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Assessment of sustainable development goals and health sector strategic indicators in Cameroon: A retrospective regional and national analysis

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Abstract

The Cameroon Health Sector Strategy (HSS) aims to foster a healthy and productive population, aligning with the Sustainable Development Goals. This retrospective study assesses progress toward the objectives of the HSS and key health indicators in the Center Region and nationally, providing a critical sub-national benchmark. In April 2023, we collected data for the period up to 2022 from the national DHIS2 database, online documents, and surveys, including the Demographic and Health Survey and the Multiple Indicator Cluster Survey. Data underwent rigorous validation for completeness and accuracy before analysis. Nationally, performance was highest for antenatal antiretroviral therapy coverage (99%) and lowest for the reduction of chronic malnutrition among children under five (63% of target). The Center Region achieved the national malnutrition target (11% prevalence) but showed the lowest coverage of long-lasting insecticidal nets among children. A key infrastructural finding was the disparity in health facility density, which exceeded the national target (2.3/10,000) overall but remained below this target in the Center Region (1.4). In the Center Region, vaccination coverage for tracer antigens (Pentavalent 3, Bacille Calmette–Guérin) declined over 5 years, falling below the 95% target in 2022, although it remained above the national average. Similarly, antenatal care attendance and intermittent preventive treatment coverage remained persistently low from 2018 to 2022. While significant progress has been made in strengthening

the health system, these findings highlight the need for targeted efforts to prevent malaria, improve routine immunization and antenatal care utilization, and address the underlying causes of nutritional insecurity in lagging regions. This analysis offers crucial evidence for strategic health planning and resource allocation.

Keywords: Sustainable Development Goals; Health Sector Strategy; Indicator evaluation; Center Region; Cameroon

1. Introduction

At the global level, the dynamics of the association between an aging population and higher health expenditure represent a major public concern in Western and developing economies (Baltagi & Moscone, 2010). This trend has prompted extensive discussion about the challenges and opportunities that an ageing society presents (Breyer & Felder, 2006). A variation in demographic structure may lead to a higher incidence of chronic degenerative diseases, causing, in the long term, an increase in disabilities and comorbidity, which are more expensive to treat (Baltagi & Moscone, 2010). The expected effect is a greater demand for long-term care and, in turn, an increase in healthcare expenditure, thereby undermining the financial sustainability of the health system in terms of systemic performance (Lopreite *et al*., 2023). In this context, sustainable development refers to achieving human development goals while maintaining the capacity of natural systems to provide the natural resources and ecosystem services on which economies and societies depend (Mensah, 2019).

The third Sustainable Development Goal (SDG) aims to ensure healthy lives and promote well-being for all by 2030 (Join SDG Fund, 2025). Based on these objectives, Cameroon has developed a Health Sector Strategy (HSS) that aims to build healthy, productive human capital capable of driving strong, inclusive, and sustainable growth (World Health Organization [WHO], 2016).

One of the key challenges to achieving this goal is malaria, which remains a leading cause of death in sub-Saharan Africa and accounts for 94% of global morbidity (Li *et al*., 2024). In Cameroon, the national malaria prevention strategy includes promoting the use of long-lasting insecticidal nets (LLINs), intermittent preventive treatment (IPT) for pregnant women, and seasonal malaria chemoprevention for children aged 3–59 months in the northern regions (Talipouo *et al*., 2019).

Moreover, maternal and neonatal mortality remain significant concerns in Cameroon (Cheuyem *et al*., 2025). Most maternal deaths are preventable, as effective solutions to address complications are well established. Ensuring that all women have access to quality care during pregnancy, childbirth, and the postpartum period is essential. Maternal and newborn health are intrinsically linked. It is particularly important that all births are attended by skilled healthcare workers, as prompt care and treatment can mean the difference between life and death for both mother and newborn. In addition, preventing unintended pregnancies is a key aspect of improving maternal health (WHO, 2025).

Human Immunodeficiency Virus (HIV)/Acquired Immune Deficiency Syndrome-related deaths have declined, partly due to the scale-up of antiretroviral treatment (ART) (HIV.gov, 2024). However, women continue to face barriers to ART uptake and adherence. Health systems and structural interventions may have limited impact if they fail to address interpersonal barriers, such as those involving partners (Omonaiye *et al*., 2018). Addressing these challenges requires the development of respectful, locally acceptable models of HIV service delivery and antenatal care. These models must respond to women's needs and perspectives, supporting them throughout the maternal ART cascade (Hodgson *et al*., 2014).

Routine immunization remains a highly cost-effective public health intervention for reducing child mortality (Zhou, 2024). Consequently, immunization of children aged 0–11 months and pregnant women is a priority objective in Cameroon's health strategy (Amani *et al*., 2023). While this strategy protects children from infectious diseases, they remain vulnerable to nutritional problems, particularly micronutrient deficiencies such as iron deficiency, which is highly prevalent in Cameroon among children under five and women of childbearing age. This malnutrition has multifactorial causes, including general food insecurity, limited dietary diversity, and infrastructural challenges such as inadequate access to basic social services, poor sanitation, and suboptimal healthcare and hygiene practices (ReliefWeb, 2022).

While the existing body of literature, including the seminal work by Cheuyem *et al*. (2025) and Amani *et al*. (2023), has provided valuable insights into specific health

domains in Cameroon, a comprehensive, retrospective analysis tracking progress against the national HSS and SDG indicators at both national and sub-national levels remains notably absent. Previous contributions have often been thematic in focus (concentrating on geospatial quality of care, immunization, or stillbirths) or have relied on survey data that, while robust, may not fully capture recent programmatic performance. Our study directly addresses this gap by conducting a systematic assessment of a standardized set of core health indicators, drawing on the most current national DHIS2 data alongside survey reports to provide a dual-perspective evaluation. This approach allows us not only to benchmark the current situation but also to quantify progress over time, revealing critical disparities between national averages and regional-level performance, particularly within the Center Region. We therefore conducted this study with the aim of moving beyond thematic description to offer an evidence-based gap analysis that is essential for refining policy, targeting interventions, and reorienting resources to accelerate progress toward the HSS and SDG 2030 targets in Cameroon.

2. Methods

2.1. Study type and period

Data were collected in April 2023 through a document review and from online databases. Depending on availability, data were collected retrospectively up to December 2022.

2.2. Study site

Cameroon had an estimated population of 27.6 million in 2022, divided into 10 administrative regions, including the Center Region. The country has two capitals: Yaoundé in the Center Region, which serves as the political hub, and Douala in the Littoral Region, which drives the country's economy. Notably, Cameroon's population is predominantly youthful, with 43.6% of citizens under the age of 15 (Amani *et al*., 2022). The Center Region comprises 32 health districts, which include urban, semi-urban, and rural. This region is also characterized by significant cultural and socioeconomic diversity, with numerous ethnic groups contributing to its vibrant cultural landscape and varied economic activities (Figure 1) (Cheuyem *et al*., 2025).

2.3. Data sources, processing, and analysis

Data were retrieved from the online database using the DHIS2 version 2.40 data visualizer tool. National health data were exported into a Microsoft Excel 2019 file. According to national guidelines, this database is updated monthly with reports from health facilities in each health district. To ensure reliability, the extraction was performed

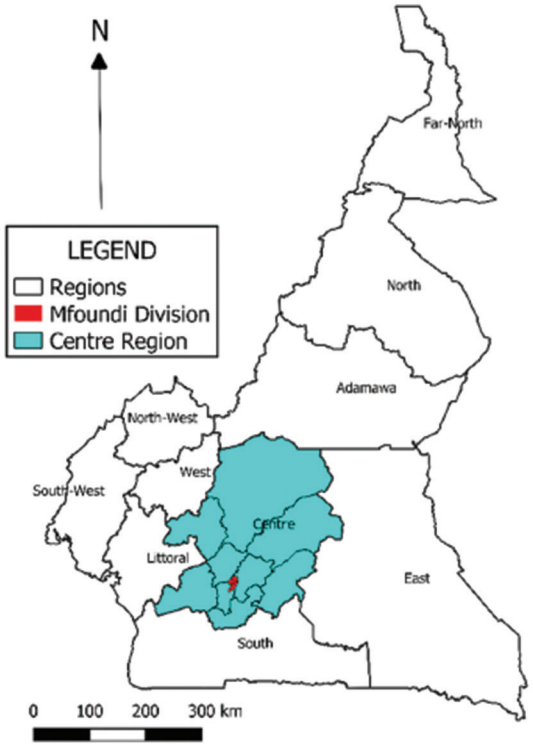


Figure 1. Map of Cameroon highlighting the Center Region. Adopted from Geomatic Strategy (2022).

by two independent and trained DHIS2 specialists; in case of discrepancies, a third specialist was consulted. Data underwent rigorous accuracy and completeness checks prior to analysis. Some key indicator data were additionally collected from surveys and reports available online, such as the Demographic and Health Survey, the Multiple Indicators Cluster Survey, and the National Statistical Institute Report for the Center Region (Cameroon National Institute of Statistics, 2020; United Nations Children's Fund [UNICEF], 2019; WHO, 2015). Charts presenting various trends were produced using Microsoft Excel 2016.

2.4. Variable selection

The selection of key indicators was guided by a dual framework to ensure relevance and alignment with both national and global health priorities. Primarily, we drew from the indicators explicitly defined in Cameroon's HSS 2020–2030 logical framework, which outlines the nation's core priorities for health system strengthening and outcome monitoring (WHO, 2016). To complement this and ensure comprehensive coverage of health-related SDGs, this set was cross-referenced with the WHO Global Reference List of 100 Core Health Indicators (Kaiser *et al*., 2017; WHO, 2018). This combined approach ensured that our analysis focused on a standardized set of metrics that are both critical for national health policy decision-making

and suitable for benchmarking against international standards.

The data collected included indicators related to health system strengthening, health promotion, disease prevention, and case management. Indicators aligned with the SDGs included vaccination coverage with selected tracer antigens (Pentavalent 3, Bacille Calmette–Guérin [BCG], measles, and rubella vaccines) and antenatal care utilization among pregnant women.

2.5. Operational definitions

Qualified healthcare workers include physicians, other clinicians, state-registered nurses, and midwives (WHO, 2014). Improved sanitation includes a slab pit latrine, a ventilated improved pit latrine, a flush toilet, or a composting toilet (United Nations Educational, Scientific and Cultural Organization Institute for Statistics [UNESCO UIS], 2020). Life expectancy refers to the average number of years a person at a given age may be expected to live based on current mortality rates (Tulchinsky & Varavikova, 2014). The perioperative mortality rate is the rate of death (from all causes) before hospital discharge among patients who have undergone one or more surgical procedures during their hospital stay. The neonatal mortality rate is the probability that a child born in a given place in a given year or period will die in the first 28 days of life, expressed per 1,000 live births. The maternal mortality ratio refers to the annual number of deaths among women due to causes related to or exacerbated by pregnancy or its management (excluding accidental or fortuitous causes), occurring during pregnancy, childbirth, or within 42 days following the end of pregnancy, regardless of duration or type of pregnancy, expressed per 100,000 live births over a specified period (Cheuyem *et al.*, 2025; Kaiser *et al.*, 2017; WHO, 2018).

3. Results

3.1. Progress toward objectives

At the national level, the highest performance was observed for the proportion of HIV-positive pregnant women receiving ART (99%) in 2022, while the lowest performance was recorded for the reduction of chronic malnutrition among children under five, with only 63% of the target achieved in 2018. In the Center Region, the national target of reducing the prevalence of chronic malnutrition to 11% was achieved. The lowest performance in the region was observed in the proportion of children under five sleeping under LLINs (Figure 2).

3.2. Key indicators of the health sector strategy

3.2.1. Health system strengthening component

The density of health facilities was higher than the target at the national level (2.3/10,000 inhabitants) but lower at the regional level (1.4/10,000 inhabitants). The density of qualified healthcare workers and the use of services were also below the expected standard at both regional and national levels (Table 1).

3.2.2. Impact indicators

3.2.2.1. Life expectancy

Life expectancy at birth has increased markedly over the past decade and was approximately 61 years in 2020 (Figure 3).

3.2.2.2. Crude mortality

The mortality rate in the Center Region has been increasing since 2019. A peak was observed in 2021 (3.39/1,000), followed by a decrease in 2022. These observations mirror the national trends over time (Figure 4).

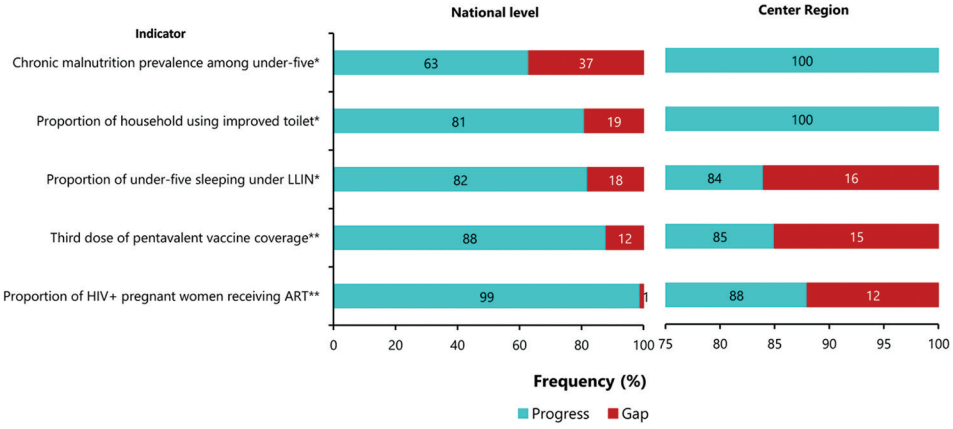


Figure 2. Progress toward achieving key Health Sector Strategy objectives by 2018 and 2022 at the national and regional levels
Notes: *: Progress by 2018; **: Progress by 2022.
Abbreviations: ART: Antiretroviral treatment; LLIN: Long-lasting insecticidal net.

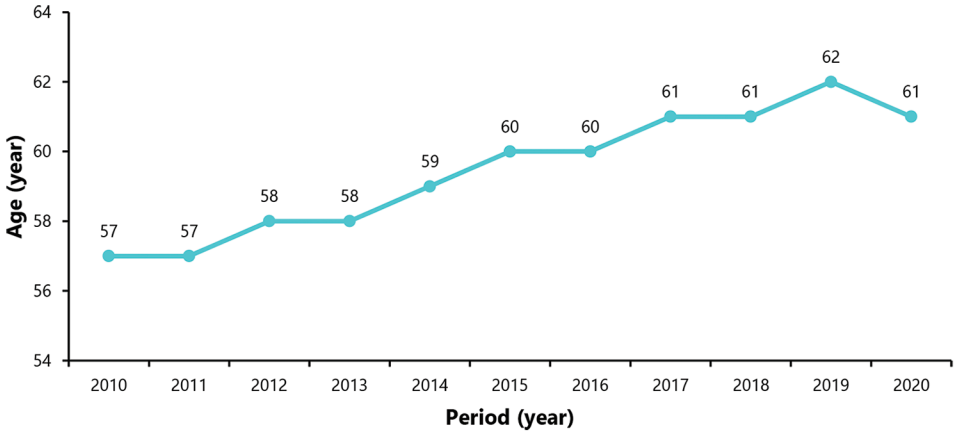


Figure 3. Evolution of life expectancy in Cameroon from 2010 to 2020

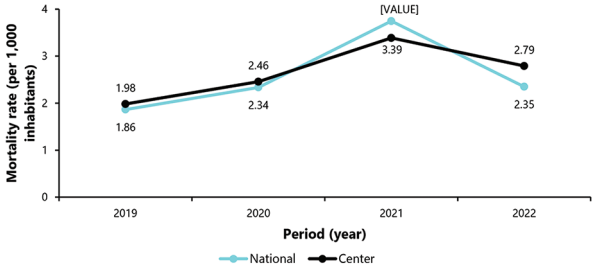


Figure 4. Crude mortality from 2019 to 2022 at the national and regional levels

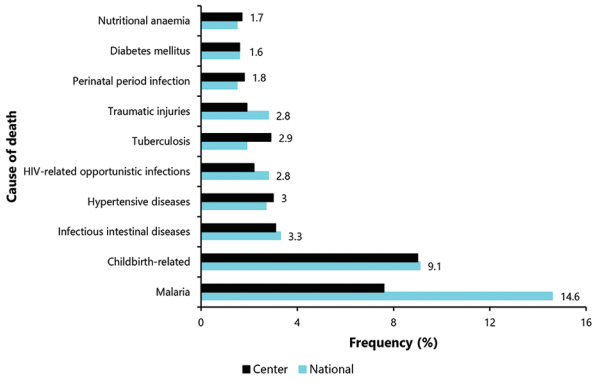


Figure 5. Nine leading causes of death from 2018 to 2022 in the Center Region and at the national level

Childbirth-related causes (9.1%) were the leading cause of death, followed by malaria (7.6%) in the Center Region. Intestinal diseases and trauma were the third and fourth leading causes of death, respectively (Figure 5).

3.2.3. Health promotion component

3.2.3.1. Households using improved toilets

In the Center Region, the proportion of households with improved sanitation ranged from 56% to 92%. This trend

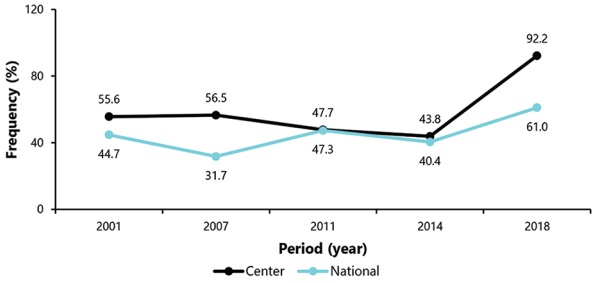


Figure 6. Percentage of households using improved toilets in the Center Region and in Cameroon from 2001 to 2018

Table 1. National and Center Region indices of availability of healthcare and services, 2022–2023

Indicator	Target	Value	
		Regional	National
Infrastructure			
Density of health facilities[a]	2	1.4	2.3
Hospital beds[a]	25	20.1	24.0
Healthcare workers			
Qualified staff[a]	23	13.7	11.3
Use of services			
Use (outpatient consultations/ person/year)	5	0.5	0.41

Note: [a]Value/10,000 inhabitants.

remained relatively stable between 2001 and 2014, then rose sharply to around 90% in 2018. Moreover, these regional estimates remained higher than the national average, which fluctuated between 40% and 60% over the same period (Figure 6).

3.2.3.2. Chronic malnutrition among children under five

The prevalence of chronic malnutrition has declined slightly since 2011, reaching around 8.9% in 2018 in

the Center Region. This rate remains below the national average (13%) (Figure 7).

3.2.4. Disease prevention component

3.2.4.1. Prevalence of hypertension

In the Center Region, the prevalence of hypertension increased steadily from 2020 to 2022, reaching around 3.8%. These estimates remained below the national average (4.7%) (Figure 8).

3.2.4.2. Children aged 0–5 years sleeping under long-lasting insecticidal nets

The trend in the Center Region shows a significant and steady increase in the proportion of children aged 0–5 sleeping under LLINs, reaching three-quarters of the target in 2018 (75.6%). Regional estimates followed national trends over the same period (Figure 9).

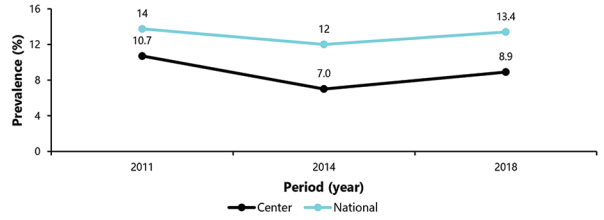


Figure 7. Prevalence of chronic malnutrition among children under five from 2011 to 2018 in the Center Region and in Cameroon

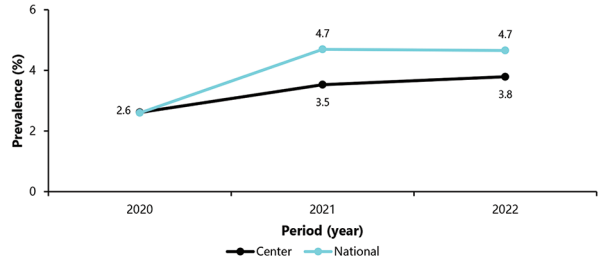


Figure 8. Prevalence of hypertension from 2020 to 2018 in the Center Region and in Cameroon

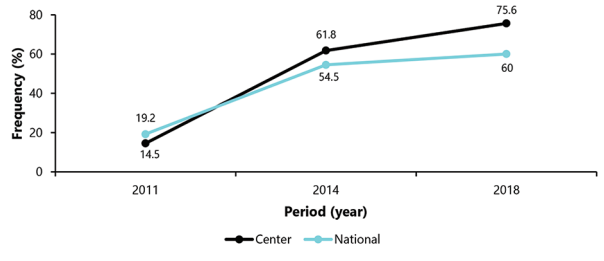


Figure 9. Proportion of children aged 0–5 years sleeping under long-lasting insecticidal nets from 2011 to 2018 in the Center Region and in Cameroon

3.2.4.3. HIV-infected pregnant women receiving antiretroviral therapy

The Center Region's performance in enrolling newly diagnosed HIV-positive pregnant women on ART has remained below the national average and the 95% target set by health authorities over the past 5 years (Figure 10).

3.2.5. Case management component

3.2.5.1. Maternal and child mortality

Maternal mortality in the Center Region has closely mirrored national trends, particularly in 2019 and 2020. However, it has shown considerable fluctuation, with an upward trend in recent years, particularly in 2022.

Infant mortality decreased from 43/1,000 live births in 2014 to 39/1,000 live births in 2018 in the Center Region, reflecting a 9.3% reduction in mortality among children under 1year of age.

Neonatal mortality gradually decreased in the Center Region up to 2022 (3.8/1,000 live births), following a slight increase in 2019 (4.9/1,000 live births). Regional trends remained higher than national estimates over the same period.

After a peak in under-five mortality in 2019 (1.7/1,000 live births), there has been a continuous decline. At the national level, however, mortality remained above the levels observed in the Center Region, stabilizing at around 1.9/1,000 live births (Figure 11).

3.2.5.2. Perioperative mortality

In the Center Region, the perioperative mortality was highest among children under five. However, this rate has decreased over the last 3 years (Figure 12).

3.3. SDG indicators trends

3.3.1. Vaccination coverage

In the Center Region, coverage of tracer antigens (Pentavalent 3, BCG) declined over the 5-year study period, falling below the national target of 90% in 2022.

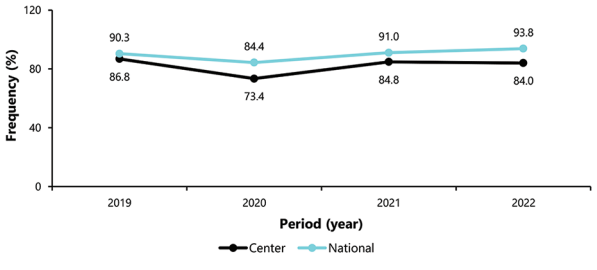


Figure 10. Proportion of newly diagnosed HIV-positive pregnant women receiving antiretroviral treatment from 2019 to 2022 in the Center Region and in Cameroon

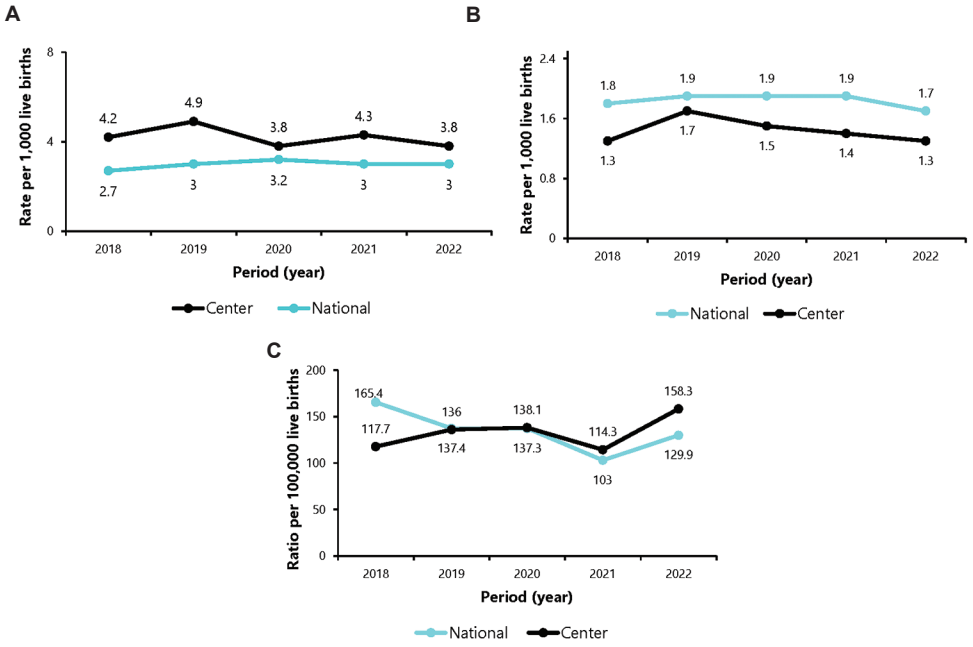
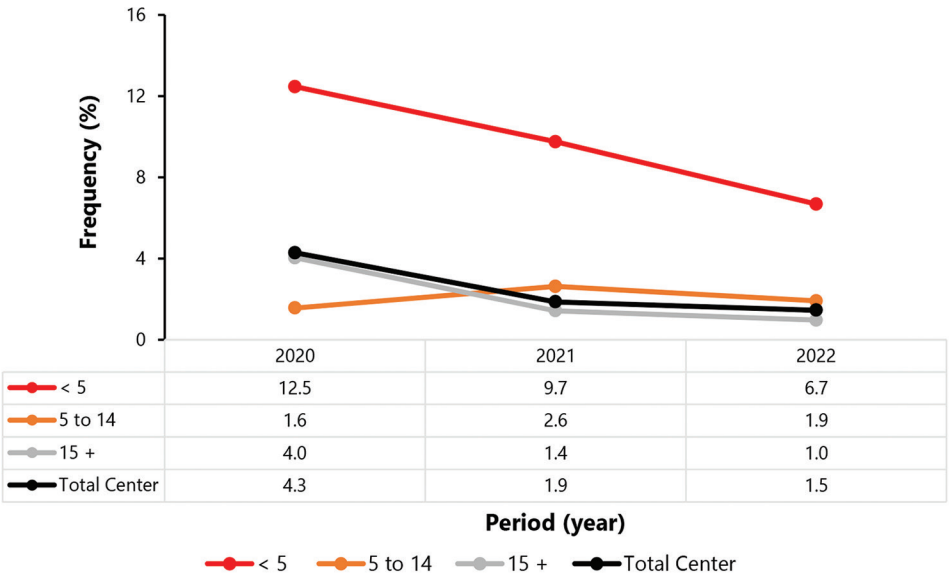


Figure 11. Mortality indicator trends during key periods of life among children and women in the Center Region and in Cameroon. (A) Neonatal mortality. (B) Under-five mortality. (C) Maternal mortality.



	2020	2021	2022
< 5	12.5	9.7	6.7
5 to 14	1.6	2.6	1.9
15 +	4.0	1.4	1.0
Total Center	4.3	1.9	1.5

Figure 12. Perioperative mortality by age group from 2020 to 2022 in the Center Region and in Cameroon

However, coverage remained above the national average throughout the study period (Figure 13).

3.3.2. Antenatal consultations

In the Center Region, the proportion of pregnant women attending four or more antenatal care visits and receiving at least three doses of IPT remained low from 2018 to 2022. Specifically, IPT3 coverage in 2022 was below the national target of 40–60%. The trends show that coverage in the Center Region followed national trends but consistently remained below the national average (Figure 14).

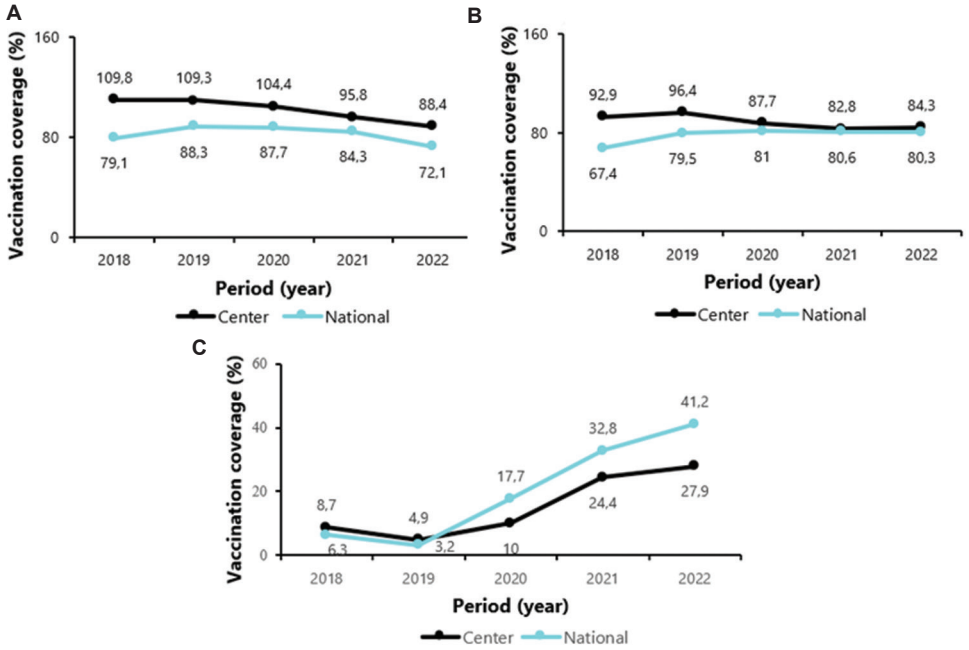


Figure 13. Immunization coverage among children aged 0–11 months from 2018 to 2022 in the Center Region and in Cameroon. (A) BCG vaccine. (B) Pentavalent vaccine. (C) Measles and rubella vaccine.
Abbreviation: BCG: Bacille Calmette–Guérin.

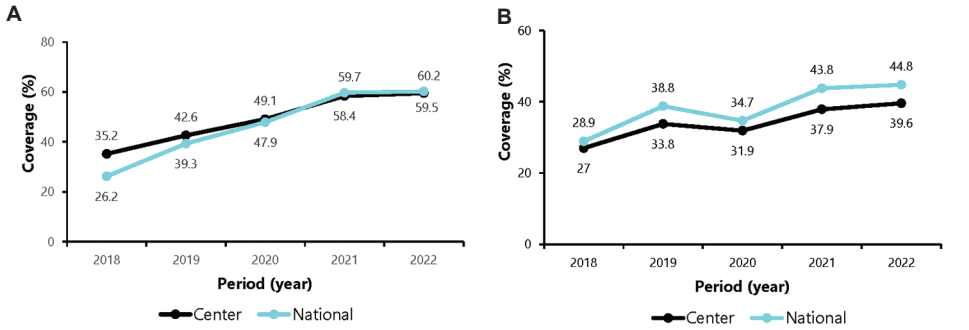


Figure 14. Trends in maternal health coverage in the Center Region (blue line) and Cameroon (black line) from 2018 to 2022. (A) Coverage of four or more antenatal care consultations among pregnant women. (B) Coverage of three doses of intermittent preventive treatment in pregnancy.

4. Discussion

4.1. Key indicators of the Health Sector Strategy

The present study revealed that Cameroon has reached the WHO standard for the availability of health facilities (2.3/10,000 population). However, the Center Region has not yet reached the WHO standard for the availability of health services across all components (WHO, 2014). Therefore, considerable efforts are still needed to strengthen community health services not only by increasing the density of health facilities to bring them closer to communities but also by recruiting and ensuring the equitable distribution of healthcare workers across the region. This will enable health facilities to function optimally and improve the appeal and utilization of these services by the population.

Mortality increased from 2019 and peaked in 2021 before declining in 2022. Deaths related to the coronavirus disease 2019 (COVID-19) pandemic and associated disruptions, such as decreased demand for health services (vaccination, emergency, and outpatient consultations) and reduced quality of care, may explain these trends (Mewoabi, 2022; Moynihan *et al.*, 2021). Similar observations have been made in India (Ajith Kumar & Mishra, 2022).

Improved sanitation was available in 55–92% of all households in the Center Region, consistently surpassing the national average of 40–60%. This superior performance may be attributed to effective community awareness campaigns on sanitation and hygiene, combined with regional economic growth that enables households to invest in improved sanitation facilities. Factors such as urban residence, wealth status, and media exposure are known to influence sanitation access (Demsash *et al.*, 2023). These regional results contrast sharply with findings from Addis Ababa, Ethiopia, where the vast majority of households lacked improved toilets (92–100%) (Belay & Andualem, 2022).

The prevalence of chronic malnutrition among children under five has decreased slightly since 2011, reaching approximately 8.9% in 2018 in the Center Region, and remained lower than the national average (13%). Economic access to nutritious food is an important underlying determinant of nutritional outcomes in Cameroon. According to the *2021 Fill the Nutrient Gap in Cameroon* study, 48% of households cannot afford a nutritious diet. Infant and young child feeding practices are largely inadequate nationally and constitute a major driver of malnutrition (ReliefWeb, 2022). The rate of exclusive breastfeeding is also low, at only 40% (National Health Survey 2018). In addition, a study in Cameroon found that inadequate drinking water consumption is a potentially modifiable risk factor for undernutrition (Ngassa *et al.*, 2022).

Regarding the proportion of children under five sleeping under LLINs, the trend showed a significant and steady increase, reaching three-quarters of the target in 2018 (75.6%), with estimates following national trends over the same period. The Ministry of Public Health conducted four national mass LLIN distribution campaigns, the most recent being in April 2022 (MINSANTE, 2016). This may explain the increased household use of LLINs, particularly among children under five.

The Center Region's performance in enrolling newly diagnosed HIV-positive women on ART has consistently remained below both the national average and the 95% target set by health authorities over the past 5 years. Evidence indicates that key barriers to treatment initiation among pregnant women include fear of disclosing their HIV status to partners and family members, along with persistent stigma and discrimination. Conversely, awareness of HIV status before pregnancy is a crucial facilitator of treatment adherence, underscoring the importance of integrating routine testing and pre-conception counseling into broader strategies to improve maternal ART uptake (Kanguya *et al.*, 2022).

Infant mortality fell from 43/1,000 live births in 2014 to 39/1,000 live births in 2018 in the Center Region, reflecting a 9.3% decrease in mortality among children under 1 year of age. Measures to improve child nutrition, prevent disease (immunization, LLIN use), control epidemics (measles, tetanus, yellow fever), and bring health facilities closer to communities may explain this trend. Similar interventions elsewhere have led to satisfactory reductions in child mortality (Karungula, 1992).

The neonatal mortality rate in the Center Region showed a general decline, reaching 3.8 by 2022 after a temporary increase to 4.9 in 2019. However, regional rates consistently exceeded national averages throughout this period. To accelerate reductions in neonatal mortality, key interventions should include improving working conditions through increased staffing and equipment availability, as well as enhanced training in emergency obstetric and neonatal care. A critical strategic focus should be implementing policies that ensure immediate care for newborns with complications—particularly prematurity, birth asphyxia, and infections—before requiring payment. This approach to removing financial barriers at the point of care has demonstrated significant reductions in treatment delays and corresponding improvements in newborn survival outcomes (Mah Mungyeh *et al.*, 2014; Ndombo *et al.*, 2017).

The under-five mortality rate in the Center Region remained stable at around 1.9/1,000 live births from 2018 to 2022. By comparison, demographic and health surveys in Kenya report higher rates (6–12%). Premature birth, pneumonia, congenital malformations, neonatal infections, malaria, sepsis, measles, complications of childbirth, and diarrhea remain the leading causes of preventable deaths among children under five (Huber, 2016; WHO, 2022).

Adherence to recommended nutrition practices (immediate and exclusive breastfeeding, access to adequate food and micronutrients) is fundamental to preventing many deaths. In addition to these general measures, access to skilled antenatal, delivery, and postnatal care; family awareness of danger signs in children; and improved access to water, sanitation, hygiene, and immunization all contribute significantly to reducing child mortality (Huber, 2016; WHO, 2022).

Perioperative mortality is a key measure of the quality of hospital care. In the Center Region, the perioperative mortality rate was highest for children under five. However, this rate has decreased over the past 3 years. As children under five constitute a vulnerable group, this may explain their poorer post-operative prognosis. A study in Nigeria found that the oldest age group was most affected (Ogbuanya *et al.*, 2022). Enhancing the quality of care—

including reception, anesthetic consultation, technical support, and post-operative monitoring—is essential to improve this indicator (Ouro-Bang'na Maman *et al*., 2008).

4.2. SDG indicators – vaccination and antenatal consultation coverage

Vaccination coverage in the Center Region for tracer antigens (Pentavalent 3, BCG) declined over the past 5 years and by 2022 was below the national target of 95%. However, coverage remained above the national average during the study period. In the aftermath of the COVID-19 crisis, vaccination services experienced a significant drop in attendance due to fears of contamination, compounded by the movement restrictions imposed by administrative authorities in March 2020.

Globally, the COVID-19 pandemic negatively impacted routine childhood immunization coverage and immunization services. In developing countries such as Cameroon, where coverage was already lower than in high-income countries, the impact was even more pronounced, heightening the risk of outbreaks of vaccine-preventable diseases and widening existing inequalities. The implementation of catch-up vaccination activities across all settings is essential to maintain coverage, protect vulnerable populations, and prevent further health crises (Yunusa *et al*., 2022).

In the Center Region, coverage among pregnant women attending four or more antenatal care visits and receiving at least three doses of IPT has remained low over the past 5 years. Specifically, IPT3 coverage in 2022 was below the national target of 40–60% (PNLP/MINSANTE, 2019). The reasons for this poor performance have been examined in previous studies, which identified several factors associated with low attendance at health facilities among women of childbearing age in both rural and urban settings, including lack of decision-making autonomy, geographical inaccessibility, financial barriers, self-medication, reliance on traditional practitioners, and poor quality of services (poor reception, negligence, stock-outs of medicines).

5. Limitations

This study relied on secondary data, which may have inherent limitations related to data collection and transmission quality. However, the National Health Survey data utilized in this study were collected using a rigorous methodology, minimizing the risk of bias. Nevertheless, given that the most recent data available in Cameroon are from 2018, there is a need to conduct a new national health survey to generate more up-to-date and accurate data for decision-making.

6. Conclusion

Based on the key performance indicators assessed in this study, significant progress has been made in strengthening the healthcare system and developing healthy, productive human capital, as evidenced by notable achievements in maternal ART coverage and life expectancy. However, this retrospective analysis reveals that substantial and targeted efforts are still required to address persistent challenges, particularly in reducing nutritional insecurity. To combat chronic malnutrition, which remains a critical barrier to development, a multi-sectoral policy approach is urgently needed. This must extend beyond the health sector to include scaling up and financing evidence-based nutrition-specific interventions, such as promoting exclusive breastfeeding, providing micronutrient supplements for pregnant women and children, and managing acute malnutrition. Concurrently, nutrition-sensitive strategies are vital, including improving household food security through agricultural support for diverse crop production, enhancing access to clean water and sanitation to prevent nutrient loss from diarrheal diseases, and implementing social and behavior change communication campaigns to educate families on optimal infant and young child feeding practices. For the Center Region in particular, policy efforts and resources should be strategically directed toward addressing the suboptimal density of qualified healthcare workers and boosting the utilization of key preventive services. This includes intensifying community-based programs to promote consistent LLIN use for malaria prevention and addressing the financial, geographical, and quality-of-care barriers that deter pregnant women from attending the recommended four antenatal care visits and receiving IPT. Furthermore, the documented decline in routine immunization coverage demands immediate policy action through the implementation of robust catch-up and system-strengthening campaigns to protect vulnerable populations from outbreaks of vaccine-preventable diseases. By prioritizing these targeted, data-driven interventions, Cameroon can not only consolidate the gains achieved but also accelerate its progress toward fulfilling the goals of its HSS and the 2030 Agenda for Sustainable Development, ensuring that these advancements are both equitable and sustainable across all regions.

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Conflict of interest

The authors declare that they have no competing interests.

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Ethics approval and consent to participate

Ethical clearance for the present study was waived by the Faculty of Medicine of Yaoundé's ethical review board. As this secondary data was anonymous and publicly available in aggregated data, there was no risk to the individuals whose data was collected. All methods were performed in accordance with the relevant guidelines of the Helsinki Declaration.

Consent for publication

Not applicable.

Availability of data

All data generated or analyzed during this study are provided in the manuscript.

Further disclosure

The paper has been uploaded to or deposited in MedRxiv (https://doi.org/10.1101/2024.11.25.24317921).

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