Maternal-Child Health

Progress in maternal, newborn, and child health in cities in sub-Saharan Africa: Are wide inequities holding back cities?

This article examines persistent disparities in maternal, newborn, and child health progress across urban settings in sub-Saharan Africa. Drawing on urban health data, the authors explore whether gains in key indicators—such as antenatal care coverage, skilled birth attendance, and child immunisations—are being experienced uniformly across city populations. The analysis suggests that despite overall improvements, significant inequities remain between different urban subpopulations, often tied to socioeconomic deprivation, informal settlement residence, and insufficient access to healthcare services. The authors argue that unless interventions are tailored to address the needs of underserved urban groups, upcoming sustainable development goals may remain out of reach. Urban health planning must explicitly incorporate equity-focused strategies to ensure no one is left behind in cities.

Reference

Faye CM, Mberu B, Boerma T. Progress in maternal, newborn, and child health in cities in sub-Saharan Africa: Are wide inequities holding back cities? *J Urban Health*. 2024 Nov;101(Suppl 1):1–4. doi:10.1007/s11524-024-00936-x.

Steps for operationalizing global guidance on nutrition interventions in antenatal care: Lessons learned in four countries.

Implementing the World Health Organization's nutrition guidelines within antenatal care (ANC) services requires context-adapted strategies. This study outlines the process of integrating a package of scalable nutrition interventions—including micronutrient supplementation (iron-folic acid, calcium), dietary counseling, gestational weight monitoring, and breastfeeding preparation—across four low-to-middle income countries: Bangladesh, Burkina Faso, Ethiopia, and India. Using randomized controlled external evaluations (2014–2022), the researchers co-designed deployment models alongside national ANC stakeholders and community partners. Intervention components encompassed health systems strengthening, community mobilization, and behavior-change communication. Outcomes included significant increases in coverage of nutrition counseling, micronutrient adherence, and ANC attendance, as well as improvements in dietary diversity and breastfeeding practices. Key lessons highlighted the importance of joint planning with policymakers, adapting service delivery protocols, ensuring supply chains, equipping health workers, and mobilizing household support. The findings demonstrate that a contextualized nutrition package can be effectively embedded into ANC and positively influence maternal and child outcomes in diverse settings.

Reference

Sanghvi T. Steps for operationalizing global guidance on nutrition interventions in antenatal care: Lessons learned in four countries. *BMC Proceedings*. 2024;18(5)\:O50.

Comparing adverse maternal and neonatal outcomes in adolescent versus adult mothers in sub-Saharan Africa

Objective: Adolescent pregnancy is a major public health and social issue, with known associations to poorer pregnancy outcomes. This study compared adverse outcomes between adolescents (13–19 years) and adult mothers (20–35 years) delivering at Korle-Bu Teaching Hospital in Accra, Ghana.

Methods: A comparative cross-sectional design included 110 adolescents and 220 adult mothers (Nov 2016–Feb 2017). Data on sociodemographics, antenatal care, delivery, and maternal–perinatal outcomes were collected via interviews and hospital records. SPSS 16 was used for data analysis.

Results: The adolescent pregnancy incidence was 5.1%. Adolescents were approximately three times more likely than adults to experience eclampsia, although preeclampsia occurred more commonly in adults. Adolescents residing in suburban areas were also more likely to suffer adverse perinatal outcomes than their adult counterparts.

Conclusion: Beyond social and biological vulnerabilities, adolescent mothers face significantly higher maternal and neonatal risks—including elevated eclampsia rates. The findings underscore the urgency of tailored interventions and enhanced support systems to mitigate adverse outcomes in this population.

Reference

Onuzo CN, Sefogah PE, Damale NK, Boafor TK, Swarray-Deen A, Mumuni K. Comparing adverse maternal and neonatal outcomes in adolescent versus adult mothers in sub-Saharan Africa. medRxiv [Preprint]. 2024 Jan 4; doi:10.1101/2024.01.04.24300852.

Impact of secondary and tertiary neonatal interventions on neonatal mortality in a low-resource limited setting hospital in Uganda: A retrospective study.

To assess how secondary and tertiary-level neonatal interventions affect neonatal mortality over 11 years at Nsambya Hospital, Uganda. Interrupted time-series analysis of neonatal admissions and deaths across two phases—Phase I (secondary interventions, 2007–2014) and Phase II (tertiary interventions, 2015–2020). Among 25,316 admitted neonates, 1,853 (7.3%) died. Inpatient mortality significantly declined from 8.2% in Phase I to 5.7% in Phase II ($p = 0.001$). Case-fatality rates (CFR) for prematurity dropped from 16.2% to 9.2% ($p = 0.001$), and perinatal asphyxia CFR reduced modestly (14.9% to 13.0%; $p = 0.34$). However, CFR for neonatal sepsis more than doubled (3% to 6.8%; $p = 0.001$). Secondary and tertiary neonatal care improvements are feasible and beneficial in low-resource contexts, significantly reducing mortality—especially among premature and asphyxiated newborns. The increased sepsis-related deaths highlight the critical need for strengthening infection-control measures.

Reference

Kirabira VN, Nakaggwa F, Nazziwa R, Nalunga S, Nasiima R, Nyagabyaki C, Sebunya R, Latigi G, Pirio P, Ahmadzai M, Ojom L, Nabwami I, Burgoine K, Blencowe H. Impact of secondary and tertiary neonatal interventions on neonatal mortality in a low- resource limited setting hospital in Uganda: a retrospective study. BMJ Open. 2022 Aug 11;12(8):e055698. doi: 10.1136/bmjopen-2021-055698. PMID: 35953254; PMCID: PMC9379481.

Urology

A review of bladder cancer in Sub-Saharan Africa: A different disease, with a distinct presentation, assessment, and treatment.

Cancer of the bladder is the ninth leading cause of cancer in developed countries. It is the second most common urological malignancy. Transitional cell carcinoma (TCC) is the most common histological subtype in developed countries. In most of Africa, the most common type is squamous cell carcinoma (SCC). Cancer of bladder guidelines produced by the European Urological Association and the American Urological Association, including the tumor, node, and metastasis staging is focused on TCC of the bladder. The purpose of the study is to review the pathogenesis, pathology, presentation, and management of cancer of the bladder in Africa and to use this information to propose a practical staging system for SCC. The study used the meta-analysis guideline provided by PRISMA using bladder cancer in Africa as the key search word. The study collected articles available on PubMed as of July 2017, Africa Online and Africa Index Medicus. PRISMA guidelines were used to screen for full-length hospital-based articles on cancer of the bladder in Africa. These articles were analyzed under four subcategories which were pathogenesis, pathology, clinical presentation, and management. The information extracted was pooled and used to propose a practical staging system for use in African settings. The result of evaluation of 821 articles yielded 23 full-length papers on hospital-based studies of cancer of the bladder in Africa. Cancer of the bladder in most of Africa is still predominantly SCC (53%-69%). There has been a notable increase in TCC in Africa (9%-41%). The pathogenesis is mostly schistosoma-related SCC presents late with painful hematuria and necroturia (20%). SCC responds poorly to chemotherapy or radiotherapy. The main management of SCC is open surgery. This review allowed for a practical organ-based stage of SCC of the bladder that can be used in Africa. Bladder cancer in Africa presents differently from that in developed countries. Guidelines on cancer of the bladder may need to take account of this to improve bladder cancer management in Africa.

Reference

Bowa K, Mulele C, Kachimba J, Manda E, Mapulanga V, Mukosai S. A review of bladder cancer in Sub-Saharan Africa: A different disease, with a distinct presentation, assessment, and treatment. Ann Afr Med. 2018 Jul-Sep;17(3):99-105. doi: 10.4103/aam.aam_48_17. PMID: 30185677; PMCID: PMC6126046.

Prevalence and clinical patterns of urolithiasis in sub-saharan Africa: a systematic review and meta-analysis of observational studies

Urolithiasis, the presence of stones in the urinary tract, has been linked to various clinical features and reported as a worldwide health concern. Its prevalence varies across different regions as well as populations. Several primary studies have been conducted in Sub-Saharan Africa on the situation. However, their reports are inconsistent. Hence, this review aimed to assess the pooled magnitude of urolithiasis and its clinical patterns among hospital-visiting patients in sub-Saharan Africa. Online databases such as PubMed, Hinari, the African Journals online database, and Google Scholar were used to comprehensively search articles published until June 28, 2023, about the prevalence and clinical patterns of urolithiasis in Sub-Saharan Africa. All the included studies were conducted at hospital setting. The retrieved data was exported to STATA version 16 for final analysis. A random-effect meta-analysis model was computed to estimate the pooled results. The heterogeneity of the studies was assessed using I2 and Cochran's Q. Publication bias was examined by observation using funnel plots and statistically by Egger's tests. Subgroup analysis was performed based on the country where the studies have been conducted. A total of 26 articles (11 reported both prevalence and clinical pattern, 5 reported only prevalence, and 10 reported only clinical patterns of urolithiasis) were included in the final systematic review and meta-analysis. The pooled prevalence of urolithiasis among hospital-visiting patients was 9.4% (95% CL = 4.9-14%), with significant heterogeneity. Most of the urolithiasis was located in the kidney, with an estimated pooled proportion of 4.6% (95% CI = 2.7, 6.5), followed by bladder stone-2.0% (95% CI = 0.7, 3.4), ureteral stone-1.8% (95% CI = 0.7, 2.9), and urethral stone-0.2% (95% CI = 0.00, 0.05). The subgroup analysis showed the highest prevalence of urolithiasis was found in Mauritian, 28.1% (95%CI 24.5, 31.7), followed by Ethiopia 18.1%, and the lowest was in Eritrea, 1.0%. A sensitivity analysis using the random-effects model found no influential study on the pooled prevalence of urolithiasis. Evidence of significant publication bias was observed and trim-fill analysis was conducted for adjustment. Accordingly, two missing studies were identified, and after adjustment, the combined prevalence of urolithiasis was estimated to be 10.7%. The study also found that urolithiasis prevalence per gender was 6.3% in males and 2.9% in females. The most common clinical presentation of urolithiasis was flank pain at 58.4% (95% CL=, 45.9, 70.8), followed by low back pain at 45.9% (95% CL=, 23.1, 68.8), and nausea/vomiting at 29.9% (95% CI: 1 1.1, 48.8). The prevalence of urolithiasis in Sub-Sahara African Countries is increasing even though a remarkable regional variation was observed, with higher predominance in males than females. Common clinical presentations of urolithiasis were flank pain, low back pain, and nausea/vomiting.

Reference

Kassaw AB, Belete M, Assefa EM, Tareke AA. Prevalence and clinical patterns of urolithiasis in sub-saharan Africa: a systematic review and meta-analysis of observational studies. BMC Nephrol. 2024 Oct 8;25(1):334. doi: 10.1186/s12882-024-03780-y. PMID: 39379862; PMCID: PMC11460051

Role of surgery for upper urinary tract stones in low-income countries: semi-rigid ureteroscopy and percutaneous nephrolithotomy in Benin.

Percutaneous nephrolithotomy (PCNL) and semi-rigid ureteroscopy (SR-URS) are adequate therapeutic means of treating upper urinary tract stones. This study aimed to evaluate the effectiveness of this approach in managing urinary lithiasis at the National University Hospital Centre of Cotonou (CNHU-Cotonou).Patients and methods: This was a retrospective, descriptive study conducted

at the Urology Department of the CNHU-Cotonou from 28 November 2018 to 31 December 2022. The records of patients with upper urinary tract lithiasis treated with PCNL and SR-URS were reviewed and included. A total of 121 patients were included. The average age was 46 years. The average stone size was 32 mm at the renal level and 6 mm at the ureteral level. PCNL was performed in 69 cases and SR-URS in 57 cases, with complete lithotripsy rates of 73.9% and 91.2%, respectively. In 53.6% (n = 37) of cases during PCNL, postoperative drainage was made by nephrostomy. During the SR-URS, a JJ-stent was placed in 92.9% (n = 53). The postoperative course was simple in 78.5%. A postoperative urinary tract infection was observed in 61.5% of cases. The average hospital stay was two days. Endoscopic surgery is now used to treat upper urinary tract stones at CNHU-Cotonou. The combination of PCNL and SR-URS gives satisfactory results in our environment with limited equipment.

Reference

Natchagande G, Agounkpe MM, Loko MDC, Hodonou F, Yevi DMI, Sossa J, Ngapna Y, Avakoudjo JDG, Ayed A. Role of surgery for upper urinary tract stones in low-income countries: semi-rigid ureteroscopy and percutaneous nephrolithotomy in Benin. Afr Urol. Vol. 5 No. 1 (2025)

Risk factors for recurrence of urethral strictures in urology at the Cocody-Abidjan University Hospital in Ivory Coast from 2014 to 2023

To identify factors that promote recurrence of urethral strictures. This was a retrospective cohort study that included 104 patient records from the Urology Department of the Cocody-Abidjan University Hospital (CHU) for urethral strictures from April 1, 2014, to March 31, 2023, a period of 10 years. The prevalence of urethral strictures was 3.20%, with a mean age of 54.45 years and a range of 17 to 90 years. More than half of the patients were from disadvantaged social classes. All patients presented with dysuria, 81% of which was associated with urinary retention. Strictures were post-infectious in 66% of cases and iatrogenic in 21% of cases. Endoscopic internal urethrotomy (EUI) was the most commonly used treatment in 45% of cases, followed by end-to-end anastomotic resections (ETAR) in 25%, 1-stage urethroplasty (1ST) in 14%, and 2- stage urethroplasty (2ST) in 11%. The recurrence rate was 32.7% (34/104). Infectious causes dominated the recurrence cases with 32 out of 34 cases. Patients who underwent EUI with 22 out of 34 cases had more recurrences. There was a statistically significant relationship between the occurrence of recurrence and infectious etiology There was also another significant relationship between previous treatment (endoscopy) and recurrence, with a chi-square value of 12.59 higher than the observed chi-square value of 10.18. Urethral stricture affects adults and the elderly from disadvantaged backgrounds. EIU performed for infectious causes is marked by adverse outcomes, with a high recurrence rate.

Reference

Fofana, A., Tuo, L. S. M., Yao, E. K., Amangoua, E. J. V., Yeo, D. D., & Coulibaly, I. (2025). Risk factors for recurrence of urethral strictures in urology at the Cocody-Abidjan University Hospital in Ivory Coast from 2014 to 2023. African Urology, 5(1), Article 230. https://doi.org/10.36303/AUJ.0230*.

Paediatric urology in Sub-Saharan Africa: challenges and opportunities

The need for paediatric urological care in low- and middle-income countries in sub-Saharan Africa (SSA) is enormous due to a burgeoning paediatric-aged population and a disproportionate burden of congenital malformations. There are formidable challenges in the provision of a skilled workforce and appropriate infrastructure, resulting in a huge unmet need with consequent effects on the long-term health and prosperity of the population. Constraints of funding, geography, culture, surgical and anaesthetic skills, and instrumentation means that many conditions present late and with complications that could have been avoided by an earlier attendance. It also means that the management of congenital malformations, e.g., bladder exstrophy and congenital obstructive posterior urethral membrane, differ substantially from that seen in the developed world, with the outlook for children with renal failure being particularly bleak. Collaborations between paediatric urologists from high- and low-income countries are beginning to help with the development of a surgical infrastructure customised to paediatric care, and with the training of specific paediatric urological knowledge and skills. These collaborations, whilst welcome, still require substantial expansion to achieve more equitable access to appropriate paediatric urological care for children in SSA. Future efforts have to focus on the creation of sustainable and equal partnerships between urologists from low- and high-income healthcare environments, with an emphasis on providing sustainable management, appropriate to local need and available resources. The provision of shared learning, utilising the benefits of global digital communication, will improve mutual understanding of needs in a resource-poor environment and the involvement of trainees from both income settings can help perpetuate long-term collaborations.

Reference

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Paeditrics

Prevalence and clinical presentation in newly diagnosed human immunodeficiency virus–infected children aged 2 months to 5 years in Federal Medical Centre, Katsina, Nigeria. A cross-sectional study.

The prevalence of pediatric HIV infection is largely unknown in many sub-Saharan African countries. This study aimed to determine the prevalence, clinical pattern of HIV infection, and outcomes among new patients under 15 years using age-specific diagnostic methods. A prospective cross-sectional study was conducted using the provider-initiated HIV testing and counselling (PITC) model. HIV rapid tests run in parallel were used for screening, with confirmation via HIV DNA PCR in children under 18 months and Western blot in children aged 18 months or older. A total of 600 children aged between one day and 179 months were enrolled. The male-to-female ratio was 1.2:1. HIV seroprevalence was 12.3%, with a confirmed

prevalence of 10% following age-specific testing. Among children younger than 18 months, 37.8% were exposed but not infected. Mother-to-child transmission accounted for 93.3% of confirmed HIV cases. Clinical features predictive of HIV infection included diarrhea, cough, weight loss, ear discharge, generalized lymphadenopathy, skin lesions, parotid swelling, and oral thrush. Approximately 75% presented in advanced or severe clinical stages of disease, and 56.8% had severe immunodeficiency; moreover, 50% exhibited viral loads exceeding 100,000 copies/mL. The mortality rate among HIV-positive children was 14.3%, compared with 11.3% in HIV-negative children—though this difference was not statistically significant. Among HIV-positive children, 26.7% were orphans. The prevalence of HIV among newly screened pediatric patients was high, predominantly due to mother-to-child transmission. Most presented with advanced disease stages, and mortality was elevated. The study suggests a need to expand access to PMTCT services, implement PITC widely in pediatric settings, and strengthen support services for HIV-infected children

Prevalence and clinical presentation in newly diagnosed human immunodeficiency virus–infected children aged 2 months to 5 years in Federal Medical Centre, Katsina, Nigeria: A cross-sectional study.

Reference

Nasir, F. F., Ibrahim, M., Suleiman, B. M., & Ibrahim, O. R. (2025). Pediatric Infectious Disease, 7(2), 39–43. https://doi.org/10.5005/jp-journals-10081-1455

Profile of Positive Cultures in Pediatric Intensive Care Unit: A Retrospective Cohort Study.

Infections remain a leading cause of morbidity and mortality among children in developing countries, with healthcare-associated infections—often involving multidrug-resistant organisms (MDROs)—further complicating outcomes in Pediatric Intensive Care Units (PICUs). Despite this, limited studies exist from lower-middle-income countries (LMICs) on pediatric infection surveillance and antimicrobial susceptibility patterns. This study sought to (1) examine the demographic profiles and outcomes of critically ill children with positive blood or respiratory cultures, (2) describe the spectrum and resistance patterns of isolated organisms, and (3) assess patient outcomes in the PICU setting. A retrospective observational cohort study was conducted in a tertiary pediatric hospital's PICU from January 1 to December 31, 2021. Children aged 1 month to 18 years with positive blood or respiratory cultures were included. Positive isolates were differentiated as community-acquired or hospital-acquired based on timing post-admission. Organisms were classified and antimicrobial susceptibility assessed using standard culture techniques and interpreted per CLSI 2020 criteria. There were 139 children with positive cultures, with a median age of 12 months. The majority of children had comorbidities (62.6%), previous hospital admissions (83.5%), and/or antibiotic exposure (85.4%). Gram-negative bacilli (GNB) comprised 99% of positive respiratory cultures in hospital-acquired infections (HAI), and the most common organisms grown were Acinetobacter species, Klebsiella species, and Pseudomonas species. On antibiotic sensitivity testing, approximately three-fourths of the organisms showed multidrug resistance. High levels of carbapenem resistance were seen in isolates of Acinetobacter baumannii (40/48), Klebsiella pneumoniae (25/29), and Pseudomonas aeruginosan (22/37). Out of the 139 patients included in the study, 86 (61.9%) survived. On multivariate analysis, multidrug resistant organisms (MDRO) were significantly associated with mortality (p = 0.02).Conclusion: Infections in critically ill children were predominantly due to gram-negative organisms. There is a trend toward increasing antibiotic resistance over time. Infection with MDRO is associated with mortality.

Highlights: Infections represent a major burden in developing countries, especially in critically ill children. Our study shows high levels of multidrug resistance and increasing carbapenem resistance over time. We have demonstrated a higher risk of mortality in children with MDRO

Reference

Bhagat, I., Solomon, R., Mamtora, D., Mehta, G., & Shobhavat, L. (2025). Profile of Positive Cultures in Pediatric Intensive Care Unit: A Retrospective Cohort Study. Pediatric Infectious Disease, 7(2), 44–49. https://doi.org/10.5005/jp-journals-10081-1458

Abstract

Infections are an important cause of morbidity and mortality in the pediatric intensive care unit (PICU). Aims and objectives: To study the demographic profile, describe the spectrum and resistance pattern of organisms isolated from blood and respiratory cultures, and study the outcome. Materials and methods: This retrospective observational study, conducted from January 1 to December 31, 2021, was performed on children with positive blood and respiratory cultures admitted to the PICU of a tertiary care multispecialty hospital. Demographic profile and outcome measures were recorded. Positive cultures and resistance patterns were noted. Results: There were 139 children with positive cultures, with a median age of 12 months. The majority of children had comorbidities (62.6%), previous hospital admissions (83.5%), and/or antibiotic exposure (85.4%). Gram-negative bacilli (GNB) comprised 99% of positive respiratory cultures in hospital-acquired infections (HAI), and the most common organisms grown were Acinetobacter species, Klebsiella species, and Pseudomonas species. On antibiotic sensitivity testing, approximately three-fourths of the organisms showed multidrug resistance. High levels of carbapenem resistance were seen in isolates of Acinetobacter baumannii (40/48), Klebsiella pneumoniae (25/29), and Pseudomonas aeruginosa (22/37). Out of the 139 patients included in the study, 86 (61.9%) survived. On multivariate analysis, multidrug resistant organisms (MDRO) were significantly associated with mortality (p = 0.02). Conclusion: Infections in critically ill children were predominantly due to gram-negative organisms. There is a trend toward increasing antibiotic resistance over time. Infection with MDRO is associated with mortality. Highlights: Infections represent a major burden in developing countries, especially in critically ill children. Our study shows high levels of multidrug resistance and increasing carbapenem resistance over time. We have demonstrated a higher risk of mortality in children with MDRO.