

UNPACKING THE DOUBLE BURDEN

STRATEGIES FOR IMPROVING GHANA'S HEALTH

A POLICY BRIEF



EXECUTIVE SUMMARY

This policy brief addresses the need to improve health in Ghana, focusing on the most prominent causes of death due to communicable (CD) and non-communicable diseases (NCD). The recommended solutions involve evidence-based interventions for (1) Malaria (T3, ITNs, vaccination, IPTp, SMC), (2) LRI (vaccination, increase of breastfeeding of 6 months, decrease malnutrition and stunting) (3) cardiovascular diseases (lifestyle changes & training of healthcare staff). By implementing the suggested solutions the weaknesses in the health system and health outcomes for communities in Ghana can be improved.

GHANA'S HEALTH SYSTEM

In recent years the Government of Ghana increased its effort to improve the overall health of its population. The **Ghana Health Service (GHS)** serves as an advocate for health policies, specifically in the primary health care sector. Its tasks include to provide understandable health services at all levels in establishing guidelines and strategies as well as to promote healthy living (MOH 2023). Moreover since 2003 the Ghanaian government implemented the **National Health Insurance Scheme (NHIS)** to improve health care coverage throughout the population (Schieber et al. 2012). The census in 2021 showed that **68.6 % of the population** in Ghana is covered by NHIS or at least a private health insurance (ITA 2022). As a comparison, in the year 2010 around 34% (not including private insurance) of the population were active members in the NHIS (Schieber et al. 2012). Generally, in 2019 Ghana spent around 76 USD per person on health. This number is expected to rise to 172 USD per capita (IHME 2019). Broken down to GDP, this means that **Ghana spent in total 3.5 on its health infrastructure in 2019** (WHO 2022a). One of the biggest issues with health care financing is the constant economic trade-off individuals face between investing in health and other living expenses. This resulted in **36% of out-of-pocket spending** on health services in 2019 (WHO 2022a).

DOUBLE BURDEN OF DISEASE & MORTALITY

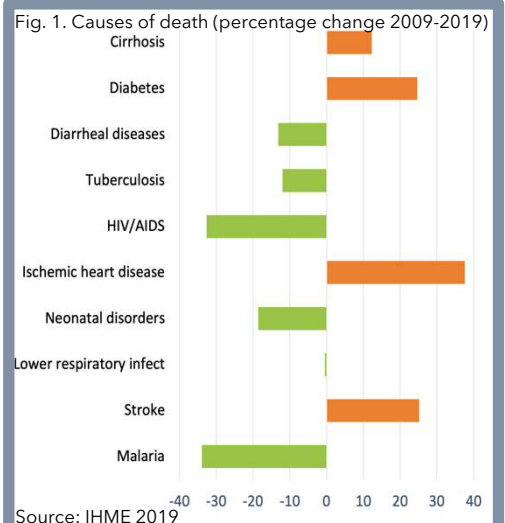
Starting from 2009, the causes of the mortality rate changed fundamentally. Particularly in the realm of **communicable diseases** such as HIV and malaria, there was a **significant reduction** in the number of deaths in both cases (see figure 1). However, **diseases of affluence** such as diabetes have risen as well as deaths due to **heart diseases or strokes** (illustrated in figure 1) (IHME 2019). A strong improvement can also be observed in the mortality rate of children from birth to age 1 as well as up to age 5 (WHO 2020). Nevertheless, the **supply of intensive care beds remains critical**, with only 0.5 beds per 100,000 citizens (Siaw-Frimpong et al. 2021).

REMAINING ISSUES


NHIS provided limited scope of health issues by primarily tackling the most prevalent diseases, such as Malaria (ITA 2022)


Disparities between urban and rural areas in the supplience of health infrastructure, rural areas lack access to modern healthcare services (ITA 2022)

COVID-19 pandemic further attenuated the financial situation for the health sector (WHO 2022a)



KEY FACTS

 Infant mortality rate* **46.99** → **22.91**

 Under-five mortality rate** **69.12** → **33.02**

 **0.5 ICU beds** per 100,000 people***

*dying between birth and the age 1 per 1,000 live births 2010 & 2020 (WHO)

** dying by age 5 per 1,000 live births 2010 & 2020 (WHO)

***Siaw-Frimpong et al. 2021



APPROACH & METHOD

This policy brief will focus on communicable (CD) and non-communicable diseases (NCD), which are considered the leading cause of death in Ghana. It considers the risk factors that influence an outbreak as well as severe disease progression, including death. Data from the Global Burden Disease Project (GBD) of the Institute for Health Metrics and Evaluation (IHME) is used as evidence.

Why is this policy brief important?

- 1 to prevent (infection) with diseases
- 2 to minimize risk factors
- 3 to promote healthier lifestyles
- 4 **to reduce deaths by most prevalent diseases!**

RCTs – are highly advantageous in research as they establish a causal relationship between an intervention and an outcome by randomly assigning participants to treatment and control group.

The policy brief is referring to high quality empirical evidence to make policy recommendations that offer a high probability of success. To extract the key findings from relevant literature, **systematic reviews** are mainly used to cover as many studies as possible as well as to reduce the bias of individual studies, which is important regarding the effectiveness of certain interventions.

Individual studies are examined as well especially if focusing on Ghana specific approaches. Moreover, an attempt is made to include mainly studies with **RCTs** (Randomised Control Trial)

LIMITATIONS

- Due to the **limited scope of briefings, the complexity of the policy recommendations is not fully captured**, e.g. in the case of Malaria prevention, there is a multitude of measures, all of which face specific hurdles and thus require varying responses.
- In some cases, **the data obtained is already several years out of date**. For instance, most data refer to 2019 or even 2010 and can therefore lead to inaccurate conclusions about the prevalence and incidence of a disease.



KEY FINDINGS

I. COMMUNICABLE DISEASES

The prevalence of the two communicable diseases (CD) that cause the most deaths in Ghana, **malaria and lower respiratory infection (LRI), decreased both by 34% and 0.5 %** from 2009 until 2019. Especially since LRI mortality rates hardly decreased, but also since Malaria remains the leading cause of deaths in Ghana, measures to combat these diseases persist essential (IHME 2019).

LRI (Lower Respiratory Infection)

LRIs are globally one of the leading cause of deaths for children under 5 (Jackson et al. 2013). Around 70 % of LRI occur in South Asian or sub-Saharan countries and 97% of the cases in low to middle income countries (Seidu et al. 2019). In most cases **M. Pneumoniae** is causing LRI in children (Jackson et al. 2013).

Exclusive breastfeeding requires that the child is fed with breast milk for at least 5 months. In Ghana **only 43% children receive sufficient breast feeding**. This ultimately leads to undernutrition, which further exposes children to greater risk of dying from diseases such as LRI (UNICEF 2017; Kramer, Kakuma 2012).

RISK FACTORS:
Low-birth weight,
Too short for age (stunted)
lack of exclusive breastfeeding,
undernutrition,
and incomplete immunization.
(Moschovis et al. 2015; Jackson et al. 2013)

In renowned literature, particularly the benefit of **zinc supplementation** is addressed. By analyzing 6 studies that included a total of 5,193 participants, it was found that zinc supplementation reduces the incidence of Pneumonia by 13% and prevalence by 41% (Lassi et al. 2016).

Malaria

Malaria is a preventable and curable disease, which is spread through mosquito bites, which are infected by parasites. African regions are most prone to have a high malaria death rate with 96% in 2021 (WHO 2022b). Nowadays around 2 % of the worldwide malaria deaths happen in Ghana (WHO 2022c). For the control of malaria, four **preventive measures** are essential as well as to **test, treat and track (T3)** the disease.



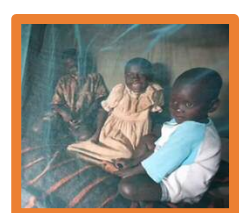
MEDICATION



VACCINATION



TESTING



BED NETS



II. NON-COMMUNICABLE DISEASES

The prevalence of the two non-communicable diseases (NCD) that cause the most deaths in Ghana, **Strokes** and **ischemic heart diseases (IHD)**, increased both by **25 %** and **38 %** from 2009 until 2019 (IHME 2019). Both diseases are classified as cardiovascular diseases (CVD). Generally, CVDs account for most deaths in low- and middle-income nations, where primary healthcare initiatives for early detection and treatment of CVD risk factors are often unavailable. Consequently, CVDs and other NCDs disproportionately affect the poorest individuals in these countries, resulting in delayed detection, premature mortality, and financial hardship from catastrophic health spending (WHO 2021).

Cardiovascular Diseases - Ischemic Heart Disease and Stroke

The percentage of **DALY across all age groups in Ghana** in 2019 was **5.7 % for strokes** and **7.2 % for IHDs** (Vos et al. 2020). As explanation, DALY is defined as the years of life lost due to death and health limitations (disabilities). Both CVDs are caused by common risk factors. On the one hand by those that cannot be influenced, such as age, and on the other hand by modifiable factors, such as smoking and obesity:

Nonmodifiable risk factors	Modifiable risks factors
<ul style="list-style-type: none">• Age (increases with age)• Male sex• Genetics (family history)• Life circumstances (divorced, level of education, unemployment)	<ul style="list-style-type: none">• Hypertension• Current smoking, alcohol consumption• Waist-to-hip ratio, physical inactivity, obesity• Hyperlipidaemia, diabetes mellitus, cardiac causes• Unhealthy cholesterol level

Source: Boehme et al. 2017; Sanuade et al. 2019; Torpy et al. 2009; Sarfo et al. 2018

Generally, public health policies in low- and middle-income countries often neglect CVDs and related risk conditions due to given attention remaining on infectious diseases (Hamid et al. 2019). This ultimately leads to worsening of the **double burden of disease** in Ghana. In a study in 2011, it was found that only **about 35 % of health facilities had necessary hypertension and diabetes medication available** (Kushitor, Boatemaa 2018).

As the incidence of CVDs is reasonably high among Ghanaians with hypertension, diabetes and obesity, **focus needs to be placed on tighter control of hypertension and interventions for regular physical activity** (Hamid et al. 2019; Sarfo et al. 2018).



MALARIA POLICY RECOMMENDATIONS



Insecticide-treated bed nets (ITNs): Around 51 % of households in Ghana already use ITNs (Kanmiki et al. 2019). However, there are major differences between the individual population classes: respondents from the relatively richest fifth were 74% more likely to own an ITN than their counterparts from the poorest fifth (Kanmiki et al. 2019). **ITN interventions in rural Ghana and similar locations should focus on underprivileged populations, such as impoverished and unemployed people. Customized education and campaigns are needed to ensure continued use of ITNs** (Bawuah, Ampaw 2021; Kanmiki et al. 2019). Moreover, the use of ITNs can be further ensured by incentivizing citizens to purchase the nets by themselves, e.g. with coupons (Alfonso et al. 2020).



Vaccination: Currently the only suggested malaria vaccine by the WHO is RTS,S/AS01. In the Malaria Report 2022 it is stated that more than 1.2 million children received the vaccine in Ghana, Kenya and Malawi (WHO). **Accordingly, it is advised to carry out vaccination campaigns and projects on a large scale in order to protect children from infections (CDC 2018). To meet higher vaccination quotas, it is suggested to send reminders about the upcoming vaccination opportunity.** The most successful measure includes direct reminders over the phone as well as through parallel prompts via several channels (Jacobson et al. 2018).



Other preventions such as (1) Intermittent Preventive Treatment of Malaria for Pregnant Women (IPTp) and (2) Seasonal Malaria Chemoprevention (SMC) are highly effective methods, which involve the use of drugs to prevent infections and its consequences for women and children (Cairns et al. 2021; CDC 2018; González et al. 2018). **However, there is still room for improvement. In 2019 (latest data), only about 50% of those under 5 years of age who requested treatment received ACTs (prevention drugs) (WHO 2022c).**



Test, Treat & Track (T3) policy launched in 2012, it recommends universal testing for all suspected cases of malaria, treatment with quality anti-malarial drugs for positive cases, and monitoring of treated patients (Kolekang et al. 2022). The most prominent issue occurring is the decreasing testing rate as well as the lack of malaria case monitoring. **Thus, it is advised to increase the training of staff as well as to provide facilities with additional tests** (Akanteele et al. 2016; Kolekang et al. 2022; Oteng et al. 2020).



LRI

POLICY RECOMMENDATIONS

Immunisation

PCV vaccination: Vaccines can prevent pneumococcal disease caused by streptococcus pneumoniae bacteria. PCV13 or PCV15 is suggested for all children under 5 years old and those between 5 and 18 years old with certain medical conditions (CDC 2023). Ghana implemented a vaccination (PCV13) plan into their infant immunization program in 2012 (Kobayashi et al. 2021). **Most recent data of 2021 indicates that the vaccine coverage is about 98% in Ghana. Since the introduction of the vaccine the economic burden decreased significantly (IVAC). Nevertheless, it is utmost important to keep up the quotas.**

Risk reduction

Exclusive breastfeeding for six months has clear benefits to a shorter period of time. As already mentioned, children in Ghana are not breastfed for a sufficiently long time. Even though the quality of evidence was low due to limited research, some studies still show that health education conducted by trained healthcare professionals as well as support from trained volunteers and peer counselors improved the number of women who began breastfeeding their newborns (Balogun et al. 2016; Buckland et al. 2020). **Consequently, healthcare professionals should be incentivized and instructed to educate expectant mothers about the positive effects of breastfeeding on their children's development.**

Under- and malnutrition - successful strategies for decreasing stillbirths and low birthweight involve the provision of micronutrients, community-based interventions, and supplementary food. The utilization of preventative nutrient supplements for children aged 6-23 months can also promote growth (Keats et al. 2021). **Especially zinc supplementation should be promoted to reduce the incidence and prevalence of pneumonia** (Lassi et al. 2016).

Between 2009-2018 undernutrition among the age of five could be minimized. The prevalence of **stunting (too short for age)** could be decreased from 28 % to 18%, which is an important step to have success in treatments for pneumonia (Moschovis et al. 2015). Figure 2 shows an approach in how to minimize stunting and undernutrition (Aryeetey et al. 2021):

Reduction in stunting due to:

- Increased access and usage of health services (HS); improved access to WASH; availability of ITNs; inventions & initiatives
- Improved living situation; political stability (PS); economic growth (EG); access to infrastructure (IN)

Improvement needed:

- Funding, strengthening of initiatives such as SUN; tackle weaker improvements in rural and poorer communities.



Fig. 2. Undernutrition - Improvements

Source: own illustration deprived from Aryeetey et al. 2021



CARDIOVASCULAR DISEASES

POLICY RECOMMENDATIONS

Overall, lifestyle interventions are an effective measure to reduce risks that lead to CVDs. For successful implementation of lifestyle changes, health care professionals need to take on the role of mediators. Following key points must be considered:

- 1 Address patients' health behaviors and psychosocial barriers in primary prevention & emphasizing lifestyle modification
- 2 Promote diets such as DASH (Dietary Approaches to Stop Hypertension), which is rich in fruits, vegetables, whole grains, and low-fat dairy with reduced sodium and saturated and total fat content
- 3 Encourage regular physical activity; especially recommended aerobic exercise, isometric training & exercises for stress management such as meditation
- 4 **Enhance training of medical staff on NCDs and specifically on CVDs!**

Source: Fu et al. 2020; Hamid et al. 2019; Kaminsky et al. 2020; Kushitor, Boatemaa et al. 2018

In order to be able to address points 1 to 3, the **healthcare personnel must be primarily educated** in terms of CVD diagnosis and management as well as to receive **adequate equipment** (e.g. for monitoring and diagnosis) (Hamid et al. 2019). Basic primary care and information for CVDs can also be **provided by nurses** to relieve the physicians (Kushitor, Boatemaa et al. 2018).

Specific suggestion for Ghana:

To **integrate NCD care into the Community-based Health Planning Services (CHPS)**, which are at the moment targeted at antenatal, post-natal, and child health services.

To stay budget-friendly, **community health nurses** on a fixed salary could be **assigned to rural areas** in Ghana to offer straightforward NCD care (Kushitor, Boatemaa et al. 2018).





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