General Medicine

Clinical Characteristics and Outcomes of Patients with Cirrhosis Who Develop Infective Endocarditis

Background: Infective endocarditis (IE) is an increasingly common infection that results in significant morbidity and mortality. An important but under-analyzed subpopulation of patients with IE are those with concomitant cirrhosis. This study compared the characteristics and outcomes of patients with and without cirrhosis who were hospitalized with IE. Methods: The authors conducted a retrospective cohort study in adult patients with IE admitted at a single center from 2010 to 2020, comparing outcomes between those with and without cirrhosis at the time of admission. Results: A total of 22 patients with a history of cirrhosis and 356 patients without a history of cirrhosis were included. Over a quarter (27.3%) of those with cirrhosis experienced a decompensation event within two years of their admission for IE. Clinical features, microbiology, and direct complications from IE were largely similar between groups. There was no significant difference in IE-related mortality rates between groups, although, in an overall survival analysis, the group with cirrhosis did have a higher risk of all-cause mortality at 2 years (HR = 2.85; p = 0.012). Conclusions: This study highlights that IE in patients with cirrhosis may contribute to or trigger decompensation events. Further research is warranted to better understand morbidity outcomes in patients with cirrhosis who develop IE.

Reference

Erika M. Dorff,Kyle Crooker,Torrance Teng,Tess Hickey,Max HoddWells,Ashwini Sarathy,Sean Muniz,Jennifer Lor,Amy Chang,Devika Singh,Jean Dejace,Elly Riser,Bradley J. Tompkins and Andrew J. Hale. Clinical Characteristics and Outcomes of Patients with Cirrhosis Who Develop Infective Endocarditis
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Outbreak of Marburg Virus Disease, Equatorial Guinea.

In February 2023, the government of Equatorial Guinea declared an outbreak of Marburg virus disease. We describe the response structure and epidemiologic characteristics, including case-patient demographics, clinical manifestations, risk factors, and the serial interval and timing of symptom onset, treatment seeking, and recovery or death. We identified 16 laboratory-confirmed and 23 probable cases of Marburg virus disease in 5 districts and noted several unlinked chains of transmission and a case-fatality ratio of 90% (35/39 cases). Transmission was concentrated in family clusters and healthcare settings. The median serial interval was 18.5 days; most transmission occurred during late-stage disease. Rapid isolation of symptomatic case-patients is critical in preventing transmission and improving patient outcomes; community engagement and surveillance strengthening should be prioritized in emerging outbreaks. Further analysis of this outbreak and a One Health surveillance approach can help prevent and prepare for future potential spillover events.

Reference

Ngai, S., Evers, E., Seoane, A., Ameh, G., Anoko, J. N., Barnadas, C....Ndoho, F. (2025). Outbreak of Marburg Virus Disease, Equatorial Guinea, 2023. Emerging Infectious Diseases, 31(5), 887-895. https://doi.org/10.3201/eid3105.241749.

Artificial Intelligence for Infectious Disease Prediction and Prevention: A Comprehensive Review

Artificial Intelligence (AI) and infectious diseases prediction have recently experienced a common development and advancement. Machine learning (ML) apparition, along with deep learning (DL) emergence, extended many approaches against diseases apparition and their spread. And despite their outstanding results in predicting infectious diseases, conflicts appeared regarding the types of data used and how they can be studied, analyzed, and exploited using various emerging methods. This has led to some ongoing discussions in the field. This research aims not only to provide an overview of what has been accomplished, but also to highlight the difficulties related to the types of data used, and the learning methods applied for each research objective. It categorizes these contributions into three areas: predictions using Public Health Data to prevent the spread of a transmissible disease within a region; predictions using Patients' Medical Data to detect whether a person is infected by a transmissible disease; and predictions using both Public and patient medical data to estimate the extent of disease spread in a population. The paper also critically assesses the potential of AI and outlines its limitations in infectious disease management.

Reference

Selestine Melchane, Youssef Elmir, Farid Kacimi, Larbi Boubchir, Artificial Intelligence for Infectious Disease Prediction and Prevention: A Comprehensive Review 16, 2 (2024), 160-197 https://doi.org/10.47745/ausi-2024-0010

The silent epidemic: unravelling NCD risk clusters and socioeconomic determinants in Zambia.

In Zambia, non-communicable diseases (NCDs) are an emerging public health crisis, with socioeconomic factors strongly influencing disease patterns. This study applies latent class analysis on National STEPS survey data to identify distinct clusters of NCD risk factors across population subgroups. Findings reveal that exposure to risk behaviors—such as tobacco use, unhealthy diets, physical inactivity, and excessive alcohol consumption—is unevenly distributed, with discrete high-risk groups shaped by socioeconomic status, gender, and residence. Although age-standardized NCD mortality rates show some decline, Zambia's premature NCD mortality remains markedly higher than global averages, highlighting deep health inequities. The study underscores the need for cost-effective, context-specific interventions—particularly those aligned with WHO's PEN (Package of Essential Non-communicable disease interventions)—and advocates an integrated, people-centred

approach to NCD prevention and control across different demographic groups.

Reference

Christian AK, Daniel E, Sanuade OA. The silent epidemic: unravelling NCD risk clusters and socioeconomic determinants in Zambia. BMC Public Health. 2025;25:2535.

A comparative systematic review of risk factors, prevalence, and challenges contributing to non-communicable diseases in South Asia, Africa, and Caribbeans

Non-communicable diseases (NCDs) are a global epidemic challenging global public health authorities while imposing a heavy burden on healthcare systems and economies.To explore and compare the prevalence of NCDs in South Asia, the Caribbean, and non-sub-Saharan Africa, aiming to identify both commonalities and differences contributing to the NCD epidemic in these areas while investigating potential recommendations addressing the NCD epidemic.A comprehensive search of relevant literature was carried out to identify and appraise published articles systematically using the Cochrane Library, Ovid, Google Scholar, PubMed, Science Direct, and Web of Science search engines between 2010 and 2023. A total of 50 articles fell within the inclusion criteria.Numerous geographical variables, such as lifestyle factors, socio-economic issues, social awareness, and the calibre of the local healthcare system, influence both the prevalence and treatment of NCDs. The NCDs contributors in the Caribbean include physical inactivity, poor fruit and vegetable intake, a sedentary lifestyle, and smoking, among others. While for South Asia, these were: insufficient societal awareness of NCDs, poverty, urbanization, industrialization, and inadequate regulation implementation in South Asia. Malnutrition, inactivity, alcohol misuse, lack of medical care, and low budgets are responsible for increasing NCD cases in Africa.Premature mortality from NCDs can be avoided using efficient treatments that reduce risk factor exposure for individuals and populations. Proper planning, implementation, monitoring, training, and research on risk factors and challenges of NCDs would significantly combat the situation in these regions.

Reference

Bhuiyan, M.A., Galdes, N., Cuschieri, S. et al. A comparative systematic review of risk factors, prevalence, and challenges contributing to non-communicable diseases in South Asia, Africa, and Caribbeans. J Health Popul Nutr 43, 140 (2024). https://doi.org/10.1186/s41043-024-00607-2

Health Economics

Meng X, Mu G, Tong J. Health economics in Africa from 1991 to 2020: a systematic review. J Public Health Afr. 2022;13(2):2027. doi:10.4081/jphia.2022.2027

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.

Eze P, Lawani LO, Agu UJ, Acharya Y, et al. Catastrophic health expenditure in sub-Saharan Africa: systematic review and meta-analysis. Bull World Health Organ. 2022;100(5):337–351. doi:10.2471/BLT.21.287673.

Objective: To estimate the incidence of, and trends in, catastrophic health expenditure in sub-Saharan Africa.

Methods: We systematically reviewed the scientific and grey literature to identify population-based studies on catastrophic health expenditure in sub-Saharan Africa published between 2000 and 2021. We performed a meta-analysis using two definitions of catastrophic health expenditure: 10% of total household expenditure and 40% of household non-food expenditure. The results of individual studies were pooled by pairwise meta-analysis using the random-effects model.

Findings: We identified 111 publications covering a total of 1 040 620 households across 31 sub-Saharan African countries. Overall, the pooled annual incidence of catastrophic health expenditure was 16.5% (95% confidence interval, CI: 12.9–20.4; 50 datapoints; 462 151 households; I^2 = 99.9%) for a threshold of 10% of total household expenditure and 8.7% (95% CI: 7.2–10.3; 84 datapoints; 795 355 households; I^2 = 99.8%) for a threshold of 40% of household non-food expenditure.

Countries in central and southern sub-Saharan Africa had the highest and lowest incidence, respectively. A trend analysis found that, after initially declining in the 2000s, the incidence of catastrophic health expenditure in sub-Saharan Africa increased between 2010 and 2020. The incidence among people affected by specific diseases, such as noncommunicable diseases, HIV/AIDS and tuberculosis, was generally higher.

Conclusion: Although data on catastrophic health expenditure for some countries were sparse, the data available suggest that a non-negligible share of households in sub-Saharan Africa experienced catastrophic expenditure when accessing health-care services. Stronger financial protection measures are needed.

Ifeagwu SC, Yang JC, Parkes-Ratanshi R, Brayne C. Health financing for universal health coverage in Sub-Saharan Africa: a systematic review. Glob Health Res Policy. 2021;6:8. doi:10.1186/s41256-021-00190-7.

Background: Universal health coverage (UHC) embedded within the United Nations Sustainable Development Goals, is defined by the World Health Organization as all individuals having access to required health services, of sufficient quality, without suffering financial hardship. Effective strategies for financing healthcare are critical in achieving this goal yet remain a challenge in Sub-Saharan Africa (SSA). This systematic review aims to determine reported health financing mechanisms in SSA within the published literature and summarize potential learnings.

Methods: A systematic review was conducted aligned with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) reporting guidelines. On 19 to 30 July 2019, MEDLINE, EMBASE, Web of Science, Global Health Database, the Cochrane Library, Scopus and JSTOR were searched for literature published from 2005. Studies describing health financing approaches for UHC in SSA were included. Evidence was synthesised in form of a table and thematic analysis.

Results: Of all records, 39 papers were selected for inclusion. Among the included studies, most studies were conducted in Kenya (n = 7), followed by SSA as a whole (n = 6) and Nigeria (n = 5). More than two thirds of the selected studies reported the importance of equitable national health insurance schemes for UHC. The results indicate that a majority of health care revenue in SSA is from direct out-of-pocket payments. Another common financing mechanism was donor funding, which was reported by most of the studies. The average quality score of all studies was 81.6%, indicating a high appraisal score. The interrater reliability Cohen's kappa score, □=0.43 (p = 0.002), which showed a moderate level of agreement.

Conclusions: Appropriate health financing strategies that safeguard financial risk protection underpin sustainable health services and the attainment of UHC. It is evident from the review that innovative health financing strategies in SSA are needed. Some limitations of this review include potentially skewed interpretations due to publication bias and a higher frequency of publications included from two countries in SSA. Establishing evidence-based and multi-sectoral strategies tailored to country contexts remains imperative.

Health Policy

Ansah EW, Maneen S, Ephraim A, Ocloo JEY, Barnes MN, Botha NN. Politics–evidence conflict in national health policy making in Africa: a scoping review. Health Res Policy Syst. 2024;22:47. doi:10.1186/s12961-024-01129-3.

Background: Generally, public health policy-making is hardly a linear process and is characterized by interactions among politicians, institutions, researchers, technocrats and practitioners from diverse fields, as well as brokers, interest groups, financiers and a gamut of other actors. Meanwhile, most public health policies and systems in Africa appear to be built loosely on technical and scientific evidence, but with high political systems and ideologies. While studies on national health policies in Africa are growing, there seems to be inadequate evidence mapping on common themes and concepts across existing literature.

Purpose: The study seeks to explore the extent and type of evidence that exist on the conflict between politics and scientific evidence in the national health policy-making processes in Africa.

Methods: A thorough literature search was done in PubMed, Cochrane Library, ScienceDirect, Dimensions, Taylor and Francis, Chicago Journals, Emerald Insight, JSTOR and Google Scholar. In total, 43 peer-reviewed articles were eligible and used for this review.

Results: We found that the conflicts to evidence usage in policy-making include competing interests and lack of commitment; global policy goals, interest/influence, power imbalance and funding; morals; and evidence-based approaches, self-sufficiency, collaboration among actors, policy priorities and existing structures. Barriers to the health policy process include fragmentation among actors, poor advocacy, lack of clarity on the agenda, inadequate evidence, inadequate consultation and corruption.

Conclusion: Despite the seeming increase in research evidence on the central role of political leadership in defining national public health policies in Africa, there seems to be inadequate empirical accounts of the common themes or concepts in the existing literature regarding the politics–evidence conflict in the public health policy-making process. The authors call for more studies that map and compare these themes to strengthen evidence-informed decision-making in African health policy.

Ahmat A, Asamani JA, et al. Health workforce policy and plan implementation in the context of universal health coverage in the Africa Region. BMJ Glob Health. 2022;7(Suppl 1):e008319. doi:10.1136/bmjgh-2021-008319.

Several countries in Africa have developed human resources for health (HRH) policies and strategies to synergise efforts in setting priorities, directions and means to address the major challenges around leadership and governance, production, recruitment, management, motivation and retention and coordination. In this paper, we present information on the availability, quality and implementation of national HRH policies and strategic plans in the WHO Africa Region. Information was obtained using a questionnaire completed by the head of HRH departments in the Ministries of Health of 47 countries in the WHO Africa Region. Of the 47 countries in the Region, 57% (27 countries) had HRH policies and 11% (5 countries) were in the process of developing one. Thirty-two countries (68%) had national strategic plans for HRH with 12 (26%) being in the process of developing a strategic plan, and 28 countries reporting the implementation of their strategic plans. On the quality of the policies and strategic plans, 28 countries (88%) linked their plans to the national development plan, 30 countries (94%) informed their policy and plan using the national health policy and strategic plans. Evidence-based HRH policies and plans guide the actions of actors in strengthening health systems. Countries need to invest in developing quality HRH policies and plans through an intersectoral approach and based on contextual evidence. This is vital in ensuring that equitably distributed, well-regulated and motivated HRH are available to deliver people-centred health services to the population.

Afriyie DO, Awuzudike M, Amos TA, Aikins M, Salifu Y. The state of strategic plans for the health workforce in Africa. Hum Resour Health. 2019;17:42. doi:10.1186/s12960-019-0373-4.

Background: Human resources for health (HRH) strategic planning is essential for the development and stability of the health workforce, especially in low- and middle-income countries, including in sub-Saharan Africa.

Methods: We examined the HRH strategic plans of sub-Saharan African countries that were in place in 2015. We used a document review to assess the content, context, process, and coherence of the strategic plans.

Results: The review covers 39 strategic plans from 34 countries. While many plans included production, distribution, and retention of health workers as strategic goals, only a minority had clear, costed action plans, or formal monitoring frameworks. Also, the link between strategic plans and national development or health sector strategies was often weak, and few plans reflected health labour market analyses.

Conclusion: HRH strategic plans in many African countries show a commitment to addressing workforce problems, but they often lack specificity, costing, and monitoring mechanisms. The authors recommend stronger national capacity for labour market analysis, better alignment with broader national health strategies, and more rigorous monitoring and evaluation.

Asamani JA, Alhassan RK, Dovlo D. State of the health workforce in the WHO African Region: findings, challenges, and implications for policy. Hum Resour Health. 2024;22:--. (or similar) doi: 10.1186/s12960-024-

The WHO African Region's framework for implementing the Global Strategy on Human Resources for Health further contextualised various global strategies and initiatives by incorporating the region's social, political, economic and cultural dynamics and health worker projections. The development and implementation of this framework recognised the peculiar dynamics within the region, including that Africa has about 10% of the global population and contributes to 25% of the world disease burden, with only about 4% of the global health workforce to provide needed care. Despite the African region suffering many setbacks in providing the needed essential healthcare services, modest progress has been made in improving life expectancy, partly contributed by the increase in the production of health workers of various cadres.

Respiratory Infectious diseases

1. Mizgerd JP. Respiratory infection and the impact of pulmonary immunity on lung health and disease. Am J Respir Crit Care Med. 2012;186(9):824-9. **Abstract:** Acute lower respiratory tract infection is responsible for an inordinate disease burden. Pulmonary immunity determines the outcomes of these infections. The innate and adaptive immune responses to microbes in the lung are critical to maintaining a healthy respiratory system and preventing pulmonary disease. In addition to balancing antimicrobial defense against the risk of lung injury during the immediate infection, the shaping of pulmonary immunity by respiratory infection contributes to the pathophysiology of many and even perhaps most chronic pulmonary diseases. This Pulmonary Perspective aims to communicate two interconnected points. First, tremendous morbidity and mortality result from inadequate, misguided, or excessive pulmonary immunity. Second, our understanding of pulmonary immunity is at an exciting stage of rapid developments and discoveries, but many questions remain. Further advances in pulmonary immunity and elucidation of the cellular and molecular responses to microbes in the lung are needed to develop novel approaches to predicting, preventing, and curing respiratory disease.
2. Long Y, Zheng Y, Li C, Guo Z, Li P, Zhang F, Liu W, Wang Y. Respiratory pathogenic microbial infections: a narrative review. Int J Med Sci. 2024;21(5):826-36. **Abstract:** Respiratory infectious diseases have long been recognised as a substantial global healthcare burden and are one of the leading causes of death worldwide, particularly in vulnerable individuals. In the post COVID-19 era, there has been a surge in the prevalence of influenza virus A and other

multiple known viruses causing cold compared with during the same period in the previous three years, which coincided with countries easing COVID-19 restrictions worldwide. This article aims to review community-acquired respiratory illnesses covering a broad spectrum of viruses, bacteria, and atypical microorganisms and focuses on the cluster prevalence of multiple known respiratory pathogens in China, thereby providing effective prevention and control measures.

3. Feldman C, Anderson R. RSV: an overview of infection in adults. Pneumonia. 2025;17:15. **Abstract (Background + Conclusion):** While originally considered a childhood infection, more recently it has been increasingly recognized that respiratory syncytial virus (RSV) may also cause infection in adults. A potential reason that RSV may have been overlooked in adults previously was a lack of knowledge that this infection could occur at this age, with infrequent testing for RSV infection in adults. There was also at that time the belief that if the infection was documented to be due to RSV, there was little one could do to about it in terms of treatment and/or prevention. Furthermore, there was also the recognition that RSV antigen testing in adults was less sensitive than in children, thus requiring the performance of polymerase chain reaction (PCR) testing for RSV diagnosis, which is expensive and underutilized. More recently, however, enormous advances have been made in the prevention and management of this infection thus requiring further awareness of its occurrence in adults. This manuscript reviews the virus itself, its immunopathogenesis, the role of RSV-pneumococcal interaction in disease pathogenesis, clinical aspects of the infection, the burden of disease, complications, mortality, treatment, and prevention of RSV infections in adults. RSV virus is a common cause of respiratory tract infections in adults and advances in recent research have not only enhanced our knowledge of this infection but have led to the development of effective treatment and prevention of the infection.
4. Zhou Y, Zou Y, Zhou L, Wei H, Zou Y-W, Guo X-R, Ye Y-Q, Li N, Lu Y. Acute respiratory distress syndrome caused by Chlamydia psittaci: a case report and literature review. Front Med (Lausanne). 2024;11:1418241. **Abstract:** Case presentation: This study reports a 37-year-old young female who was infected with Chlamydia psittaci (C. psittaci) after contact with parrots and eventually developed ARDS. The patient initially developed fever and sore throat, followed by cough and expectoration. Despite receiving empirical anti-infection treatment, the condition continued to progress rapidly, and severe dyspnea developed within a short period of time. She was subsequently transferred to the intensive care unit (ICU) and underwent tracheal intubation and mechanical ventilation due to acute respiratory failure. After the DNA sequence of C. psittaci in bronchoalveolar lavage fluid (BALF) was detected through metagenomic next-generation sequencing (mNGS), the patient received targeted antibiotic treatment with doxycycline and moxifloxacin, and her clinical symptoms gradually improved. Psittacosis, also known as ornithosis, is caused by infection with C. psittaci. Moreover, C. psittaci is a gram-negative and specialized intracellular parasitic pathogen, which is also one of the species in the Chlamydia family that is pathogenic to humans or animals. It can directly or indirectly infect the host, leading to the onset of psittacosis.
5. Singanayagam A, C Papi A, Mackay AJ, et al. Viruses exacerbating chronic pulmonary disease: the role of immune modulation and therapeutic implications. BMC Med. 2012;10:27. **Abstract:** Chronic pulmonary diseases are a major cause of morbidity and mortality and their impact is expected to increase in the future. Respiratory viruses are the most common cause of acute respiratory infections and it is increasingly recognized that respiratory viruses are a major cause of acute exacerbations of chronic pulmonary diseases such as asthma, chronic obstructive pulmonary disease and cystic fibrosis. There is now increasing evidence that the host response to virus infection is dysregulated in these diseases and a better understanding of the mechanisms of abnormal immune responses has the potential to lead to the development of new therapies for virus-induced exacerbations.

Abuelaish I, Goodstadt MS, Mouhaffel R. Interdependence between health and peace: call for a new paradigm. Health Promot Int. 2020;35(6):1590–1600. doi:10.1093/heapro/daaa023.

Abstract: Health and peace, and their relationships to disease, conflict and violence, are complex and multifaceted interrelated terms. Scholars have proposed a variety of definitions for health and peace. The conceptualisations of health and peace share many fundamental elements, including in their social, psychological (emotional and mental) and spiritual dimensions. The authors argue that health and peace are interdependent in a fundamental causal fashion. Health is always positively or negatively affected by conflict, and peace can be directly or indirectly fostered through public health programmes and policy initiatives. Evidence shows that public health professionals and academics have frequently failed to recognise the interdependence of health and peace when conceptualising and addressing issues related to health and peace. In contrast, this article supports a new paradigm for addressing public health issues related to health and peace, based on the premise that health and peace are inextricably linked and require integrated, interdependent approaches. Finally, the authors emphasise that fostering health and peace requires identifying and promoting positive socio-ecological influences on health, rather than limiting the focus to health deficits and obstacles at the individual or community levels.