Completed Studies & Ongoing Projects

Directorate of Family Welfare (DFW), Government of NCT of Delhi

Abstracts of Completed Studies

1. Participation of Nursing Staff in Labour Room Functioning in Public Hospitals of Delhi

Descriptive cross-sectional study | 21 public health facilities, Delhi | 64 nursing staff | September 2025

This study examined how actively nursing staff are involved in conducting deliveries and managing labour in Delhi's government hospitals, where institutional delivery rates are now near universal. A structured survey was carried out across 21 public health facilities in September 2025, covering 64 nursing staff posted in labour rooms, with both basic experience data and 14 specific clinical practices assessed.

The findings point to a significant gap between the nursing workforce's training and its actual day-to-day clinical role. While more than half the staff surveyed (57.8%) had not conducted a single independent delivery in the preceding four months, those with more years of labour room experience were significantly more likely to be actively conducting deliveries. Adherence to basic newborn care practices, such as initiating breastfeeding, was excellent (98.4%), but adherence dropped sharply for more advanced monitoring tasks: partograph plotting was recorded in only 46.9% of cases, and postpartum IUCD insertion in just 26.6%. Notably, nurses who plotted partographs conducted nearly four times as many deliveries as those who did not, suggesting these clinical skills reinforce one another.

In short, nursing staff in Delhi's public hospitals are not yet practising to the full extent of their training, particularly in independent delivery conduct and advanced labour monitoring. The findings support targeted, skill-based refresher training and administrative steps to enable nurses to take on a more active clinical role, in line with national midwifery-strengthening initiatives such as LaQshya.

2. Effectiveness of Standard Treatment Workflows (STWs) in Improving Antenatal Care & Management of PPH

Cross-sectional survey with pre/post point-of-care intervention | 310 medical officers, Delhi, October 2025

This study assessed how well medical officers across Delhi's healthcare facilities know and practice Antenatal care and management of postpartum haemorrhage (PPH), and whether a point-of-care Standard Treatment Workflow (STW) tool improved that knowledge. A total of 310 medical officers were surveyed, the majority working in primary care settings (60.3%), spanning MBBS, AYUSH, and postgraduate-qualified doctors (various specialties including O&G).

Baseline knowledge gaps were considerable, especially in primary care. Less than half of MBBS and AYUSH doctors in primary care could correctly identify pregnancy danger signs, and correct knowledge of PPH management sequencing varied widely by qualification, from 74% among AYUSH doctors to 94% among postgraduates. Practice gaps were equally notable: only 1 in 5 AYUSH doctors in primary care reported always performing Active Management of the Third Stage of Labour (AMTSL), compared to over 76% of MBBS counterparts. Manpower and resource shortages were the most frequently cited on-ground challenges.

Knowledge of correct ANC & PPH management sequencing improved significantly after exposure to the STW tool, with the strongest effect in primary care. These findings support wider rollout of STWs as a low-cost, high-impact quality improvement measure.

3. Need of Standard Treatment Workflows (STWs) in India for Obstetrics & Gynaecology Care

Background, rationale and baseline survey methodology | 50 O&G providers (online survey) | September–October 2025, Analysis is ongoing

This study sets out the rationale for introducing **Standard Treatment Workflows (STWs)** in Obstetrics & Gynaecology care in India and describes the methodology of a baseline survey undertaken to assess their need. **Although India has made substantial progress in improving maternal health services, reducing maternal mortality, and expanding institutional deliveries, considerable variation persists in the quality and consistency of clinical care across different levels of the health system.** The authors argue that this variation reflects a persistent gap between evidence-based recommendations and routine bedside practice, driven by inconsistent training, heavy clinical workloads, frequent staff turnover, and the absence of concise, India-specific decision-support tools. While comprehensive national and international

guidelines are available, they are often lengthy, difficult to use during busy clinical practice, or based on contexts that differ from Indian healthcare settings.

To evaluate the perceived need and acceptability of these tools, an online survey was conducted among **50 Obstetrics & Gynaecology care providers** (minimum qualification: MBBS) during **September–October 2025**. The questionnaire assessed participants' baseline knowledge, current clinical practices, familiarity with standard treatment approaches, perceived barriers to guideline implementation, and opinions regarding the usefulness of concise workflow-based decision-support tools. Responses included both structured and open-ended questions to capture quantitative findings as well as qualitative insights into routine clinical practice.

4. Assessment of the Performance of the Assisted Reproductive Technology (ART) and Surrogacy Regulatory Programme in Delhi

Retrospective descriptive record-based study | ART & Surrogacy Programme Section, Directorate of Family Welfare, Government of NCT of Delhi | 160 surrogacy cases | May 2025 – April 2026

This study assessed the implementation and performance of the regulatory framework established under the Assisted Reproductive Technology (Regulation) Act, 2021, and the Surrogacy (Regulation) Act, 2021, in Delhi — **the first programme-based assessment of its kind in a Union Territory**. The study covered all surrogacy applications and monitored cases reviewed by the UT Appropriate Authority (DFW, Government of NCT of Delhi) during the period May 2025 to April 2026, using administrative records from the National ART & Surrogacy Registry and the DFW ART & Surrogacy Cell.

The regulatory infrastructure established in Delhi comprised 251 registered facilities (31 ART Banks, 49 Level 1 Clinics, 110 Level 2 Clinics, 61 Surrogacy Clinics) out of 324 applications received — with 96% of registered facilities in the private sector. A State-Level Medical Board and 11 District-Level Medical Boards were constituted and operationalised for certification of surrogacy cases. A total of 162 meetings of the UT Appropriate Authority were conducted during the study period for verification, eligibility and essentiality certification.

A total of 160 surrogacy applications were reviewed. Recurrent implantation failure (Rule 14(b)) was the most common single medical indication, accounting for 38.75% of cases, followed by absence or abnormality of the uterus (Rule 14(a), 26.88%) and life-threatening medical conditions (Rule 14(d), 17.50%). Combined medical indications were present in 12 cases (7.5%). The mean age of intending women was 38.34 ± 5.31 years (range 26–50) and of intending men was 39.93 ± 5.41 years (range 28–54), consistent with the pattern of advanced reproductive age among surrogacy applicants in India. Self-gametes were used in 85 cases (53.1%) and donor gametes in 75 cases (46.9%).

Of the 160 cases monitored, 121 had received certificates and 39 were under consideration at the time of analysis. Among the 121 certified cases, 90.9% were at various stages of the surrogacy process (pending); 5 cases (4.1%) had resulted in delivery; 2 were cancelled; and 1 neonatal death was recorded. Embryo transfer had been performed once in 80 cases and twice in 9 cases; 26 cases were awaiting embryo transfer. Surrogate mother screening identified anaemia as the most common condition (34 women), followed by thyroid abnormalities (6), abnormal urine culture (3), and elevated prolactin or positive Rubella IgM (2 each).

The study demonstrated active implementation of the ART and Surrogacy regulatory framework in Delhi and generated the first UT-level dataset on surrogacy application profiles, certification processes, surrogate screening findings and early programme outcomes. The findings provide baseline evidence for programme monitoring, policy planning and future strengthening of regulatory implementation. **Key areas for attention include improving private-sector data completeness and follow-up response, establishing longitudinal outcome tracking, and ensuring systematic monitoring of surrogate health outcomes — particularly given the high prevalence of anaemia identified during screening.**

5. Trends in Maternal and Neonatal Mortality in Delhi, India: A Five-Year Analysis (2020–2025)

Retrospective HMIS-based trend analysis | *All 11 districts, Delhi* | *Public and private facilities* | *April 2020 – March 2025*

This study examined annual trends in Maternal Mortality Ratio (MMR) and Neonatal Mortality Rate (NMR) in Delhi over five years using facility-level Health Management Information System (HMIS) data from both public and private sectors across all 11 districts. Deaths were classified by sector, facility level and ICD-10 cause of death. The study aimed to generate evidence to inform policy and programmatic response towards SDG maternal and neonatal mortality targets.

A total of 3,107 maternal deaths were recorded over the five-year period, ranging from 556 in 2020-21 to a peak of 681 in 2023-24, before declining to 617 in 2024-25. MMR ranged between 306 and 336 per 100,000 live births, with the highest value in 2021-22. Public facilities consistently accounted for over 90% of maternal deaths, concentrated in tertiary-level institutions (medical colleges and district hospitals). The proportion of private-sector maternal deaths rose gradually from 2.7% to 7.5% over the study period. When analysed by domicile, the proportion of Delhi-resident maternal deaths fell from 72% in 2020-21 to 48% in 2024-25, with non-domiciliary (non-Delhi) deaths rising to 52% — highlighting the dual burden imposed on Delhi's tertiary healthcare system by patients from neighbouring states. Resident MMR declined from 173 in 2020-21 to 113 in 2024-25.

Cause-specific analysis identified 'other obstetric complications' (including embolism, cardiac complications, liver disorders) as the leading contributor throughout (335–461 deaths per year). Hypertensive disorders showed a declining trend (89 to 73 deaths). Obstetric haemorrhage remained significant (62 rising to 74 deaths, partly due to separate PPH/APH reporting from 2023). Pregnancy-related infections showed a sharp rise — from 19 deaths in 2020-21 to 160 in 2023-24 — explained by expanded reporting of sepsis and systemic infections post-2023, alongside possible post-COVID susceptibility. Obstructed/prolonged labour contributed the fewest deaths (2–16 per year).

A total of 18,281 neonatal deaths were recorded, peaking at 4,809 in 2023-24 and declining to 3,928 in 2024-25. NMR ranged from 12 to 18 per 1,000 live births, with the highest values in 2022-23 and 2023-24. As with maternal deaths, over 90% of neonatal deaths occurred in public tertiary facilities. NMR at public primary-level facilities increased sharply (6 to 24 per 1,000 live births) owing to a steep fall in live births reported at this level (11,092 to 3,532). Cause-specific analysis identified sepsis (801–1,714 deaths), asphyxia (626–1,114), and other perinatal causes (1,064–1,828) as the leading contributors; prematurity emerged as a distinct reporting category in the final two years (804–806 deaths), reflecting both evolving clinical recognition and reporting practices.

The study provides the first comprehensive five-year HMIS-based facility-level analysis of maternal and neonatal mortality in Delhi, offering granular sector- and cause-specific data not available from SRS or NFHS sources. Key policy implications include the need to strengthen infection control and sepsis management, improve emergency obstetric care at tertiary facilities, reinforce referral pathways to manage the non-domiciliary patient burden, and use real-time HMIS data for evidence-based programme decision-making. The findings were shared with the Government of NCT of Delhi (Health & Family Welfare Department) to inform maternal health policy and planning.

6. Situational Assessment of Maternal Deaths and Home Deliveries in North District, Delhi

Mixed-methods study (data review + qualitative IDIs) | North District, Delhi | Centre for Community Medicine, AIIMS New Delhi | April 2025 – March 2026 | Commissioned by Government of NCT of Delhi

This study, conducted by the Centre for Community Medicine, AIIMS New Delhi, in collaboration with the Directorate of Family Welfare, Government of NCT of Delhi, assessed the burden, distribution and determinants of home deliveries and maternal deaths in North District, Delhi — the district with the lowest four-ANC-visit coverage in the city (50.6%) and one of the highest out-of-pocket expenditures per public-facility delivery

(₹2,935). The study combined a review of programmatic data (facility-wise home delivery line lists, 2024-25 and 2025-26) with qualitative in-depth interviews (IDIs) across four community sites (Bawana, Jahangirpuri H-Block, Jahangirpuri B-Block, Narela) and Maharishi Valmiki Hospital, involving 46 respondents including women, ASHAs, ANMs, Medical Officers, specialists and the District Programme Officer.

Programmatic data revealed a marked overall decline in home deliveries in North District between 2024-25 and 2025-26, with the largest high-burden facility (DGD Sanoth/Bawana) recording a 64.3% reduction (244 to 87 home deliveries). M&CW Narela 2 achieved the greatest percentage improvement (70.6% reduction). Despite this progress, DGD Jahangirpuri H-Block showed only a 9.1% decline, indicating persistent local barriers.

Qualitative findings identified five thematic clusters of determinants. First, the profile of women opting for home delivery included multiparous women with prior uncomplicated home births, migrant families, women with absent social support, those lacking identity documents, and families of underage pregnant girls fearing legal consequences of hospital admission. Second, socio-cultural beliefs — particularly the influence of elderly family members and the perception of childbirth as a natural process not requiring medical intervention — remained significant. Third, lack of trust rooted in negative prior experiences (stillbirths, neonatal deaths, poor provider communication, fear of unnecessary caesarean section, refusal of admission) strongly deterred hospital utilization. Fourth, health-system barriers including absence of a PHC in Bawana, inadequate staffing, lack of blood storage and 24×7 anaesthesia support, and overburdened referral hospitals contributed substantially. Fifth, financial and logistical constraints — including investigation costs, ambulance delays, and excessive reporting burden on frontline workers — limited access and ASHA effectiveness.

The assessment found that while North District has established monitoring mechanisms (ASHA/ANM reporting, line lists, MDSR meetings), MDSR meetings had not been conducted for two years prior to April 2026, and District Magistrate participation in review processes remained limited. **Recommendations included establishing PHC infrastructure in Bawana, strengthening 24×7 emergency obstetric services, standardising referral protocols, ensuring admission irrespective of documentation status, implementing respectful maternity care standards, and reinvigorating MDSR processes with senior district-level accountability. The findings informed targeted district-level corrective action plans under the DFW's institutional delivery promotion strategy.**

7. Field Evaluation of a Non-Invasive Haemoglobin Estimation Device Compared with Invasive Point-of-Care Testing for Anaemia Screening: A Prospective Observational Paired-Measurement Study from Delhi, India

Background & objectives: Anaemia affects 57% of women and 67% of children under five in India (NFHS-5, 2019–21). The Anaemia Mukt Bharat programme relies on point-of-care haemoglobin (Hb) screening; an indigenous non-invasive device, has been proposed for programme use. We evaluated its equivalence, diagnostic accuracy, and operational performance against HemoCue Hb 301, using an automated haematology analyser as the reference standard.

Methods: A prospective, observational, paired-measurement evaluation was conducted at two urban public health facilities in Delhi (April 2026) in participants aged 5–60 years. All underwent sequential EzeCheck then HemoCue finger-prick testing. A venous subset (n=139) was analysed on a haematology analyser as the reference standard. Equivalence was assessed by Two One-Sided Tests (TOST; margin ±1.0 g/dL); secondary outcomes included diagnostic accuracy, anaemia prevalence, measurement time, and participant comfort.

Results: Of 602 enrolled, 598 valid paired records were analysed (AYAM, Vivek Vihar n=348; Polyclinic, Nand Nagri n=250). EzeCheck did not achieve equivalence overall (mean difference +1.019 g/dL; 90% CI 0.872–1.165; TOST P=0.582); equivalence was demonstrated at Site 1 only (mean difference +0.383 g/dL; P<0.001). Against the haematology analyser, **EzeCheck sensitivity was 56.1% versus 89.4% for HemoCue (specificity 67.1% vs 64.4%). In pregnant women, EzeCheck sensitivity was critically low (33.0%), with mean Hb overestimation of 2.2 g/dL. Anaemia prevalence was substantially underestimated (35.1% vs 62.2% by HemoCue). EzeCheck was painless (63% no discomfort); measurement time was comparable (44 s vs 40 s).**

Conclusion: EzeCheck failed to achieve clinical equivalence with HemoCue and showed unacceptably low sensitivity, particularly in pregnant women. Deployment within the AMB T3 camp framework cannot be recommended in its current form. Regulatory authorities should mandate multi-site equivalence validation, with mandatory subgroup evaluation in pregnant women, before any non-invasive Hb device is adopted in national anaemia control strategies.

Approved project in PIP, Yet to be initiated

8. Cervical Cancer Screening through Community-Based HPV DNA Self-Sampling: An Innovative Public Health Initiative of the Government of Delhi

Programme proposal and implementation protocol | Phase I: 9 districts, 30,000 women aged 35–45 years | Directorate of Family Welfare in collaboration with Delhi Health Services, Delhi State Health Mission, NCI-AIIMS, DSCI, ICMR, WHO | Approved under GOI Programme Implementation Plan (PIP)

Cervical cancer is the fourth most common cancer globally and a leading cause of cancer-related mortality in women, with India contributing 19% of global cases and 23% of global deaths. National screening coverage in India remains critically low (0.3–2% as per NFHS-5), and current VIA/Pap-smear-based approaches are limited by low sensitivity and high inter-observer variability. HPV DNA testing has been incorporated as primary screening in multiple international guidelines, offering sensitivity of approximately 96% for CIN2+ versus 53% for cytology. **Community-based self-sampling for HPV DNA further addresses sociocultural barriers, discomfort with pelvic examinations, and health workforce constraints.**

The Directorate of Family Welfare (DFW), Government of NCT of Delhi, developed and submitted a proposal for a phased community-based HPV DNA self-sampling cervical cancer screening programme, which was accepted and approved under the Government of India Programme Implementation Plan (PIP). The programme was developed with a Technical Advisory Group comprising senior experts from AIIMS Delhi, ESIC Medical College, ICMR, and MOHFW, and a Core Expert Group led by DFW with participation from NCI-AIIMS, DSCI, WHO, and DHS.

Phase I targets 30,000 women aged 35–45 years across 9 districts of Delhi over 6–9 months. The rationale for the 35–45 year target age window is grounded in the natural history of HPV infection: while HPV prevalence peaks before age 30, the incidence of clinically significant persistent infection and CIN2/3 peaks in the mid-30s to early-40s, making this window biologically strategic and cost-effective. HPV DNA testing (PCR-based, serotypes 6, 11, 16 and 18) will be conducted at the Delhi State Cancer Institute (Dilshad Garden). Women with HPV 16/18 positivity will be referred for immediate colposcopy at linked district hospitals; those with other high-risk subtypes will receive 12-month repeat testing. Self-sampling kits will be distributed by ASHAs (approximately 5,000 engaged), each mobilising approximately 1 woman per month. An expected HPV positivity rate of 8–15% is anticipated.

Key monitoring indicators include: screening coverage ≥80% of target; sample adequacy >95%; colposcopy follow-up rate >85%; treatment completion >90%; and report turnaround ≤3 days. The total Phase I budget is approximately ₹3.82 crore, with testing kit costs comprising the major component (₹3.60 crore for 30,000 kits at ₹1,200 per kit). No additional manpower is required for **Phase I, as the programme will be delivered through the existing health workforce. Phase II, involving expansion to additional districts and integration with digital tracking systems, will follow based on operational lessons from Phase I. The programme is aligned with the WHO 90-70-90 elimination strategy and India's national commitment to achieve 70% cervical cancer screening coverage by 2030.**