimated preterm birth rate, with nearly 1 in 5 babies born before 37 weeks of gestation.[36] However, the solutions needed to address complications associated with prematurity are often unavailable due to technical complexity and prohibitive costs. Through the collaborative efforts of Rice University in Texas, USA, and the Queen Elizabeth Central Hospital in Blantyre, Malawi, a low-cost bubble continuous positive airway pressure (bCPAP) device was developed to address the high mortality in newborns attributed to respiratory distress.

After encouraging results from a clinical trial in 2012 at the Queen Elizabeth Central Hospital[37] and with funding from USAID and ELMA Philanthropies, the device has been rolled out to 36 district, central and mission hospitals across the country under the guidance of the MoH. The implementation process comprises training, mentorship, supervision, technical support, monitoring and evaluation to ensure that clinical users are conversant with the administering of bCPAP therapy and that biomedical technicians on site have the capacity to maintain and repair the devices.

With the introduction of bCPAP, health workers in Malawi now have a more clinically effective alternative to low-flow nasal oxygen therapy, which is the standard of care for newborns in respiratory distress in most low-resource settings. Preliminary evaluations revealed that despite the countrywide availability of the life-saving technology, there remained significant gaps in the health system's overall capacity to effectively improve newborn outcomes. Gaps included the lack of conducive spaces for the care of sick newborns, a lack of essential newborn technologies to address other complications such as jaundice and hypothermia, as well as staffing shortages and high turnover rates. Recent efforts have supplemented bCPAP implementation with the provision of separate and equipped spaces to treat sick newborns, improved newborn care guidelines and protocols, and increased allocation of staff to neonatal units. To ensure sustainability of the learning process, bCPAP has been integrated into pre-service training in 15 of Malawi's leading health training institutions.

By the end of 2017, 3629 babies had benefitted from the bCPAP device, 1035 health workers had been trained and mentored on the management of babies on bCPAP, and 70 technicians were trained on the maintenance of bCPAP and other essential equipment. The launch of Malawi's ENAP has generated growing interest in innovative strategies to improve the management of sick newborns, including but not limited to bCPAP.

A nurse at the Queen Elizabeth Central Hospital putting a baby on bCPAP

Nursing students at the Kamuzu College of Nursing undergoing bCPAP pre-service training

Neonatal unit in a district hospital before renovations

Neonatal unit in a district hospital after renovations

5.8.5 Other newborn health research conducted by the World Health Organization

WHO has a broad research agenda on priorities to improve the quality of care for every woman and every child. An evidence map on social, behavioural and community engagement interventions for RMNCH was completed and disseminated in 2018, and work is ongoing to define priorities for MNCH research in humanitarian settings. Other research includes the Alliance for Maternal and Newborn Health Improvement (AMANHI) bio repository study, an Antenatal corticosteroids (ANCS) trial, the Early intervention for optimal linear growth and development trial, the Enhanced management of pneumonia in community (EMPIC) study, the Healthy Life Trajectories Initiative (HeLTI), , and studies on Improved management of high-risk pregnancies, Improving quality of care for mothers and newborns, Possible serious bacterial infection (PSBI) and Primary prevention parameters evaluation (PREPARE).

The World Health Organization has also initiated several studies to bridge some of the evidence gaps around Kangaroo Mother care and improve quality of care for every newborn. These include:

- **Scale up KMC study:** KMC coverage remains dismally low globally. To address this, the WHO Scale up KMC study involves 7 populations of about a million each in different geographic regions of Ethiopia and India. It aims to understand barriers to KMC implementation and addresses them systematically. The goal is to develop the best model to ensure implementation of facility initiated KMC at scale to reach population coverage of at least 80%.
- **Immediate KMC (iKMC) Study:** Most previous studies initiated KMC only after the newborns were stable with the average age at initiation >3 days. The iKMC study is a large individually randomized controlled trial in Ghana, India, Malawi, Tanzania and Nigeria (sample size 4200) to study the efficacy of KMC initiated immediately after birth, including in unstable LBW babies (1 to 1.8 kg) in reducing neonatal mortality.
- **Community initiated KMC (cKMC) Study:** There has been considerable interest in KMC initiated outside health facilities for LBW babies born at home or discharged early. Currently, there is insufficient evidence to support initiation of KMC in the community. The cKMC study is a big (sample size 10500) individually randomized controlled trial in Haryana, India to study the impact of KMC initiated at home in LBW infants <48 hours old on mortality at 1 and 6 months. The early learnings form the study shows almost universal acceptance with average KMC duration of about 9.5 hours per day.

5.8.6 Research on midwifery

International maternal and newborn health stakeholders, in collaboration with WHO and the global Partnership for Maternal, Newborn, and Child Health (PMNCH) have used the Child Health and Nutrition Research Initiative (CHNRI) process to identify the following three maternal and newborn research priorities arising from the Lancet Series on Midwifery[†], that hold the potential to improve the quality of care for every woman and every child[‡].

1. *Evaluate the effectiveness of midwifery care as defined by the Quality Maternal & Newborn Care Framework and the contribution of its components, when compared to other models of care across various settings, particularly on rates of maternal/foetal/infant death, preterm birth, and low birth weight, and access to and acceptability of family planning services.*
2. *Identify and describe aspects of care that optimize, and those that disturb, the biological/physiological processes for healthy childbearing women and fetus/newborn infants and those who experience complications.*
3. *Determine which indicators, measures, and benchmarks are most valuable in assessing quality maternal and newborn care across settings, including the views of women, and develop new ones to address identified gaps.*

A meeting of researchers was held at Ryerson University, Canada in 2017 to begin developing concepts for the specific research need to address each priority. These concepts were discussed during a technical consultation on midwifery convened by WHO. Global leaders, practitioners, researchers, advocates and funders strategized the next steps towards implementing the research.

[†] Kennedy HP, Yoshida S, Costello A, Declercq E, Dias MA, Duff E, Gherissi A, Kaufman K, McConville F, McFadden A, Michel-Schuldt M. Asking different questions: research priorities to improve the quality of care for every woman, every child. The Lancet Global Health. 2016 Nov 1;4(11):e777-9.

[‡] The Lancet midwifery series is available at http://www.thelancet.com/series/midwifery

6. Regional and global support to countries to accelerate progress towards Every Newborn 2020 milestones

Support provided at the regional and global levels includes an interagency meeting to share experiences and updated tools, advocacy at the global level, accountability, and technical assistance.

6.1. Interagency meeting on neonatal health for the Eastern and Southern Africa Region

UNICEF, WHO, USAID and partners convened a regional meeting on newborn health in Entebbe, Uganda in September 2017. The four-day meeting brought together 103 participants from twenty countries including the fragile states of Somalia and South Sudan.

The technical sessions spanned topics relevant to MNH in the region: updated WHO guidelines, quality of care, clinical mentoring, birth registration, advocacy and community engagement, sick newborn care, surveillance of birth defects, perinatal death reviews and newborn care in emergency settings. Of particular interest were a panel discussion on KMC, the country poster session and a market place that introduced new technologies and approaches such as the Hypothermia alert device wristband and training devices such as Mama Birthie. Country group work sessions allowed participants to identify country-specific challenges and opportunities for prioritizing action for newborn survival and develop draft operational plans. Further information regarding this meeting is available at www.healthynewbornnetwork.org/blog/regional-interagency-meeting-neonatal-health-east-southern-africa-region/.

6.2. Global advocacy efforts

The UN Secretary-General's Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) calls for accelerated progress, increased commitments and better alignment across sectors and among partners. To ensure stronger mutual accountability mechanisms, partners developed the 2020 Every Women Every Child Partners' Framework. This covers six focus areas: quality, equity, dignity (QED) in services, early childhood development, adolescents' health and well-being, sexual and reproductive health and rights, empowerment of women, girls and communities, humanitarian and fragile settings. The framework was endorsed unanimously by the High-Level Steering Group in April 2017. Advocacy roadmaps have been developed for each focus area,** with measurable milestones to be monitored through the Unified Accountability Framework.

While newborn health cuts across the focus areas, the Every Newborn partnership has primarily been engaged in the development of QED, which is committed to ensuring that all women, children and adolescents in all settings have equal access to quality, affordable and respectful health care and services. This provides an important platform for advocacy and programming, particularly in the partnership's efforts to support the Network for Improving Quality of Care for Maternal, Newborn and Child Health†† (www.qualityofcarenetwork.org), the development of costed national plans to achieve universal coverage of essential health services for women, children and adolescents and the promotion of respectful care in all settings.

6.3. Accountability efforts

EWEC has mobilized continued support from governments and nongovernmental stakeholders, and their 2017 progress report‡‡ shows that commitments have increased since 2015. These commitments may be financial, in-kind or shared value interventions (for example policy or advocacy). Between September 2015 and December 2016, the 215 commitments made to the EWEC Global Strategy totalled US$ 28.4 billion (excluding the value of non-financial commitments, which is considerable but difficult to quantify). Commitments by LMICs reached an estimated US$ 8.5 billion – more than half the sum committed by high-income countries. Of all commitments, 42% referenced newborn health or mortality and 5% referenced stillbirth specifically.

** http://www.everywomaneverychild.org/advocacy-roadmaps/

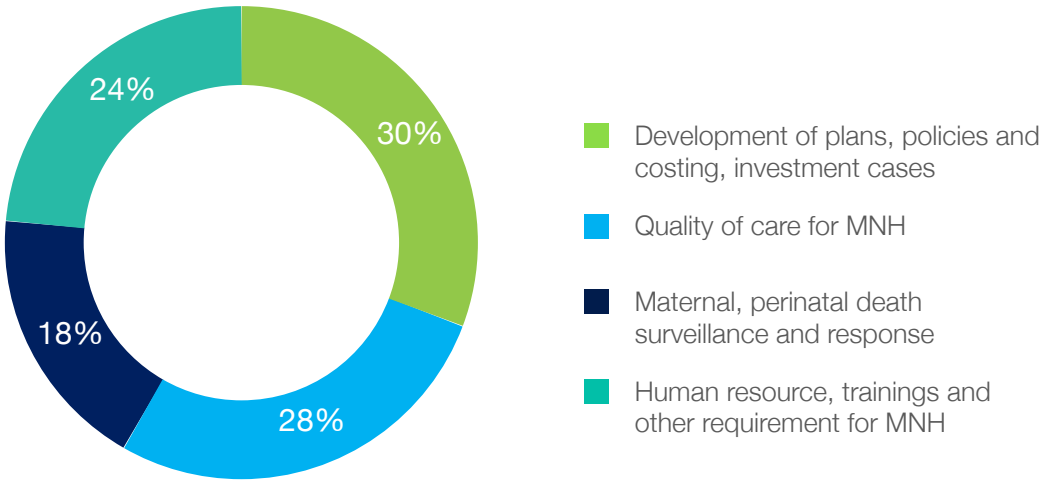
†† QUALITY, EQUITY, DIGNITY Launch of the Network to improve Quality of Care for Mothers, Newborns and Children 14 – 16 February 2017. http://www.who.int/pmnch/media/events/2017/lilongwe_conceptnote.pdf?ua=1

‡‡ http://www.who.int/pmnch/activities/advocacy/globalstrategy/2016_2030/gspr/en/index2.html

6.4. Technical assistance requests

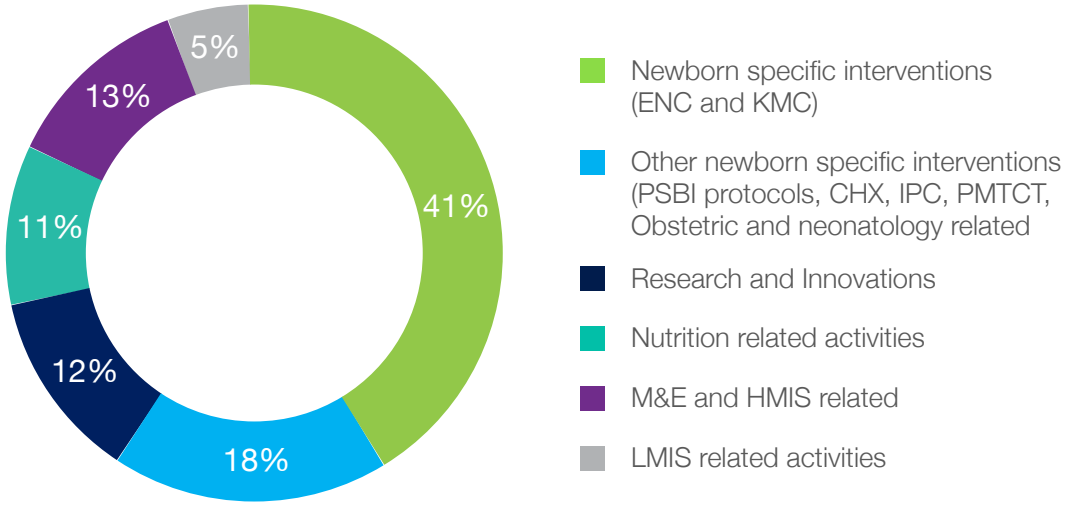
Figure 13 shows the various types of technical assistance (TA) requests submitted by countries to the ENAP working group. The greatest proportion of requests concerned the development of plans, policies, costed plans and investment cases for MNH (30%). This is followed by requests for assistance on QoC (28%), for example conducting QoC assessments, developing guidelines and action plans, training on PDSA cycles, quality improvement approaches at facilities, development of indicators for outpatient and inpatient obstetric and neonatal care, establishment of quality assurance systems, and adaptation of paediatric quality assessment tools and standards. There were 17 requests from countries for help on human resources for maternal and newborn health (24%), including in-service and pre-service training on MNH, developing appropriate training materials and conducting training of trainers. There were 13 technical assistance requests to support MPDSR work in countries (18%).

Figure 13. Technical assistance requests for newborn health



Additional TA requests for specific topics are shown in Figure 14. Most of these requests concerned early essential newborn care and KMC (43%). Assistance on other newborn-specific interventions such as PSBI, infection presentation, chlorhexidine and specialized topics in neonatology comprised 18% of the requests. The third most frequent request was on research and innovation (13%) to identify research priorities for MNH, operations research on newborn health, development of costed research plans and strengthening national capacity for research on newborn health.

Figure 14. Technical assistance requests on newborn interventions



7. Emerging areas

Topics of new or increased focus include early childhood development, surveillance of birth defects, Zika virus disease and newborn care in humanitarian settings.

7.1. Early childhood development

Children that get nurturing care reach their full potential, are healthier, have better growth and achieve better grades at school. It is essential that all countries, particularly low-income countries that suffer disproportionately from the burden of unfulfilled human potential, prioritize investments in early childhood development.

Services provided by health workers during the mother's pregnancy and the first three years of a child's life are appropriate channels to address ECD. During antenatal care visits, health workers can help to ensure that pregnant women are getting adequate nutrition to support brain development. Giving birth with the assistance of trained health workers at facilities that offer good quality services can reduce the risk of complications. Early initiation of breastfeeding and exclusive breastfeeding for six months supports a child's mental development.

The way mothers, fathers and other caregivers nurture and support children in the early years is among the most decisive factors for healthy child development, with lifelong and intergenerational benefits for health, productivity and social cohesion. Nurturing care means providing stable environment that ensures children's good health and nutrition, protects them from threats, and gives opportunities for early learning, through interactions that are emotionally supportive and responsive. Contacts with health services, such immunization visits, can be opportunities for promoting nurturing care; other sectors, including nutrition, education, social welfare and child protection sectors also have a role to play. WHO and UNICEF, in collaboration with the PMNCH, the ECD Action Network (ECDAN) and others, are leading a process to develop a Nurturing Care Framework for early childhood development.

7.2. Surveillance of birth defects

Because neonatal mortality due to infections and birth asphyxia is decreasing, the relative contribution of congenital defects to death and disability is growing. There is limited availability of reliable, nationally representative data on birth defects, thus the burden of birth defects in countries remains largely unknown. Surveillance of birth defects will help identify the occurrence and factors associated with birth defects and put in place interventions to address those that are preventable. Such interventions include vaccination against rubella, testing and treatment for syphilis in pregnancy, and folic acid supplementation before and during pregnancy.

7.3. Zika virus disease

The Zika virus affected 75 countries in Africa, Asia, Latin America and the Caribbean, and continues to threaten the well-being of women and children. It is primarily transmitted by the Aedes mosquito, but sexual transmission also occurs. Climate change, weather phenomena and natural disasters are thought to contribute to outbreaks. There is now consensus that Zika virus is a cause of microcephaly and the Guillain-Barré syndrome. Links to other neurological complications and long-term effects are being investigated.

Protection against mosquito bites is a key means of preventing Zika virus infection. Travellers and those living in affected areas should protect themselves from mosquito bites. Special attention and help should be given to those who may not be able to protect themselves adequately, such as young children. WHO recommends that sexually active men and women be appropriately counselled and offered a full range of contraceptive methods, in order to make an informed choice about whether and when to become pregnant and to prevent possible adverse pregnancy and foetal outcomes. In 2016, WHO declared an end to the international Zika emergency. However, the world needs to remain vigilant on efforts to control Zika virus. Crucial questions remain unanswered, particularly related to the safety of pregnant women and neonates after Zika virus infection.

7.4 Newborn care in humanitarian settings

Despite improvements in newborn health globally, relatively poor outcomes persist in countries plagued by conflict or political instability. Newborn health services are often neglected during humanitarian crises and are largely missing from emergency response assessments, supply kits, intervention packages, and monitoring efforts.

The particular vulnerability of women and children during humanitarian crises indicates that maternal and newborn health services should be one of the first priorities. Setting up temporary health outposts or facilities as close as possible to the crisis affected communities may be the only option. Other potential strategies include using mobile health units to reach pregnant and recently-delivered women and their newborns or using community health workers that make household visits when the security situation allows. Health workers should be provided with the supplies, commodities and equipment they need in order to provide essential newborn care to every newborn, and high-quality and timely treatment to small and sick neonates. Workers should be trained to recognize danger signs, treat life-threatening newborn conditions to the greatest extent possible, and transfer women and newborns to referral facilities (or hospitals) when possible.

Integrating newborn care into a humanitarian response plan requires prioritization, planning and persistence on the part of the government and partners. Training on newborn health must be practical, and management of common neonatal conditions should be incorporated in other training curricula such as IMCI, Safe Motherhood and integrated Community Case Management. There are a range of resources available at the global level which can be used in such contexts. These include Newborn Health in Humanitarian Settings: Field Guide, the Minimum Initial Service Package for Reproductive Health in Crisis Situations (MISP) and the Inter-Agency field manual For Reproductive Health in Crisis Situations (IAFM).

8. Discussion

The increased uptake of the Every Newborn Tracking Tool, 75 countries in 2017 as compared to ten in 2015, is encouraging. Progress is noted in all reported areas with a few exceptions where global guidance and consensus building need more effort. The launch of the Network for Improving Quality of Care for Maternal, Newborn and Child Health has provided an additional opportunity for all countries to benefit from mutual learning and available resources for implementing WHO standards on maternal and newborn health. With two years remaining to reach ENAP targets for 2020, countries need to further intensify their actions. The coverage of evidence-based key interventions (antenatal corticosteroids, resuscitation, management of infections, KMC and inpatient care of small and sick newborns) as well as rates of postnatal care and early initiation of breastfeeding need to be improved. This will require renewed political attention at the global, regional and national levels.

The number of countries reporting having included a newborn component in their emergency preparedness plans has increased but remains very low. Urgent attention is needed to disseminate and implement Newborn Health in Humanitarian Settings: Field Guide, and to build the capacity of humanitarian actors.

With country ENAP plans and budgets in place, further efforts are required to ensure adequate resource mobilization and financing. Countries are also encouraged to assess whether they are making progress towards achieving national targets set for 2020.

The Every Newborn Tracking Tool will be progressively replaced by an increased focus on results monitoring. A simplified tool for country reporting in 2018 can be found in Annex 1, and a list of suggested indicators for HMIS reporting can be found in Annex 3. Measurement improvements should focus on strengthening country vital statistics at both central and decentralized levels, understanding what drives changes in coverage and obtaining better data on perinatal and neonatal deaths. Achieving the SDG mortality targets will also require investments to target those families most at risk, including the increasing proportion of newborn deaths occurring in fragile humanitarian settings. To address inequities, political commitment is crucial. Programmes will need to understand underlying issues and barriers and determine the best equity strategies to target underserved areas and groups.

Research efforts need to focus on improving understanding of the causes of maternal, perinatal and neonatal deaths. This also includes the development of new interventions and context-specific approaches to preventing mortality and morbidity. Implementation research in countries is needed to improve quality of care at birth, prevent stillbirths and care for small and sick newborns.

Substantial weaknesses have been noted in national HMIS data, including data that is incomplete or of poor quality, data duplication and overload, gaps in data management and lack of utilization. Hence national and subnational information systems need to be strengthened considerably, particularly as a part of results-based financing and mechanisms such as the GFF for quality improvement.

As the risk factors are similar for maternal, perinatal and neonatal deaths, and they tend to occur within the same time frame (around the time of birth), integration of maternal and newborn health interventions along the continuum of care is logical. Successful and feasible interventions are well-known, however, much more attention is needed to ensure the coverage and the quality of obstetric and neonatal care services (especially for the sick and small newborn). Although challenges vary amongst countries, a multi-faceted, health-systems approach supported by an enabling policy environment holds promise.

Accountability efforts have received increasing attention and ensuring accountability for the provision of quality care should remain central in programmatic efforts. Mechanisms at the global level such as the UN Secretary-General's Global Strategy for Women's, Children's and Adolescents' Health and the series of Countdown reports have proven to be useful in tracking progress and identifying inequities and gaps. At the national level, stakeholders including civil society, independent researchers, academics, champions and influential persons need to exert continuous pressure and work with government to ensure the provision of high-quality services. These accountability efforts will be strengthened when combined with local outreach and civil society activities such as citizens' reports cards and public hearings that help draw attention to the performance of the health sector.

An important factor in changing the trajectory of newborn survival is access to the most recent data on neonatal mortality, coverage of interventions, funding trends and human resources. The Numbers

page (https://www.healthynewbornnetwork.org/numbers/) of the Healthy Newborn Network aims to improve the understanding and use of data in making decisions about strategic newborn health interventions. It provides a central location of the most recently published data relating to newborn survival and health, including mortality estimates, causes of death, coverage, contextual indicators, human resources and financing indicators. Numbers provides a comprehensive database that can be downloaded with an extensive list of indicators for 197 countries. It also includes an interactive tool for data visualization that allows users to easily and quickly make graphs. The multi-dimension query functionality of the tool makes it easy to select multiple indicators and countries. The heat maps visually demonstrate cross-country comparisons of indicators across countries. Easy access to such data by health workers, public health practitioners and researchers in high-burden countries will be crucial for ensuring data-driven decision making, accountability and progress towards newborn health targets.

Inadequate financing for health systems is a common bottleneck in low-income settings. A strong health system depends upon numerous factors such as trained and motivated health workers, a well-maintained infrastructure and a reliable supply of medicines and technologies. These must be backed by adequate funding, strong health plans and evidence-based policies. Specific budget lines for maternal health, newborn health and stillbirths are often missing from national and subnational health budgets, and care for small and sick newborns is rare in financial protection schemes. Strong political commitment can ensure that the limited resources that do exist are invested judiciously to build strong health systems that prioritize MNH.

The GFF is one of several initiatives designed to support efforts to ensure dedicated investments for RMNCAH. Improving stillbirths, maternal health and newborn health by strengthening health systems must be central in investment cases for GFF support in high-burden countries. The GFF can play a catalytic role in bringing together multiple financing sources for maternal and newborn health in a synergistic, country-led way that closes the funding gap for maternal health, newborn health and stillbirths by 2030.

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Annexes

Annex 1: Simplified progress tracking tool for 2018 reporting

ENAP	
SIMPLIFIED COUNTRY IMPLEMENTATION TRACKING TOOL	
Country name:	
Partner completing the form: (Name, Agency):	
Date Form completed (dd/mm/yyyy):	
Date Form submitted (dd/mm/yyyy):	

SECTION 1: COUNTRY CONTEXT

No.	Question	Response	Skip
100	Ministry of Health focal point for newborn health?	Yes ..... 1 No 0	
101	Is there a Ministry of Health focal point for newborn health at sub-national level?	Yes ..... 1 No 0	
102	Is there a national technical working group for maternal and newborn health?	Maternal health only ..... 1 Newborn health only ..... 2 Maternal and newborn health only ..... 3 SRMNACH combined ..... 4 No technical working group ..... 0 → Other 8	201
103	How often does the national technical working group meet?	Monthly ..... 1 Twice a Year ..... 2 Annually ..... 3 Other (Specify) 8	

SECTION 2: EVERY NEWBORN 2020 NATIONAL MILESTONES

National Plans

No.	Question	Response	Skip
201	Does your country have a National Newborn Action Plan?	Yes ..... 1 In Process ..... 2] No ..... 0] →	203
202	Date of finalization	__ __ / __ __ __ __ M M / Y Y Y Y	
203	Is the National Newborn Action Plan integrated with a Reproductive and Maternal Health National Plan?	Yes ..... 1 No 0	

No.	Question	Response	Skip
204	Does your country have an adequately strengthened RMNCAH strategy/plan for implementation at scale with focus on maternal and newborn health?	Yes ..... 1 In Process ..... 2 No 0	206
205	Date of finalization	__ __ / __ __ __ __ M M / Y Y Y Y	
206	Was the National plan formulated in coordination with other sectors?	Yes ..... 1 In Process ..... 2 No 0	
207	Does the national plan mandate community participation in decision-making, delivery of health services, and monitoring and evaluation?	Yes ..... 1 In Process ..... 2 No 0	
208	Has the national plan been costed and budgeted?	Yes ..... 1 No 0	
209	Have funds been expended to support the national plan?	Yes ..... 1 No 0	
210	Does the country have sub-national newborn action plan/s?	Yes ..... 1 No 0	
211	At what level are the sub-national newborn action plan/s?	Provincial ..... 1 State ..... 2 Urban ..... 3 Municipality ..... 4 Other 8	
212	Have the sub-national newborn action plans been costed/budgeted?	Yes ..... 1 No 0	
213	Does your country hold routine national health sector reviews that include maternal and newborn programs?	Yes ..... 1 In Process ..... 2 No 0	216
214	Do these reviews include broad stakeholder participation, including civil society organizations?	Yes ..... 1 In Process ..... 2 No 0	

Quality of Care

No.	Question	Response	Skip
215	Does your country have a National Quality improvement program or initiative?	Yes ..... 1 In Process ..... 2 No 0	218

No.	Question	Response	Skip
216	Date of finalization	__ __ / __ __ __ __ M M / Y Y Y Y	
217	Does this National Quality Improvement program or initiative include maternal and newborn health?	Maternal health only ..... 1 Newborn health only ..... 2 Maternal and newborn health only ..... 3 SRMNACH combined ..... 4 Other 8	
218	List key elements that are relevant to maternal and newborn health	1. 2. 3.	
219	Does your country have national quality improvement guidelines for maternal and newborn health?	Yes ..... 1 In Process ..... 2 No 0	221
220	Date of finalization	__ __ / __ __ __ __ M M / Y Y Y Y	
221	Does your country have a maternal death surveillance and response system in place?	Yes ..... 1 In Process ..... 2 No 0	224
222	Number of facilities conducting routine reviews	_____	
223	Total number of facilities	_____	
224	Does your country have a perinatal death review system in place?	Yes ..... 1 In Process ..... 2 No 0	227
225	Number of facilities conducting routine reviews		
226	Total number of facilities		
227	Does your country hold routine national health sector reviews that include maternal and newborn programs?	Yes ..... 1 In Process ..... 2 No 0	229
228	Do these reviews include broad stakeholder participation, including civil society organizations?	Yes ..... 1 In Process ..... 2 No 0	

Investment in Health Workforce and Health Workforce Capacity and Support

No.	Question	Response	Skip
229	Does your country have a policy in place for adequate skilled health workers for maternal and newborn health according to global standards?	Yes ..... 1 In Process ..... 2 No 0	232

No.	Question	Response	Skip
230	Date of finalization	__ __ / __ __ __ __ M M / Y Y Y Y	
231	List key elements that are relevant to maternal and newborn health	1. 2. 3.	
232	Does your country have a policy in place for adequate skilled health workers for maternal and newborn health according to global standards?	Yes ..... 1 In Process ..... 2 No 0	

Community Engagement and Parents' Voices and Champions

No.	Question	Response	Skip
233	Does your country have a national advocacy/ communication strategy for maternal and newborn health?	Maternal only ..... 1 Newborn only ..... 2 Maternal and newborn ..... 3 No Strategy ..... 0 →	235
234	List key elements that are relevant to maternal and newborn health	1. 2. 3.	
235	Does your country have a national community engagement / mobilization strategy in place for maternal and newborn health?	Maternal only ..... 1 Newborn only ..... 2 Maternal and newborn ..... 3 No Strategy ..... 0 →	237
236	List key elements that are relevant to maternal and newborn health	1. 2. 3.	

Data

No.	Question	Response	Skip
237	Does the national HMIS include an indicator for use of antenatal corticosteroids for foetal lung maturation?	Yes ..... 1 In Process ..... 2 No 0	
238	Does the national HMIS include an indicator for newborn resuscitation performed?	Yes ..... 1 In Process ..... 2 No 0	
239	Does the national HMIS include an indicator for newborns that benefited from KMC?	Yes ..... 1 In Process ..... 2 No 0	

No.	Question	Response	Skip
240	Does the national HMIS include an indicator for treatment of neonatal sepsis?	Yes ..... 1 In Process ..... 2 No 0	
241	Does the national HMIS include an indicator on newborns with documented birth weight?	Yes ..... 1 In Process ..... 2 No 0	
242	Does the national HMIS include an indicator for pre-discharge neonatal mortality rate?	Yes ..... 1 In Process ..... 2 No 0	
243	Does the national HMIS include an indicator for newborn deaths by cause using ICD-PM?	Yes ..... 1 In Process ..... 2 No 0	
244	Does the national HMIS include an indicator for immediate breastfeeding?	Yes ..... 1 In Process ..... 2 No 0	
245	Does the national HMIS include an indicator for low birthweight?	Yes ..... 1 In Process ..... 2 No 0	
246	Does the national HMIS include an indicator for preterm birth?	Yes ..... 1 In Process ..... 2 No 0	
247	Does the national HMIS include an indicator for content of pre-discharge postnatal care?	Yes ..... 1 In Process ..... 2 No 0	
248	Does the national HMIS include an indicator for birth registration?	Yes ..... 1 In Process ..... 2 No 0	
249	Does the national HMIS include an indicator for neonatal death registration with Civil registrar?	Yes ..... 1 In Process ..... 2 No 0	
250	Does the national HMIS include an indicator for perinatal death reviews?	Yes ..... 1 In Process ..... 2 No 0	

Research and Innovation

No.	Question	Response	Skip
251	Does your country have a prioritized research agenda for newborn health?	Yes ..... 1 In Process ..... 2 No 0	254

No.	Question	Response	Skip
252	Status of process	Identification ..... 1 Development/review ..... 2 Implementation ..... 3 Dissemination 4	
253	Does the research agenda include issues related to stillbirths?	Yes ..... 1 No 0	

Health Financing

No.	Question	Response	Skip
254	Does your country have free maternal care policy in place?	Yes ..... 1 In Process ..... 2 No 0	
255	Does your country have free newborn care policy in place?	Yes ..... 1 In Process ..... 2 No ..... 0 →	257
256	Is this a stand-alone policy or integrated with free maternal care?	Standalone ..... 1 Integrated ..... 2 Other 8	
257	Does your country have national health insurance for maternal and newborn care?	Maternal only ..... 1 Newborn only ..... 2 Both Maternal and newborn ..... 3 No national health insurance ..... 0 →	260
258	Does the national health insurance include sick newborns?	Yes ..... 1 No 0	
259	Date of finalization	__ __ / __ __ __ __ M M / Y Y Y Y	

Commodities

No.	Question	Response	Skip
260	Are the following life-saving maternal and newborn health commodities included in the National Essential Medicines List (NEML)?		
A	Oxytocin	Yes ..... 1 In Process ..... 2 No 0	
B	Misoprostol	Yes ..... 1 In Process ..... 2 No 0	
C	Magnesium sulfate	Yes ..... 1 In Process ..... 2 No 0	

No.	Question	Response	Skip
D	Injectable antibiotics	Yes ..... 1 In Process ..... 2 No 0	
E	Antenatal corticosteroids	Yes ..... 1 In Process ..... 2 No 0	
F	Chlorhexidine	Yes ..... 1 In Process ..... 2 No 0	
G	Newborn resuscitation (Ambu bag and Mask)	Yes ..... 1 In Process ..... 2 No 0	
261	Does your country have a Logistics Management Information System (LMIS) for the following life-saving MNH commodities?		
A	Oxytocin	Yes ..... 1 In Process ..... 2 No 0	
B	Misoprostol	Yes ..... 1 In Process ..... 2 No 0	
C	Magnesium sulfate	Yes ..... 1 In Process ..... 2 No 0	
D	Injectable antibiotics	Yes ..... 1 In Process ..... 2 No 0	
E	Antenatal corticosteroids	Yes ..... 1 In Process ..... 2 No 0	
F	Chlorhexidine	Yes ..... 1 In Process ..... 2 No 0	
G	Newborn resuscitation (Ambu bag and Mask)	Yes ..... 1 In Process ..... 2 No 0	

Additional Comments

Annex 2: Tables on progress (75 countries, 2017-2018) of selected ENAP milestones

National Plans

Country	National newborn action plan developed	Newborn component strengthened in RMNCAH plan	Newborn mortality rate target defined in newborn or RMNCAH plan	Stillbirth rate target defined in newborn or RMNCAH plan	Specific activities for all ENAP milestones added, including scale-up of newborn-specific interventions in RMNCAH plan	Emergency preparedness for newborn care in emergency included in plan	Newborn action plan costed	A dedicated full-time position for newborn care at national level available	Sub-national plan developed
Afghanistan									
Angola									
Armenia									
Azerbaijan									
Bangladesh									
Benin									
Bhutan									
Botswana									
Burkina Faso									
Burundi									
Cameroon									
Chad									
China									
Comoros									
Cote d'Ivoire									
Djibouti									
DRC									
Egypt									
Eritrea									
Ethiopia									
Gambia									
Georgia									
Ghana									
Guinea									
Guinea-Bissau									
India									
Indonesia									
Iran									
Iraq									
Jordan									
Kazakhstan									
Kenya									
Kyrgystan									
Lebanon									
Lesotho									
Liberia									
Libya									
Madagascar									
Malawi									
Maldives									
Mali									
Mauritania									
Morocco									
Mozambique									
Myanmar									

Country	National newborn action plan developed	Newborn component strengthened in RMNCAH plan	Newborn mortality rate target defined in newborn or RMNCAH plan	Stillbirth rate target defined in newborn or RMNCAH plan	Specific activities for all ENAP milestones added, including scale-up of newborn-specific interventions in RMNCAH plan	Emergency preparedness for newborn care in emergency included in plan	Newborn action plan costed	A dedicated full-time position for newborn care at national level available	Sub-national plan developed
Namibia									
Nepal									
Niger									
Nigeria									
Pakistan									
Palestine									
PNG									
Philippines									
Rwanda									
Senegal									
Sierra Leone									
Somalia									
South Sudan									
Sri Lanka									
Sudan									
Swaziland									
Syria									
Tajikistan									
Tanzania									
Tomor-Leste									
Togo									
Tunisia									
Turkmenistan									
Uganda									
Uzbekistan									
Vietnam									
Yemen									
Zambia									
Zimbabwe									

Quality of Care

Country	National Quality Improvement Initiative included in policies	National QI programme has specific focus on MNH	Health workers authorized to administer life-saving MNH interventions	Policy adopted for maternal death notification	Policy exists on home-based postnatal care
Afghanistan					
Angola					
Armenia					
Azerbaijan					
Bangladesh					
Benin					
Bhutan					
Botswana					
Burkina Faso					
Burundi					
Cameroon					
Chad					
China					
Comoros					
Cote d'Ivoire					
Djibouti					
DRC					
Egypt					
Eritrea					
Ethiopia					
Gambia					
Georgia					
Ghana					
Guinea					
Guinea-Bissau					
India					
Indonesia					
Iran					
Iraq					
Jordan					
Kazakhstan					
Kenya					
Kyrgystan					
Lebanon					
Lesotho					
Liberia					
Libya					
Madagascar					
Malawi					
Maldives					
Mali					
Mauritania					
Morocco					
Mozambique					
Myanmar					
Namibia					
Nepal					
Niger					
Nigeria					
Pakistan					

Country	National Quality Improvement Initiative included in policies	National QI programme has specific focus on MNH	Health workers authorized to administer life-saving MNH interventions	Policy adopted for maternal death notification	Policy exists on home-based postnatal care
Palestine					
PNG					
Philippines					
Rwanda					
Senegal					
Sierra Leone					
Somalia					
South Sudan					
Sri Lanka					
Sudan					
Swaziland					
Syria					
Tajikistan					
Tanzania					
Tomor-Leste					
Togo					
Tunisia					
Turkmenistan					
Uganda					
Uzbekistan					
Vietnam					
Yemen					
Zambia					
Zimbabwe					

Data Availability

Country	Eligible mothers given antenatal corticosteroids for foetal lung maturation	Eligible newborns receiving resuscitation	Eligible newborns that benefited from KMC	Eligible newborns treated for neonatal sepsis
Afghanistan				
Angola				
Armenia				
Azerbaijan				
Bangladesh				
Benin				
Bhutan				
Botswana				
Burkina Faso				
Burundi				
Cameroon				
Chad				
China				
Comoros				
Cote d'Ivoire				
Djibouti				
DRC				
Egypt				
Eritrea				
Ethiopia				
Gambia				
Georgia				
Ghana				
Guinea				
Guinea-Bissau				
India				
Indonesia				
Iran				
Iraq				
Jordan				
Kazakhstan				
Kenya				
Kyrgystan				
Lebanon				
Lesotho				
Liberia				
Libya				
Madagascar				
Malawi				
Maldives				
Mali				
Mauritania				
Morocco				
Mozambique				
Myanmar				
Namibia				
Nepal				
Niger				
Nigeria				
Pakistan				

Country	Eligible mothers given antenatal corticosteroids for foetal lung maturation	Eligible newborns receiving resuscitation	Eligible newborns that benefited from KMC	Eligible newborns treated for neonatal sepsis
Palestine				
PNG				
Philippines				
Rwanda				
Senegal				
Sierra Leone				
Somalia				
South Sudan				
Sri Lanka				
Sudan				
Swaziland				
Syria				
Tajikistan				
Tanzania				
Tomor-Leste				
Togo				
Tunisia				
Turkmenistan				
Uganda				
Uzbekistan				
Vietnam				
Yemen				
Zambia				
Zimbabwe				

QI guidelines and mechanisms

Country	National QI guidelines for MNH are available	Plan available to implement the MNH QI guidelines	MDSR mechanism in place	Perinatal Death Review system in place
Afghanistan				
Angola				
Armenia				
Azerbaijan				
Bangladesh				
Benin				
Bhutan				
Botswana				
Burkina Faso				
Burundi				
Cameroon				
Chad				
China				
Comoros				
Cote d'Ivoire				
Djibouti				
DRC				
Egypt				
Eritrea				
Ethiopia				
Gambia				
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Kyrgystan				
Lebanon				
Lesotho				
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Madagascar				
Malawi				
Maldives				
Mali				
Mauritania				
Morocco				
Mozambique				
Myanmar				
Namibia				
Nepal				
Niger				
Nigeria				
Pakistan				

Country	National QI guidelines for MNH are available	Plan available to implement the MNH QI guidelines	MDSR mechanism in place	Perinatal Death Review system in place
Palestine				
PNG				
Philippines				
Rwanda				
Senegal				
Sierra Leone				
Somalia				
South Sudan				
Sri Lanka				
Sudan				
Swaziland				
Syria				
Tajikistan				
Tanzania				
Tomor-Leste				
Togo				
Tunisia				
Turkmenistan				
Uganda				
Uzbekistan				
Vietnam				
Yemen				
Zambia				
Zimbabwe				

Investment in free Maternal and Newborn Care and Services

Country	Free maternal care policy/national health insurance/incentive schemes in place	Free newborn care policy/national health insurance in place	National health insurance scheme/free policy in place covering maternal and newborn care including sick newborns
Afghanistan			
Angola			
Armenia			
Azerbaijan			
Bangladesh			
Benin			
Bhutan			
Botswana			
Burkina Faso			
Burundi			
Cameroon			
Chad			
China			
Comoros			
Cote d'Ivoire			
Djibouti			
DRC			
Egypt			
Eritrea			
Ethiopia			
Gambia			
Georgia			
Ghana			
Guinea			
Guinea-Bissau			
India			
Indonesia			
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Iraq			
Jordan			
Kazakhstan			
Kenya			
Kyrgystan			
Lebanon			
Lesotho			
Liberia			
Libya			
Madagascar			
Malawi			
Maldives			
Mali			
Mauritania			
Morocco			
Mozambique			
Myanmar			
Namibia			
Nepal			
Niger			
Nigeria			
Pakistan			

Country	Free maternal care policy/national health insurance/incentive schemes in place	Free newborn care policy/national health insurance in place	National health insurance scheme/free policy in place covering maternal and newborn care including sick newborns
Palestine			
PNG			
Philippines			
Rwanda			
Senegal			
Sierra Leone			
Somalia			
South Sudan			
Sri Lanka			
Sudan			
Swaziland			
Syria			
Tajikistan			
Tanzania			
Tomor-Leste			
Togo			
Tunisia			
Turkmenistan			
Uganda			
Uzbekistan			
Vietnam			
Yemen			
Zambia			
Zimbabwe			

Health workforce strategies

Country	A human resource plan/strategy for SBAs in place	A retention policy/strategies for SBAs or relevant cadres in place	Competency and skill-based service/ training/education for MNH available
Afghanistan			
Angola			
Armenia			
Azerbaijan			
Bangladesh			
Benin			
Bhutan			
Botswana			
Burkina Faso			
Burundi			
Cameroon			
Chad			
China			
Comoros			
Cote d'Ivoire			
Djibouti			
DRC			
Egypt			
Eritrea			
Ethiopia			
Gambia			
Georgia			
Ghana			
Guinea			
Guinea-Bissau			
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Kazakhstan			
Kenya			
Kyrgystan			
Lebanon			
Lesotho			
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Libya			
Madagascar			
Malawi			
Maldives			
Mali			
Mauritania			
Morocco			
Mozambique			
Myanmar			
Namibia			
Nepal			
Niger			
Nigeria			
Pakistan			

Country	A human resource plan/strategy for SBAs in place	A retention policy/strategies for SBAs or relevant cadres in place	Competency and skill-based service/ training/education for MNH available
Palestine			
PNG			
Philippines			
Rwanda			
Senegal			
Sierra Leone			
Somalia			
South Sudan			
Sri Lanka			
Sudan			
Swaziland			
Syria			
Tajikistan			
Tanzania			
Tomor-Leste			
Togo			
Tunisia			
Turkmenistan			
Uganda			
Uzbekistan			
Vietnam			
Yemen			
Zambia			
Zimbabwe			

National Essential Medicines List (NEML)

Country	Oxytocin included in the NEML	Misoprostol included in the NEML	Magnesium sulfate included in the NEML	Injectable antibiotics included in the NEML	Antenatal corticosteroids included in the NEML	Chlorhexidine included in the NEML	Newborn resuscitation devices (Ambu bag and mask) included in the NEML
Afghanistan							
Angola							
Armenia							
Azerbaijan							
Bangladesh							
Benin							
Bhutan							
Botswana							
Burkina Faso							
Burundi							
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Mauritania							
Morocco							
Mozambique							
Myanmar							
Namibia							
Nepal							
Niger							
Nigeria							
Pakistan							

Country	Oxytocin included in the NEML	Misoprostol included in the NEML	Magnesium sulfate included in the NEML	Injectable antibiotics included in the NEML	Antenatal corticosteroids included in the NEML	Chlorhexidine included in the NEML	Newborn resuscitation devices (Ambu bag and mask) included in the NEML
Palestine							
PNG							
Philippines							
Rwanda							
Senegal							
Sierra Leone							
Somalia							
South Sudan							
Sri Lanka							
Sudan							
Swaziland							
Syria							
Tajikistan							
Tanzania							
Tomor-Leste							
Togo							
Tunisia							
Turkmenistan							
Uganda							
Uzbekistan							
Vietnam							
Yemen							
Zambia							
Zimbabwe							

National Essential Medicines List (NEML)

Country	Oxytocin included in LMIS	Misoprostol included in LMIS	Magnesium sulfate included in LMIS	Injectable antibiotics included in LMIS	Antenatal corticosteroids included in LMIS	Chlorhexidine included in LMIS	Newborn resuscitation devices (Ambu bag and mask) included in LMIS
Afghanistan							
Angola							
Armenia							
Azerbaijan							
Bangladesh							
Benin							
Bhutan							
Botswana							
Burkina Faso							
Burundi							
Cameroon							
Chad							
China							
Comoros							
Cote d'Ivoire							
Djibouti							
DRC							
Egypt							
Eritrea							
Ethiopia							
Gambia							
Georgia							
Ghana							
Guinea							
Guinea-Bissau							
India							
Indonesia							
Iran							
Iraq							
Jordan							
Kazakhstan							
Kenya							
Kyrgystan							
Lebanon							
Lesotho							
Liberia							
Libya							
Madagascar							
Malawi							
Maldives							
Mali							
Mauritania							
Morocco							
Mozambique							
Myanmar							
Namibia							
Nepal							
Niger							
Nigeria							
Pakistan							

Country	Oxytocin included in LMIS	Misoprostol included in LMIS	Magnesium sulfate included in LMIS	Injectable antibiotics included in LMIS	Antenatal corticosteroids included in LMIS	Chlorhexidine included in LMIS	Newborn resuscitation devices (Ambu bag and mask) included in LMIS
Palestine							
PNG							
Philippines							
Rwanda							
Senegal							
Sierra Leone							
Somalia							
South Sudan							
Sri Lanka							
Sudan							
Swaziland							
Syria							
Tajikistan							
Tanzania							
Tomor-Leste							
Togo							
Tunisia							
Turkmenistan							
Uganda							
Uzbekistan							
Vietnam							
Yemen							
Zambia							
Zimbabwe							

Research agenda

Country	Research agenda (as referenced in ENAP) prioritized by country	Research focusing on stillbirths planned by country
Afghanistan		
Angola		
Armenia		
Azerbaijan		
Bangladesh		
Benin		
Bhutan		
Botswana		
Burkina Faso		
Burundi		
Cameroon		
Chad		
China		
Comoros		
Cote d'Ivoire		
Djibouti		
DRC		
Egypt		
Eritrea		
Ethiopia		
Gambia		
Georgia		
Ghana		
Guinea		
Guinea-Bissau		
India		
Indonesia		
Iran		
Iraq		
Jordan		
Kazakhstan		
Kenya		
Kyrgystan		
Lebanon		
Lesotho		
Liberia		
Libya		
Madagascar		
Malawi		
Maldives		
Mali		
Mauritania		
Morocco		
Mozambique		
Myanmar		
Namibia		
Nepal		
Niger		
Nigeria		
Pakistan		

Country	Research agenda (as referenced in ENAP) prioritized by country	Research focusing on stillbirths planned by country
Palestine		
PNG		
Philippines		
Rwanda		
Senegal		
Sierra Leone		
Somalia		
South Sudan		
Sri Lanka		
Sudan		
Swaziland		
Syria		
Tajikistan		
Tanzania		
Tomor-Leste		
Togo		
Tunisia		
Turkmenistan		
Uganda		
Uzbekistan		
Vietnam		
Yemen		
Zambia		
Zimbabwe		

Community ownership and partnership

Country	A national communication strategy (advocacy, BCC/C4D) on newborn developed	A community MNH engagement/mobilization strategy in place
Afghanistan		
Angola		
Armenia		
Azerbaijan		
Bangladesh		
Benin		
Bhutan		
Botswana		
Burkina Faso		
Burundi		
Cameroon		
Chad		
China		
Comoros		
Cote d'Ivoire		
Djibouti		
DRC		
Egypt		
Eritrea		
Ethiopia		
Gambia		
Georgia		
Ghana		
Guinea		
Guinea-Bissau		
India		
Indonesia		
Iran		
Iraq		
Jordan		
Kazakhstan		
Kenya		
Kyrgystan		
Lebanon		
Lesotho		
Liberia		
Libya		
Madagascar		
Malawi		
Maldives		
Mali		
Mauritania		
Morocco		
Mozambique		
Myanmar		
Namibia		
Nepal		
Niger		
Nigeria		
Pakistan		

Country	A national communication strategy (advocacy, BCC/C4D) on newborn developed	A community MNH engagement/mobilization strategy in place
Palestine		
PNG		
Philippines		
Rwanda		
Senegal		
Sierra Leone		
Somalia		
South Sudan		
Sri Lanka		
Sudan		
Swaziland		
Syria		
Tajikistan		
Tanzania		
Tomor-Leste		
Togo		
Tunisia		
Turkmenistan		
Uganda		
Uzbekistan		
Vietnam		
Yemen		
Zambia		
Zimbabwe		

Annex 3: List of indicators for maternal and newborn health (under discussion)

Interim Maternal and newborn health HMIS Indicators (under discussion)		
Indicator (all facility-based)	Numerator	Denominator (Facility level)
Outcome indicators		
1. Maternal deaths	Number of maternal deaths in facility	
2. Maternal deaths by cause	Number of maternal deaths classified by cause (ICD-MM)	
3. Newborn deaths by cause	Number of neonatal deaths classified by cause (ICD-PM)	
4. Stillbirth rate (disaggregated by fresh and macerated)	Number of newborns born in a facility with no signs of life and born weighing at least 1,000 grams or after 28 weeks of gestation	Total Births
5. Pre-discharge neonatal death rate (disaggregated by in-born & out-born)	Number of newborns born live in a facility who die prior to discharge from facility	Live Births
6. Obstetric Case Fatality Rate (disaggregated by direct and indirect causes when feasible)	Number of women who develop a complication in facility who die due to an obstetric complication	Number of women with obstetric complications attended in the health facility
Output/Coverage indicators		
7. Proportion of women who were screened for syphilis during antenatal care	Number of women screened for syphilis during antenatal care	First ANC visits
8. Proportion of women administered immediate postpartum uterotonic (for PPH prevention)	Number of women administered immediate postpartum uterotonic to prevent postpartum haemorrhage	Total Births
9. Placeholder for treatment of maternal complication	TBD	TBD
10. Proportion of newborns breastfed within one hour of birth	Number of newborns breastfed within one hour of birth	Live Births
11. Proportion of newborns with documented birthweight	Number of newborns with documented birthweight in record or register	Total Births
12. Proportion of newborns on KMC	Number of newborns initiated in KMC (or admitted to KMC unit if separate unit exists)	Live Births
13. Proportion of newborns resuscitated with bag and mask	Number of newborns resuscitated with bag & mask	Total Births
14. Proportion of newborns treated for neonatal Infection	Number of newborns treated with antibiotics	Live Births
15. Low Birth Weight	Number of newborns with birthweight <2500 grams	Live Births
16. Pre-Term Birth	Number of newborns born <37 weeks estimated gestation	Live Births
17. Caesarean Section (disaggregated by elective and emergency)	Number of births via caesarean section	Total Births

18. Placeholder for content of postnatal care for woman	Number of women who received xx service for postnatal care prior to discharge	Total births
19. Placeholder for content of postnatal care for newborns	Number of newborns who received xx service for postnatal care prior to discharge	Live births
20. Birth Notification	Number of births with notification submitted to Civil Registrar	Total Births
21. Maternal death registration	Number of maternal deaths registered with Civil Registrar	Number of Maternal Deaths
22. Neonatal Death registration	Number of neonatal deaths registered with Civil Registrar	Number of Neonatal Deaths
23. Proportion of maternal deaths reviewed	Number of maternal deaths reviewed in MPDSR Programme	Number of Maternal Deaths
24. Proportion of perinatal deaths reviewed	Number of perinatal Deaths reviewed in MPDSR Programme	Number of Perinatal Deaths

List of Acronyms

AMDD	Averting Maternal Death and Disability
ARR	Average Rate of Reduction
BCC	Behaviour Change Communication
bCPAP	Bubble Continuous Positive Airway Pressure
C4D	Communication for Development
CHAMPS	Child Health and Mortality Prevention Surveillance
COIN	Care of the Infant and Newborn
COINN	Council of International Neonatal Nurses
CNCP	Comprehensive Newborn Care Package
CRVS	Civil Registration and Vital Statistics Systems
CIFF	Children's Investment Fund Foundation
CWG	Chlorhexidine Working Group
DHIS2	District Health Information System- 2
EN-BIRTH study	Every Newborn-Birth Indicators Research for Tracking in Hospitals
ECD	Early Childhood Development
ENAP	Every Newborn Action Plan
EmOC	Emergency Obstetric Care
EmONC	Emergency Obstetric and Neonatal Care
EWEC	Every Woman Every Child
GBS	Group B Streptococcus
GFF	Global Financing Facility
HEW	Health Extension Worker
HMIS	Health Management Information Systems
HNN	Healthy Newborn Network
HSDP	Health Sector Development Plan
IAFM	Inter-Agency Field Manual for Reproductive Health in Crisis Situations
ICM	International Confederation of Midwives
ICD-10 MM	International Classification of Diseases for Maternal Mortality
IGME	Inter-Agency Group for Mortality Estimation
IMCI	Integrated Management of Childhood Illness
KMC	Kangaroo Mother Care
LBW	Low Birth-Weight
LMICs	Low- and Middle-Income Countries
LMIS	Logistic Management Information Systems
LSHTM	London School of Hygiene and Tropical Medicine
MCSP	Maternal and Child Survival Programme
MDSR	Maternal Death Surveillance and Response
MISP	Minimum Initial Service Package for Reproductive Health in Crisis Situations
MITS	Minimally Invasive Tissue Sampling
MNCH	Maternal, Newborn and Child Health
MNH	Maternal and Newborn Health
MoH	Ministry of Health
MOHFW	Ministry of Health and Family Welfare
MoNITOR	Mother and Newborn Information for Tracking Outcomes and Results
MoRES	Monitoring Results for Equity System
MPDSR	Maternal and Perinatal Death Surveillance and Response
MPND	Maternal, Perinatal and Neonatal Deaths

NEML	National Essential Medicines List
NMR	Neonatal Mortality Rate
NNHP	National Newborn Health Program
PRECISE	Pregnancy Care Integrating Translational Science Everywhere
PSBI	Possible Severe Bacterial Infection
PDSA	Plan-Do-Study-Act Cycles
PMNCH	Partnership for Maternal, Newborn & Child Health
QI	Quality Improvement
QoC	Quality of Care
RLN	Regional Learning Network
RMNCAH	Reproductive maternal newborn child adolescent health
SNBCU	Special Newborn Care Units
TA	Technical Assistance
TWG	Technical Working Group
SBR	Stillbirth rates
SDG	Sustainable Development Goal
UHC	Universal Health Coverage
UN	United Nations
UNICEF	United Nations Children's fund
UNFPA	United Nations Population Fund
UNAIDS	Joint United Nations Programme on HIV and AIDS
URC	University Research Company
USAID	United States Agency for International Development
WHA	World Health Assembly
WHO	World Health Organization

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Every Newborn management team

Supporting Partners