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NEONATAL DEATHS, FIRST-DAY HOSPITAL MORTALITY AND PAEDIATRIC INPATIENT CARE

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Abstract. We analysed 366 neonatal deaths and 300 in-hospital infant deaths recorded in Fergana region in January–June 2025 and 2026, together with 385,030 paediatric hospital treatments in 2024–2025. Neonatal mortality rose from 4.0 to 4.4 per 1,000 live births (RR 1.11; 95% CI 0.90–1.36; p=0.35). Late neonatal deaths increased from 57 to 70. Deaths within 24 hours of admission rose from 4.1% to 7.2% (p=0.32). Neither change was statistically significant, but both should be reviewed routinely.

Keywords: neonatal mortality; late neonatal deaths; first-day hospital mortality; paediatric inpatient care; Fergana region.

Introduction. Most infant deaths happen in the first month of life. In 2020, small vulnerable newborns accounted for 55.3% of the 2.4 million neonatal deaths worldwide [1], and neonatal sepsis killed about 1 in 6 affected newborns [2].

Health-system changes move these numbers. Moscow oblast cut infant mortality by 73% after it opened perinatal centres and improved prenatal diagnosis [3]. A resuscitation course for level-3 teams in Kyrgyzstan, Tajikistan and Uzbekistan shortened the time to respiratory support from 67 to 38 seconds [4]. Yet perinatal mortality at Fergana's regional perinatal centre, a referral facility, was still 43.7‰ in 2024 [5]. Since 2021, perinatal centres and primary care in Uzbekistan have had to monitor pregnant women through one shared system [6].

Objective. To assess neonatal and in-hospital infant mortality in Fergana region in January–June 2025 and 2026, and paediatric inpatient activity in 2024–2025.

Materials and methods. We analysed official reports of the regional multidisciplinary children's medical centre. The data covered 366 neonatal deaths (176 in 2025, 190 in 2026), 300 infant deaths in hospital (147 and 153) and 385,030 hospital treatments of children (193,263 in 2024; 191,767 in 2025).

Late neonatal deaths (7–27 days) were derived as neonatal minus early neonatal deaths. Live births (about 44,200 and 43,100) were back-calculated from the reported rates. We compared periods with rate ratios (RR) and 95% confidence intervals (CI), proportions with the χ^2 or Fisher's exact test, and the 19 districts with a Poisson dispersion test. Small counts got exact Poisson CIs. Significance was set at $p<0.05$.

Results.

Neonatal mortality. The rate rose from 4.0 to 4.4 per 1,000 live births (RR 1.11; 95% CI 0.90–1.36; p=0.35). Early neonatal mortality barely moved: 119 vs 120 deaths, 2.7 vs 2.8‰ (RR 1.04; 0.80–1.33).

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Most of the increase came from late neonatal deaths, which went from 57 to 70 (1.29 vs 1.63‰; RR 1.26; 0.89–1.79; p=0.21). The early share of all neonatal deaths fell from 67.6% to 63.2% (p=0.37).

District rates in 2026 ranged from 1.7‰ (Yozyovon) to 9.7‰ (So‘x), with borderline heterogeneity (χ^2=27.3; df=18; p=0.07). Toshloq added 7 deaths (12 to 19; RR 1.60; 0.78–3.31). The So‘x figure rests on 6 deaths among roughly 620 births, and its exact 95% CI is 3.6–21.1‰.

Hospital deaths. About half of infant deaths occurred in hospital (48.2% and 47.4%; p=0.84). Deaths within 24 hours of admission rose from 6 of 147 (4.1%) to 11 of 153 (7.2%) (RR 1.76; 0.67–4.64; Fisher p=0.32). Fergana district had 4 of the 11 first-day deaths in 2026, after none in 2025 (p=0.10).

Inpatient activity. Between 2024 and 2025 the number of children treated fell by 0.8%, bed-days by 4.0%, and mean length of stay from 5.32 to 5.15 days.

Conclusion. Neonatal mortality in Fergana region did not change significantly between the two half-years. Two signals deserve follow-up: late neonatal deaths and deaths within the first day of admission. Both may point to gaps in post-discharge care, infection control and referral timing.

District rankings built on 6-month counts are unstable and need multi-year pooling. A routine review of every death within 24 hours of admission, starting in Fergana district, is a practical first step.

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