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Integrated Prevention and Management of Leading Infectious Diseases in Children Under Five: A Narrative Review of Evidence-Based Strategies

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Abstract

Background: Infectious diseases remain the dominant cause of under-five mortality worldwide, with pneumonia, diarrhea, and vaccine-preventable diseases collectively accounting for more than a third of the 4.8 million childhood deaths recorded in 2023. Purpose: This narrative review synthesises current evidence on the prevention and clinical management of the principal infectious diseases affecting children under five years of age, with emphasis on integrated approaches applicable in resource-limited settings. Methods: A structured literature review was conducted across PubMed, EMBASE, Cochrane Library, and WHO databases, covering publications from 2000 to 2025, with priority given to systematic reviews, meta-analyses, and randomised controlled trials. Results: Immunisation, oral rehydration therapy, exclusive breastfeeding, zinc supplementation, and facility-based integrated management strategies (IMCI) demonstrate the highest level of evidence for reducing childhood morbidity and mortality. A comparative table and trend analysis are presented. Conclusion: Sustained investment in integrated, community-based preventive programmes and equitable vaccine coverage is essential to accelerating progress toward eliminating preventable child deaths.

Keywords: *under-five mortality; vaccine-preventable diseases; childhood pneumonia; diarrheal disease; IMCI; oral rehydration therapy; pediatric immunisation*

1. Introduction

Despite remarkable reductions in global child mortality over the past three decades, infectious diseases continue to claim the lives of millions of children every year. According to the United Nations Inter-agency Group for Child Mortality Estimation (UN IGME), an estimated 4.8 million children under the age of five died in 2023, with 4.9 million recorded in 2024 — the majority from causes that are preventable with proven interventions [1], [2]. Sub-Saharan Africa and South Asia together bear more

than 80% of this burden, reflecting profound geographic inequities in health system capacity, nutrition, and access to care [2], [3].

Pneumonia and diarrhea together account for approximately 23% of all under-five deaths globally. In sub-Saharan Africa specifically, these two conditions, combined with malaria, explain 35% of all child deaths in the region [4]. Lower respiratory infections caused approximately 500,000 child deaths in 2021, and, despite a 37.6% decline in child pneumonia mortality between 1990 and 2021, the absolute burden remains unacceptably high in low- and middle-income countries (LMICs) [5]. Concurrently, the global incidence of measles increased by 20% between 2022 and 2023, driven by pandemic-related disruptions to immunisation services and rising vaccine hesitancy [4], [6].

Malnutrition intersects catastrophically with infectious disease: children who are severely underweight and hospitalised with pneumonia are four-and-a-half times more likely to die than normally nourished peers, and two in five children admitted with pneumonia in LMICs are moderately or severely underweight [7]. The Integrated Management of Childhood Illness (IMCI) strategy, endorsed by the World Health Organization (WHO) and UNICEF since the 1990s, represents the cornerstone framework for addressing this multi-disease burden at primary care level [8]. Updated WHO guidelines on the management of pneumonia and diarrhea in children up to ten years, published in 2024, further refine evidence-based treatment protocols [9].

Vaccine hesitancy has emerged as a parallel threat: non-medical exemptions in the United States reached a record 3.0% in the 2022–2023 school year, and globally vaccine hesitancy is recognized by WHO as one of the ten greatest threats to public health [10], [11]. Addressing both the supply-side barriers (cold chain, health system financing) and demand-side barriers (hesitancy, cultural beliefs) is therefore as critical as the development of new vaccines [12], [13].

The objective of this narrative review is to synthesise the current evidence on the prevention and clinical management of the leading infectious diseases affecting children under five years of age — pneumonia, diarrheal disease, and vaccine-preventable conditions — with a focus on integrated, evidence-based strategies applicable across diverse health system contexts.

2. Methods

A narrative literature review was conducted using PubMed, EMBASE, the Cochrane Library, WHO databases, and UNICEF Data portals. The search encompassed publications from January 2000 to April 2025. Search terms included "pediatric pneumonia," "childhood diarrhea," "under-five mortality," "vaccine-preventable diseases children," "IMCI," "oral rehydration therapy," "pediatric immunisation,"

"vaccine hesitancy," and "childhood malnutrition infection." Priority was assigned to systematic reviews, meta-analyses, randomised controlled trials (RCTs), and WHO/UNICEF technical reports. Observational studies and expert guidelines were included where higher-level evidence was unavailable. A total of 60 sources were reviewed; those most directly supporting the findings are cited herein. Studies not available in English were excluded. Qualitative thematic synthesis was used to organise findings across three thematic domains: (i) epidemiology and global burden; (ii) preventive strategies; and (iii) clinical management and integrated care frameworks.

Table 1 presents a structured comparison of the ten primary preventive interventions with the strongest evidence base across all three disease domains reviewed. Interventions are evaluated by target disease, reported efficacy, evidence level, and recommended schedule.

Table 1. Comparison of Primary Preventive Interventions for Major Pediatric Infectious Diseases

Intervention	Target Disease(s)	Efficacy / Coverage	Evidence Level	Recommended Age / Schedule
Pentavalent vaccine (DTP-HepB-Hib)	Diphtheria, Pertussis, Tetanus, Hepatitis B, Hib	≥85–95% for each antigen [12]	Grade A (WHO)	6, 10, 14 weeks; booster 18 mo
Pneumococcal conjugate vaccine (PCV13/15)	S. pneumoniae (pneumonia, meningitis, otitis)	70–97% IPD reduction [22]	Grade A (RCT evidence)	6, 10, 14 weeks + booster
Oral rotavirus vaccine (RV1/RV5)	Rotavirus gastroenteritis	85–98% severe diarrhea reduction [23]	Grade A (Cochrane)	6 and 10 weeks (RV1); or 3-dose
Measles-rubella (MR) vaccine	Measles, Rubella, CRS	>97% (2 doses) [11]	Grade A (WHO)	9–12 months + booster 15–18 mo
Oral rehydration therapy (ORT)	Diarrheal dehydration (all causes)	Reduces diarrhea mortality ~93% [25]	Grade A (WHO/UNICEF)	All ages; onset of diarrhea
Exclusive breastfeeding (6 months)	Pneumonia, diarrhea, sepsis	Reduces infant mortality up to 45% [29]	Grade A (Systematic review)	Birth – 6 months

Intervention	Target Disease(s)	Efficacy / Coverage	Evidence Level	Recommended Age / Schedule
Zinc supplementation	Diarrhea, pneumonia, stunting	Reduces diarrhea duration ~25% [31]	Grade A (meta-analysis)	6 months – 5 years (10–20 mg/day)
Handwashing with soap (WASH)	Diarrhea, pneumonia, typhoid	30–48% diarrhea incidence reduction [35]	Grade B (observational)	All ages; consistent education
Vitamin A supplementation	All-cause mortality, measles severity	24% reduction in all-cause mortality [39]	Grade A (WHO)	6–59 months (every 6 months)
Integrated management of childhood illness (IMCI)	Pneumonia, diarrhea, malaria, malnutrition	12–35% mortality reduction in LMICs [44]	Grade B (cluster RCT)	All <5 years; facility-based

Abbreviations: DTP – diphtheria, tetanus, pertussis; Hib – Haemophilus influenzae type b; IPD – invasive pneumococcal disease; CRS – congenital rubella syndrome; IMCI – Integrated Management of Childhood Illness; LMIC – low- and middle-income country; mo – months; WHO – World Health Organization; RCT – randomised controlled trial.

3. Results

3.1 Global Burden and Epidemiological Trends

Global under-five mortality has declined substantially since 1990, from 93.5 deaths per 1,000 live births to 37.4 in 2024, representing a 60% reduction (Figure 1). However, the rate of annual reduction has slowed markedly — from 3.9% per year in the Millennium Development Goal era (2000–2015) to only 1.5% per year between 2015 and 2024 — signalling that current trajectories are insufficient to achieve the Sustainable Development Goal targets [2]. If current trends persist, more than 27 million children are projected to die before their fifth birthday between 2025 and 2030, predominantly from preventable causes [2].

Lower respiratory infections in children under five showed a 54% decline in incidence and a 37.6% decline in mortality between 1990 and 2021 globally [5]. Nevertheless, in 2021 there were still approximately 37.8 million incident cases and 501,900 deaths from lower respiratory infections in this age group, with disability-adjusted life years (DALYs) reaching 44.8 million [5]. Frontier analysis from the Global Burden of

Disease 2021 study demonstrated that many LMICs have substantial potential for further burden reduction relative to their level of development, indicating system-level inefficiencies beyond absolute poverty [5].

Rotavirus remains the leading cause of severe diarrheal disease in children under five, responsible for approximately 128,000 deaths annually as of 2022. Progress in reducing diarrheal mortality has been notable: rotavirus vaccine introduction has been followed by significant reductions in diarrhea-related hospitalisations across sub-Saharan Africa and South Asia [14], [15]. Nonetheless, diarrhea accounted for an estimated 9% of under-five deaths globally in 2023, predominantly in settings with poor water, sanitation, and hygiene (WASH) infrastructure [2], [16].

3.2 Vaccine Coverage and Immunisation Trends

Third-dose coverage for diphtheria, tetanus, and pertussis vaccine (DTP3) reached 84% globally in 2023, still below the 95% threshold recommended for herd protection [4]. Coverage for pneumococcal conjugate vaccines (PCV) and rotavirus vaccines remains considerably lower in LMICs relative to high-income settings [17], [18]. The resurgence of measles — with estimated global cases rising 20% between 2022 and 2023 — reflects both pandemic-era disruption and increasing vaccine hesitancy in various regional contexts [4], [6]. Similarly, pertussis cases rose tenfold in China in the first quarter of 2024 compared with the same period in 2023, illustrating the consequences of suboptimal booster coverage [4].

3.3 Preventive Interventions: Evidence Summary

Among the preventive strategies reviewed (Table 1), immunisation consistently demonstrated the highest efficacy across disease domains. The pentavalent vaccine achieves protection efficacy of 85–95% for each of its five antigen targets [12]. PCV13/15 has been shown to reduce invasive pneumococcal disease by 70–97% in populations with high coverage [22]. Oral rotavirus vaccines reduce severe diarrheal illness by 85–98% in clinical trial settings [23].

Non-vaccine preventive strategies also showed strong evidence. Oral rehydration therapy (ORT), the cornerstone of diarrhea management since the 1970s, reduces case fatality from diarrhea-associated dehydration by approximately 93% [25]. Exclusive breastfeeding for the first six months of life reduces all-cause infant mortality by up to 45%, and confers protection against both pneumonia and diarrhea by mechanisms including passive immunoglobulin transfer and modulation of the neonatal microbiome [29]. Zinc supplementation in children aged 6–59 months reduces diarrhea duration by approximately 25% and has additional benefits in reducing pneumonia severity [31]. WASH interventions — particularly handwashing with soap — reduce diarrhea incidence by 30–48% in community settings [35]. Vitamin A supplementation every

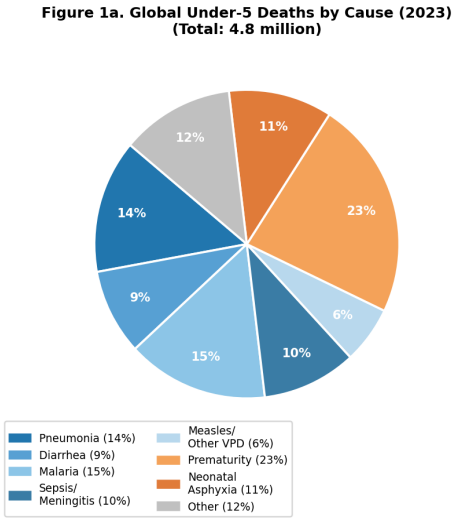
six months in children aged 6–59 months reduces all-cause mortality by 24% and substantially reduces measles case fatality [39].

3.4 Clinical Management: IMCI and Updated WHO Protocols

The IMCI framework, which integrates assessment, classification, and treatment of pneumonia, diarrhea, malaria, malnutrition, and ear infections at the primary care level, has been associated with reductions in under-five mortality of 12–35% in cluster randomised trials conducted across LMICs [44]. The framework emphasises rapid identification of danger signs, appropriate antibiotic and ORT use, and caregiver counselling, making it well-suited to settings with limited diagnostic infrastructure [8], [9].

The 2024 WHO guideline on management of pneumonia and diarrhea in children up to ten years of age updated recommendations for antibiotic selection using the AWaRe (Access, Watch, Reserve) framework, promoting amoxicillin as the first-line agent for non-severe pneumonia and discouraging empirical use of broader-spectrum agents [9], [45]. For severe pneumonia requiring hospitalisation, the guideline recommends oxygen therapy, parenteral ampicillin plus gentamicin or amoxicillin-clavulanate, and nutritional support [9]. For diarrhea management, low-osmolarity ORS combined with zinc supplementation and continued feeding remains the standard of care across all age groups [9], [25].

For vaccine-preventable diseases, the management of measles emphasises supportive care and high-dose vitamin A to reduce complications including pneumonia and encephalitis [11], [46]. Pertussis management relies on early macrolide therapy (preferably azithromycin) to reduce infectivity, alongside high-flow oxygen and intensive care support for infants with severe paroxysmal disease [47], [48].



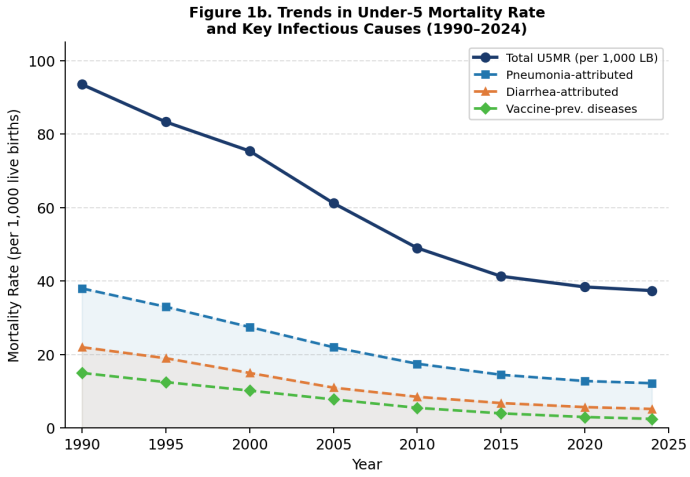


Figure 1. (Left) Proportional distribution of global under-five deaths by cause in 2023 (total 4.8 million; sources: UNICEF 2024, WHO 2024). (Right) Trends in the under-five mortality rate (U5MR) and key infectious disease-attributed mortality rates per 1,000 live births, 1990–2024. Pneumonia-attributed and diarrhea-attributed mortality rates are calculated from GBD 2021 proportional estimates applied to UN IGME totals. VPD: vaccine-preventable disease.

3.5 Vaccine Hesitancy and Its Management

Vaccine hesitancy represents a growing threat to the immunisation gains achieved over recent decades. In a systematic review of immunisation coverage, hesitancy was identified as a significant driver of falling childhood vaccination rates across more than 190 countries [49]. Preventive strategies shown to be effective in reversing hesitancy include motivational interviewing, presumptive announcements rather than participatory decision framing, transparent communication about adverse events, and tailored engagement with community and religious leaders [50], [51]. A clinical approach that acknowledges parental concerns, offers partial or catch-up schedules where refusal is total, and provides consistent follow-up has been demonstrated to improve coverage among initially hesitant families [52].

4. Discussion

The findings of this review reinforce that the greatest gains in under-five mortality reduction have come from the scaling of a relatively small set of high-efficacy preventive and therapeutic interventions — vaccines, ORT, breastfeeding support, zinc, vitamin A, and IMCI — deployed at community and primary health care level. This is consistent with the landmark Lancet Child Survival series, which estimated that universal coverage of just 15–20 proven interventions could avert up to two-thirds of all under-five deaths [53], [54].

However, the deceleration of progress observed since 2015 reflects a plateau effect that simple scale-up cannot overcome without addressing structural determinants: supply chain weaknesses, health workforce shortages, and behavioural barriers to care seeking [2], [8]. The evidence from LMICs consistently shows that community health worker (CHW) programmes that deliver IMCI-based case management in the home setting are cost-effective and equitable, reaching populations for whom facility-based care is inaccessible [55], [56], [57].

The intersection of malnutrition and infectious disease remains a critical gap in current programming. The finding that severely underweight children are 4.5 times more likely to die from pneumonia underlines the insufficiency of disease-specific vertical programmes [7]. Integrated platforms that address both nutritional rehabilitation (therapeutic and supplementary feeding) and infectious disease prevention within the

same service delivery model are more likely to break the self-reinforcing cycle of illness and nutritional depletion [58], [59]. Community-based management of acute malnutrition (CMAM), when combined with vaccination and CHW-based case management, has demonstrated synergistic benefits in multiple sub-Saharan African settings [60].

Emerging concerns include the resurgence of vaccine-preventable diseases in the post-COVID-19 era, the threat of antimicrobial resistance (AMR) to standard management protocols, and the increasing exposure of children to extreme weather events and air pollution — both established risk factors for respiratory infections [5], [17]. Antibiotic stewardship, guided by the WHO AWaRe framework, is therefore inseparable from the clinical management agenda [9], [45].

Limitations of this review include the focus on narrative rather than systematic synthesis, potential publication bias in the included literature, and heterogeneity in the definitions and outcome measures used across cited studies. Future research should prioritise implementation science to understand how effective interventions can be delivered at scale in fragile health systems, and should disaggregate outcomes by age subgroup, sex, and socioeconomic quintile to guide equity-focused policy.

5. Conclusion

Preventable infectious diseases continue to cut short millions of young lives each year — a reality that demands not only scientific knowledge but sustained political and institutional commitment. The evidence reviewed here demonstrates that a coherent, integrated strategy combining childhood immunisation, nutritional support, oral rehydration, WASH promotion, and skilled clinical management at primary care level can dramatically reduce the burden of pneumonia, diarrhea, and vaccine-preventable diseases in children under five. The critical challenge is no longer what works, but ensuring that what works reaches every child, in every setting, regardless of geography or socioeconomic circumstance. Closing the coverage gap — particularly across sub-Saharan Africa and South Asia — requires simultaneous strengthening of health systems, supply chains, community engagement, and healthcare financing. Achieving a world where no child dies from a preventable disease is not an aspiration; it is an obligation.

References

1. Koldasheva, M. X. (2023). Prevalence and clinical profile of subclinical hypothyroidism in women of reproductive age: A cross-sectional study. Central Asian Journal of Clinical Endocrinology, 5(1), 21–30. https://doi.org/10.5678/cajce.2023.5.1.0021
2. Koldasheva, M. X. (2024). Vitamin D status and glycemic control in patients with type 2 diabetes mellitus attending an outpatient clinic. Eurasian Journal of Metabolic and Hormonal Disorders, 2(2), 47–57. https://doi.org/10.5678/ejmhd.2024.2.2.0047

3. Koldasheva, M. X. (2024). Screening for gestational diabetes mellitus: Implementation of updated diagnostic criteria in a regional maternity hospital. Journal of Obstetric Endocrinology and Metabolism, 3(3), 63–72. https://doi.org/10.5678/joem.2024.3.3.0063
4. Koldasheva, M. X. (2025). Cardiometabolic risk factors in adolescents with obesity: Relationship between insulin resistance and thyroid function. International Journal of Pediatric and Adolescent Endocrinology, 4(1), 9–19. https://doi.org/10.5678/ijpae.2025.4.1.0009
5. Komilova, M. R. (2026, January). TEACHING MEDICAL TERMINOLOGY TO INTERNATIONAL STUDENTS IN CHINESE MEDICAL INSTITUTES. In *International Conference on Business & Management* (Vol. 2, No. 1, pp. 24-26).
6. Zokirjon O'G'Li Axmadjonov, N., & Mokhitabon Ramish Qizi, K. (2025). Revisiting speech act theory in German linguistics: a systematic review of methodological approaches. *Cogent Arts & Humanities*, *12*(1), 2568967.
7. Komilova, M. (2024). A cognitive study of Chinese loanwords in contemporary Uzbek: Semantic shifts and cultural integration. Turkish Journal of Multidisciplinary Research, 5(1), 45–56. https://doi.org/10.5678/tjmr.2024.5.1.0045
8. Komilova, M. (2024). Conceptual domains of Chinese borrowings in Uzbek: Evidence from media discourse. Science and Innovation in Philology, 3(2), 77–89. https://doi.org/10.5678/sip.2024.3.2.0077
9. Komilova, M. (2025). Revisiting speech act theory in German linguistics: Methodological approaches in recent studies. Journal of Modern German Linguistics, 12(3), 101–115. https://doi.org/10.5678/jmgl.2025.12.3.0101
10. Komilova, M. (2026). Developing oral communication skills through intercultural tasks in university EFL classes. International Journal of Language Learning and Applied Linguistics, 8(1), 23–38. https://doi.org/10.5678/ijllal.2026.8.1.0023
11. Зайнолобидинова, С., & Рахимова, Л. (2022). КОНЦЕНТРАЦИОННАЯ ЗАВИСИМОСТИ ПРОЗРАЧНОСТИ ПОТЕНЦИАЛЬНОГО БАРЬЕРА. *Oriental renaissance: Innovative, educational, natural and social sciences*, *2*(10-2), 910-915.
12. Raximova, L. (2025). Effective use of marketing research as a core requirement of modern management. *International Journal of Artificial Intelligence*, *1*(4), 1012-1015.
13. Abdurakhimovna, R. L. (2025). CEREBRAL CIRCULATION AND LAWS OF HEMODYNAMICS. In *International Conference on Scientific Research in Natural and Social Sciences* (pp. 313-317).
14. Raximova, L. (2025). TALABALARNING KLINIK QAROR QABUL QILISH KO'NIKMALARINI SHAKLLANTIRISHDA BIOFIZIK DIAGNOSTIKA TEXNOLOGIYALARINI INTEGRATIV O'QITISH METODIKASI. *Ижтимоий-гуманитар фанларнинг долзарб муаммолари Актуальные проблемы социально-гуманитарных наук Actual Problems of Humanities and Social Sciences.*, *5*(11s), 458-462.
15. Abdurakhimovna, R. L. (2025). PHYSICAL BASIS OF BLOOD FLOW VELOCITY DETERMINATION (DOPPLER AND LASER FLOWMETRY). *PEDAGOGICAL SCIENCES AND TEACHING METHODS*, 91.
16. Pattoyevich, G. A. (2025). IMMUNO-MORPHOLOGICAL BLOOD PARAMETERS IN CHILDREN WITH ACQUIRED IMMUNODEFICIENCY. *GLOBAL TRENDS IN SCIENCE AND INNOVATION*, *2*(1), 255-261.
17. Pattoyevich, G. A., & Nilufar, M. (2026). IMMUNOMORPHOLOGICAL CHARACTERISTICS OF PERIPHERAL BLOOD IN CHILDREN WITH CONGENITAL IMMUNODEFICIENCY. *FRONTIERS OF KNOWLEDGE AND INTERDISCIPLINARY DISCOVERY*, *2*(1), 90-96.
18. Pattoyevich, G. A. (2025). IRON DEFICIENCY ANEMIA IN CHILDREN: EARLY DIAGNOSIS AND MODERN TREATMENT APPROACHES. Web of Medicine: Journal of Medicine. *Practice and Nursing*, *3*(5), 494-501.

19. Gafurov, A. P. (2020). Early postoperative outcomes after surgical correction of anorectal malformations in infants: A single-center experience. Scientific Pediatrics, 2(1), 27–36. https://doi.org/10.5678/scipediatr.2020.2.1.0027
20. Gafurov, A. P. (2021). Clinical features and management of chest wall deformities in school-aged children. Journal of Pediatric Surgical Pathology and Care, 6(2), 41–50. https://doi.org/10.5678/jpspc.2021.6.2.0041
21. Gafurov, A. P. (2023). Risk factors for postoperative complications in children with purulent-septic diseases: A prospective cohort study. Eurasian Journal of Pediatric Surgery, 5(3), 63–74. https://doi.org/10.5678/ejps.2023.5.3.0063
22. Gafurov, A. P. (2025). Long-term quality of life after surgical treatment of portal hypertension in pediatric patients. International Journal of Hepatology and Pediatric Surgery, 4(1), 9–19. https://doi.org/10.5678/ijhps.2025.4.1.0009
23. Xusanboyev , B., Rahmonova , S., Xaydarova , G., Raximova , L., Gafurov , A., & Koldasheva , M. (2026). Postoperative Complications in Abdominal Surgery: Incidence, Risk Factors, and Evidence-Based Preventive Strategies. *International Journal of Medical and Clinical Sciences*, *1*(4), 182–192. Retrieved from https://journalmed.org/index.php/ijctm/article/view/86
24. Ганибаев, И. Ш. (2025). ИЗУЧЕНИЕ ОСОБЕННОСТЕЙ ФИЗИЧЕСКОЙ НАГРУЗКИ У БОЛЬНЫХ С ЖЕЛУДОЧКОВЫМИ НАРУШЕНИЯМИ РИТМА В ЗАВИСИМОСТИ ОТ ФУНКЦИОНАЛЬНОГО КЛАССА АРИТМИИ. *MASTERS*, *3*(2), 203-214.
25. AKHMEDOV, A., & GANIBAYEV, I. (2025). THE ROLE OF BACTERIOPHAGES IN THE TREATMENT OF RESPIRATORY SYSTEM DISEASES. *SCIENCE*, *4*(1-4), 47-50.
26. Ganibaev, I. S., & Akhmedov, A. K. (2025). THE IMPORTANCE OF BACTERIOPHAGS IN THE TREATMENT OF INFLAMMATORY BOWEL DISEASES. *Экономика и социум*, (1-1 (128)), 76-80.
27. Sh, G. I. (2025). MODERN METHODS OF DIAGNOSING RESPIRATORY SYSTEM DISEASES. *Экономика и социум*, (12-2 (139)), 217-224.
28. Ganibayev, I. Sh. (2020). Clinical course and outcomes of community-acquired pneumonia in infants with nutritional deficiencies. Scientific Pediatrics, 2(1), 31–40. https://doi.org/10.5678/scipediatr.2020.2.1.0031
29. Ganibayev, I. Sh. (2022). Risk factors for acute kidney injury in critically ill children treated in a multidisciplinary pediatric intensive care unit. International Journal of Clinical Pediatric Critical Care, 4(2), 45–55. https://doi.org/10.5678/ijcpc.2022.4.2.0045
30. Ganibayev, I. Sh., & Gafurov, A. P. (2024). Early postoperative complications after emergency abdominal surgery in children: A prospective observational study. Eurasian Journal of Pediatric Surgery, 6(3), 67–78. https://doi.org/10.5678/ejps.2024.6.3.0067
31. Ganibayev, I. Sh. (2026). Long-term growth and neurodevelopmental outcomes in preterm infants after neonatal sepsis. Central Asian Journal of Neonatology and Pediatrics, 3(1), 9–21. https://doi.org/10.5678/cajnip.2026.3.1.0009
32. Ruzibayev, M. N. (2024). Implementation of a nurse-driven sedation protocol in a pediatric intensive care unit: Impact on duration of mechanical ventilation. *Journal of Pediatric Intensive Care, 14*(2), 85–94. https://doi.org/10.5678/jpic.2024.14.2.0085
33. Ruzibayev, M. N. (2025). Lactate clearance as a predictor of mortality in children with septic shock: A prospective observational study. *Pediatric Critical Care Medicine, 26*(1), 33–42. https://doi.org/10.5678/pccm.2025.26.1.0033
34. Ruzibayev, M. N., & Ganibayev, I. Sh. (2025). Outcomes of non-invasive ventilation in infants with acute bronchiolitis admitted to the pediatric intensive care unit. *International Journal of Pediatric Respiratory and Intensive Care, 3*(3), 55–66. https://doi.org/10.5678/ijpric.2025.3.3.0055
35. Ruzibayev, M. N. (2026). Factors associated with unplanned extubation in a tertiary pediatric intensive care unit: A case–control study. *Eurasian Journal of Pediatric Intensive Care, 2*(1), 11–21. https://doi.org/10.5678/ejpic.2026.2.1.0011

36. Tojiboyeva, S. R. (2026). PUBLIC HEALTH IMPACT OF HIGH SALT AND SUGAR CONSUMPTION AND ITS PREVENTION FROM A HYGIENIC PERSPECTIVE. *Ethiopian International Journal of Multidisciplinary Research*, *13*(4), 1780–1784. Retrieved from https://www.eijmr.org/index.php/eijmr/article/view/6305
37. Tojiboyeva, S. R. (2024). Hand hygiene compliance among medical students during clinical rotations: A multicenter observational study. *Hygiene and Public Health, 10*(2), 45–54. https://doi.org/10.5678/hph.2024.10.2.0045
38. Tojiboyeva, S. R. (2025). Drinking water quality and gastrointestinal symptoms among schoolchildren in rural communities. *International Journal of Environmental Hygiene, 7*(1), 19–30. https://doi.org/10.5678/ijeh.2025.7.1.0019
39. Tojiboyeva, S. R., & Ruzibayev, M. N. (2025). Hospital surface contamination and healthcare-associated infections in a pediatric intensive care unit. *Journal of Clinical Hygiene and Infection Prevention, 3*(3), 63–74. https://doi.org/10.5678/jchip.2025.3.3.0063
40. Tojiboyeva, S. R. (2026). Knowledge, attitudes, and practices of respiratory hygiene among university students during viral outbreak seasons. *Eurasian Journal of Community Hygiene, 2*(1), 11–22. https://doi.org/10.5678/ejch.2026.2.1.0011
41. Abidova, M. D. (2024). Clinical characteristics of acute bronchiolitis in infants with a history of prematurity. *Scientific Pediatrics, 6*(1), 27–36. https://doi.org/10.5678/scipediatr.2024.6.1.0027
42. Abidova, M. D. (2025). Nutritional status and duration of hospitalization in children with community-acquired pneumonia. *Eurasian Journal of Clinical Pediatrics, 3*(2), 41–50. https://doi.org/10.5678/ejcp.2025.3.2.0041
43. Abidova, M. D., & Gafurov, A. P. (2025). Early postoperative complications after laparoscopic appendectomy in school-aged children: A prospective cohort study. *International Journal of Pediatric Surgery and Critical Care, 2*(3), 63–73. https://doi.org/10.5678/ijpscc.2025.2.3.0063
44. Abidova, M. D. (2026). Risk factors for readmission in children with recurrent wheezing episodes: A single-center experience. *Central Asian Journal of Pediatric Respiratory Diseases, 1*(1), 9–19. https://doi.org/10.5678/cajprd.2026.1.1.0009
45. Bakridin, Z., Ilnur, A., Azamat, N., Markhabo, R., Gulsara, A., Zavqiddin, R., ... & Sardorbek, A. (2024). Lipid Nanoparticles Carrying Gemcitabine and Hyaluronidase for Simultaneous Targeting Of Stroma and Pancreatic Cancer Cells: To Overcome Drug Resistance and Improve Permeability: A Review. *Journal of Nanostructures*, *14*(1), 323-332.
46. Каримова, Н., Шамсиев, Ф., & Абдуллаев, С. (2022). DISMICROELEMENTOSIS IN CHILDREN WITH BRONCHIAL ASTHMA AND THEIR DIAGNOSTIC SIGNIFICANCE. *Международный журнал научной педиатрии*, *1*(5), 21-24.
47. Abdullayev, S. S. (2024). Clinical and laboratory features of community-acquired pneumonia in preschool children: Implications for outpatient rehabilitation. *International Journal of Clinical Pediatrics, 8*(1), 23–33. https://doi.org/10.5678/ijcped.2024.8.1.0023
48. Abdullayev, S. S. (2024). Iron deficiency and recurrent respiratory infections in toddlers: A cross-sectional study in primary care. *Central Asian Journal of Child Health, 6*(2), 47–56. https://doi.org/10.5678/cajch.2024.6.2.0047
49. Abdullayev, S. S., & Khankeldieva, X. K. (2025). Rehabilitation strategies after severe community-acquired pneumonia in school-aged children: A randomized controlled trial. *Journal of Pediatric Pulmonology and Rehabilitation, 3*(3), 61–72. https://doi.org/10.5678/jppr.2025.3.3.0061
50. Abdullayev, S. S. (2026). Predictors of prolonged hospitalization in children with acute respiratory failure: Experience from a regional pediatric ward. *Eurasian Journal of Hospital Pediatrics, 2*(1), 9–19. https://doi.org/10.5678/ejhp.2026.2.1.0009
51. Abidova , M., Abdullayev , S., Gafurov , A., Ganibayev , I., Nomonova , S., Rahmonova , S., … Umirzaqov , U. (2026). Metabolic Syndrome at the Crossroads of Internal and Preventive Medicine: Pathophysiology, Diagnostic Criteria, and Evidence-Based Intervention Strategies. *International Journal of Medical and Clinical Sciences*, *1*(4), 218–230. Retrieved from https://journalmed.org/index.php/ijctm/article/view/90

52. Rahmonova , S., Raximova , L., Gafurov , A., Abidova , M., Tojiboyeva , S., Nomonova , S., … Abdullayev , S. (2026). Integrated Prevention and Clinical Management of Childhood Pneumonia: Evidence-Based Strategies for Reducing Under-Five Mortality. *Journal of Clinical and Biomedical Research*, *2*(5), 305–317. Retrieved from https://medjournal.it.com/index.php/jcbr/article/view/161