The Role of Intrapartum and Immediate Postpartum Care Quality Improvement Initiative in Reducing Stillbirths in India

Background

India's burden of stillbirths is the highest in the world, with an estimated 340,622 stillbirths in 2019.[1] To address this high number, in 2014, the Government of India adopted a target of less than 10 stillbirths per 1,000 births by 2030 as a part of the India Newborn Action Plan.[2]

Evidence suggests that most stillbirths are associated with preventable complications that occur during labor.[3,4] To tackle these issues, Jhpiego, in collaboration with the Government of Rajasthan and with funding support from Children's Investment Fund Foundation (CIFF), implemented the World Health Organization (WHO) Safe Childbirth Checklist in 101 facilities in seven districts of Rajasthan as part of a quasi-experimental study conducted between June 2012 to April 2015. **The results of an independent evaluation of this initiative showed significant improvement in adherence to essential clinical practices and an 11% reduction in facility-based mortality (stillbirths and very early neonatal deaths).**[5] As a result, in April 2015, the Ministry of Health and Family Welfare, Government of India,

Dakshata strategy

The overall goal of Dakshata is to improve the quality of maternal and newborn care during the intrapartum and immediate postpartum period, through provision of care by competent and confident providers. The major objectives of the initiative are to:
1. Strengthen the competency of labor room providers, including medical officers, staff nurses, and auxiliary nurse midwives, to perform evidence-based practices as per the established labor room protocols and standards.
2. Implement enabling strategies to ensure improved adherence to evidence-based clinical practices.
3. Improve the availability of essential supplies and commodities in the labor room and the postpartum wards.
4. Improve provider accountability through improved recording, reporting and utilization of data.

Dakshata used a modified version of WHO's Safe Childbirth Checklist as the framework for strengthening provider competencies, along with mentoring and monitoring by supervisors.

[1]Hug L, You D, Blencowe H, et al. Global, regional, and national estimates and trends in stillbirths from 2000 to 2019: a systematic assessment. Lancet. 2021;398(10302):772-785. doi: 10.1016/S0140-6736(21)01112-0.
[2]Ministry of Health and Family Welfare, Government of India. INAP: India Newborn Action Plan. New Delhi: Government of India; 2014. http://nhm.gov.in/images/pdf/programmes/inap-final.pdf
[3]Bhutta ZA, Das JK, Bahl R, et al. Can available interventions end preventable deaths in mothers, newborn babies, and stillbirths, and at what cost? Lancet (London, England). 2014;384(9940):347–70. doi: 10.1016/S0140-6736(14)60792-3.

[4]Darmstadt GL, Yakoob MY, Haws RA, Menezes EV, Soomro T, Bhutta ZA. Reducing stillbirths: interventions during labour. BMC Pregnancy and Childbirth. 2009;9 Suppl 1:S6. https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/1471-2393-9-S1-S6
[5]Varghese B CA, Kumari S, Bandyopadhyay S, et al. Does the safe childbirth checklist (SCC) program save newborn lives? Evidence from a realistic quasi-experimental study, Rajasthan, India. Maternal Health, Neonatology and Perinatology. 2019;5:3. DOI: 10.1186/s40748-019-0098-4.

scaled up the initiative throughout the country under the name "*Dakshata*" (meaning "adroitness").[6]

[6]Maternal Health Division, Ministry of Health and Family Welfare, Government of India. DAKSHATA Empowering Providers for Improved MNH Care during Institutional Deliveries April 2015: A strategic initiative to strengthen quality of intra- and immediate postpartum care. https://nhm.gov.in/WriteReadData/l892s/81164783601523441220.pdf

The Government of Rajasthan was quick to adopt the initiative. As a strategic decision, Dakshata targeted facilities with more than 50 deliveries per month, mainly district hospital, sub-divisional hospitals, and community health centers. The first phase of the program, beginning in 2015, was implemented in 147 facilities in 13 districts. In a second phase in 2017, 55 facilities in seven more districts were added. In October 2018, the Government of Rajasthan scaled up the program across all 34 districts in the state targeting 360 facilities with high birth volumes (Figure 1.)

Figure 1. The map of Rajasthan state with intervention districts
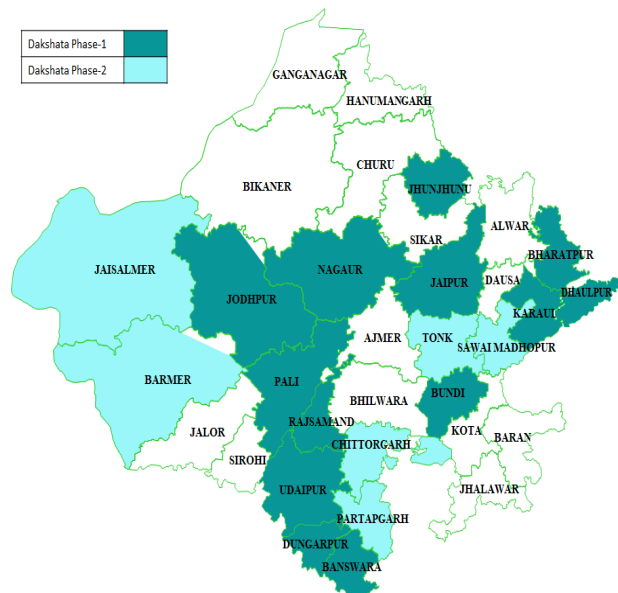
Challenges in Stillbirth Reporting and Quality of Intrapartum Care

Jhpiego supported the Maternal Health Division of the Government of Rajasthan to implement Dakshata. The initiative has a total of 19 practice standards to ensure quality of care for all pregnant women coming to public health facilities. Initially, the project team sought to identify practices that were contributing to the high stillbirth rate or leading to poor recording of stillbirths. The team observed the following challenges:

1. **Staff orientation on stillbirth**: One major challenge we observed was inconsistent provider understanding regarding categories of stillbirth (stillbirths were being classified as intrauterine fetal death [IUFD]).

2. **Gaps in data reporting:** Facilities lacked a system of data validation. We observed differences in stillbirth data recorded in labor room registers and in the Pregnancy Child Tracking System (PCTS), a government-owned management information system to capture administrative data related to various reproductive and child health services.

3. **Sub-optimal competency in providing evidence-based practices for fetal and neonatal wellbeing:** During periodic assessments, the team observed challenges in performing essential newborn care (ENBC) and newborn resuscitation (NBR). For example, the fetal heart rate (FHR) was not routinely assessed at the time of admission. Only 55% of facilities documented an FHR recording at the initial rapid baseline program assessment. Providers in only 9% and 4% of facilities were able to correctly perform ENBC and NBR, respectively, at the time of baseline assessment. During labor, harmful practices, such as unnecessary augmentation of labor and application of fundal pressure, were common. Although assessment forms did not capture these practices, they were observed by assessors.

Four key activities to improve the quality of care, and documentation practices, at the time of childbirth

As illustrated in Figure 2, Dakshata focused on four main activities to strengthen the quality of care, and improve documentation practices, around the time of childbirth. These four focus activity areas are discussed in more detail here. Chronology of activities and the timeline are presented in Figure 3.

Figure 2. Activities to improve quality of care around childbirth and stillbirth

1. ***Addressing misclassification and making quality data available for decision-makers:***

The Dakshata team worked with service providers, during half day refresher trainings and full-day mentoring and support visits, on how to classify fresh and macerated stillbirths. During the training, teams discussed the mismatch between stillbirth data in labor room registers and in the PCTS. Group discussions strengthened service providers' knowledge about stillbirth. Champion providers were also identified; they were responsible for ensuring accurate recording and reporting at all levels, which led to improved classification of stillbirths.

At state level, the team also advocated to include two separate categories for fresh and macerated category in the PCTS (earlier the categories only included IUFD and stillbirth). This data was later utilized by districts and state officials to conduct a review of facilities with high stillbirth rates. To ensure that there was no mismatch between the data reported in the PCTS and labor room registers, a data validation exercise was carried out between October and December 2018. Out of 183 facilities, PCTS and labor room register data matched in 160 (87%) facilities. For the remaining 23 facilities, the main issue was misclassification of stillbirths. These facilities were using IUFD in place of fresh or macerated stillbirths. Later, the state issued a detailed directive to ensure proper reporting and appropriate classification. Dakshata worked with facility in-charges to ensure implementation of directives.

2. ***Addressing service delivery practices contributing to preventable stillbirth***

Some harmful practices, like unnecessary augmentation of labor and the use of fundal pressure, were observed during periodic assessments. These practices were carried forward from provider pre-service training. Dakshata program officers focused on these practices during trainings and post-training mentoring and support visits.[7] During each visit, the program team observed providers in the labor room and provided feedback

and support to help improve their skills. Mentors also organized onsite training sessions and mock drills to assess readiness of the facility staff in various emergency situations.

3. ***Focused efforts to improve performance of sub-optimal performers:***

A major reason why providers did not follow recommended practices for managing complications was that most did not have adequate opportunities for supported practice during their pre-service training. After seeing the promising practices introduced through Dakshata, the government established one skill lab in each of the 34 districts to support more frequent practice. They also began to support dedicated mentors, with simulators, to conduct routine visits to facilities so providers could practice their skills. However, despite this support, as well as Dakshata mentoring and support visits, some practices were slow to change or improve. Periodic Assessment of Competency and Knowledge (PACK), discussed below, was introduced in response to ensure sufficient data on 1) practices with poor adherence and 2) providers who had sub-optimal skill levels (in-general or specific to one practice).
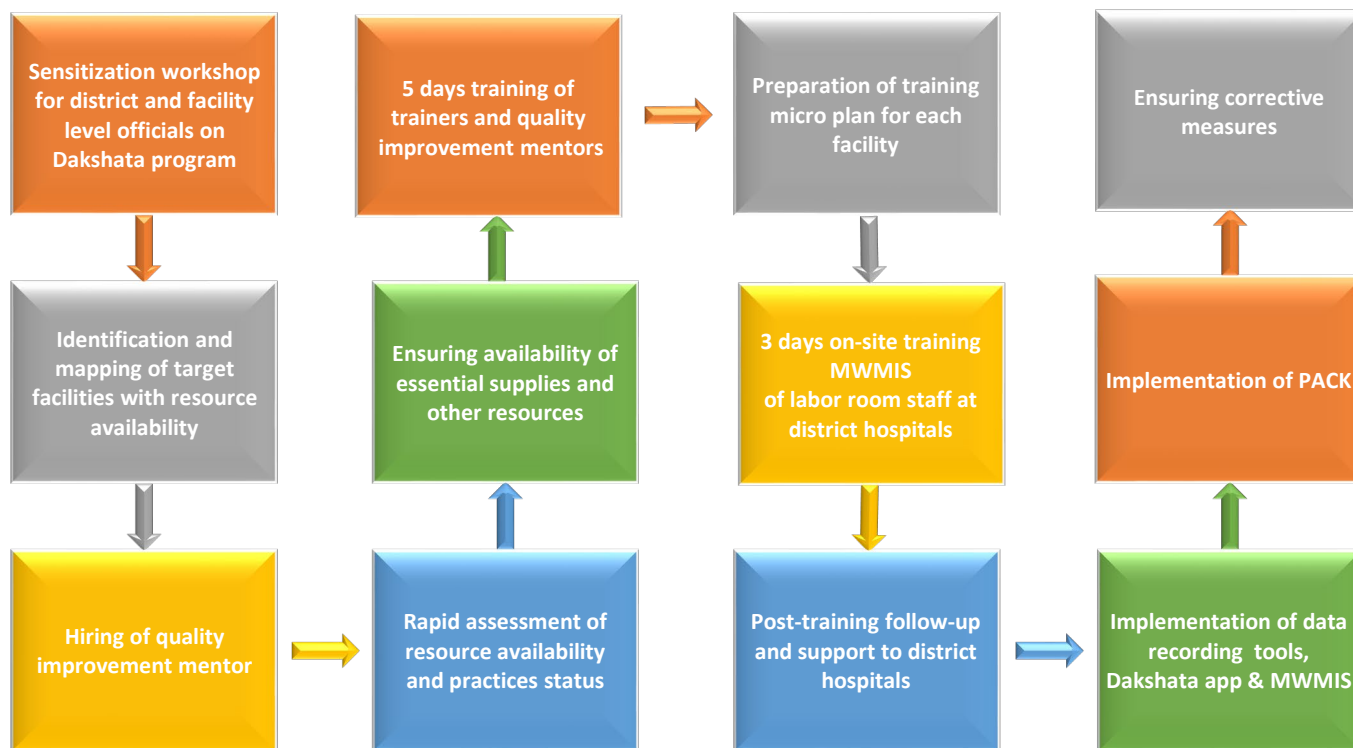
4. ***Periodic assessment of competency and knowledge***

In response to continued practice gaps, Dakshata introduced PACK in 2018 to track provider performance and adherence to recommended practices. During quarterly facility-based assessments, providers were assessed to find out if they performed NBR when a baby did not cry immediately after birth. Performance improved from 4% at baseline (June–Aug 2015) to 55% in most recent period assessment (May–Aug 2019). Similarly, practices such as immediate newborn care improved from 9% to 76% and FHR recording from 55% to 92%. Competency and knowledge of certain skills remain an unfinished agenda and will require a highly customized capacity building program to ensure that providers get confidence in these life-saving skills.
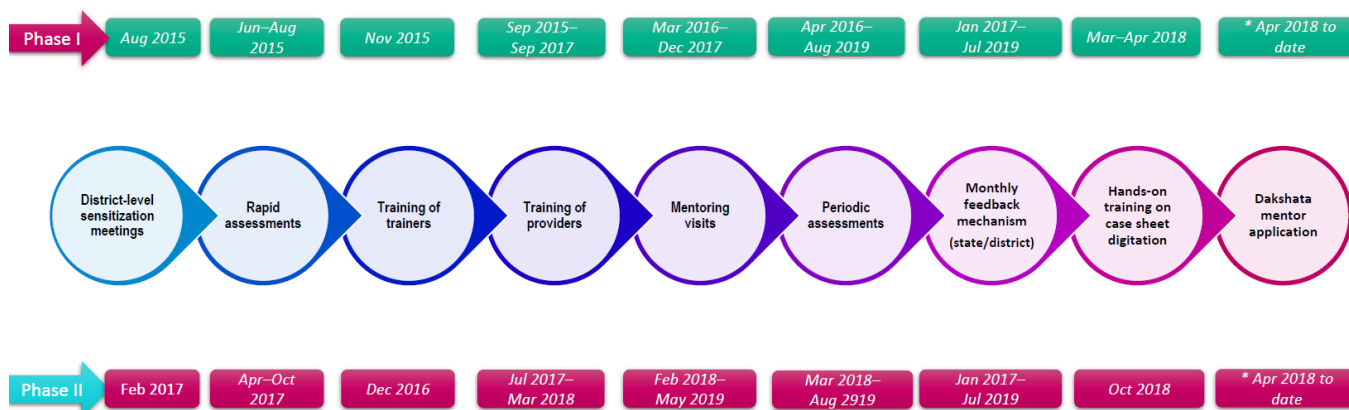
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[7]A structured five-visit mentorship package was developed and tested under Dakshata to deliver various mentorship components. The package was approved by the maternal health division of Ministry of Health and

Family Welfare, Government of India, and is hosted over the National Health Mission website.

Figure 3. Chronology of activities and timeline

Sensitization workshop for district and facility level officials on Dakshata program	5 days training of trainers and quality improvement mentors	Preparation of training micro plan for each facility	Ensuring corrective measures
Identification and mapping of target facilities with resource availability	Ensuring availability of essential supplies and other resources	3 days on-site training MWMIS of labor room staff at district hospitals	Implementation of PACK
Hiring of quality improvement mentor	Rapid assessment of resource availability and practices status	Post-training follow-up and support to district hospitals	Implementation of data recording tools, Dakshata app & MWMIS

Sequence of Dakshata Activities

Phase I

Aug 2015	Jun–Aug 2015	Nov 2015	Sep 2015–Sep 2017	Mar 2016–Dec 2017	Apr 2016–Aug 2019	Jan 2017–Jul 2019	Mar–Apr 2018	* Apr 2018 to date

District-level sensitization meetings → Rapid assessments → Training of trainers → Training of providers → Mentoring visits → Periodic assessments → Monthly feedback mechanism (state/district) → Hands-on training on case sheet digitation → Dakshata mentor application

Phase II

| Feb 2017	Apr–Oct 2017	Dec 2016	Jul 2017–Mar 2018	Feb 2018–May 2019	Mar 2018–Aug 2919	Jan 2017–Jul 2019	Oct 2018	* Apr 2018 to date

* Program has been adopted by Government of Rajasthan

Results

Newborn care practice data showed improvement in recording FHR at admission, adherence to essential newborn care, and NBR skills of providers (Figure 4).

Figure 4. Improvement in newborn care practices

Legend: Baseline (Jun-Aug 15) | Periodic Assessment (May-Aug 19)
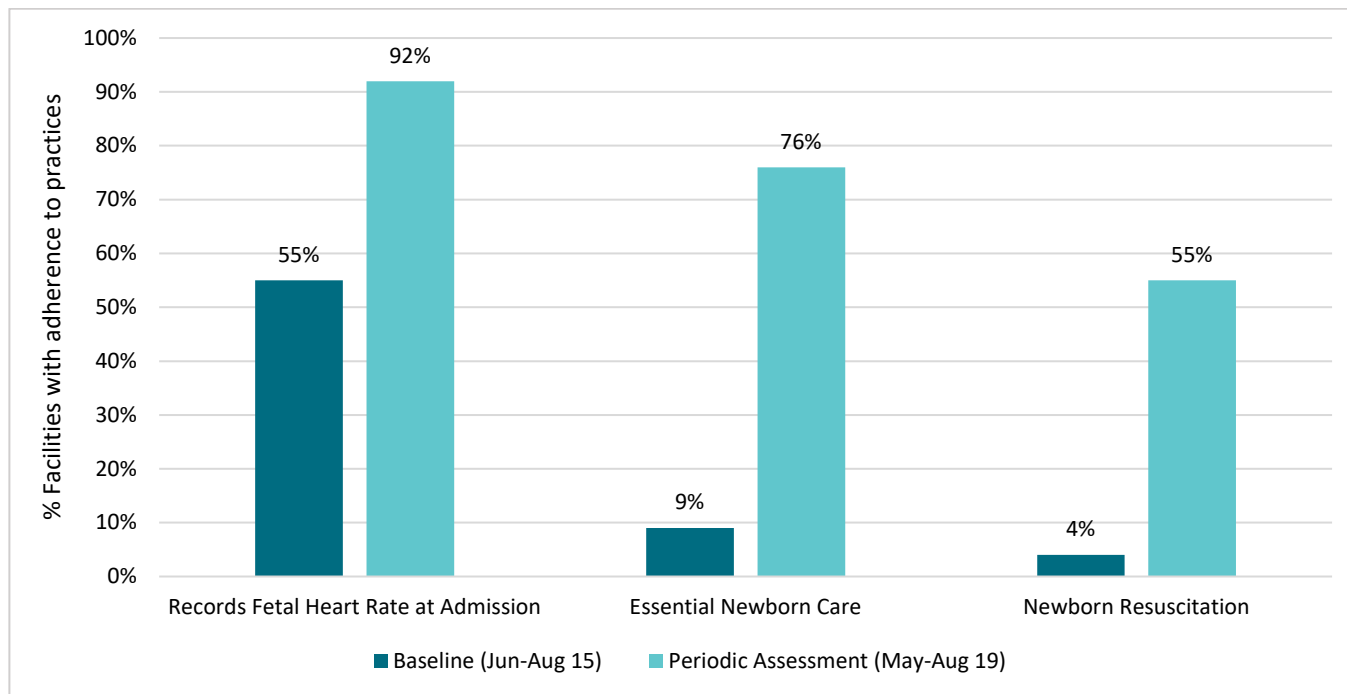
The service statistics data showed considerable reduction in stillbirths at Dakshata intervention facilities (19.3 vs 15.3 per 1,000 births) as compared to non Dakshata facilities (21.8 vs 18) from 2016 to 2020 (Figure 5).

Figure 5. Trend of stillbirth rate (per 1,000 live birth) in Dakshata versus non Dakshata facilities
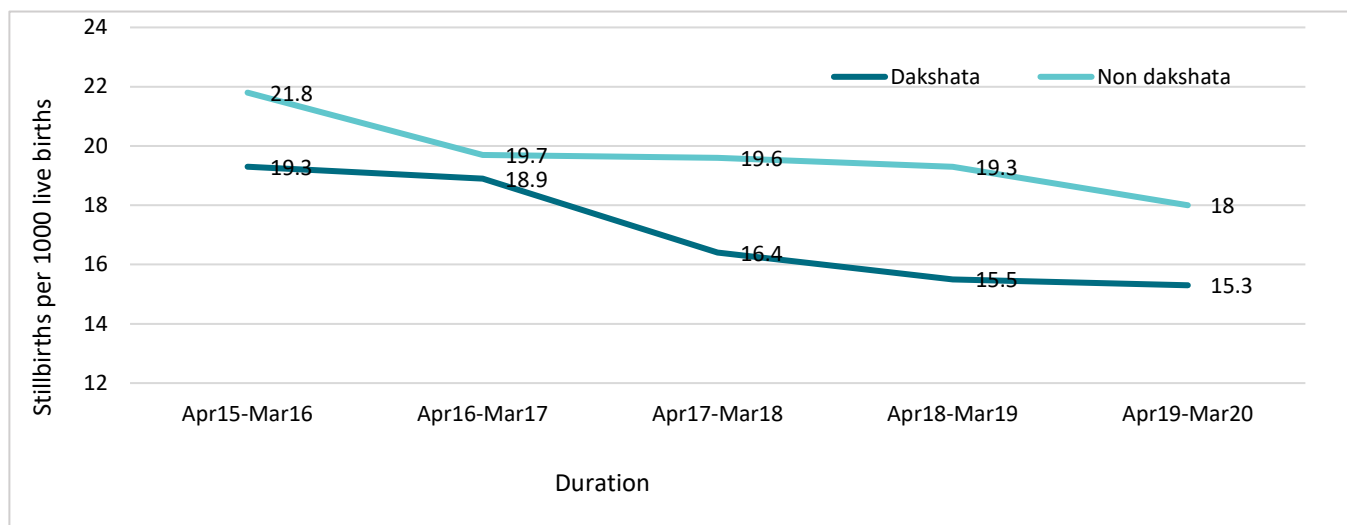
Concentrated efforts for addressing misclassification of stillbirths helped the Dakshata team to bring uniformity in classification across the state. A validation exercise conducted in 2018 helped the team in ensuring trustworthiness of PCTS data. However, there are certain challenges remained related with data recording and adherence to evidence-based practices which require further programming.