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Maternal and Infant Mortality and The Role of Nurses: Global Overview and Focus on Pakistan, Sindh, and Karachi. A Scoping Review

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ABSTRACT

Background: The number of mothers and babies who die is still a problem. It shows how well a countrys health system is working and if everyone has access to care. Even though the number of deaths has gone down in the few years it is still not good enough. Most of these deaths happen in countries. Pakistan is one of these countries where a lot of mothers and babies die. There are differences in how many people die in different parts of the country and between cities and rural areas. Sindh, including Karachi needs attention because people there have a hard time getting help when they need it the care is not good and they are poor.

Objective: This study looks at what's happening with mothers and babies dying around the world and in Pakistan especially in Sindh and Karachi. It also looks at how nurses and midwives can help reduce the number of deaths.

Methods: We did a review of all the information we could find. We looked at surveys global estimates, peer-reviewed studies and reports from big organizations like WHO, UNICEF and the Government of Sindh. We organized all the information into categories like how many people're dying, why they are dying, what is stopping people from getting help and what nurses and midwives can do to help.

Results: A survey in Pakistan found that in 2019 186 mothers died for every 100,000 babies born. In Sindh it was even higher 224 mothers died for every 100,000 babies born. Another survey found that 62 babies died for every 1,000 born and 42 newborns died for every 1,000 born. The main reasons for these deaths are bleeding after birth,

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high blood pressure, infection, unsafe abortion babies being born early birth asphyxia, newborn infection, pneumonia, diarrhea, poor nutrition and delays in getting care. Nurses and midwives play a role in taking care of mothers and babies before during and after birth. They help with check-ups delivering babies, emergency care, vaccinations, breastfeeding, teaching people, about health and following up with mothers and babies after they go home.

Keywords: Maternal Mortality; Infant Mortality; Neonatal Mortality; Pakistan; Sindh; Karachi; Nurses; Midwives; Antenatal Care; Skilled Birth Attendance; SDGs

Introduction

Maternal and child mortality are core measures of the strengths of a country's health system, gender equity, and social development. Maternal mortality speaks to the availability of timely antenatal, intrapartum, emergency obstetric and postnatal care for women, while infant mortality reflects newborn care and access to maternal health, nutrition, immunization services as well as to sanitation and household socioeconomic conditions. Global estimates indicate important global progress in reducing maternal deaths since 2000, but the rate of improvement has continued to slow from 2016 onwards and the Sustainable Development Goal (SDG) target of an MMR of less than70 per 100,000 live births is still unattainable for many countries (World Health Organization [WHO et al.,2025). The burden of child deaths globally has also decreased, but the share of under-five mortality accounted for by neonatal deaths remains high and highlights the need to focus on care during pregnancy, delivery or in the first 28 days (United Nations Inter-agency Group for Child Mortality Estimation [UN IGME], 2025). Pakistan illustrates these challenges. National indicators have performed well over time, though maternal, neonatal and infant mortality are still above global targets. The 2019 nationwide maternal mortality ratio (MMR) from the Pakistan Maternal Mortality Survey (PMMS) was estimated to be 186 per 100,000 live births with considerable province to province variation (National Institute of Population Studies [NIPS] & ICF, 2020)

The MMR in Sindh stood at 224 per 100,000 live births, higher than the national average (which is more than double in Punjab) According to 2017–18 Pakistan Demographic and Health Survey (PDHS), the infant mortality rate (IMR) is 62 per 1000 live births, and neonatal mortality is reported as being 42/1000 live births (NIPS & ICF,2019). Pakistan's most populous city, Karachi, the capital of the Sindh province in which it lies and has better access to tertiary-care than many rural districts, but urban averages mask stark inequalities. The high level of exposure to overcrowding and unsafe water, irregular access to good quality maternity care, large out-of-pocket expenditure on health services, and delay in reaching referral hospitals imposes a lifelong burden on the women and infants living in informal settlements. Complicated maternal and neonatal cases are also referred to tertiary centers in Karachi from rural Sindh, often with complications that began due to delay in diagnosis, delayed transfer or inadequate primary care. Importance This review provides a rewritten, academic-level synthesis of maternal and infant mortality with particular emphasis on Pakistan, Sindh, Karachi, nursing/midwifery workforce.

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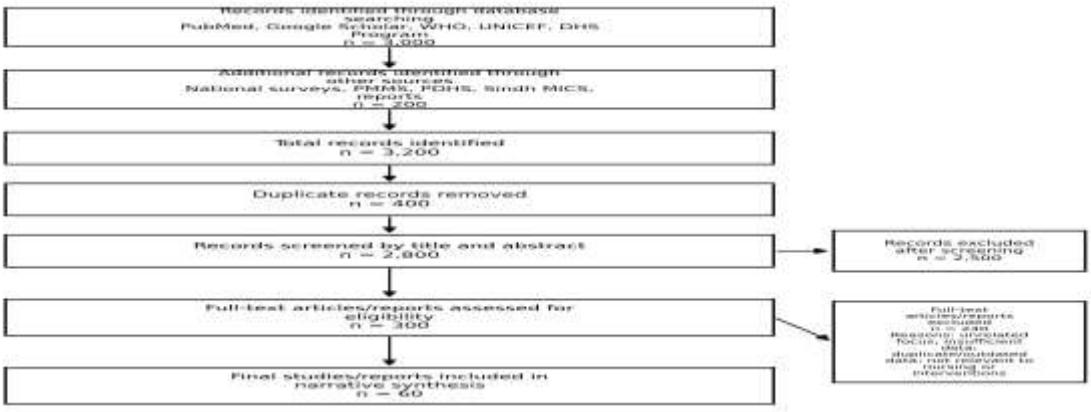
Methods

Researchers have opted to present this manuscript as a structured narrative review rather than a meta-analysis. Given the range of heterogeneity in design and outcomes across national surveys, global modeled estimates, observational studies, qualitative studies, policy reports and programmatic documents that comprise available evidence, a narrative synthesis was an appropriate choice. Sources were identified from PubMed, Google Scholar, WHO, UNICEF, UN IGME, DHS Program, NIPS (National Institute of Population Studies), ICF (Institute for Community and Family Health), Sindh MICS (Multiple Indicator Cluster Survey) and appropriate peer reviewed academic journals.. Search terms included combinations of “maternal mortality,” “infant mortality,” “neonatal mortality,” “Pakistan,” “Sindh,” “Karachi,” “antenatal care,” “skilled birth attendance,” “community midwives,” “nurses,” “midwifery,” “home delivery,” “postnatal care,” and “health-system barriers.” Sources published before 2018 were excluded unless they were a foundational guideline or an important conceptual source. Sources reported data or analyses on estimates of maternal and neonatal mortality, determinants, causes and interventions, roles of nursing or midwifery practitioners and Pakistan-specific maternal-newborn health systems. Removal of overall incomplete, non-traceable or website-fragment references from the original manuscript References were reordered and Ethical approval was not required in this review as publicly available literature were used, no human participants recruited.

Academic readability was enhanced by presenting data with a combination of tables, graphs and conceptual flow figures. Source selection, mortality indicators, patterns of causes and nursing/midwifery frameworks are summarised in the figures (1.0-8.0), and Tables 1.0 to 5. sprint key Indicators, determinants, roles and strategic recommendations forward strengthening the occupational group.

Figure 1.0. PRISMA-Informed Flow Diagram of Source Selection



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Note. This PRISMA-informed flow diagram summarizes the literature selection process for the structured narrative review. Exact screening logs should be retained if the manuscript is submitted as a systematic review.

Stage	Step	Records (n)
Identification	Records identified through database and website searching	3,000
Identification	Additional records identified through reports, national surveys, and organizational sources	200
Identification	Total records identified	3,200
Screening	Duplicate records removed	400
Screening	Records screened by title and abstract	2,800
Screening	Records excluded as not relevant to maternal/infant mortality or Pakistan/Sindh/Karachi focus	2,500
Eligibility	Full-text articles/reports assessed for eligibility	300
Eligibility	Full-text articles/reports excluded with reasons	240
Included	Sources included in final narrative synthesis	60

Note. Transparency of source selection is ensured by the flow summary provided. Exact database export files, search dates, full search strings and reasons for exclusion are retained and reported in accordance with PRISMA 2020 guidelines if submitted to a journal as systematic review.

Global Context of Maternal and Infant Mortality

Maternal deaths have gone down globally since the turn of the century, but not rapidly enough to meet SDG targets. In 2023, an estimated 260000 maternal deaths worldwide occurred (ICF, 2020), with the burden mainly in low- and lower-middle-income countries (LMICs), especially sub-Saharan Africa and Southern Asia(WHO et al.,2025). The majority of maternal deaths are preventable if a women has access to skilled birth attendant, emergency obstetric care and quality antenatal and postnatal care (ICF, 2020). About 75–80% of direct obstetric deaths globally are due to five causes: severe bleeding, hypertensive disorders of pregnancy, sepsis obstructed labour and unsafe abortion (WHO | World Health Organization).2024a Global under-five mortality has also fallen but neonatal deaths remain a stubbornly difficult challenge. UN IGME (2025) estimates indicate that millions of children under 5 years still continue to die every year, and most newborn deaths constitute a significant proportion of all under-five mortality. Complications of prematurity, intrapartum-related events (birth asphyxia), neonatal sepsis and congenital anomalies are the top contributors to newborn mortality. While most deaths of infants after the neonatal period are primarily related to pneumonia, diarrhoea, malnutrition and unsafe water/sanitation/incomplete immunization (UNICEF 2024a; WHO 2024b). These patterns reflect that maternal survival and infant survival are intertwined: the quality of care received during pregnancy and childbirth is closely linked to newborn outcomes.

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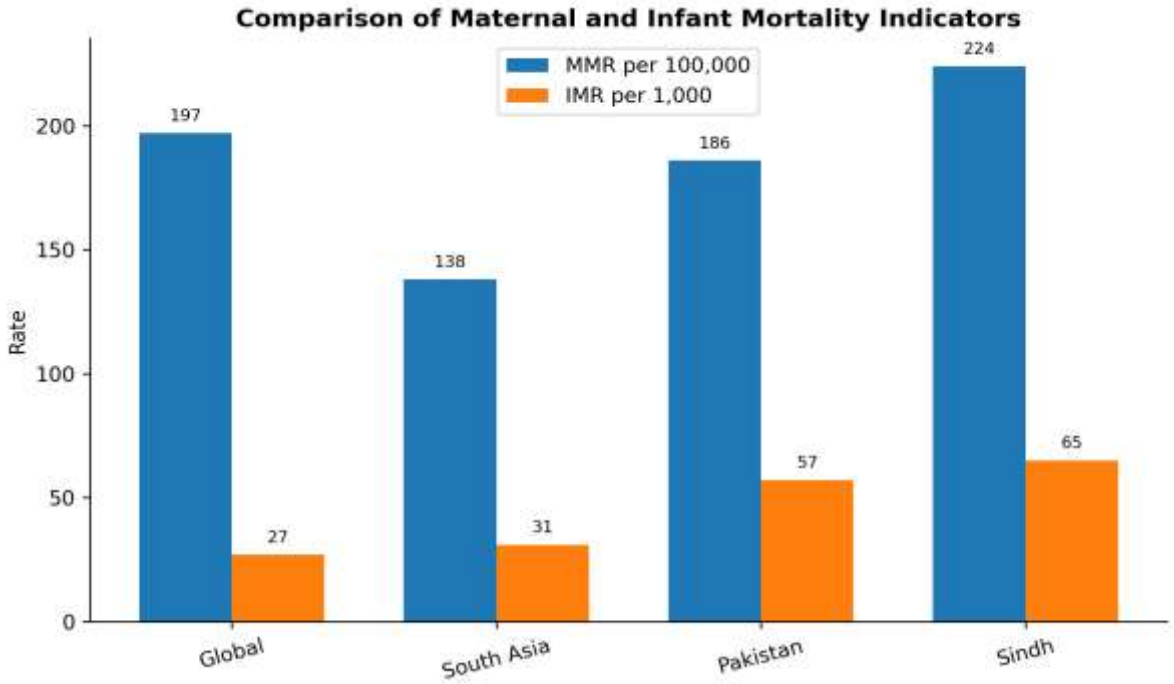
Figure 2.0. Comparison of Maternal and Infant Mortality Indicators



Note. MMR is reported per 100,000 live births, while IMR is reported per 1,000 live births. Values summarize global, regional, Pakistan, and Sindh comparisons used in this narrative review.

Table 1.0. Selected Maternal and Infant Mortality Indicators

Area/indicator	Most relevant estimate	Interpretation
Global maternal mortality	Approximately 260,000 maternal deaths in 2023	Progress has slowed; deaths remain concentrated in LMICs
Pakistan MMR	186 per 100,000 live births (PMMS 2019)	Above SDG target and higher than many regional comparators
Sindh MMR	224 per 100,000 live births (PMMS 2019)	Higher than national average; reflects provincial inequity
Pakistan infant mortality	62 per 1,000 live births (PDHS 2017–18)	High burden of preventable infant deaths
Pakistan neonatal mortality	42 per 1,000 live births (PDHS 2017–18)	Most infant deaths occur in the first month of life
Karachi-specific data	City-level mortality data are limited	Use urban Sindh and tertiary referral data cautiously; local surveillance is needed

Maternal and Infant Mortality in Pakistan, Sindh, and Karachi

The major direct reasons for maternal mortality in Pakistan reflect the same global patterns: postpartum hemorrhage; hypertensive disorders of pregnancy; puerperal sepsis; unsafe abortion; complications of obstructed labor. (NIPS & ICF, 2020; WHO, 2024a). Timely access to antenatal care and services such as skilled birth attendance,

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blood transfusions, eclampsia: magnesium sulfate; postpartum hemorrhage: uterotonics; sepsis: antibiotics; surgical care will prevent these problems or may make them treatable. Delay is used as the basic framework to analyze preventable maternal deaths, where "three delays" contribute to these preventable maternal deaths:

1) Delay in the decision to seek care;
2) Delay in reaching care; and
3) Delay in receiving adequate care when an individual presents at the health facility.

In Pakistan, the reason for the three delays can be traced to the poor education of women, lack of autonomy for women, poverty, transportation problems, weak referral systems, poor quality of healthcare facilities, and a lack of trust in public sector providers (Ahmad et al., 2025; Nisar et al., 2016). In addition, other factors such as high parity, short intervals between births, anemia, lack of family planning, and limited access to antenatal services increase the risks for complications related to childbirth. Consequently, many women only arrive at the tertiary hospitals when complications related to their childbirth have become life-threatening. Therefore, having a functional tertiary healthcare system cannot solely compensate for weak primary and referral systems when providing care to mothers during the childbirth process. A nested case-control study using PMMS data found that maternal education, age, tetanus vaccination, and health-system factors were associated with maternal mortality risk, reinforcing the importance of both social determinants and service quality (Ahmad et al., 2025). Infant mortality in Pakistan is driven largely by neonatal deaths. The PDHS 2017–18 reported neonatal mortality of 42 per 1,000 live births and infant mortality of 62 per 1,000 live births (NIPS & ICF, 2019). These rates are linked to preterm birth, birth asphyxia, neonatal sepsis, low birth weight, poor breastfeeding, maternal undernutrition, and delayed access to skilled care. Sindh MICS 2018–19 provides additional provincial evidence on maternal and child health, immunization, nutrition, water, sanitation, and child mortality indicators (Government of Sindh, Bureau of Statistics, & UNICEF, 2021). In rural Sindh, home delivery remains an important risk marker. A population-based analysis from Thatta found that 27.7% of women delivered at home; home delivery was associated with illiteracy, high parity, and no antenatal care, with no antenatal care showing a particularly strong association (Sadia et al., 2022). Karachi has multiple tertiary hospitals and specialized maternal-newborn services, but city-level mortality data are limited and urban averages can mask conditions in informal settlements. Karachi also functions as a referral hub for complicated cases from rural Sindh; therefore, improving rural emergency referral and peripheral maternal-newborn care is essential even for reducing tertiary-hospital deaths in Karachi.

Figure 3.0. Provincial Maternal Mortality Ratio in Pakistan

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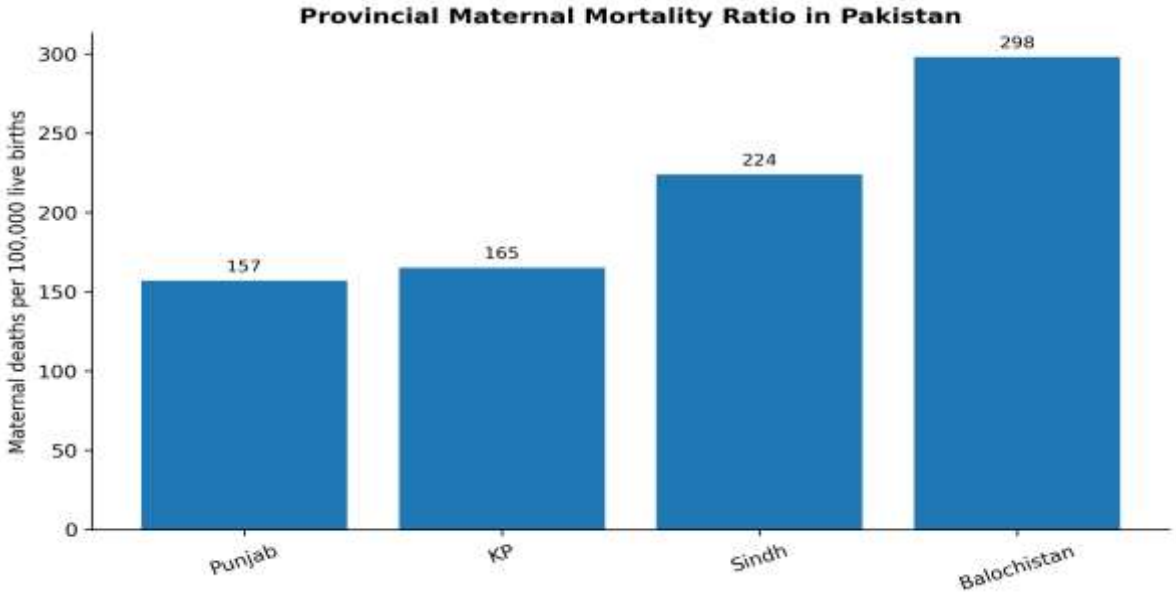
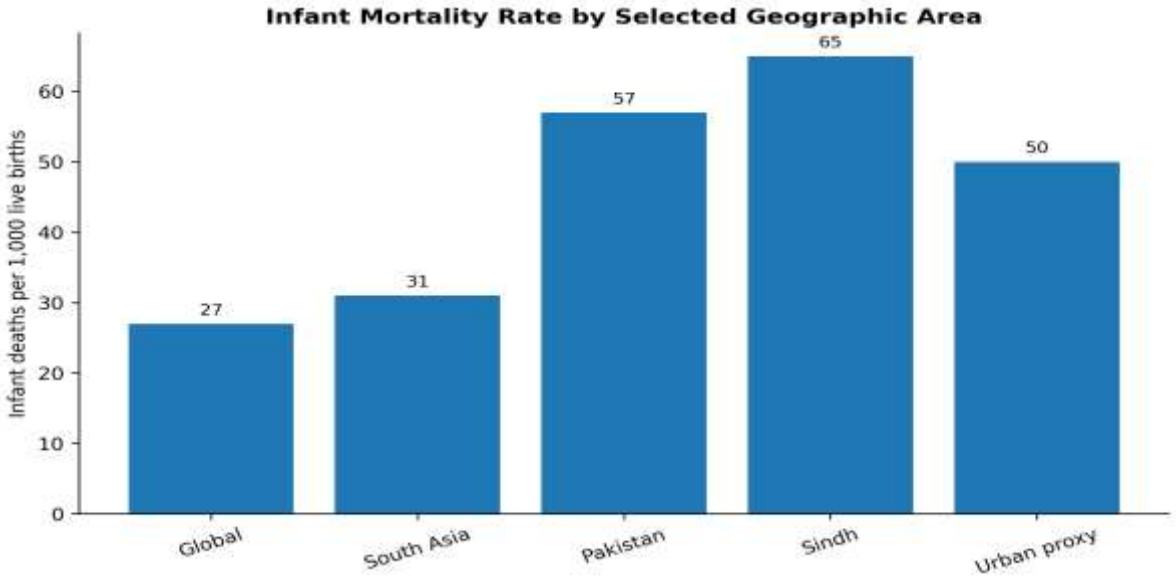


Note. The figure shows provincial disparities based on Pakistan Maternal Mortality Survey 2019 estimates.

Figure 4.0. Infant Mortality Rate by Selected Geographic Area



Note. Karachi-specific population-level IMR is limited; the urban proxy is used to represent urban settings while acknowledging intra-urban inequities.

Major Causes and Determinants of Mortality

Maternal causes

Timely access to antenatal care and services such as skilled birth attendance, blood transfusions, eclampsia: magnesium sulfate; postpartum hemorrhage: uterotonics; sepsis: antibiotics; surgical care will prevent these problems or may make them treatable. Delay is used as the basic framework to analyze preventable maternal

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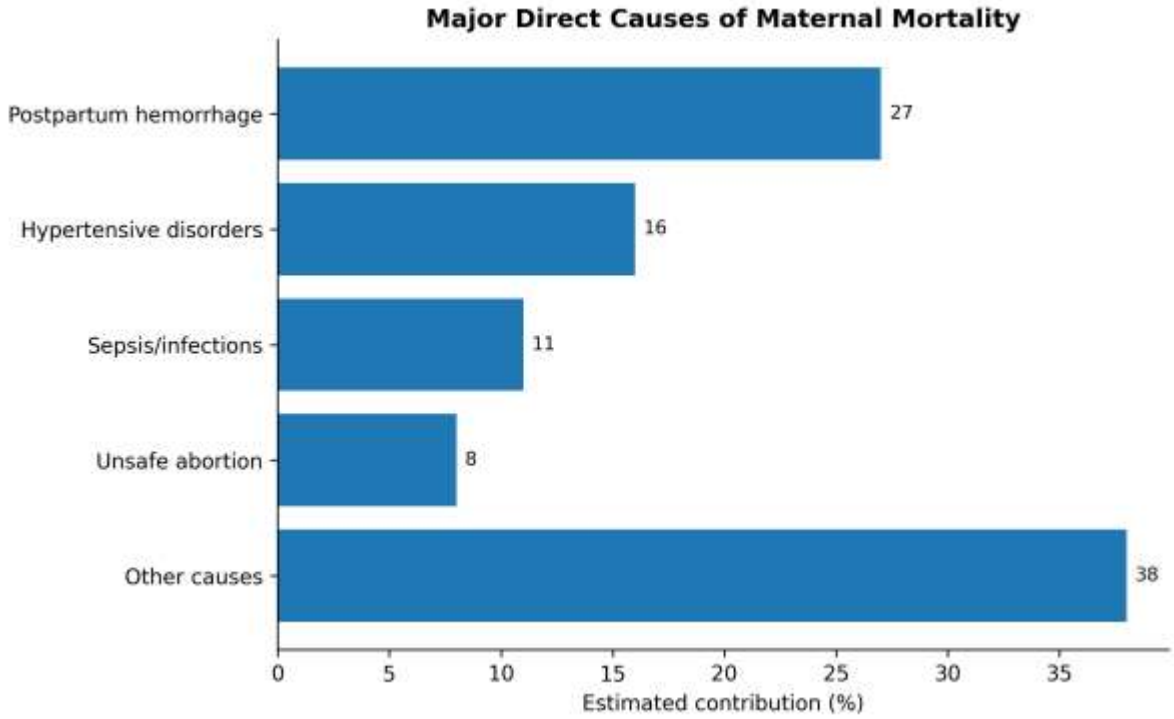
Figure 5.0. Major Direct Causes of Maternal Mortality



Note. Percentages are used for academic visualization and may be replaced with exact cause-specific proportions from a final dataset.

Infant and neonatal causes

The major causes of infant mortality include prematurity, low birth weight, birth asphyxia, neonatal infection, congenital anomalies, pneumonia, diarrhea, and malnutrition. Many deaths occur within the first 28 days of life, emphasizing the importance of skilled delivery care, immediate newborn care, thermal protection, early initiation of breastfeeding, clean cord care, neonatal resuscitation, and postnatal follow-up (UNICEF, 2024a; WHO, 2022). Post-neonatal deaths are strongly influenced by immunization coverage, breastfeeding, nutrition, WASH conditions,

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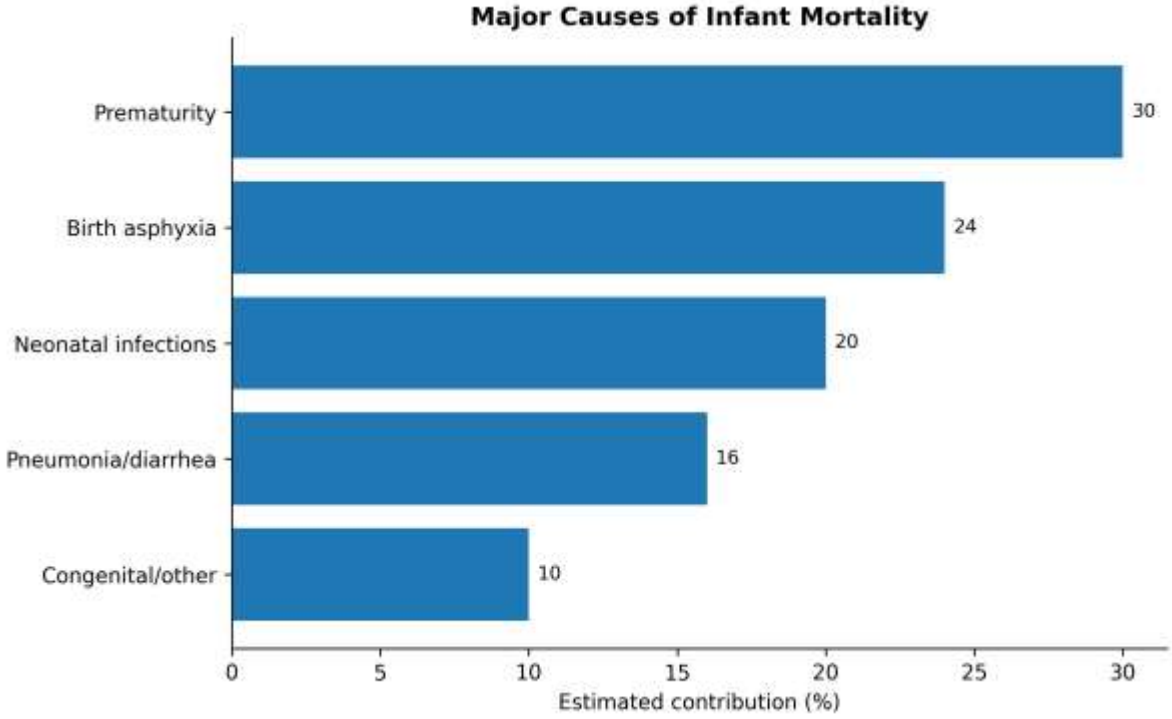
and timely treatment of pneumonia and diarrhea. Social determinants are central. Maternal education, household wealth, rural residence, women's autonomy, quality of transport, and availability of female health workers influence whether a newborn receives timely preventive and curative care. In Sindh and Karachi's low-income settlements, unsafe water, overcrowding, poor sanitation, and out-of-pocket costs can increase infection risk and delay care-seeking.

Figure 6.0. Major Causes of Infant Mortality



Note. The figure summarizes major neonatal and post-neonatal causes relevant to Pakistan and comparable low- and middle-income settings.

Table 2.0. Major Causes of Mortality and Evidence-Based Responses

Mortality area	Major causes/risk factors	Evidence-based response
Maternal mortality	Postpartum hemorrhage, eclampsia, sepsis, unsafe abortion, obstructed labor	Skilled birth attendance, EmONC, uterotonics, magnesium sulfate, antibiotics, safe referral
Neonatal mortality	Prematurity, low birth weight, birth asphyxia, neonatal sepsis	Antenatal risk detection, facility birth, neonatal resuscitation, kangaroo mother care, clean cord care, early breastfeeding
Post-neonatal infant mortality	Pneumonia, diarrhea, malnutrition, incomplete immunization, unsafe WASH	Immunization, ORS/zinc, antibiotics for pneumonia, nutrition, exclusive breastfeeding, safe water and

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Mortality area	Major causes/risk factors	Evidence-based response
		sanitation
System delays	Late decision-making, transport barriers, poor referral, poor facility readiness	Birth preparedness, ambulance/referral systems, 24/7 services, quality improvement, death review
Social determinants	Poverty, low female education, early marriage, low autonomy	Girls' education, social protection, family planning, community engagement, respectful care

Health-System Challenges

Pakistan's maternal-newborn health system includes public primary care facilities, rural health centers, district hospitals, tertiary hospitals, private facilities, community midwives, Lady Health Workers, and immunization services. Preventable deaths continue to be a persistent issue due to inequities in access to and quality of health care services, despite the existence of a comprehensive health care system with well-structured infrastructure. Most rural health care facilities are short of skilled providers (available 24/7) to deliver maternal and child health services, provide blood transfusions, have sterile operating rooms, are capable of resuscitating newborns, or provide reliable transportation for referrals. In urban areas, many poor families are dependent on the private sector for health care yet do not have access to timely care because of long wait times at overcrowded public hospitals. Therefore, while there may be universal access to facility-based deliveries—the actual availability of staff and adherence to clinical guidelines, respectful care, availability of essential medicines, and functioning referral systems—all must be assured if a reduction in mortality is to be achieved. The future success of the country in addressing these issues will require the establishment of functioning emergency obstetric and newborn care services; the creation of a quality improvement and assurance process; and ongoing evidence-based maternal and perinatal death surveillance and response activities, in addition to an increase in the number of women who deliver in a facility.. WHO recommends high-quality antenatal care, positive postnatal care, and skilled care throughout the continuum from pregnancy to newborn care (WHO, 2016, 2022).

Socioeconomic and Cultural Determinants

Maternal and infant mortality in Pakistan cannot be explained only by clinical causes. Poverty limits the ability to pay for transport, medicines, ultrasound, laboratory tests, and private maternity services. Low female education reduces awareness of danger signs, antenatal care, birth preparedness, breastfeeding, immunization, and care-seeking. Women's limited decision-making autonomy can delay hospital transfer during emergencies. Early marriage and early childbearing increase risks of obstetric complications and poor neonatal outcomes. Cultural preference for home delivery and reliance on traditional birth attendants continue in some rural communities. In conservative settings, lack of female providers can discourage women from using facilities. Myths about contraception, vaccines, colostrum, and modern maternity care

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also shape behavior. Evidence from Pakistan suggests that family decision-making, transport, cost, and perceived quality of care influence antenatal care and delivery choices (Nisar et al., 2016; Sadia et al., 2022). Interventions must therefore combine service delivery with community engagement, male involvement, women's empowerment, and locally trusted health workers.

Table 4.0. Socioeconomic and Health-System Determinants of Mortality

Determinant	Effect on maternal mortality	Effect on infant mortality	Recommended response
Poverty	Delays care-seeking and limits transport access	Increases malnutrition and delayed treatment	Transport vouchers and free maternity/newborn care
Low female education	Reduces ANC, facility delivery, and danger-sign recognition	Reduces immunization and appropriate feeding	Girls' education and community health literacy
Rural residence	Increases distance from EmONC services	Reduces access to newborn care	Strengthen BHUs, RHCs, referral and ambulance systems
Cultural norms	Promotes home birth and delayed decision-making	Delays care for sick newborns	Engage husbands, mothers-in-law, and community leaders
Health workforce shortage	Reduces skilled birth attendance	Reduces newborn assessment and follow-up	Train and deploy nurses, midwives, LHVs, and LHWs
Weak referral system	Delays emergency obstetric care	Delays neonatal emergency care	Functional referral pathways and communication systems
Poor quality of care	Leads to preventable deaths in facilities	Missed complications and poor newborn management	Clinical audits, death reviews, supervision, and quality improvement

Note. Table 4.0 summarizes social, cultural, economic, and health-system determinants that influence maternal and infant mortality in Pakistan and Sindh.

Role of Nurses and Midwives

Nurses and midwives are central to reducing maternal, neonatal, and infant deaths. Their roles include antenatal assessment, health education, danger-sign counseling, skilled birth attendance, infection prevention, management of normal labor, early recognition of complications, newborn resuscitation, breastfeeding support, immunization counseling, postnatal home visits, family planning, and referral coordination. The State of the World's Midwifery emphasizes that competent

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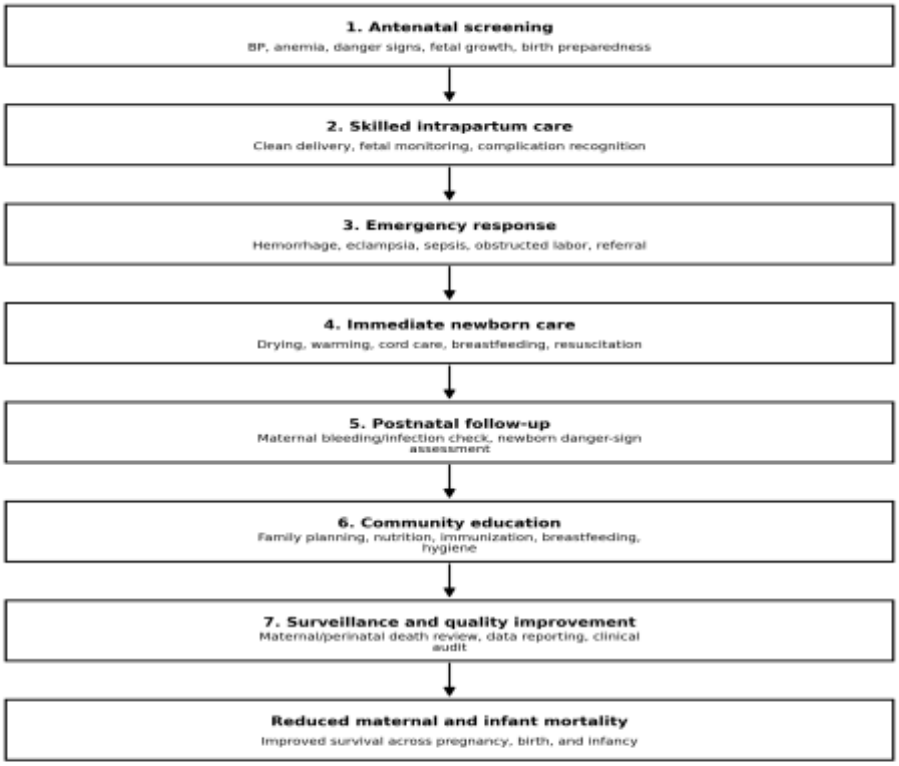
midwives integrated into supportive health systems can avert a large proportion of preventable maternal and newborn deaths (United Nations Population Fund [UNFPA], International Confederation of Midwives, & WHO, 2021). In Pakistan, the nursing and midwifery workforce remains under-resourced and unevenly distributed. Community midwives in rural Pakistan have reported financial constraints, transportation difficulties, and security concerns that limit their ability to provide basic emergency obstetric and newborn care (Kumar et al., 2023). Utilization and retention of community midwives in Thatta have also been influenced by community trust, perceived quality, mobility barriers, and the availability of referral support (Khowaja et al., 2022). It is critical to tackle these challenges in Sindh due to high maternal and neonatal deaths in rural Sindh, as well as the increasing number of complications received by Karachi referral hospitals at a later time.

Figure 8.0. Nursing and Midwifery Flow Sheet for Reducing Maternal and Infant Mortality



Note. The flow sheet shows how nurses and midwives contribute across antenatal, intrapartum, immediate newborn, postnatal, community, and quality-improvement levels.

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Table 3.0. Nursing and Midwifery Roles Across the Maternal-Infant Continuum

Continuum point	Nursing/midwifery role	Expected effect
Pre-pregnancy and family planning	Counseling on birth spacing, contraception, anemia prevention, and nutrition	Reduced high-risk pregnancies and improved maternal health
Antenatal care	Blood pressure screening, danger-sign education, tetanus vaccination, nutrition counseling, birth preparedness	Early risk identification and safer delivery planning
Labor and delivery	Skilled birth attendance, infection prevention, monitoring, active management of third stage, newborn resuscitation	Reduced hemorrhage, birth asphyxia, sepsis, and delayed referral
Postnatal care	Assessment for bleeding, infection, hypertension, breastfeeding support, newborn danger signs	Early detection of postpartum and neonatal complications
Infant health	Immunization counseling, growth monitoring, ORS/zinc education, pneumonia danger-sign referral	Reduced vaccine-preventable disease and infection-related deaths
Community outreach	Home visits, male/family engagement, referral linkage, health education in local language	Improved trust, timely care-seeking, and continuity of care

Interventions and Strategic Priorities for Pakistan and Sindh

The evidence indicates a multi-pronged approach. To begin with, Pakistan must enhance the availability of high-quality antenatal care by transitioning from few contacts with clients to providing effective coverage so that all women receive the services required to have a successful pregnancy and delivery. Some of the core components of effective antenatal care are; measuring the blood pressure, screening for anemia, providing nutrition education and counselling, preparing for birth, assessing risk to the developing fetus, administering tetanus immunization, and developing a plan for referral if a complication arises. Secondly, skilled attendance at delivery needs to be expanded, particularly in rural Sindh and in urban areas that are underserved. Towards this end, 24-hour, 7 day a week, maternity care services need to be provided, with female healthcare practitioners delivering the services; having functional basic and comprehensive emergency obstetric and newborn care; and providing ambulance services to all mothers and babies. Thirdly, postnatal care must be enhanced during the first 48-72 hours after a lady has delivered her baby, which is when the vast majority of maternal and neonatal deaths occur. Nurses, LHVs, and LHW can conduct home visits after delivery to ensure mothers are breastfeeding and to provide breastfeeding support, assess danger signs in mothers and/or infants, and to ensure timely referral of mothers and/o infants, should any complications occur. Forth, in order for infants to survive, immunizations must be improved, exclusive breast feeding must be promoted, clean cord care must be ensured, high risk infants

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who are premature must be managed, active and effective neonatal resuscitation must be provided, and infants with pneumonia or diarrhoea must receive prompt treatment; in addition to providing nutrition support as needed. Fifth, WASH (Water, Sanitation and Hygiene) and poverty sensitive interventions are necessary in low-income areas of Karachi and Rural Sindh; as infant mortality due to infection stems from the environment. Lastly, Pakistan needs to support the development of the Nursing and Midwifery Workforce. This would include creating additional places in nursing and midwifery education, improving emergency obstetric and newborn care training through simulation, enhancing incentives for rural placement, providing safe housing and transport, offering supervision, and establishing career paths for both Public Health Nursing and Advanced Midwifery Practice.

Table 5.0. Recommended Actions for Sindh and Karachi

Priority area	Recommended action	Responsible stakeholders
Emergency obstetric care	Ensure 24/7 EmONC readiness, blood transfusion, magnesium sulfate, oxytocin, antibiotics, and surgical referral	Sindh Department of Health, hospitals, PPHI, district managers
Primary maternal-newborn care	Strengthen BHUs/RHCs and maternity homes with female staff, ANC quality, postnatal care, and newborn resuscitation	PPHI Sindh, district health offices, nursing leadership
Referral system	Develop ambulance mapping, referral communication, and feedback loops between rural Sindh and Karachi hospitals	Provincial health department, Rescue/ambulance services, tertiary hospitals
Nursing and midwifery workforce	Increase recruitment, rural incentives, security, accommodation, and competency-based training	PNC/PNMC, universities, health department
Urban poor in Karachi	Establish targeted outreach in informal settlements for ANC, immunization, family planning, WASH education, and referral	District health offices, NGOs, LHW program, nursing schools
Monitoring and accountability	Implement maternal and perinatal death surveillance and response with nursing participation	Hospitals, district committees, provincial MNCH program

Discussion

The findings of this review indicate that maternal and infant mortality in Pakistan results from clinical, health-system, and social factors. While major causes of these deaths are already well-known, mortality continues to occur due to access to and quality of evidence-based interventions. The overwhelming concentration of maternal-newborn mortality in the rural and poor populations of Pakistan illustrates

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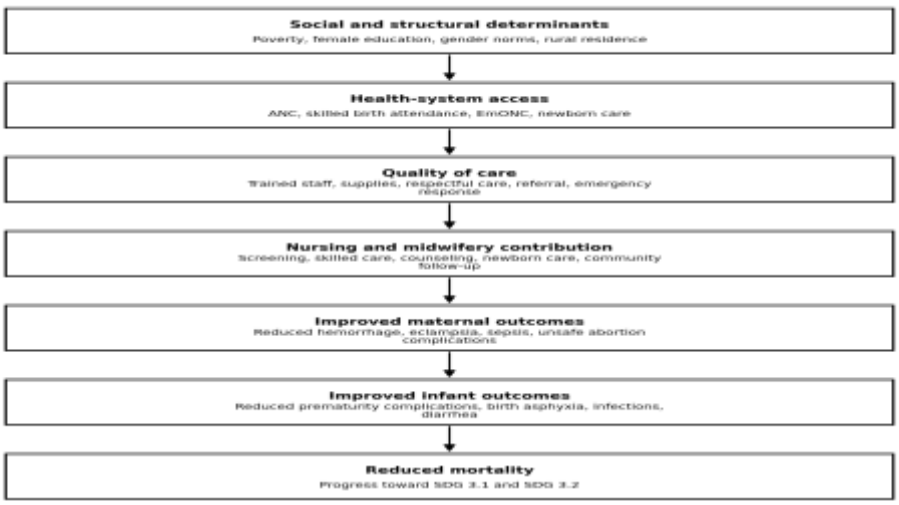
the inequities of maternal-newborn health. Within Pakistan, the province of Sindh deserves additional focus due to its higher-than-average maternal mortality rate (MMR) and the fact that women and newborns in rural districts rely greatly on the availability of timely referrals to urban medical facilities such as Karachi. Although the tertiary-care hospitals in Karachi are critical, they cannot prevent maternal and infant death occurring as a result of women and newborns unable to arrive to the facility in a timely manner; arriving without identification and screening of risk at time of presentation; or arriving to the tertiary facility following an unsuccessful referral. Therefore, efforts to strengthen peripheral maternity services, community midwifery, outreach through lady health workers (LHWs), and emergency transport services must be as much a priority as efforts to strengthen tertiary maternity care. Nurses and midwives represent a key component of the resolution of these challenges. Nurses and midwives are particularly well situated to provide respectful maternity care, identify risk early in women and newborns, establish family trust in the nurse/midwife, educate the community about reproductive health, and provide continuity of care from pregnancy through infancy. Nonetheless, the effectiveness of these initiatives hinges on sufficient staffing, high-quality education, supportive oversight, safe work environments, necessary resources, and empowerment within interdisciplinary teams. In the absence of such investment, reforms related to maternal and newborn health are likely to fall short.

Figure 7.0. Maternal-Infant Mortality Reduction Framework



Note. The conceptual framework links social determinants, health-system access, quality care, and nursing/midwifery contributions to improved maternal and infant survival.

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Limitations

This manuscript is a structured narrative review and does not include a pooled meta-analysis. Exact Karachi-level maternal and infant mortality estimates are limited; therefore, urban Sindh and referral-hospital interpretation should be used cautiously. Some global and national estimates differ because of variation in data sources, modeling methods, and survey periods. For journal submission, the search strategy should be documented in full, including databases, search dates, exact terms, screening decisions, and reasons for exclusion.

Conclusion

Maternal and infant mortality in Pakistan remain unacceptably high despite gradual improvement. Sindh and Karachi require focused, equity-oriented strategies that address both clinical care and social determinants. Preventable deaths can be reduced through high-quality antenatal care, skilled birth attendance, emergency obstetric and newborn care, postnatal follow-up, family planning, immunization, nutrition, WASH, and responsive referral systems. Nurses and midwives should be recognized as essential leaders in this agenda. Strengthening their education, deployment, safety, authority, and community role is one of the most practical pathways to achieving maternal and infant survival targets in Pakistan.

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