

**Public-Private engagement and health systems resilience in times of
health worker strikes: Case study of the Christian Health Association of
Ghana and Government of Ghana engagement**



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Abstract

Globally, health worker strikes pose a threat to the fundamental human right to the highest level of health and the realization of universal health coverage. The impact of these strikes has been noted to be more detrimental in low and middle-income countries (LMICs). During health worker strikes in LMICs, private providers have been identified as crucial to maintaining service continuity. However, poor engagement with the private sector might result in compromising the quality of care received at this time and may accrue financial hardship for the population, especially the poor. Ghana has been the site of many public sector nationwide health worker strikes over the past two decades. During these strikes, the grouping of faith-based health providers, networked mainly by the Christian Health Association of Ghana (CHAG), is thought to play an important role in ensuring the continuation of services. However, no study has yet described or explored private and public sector engagement during health worker strikes and whether these interactions may contribute to health system resilience.

This case study described and explored the engagement between CHAG and the Government of Ghana during public sector health worker strikes from 2010-2016 and its implications for health system resilience. Following an initial scoping literature study, three strike incidents were chosen as embedded units for further analysis. The initial scoping review was followed by a desk-based review of additional data from peer-reviewed literature, institutional databases, and media archives. A secondary analysis of interview transcripts from a related project was also undertaken, and expert consultations were undertaken. Data was analyzed using a qualitative thematic approach.

Our findings showed that health worker strikes in Ghana were a chronic stressor. We found evidence of system-level interactions between CHAG and the government, where the government publicly directed patients to CHAG facilities to allow for 'absorptive' and 'adaptive' resilience strategies. This was possible due to CHAG's non-striking convention, the two actors' unique secondment policy, and the presence of a National Health Insurance System. We discovered that system 'software' components, including trust, shared values, and power influenced the dynamics of this interaction. However, there was limited evidence of additional support from the government to CHAG facilities during strikes or increased collaboration between the two actors. Additionally, it was found that chronic delays in reimbursements from the National Health Insurance System to private providers impeded CHAG's ability to provide care and that there were challenges to CHAG's non-striking convention from within and outside the organization.

The study highlights the critical role that private providers can play in enhancing the resilience of the health system during strikes in Ghana. To this end, the government should establish close and proactive partnerships with private providers to guarantee adequate support during such disruptions- including responding to challenges with the National Health Insurance System and scaling up resources at private facilities during strikes. The study also showed that important complexities (including challenges to CHAG's non-striking convention) need to be considered moving forward. Additionally, the government should (with a keen awareness of the complex adaptive nature of health systems) engage in joint efforts with relevant stakeholders to proactively address human resource-related challenges. The case study highlights the continued and expanding significance of private providers (in particular non-profit providers) in the strengthening and resilience of mixed health systems. LMICs must plan for strikes by fostering collaborative relationships with the private sector and developing strike preparedness strategies and policies to ensure the continuation of emergency and essential services during these times.

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Acronyms and Abbreviations

ADHA	Additional Duty Hours Allowance Policy
CHA	Christian Health Association
CHAG	The Christian Health Association of Ghana
FBHPs	Faith-based health providers
FWSC	Fair Wages and Salary Commission
GHOSPA	Government Hospital Pharmacists Association
GHS	Ghana Health Services
GMA	Ghana Medical Association
GoG	Government of Ghana
GRNMA	Ghana Registered Nurses and Midwives Association
HPSR	Health Policy and Systems Research
HRH	Human Resources for Health
IMF	International Monetary Fund
LMICs	Low and middle-income countries
MOF	Ministry of Finance
MOH	Ministry of Health
MOU	Memorandum of Understanding
NDC	National Democratic Congress
NPP	New Patriotic Party
PPE	Public-private engagement
PPP	Public-private partnerships
SDGs	Sustainable Development Goals
SSA	sub-Saharan Africa
SSSS	Single Spine Salary Structure
UHC	Universal Health Coverage
WHO	World Health Organization

Glossary

Universal health Coverage	“Ensuring that all people have access to the effective promotive, preventive, curative, rehabilitative, and palliative health services they require, and that the use of these services does not expose the user to financial hardship” ¹
Health worker	“A health worker is any individual who offers health services either through direct contact as clinical workers (doctors, nurses, physiotherapists, occupational therapists) or indirectly as assistants’ helpers or laboratory technicians (non-clinical staff)” ²
Strike	“The collective withholding of labor/services by a category of professionals to extract concessions or benefits” ³
Health system resilience	“The capacity of health actors and institutions and populations to prepare for and effectively respond to a crisis, maintain core functions when a crisis hits and informed by lessons learned during the crisis, reorganize if conditions require it” ⁴
Private health provider	“Individuals and organizations that are neither owned nor directly controlled by governments and are involved in provision of health services. It can be classified into subcategories as for profit and not for profit, formal and informal, domestic and international” ⁵
Public-private engagement	“Deliberate and systematic collaboration, in accordance with national health priorities, between the state and the private health sector” ⁶

¹ World Health Organization. Health in 2015: from MDGs, millennium development goals to SDGs, sustainable development goals. 2015.

² Joseph B, Joseph M. The health of the healthcare workers. Indian journal of occupational and environmental medicine 2016;20(2):71.

³ Wolfe S. Strikes by health workers: a look at the concept, ethics, and impacts. Am J Public Health. 1979;69(5):431-433.

⁴ Kruk ME, Myers M, Varpilah ST, Dahn BT. What is a resilient health system? Lessons from Ebola. Lancet. 2015;385(9980):1910-1912.

⁵ Klinton J. The private health sector: an operational definition. World Health Organization. 2020:2-4.

⁶ Whyte E, Olivier J. Models of engagement between the state and the faith sector in sub-Saharan Africa—a systematic review. Development in Practice 2017;27(5):684-697.

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Study Protocol

Introduction

There is widespread acceptance of the necessity for governments to progress toward universal health coverage (UHC). Health has been identified as a critical consequence and determinant of all elements of the 2030 Sustainable Development Goals (SDGs), and UHC is a crucial objective (1). Although several methods for achieving UHC have been described, the goals of UHC remain the same: *"ensuring that all people have access to the effective promotive, preventive, curative, rehabilitative, and palliative health services they require, and that the use of these services does not expose the user to financial hardship"* (2). For this purpose, governments in many nations, such as Ghana, have implemented efforts to achieve UHC (3). For instance, Ghana's 2020 National Health Policy is centered on attaining SDG 3 and emphasizes the interdependent and indispensable role of UHC in achieving the SDGs (4).

A motivated, trained, and equitably distributed health workforce is essential to achieve UHC. Human resources for health (HRH) are one of the six key building blocks of a health system established by the World Health Organization (WHO) and is arguably one of the most essential components of a health system (5). A health worker⁷ is any individual who offers health services either through direct contact as clinical workers (doctors, nurses, physiotherapists, occupational therapists) or indirectly as assistants' helpers or laboratory technicians (non-clinical staff) (6). Health worker density is among the most critical factors determining UHC service availability in low and middle-income countries (LMICs) (7). Health service coverage depends extensively on health professionals' availability, accessibility, and competency to provide high-quality, patient-centered care (7). Countries at all levels of socio-economic development face varying degrees of challenges in one of these areas (5).

Noting the importance of HRH, it is of crucial concern for attaining health system goals and, ultimately, the SDGs when health workers go on strike. Health worker strikes are a worldwide phenomenon and are becoming a more common occurrence in LMICs such as Ghana (8). A 'strike'⁸ can be defined as *"the collective withholding of labor/services by a category of professionals to extract concessions or benefit"* (9). Strike action might be confined to a single hospital or region, or it can take the shape of national public sector strikes, the latter of which is significant due to the nationwide interruption of health services (10). Though research is undecided as to the impact of health worker strikes on overall mortality (11-14), public sector strikes in LMICs have been found to have significant health systems effects, for example leading to a substantial decrease in in-patient and outpatient services (13,15,16); breakdown in trust between community and health workers (17,18); decreased health worker motivation (17,19), and entrenching inequalities as the effects of health worker strikes are disproportionately felt by the poorest in society (14,17,20).

Important contextual considerations for understanding health worker strikes in LMICs include the systemic inadequacies linked to human resources challenges such as staff shortages and inequitable staff allocation (21-23). Common causes of health worker strike in the public sector include inadequate poor working conditions and the failure of employers (often the government) to comply with collective bargaining agreements (10).

⁷ For the purposes of this study, we only focused on health workers that have direct contact with patients such as doctors, nurses, physician assistants and pharmacists.

⁸ Unless otherwise states 'strike' as used in this paper refers generally to health worker strikes. We use 'strikes' and 'health worker strikes' interchangeably throughout the paper.

Few studies have examined the experiences and impacts of strikes in LMICs and how health systems respond during strikes (8,17,18). Most literature on strikes has focused on assessing the effect of strikes on mortality (13) and examining the ethical concerns of strikes (17). Studies that have examined responses to strikes in LMIC settings found that the ability of the population to obtain alternative health care in private facilities is vital to ensuring the continuation of services (8,17,18). In many contexts, patients commonly turn to the private sector when public sector health worker strikes occur (17).

However, without system-level interactions with the private sector to better facilitate this coordination, accessing health services in private facilities may have significant financial consequences for poor and vulnerable populations and compromise the quality of care received in these facilities (10,17,18). Thus, governments in these contexts many need to build more formal relationships with the private sector to develop strike response capabilities. Importantly, there is an ever-increasing understanding of the significant role the private sector can play in LMICs in achieving health system strengthening and responsiveness (7,24,25). Due to resource difficulties in LMICs, the public sector's ability to achieve UHC goals alone is significantly undermined. Consequently, cooperation between the public and private sectors has become increasingly important in these contexts (26).

In light of the potential repercussions and ramifications of health worker strikes on the attainment of UHC in Ghana and other LMICs, every effort must be taken to prevent health worker strikes and respond effectively when strikes occur (20). There is a need for more health systems-based research focused on understanding resilience capacities and strategies nations can adopt to cope with strikes. Despite the important role private providers can play in offering health systems resilience during this time, it is of great concern that no study has explored this interaction in any significant detail (17).

Scoping literature review

A scoping literature review was conducted to explore the context of health worker strikes, the engagement between the private and public sector and health system resilience in Ghana and LMICs. The search strategy used is discussed in detail in this protocol's methods section, and the results are presented below.

Health worker strikes

Health worker strikes are a global phenomenon. Between 1996 and 2005, there were approximately 620 reported strikes in the health sector, and almost one-fifth occurred outside of sub-Saharan Africa (SSA) (13). In 2015 alone, health worker strikes were reported in India, Australia, Ghana, Nigeria, Venezuela, and the United States (12). A review of health worker strikes in low-income countries by Russo et al (2020) found that the annual median number of strikes in these settings was six strikes annually (the highest number of strikes were recorded in 2014 and 2018), and the annual number of working days lost to strikes in low-income settings was projected to be 77.5 days (on average, a strike in the health sector was taking place in a low-income country every third working day) (8).

The subject of health workers' right to strike is laden with significant ethical disputes and has been reported on in detail elsewhere (9,10,12,17,27,28). Practitioner strikes generate tension between healthcare personnel's responsibilities to safeguard their patients' health and their rights as employees (12,28). The primary purpose of a strike by an employee is to inflict some loss, usually financial, on an employer to convince them to terminate the impasse in negotiations and concede to the workers' demands (10). In the case of public sector health worker strikes, where the government is often the employer, the financial impact is indirect, and

the strikes' ability to negatively impact patients is more direct (27). Therefore, some patients must suffer harm or inconvenience as a result of a health worker's strike for it to succeed (27)

The impact of strikes on a nation and patients is not immediately catastrophic and is highly context-dependent and determined by several factors, such as the length of the strike, the precise measures taken to maintain a level of service supply during the strike, and the population's ability to acquire alternative care (8,17). In most studies evaluating the impact of health worker strikes on patients and the general population, mortality has served as the primary outcome measure and paints a divided picture. Some studies indicate that mortality rates fall or remain unchanged during strikes (11-13), whereas others indicate an increase in mortality (14,29). However, analyzing the consequences of strikes on patients based purely on mortality provides a very narrow and constrained view of the overall impact of strikes. In most situations, death is an uncommon occurrence that is mostly unaffected by extreme shocks (11). Several of the primary causes of death, for instance, are immune to medical therapy (11). In addition to preventing death, the health system aims to reduce pain and disability and enhance the overall quality of life and well-being (21). The effect of strikes on these objectives are not represented in mortality statistics.

However, consistent across all settings, regardless of income level, is that strikes commonly affect the delivery of health services, with the potential to have significant financial and political ramifications for a nation (8,11,12). In high income settings, massive cancellations of elective surgeries and hospital consultations have resulted from strikes (8,12,30). In 2012, for instance, doctor strikes in the United Kingdom led to a 45.5% reduction in outpatient services (12,30). The effect of strikes in LMIC settings has been argued to be worse (8,13,17). These adverse health system outcomes have been linked to infrastructural challenges, existing resource challenges, already-limited human resource capacity in these settings, weak institutional arrangements, and lack of access to affordable alternative healthcare sources during strikes (8,17).

In SSA, countries that often experience health worker strikes include Ghana, Kenya, Zimbabwe, and Nigeria. These strikes often take the form of national public sector strikes (13). For example, in Kenya in 2017, doctors embarked on a 100-day strike, followed by nurses and shortly after that nurses embarked on a 110-day strike (17,18). In 2015 and 2016 in Ghana, various health professionals, including pharmacists and doctors, embarked on nationwide strikes, including a three-week doctor strike in August 2015 (31). Public sector health worker strikes of this nature often result in the suspension of outpatient services and even emergency services (15).

The impact of health worker strikes in LMICs is disproportionately felt by the poor, which further entrenches the health system's underlying social inequalities. A sizable proportion of the population in LMICs depends on government-run public services (8,10,17). Even when patients have access to private healthcare facilities, doing so sometimes comes at a considerable cost, further entrenching the poverty of vulnerable individuals who must rely on private healthcare (10,17,18). Furthermore, all health worker strikes reported in these settings affect outpatient services (8). A study by Scanlon et al (2021) revealed that pregnant women in Kenya were significantly less likely to receive sufficient prenatal care, such as vaccinations and antenatal check-ups, during strike periods (18,32).

Strikes may also have unquantifiable harmful consequences on 'software'⁹ components of the health system (17,18,33). The loss of trust between health personnel and the populations they serve is an essential consequence of health worker strikes in LMICs (17,18,33). Trust is vital in health systems because the health

⁹ The Ortiz Aragon framework is commonly used in health systems to describe the capacities of an organisation. Hardware refers to resources such as infrastructure, technology and finances (105). Software is divided into two components (105). Tangible software refers to capacities such as formal management procedures and processes and intangible software refers to values, norms, power and relationships (105).

system is seen by most as being social and relational (17). The effect of health worker strikes on trust is worrying as trust has been associated with improving patient outcomes such as the adoption of preventative behaviors and adherence to treatment (18).

Recognizing that strikes are a typical occurrence in LMICs with potential negative impacts on the health system, proper planning and preparation must precede any potential crisis (12,15,17,22). Due to the influence of strikes on health care delivery and other health system dynamics, health worker strikes can be considered a chronic or 'acute' health system stressor or shock. A stressor is a persistent disruption of the health system's operation, while a shock is an acute disruption (34). Consequently, it is crucial that governments thoroughly understand the dynamics of strikes and establish resilience and response capacities for when they arise.

Health system resilience during health worker strikes

In recent years, the concept of 'health system resilience' has undergone significant modification and discussion. The West African Ebola outbreak and the COVID-19 pandemic have influenced the prioritization of systems resilience in the global agenda (35). Most definitions and concepts of resilience characterize resilience as the ability of the system to absorb shocks, respond to shocks, and emerge from those shocks even stronger than before (36). Kruk et al (2015) define health systems resilience as *"the capacity of health actors and institutions and populations to prepare for and effectively respond to a crisis, maintain core functions when a crisis hits and informed by lessons learned during the crisis, reorganize if conditions require it"* (36).

In addition, 'everyday resilience' as described by Barasa et al (2017) and Gilson et al (2017) emphasizes the need for systems to respond effectively to day-to-day chronic health system difficulties in addition to acute shocks - which were often the focus of health systems resilience literature (34,37). An 'acute shock' is sudden occurrence and transient in nature. 'Chronic stressors' are described as persistent and recurrent challenges over a long period of time (34,37). Broadly there are three types of resilience strategies utilized by health institutions, absorptive, adaptive, and transformative (37). Absorptive strategies refer to strategies that allow the system to continue delivering services without any meaningful change to its original structure (34,38). In contrast adaptive strategies require the system to make some adjustment in response to the shock (34,38). At a point where a system must implore strategies that fundamentally alter its original structure then the strategy is regarded as transformative (34,38).

Notably, resilience can be viewed as both an outcome and an ability of a system (39). As an outcome, resilience is seen as a quantitative measure of the performance of a system in dealing with shocks (40). Health system resilience as an ability, on the other hand, refers to the actions and strategies that are put in place to build and maintain the ability of a health system to withstand and recover from disruption (39). In this study, we focus on resilience as an ability of a system in line with the conceptualization of health systems as socially constructed complex adaptive systems¹⁰ (34,37,39). Thus, in understanding resilience, there is a particular emphasis on understanding what gives the system the ability to absorb, adapt and transform to shocks and stressors (39)- including important effects of software elements in a system (such as power, values) and the interactions between actors (34).

Though health systems resilience has gained prominence on the global health agenda, there is widespread agreement that the term is still primarily theoretical in the field of Health Policy and Systems Research (HPSR). Saulnier et al (2021) report on the findings of the global health system consortium established to identify priority areas for health systems resilience research. One of the critical issues noted was the need for research

¹⁰ We unpack the concept of health systems being conceptualized as complex adaptive systems later (see theoretical underpinning).

on how private providers can contribute to the resilience of health systems in the face of shocks and stressors (41). In health systems resilience literature, it has also been emphasized that there is a need for greater understanding of the types of shocks that health systems confront and how systems respond to specific shocks (as studies have commonly focused on the resilience of the system as a whole) (35).

A scoping review of studies that mention health system resilience during health worker strikes found nine studies that addressed this in some detail (Table 1). These studies show that in some LMIC settings, there are often no system-level mechanisms for responding to and managing strikes (17,33,42,43). Typically, individual health providers and communities undertake resilience methods that are ad hoc, inconsistent, and difficult to sustain (17,33,42,43). The studies that directly analyzed health system resilience during strikes utilized the 'everyday resilience framework' and were primarily focused on Kenya (14,17,20). These studies classify the resilience strategies in Kenya as absorptive and adaptive, meaning that the strategies were short-term and limited (17,18). These studies also found no evidence of 'transformative strategies' and noted that the Kenyan health system was poorly prepared to face future strikes (17,18).

Nearly all studies on health system resilience during health worker strikes noted that access to private health services as an alternative form of care was essential for the continuation of services and resilience of the overall system (13,14,17,20,33,42-44). A study by Ong'ayo et al (2020) in the *Lancet* which found that mortality rates in Kenya remained constant during strike periods attributed their findings in part to the continuation of services in private facilities (13). A study in Nigeria found that during strikes there was a 66% increase in referrals to private facilities (44).

In addition, the literature indicates that the private sector may not always be able to accommodate the surge of patients (14,17,42). A study by Adam et al (2018) at a faith-based hospital during the 100-day doctor strike in Kenya revealed an increase in hospital mortality (14). The study found that although patients may be redirected to private facilities for care, the lack of effective strategies to manage the patient load may cause these institutions to become overwhelmed, compromising the quality of care received (14).

Some studies have highlighted the need for more system level coordinated strategies between public and private health facilities during strikes (8,14,17,20,42,43). This coordination might facilitate the sharing of resources and the referral of patients during emergency situations, such as strikes. For example, Waithaka et al (2020) found that during the strike period examined in Kenya, some managers adopted informal systems of performing operations in the public sector and then transferring patients to private facilities for post-operative care (17). Some sub-country managers also supplied resources to the private sector to improve their ability to provide services to the community (17). However, these strategies were adopted by individual health providers in Kenya and were not a state approach to the strikes. Waithaka et al (2020) state that further research is required to determine whether and how private providers might provide resilience capacities the public sector can lean on during strikes (17).

Public-private engagements in LMICs

The majority of LMICs have a 'mixed' health system consisting of both a public (state actors) and a private sector (non-state actors), also known as a public/private mix (45). LMICs often face numerous health system challenges, including infrastructural and resource limitations (46). These obstacles make it difficult for the public sector in LMICs to attain UHC and the provision of health care for all (26,47,48). As a result, policymakers are progressively establishing channels for private sector involvement (49). It is well-established that formal engagement and integration of the private sector into the health system in LMICs can help strengthen health systems improve resilience (26,48-53).

The WHO defines the private health sector as *“Individuals and organizations that are neither owned nor directly controlled by governments and are involved in provision of health services. It can be classified into subcategories as for profit and not for profit, formal and informal, domestic and international”* (54). The perceptions on private sector involvement in the provision of health services underwent significant transformation in the 1980s and 1990s. Previously, the consensus was that the state was the sole and rightful provider of health services (55,56). However, it became apparent that many LMICs lacked the resources to increase public spending on health, and a sizable portion of individuals in LMICs relied on private sector services, often at a significant financial cost (49). A report by the International Finance Corporation in 2011 found that the private sector was responsible for 50% of health services in Africa (49). The World Health Assembly passed a resolution in 2010, encouraging nations to engage the private sector in delivering basic healthcare services (55).

Understanding the role private providers can play in achieving health system objectives requires understanding the mechanisms by which a government engages private providers (51). Commonly, these mechanisms are known as public-private engagements (PPEs) (26). PPE can be defined as *“deliberate and systematic collaboration, in accordance with national health priorities, between the state and the private health sector”* (45). It is important here to draw a distinction between PPE and public-private partnerships (as these two terms are sometimes used interchangeably in the literature) (56,57). PPE refers to a broad category of different models of collaboration between the state and private sector and is inclusive of public-private partnerships-which represent one model (56,57). The public private partnership is defined as *“long term contract between a private party and the government entity for providing a public service, in which the private party bears significant risk and management responsibility, and remuneration is linked to performance”* (56,57).

Well-designed PPEs have been linked to financial advantages, quality enhancement, and access to health services (53). PPEs can take on many forms and for various purposes (26,45,49,58). Prior research, albeit extremely limited in the context of LMICs, has attempted to describe PPE arrangements in countries, classify the different types of PPEs, and begin to comprehend why some arrangements succeed while others fail (22,24,25,48,59). PPE arrangements have been noted to contribute to LMICs progressing towards UHC (24,25,48,59), assisting with the prevention and management of disease burdens such as TB and HIV (46,60), and responding to human resource challenges (5,22,24). Though these arrangements are in wide existence in SSA, it has been noted that several PPEs fail to meet their objectives and goals (49,57,58). However few studies have analyzed PPE arrangements in Africa and the elements that contribute to their success or failure (45,58).

Whyle and Olivier (2016) developed a typology for classifying PPE arrangements in Southern Africa (58). They identified eight distinct PPE models, including contracting out, voucher programmes, development partnership (DP) regulation, and public-private partnership (PPP). The contracting-out model and public-private partnerships are examples of frequent PPE arrangements discussed in SSA (45,48,58,61). A contracting-out model is the *“delegation of a health-related responsibility by the state to a provider for a price”* (58). This PPE arrangement is characterized by the transfer of duty for services to private suppliers while the public sector retains control over choices on resource allocation. Typically, these agreements have a brief and highly specialized time frame (45,58). In contrast, PPP models are characterized by a long-term relationship, the existence of a contract, a high level of risk sharing, and collaborative relationships. Importantly, the PPE models are influenced by a range of ‘software factors’ including trust, values and power relationships (58).

Faith-based health providers and PPE

In SSA, faith-based health providers (FBHPs) are one of the most prominent private providers (45,62,63). These providers are typically religiously affiliated and non-profit organizations (64). FBHPs refer to health facilities that provide health services, along with their governing bodies, linking networks, and affiliated entities (45). Twenty years ago, there was a lack of literature on the scope, function, and integration of FBHPs within health systems (62). However, a revived emphasis on the importance of FBHPs in African health systems and the role of religion in development during the past decade has resulted in an increasing body of work on FBHPs (62,65). It is commonly acknowledged that FBHPs play an important and prominent role in the provision of health services in SSA (45,58,62,63,65).

Most FBHPs in SSA are affiliated with the Christian faith. The desire to better coordinate services and negotiate the role of FBHPs in post-independent African states led to the founding of the umbrella organizations referred to as Christian Health Associations (CHAs) (45,59). FBHPs trace their origins to the arrival of Christian health missionaries in Africa during the colonial era (62). Although their aim, function, and activities have evolved, several FBHPs have retained a strong presence post-independence (45). Post-independence many FBHPs gained greater independence from their international denominational authorities, which resulted in a decline in denominational funding over time (45,59,63). This increased the dependence of FBHPs on their governments (63). In the 1960s, there was a shift toward developing national networks to improve the coordination of services and encourage collective participation in governance to facilitate engagements with governments (63). There are currently CHA networks in 23 of Africa's 54 nations, including Ghana, Uganda, Malawi, and Kenya (63). Though the organizational structure and nature of CHAs vary greatly from country to country, with some being loose, poorly integrated networks and others being strong, robust networks, they share some commonalities, such as the objective to improve and better organize collective negotiation with government (63).

Table 1 Relevant studies for scoping review on resilience responses to strikes in LMICs

Source	Title	Country of focus	Focus and/or Methodology	Relevant findings
Waithaka et al (2014)	Prolonged health worker strikes in Kenya perspectives and experiences of frontline health managers and local communities in Kilifi County	Kenya	An embedded research approach was conducted on the Kenyan West coast, where qualitative data was collected through informal observations, reflective meetings and interviews with frontline health managers and local communities.	Showed that frontline managers adopted a range of innovative strategies to maintain services - including collaboration with the private sector. Applies 'everyday resilience' and described these strategies as 'absorptive' and 'adaptive' as strategies were ad-hoc, inconsistent and difficult to sustain. Found limited evidence of 'transformative strategies and preparedness for strikes. Noted that patients commonly turned to the private sector
Scanlon et al (2021)	It was hell in the community: a qualitative study of maternal and child health care during health care worker strikes in Kenya	Kenya	Explores the perspectives of community health workers and nurses during health worker strikes in Kenya through in-depth interviews and focus group discussions	The study applied the 'everyday resilience' lens to evaluate the resilience of the healthcare system during strikes. The results showed that the tactics used during the strikes were primarily temporary and inadequate, lacking in system-level approaches to handle the strikes. The study suggests maintaining partnerships and connections with the private sector as a way to preserve services.
Adam et al (2018)	Pediatric and obstetric outcomes at a faith-based hospital during the 100-day public sector physician strike in Kenya	Kenya	Reports on experiences at AIC-Kijabe Hospital, a not-for-profit, faith-based Kenyan hospital. Routine data on admissions and deaths of newborn and pediatric patients for a period.	The research found that there was a rise in fatalities at the faith-based hospital, showing that the private hospital was unable to handle the increased number of patients due to the strikes, leading to its inability to manage the patient load.
Irimu et al (2018)	Tackling health professionals strikes an essential part of health system strengthening in Kenya	Kenya	Reports on strikes in Kenya between 2010 and 2017	The conclusion of the report states that government's knee-jerk reactions, such as intimidating healthcare workers, are ineffective. The report emphasizes the importance of setting up solid connections with private sector partners and creating risk management plans that are established prior to times of emergency.
Salama, McIsaac and Campbell (2019)	Health worker strikes: a plea for multi-sectoral action	LMICs	Editorial piece on health worker strikes in LMICs	The report underscores the necessity for collaboration across different sectors to effectively prevent disputes and for the involvement of the private sector during strikes.
Nyagetuba and Adam (2019)	Health worker strikes: are we asking the right questions?	LMICs	Commentary on the current nature of strikes in Kenya and other LMIC settings	The report acknowledges that strikes by healthcare workers are a persistent and significant issue that negatively affects the delivery of health services across Africa. It recognizes the impact that strikes have on trust and the motivation of healthcare workers.
Russo et al (2019)	Health workers' strikes in low-income countries: the available evidence	LMICs	A systematic review of grey literature on health worker strikes in lower-income countries from 2005-2018	Presents a framework for evaluating individual strike occurrences, taking into consideration the micro and macro factors that contribute to strikes in lower-income nations.
Ong'ayo et al (2019)	Effect of strikes by health workers on mortality between 2010 and 2016 in Kilifi, Kenya: a population-based cohort analysis	Kenya	Uses daily mortality data obtained from demographic surveillance data to estimate changes in mortality during strike periods from 2010 to 2016.	The report observed that during strikes in Kenya, public hospitals experienced disruptions in service delivery, while services were maintained in private and faith-based hospitals. This was noted to play a role in the overall conclusion that mortality rates remained unchanged between the strike and non-strike periods.
Oleribe et al (2020)	Industrial action by healthcare workers in Nigeria in 2013–2015: an inquiry into causes, consequences and control—a cross-sectional descriptive study	Nigeria	Cross-sectional descriptive survey using self-administered questionnaires.	The study discovered that in Nigeria, healthcare worker strikes resulted in 66% of patients being referred to private healthcare facilities. Unlike other studies, the primary reason for the strikes found for strikes was poor leadership and management.

Whyte and Olivier (2017) contend that Christian Health Associations (CHAs) have a distinct public-private engagement (PPE) model with their governments, referred to as the *"CHA-State PPE model"* (Appendix 11) (45). They found that this model embodies characteristics of both contracting out and PPP models. Like contracting out models, the CHA-State model exhibits characteristics of *"duty transfer to CHAs"*, a *"hierarchical relationship in which the state retains control"*, and *"restricted resource sharing"* (45). It also mirrors a PPP model in its long-term, collaborative nature and significant risk transfer (45). What is particularly interesting about the CHA-State PPE model is that the relationship between the state and CHAs is usually formalized through a memorandum of understanding (MOU) as opposed to a legal binding contract (45). Currently, 11 of the 23 African states with CHAs have signed an MOU with their respective governments (63). The non-binding nature of these MOUs means that they often are not legally enforceable and rely heavily on trust between both parties to fulfill the respective agreements (58,61). Despite the unique elements displayed by the PPE model, few studies have explored this model and how it interacts with the health system.

Arguably, this unique PPE model influences (or can influence) the role of FBHPs during health worker strikes and is worth exploring in further detail. The CHA-State PPE being based on significant trust and values might position FBHPs as dependable partners during health worker strikes. In the case of health worker strikes, studies have revealed that the poor typically seek assistance from FBHPs as opposed to for-profit providers because these providers are generally perceived to be more affordable (62). In addition, for-profit private providers in some contexts are more prominent in urban regions (62,66,67), but FBHPs are often prominent in rural and semi-urban areas (62,66,67), potentially making them more accessible to the public during strikes. Despite the potential of FBHPs to contribute to health system resilience during strikes, this issue has never been explored.

Public-private engagement in Ghana

As mentioned, health worker strikes have been frequently reported in Ghana (68,69). The second largest private sector in Ghana is the FBHP sector – thought to provide around 20-25% of all health services (66). It is suggested that the relationship between the Christian Health Association of Ghana (CHAG) and the Government of Ghana (GoG) provides resilience capacities to the health system during this time (70,71). Consequently, Ghana provides an interesting case study for examining the interaction of private providers with the state during health worker strikes. The following section will review the Ghanaian health system regarding the private-public mix, the context of health worker strikes in Ghana, and CHAG-state PPE model.

Ghana's health system is a pluralistic health system consisting of public and private providers and Teaching hospitals. The public sector is comprised of two institutions: the Ministry of Health (MOH), which oversees *"policy formulation and resource mobilization"* in Ghana, and the Ghana Health Services (GHS), an independent administrative entity responsible for implementing national policies (66,72).¹¹ The Ghanaian health system consists of three tiers: tertiary services supplied by Teaching Hospitals¹², secondary level facilities (mostly GHS and private facilities), and primary level institutions (District hospitals, polyclinics, and Community-based Health Planning Services) (73).

¹¹ This separation between the GHS and MOH was as a result of the of the GHS and Teaching Hospitals Act 525 of 1996. The act established the GHS as an independent agency with the mandate of providing primary and secondary health services (73).

¹²Teaching Hospitals are semi-autonomous national referral hospitals tasked with providing tertiary care, research, and training (73).

The Ghanaian health system performs relatively well compared to other countries in SSA. The nation has achieved considerable strides in decreasing newborn and child mortality and nearly doubling the number of assisted deliveries in the past decade (72). As of 2017, the life expectancy in Ghana was 64 years (compared to 53 in other African nations), and the maternal mortality rate was 32.8 deaths per 1000 births (versus the average of 47 in other SSA nations) (72). Despite these efforts, the nation's health system still faces numerous obstacles, such as a double burden of disease characterized by infectious and non-infectious diseases, inequitable access to health care, and the ongoing HRH crisis (72,74,75).

Two major health sector reforms characterize the Ghanaian health system. The first was the introduction of a universal health system in the form of the National Health Insurance System (NHIS)¹³, which was established in 2003 and came into effect in 2005 (59,60). At present the scheme covers approximately 60% of the nation and offers an extensive benefits package (covering nearly 95% of the disease burden in Ghana) (74). Public and private providers are part of the scheme, and scheme holders can seek care at any of the accredited facilities (74). Despite studies indicating that the NHIS has increased the utilization of health care services in Ghana and decreased the financial burden of care on patients, the scheme faces several challenges, such as reports of fraud, mismanagement of funds, and lengthy delays in paying providers (46,66). These challenges negatively impact all public and private providers in Ghana (46,66).

In response to the escalating fragmentation of the health system, the second major reform centered on supporting development via a Sector Wide Approach (SWAP) and fostering deeper connections between the public and private sectors (66,76). This emphasis on the need for better PPE led to the creation of the Private Health Sector Policy in 1999 to support expanding and integrating the private sector within the health system (74). The National Health Policy (2020) is founded on this principle. It is based on a whole-of-government, whole-society approach to the delivery of health services - recognizing the fundamental role of the private sector in health system strengthening (72).

Approximately 50-60% of all health services in Ghana are currently provided by the private sector (46,66). For-profit providers had the highest proportion of these services, followed by FBHPs, who are almost exclusively comprised of CHAG-networked facilities (66). For-profit providers are more prevalent in urban areas, whereas CHAG facilities are more prevalent in rural and semi-urban regions (64,66). Although the interaction between the public sector and private providers varies widely, the most common model of engagement between the GoG and the private sector often takes the form of an MOU (more below) (45,46,66,72). Currently, in Ghana, an MOU exists between the public sector and nearly every listed private provider (46).

The Christian Health Association of Ghana

The cooperation between CHAG and the MOH has been cited in many studies as an example of an effective PPE model in Africa (58,63,66). Currently, more than three hundred facilities in Ghana are networked through CHAG (70). CHAG Member institutions (referred to as CMIs) supply a range of curative, preventative, and rehabilitative services, including immunization, health education, maternity and child health, and reproductive health services (77). CHAG was one of the first CHAs established in Africa and has been an integral part of the Ghanaian health system pre- and post-independence. In 2003, CHAG and the MOH signed an MOU to formalize their engagement. The MOU highlights the importance of CHAG to the Ghanaian health system and

¹³ The NHIS was created as a policy response to the unpopular "Cash and Carry" system. The model made it compulsory for patients to pay before they could receive care which led to a significant rise in out-of-pocket expenditure in Ghana.

formalizes as an agency within the MOH. The MOU also affirms the autonomy and independence of CHAG, noting that though the government would supply financial other logistical support to CHAG facilities, CHAG would remain an independent agency. The MOU also appoints some CHAG facilities as district hospitals (70,71).¹⁴

CHAG and the MOH are said to have a strong and trustworthy relationship although there have been times of severe tension. Most of this conflict stemmed from disagreements regarding HRH management (78). There have been multiple attempts and agreements between CHAG and the MOH to manage human-resource-related issues to maintain fairness. One solution adopted in 2000 was the secondment strategy, in which the government would be solely responsible for the payment and staffing of select government employees in CHAG facilities to integrate better the HR systems of both sectors (71,78). However, the secondment approach faced numerous obstacles and has since been amended. Currently, most health workers in CHAG facilities are paid by the MOH, but they are administered and managed by CHAG (70). This modification to the secondment policy also ensures that CHAG employees receive the same terms of employment and benefits as GHS employees- even employment benefits obtained because of strikes.

Health worker strikes in Ghana

Most public sector health worker strikes in Ghana have occurred in the past two decades (69). Few peer-reviewed studies have analyzed the background, characteristics, and effects of strikes in Ghana despite their prevalence. Most information on these strikes is found in media reports on Ghana Web, the Ghana News Agency and other grey literature. (Appendix summarizes the relevant papers and documents on the context of health worker strikes in Ghana).

Health worker strikes have been reported in Ghana in 2005 (79), 2013 (68,69,79,80), 2015 (59,68,69,73,79,81), 2016 (70) and threats of strikes continue today. Strikes occur for various reasons, but the most frequent causes include concerns over low wages, salary disparities between professions and disputes over conditions of service (69). Most recently, in July 2021, several health profession boards threatened to embark on strike action if the government did not agree to pay 20% of their cost-of-living allowance. As shown in Appendix 1, the most reported strike incident in Ghana is the three-week national doctor strike in the public sector which occurred in August 2015. This strike was caused by a long-standing dispute between the Ghana Medical Association (GMA) and the MOH (59,68,69,73,79,81). During the strike, outpatient services at all public facilities ceased, and as the strike escalated, emergency and in-patient services by doctors were also withdrawn (31,82,83).

Health worker strikes often occur in response to and contribute to an already-persistent HRH crisis in Ghana. In 2006, the World Health Organization identified Ghana as one of 57 countries facing a human resource crisis characterized mostly by a shortage of health workers and inequitable distribution of workers (75). Though the nation considerable progress in responding to these challenges, human resource challenges continue to persist (75). According to the Ghana Medium Term Review (2018), the HRH sector is characterized by low wages, poor working conditions, low staff motivation, unequal distribution of health workers, and paradoxical unemployment among some health employees (75). A study by Asamani et al (2020) showed that the GHS had a staffing shortage of 41% (84). Health worker strikes have also been found to sometimes initiate a cascade of policy reforms that can have unintended consequences for the health system (79,84). For example, health

¹⁴ This means that some CHAG facilities function as public sector referral hospitals but are 'owned' by CHAG.

worker strikes that took place in 2005-2006 in response to the implementation of an Additional Duty Hours Allowance policy led to a significant increase in government expenditure on health worker salaries (79). Nearly 98% of GoG's allocation of funds to the MOH is spent on health workers' salaries (79).

Similar to strikes in other LMIC contexts, it is frequently documented that public sector health worker strikes in Ghana bring the public health system to a near halt (59,68,69,73,79,81), many leading to the cessation of emergency and outpatient services. Again, like in other LMIC settings, a key element of maintaining the provision of services during strikes is the ability of the population to seek healthcare from private facilities. However, unlike other LMIC settings, the GoG is reported to have some system-level engagements with the private sector to aid with the continuation of services (71). According to media reports during the 2015 strikes, the GoG published a list of quasi-government hospitals that were not on strike and reached out to retired physicians for assistance in government and private institutions (31,85-88). However, redirecting patients to private hospitals does not guarantee that private providers can handle the additional patient load or that the most vulnerable members of the population can afford private hospital care.

What is known about the role of CHAG during health worker strikes?

As previously mentioned, the ability of the population to access health care at private institutions during public sector health worker strikes is essential to the systems resilience. It is argued by some that the close and long-standing relationship between the MOH, and CHAG contributes to the resilience of the Ghanaian health system during health worker strikes (59,70,71). However, the nature of this relationship in the context of health worker strikes in Ghana has never been explored before. A range of factors that are unique to CHAG-state PPE model in Ghana could influence if and how this engagement provides resilience capacities that the Ghanaian health system can use during times of health worker strikes.

In addition to the unique PPE model between CHAG and GoG, it has been argued that the revised secondment policy between CHAG and the MOH has contributed to this interaction during health worker strikes (59). As previously explained, the amendment to the secondment policy has resulted in the majority of workers in CHAG facilities receiving wages from the MOH while being overseen and administered by CHAG (64,75). This amendment also ensures that CHAG personnel receive the same conditions of service and benefits package as GHS workforce, and if this package is modified during a strike by public health workers, these advantages accrue to CHAG staff members as well (75).

Moreover, CHAG facilities reportedly have a stringent non-striking policy that is tied to their religious values, which are said to play a significant role in CHAG's identity (70,71,87). According to Yeboah and Gilbert (2017), this non-striking position helps to offset the harmful effects of strikes on the population by ensuring the continuation of health services (70,78). For example, in September 2016, when pharmacists in the public sector went on strike, the MOH officially and publicly advised patients to seek care in CHAG facilities, recognizing CHAG's non-strike stance (70,78).

Problem statement

Globally, health worker strikes pose a threat to the fundamental human right to the highest level of health and the realization of UHC. The potential negative health system effects of public sector health worker strikes include the avoidable death of some patients, the entrenchment of health system inequalities, the reduction of health worker motivation, and the erosion of health system trust. In LMICs where most of the population

depends on public health services and where public systems face many resource and infrastructural challenges, these effects are often more pronounced. To ensure the continuation of essential services, health systems must build resilience capacities to prepare for and respond to strikes when they occur. During health worker strikes in LMICs, private providers have been identified as crucial to maintaining service continuity. No study has yet examined how the private and public sectors interact during health worker strikes and whether this can contribute to overall health system's resilience.

Ghana has been the site of many public sector-, nationwide health worker strikes over the past two decades. Frequently, these strikes bring the public health system to a halt. According to some, the interaction between CHAG and the GoG provides resilience capabilities to the Ghanaian health system during these times. However, this idea has never been explored in any significant detail. Ghana's complex health system, including the HRH crisis and the unique public-private engagement (PPE) model between CHAG and GoG, may influence the interaction of the public and private sector during health worker strikes. To unpack the contribution of private providers to resilience capacities in Ghana during health worker strikes, an in-depth examination of the context of strikes in Ghana, the nature of the relationship between the state and private providers, and the unique factors that influence this relationship will be required. The reality is that the threat of health worker strikes in Ghana and other LMICs persists, and the health systems in these countries must plan and prepare for this future possibility to safeguard the right of individuals to the highest quality of health care. As such, the following study aims to answer the question:

Does public-private engagement provide health system resilience during public sector health worker strikes in Ghana?

The terms 'public-private engagement', 'health workers', 'strikes', and 'health system resilience' have been operationalized in the scoping literature review above. The table below gives a summary of the terms:

Table 2 Concepts for study

Concept	Definition
Public-private engagement	"Deliberate and systematic collaboration, in accordance with national health priorities, between the state and the private health sector" (45)
Health workers	"A health worker is any individual who offers health services either through direct contact as clinical workers (doctors, nurses, physiotherapists, occupational therapists) or indirectly as assistants' helpers or laboratory technicians (non-clinical staff)" (6).
Strikes	"The collective withholding of labor/services by a category of professionals, for the purpose of extracting concessions or benefits" (9).
Health system resilience	"The capacity of health actors and institutions and populations to prepare for and effectively respond to a crisis, maintain core functions when a crisis hits and informed by lessons learned during the crisis, reorganize if conditions require it" (36)

Methods

Purpose and objectives

To answer the above question, this study will describe the case of the engagement between CHAG (private sector) and the GoG (public sector) during health worker strikes in Ghana from 2010-2016 and explore how this engagement may contribute to health system resilience.

The objectives of the study are:

1. To describe the context of public sector health worker strikes in Ghana from 2010-2016.

2. To describe the role of CHAG in responding to public sector health worker strikes from 2010-2016.
3. To explore the factors influencing the engagement between CHAG and the GoG during health worker strikes from 2010-2016.
4. To explore the ways in which the engagement between CHAG and GoG may have contributed to health system resilience during health worker strikes from 2010-2016.

Sub-study arrangement

This research project is a sub-study of a larger WHO - Alliance for Health Policy and Systems Research (AHPSR)-a funded project entitled “Systems integration towards UHC: Strengthening the collaborative relationship between faith-based non-profit providers and the Ghanaian public health system” (89)’ (see Appendix 4 for main study brief). The AHPSR study investigated the historical and present relationship between FBHPs and the Ghanaian health system. The findings revealed that the contribution of CHAG to the nation's health system's resilience during health worker strikes was a recurring and underexplored theme (59,78). This study aims to contribute by examining this interaction in greater detail and describing the role of PPE during health worker strikes with the aim of furthering our understanding of how faith-based non-profit health providers can contribute to health system resilience. The researcher will add to the broader AHPSR study by performing a secondary analysis of the interview transcripts collected.

Methodology

A single case study will be conducted, that is primarily qualitative in nature, and flexible in design (see Box 1). Given the iterative and exploratory nature of the study, the precise specifications of a fixed study design will not be suitable for answering the research question (90). This is a macro-level study since it seeks to investigate national-level interactions and strategies that occur during health worker strikes.

Yin (2009) states that case studies are suited for studies that aims to “*understand a complex phenomenon in its real-life context and when comprehension of that phenomenon depends on assessing context*” (91). Each PPE arrangement has its own inter-relational dynamics (58), and each strike incident occurs in an environment

Box 1 Key characteristics of study design

- **Research design:** Single case study in three phases, following an iterative and flexible design: scoping literature, single case study, consolidation and synthesis of results.
- **Purpose:** To *describe* the engagement between CHAG and the GoG during health worker strikes in Ghana from 2010-2016 and to explore how this engagement may have contributed to the strike-related resilience of the health system.
- **Study design:** Macro level retrospective single-case study with the case defined as ‘the engagement between CHAG and the GoG during health worker strikes in Ghana’
- **Theoretical Underpinnings:** Study is situated in the field of HPSR research with its relevant theoretical frameworks. Study will draw on theory related to health worker strikes in LMICs, PPE models in LMICs and health system resilience frameworks.
- **Data collection:** Data for the case study will be collected from multiple sources including peer-reviewed literature, grey literature and secondary data analysis of interview transcripts from primary AHPSR project.
- **Data Analysis:** Data analysis for the case will use a qualitative thematic approach where themes will be decided deductively and inductively. Based in the critical realism epistemological framework.

influenced by a variety of macro and micro-level contextual factors (8). Without a comprehensive understanding of context, it is nearly impossible to investigate the engagement between CHAG and the GoG; therefore, the case study design is suitable. Alternative study methods, such as quantitative surveys or cross-

sectional studies, would be unable to capture and investigate the context surrounding health worker strikes and PPE to the same extent as case study designs (92).

In addition, a unique strength of the case study design is its capacity to accommodate a wide range of evidence. This advantage also distinguishes it from another approach that was considered for this study - a historical study. The advantage of a purely historical study is its capacity to examine the 'dead past' when there are almost no relevant actors or current evidence to describe past events (92). In case study designs, the ability to integrate a wide range of evidence, such as recent interview transcripts, current documents, and reports, is especially advantageous (92). Moreover, as demonstrated by the scoping review described in the preceding section, information about health worker strikes in Ghana is abundant but primarily exists in unpublished data and is poorly synthesized. This study will incorporate multiple sources of evidence to gain a comprehensive understanding of the context of health worker strikes in Ghana and the interaction between CHAG and GoG during this time.

In case study designs it is important to define the 'case' and 'context' of the study (92,93). The case is defined as 'the engagement between CHAG and the GoG during health worker strikes in Ghana'. This was deemed the 'case' because the phenomenon being studied is 'PPE' during health worker strikes in Ghana,' and CHAG-state engagement represents one private provider in Ghana.

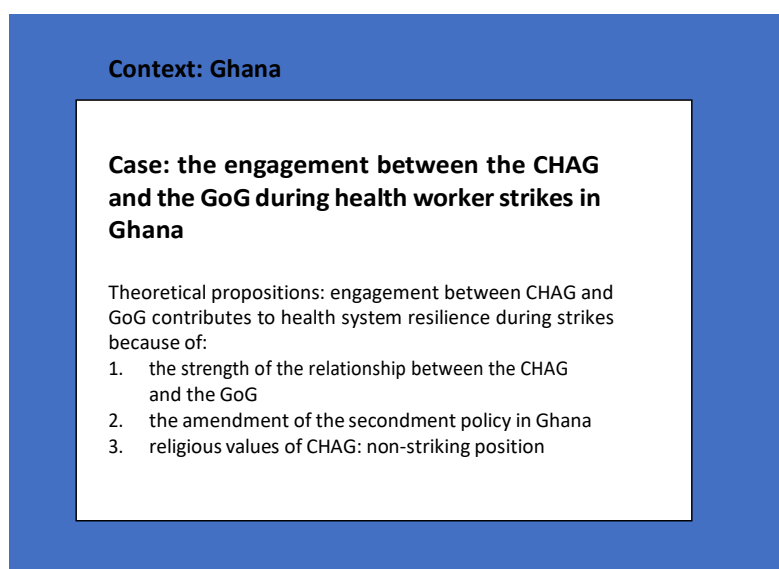


Figure 1 Single-case study approach (source: author adapted from Yin 2014)

The rationale for adopting a single case approach is that CHAG-state PPE represents a critical case. A critical case is a case one where *"theory specifies a clear set of propositions about how explanatory variables affect outcomes, as well as the conditions within which the propositions are believed to be true"* (94). Single case studies are preferable to multiple case studies when a researcher seeks to thoroughly explore these theoretical propositions (94). The theoretical propositions underlying this case (as shown in Figure 1) are that the engagement between CHAG and GoG contributes to the resilience of the health system during health worker strikes because of: 1) The strength of the relationship between CHAG and the GoG, and 2) the amendment of the secondment policy in Ghana, and 3) the distinctive values of CHAG, namely its non-striking position. This set of propositions is unquestionably specific to CHAG and GoG relationship. In addition, CHAG is one of Ghana's most prominent private providers. Unlike other providers, they have a long-standing relationship with the MOH that has been maintained through years of cooperation and shared values

(23,25,66). CHAG has become increasingly integrated into the health system, making it a critical case in the context of Ghana (23,25,66). The decision to focus on the period 2010-2016 was influenced by the rapid scoping review, which revealed that this was a particularly turbulent period for the Ghanaian public sector, with frequent strikes by health workers; providing sufficient data for analysis (68,69).¹⁵ In addition this period was encompassed by the broader study which was completed in 2017.

Theoretical underpinnings

Noting that this is the first study of its kind to explore the articulation of the public and private sector during health worker strikes in Ghana, this study will incorporate several theoretical frameworks. Figure 3 shows how these theoretical concepts and frameworks converge in this study to address the objectives of the study.

This study is framed as HPSR and utilizes the theoretical frameworks relevant to this field that emphasizes a systems-based approach to research. Health systems are frequently conceptualized as complex adaptive systems in HPSR (95,96). The WHO identifies six fundamental components of health systems. Although these components are distinct, the system can only be understood through recognizing the interdependence of the different elements and the evolving nature of the health system in response to multiple feedback loops (79,95). Due to the multiple feedback loops, interaction in one area of the system can have unintended consequences for another (79,95). This is particularly pertinent in the case of health worker strikes in Ghana, noting that the HRH interventions have previously led to unintended strike action (79). Health systems can also be understood as consisting of 'hardware,' 'tangible software,' and 'intangible software' dynamics, as exemplified by the Ortiz Aragon framework (95,96). Notably, health systems are intrinsically social systems, and the numerous actors engaged contribute significantly to the complexity of the system (95,96). Actors (individuals, groups, or organizations) have their motivations and ideals and engage with one another through power-influenced social relationships (95,96). These theoretical notions are essential for comprehending the system in which CHAG and the MOH interact and the larger context of health worker strikes.

The first objective of this study is to understand the context of health worker strikes in Ghana in the period 2010-2016. In addition to the theory on health worker strikes in low- and middle-income countries (LMICs) reported in the scoping literature review of this protocol, the conceptual framework for health sector strikes in low-income countries created by Russo et al (2019) (Box 2) will be used to guide the 'rich description of context' (8). The framework's objective is to examine the features, frequency, causes, results, and stakeholders of health worker strikes (8). The framework emphasizes the importance of describing the micro and macro elements of health worker strikes, stressing that these strikes are context-specific (8).

This study's second and third objectives are to investigate the interaction between CHAG and GoG during health worker strikes and the factors that facilitate or impede this interaction. To comprehend the PPE model between CHAG and the GoG, a comprehensive understanding of the public/private mix in Ghana and other LMICs is necessary. As noted earlier, Whyte and Olivier (2017) propose the existence of a unique PPE model between

Box 2: Key elements of Russo et al (2020) Conceptual framework for health worker strikes in low income countries

- Framework highlights the need to consider:
 - The role of influencing actors (and their interactions) such as unions, government, political parties.
 - Pre-existing economic conditions of a country i.e., economic growth, wage and unemployment levels.
 - Pre-existing legal conditions i.e. existence of mechanisms for resolution of disputes.
 - Strike onset characteristics and resolution.
- Framework highlights the need to understand the interactions and linkages between strike characteristics, pre-existing conditions and actors at both a health sector and country level.

¹⁵ As our study progressed from the contextual phase, we identified ten strike incidents that occurred in Ghana from 2010-2016. Three of those incidents (described in Part B) had rich information about the interaction of CHAG and the GoG during strikes. We purposively selected these incidents as embedded studies for deeper analysis and cross-comparison. Our analysis focused on these selected embedded units but was not exclusive to these strike incidents.

CHAs and their governments in LMICs, which they refer to as CHAG-state PPE model (23). They contend that this model is distinctive because it combines elements of 'contracting out' models and 'public-private partnerships'. Consequently, this model will provide essential insights for comprehending the nature of CHAG and GoG's relationship and engagement.

The final objective of the study is to investigate how the interaction between CHAG and GoG may contribute to the resilience of the health system during health worker strikes. To investigate and describe this contribution, a comprehension of health system resilience is essential; therefore, theories from the growing body of literature on health system resilience will be utilized. Previous studies assessing resilience during health worker strikes employed the everyday resilience lens. Everyday resilience can be defined as *"the ability of the system to maintain positive adjustment in the context of chronic shocks and stressors in ways that allow the organization to emerge from those conditions strengthened and more resourceful"* (34). Barasa et al (2017) state that the concept of everyday resilience is especially significant in LMICs, where managers of health facilities and systems are constantly confronted with structural and political instability (37).

Using the concept of everyday resilience, Kagwanja et al (2020) develop a conceptual framework that combines two key concepts of resilience thinking: 'resilience capacities' and 'resilience strategies' (38). Cognitive capacities represent the system's capability to understand uncertainty and identify appropriate solutions, while behavioral capacities refer to the system's ability to take action and implement regular or unconventional responses, leveraging learned resourcefulness and readiness (38). Contextual capacities, on the other hand, consist of connections and resources obtained from a mix of strong social capital and extensive resource networks (38). Thus, interactions between CHAG and GoG can confer one or more of these 'resilience capacities' on the system. In contrast, resilience 'strategies' refer to how a system responds to a shock or stressor, which can be classified as absorptive, adaptive, or transformative (as discussed earlier). These strategies may sometimes result in negative or maladaptive health system strategies (34).

The question then becomes how to determine when a resilience strategy during health worker strikes is positive and not maladaptive for the health system. In this regard, Chima (2013) proposes that the objective should be 'ethical strikes' in which effective responses would maintain emergency and essential services and protect individuals from significant financial losses when seeking health care services (10). In addition, Scanlon et al (2021) describe the effects of health worker strikes on vulnerable populations such as pregnant persons. It is thus arguable that ethical strikes would also preserve services for these populations (20). Thus, strategies that achieve these objectives can be viewed as imparting some resilience to the system during strikes.

Phases of study design

The study will be conducted iteratively in three phases with the goal of increasing comprehension from phase to phase (Figure 2).

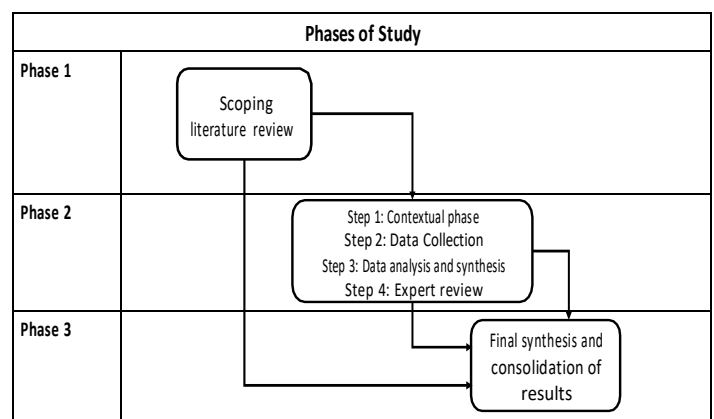


Figure 2 Phases of study (Source: Author)

Convergence of theoretical frameworks for data collection and analysis

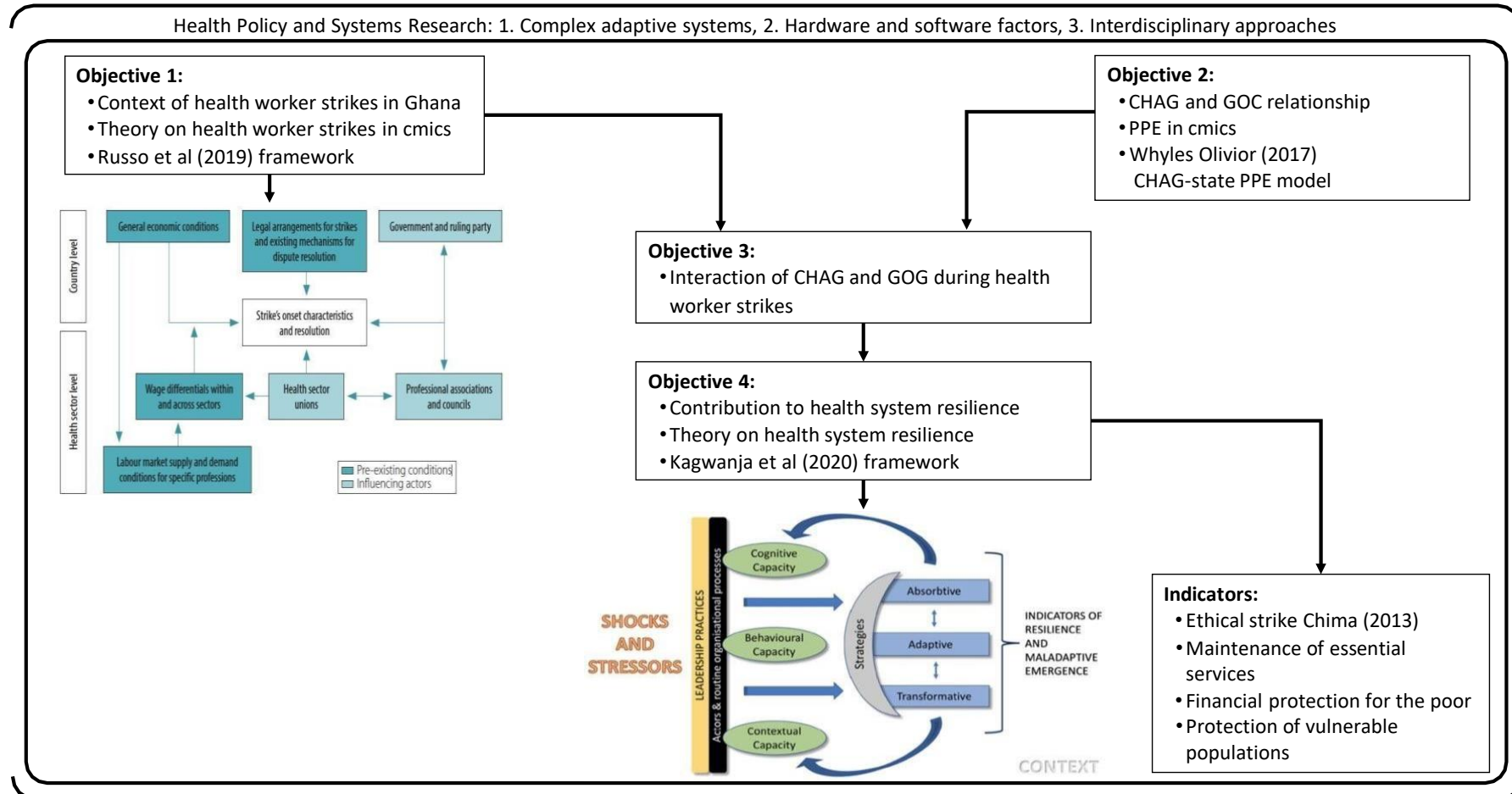


Figure 3 Theoretical frameworks underpinning the study (source: Author)

Phase 1: Scoping literature review

At first, the scoping review aimed to identify existing literature on health worker strikes in LMICs (search A).¹⁶ The databases searched included Google Scholar, PubMed, and EBSCOhost. The search period was limited to 2000-2022, although relevant literature that fell outside of the time was also included. Only publications in English were included. Citation tracking was used to identify further pertinent articles by reviewing the included studies' reference lists. A general search on google for grey literature was also performed. The concept of health system resilience came up in studies on health worker strikes in LMICs, and this term was added to the search as well. Important studies relevant to this are summarized in Appendix 1.

After conducting search A, it became apparent that private providers were particularly important during times of health worker strikes, and their role could not be understood without further examination of the public-private mix in LMICs. A second search (search B) was conducted to understand the public-private mix in LMIC health systems. Results from search A and search B informed the decision to focus on health worker strikes in Ghana because of the interesting and unique PPE frequently reported in the nation. There was then a need to conduct a further search on the context of health worker strikes in Ghana. Relevant studies for search C are summarized in Appendix 1.

Table 3 Main search terms and relevant variables for search A

Cluster	Variations
Health worker strikes	'doctor strikes', 'medical professional protests', 'nurse strikes', 'disruptions', 'health worker disputes', 'unrest'
Low-middle income countries	'sub-Saharan Africa', 'developing'
Health System Resilience	'responsiveness', 'preparedness'

Table 4 Main search terms and relevant variations for search B

Cluster	Variations
Public-private mix	'public-private partnerships', 'private sector', 'interactions', 'relationships'
Health systems	'health policy', 'HPSR', 'public health'

Table 5 Main search terms and relevant variations for search C

Cluster	Variations
Health worker strikes in Ghana	'doctor protest Ghana', 'nurse protest Ghana', 'worker unrest', 'human resources for health'
PPPE Ghana	'faith-based providers', 'private providers', 'NGOs'

Phase 2: Single case study of 'engagement between CHAG and GoG during health worker strikes in Ghana from 2010-2016'

Stage 1: Contextual analysis

This phase will begin with a contextual analysis of the case by synthesizing information gathered in the scoping review, with the goals of 1) describing the context of the Ghanaian health system between 2010 and 2016,

¹⁶ In this MPH minor dissertation style, this section of the Methods is written in the past tense, as it has already been conducted at this stage, and has been reported earlier in the Literature Review section of the protocol

importantly the private-public mix, and 2) describing the larger history and context of health worker strikes in Ghana. Detailed descriptions of context facilitate rigor in case studies (92); therefore, it is essential to situate the case within the broader context of health worker strikes and PPE in Ghana and LMICs. The framework by Russo et al (2019) (Box 2) for health worker strikes in low-middle income countries will be used to identify critical themes such as micro and macro contextual features of strikes. to facilitate reporting and analysis of the context.

Stage 2: Data collection

Once the case context is fully understood, data pertinent to the case will be gathered utilizing multiple sources of evidence (Table 6) such as media archives, grey literature, and peer-reviewed journal articles. In addition, we will conduct secondary data analysis of interview transcripts from the primary study. As shown in Table 6, nearly all evidence sources are currently accessible, albeit poorly synthesized, and a significant objective of this study will consist of synthesizing and integrating the various evidence sources. Noting that this study makes use exclusively of secondary resources an additional expert verification process (discussed below) will be conducted to enhance rigor.

Table 6 Data collection sources

Type	Name	Data Type, Source/Location and Availability
Secondary Literature (Peer-reviewed journal articles)	- When 'solutions' of yesterday become problems of today': crisis-ridden decision-making in a complex adaptive system (CAS)- the Additional Duty Hours Allowance in Ghana - An evaluation of the effects of industrial unrest at the Korle-bu Teaching Hospital (KBTH), Accra, Ghana - Ghana's numerous worker strikes; a cause of concern - The imperative of an evidence-based health workforce planning in implementation: lessons from nurses and midwives' unemployment crisis in Ghana. - Single Spine Pay Policy, Can Ignorance delay the benefits it has on the Ghanaian public service worker - Towards universal health coverage: a mixed-method study mapping the development of the faith-based non-profit sector in the Ghanaian health system. - The evolving partnership between the Government of Ghana and national faith-based health providers: leadership perspective and experiences from CHAG	Qualitative Openly available published peer-reviewed articles: Google, Google Scholar, PubMed, EBSCOhost Have (will add on)
Reviews	- Literature Review: Whyte EB, Olivier J. Models of public-private engagement for health services delivery and financing in Southern Africa: a systematic review. Health Policy Plan 2016;31(10):1515-1529. - Whyte E, Olivier J. Models of engagement between the state and the faith sector in sub-Saharan Africa—a systematic review. Development in Practice 2017;27(5):684-697.	Qualitative Openly available Have (will add on)
Media Archives	- Ghana Web Articles - Ghana News Agency Articles - Mojo Online	Qualitative Openly available Have (will explore further)
Institutional websites	- CHAG Website https://chag.org.gh/ - Ministry of Health Ghana https://www.moh.gov.gh/ - Ghana Medical Association https://ghanamedassoc.org/ - The Ghana Registered Nurse and Midwives Association	Qualitative Openly available Have (will explore further)

	• https://ghananurses.org/	
Government briefings and press statements	• Official government briefings and communications on social media • Memorandum of understanding and draft condition of agreements. • Press statements.	Qualitative Openly available Have (will explore further)
Social Media Pages	• CHAG Facebook page • Ghana Medical Association Facebook Page • News Agency Facebook pages	Qualitative Openly available Have (will explore further)
Thesis	• Towards Universal Health Coverage: Mapping the Development of the Faith-Based Non-Profit Sector in the Ghanaian health system. • Partnerships that support health systems resilience over time a study of non-state, faith-based health providers in Africa.	Qualitative Available on UCT Open Access and Google Scholar Have (will add on)
*Secondary Data	Interview transcript from primary study	Qualitative Can gain access to

In addition to the data collected in the preceding table, secondary data from the broader APHSR study will also be analyzed. This consists of transcriptions of interviews conducted with CHAG officials in which the role of CHAG during health worker strikes was discussed. The information from these interviews will also be used for triangulation of data.

Stage 3: Data analysis

During this stage, three questions will guide the analysis and interpretation of the data gathered in the preceding phase. 1) What role did CHAG play during health worker strikes in Ghana between 2010 and 2016? 2) What was the engagement between CHAG and GoG health worker strikes in Ghana from 2010-2016? 3) Did this engagement contribute to the resilience of the health system during this time? The data collected in the preceding phase will be examined to determine its relevance to these questions to create the final 'data set' from which data will be analyzed.

As our data is based on secondary sources of information and documents, the analysis of the documents themselves is crucial to this study. To analyze the documents collected we will implore elements of qualitative document analysis approaches (97,98). The goal of qualitative document analysis is to understand the perspectives, experiences, and meanings that are expressed in the text and how these relate to the research question being studied (97). Gibson and Brown (2011) advise that when analyzing documents for the first time, seeking to understand the time the document was created, the author, purpose, audience and perspective is essential (98).

The data will be analyzed using a thematic analysis method which is a technique for "*identifying, analyzing, and reporting patterns (themes) within data*" (99). Thematic analysis is especially useful as our study will seek to synthesize data from multiple sources (99). In this method, determining what constitutes a theme is crucial. Importantly, a theme is not necessarily determined by the frequency with which it appears in the data set but rather by whether it captures something crucial in relation to the overall research question. What constitutes a theme; will be decided on deductively and inductively (98). Deductive thematic analysis will be guided by the theoretical foundations established in the scoping review. Noting that this is an exploratory study of a topic that has not previously been studied before, it is also essential that the study methodology allows for new themes to emerge from the data.

The scoping review reported on in phase 1 of this protocol established the theoretical foundation that will guide and inform the interpretation of the findings. As noted previously and shown in Figure 1, three important theoretical propositions will be examined for this case. In addition, the interaction between CHAG and GoG

could contribute to the resilience of the health system by conferring specific resilience capacities (cognitive, behavioral, or contextual), which can lead to specific strategies (absorptive, transformative, or adaptive). These theoretical propositions (shown in Figure 3) will form the initial themes that will guide the interpretation of data. However, as this study is an initial exploration into an understudied topic, it is very possible that new themes will emerge from the data and current themes may need to be adapted. Thus, themes will be decided both inductively and deductively.

Our approach to thematic analysis will be based in the critical realism epistemological paradigm. This paradigm is based on the perspective that there exists a world independent of our perceptions, but that our access to this world is mediated by our cognitive and social structures (100,101). This paradigm highlights the significance of comprehending the relationship between our knowledge of the world and its social and historical context. It seen as the middle position between positivism and relativism (100,101). Similar to positivism the paradigm seeks to comprehend the causal mechanisms that influences a phenomenon, but critical realism does not see these causal mechanisms as an objective reality that can always be measured (101). Like relativism this perspective also seeks to understand how actors make sense of their experience and the influence this has on their perspective of reality. In this study we are seeking to understand public and private sector engagement during health worker strikes. Thus, our focus is understanding the mechanisms that can explain this interaction i.e., the context of the Ghanaian health system.

Stage 4: Expert checking

As this case study relies primarily on publicly available data and secondary data analysis, it is crucial that the interpretation and conclusions reached be reviewed by experts to improve the trustworthiness of the study. Experts are individuals who are not directly involved in the research study but have specialized knowledge of the research field and can provide an informed and objective assessment of the project's methods and findings. Checking of study findings by experts can provide invaluable insights into a study, provide additional resources, and shed light on areas or topics that may require additional exploration. Expert reviews are also beneficial for counteracting the subjectivity that is inherent in all qualitative research. A few (2-3) experts from CHAG and the MOH will be contacted based on their expertise and familiarity with the topic, and involvement in the previous study. The checking process will either involve sharing of initial analysis (written), followed by an electronic phone or Teams call, or an email exchange.¹⁷ These experts were previously expert participants in the broader study for which this is a sub-study. Their involvement then included the signing of a consent form (the conditions of which still cover the information, as they agreed to the continued checking of subsequent research outputs, with no time limit imposed).

Phase 3: Synthesis and write up

During this stage, the feedback from the experts will be incorporated and used to correct any errors in the study or to investigate specific themes in greater depth. The final analysis and expert feedback will be consolidated and synthesized to produce a comprehensive report on how private-public engagement in Ghana can contribute to the health system's resilience during health worker strikes.

Rigor

Due to the nature of qualitative work and case-study design, the researchers will ensure rigor in all phases of the research. Vital to achieving rigor is the formulation of this detailed study protocol that outlines and clearly

¹⁷ No new primary data will be collected from these experts – their role is to check the analytics emerging from this study

defines the case being studied, the reasons for selecting the case, and the underlying propositions and assumptions that inform the case (91,92). Generally, the rigor of case study research is also improved by ensuring complete and detailed reporting of all data collection and analysis methods so that the reader can determine whether the analysis and interpretations are credible (91,92). To ensure complete reporting of results, the researcher will take the necessary steps, including maintaining an active and detailed evidence trail for all collected data. A database of all media reports, grey literature, and secondary literature collected will be maintained and will be made accessible alongside the study's final report. This database will also seek to establish a transparent chain of evidence.

In addition, rigor in case study design, particularly for single-case studies like this one, necessitates a detailed description of context. and comprehensive case contextualization (92,93). Consequently, this study's first and second phases are concentrated on providing an in-depth description of the context of health worker strikes in Ghana, CHAG and state PPE, and the larger context of health worker strikes and PPE models in LMICs. It has also been noted that theory is essential for ensuring rigor by enhancing transferability and confirmability (92,93). As described in detail above, this study is based on multiple theoretical foundations that will be explored iteratively throughout the study. Theoretical principles will direct the collection of data and analysis of data.

Noting that most data collected for this study will be from unpublished sources such as media reports, institutional databases, media statements, student theses and online reports, it is essential to conduct continuous quality checks on materials, and also collect data from multiple sources to avoid bias (98). These data sources will be triangulated with other forms of evidence, such as peer-reviewed literature and secondary data analysis of interview transcripts, to enhance rigor. In addition, the final conclusions and interpretations of this study will be reviewed by experts prior to publication.

Furthermore, all phases of qualitative studies are susceptible to researcher bias, as the researcher has a substantial impact on study design, data collection, and result interpretation (92,93). Noting this, researcher reflexivity is always important. The researcher identifies as a Ghanaian-South African woman of color. The researcher has a background in medicine and is currently a student of public health; consequently, she possesses certain ideological biases that will unavoidably affect the research. Importantly in the context of this study (in which the case is a Christian FBHP) the researcher aligns with Christian values. The researcher will aim to remain reflexive by constantly evaluating their positionality in relation to the study and engaging in frequent checkpoints with the study's supervisor. The study also seeks to reduce the influence of bias by employing expert reviews to assess the validity of the results.

Ethics

Throughout this study, all research ethical principles and practices will be adhered to in accordance with the Helsinki Declaration (102) and international, national, and institutional standards. Ethical approval will be sought from the Human Research Ethics Committee (HREC) of the University of Cape Town (UCT). The ethical risk is deemed minimal. This study will abide by the ethical clearance that has already been granted for the main AHPSR study. This clearance was obtained from the WHO Research Ethics Committee, the Ghana Health Service Review Committee, and the UCT HREC (see Appendix 4).

Noting that this study uses secondary interview transcripts from the primary study, all ethical principles were adhered to in the primary study. Participants were informed of the study's purpose, the risks associated with participation, and their right to withdraw at any time. No participant was compensated for their participation

in the study. The interviews were conducted in confidence and were recorded for transcription purposes. The transcription notes have been made anonymous. In the primary study, ethical principles regarding data handling were also adhered to. All data were stored and backed up on a password-protected drive, and it will be deleted three years after the conclusion of the study. On receipt of the interview transcripts for this sub-study, the same ethical principles will continue to govern data management. Once utilized, the researcher will delete the interview transcripts provided.

This research also utilizes expert analysis to validate its findings. It's important to note that experts are not considered as participants in the study since data collection and examination will be completed before their involvement (103). The expert review process only involves evaluating the study's existing results and interpretations and not collecting new information from the experts. Before being provided with the data for review, the experts will be required to sign a confidentiality agreement (Appendix 2). This is a completely voluntary process, and experts will be informed that they may opt-out at any time. Experts can provide feedback digitally or through a phone conversation, depending on their preference. In the case of telephone conversations, however, experts' words will not be recorded or taken down verbatim.

Risks and benefits

In addition to the ethical risks and considerations discussed previously, the following (albeit minimal and unlikely) risks associated with conducting health system research will be considered.

HPSR studies can present unique risks, which the author will consider throughout the study. Occasionally, HPSR studies can have unintended effects on the health system (104). This study has the potential to unintentionally undermine the function of FHBP in the Ghanaian health system. The relationship between CHAG and the GoG is constantly evolving and can at times become tense (70). In addition, health worker strikes in Ghana is highly politicized (69), with numerous ethical disputes regarding their moral correctness. Thus, the author will ensure accurate reporting and interpretation of the results and conclusions. Importantly, this study will make no moral judgments about health worker strikes in Ghana. The focus of this study is not whether CHAG health workers should join in public sector strikes, rather, it is a retrospective study on the documented role of private providers during health worker strikes and the implications of this for health system resilience. Before publication, the author will also present the results and findings to experts to confirm the interpretation of the results and ensure that the way results are being communicated will not pose a risk to the health system.

The research aims to benefit policymakers in Ghana and other LMICs by examining the role private providers can play during health worker strikes and how these capacities may be utilized to ensure the continuation of essential health services. This is the first study of its kind, and it will also address areas where there is a dearth of literature, such as providing a comprehensive contextual synthesis of the history and context of health worker strikes in Ghana. In addition, policymakers interested in the factors influencing the relationship between public and private providers in Ghana and other LMICs will find this study useful. It will also contribute to the much-needed literature on FBHPs and their effect on the resilience of health systems, as well as to our comprehension of the CHA-State PPE.

Communication of findings

This research study will be submitted to the University of Cape Town as a thesis in partial fulfilment of the Master of Public Health degree requirements. Thus, the thesis will be accessible via the open database of

theses at UCT. The final output of this study is a journal article which will be submitted to peer-reviewed journals. Journals with a particular focus on health systems and equity in health service provision will be targeted.

Additionally, research findings will be disseminated to stakeholders. The final journal article will be distributed to the reviewers of the study, as well as to CHAG and the MOH. This study will produce a summary of the context of health worker strikes in Ghana from 2010 to 2016. This contextual analysis will also be provided to officials at the MOH in Ghana. The author will also utilize platforms they are part of, such as the Mandela Rhodes Foundation and the International Working Group for Health System Strengthening, to disseminate the final journal article and findings.

Timeline

The expected timeline of this study is as follows:

Table 7 Timeline for study

Activity	May 2022	Jun 2022	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023
Phase 1: Scoping literature review									
Draft protocol									
Final protocol submitted to ethics									
Phase 2: data collection and analysis									
Expert reviews									
Phase 3: Consolidation and synthesis of results									

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Part B Journal Article

Intended journal: *International Journal for Equity in Health*¹

Public-private engagement and systems resilience in times of health worker strikes: Case study of the Christian Health Association of Ghana and Government of Ghana engagement

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Abstract

Background: In low and middle-income countries, private providers have been identified as crucial to maintaining service continuity during health worker strikes. However poor engagement with the private sector might compromise the quality of care received at this time and may accrue financial hardship for the population, especially the poor. Ghana has been the site of numerous nationwide health worker strikes. During strikes, the grouping of faith-based non-profit health providers, networked mainly by the Christian Health Association of Ghana (CHAG), has been noted as vital to the continuation of services. No study has yet described or explored private and public sector engagements during health worker strikes and the implications for health system resilience.

Methods: This study was a primarily qualitative descriptive and exploratory case study of the engagement between CHAG and the Government of Ghana (GoG) during public sector health worker strikes from 2010-2016. We combined evidence from peer-reviewed literature, media archives and other grey literature with secondary analysis of interview transcripts from a related study. Data was analyzed using a qualitative thematic analysis approach.

Results: Health worker strikes were a persistent chronic stressor. We found evidence of some system-level interactions between CHAG and the GoG during strikes which allowed for adaptive and absorptive resilience strategies. This engagement was influenced by CHAG's non-striking ethos, the two actors' unique secondment policy, and the presence of a National Health Insurance System. However, there was limited evidence of the government offering further assistance to CHAG member facilities during strikes and systemic challenges with the National Health Insurance System threatened the ability of CHAG to provide quality and affordable care.

Conclusions: The study highlights the critical role that private providers can play in enhancing the resilience of the health system during strikes in Ghana. The government should establish proactive partnerships with private providers to guarantee adequate support during strikes. Additionally, the government should engage in joint efforts with relevant stakeholders to proactively address human resource-related challenges. Governments need to ensure preparedness for the advent of strikes. Further research is needed to develop and evaluate strategies nations can use to respond to strikes.

Keywords: *public-private engagement; health system resilience; Christian Health Association of Ghana; Ghana; human resources for health; health worker strikes; industrial action*

¹ Journal instructions for authors in Appendix 13. These footnotes would be converted to alphabetized endnotes in case of publication.

² For the purpose of this examination, the student is the sole author of the work. We confirmed with the journal editors that this journal has no wordcount limit – and the current manuscript falls within reasonable scope for a qualitative study

Background

There is widespread acknowledgement of the role of partnerships between state and non-state actors in strengthening health systems³, achieving universal health coverage (UHC), and, more recently, contributing to health systems resilience. In the epoch of the COVID-19 pandemic, the concept of health systems resilience has gained further attention, and the importance of partnerships between state and non-state actors in ensuring system resilience amid shocks and stressors has been highlighted (1,2). In a 2016 edition of the Bulletin of the World Health Organization (WHO), health systems resilience is named as a critical concept for global health, in the same vein as health system strengthening, UHC and health security (3). In many low and middle-income countries (LMICs), healthcare demand exceeds supply, and public resources are insufficient to satisfy health system goals (4). There is general consensus that the private health sector⁴, acting within a plural system, may considerably improve access to health services provided the right conditions are created (5).

The public-private engagement (PPE) model between the private and public sectors influences how well private providers can complement the public system (6-10). PPE can be defined as *"the mechanism of engaging with the non-state sector in line with state priorities through a temporary or partial transfer of assets or by sharing the responsibility for service provision between the public and the private sector"* (10). Even though PPEs are widespread in Africa, few studies have examined how they work (9). There is a need for a greater understanding of the advantages and drawbacks of PPE models for achieving health systems goals (11). Faith-based health providers (FBHPs)⁵ are a prominent grouping of private usually non-profit providers in Africa that have been in existence since pre-colonial times (12,13). This sector is dominated by Christian providers who are often networked under umbrella bodies referred to as Christian Health Associations (CHAs) (13,14). Whyte and Olivier (2017) propose that these private providers have a unique PPE model with state actors based on years of collaboration, shared values, and trust, referred to as a CHA-State PPE (10). This model may position FBHPs as an asset to health systems resilience.

A consortium of health system experts identified the need for additional research on the private sector (with specific mention of FBHPs) as one of five important research gaps in the literature on the resilience of health systems (15). While definitions and notions of health systems resilience differs, resilience generally refers to the ability of a system to absorb shocks, respond to shocks, and emerge from those shocks even stronger than before (16). The concept has been applied to the analysis of diverse health system shocks, such as epidemics, conflict, and political and economic crises (17). The phrase 'everyday resilience' was coined by Barasa et al (2017) and Gilson et al (2017) to characterize the resilience capacities and strategies required to respond to day-to-day chronic health system difficulties (18,19).

In line with this, a critical shock in African nations is the phenomenon of health worker⁶ strikes, which have been understood to be 'chronic stressors' or 'acute' shocks of health systems. Strikes are not immediately catastrophic, and the impact depends on a range of factors, including duration, type of health worker on strike (20), actions of striking workers, health-seeking behavior (20), and access to alternative forms of care (21).

³ A health system as defined by the WHO "consists of all organizations, people and actions whose primary intent is to promote, restore or maintain health"(1).

⁴ The private health sector can be defined as "organisations involved in the financing or provision of health services that fall outside the direct control of the government of the country."

⁵ FBHPs refer to a grouping of non-state providers identifying as faith aligned and usually non-profit in configuration (13). FBHPs refer to health facilities that provide health services, along with their governing bodies, linking networks, and affiliated entities (10).

⁶ A health worker in this study is any individual who offers health services either through direct contact as clinical workers (doctors, nurses, physiotherapists, occupational therapists) or indirectly as assistants' helpers or laboratory technicians (non-clinical staff). We focus primarily on the former- health workers who offer services directly to patients.

Strike action can range from workers reducing the number of hours they work to completely stopping work altogether and are experienced globally (21-24) - but the effects have been argued to be worse in LMICs due to existing resource challenges, already-limited human resource capacity, weak institutional arrangements, and importantly the lack of access to affordable alternative sources of healthcare during times of strikes (21,23,25). In these settings, a sizable proportion of the population is usually reliant on public facilities administered by the government and strikes by public sector workers can adversely affect access to health services (23,25).

Though research is undecided as to the impact of health worker strikes on overall mortality (22,24,26,27), public sector strikes in LMICs have been found to have significant health systems effects, for example leading to a substantial decrease in inpatient and outpatient services; breakdown in trust between community and health workers (21,28); decreased health worker motivation (21,29), and entrenching inequalities as the effects of health worker strikes are disproportionately felt by the poorest in society (17,21,27). Systemic weaknesses relating to human resources for health (HRH) in LMICs, including shortage of health workers and inequitable distribution of workers are important contextual consideration for understanding health worker strikes (30-32). Common causes of health worker strikes include inadequate conditions of service, poor working environment (33), dissatisfaction with leadership and management (34), and the failure of the government to comply with collective bargaining agreements (25). Strikes by health workers are particularly concerning as HRH are arguably the most fundamental building block of a health system (30).

There is a limited number of studies that have explored the effects and experiences of strikes or how health systems respond during these events (21,23,28). Most literature has analyzed the impact of strikes on mortality rates in countries (21,26). There is also contentious debate about the ethical nature of strikes noting their potential impact on patients (21,25,35,36). Studies that have examined responses to strikes in LMIC settings found that the ability of the population to obtain alternative health care in private facilities is vital to ensuring the continuation of services (21,23,28). In many contexts, patients commonly turn to the private sector when public sector health worker strikes occur (21,28). However, without system-level interactions with the private sector to better facilitate this, accessing health services in private facilities may have significant financial consequences for the poor and compromise the quality of care received in these facilities (21,28). Despite the vital role private providers may play in offering health system resilience during this time, it is of great concern that no study has explored this interaction in any significant detail -an area Waithaka et al (2020) comment needs further exploration (21).

Ghana presents an interesting context to explore the role of PPE during health worker strikes. Ghana has experienced several public-sector strikes in response to the persistent HRH challenges (37-42). Though significant strides have been made in responding to the HRH challenges, tensions around human resource management persist and strikes continue to occur with significant health system impacts (33,39). A recent study by Ampofo et al (2022) noted a 70% decrease in the utilization of services during a three-day strike by nurses in 2020 in Ghana (33). During health worker strikes, the private sector in Ghana, especially the grouping of FBHPs networked by CHAG has been noted to play an essential role in ensuring the continuation of services (43,44). The government has been noted to publicly direct patients to CHAG facilities during strikes, and some have proposed this to improve the resilience of the health system (43,44).

Considering the potential repercussions and ramifications of health worker strikes on health system outcomes, it is vital that every effort be taken to prevent strikes and respond effectively to them (17,23,45). As such, this study explored the case of the interaction between CHAG and the GoG during health worker strikes and the

implications of these interactions for health systems resilience to answer the question: *"Does public-private engagement provide health systems resilience during public sector health worker strikes in Ghana?"*

Methods

This study was a flexible, primarily qualitative, descriptive, and exploratory single case study. The case study approach was most appropriate as the phenomenon being studied required an in-depth understanding of context, and the case study approach also allowed us to combine various sources of evidence (46). The case was defined as 'the engagement⁷ between CHAG and the GoG during health worker strikes' (Box 1) in the period of 2010-2016, as this was reported to have frequent strikes.

The overall purpose was to describe the engagement between CHAG and the GoG during health worker strikes and to explore how this engagement may contribute to health systems resilience. We had the following objectives: 1) to describe the context of public sector health worker strikes in Ghana 2) to describe the role of CHAG in responding to public sector health worker strikes; 3) to explore the factors influencing the engagement between CHAG and the GoG during health worker strikes; 4) to explore how the engagement between CHAG and GoG may have contributed to health systems resilience during health worker strikes.

Box 1 Single embedded case study clarification

Context: Ghana 2010-2016

The Case: 'engagement between CHAG and GoG during health worker strikes'

Embedded cases: Individual strike incidents

This was a sub-study of a larger grant (see Appendix 4)⁸, which set out to investigate the historical relationship between the public sector of Ghana and non-state non-profit organizations (represented predominantly by CHAG). The findings revealed that the contribution of CHAG to the nation's health systems resilience during health worker strikes was a recurring and underexplored theme (37). We aimed to contribute to the main study by examining this interaction in greater detail and describing the role of PPE during strikes to further our understanding of how FBHPs can contribute to health systems resilience.

This study was conducted in three phases: 1) a scoping review, 2) a single case study of CHAG-GoG interaction, and 3) results analysis and synthesis. The scoping literature review investigated the background of health worker strikes, the public-private mix, and health systems resilience literature related to strikes in Ghana and other LMICs.

The analysis revealed adequate publicly

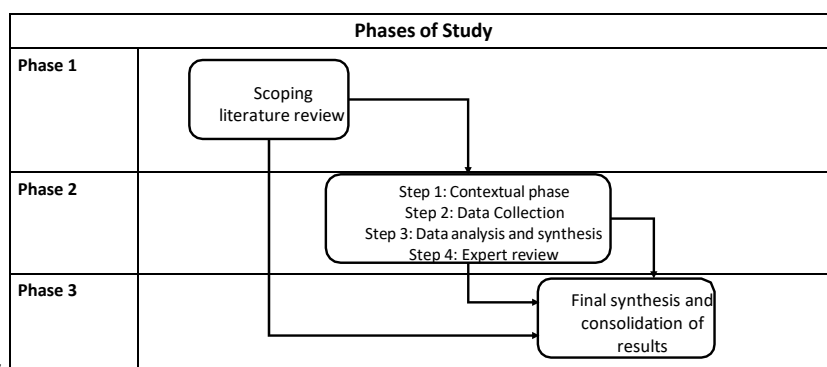


Figure 1 Phases of study 1

accessible data to conduct the case, but poorly synthesized, and an important goal of this study was to synthesize and integrate the diverse evidence sources. The scoping review operationalized the term 'PPE', 'health worker strikes', and 'health systems resilience'. The review also established the theoretical foundation for this case study- which synthesized several theoretical frameworks to collect and analyze data (Appendix

⁷ Engagement refers to an interaction or involvement between actors. Thus, we use the term engagement and interactions interchangeably.

⁸ The larger research project was titled "WHO - Alliance for Health Policy and Systems Research (AHPSR)-a funded project entitled 'Systems integration towards UHC: Strengthening the collaborative relationship between faith-based non-profit providers and the Ghanaian public health system'" (58).

7)- including the Russo et al (2020), the CHA-State PPE model as described by Whyte and Olivier (2017) and the adapted the health systems resilience framework by Kagwanja et al (2018) (Appendix 7)¹⁰.

This second phase case study was carried out in four iterative steps. The first step was to contextualize the Ghanaian health system regarding the public-private mix and the background of health worker strikes. Our scoping review showed that no journal articles (to our knowledge) clearly and specifically described the context of health worker strikes in the time frame we sought to analyze.

We sought to build a descriptive case of health worker strikes between 2010 and 2016 in Ghana before we could situate the interaction between CHAG and GoG within this context. Information on health worker strikes was mostly in media archives and grey literature. We searched media archives, namely GhanaWeb, Myjoyonline, and Citinews and conducted a further search on Google and institutional databases (Box 2). Our analysis of the collected documents was guided by a qualitative document analysis approach¹¹ (47) – which recognizes the importance of understanding the perspective, scope, and reliability of documents as essential to the analysis (47). In total, we found and analyzed 236 documents (Appendix 9).

From the contextual phase, the embedded case selection of three (of ten) strike incidents were purposively selected based on the inclusion criteria of: 1) strike incidents that were of relevance to the case description, 2) availability of sufficient ‘reliable’ evidence on the engagement between CHAG and the GoG during health worker strikes¹² (Table 1).

The next step of the case study collected and analyzed data simultaneously – focusing on CHAG-GoG engagement during strikes. Fifty-six of the 236 documents were relevant, and in addition, we conducted secondary analyses of past interview transcripts from the broader AHPSR study. Unique identification codes were assigned to sources: the first letter denoting type of source (Box 3), the second letter (if applicable) to a specific strike incident (Table 1), and numbers in brackets (if present) indicate specific page numbers.

The data collected were systematically categorized and thematically analyzed according to the research objectives. Themes were identified deductively, based on the analytical framework developed through scoping review (Appendix 7), and inductively, by examining emerging patterns. Data collection from multiple sources facilitated the triangulation of evidence to enhance rigor.

Box 2 Data sources

Institutional databases sources:

- Ghana Medical Association
- Fair Wages and Salary Commission
- Ghana National Labor Commission
- Ghana Ministry of Health
- Christian Health Association of Ghana
- Ministry of Labor

Media archives sources:

- Ghanaweb
- Myjoyonline
- AllAfrica
- Citinews

Peer-reviewed literature sources:

- Google Scholar
- Pubmed
- Ebscohost

¹⁰ Appendix 7 shows how the different theoretical frameworks found in our scoping review intersect.

¹¹ The qualitative data analysis approach also emphasizes identifying the source/author, date, the perspective of the document, aim of the document and the intended audience as part of the data analysis process (47).

¹² From the ten strike incidents that were reported during this time, three of those incidents (Table 1) had rich information about the interaction of CHAG and the GoG during strikes. We purposively selected these incidents as embedded studies for deeper analysis and cross-comparison. Our analysis focused on these selected embedded units but was not exclusive to these strike incidents.

As this case study relies primarily on publicly available data and secondary data analysis, it is crucial that the interpretation and conclusions reached be reviewed by experts to improve the trustworthiness of the study. Results and analysis were reviewed by two experts who initially participated in the AHP SR study and are still involved in CHAG and MOH (Appendix 2 and 4). After incorporating expert feedback, the last phase was writing and synthesizing the case.

Study limitations

Our findings are context specific to the relationship between CHAG and the GoG and the context of health worker strikes in Ghana. Thus, are likely not directly transferable to other providers or settings. Much of our data was also sourced from media reports that may contain incorrect or biased information. It is possible that we missed key policies internal to CHAG and the GoG that are not publicly available. We sought to mitigate this by reviewing multiple documents, drawing on three types of secondary information, and seeking triangulation between sources. We also maintained an active evidence trail and sought expert verification. Lastly, we focused on macro-level interactions between CHAG and the MOH, which limited our ability to fully understand the strategies adopted by individual health facilities in Ghana (a potential area for future research).

Results

Below we present our main findings of the case study of the engagement between CHAG and GoG during health worker strikes in Ghana from 2010-2016.

Case context

Ghana's health system architecture and public-private mix

The Ghanaian health system architecture and public-private mix present important contextual information for this case. In 2016, the projected population of Ghana was 28,687,274 (38). In 2010 Ghana was reclassified as 'middle-income' by the World Bank, mostly as a result of the discovery of large oil reserves (48). However, major wealth gaps prevail, especially between the predominantly rural north and urban south (49). Wealth disparities also contribute to the variable health outcomes between regions, and the inequitable distribution of health professionals (37,49). Ghana has a complicated disease burden characterized by a rise in noncommunicable diseases and persistent infectious diseases (37,49).

Ghana has a pluralistic health system consisting of public and private providers and Teaching Hospitals. The public sector is comprised of two institutions: the Ministry of Health (MOH), which oversees policy formulation and resource mobilization, and the Ghana Health Service (GHS), an independent administrative entity responsible for implementing national policies (48,49). The GHS is required under the GHS and Teaching Hospitals Act 525 of 1996 to provide primary and secondary services to all Ghanaian citizens, and these services are supplemented by private and quasi-governmental institutions¹³ (49,50). Teaching Hospitals¹⁴ are

Box 3 Data unique Identifiers

M#: Media Report
J#: Peer-reviewed Journal Article
P#: Policy document
C#: Communication
G#: Government reports
N#: Non-government reports
B#: Books
I#: Secondary Interview Transcripts
T#: Theses

¹³ Quasi-Government Health Institutions consist of government institutions, agencies, and departments whose primary focus is not on health, but which engage in health service operations, such as Ghana's ports, the military, and so on (137).

¹⁴ Teaching Hospitals are semi-autonomous national referral hospitals tasked with providing tertiary care, research, and training.

required to offer tertiary health care (38). Thus, the MOH is primarily responsible for regulating and interacting with the private sector.

The private sector in Ghana is a large and significant provider of health-related goods and services providing approximately 50 to 60% of all health services in Ghana (48,51). For-profit providers had the highest proportion of these services, followed by FBHPs (48). The Ghanaian government made several policy attempts to improve integration, collaboration and promote private sector involvement in the health system (5,48). As with many other African nations, private providers have been present in Ghana since pre-colonial times, mostly as FBHPs (10). Thus, the policy aim over several years relating to FBHPs was centered on better integrating the already existing sector. Ghana has been ahead of many African nations private sector development as it had a private sector policy plan since 1999 and 2003 (48). However, A 2011 World Bank Assessment revealed critical policy weaknesses with the 2003 policy, including that several of its objectives were not implemented seven years after adoption (5,48).¹⁵ This led to the 2012 Private Health Sector Development Policy, which aimed to respond to the gaps in the 2003 policy (5).

The introduction of the National Health Insurance System (NHIS) in 2003 – being the first sub-Saharan African country to do so— significantly influenced the interaction between the public and private sectors (48). In 2013 the scheme covered approximately 60% of the nation and offered an extensive benefits package (52) (covering nearly 95% of the disease burden in Ghana) (53). Public and private providers are part of the scheme, and card holders can seek care at any of the accredited facilities (53). The NHIS has been the topic of intense debate within the broader literature (54-58). It has been recognized for increasing the utilization of health care services in Ghana and decreasing the financial burden of care on patients (54,55). It has also been heavily criticized for its several challenges, including reports of fraud, mismanagement of funds, and lengthy delays in paying providers. These challenges negatively impact Ghana's public and private providers (48,51).

FBHPs in Ghana are predominantly networked under the 1967-founded CHAG (37). Institutional members refer to the hospitals and clinics linked to various denominational bodies (CHAG Member Institutions- CMIs) (44). In the 1960s there were approximately 21 CMIs, this number has subsequently grown to approximately 300 (43). CHAG's National Secretariat is the coordinating body for CMIs and thus the primary link between CMIs and the MOH (43). Here it is vital to draw a distinction between the interaction between CMIs and the MOH, and CHAG and the MOH. The MOH has an indirect relationship with CMIs as its only interaction with CMIs is purely a funding role. In contrast the relationship with CHAG is a direct relationship as CHAG interacts with the MOH on behalf of CMIs and can thus be regarded as a CHA-State PPE.

The MOH and CHAG have an extensive history of collaboration. In accordance with the Adibo Report¹⁶, which emphasized the necessity for CHAG to work jointly but independently with the government, the GoG began subsidizing the salaries of health professionals in CMIs in the 1970s- and continues to subsidize nearly 92% of salaries in CHAG facilities (37,43). The collaboration between CHAG and MOH has continued to grow, and many have cited the engagement as an example of an effective PPE in Africa (9,14,48). This engagement was formalized by an MOU between CHAG and the MOH in 2003- and subsequent amendments in 2006 (Box 4)

¹⁵ Amongst the weaknesses outlined by the report included the fact that importantly that at the time, only one PPE with CHAG existed and with no other private provider (48).

¹⁶ In 1975 the GoG commissioned a study on the role of FBHPs in the health system. The resultant 'Adibo report' presented three key options for the government in how it could engage with the FBHPs including taking over the hospitals entirely, providing partial support with the possibility of taking over in future and allowing FBHPs to operate independently but with the support of government. Following the report, the GoG decided to continue collaboration with FBHPs but allowing them to operate independently. The report also suggested that government subsidize the salaries of FBHP staff.

(9,14,48). Some CHAG hospitals have also been assigned District hospital status (43,44). CHAG also established formal partnerships with the GHS and the National Health Insurance Authority¹⁷ through the MOU.

Currently, in many instances CHAG acts as an extension of the public sector while maintaining its independence from the government (10,37). CHAG is seen as an agency within the MOH with its own personnel similar (though lesser extent) to the GHS (43).

Background of health worker strikes in Ghana

Health worker strikes in Ghana can be traced back to the early 1970s (62). Ghana post-independence saw the advent of unionization by public sector workers (40). The Ghana Medical Association (GMA) was one of the first professional body to unionize in 1958 and today acts as a professional representative group for medical doctors with a current membership of over 7000 doctors (59). Subsequently, in 1960 the Ghana Registered Nurses and Midwives Association (GRNMA) was established and is the largest professional health body in the nation (33). Other professional health organizations include the Government Hospital Pharmacist Association (GHOSPA) (60), and the Ghana Association of Certified Registered Anesthetists (61). The 1992 Constitution of Ghana enshrines the unionization of workers as a right, stating that *"every worker has the right to form or join a trade union of his choosing for the promotion and protection of his economic and social interests"* (40).

Most health workers are classified as essential workers and prohibited from embarking on strike action according to the Ghana Labor Act of 2003 (62). Section 162 and 164 of the Act provides for compulsory arbitration by the National Labor Commission (NLC) after the expiration of three days of negotiations involving workers engaged in essential services (62). A study by Seniwoliba (2014) on public sector strikes in Ghana found that parties in public sector disputes often refused to submit to mediation and arbitration processes (39). Thus, health worker strikes persist, despite the legal prohibitions against them. However, within the current confines of the law, it is technically impossible for healthcare workers to embark on strikes.

HRH management in Ghana is extremely complex. Although Ghana is said to have a decentralized HRH governance system, the MOH still controls most HRH functions (63). Health workers are also public sector workers and are governed by collective policies and institutions that affect all public sector employees. For instance, the Fair Wages and Salary Commission (FWSC) is an independent body established in 1996 under the Fair Wages and Salaries Act (Act 525) to promote fair and equitable wages and salaries in the public sector (60). Health worker salaries, market premiums, and pension contributions are decided by the engagement of

Box 4 Key features of CHAG-MOH memorandum of understanding (source Ghana-MOH and CHAG (2006) (108))

HRH Management

Responsibilities of CHAG

- Support human resource requirements of MOH
- Agree to MOH staffing norms

Responsibilities of MOH

- Provide support and access to training facilities for CMIIs
- Facilitate equitable distribution of health professionals among non-government providers
- Will supplement financial requirements of CHAG and CMIIs based on approved budgets.

Finance: CHAG will submit annual plans and budget to MOH for financial assistance.

Information sharing: CHAG will be involved in the development of national health policies and programmes

Conflict resolution: Agreement to settle disputes outside of court

Duration and termination: MOU will be operational from December 2003. Can be terminated by either party by giving notice in writing three months prior.

¹⁷ The NHIA governs the NHIS.

various bodies, including the FWSC, the MOH, and the Ministry of Finance (MOF) (60) which are often the target of health worker strikes. The first prominent incidents of health worker strikes in Ghana occurred in 1999 in response to the Additional Duty Hours Allowance Policy (ADHA) (42) (Box 5).

Box 5 Additional Duty Hours Allowance Policy (source Agyepong et al (2012))

The first prominent incidents of health worker strikes in Ghana occurred in 1999, in response to the ADHA. During this time, public sector doctors in Ghana were dissatisfied with their low pay, long hours, massive workloads, and undocumented conditions of service. In 1998, the salaries of doctors in the 37 Military hospital of Ghana were raised in Accra to recruit younger doctors. When public sector doctors learned of the wage increase in military hospitals, younger doctors became agitated and advocated for industrial action. The GMA supported the call for strike action, and doctors went on a nationwide strike. This led to the introduction of the ADHA policy which compensated employees according to a predetermined formula for hours worked more than the standard 40 hours per week. At the initiation of this policy only doctors were included. This precipitated a chain of events in which other health professionals went on strike demanding their inclusion in the policy and by September 1999, almost all permanent health worker staff were included in the ADHA policy. The ADHA policy was extremely costly for the Ghanaian economy and resulted in payment delays, which led to a series of strikes to enforce payment, followed by more payment delays and more strikes creating a vicious cycle of health worker strikes. The ADHA policy was subsequently phased out in 2005 and ADHA was consolidated into health worker salaries (which had additional consequences and led to more strikes).

In the early 2000s, the public sector in Ghana was overridden by strikes from many other professional bodies, including the National Association of Graduate Teachers, the Tertiary and Educational Workers Union and the University Teachers of Association of Ghana (62). In response to these strikes and decades of disparity and distortion in public sector wages, the GoG implemented the Single Spine Pay Policy, which came into effect in 2010 (60). One of the four components of the policy was the Single Spine Salary Structure (SSSS) (60). The policy entailed implementing a unified salary structure for all public sector employees listed in Article 190 of the 1992 Constitution, which includes healthcare workers. Various challenges were noted with the structure, including dissatisfaction with the grading structure, delays in payments and salary reduction after migration onto the grading structure (39,40,60). The Various professional unions, including the GMA and GHOSPA, challenged their new salaries and conditions when they migrated onto the single spine structure, contributing to a series of strikes (39).

In addition to agitations over the SSSS, there was the long-standing issue of conditions of service for health workers. For decades guidelines and policies for human resource management were scattered in various government documents and were not uniform (64). Several commissions were set up to try and determine conditions of service for groups of health workers, most notably in 2008 and 2009, but these commissions were unsuccessful (64). Codified conditions for doctors were only created in 2015. The challenges facing the SSSS and the need for codified conditions of services led to a series of health worker strikes from 2010-2016.

Case description

Between 2010 and 2016, nationwide health worker strikes were ongoing chronic stressors for the health system. As shown in Figure 2¹⁸ and Table 1, approximately ten separate strike incidents were identified during this time period. The longest of the ten strikes occurred in 2012 when pharmacists went on strike from April 8 to June 18 (approximately two months). Two of the ten strike incidents lasted less than a week, while the

¹⁸

We included strikes organized by professional worker unions or coalition of workers. This timeline excludes the persistent threats of strikes by professional unions throughout this time, as well as any regional or hospital-specific strikes. For simplicity we also excluded strikes that were not primarily related to health workers or strike incidents by unemployed health workers.

majority lasted between two and three weeks. Below we describe the background of the three embedded strike incidents that were selected for more in-depth analysis.¹⁹

The implementation of the SSSS in 2013 sparked a major conflict between the government and the GMA (data source Appendix 9: MA8, MA12, MA12, J5, J11, J8, J9, J11(212), J12). As a result of the new salary system, doctors were promised equal pay for equal work. However, when they discovered that their basic salaries had decreased, they acted. The GMA went on strike for three weeks, from April 8 to May 8, to protest the reduction in their pension contributions (Appendix 9: MA8, MA12, MA12, J5, J11, J8, J9, J11(212), J12). After a series of breakdowns in negotiations, the strike continued until the National Ghana Labor Commission intervened and ordered the government to repay the conversion difference. The GMA finally called off the strike after this ruling (Appendix 9: MA3, MA7, J9, J11).

Two years later, the GMA found themselves in a similar situation. This time, the strike was over long-standing issues with their conditions of service. From July 30 to August 24, 2015, the GMA went on a three-week strike to protest the unresolved matter (Appendix 9: MB1, MB4, MB5, MB9, MB14, J8, P5, C1, C2). The strike was only called off after persistent pleas from civil society groups and prominent figures to end the strikes and a directive from the NLC for the GMA to engage in compulsory arbitration (Appendix 9: MB1, MB2, MB6, MB7, MB35, P5).

The third embedded strike incident occurred in 2016 when GHOSPA went on strike to protest what they described as persistent unfairness and deliberate delays with addressing their concerns over their market premiums²⁰, salary grade structure and conditions of service (Appendix 9: MC1, MC2, MC3, MC6, T1, MC3, MC4, MC5). The pharmacists claimed that since the inception of the SSSS seven years prior, they had received lower salaries than their counterparts in other institutions. In response to the strike, the MOH instituted a committee to investigate the matter. The committee developed a report titled "Road map for Implementation of Recommendations on GHOSPA" (Appendix 9: MC1, MC2). After a general meeting with all members, GHOSPA decided to call off the strike on September 10 (Appendix 9: MC1, MC2).

Limited quantitative data addresses the effects of health worker strikes on health system outcomes during this period. Still, sources indicate the impact was severe and disproportionately detrimental to the poor. The strike incidents followed a progressive pattern: outpatient services were initially withdrawn while inpatient and emergency services were maintained by striking personnel. As the strikes continued, emergency services were removed in six (including all three embedded strike incidents) of the ten identified strike incidents (Appendix 9: ME6, ME8, J5, MF2, MF3, MA1, MA7, MB17, MB8, MC1, MC5). In the 2015 doctor strike, there were allegations of a mass resignation of doctors if their complaints were not addressed, although this never occurred (Appendix 9: MB28, MB68, M60).

The Health Insurance Service Providers Association of Ghana reported 500 deaths in the first 17 days of the 2015 GMA strike (65). Given that some patients died while being moved between hospitals, it was concluded that these deaths were likely caused by the strikes. It was also suspected that the amount was likely underestimated because rural deaths were undercounted (66). There was particular concern about the effects

¹⁹ We were unable to locate sufficient information regarding the involvement of CHAG and the GoG during nursing strikes. We assume that this is because nursing strikes have never lasted more than a week. This may be due to nurses' vital role in the operation and functioning of health institutions and their vast numbers pose considerable problems to the health system (being the largest professional health body in the nation). The government may face more pressure to respond promptly to nursing strike actions.

²⁰ A market premium is a financial incentive offered to attract and retain scarce vital skills in the economy. The premium is intended to increase the salaries of scarce skills closer to or equal to their true market value. The objective is to enable the public sector to compete favorably with the private sector for such skills on the labor market (MC1).

of strikes on vulnerable patient groups (Appendix 9: ME6, ME8, ME9, MA7, MA1, MA8, MB17). It was reported that during pharmacist strikes, services for maternal patients and patients living with HIV/AIDS were withdrawn (Appendix 9: ME6, ME8, ME9). The strikes were also perceived to lead to significant financial losses for the health system, especially the pharmacist strikes, as sales from pharmaceutical drugs are a major source of revenue for the health system.

Strikes also increased tension and a breakdown of trust between health workers, in particular tensions between hospital administrators and striking workers. There were also tensions noted between striking workers and non-striking workers.

Notably, almost all strike incidents occurred after a breakdown in negotiations between professional groups and governmental bodies, where workers felt as though their interests were not taken seriously by government officials (Appendix 9: MB13, MB15, MB18, MB23, MB29, MB44, MA1, MA4, MA8, MA12, MA13, J11, MC3, MC4, MC5). An important theme that also emerged from the data, particularly during the 2015 strike, was the use of language and the role of language as an aggravator of strikes. According to some sources, the occasionally violent and disrespectful language used by government officials (especially government communicators) and GMA leaders heightened tensions during the strikes (Appendix 9: MB3, MB6, MB7, MB10, MB15, MB20, MB26, MB28, MB30). Some perceived this to lead to the prolongation of strikes, thus compounding the effects on the health system.

Multiple interrelated macro-contextual factors, including the nation's economic and political background, were believed to have affected the onset and severity of strikes in the country (Appendix 9: MD5, MD8, J1, ME9, MA4, MB1, MB4, MB5, J2). There were significant political tensions during this time, and two highly contentious national elections were held in 2012 and 2016 (Appendix 9: MD5, MD8, J1, ME9, MA4, MB1, MB4, MB5, and J2). The National Democratic Congress (NDC) and the National Patriotic Party (NPP) dominate Ghana's political climate, which is highly polarized. President John Mahama succeeded the late President John Atta Mills, who passed away while in office as President of Ghana in 2012. The NPP, Ghana's largest opposition party during the 2013 and 2015 strikes, was among the most critical of the NDC's handling of the doctor strikes. In turn, some members of the NDC government accused the NPP of being behind the strikes and exploiting them for political gain in rural areas. This resulted in the strikes becoming a political tug-of-war in the nation (Appendix 9: MB17, MB22, MB24, MB47).

Between 2010 and 2016, Ghana's economy was characterized by an energy crisis, slow economic growth, rising debt, and a significant budget deficit (Appendix 9: MA4, MB26, MB47, MB54, MB17, MB22, MB26, MB47, MB54). The high public sector wage bill, partly worsened by the adoption of the SSSS, was a considerable factor cited for the economic difficulties. In 2012, public sector salaries consumed approximately 70% of Ghana's government revenues. To stimulate the economy in 2015, the International Monetary Fund lent Ghana \$918 million (67,68). The government promised to reduce public sector wages from 50-55% of government revenue (the share in 2015) to 30% as a loan condition. This put the Mahama administration under intense pressure to adhere to annual budgets. In response to the doctors' strikes in 2015, the President allegedly stated that *"not a single cedi will be spent on unplanned expenses outside the budget for 2014-2015"* (67,68). These impediments contributed to the prolonging and escalation of the strikes, especially in 2015 and 2016 (Appendix 9: MB17, MB22, MB26, MB47, MB54).

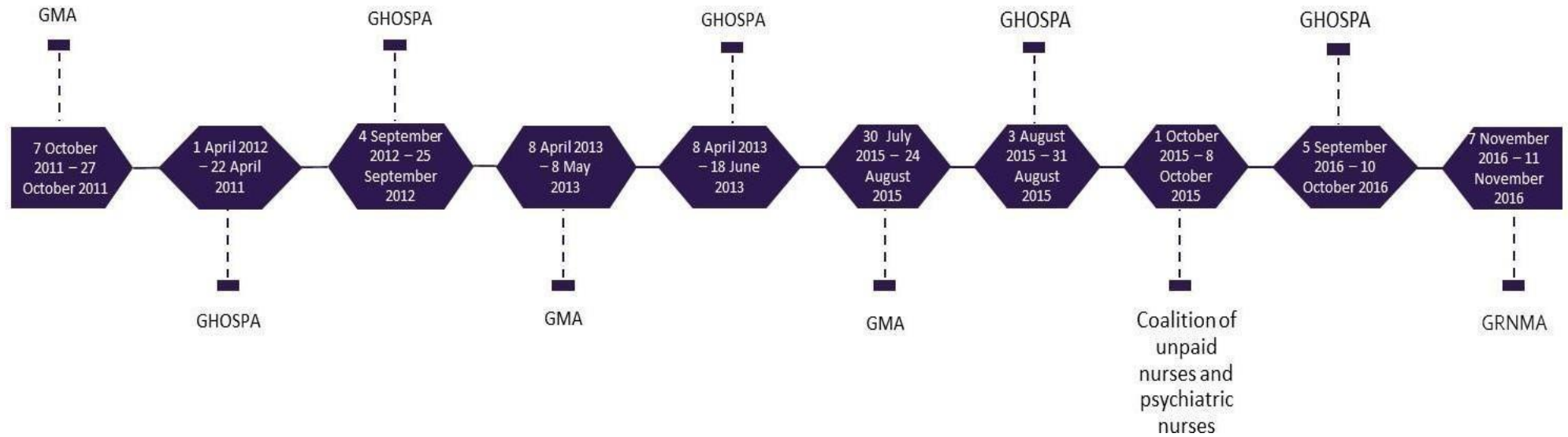


Figure 2 Timeline health worker strikes in Ghana 2010-2016

(Source author)

Table 1 Characteristics of health workers strike incidents in Ghana from 2010-2016

Strike Incident	Striking body	Onset characteristics	Macro socio-economic and political factors	Resolution	Impact
7 Oct-27 Oct 2011 Code: D	GMA	Dispute between GMA and FWSC over alleged distortions in grading structures SSSS and determination of market premium by the FWSC. MD3, MD5, MD7, MD9, MD20, MD21, MD22, MD27, J1, J8, J9, T4	-NDC gov led by President John Atta Mills. -Period of strong economic growth, driven in part by the discovery of large oil reserves. In 2010 the country achieved middle-income status. MD5, MD8, MD28, J1	-Appeals by civil groups (esp. clergy) for strikes to end -NLC intervention, compelling doctors to undergo compulsory arbitration. NLC rules in FWSC favor of FWSCMD2, MD11, MD7, MD13, MD14, J9	-Doc withdrew OPD services at most gov hospitals. Inpatient and emergency services continued during strike. -QHI struggle to handle increased patient load -Strikes have disproportionate effect on Northern regions with fewer private hospitals. -Strikes result in low staff motivation MD9, MD12, MD23, J5(2)
1 April- 22 April 2012 Code: E	GHOSPA	Dispute between FWSC and GHOSPA about implementation of the NLC ruling on grading structure, market premium and conversion difference of pharmacists being migrated onto the SSSS. (ME1, ME5, ME8, J1, J8, J9, J10, J11(212), T4)	- Death of President Mills, President Mahama accedes as president on the 24th of July - Growing political tensions -general elections December 2012 and expected to be highly contentious. (ME9, J1)	-Grievance Review Committee set up by gov to attend to impasse between GHOSPA and FWSC. (ME4, ME7)	-Strikes began with the withdrawal of OPD. Reports indicate that the strikes escalated to a point where HIV patients and those with mental illnesses were also denied services. -High revenue losses incurred by clinics -Strikes result in low staff motivation ME6, ME8, ME9, J5(2), P3
4 September- 25 September 2012 Code: F	GHOSPA	Dispute between FWSC and GHOSPA over delay in migration of government pharmacists onto the SSSS. FWSC claims the delay was due to the leadership of GHOSPA who sought a delay in their migration due to errors it perceived with salary grade structure. (MF1, MF4, MF7, MF9, MF11, MF12, J1, J8, J9, J11(212), J13, T4)	- Death of President Mills, President Mahama accedes as president on the 24th of July - Growing political tensions -general elections December 2012 and expected to be highly contentious. (ME9, J1)	-FWSC and GHOSPA to appear before a compulsory arbitration panel. According to one report GHOSPA lost the case. -In November 2012, the government inaugurated the Single Spine Post Migration Technical Committee to respond to all issues of migration onto the SSSS. (MF1, MF4, MF13, J9)	-Emergency services were withdrawn from the 11 th of September. -Heightened tensions between hospital administrators and Pharmacists. R -Some surgery department had to close down. -Financial strain on hospitals as significant revenue brought in by pharmacy sales. -Low staff motivation (MF2, MF3, MF5, MF6, MF7, MF8, J5(2))
8 April-8 May 2013 Code: A	GMA	-Doctors striking for payment of their market arrears which were outstanding since being migrated onto the SSSS. On March 27, 2013, the NLC adopted a payment schedule drawn up by the FWSC in which payment of outstanding arrears would occur in three instalments. This payment plan was rejected by the GMA.	-NDC President Mahama won December 2012 elections with a narrow margin h -Several public sector strikes occurring in the nation- primary, secondary teachers and university lecturers on strike.	Strike called off after a ruling by the NLC that the gov should restore the conversion difference being sought after by the striking doctors. (MA3, MA7, J9, J11(212))	-OPD were withdrawn by doctors from 8-14 April. Doctors threatened that after the 22 nd of April they would suspend all emergency services in hospitals -Disproportionate harm on vulnerable patient groups i.e., diabetic patients.

		-GMA also striking against reduction in their pension after migration onto the SSSS. MA1, MA4, MA8, MA12, MA12, J5, J11, J8, J9, J11(212), J12	-Energy crisis, economic slowdown and budget deficit. MA4		- Crippling public sector as strike occurred congruent with other strikes in the primary and tertiary sector MA1, MA7, MA8, MA12, MA34,
8 April- 18 June 2013 Code: A	GHOSPA	Dispute between GHOSPA and the FWSC over salary grading structure and market premiums. GHOSPA was demanding that the FWSC place them on the correct grading structure as per the ruling of the NLC which was made in their favor of the 16 th of April that year. J8, J9, J11(212)		Strike ended after the NLC took the FWSC to court to compel the FWSC to enforce their directive given to the FWSC for the payment of conversion differences. The Accra High Court ruled in favor of FWSC.J9, J11(212)	Pharmacists initially withdrew OPD services and escalated their strike action to withdraw emergency services as well from the 29 th of April. Pharmacists also withdrew services to patients with HIV and those living with mental illness.MA1, MA7, MA8, MA12
30 July- 24 August 2015 Code: B	GMA	GMA demanding gov finalize their conditions of service; an issue which had been outstanding including how additional doctors work each month was calculated and reimbursed. According to the GMA they received no response from government after seven months. MB1, MB4, MB5, MB9, MB14, MB20, MB22, MB28, MB30, MB1, MB9, MB14, MB16, MB30, J8, P5, C1	-Political tension rising as 2016 due to contentious elections. -Slow economic growth in Ghana characterized by rising debt and a ballooning public wage bill. - IMF loan condition for gov to reduce spending on public wages. MB1, MB4, MB5, MB9, MB14, MB20, MB22, MB28, MB30 MB17, MB22, MB24, MB47, J1, J2	-GMA called off strike after calls from multiple groups for the doctors to return to hospitals. -Executive meeting held by GMA where decision to end strike was taken; but decision not welcomed by all in the GMA. -Directive issued by NLC for GMA to engage in compulsory arbitration MB1, MB2, MB6, MB7, MB35, MB41, MB3, MB8, P5	-In the first week of the strike outpatient services were withdrawn with inpatient and emergency services continuing. In the second week emergency services were. -Reports that 500 patients had died since onset of strike. MB17, MB8, MB9, MB14, MB19, MB21, MB28, MB31, MB42, MB45, MB61
3 August- 31 August 2015 Code: G	GHOSPA	GHOSPA grievances over gov handling off and inadequately dealing with dispute over SSSS. Complaints from pharmacists that after migration onto the SSSS their salaries turned out to be lower. MG1, MG2, MG3, MG4, J8		Decision to scale up strike withdrawn after assurances from government that it would attend to grievances. Suspension also in response to persistent plea from public. MG1, MG3	Partial strike- Pharmacists withdrew dispensation of drugs in OPD as well as night and weekend services. (MG1, MG2, MG3)
1 October-8 October 2015 Code: I	Coalition of unpaid nurses and psychiatric nurses	7000 junior nurses and midwives striking due to delay in salary payments. The coalition claimed outstanding salaries for periods ranging from six to eleven months. MI1, M12, M13, J2, J8		Psychiatric nurses strike ended after the Controller Accounts General transferred outstanding salary arrears to nurses. M13, MI4	Psychiatric hospital potentially needing to release patients and risk closing down. (MI4)

5 September-10 October 2016 Code: C	GHOSPA	GHOSPA demanding that their salary grade structure, interim market premium and conditions of service should be reviewed by the FWSC (MC1, MC2, MC3, MC6, T1, MC3, MC4, MC5, MC6, MC9, MC10, MC11, MC12, MC13, MC14, J8)	-Rising political tension over National elections to be held in October. Continued slow economic growth. MC12, MC14, J8	-Appeals from civil society for an end to the strikes -At a National Executive meeting of GHOSPA on 10 October where members agreed to end strike after mounting public pressure. -MOH instituted a committee to investigate strike. MC12, MC14, J8	Shutdown of gov pharmacies. Only inpatients attended to. (MC1, MC5, MC7, MC11, MC14, MC6, MC7)
7 November-11 November 2016 Code: J	GRNMA	-GRNMA grievances over unpaid salary arrears, posting of nursing graduates, charging of promotional fees and inadequate logistics for public facilities. Association claimed 2000 members employed as far back as 2014 yet to receive payment -Long-standing issue of poor conditions of service for nurses. MJ2, MJ3, MJ4, MJ5, MJ6, MJ8, J6, J8, J9	-Rising political tension over National elections to be held in October. Continued slow economic growth.	Strike called off after o- GRNMA gives government until February of the next year to attend to their grievances. MJ1, MJ2	Psychiatric hospitals during the strike had to release patients and risked being shut down. MJ4, MJ5, MJ6, MJ8

Shaded cells= embedded strike incidents. NDC National Democratic Congress, Doc Doctor, GMA Ghana Medical Association, GHOSPA Government Hospital Pharmacists Association, GRNMA Ghana Registered Nurses and Midwives Association, QHI Quasi-governmental health institutions, Gov Government, SSSS, Single Spine Salary Structure,

CHAG and GoG interaction during health worker strikes 2010-2016

Table 2 and Table 3 show the sources that contributed to the key themes we describe below.

Redirection of patients to CHAG facilities

There were indications of national-level interaction between the GoG and CHAG during the investigated strike events. There were reports of the MOH publicly directing patients to CHAG facilities in all three embedded strike instances. The nature of this redirection was not different between the strike incidents (69-72). During the 2015 and 2013 strikes, the government produced a list of institutions still operating, including CHAG facilities.

"Friends from the media, additionally, about 25 quasi health facilities, 178 hospitals/clinics of CHAG, private health care providers and retired doctors across the country are supporting in delivering healthcare." (MOH Press statement Aug 2015) (68)

In each of the three strike occurrences, the MOH issued directives to service delivery agencies (including CHAG) to ensure the continuation of services. It is unclear from the data whether these directives included more instructions beyond the instruction to maintain service continuation. In 2016, a report claimed:

"It (MOH) also asked all service delivery agencies (GHS, CHAG, Teaching Hospitals) to adhere with some temporary directives while they attempted to rectify the concerns." (Extract Kasapa Fm Online September 14, 2016) (73)

The direction of patients to CHAG facilities appeared to be particularly important during the pharmacists' strike. During the 2016 pharmacist strike, there were two reports of the Minister of Health announcing that CHAG would assume responsibility for service delivery (73,74). In a press briefing, the Minister of Health stated, *"CHAG will take over service delivery while the pharmacist strike persists"* (74). The pharmacist's strikes may have presented a unique challenge for the health system, as only registered pharmacists can dispense certain drugs by law (75). In strikes by other groups of health workers, it seemed possible for non-striking health workers to assist with continuing services. For instance, during the GMA strike in 2013, there were reports of OPD facilities remaining open and attended to by physician assistants and senior nurses (76,77). The same approach appeared difficult during pharmacist strikes, where attempts by other workers to dispense or gain access to drugs were met with contestation from some pharmacists, calling these attempts illegal and "suicidal" (78).

In addition, there were reports that the MOH thanked and praised CHAG for its assistance in preserving service delivery during the health worker strikes. During the 2013 doctor strike, a statement signed by the sector minister Sherry Ayithey stated:

"The government is grateful to the Police, Military, CHA hospitals...for the dedicated services they rendered during the strike action." (Extract Peace FM online May 8, 2013) (79).

According to one report (which we use with caution here), during the 2015 doctor strike, the GHS created agreements with the private sector providing private doctors access to public health facilities (80).

"Dr Denkyira stated that the GHS linked up with the private sector doctors giving them access to public health facilities and encouraged them to bear more of the load of public health needs" (Extract Ghanaian Times, August 17, 2015) (80).

However, it is unclear from our data to what extent patients chose CHAG facilities over alternative options claimed to have been employed by patients during strikes, such as for-profit providers, traditional healers, self-medication, or not seeking help at all (60). It was noted that numerous patients opted to stay at home and missed their OPD appointments. In addition, the cost of traditional healers' services is sometimes less than that of CHAG facilities, which may have drawn patients to these facilities. This does not imply that patients should choose CHAG over traditional healers. Still, it does raise interesting questions regarding patient preference and choices during strikes that our data cannot answer.

It was also observed that CHAG institutions needed to remain operational in rural and semi-rural areas of the country where there are comparatively few other options for private healthcare providers. According to the reports, the strikes were incredibly challenging for the country's Northern regions because there are fewer private hospitals in these parts of the country (81,82).

CHAG non-striking convention

The MOH could direct patients to CHAG facilities because these facilities remained operational during strikes, and most health workers did not go on strike. Though the majority of staff at CHAG facilities would be affected by agreements reached during the strike, CHAG was noted to maintain a strict non-striking position throughout all three embedded cases (37,43,73,83-86). During strike incidents, CHAG Secretariat communicated to all CHAG member institutions to maintain the institution's non-striking convention (86). In the communication sent to managers of institutions, CHAG stated:

"CHAG Secretariat wishes to remind all our member institutions that we are obliged and restrained by our convention, which is inspired by Christian values, ethics and unique identity, to not embark upon strike action" (87).

The non-striking position and value of CHAG were also recognized and affirmed by the Ministry of Health. *"We are also pleased to announce to the public that CHAG Facilities are fully operational in line with their non-strike tradition." (Minister of Health Press statement September 15, 2016) (73,88).*

CHAG member institutions' strict adherence to its non-striking ethos led on one occasion to the dismissal of workers who chose to join the strike action. During the 2015 strike, the National Catholic Health Service (NCHS), one of the 25 denominational sub-bodies of CHAG, dismissed 14 medical doctors for partaking in the national strike (84). The reason for the dismissal provided by the NCHS was that the actions of the doctors contravened their principles. The Executive Director of CHAG, Peter Yeboah, supported the action of the NCHS by stating the non-striking convention is a known fact (89). Additionally, there were reports of challenges to CHAG's non-striking position. In 2016, striking workers appealed to workers in CHAG facilities to join the strike action. A press statement by the GNRMA stated, *"CHAG or whatever agency, so far as you are paid by the government, you must join the action to secure your welfare" (85).* Some, including the former Minister of Health Dr Kwaku Afiyie, viewed the NCHS's dismissal of the striking doctors as unconstitutional and similar to slave labor.

Table 2 Summary of important sources engagement between CHAG and GoG during strikes

Source	Type	Title	Strike incident	Findings
KasapaFM (2015, August 11)	Media Report (GNA)	Catholic Church adopting slave labor in Ghana – ex-Minister	2015	Ex minister of health challenges National Catholic Health Service dismissal of 14 employees for joining the national doctor strike.
Yeboah and Buckle (2017)	Journal paper	The evolving partnership between the GoG and national faith-based health providers: leadership perspective and experiences from the Christian Health Association of Ghana	General	CHAG has a strict non-striking position, and this position allows for the delivery of 24-hour health services during health worker strikes in Ghana, helping to mitigate impact on vulnerable populations. 2) Tensions between CHAG and MOH due to delayed payments in the NHIA complicates the relationship. 3) Role of CHAG during 2016 strike.
Olivier and Kwame (2018)	Journal paper	The history of public- (faith-based) private health sector partnership in Ghana. Report for the Alliance for Health Policy and Systems Research, World Health Organization: Geneva	General	Amendment of the secondment strategy between CHAG and MOH meant the majority of the staff in CHAG facilities receive their salaries from the MOH but managed and administrated by CHAG. The amendment also means that CHAG staff obtain the same conditions of service and benefits package as the GHS staff.
Negotiations: No invite from govt to GMA	Government Briefing	Negotiations: No invite from govt to GMA	2015	Public directed to seek care from private and QGHI that are still in operation and released a list of these facilities. Gov mentions that NHIS card holders are eligible for treatment in NHIS credentialed CHAG facilities.
Duho (2016, September 6)	Media Report (GNA)	Pharmacists in govt hospitals begin indefinite strike	2016	Public directed to receive pharmaceutical services from private providers and facilities.
MOH (2015, June 26)	MOH Draft Document	Draft Conditions of service for medical doctors and dentists	General	Context for 2015 strikes and the nature of the HRH crisis persistent in Ghana, and the history of this crisis.
Joy News (2015, August 18)	Press statement	Press statement delivered by the Minister of Health, Hon. Alex Sebgefia on the ongoing illegal strike action by the GMA on 18th August	2015	Press statement by the Minister of Health directing patients seeking care to CHAG facilities. Minister of Health notes steps taken by gov to respond to strikes, including providing resources to private facilities and re-enlisting retired doctors. Publication of list of facilities still in operation during the strike.
Joy Online (2015, August)	Media report	Christian health facilities struggle to deal with increased patient numbers	2015	Difficulties experienced by CHAG facilities during strikes. CHAG leadership advocates for resolution to the 2015 doctor strikes.
Emmanuel (2015)	Media Report	Sacked doctors are not being punished- CHAG	2015	CHAG executive leader defends decision to fire 14 medical doctors after their decision to join strikes
Dogbevi (2013)	Media Report	Health Ministry commends doctors for ending strike.	2013	MOH statement thanking CHAG for role during health worker strikes.
GHOne (2016)	Media report	GHOSPA strike: CHAG to take over service delivery – MOH	2016	MOH reports that CHAG will take over service delivery of pharmacies during strike.
	CHAG Communication	Support for Doctors n CHAG-member facilities within the context of the ongoing doctors' strike action	2015	Communication sent by CHAG secretariat to CMIs to maintain services and management teams to support health workers manage the excess load.
	CHAG communication	Withdrawal of OPD services by medical in government hospitals and clinics	2015	Communication sent by CHAG secretariat to CMIs to Christian identity and not embark on strikes. Requests facility heads to monitor situation and report any additional resources they may need.

Gov Government, MOH Ministry of Health, CHAG Christian Health Association of Ghana, QGHI Quasi-Governmental Health Institutions

Table 3 Themes from embedded cases- engagement between CHAG and MOH during health worker strikes²¹

	2013 (8 Apr-8 May 2013)	2015 (30 Jul-24 Aug)	2016 (5 Sep-10 Oct)
Theme: Coordination at national level to continue service delivery	Patients publicly redirected to CHAG facilities (MA20, E7, S1, J14, J15, T2) <i>"Managers of health facilities must be in constant communication with QHI to ensure the delivery of seamless emergency care during the period"</i> CHAG non-striking position ensures facilities remain open MA20, E7 <i>"The gov is grateful to the Police, Military, CHAG hospitals, all other health professionals and traditional medicine practitioners for the dedicated services they rendered during the strike action"</i> (MA20) (E7) Continuation of services in public facilities (E5, MA22, S3) <i>Doctors from Cuba- "government is bringing in more doctors from Cuba," (E5)</i> Sub-theme: Traditional Healers <i>"And traditional medicine practitioners for the dedicated services they rendered during the strike action"</i> (MA20, MA22)	Patients publicly redirected to CHAG facilities (MB44, MB18, MB70, MB71, J14, J15, T2, C1) <i>- "Friends from the media, additionally, about 25 QGHs, 178 hospitals/clinics of CHAG), across the country are supporting in delivering healthcare"- (MB70) (MB71)</i> CHAG non-striking position ensures facilities remain open MB33, MB73, T2, C1 <i>"In line with our convention, inspired by Christian values, ethics and unique identity, we are obliged and restraint from embarking upon strike action to resolve matters of such nature."</i> (MB33) Challenges to CHAG non-striking position M33, C1 <i>"The GMA should take them (NCHS) on. I am not amused by the stance taken by the Catholic Church. The principle that they have adopted means they are adopting slave labor in Ghana". (MB33)</i> CHAG facilities difficulty managing patient load MB44, MB72, C1 <i>"Already there was pressure on us before the GMA strike and currently the situation is getting worse day in day out" Peter Yeboah stated."</i> (MB72) Continuation of services in public facilities (MB49, MB18, MB70, MB71, MB74, MB46)	Patients publicly redirected to CHAG facilities MC1, MC31, J14(770), T2, P3 <i>"It also directed all service delivery Agencies (GHS, CHAG, Teaching Hospitals) to comply with some interim directives whilst they try to resolve the issues" (MC31)</i> CHAG non-striking position ensures facilities remain open MC31, J14(770) <i>"We are also pleased to announce to the public that CHAG Facilities are fully operational in line with their non-strike tradition" Minister of Health (MC31)</i> Sub-theme: Challenges to CHAG non-striking positionEMC16 <i>Workers at CHAG facilities asked to stand in solidarity</i> Sub-theme: Continuation of services in public facilities MC20, MC21 <i>"Deploying other professionals: To open space for pharmacist clerks to work, but appears contingency plans are not being followed" (MC20) (MC21)</i>
Theme: Financial Protection	NHIS card holders assured free service at NHIS facilities (MA14) Challenges with NHIS system (MA24, MA25, MA26, MA27, MA28, MA29, MA30) <i>"CHAG announced medical facilities will not continue to provide services to NHIS cardholders effective Monday, March 2013. The association said that the NHIA owed its members GH50million as of January 31 2013" (MA25)</i>	NHIS card holders assured free service at NHIS facilities (MB18, MB70, MB71, MB76) <i>"NHIS card holders are eligible for treatment in 1000 NHIS credentialed private and faith-based healthcare facilities and community-based health planning services across the country."</i> Challenges with NHIS system (MB78, MC22, E54) <i>"Private hospital denies patients with NHIS cards during strike due to debt owed to them" (E54)</i> Affordability of services in CHAG facilities (MC18) <i>Expense of services at CHAG facilities (MC18)</i>	Challenges with NHIS system (MC27) NHIS tariffs to increase by 27% Patients turning to traditional healers (MC19) <i>Extend NHIS to cover herbal medicines - Monic Star Center CEO (E39) (MC24)</i>
Theme: Advocacy	CHAG acting as mediator <i>"Concerned Clergy Association of Ghana, appealing to the leadership of the GMA, to reconsider intended industrial" (MA14)</i>	CHAG acting as mediator (MB72, C1) <i>"We are all appealing to the government and the GMA to settle the issue amicably."</i>	

Gov Government, CHAG Christian Health Association of Ghana, QHI Quasi-governmental Health Institutions, GMA Ghana Medical Association

²¹ Table 3 is summary of the most important quotes that contributed to our analysis. For expanded table see Appendix 10

"The GMA take them (NCHS) on. I am not amused by the stance taken by the Catholic Church. The principle that they have adopted means they are adopting slave labor in Ghana." (Extract Kasapa Fm August 11, 2015) (84)

One respondent in the secondary interview transcripts acknowledged that others in the public sector sometimes view the non-striking position of CHAG as a betrayal. *"In times of strike action, CHAG remains open. Seen as traitors – but the MOH them sees us as partners and says well done." (Respondent H)*

CHAG Facilities struggling to manage increased patient load

In 2015, two articles described CHAG's difficulties in managing the rising patient load (90,91). In a radio interview, the Executive Director of CHAG reportedly stated, *"Already there was pressure on us before the GMA strike, and currently, the situation is getting worse day in and day out"* (Extract Joy Online August 10, 2015) (90). In addition, in each of the three striking occurrences, it was reported that private hospitals (which most likely included CHAG facilities) struggled to manage the increased patient load as they did not have the facilities to cater to the increasing number of patients. In a communication sent from CHAG secretariat to member institutions, there was mention of the difficulty CHAG member facilities faced in managing the increasing numbers during the 2015 strike. *"We also noted, and quite expectedly, that CHAG Member facilities are recording unprecedented increases in the number of patients"* (CHAG communication August 7, 2015) (87).

Beyond the verbal directives issued by the government to patients to use CHAG facilities, it is unclear from the data what other measure the GoG put in place to support and coordinate with private facilities during this time. There were reports that the MOH provided increased resources to public and quasi-government hospitals, but there was no indication that the same was true for CHAG facilities (71,90,92). For instance, in 2015, the MOH declared that it would assign more nurses and midwives to the Police and 37 Military hospitals (71). It is unclear if the same provisions were made for CHAG facilities.

Within CHAG, the need for increased support and logistics for member institutions to manage the increased patient load was acknowledged. The communication provided by CHAG secretariat to CMIs identified the following measures: management teams supporting their respective doctors with lunch and snacks and recalling personnel who were on leave (87). In addition, management teams were asked to request any resources they might require (86,87). We cannot determine from our data whether CHAG secretariat provided additional resources or logistical support to CMIs, or whether the measures indicated in the communication were implemented.

Financial protection

One of the key benefits of CHAG facilities was their relative affordability compared to for-profit providers. During the investigated strike incidents, the GoG reportedly used the NHIS system to direct patients to these hospitals for free medical care (71,93-95). The NHIA's director of communications, Selim Adonoo, stated: *"NHIS cardholders are not just eligible in government establishments, but also in over 1,000 private and faith-based healthcare facilities with NHIS accreditation"* (Extract The Finder August 17, 2015) (70).

However, it was unclear to what extent the NHIS could ensure that NHIS cardholders would not be required to pay costs at CHAG facilities. The NHIS is extremely important to CHAG, considering that a considerable portion (approximately 92%) of its patient population are NHIS card holders (96,97). A key theme from the data was the tension between CHAG and the GoG regarding the NHIS due to significant issues with the NHIA, such as acute delays in processing and reimbursing health service providers (98-103). During the 2015 health worker strikes, the government owed providers approximately GH\$125 million to providers (103). This delay in payment was also suspected of having impacted the nation's medicine supply, which exacerbated the repercussions of the strike.

In 2013 CHAG threatened to cease providing services to NHIS cardholders to compel the NHIA to address the severe backlog of reimbursements to CHAG and other health service providers (100-102). This threat materialized in 2014 when CHAG continued to provide services to all clients except those with NHIS cards (43). CHAG created a coalition of NHIS service providers (including GHS) to convince the NHIA to pay the over 10-month-overdue verified claims. This occurred after the organization got numerous cries of distress from network members. CHAG and the coalition, under the name "Public Private Partnership," agreed to levy user fees on NHIS members (43).

*"And, withdrawal of service, it hit so hard that the government, of course, through the NHIA, had no choice but to quickly sit at table with CHAG and do some payments here and there."
(Respondent C)*

There were also reported concerns and threats from the Health Insurance Service Providers Association that private providers would turn away patients during the 2015 strike due to payment delays. According to a report by the Finder, *"He (Executive secretary of HIPSAG) warned that should private providers deny NHIS subscribers due to indebtedness, it could result in civil strife in the country (104)"*. According to some reports, private hospitals required NHIS cardholders to make a co-payment before receiving care, while others demanded payment in full. Private facilities may have been reluctant to accept NHIS cardholders because doing so would merely raise the debt the government owed them without any promise that the government would pay the debt.

Participate in advocacy to encourage a resolution to strikes

The role of CHAG as an advocate and mediator during strikes was also a key theme. During the 2015 doctor strikes, CHAG leadership urged the GMA and other actors involved in the strike to find a resolution to protect the health of the Ghanaian populace (72,105,106). The executive director of CHAG at the time stated in a radio interview:

*"We cannot joke with people's lives, so the FWSC, the Ministry for Employment and Labor Relations, and the GMA must come together to reach a concrete deal to halt the strike action."
(Extract Joy Online August 10, 2015) (105).*

Factors influencing the engagement between CHAG and the GoG during strikes

Table 4 Themes CHA-State PPE

Feature	Themes
Transfer of decision-making responsibilities	- The ability of CHAG to remain autonomous was a central theme. This autonomy allows CHAG to act as a collaborator and critique of gov. - Implications of integration in gov system (especially over HRH) for autonomy
Hierarchical relationship- public sector buys services	- MOH is still the highest decision-making body: it issues directives for agencies during strikes - CHAG is expected to act within the policies and framework of the MOH - CHAG's policy mission is to complement public system
No knowledge transfer due to low levels of collaboration	- Low levels of collaboration during health worker strikes; lack of evidence to suggest a formal collaboration. - Limited evidence of knowledge sharing. - In non-strike periods evidence of extensive collaboration and knowledge sharing
Sharing of financial infrastructure and/or human resources	- The nature of HRH management between CHAG and MOH. - Adaption of the secondment policy. - Conditions of service of CHAG workers unclear, - Gov funding of staff salaries in CMLs. - Unclear sharing of resources during strike incidents outside of verbal directives to CHAG facilities.
Private partner paid directly by public authority; not necessarily performance-based	- NHIS is central to CHAG operations. - Challenges with NHIS: delayed payments and poor accreditation.
Long term contract	- CHA-State PPE formalized by MOU - Long-term relationship between CHAG and MOH- a partnership built on trust and shared values. - CHAG seen as a partner of MOH.

Gov Government, NHIS National Health Insurance Scheme, CHAG Christian Health Association of Ghana, HRH human resources for health (Source adapted from Whyte and Olivier (2017))

Trust and shared values

Table 4²¹ describes key features of the CHA-State PPE model and the related themes based on our findings. A key feature of the CHA-State PPE is the relational component of this engagement. CHAG-GoG PPE was perceived by respondents²² to be based on trust and shared values. This meant that CHAG was seen as a partner and this perception meant the MOH could call on CHAG during health worker strikes. Respondents believed trust was garnered through CHAG's long-standing reputation as an innovative, experiential and reliable partner that complemented the health system. *"In my time, the trust increased as we were part of the decision-making process at the national level"* (Respondent F).

Respondents perceived the presence of shared values as key to relationship. CHAG prioritizes dignity-based health care for the underprivileged and vulnerable. These principles aligned with the MOH's goal of improving health service supply and accessibility, especially in remote areas. Respondents said this congruence of principles had made CHAG a government partner rather than a rival. CHAG's 'non-striking' convention was seen as an outgrowth of its Christian values and commitment to Christ's healing ministry.

²¹ We only included the features that were of relevance the study in this summary table, for all features of the CHA-State model see Appendix 11

²² Respondents here refers individuals who took part in the AHPSR interviews- secondary analysis of the transcripts were used for this study (see Methods).

"CHAG's culture is unique, in that the very mission that sets up CHAG says that we want to continue the healing ministry of Christ, and that is a divine mandate, because Jesus said in Luke chapter nine verse two, that go ye out there and heal the sick in my Name." (Respondent A)

CHAG Organizational Complexity

Respondents also acknowledged CHAG's organizational complexity and the diversity of its entities and actors. In 2013 the organization comprised 173 health facilities and ten training facilities belonging to twenty-one distinct denominational bodies, each of which has attempted to maintain its independence (97). According to one respondent:

"So, so, it's a complex organization, it's a real network organization. And so, there is a challenge inherent in a network organization where the center, if you are not careful, cannot hold properly because of the autonomy and subsidiary thing." Respondent C

Moreover, the non-striking ethos of CHAG appears to be a practice that has evolved over the years as opposed to a contractual agreement between CHAG and health workers in CMIs. The extent to which CHAG can enforce this convention upon workers in this large and complex organization is questionable. The communication sent out by CHAG to managerial bodies during the August 2015 health worker strikes stated.

"Our principles and ethical considerations as a Christian Health Service encourages health workers to remain at post in matters of industrial disputes. Over the years, health workers within CHAG have been very kind to heed to this principle (86)".

Autonomy and collaboration

Another feature of the CHA-State PPE is that these PPEs often have limited room for collaboration and knowledge sharing. There was evidence of extensive collaboration and knowledge sharing between CHAG and MOH on other policy issues, such as the NHIS. However, this did not appear to be the case during health worker strikes. Besides the verbal directives issued by the government for CHAG to take over service delivery during the 2016 pharmacists strike, there is limited evidence to suggest that CHAG and the GoG collaborated more extensively than this – or shared knowledge about how to better manage strikes.

As a service agency of the MOH, CHAG was expected to follow directives issued by the MOH (97). During health worker strikes, these directives specifically asked GHS and CHAG facilities to remain open and ensure the continuation of service delivery. CHAG was also expected to act within the bounds of the law and general policies of Ghana- including the Constitution and the Labour Act (107). The difficulty with health worker strikes in Ghana; is that the government often perceives them as illegal- and a strict interpretation of the law as currently written; may agree with this stance. This may have pressured CHAG facilities to remain open and not participate in health worker strikes.

CHAG must balance its role as an agency with the interests of its workers. As per the Constitution of Ghana, several of its workers belong to professional worker unions- and are sometimes leaders within these unions. Thus, CHAG staff at times have similar grievances to their counterparts in state institutions (43). On the other hand, the increasing role of CHAG as a collaborator is sometimes seen

by some within the organization as a betrayal of their interest, and CHAG is seen as 'selling out' (43). This perception may increase during instances of health worker strikes where CHAG is seen as aligning with the government and against the interest of health workers.

CHAG has also strived to maintain its autonomy and independence from the government (97). One theme that emerged from was the instances of strikes by CHAG. Some respondents commented on CHAG staff strikes in the 1980s by health workers to receive the same benefits as those in public facilities. *"So, there were later open strikes in early and mid-1980s, when people saw the disparities in salaries, saw that the government workers got more than MBP HWs" (Respondent G)*. Respondents also spoke of the instance in 2014 when CHAG facilities ceased services to NHIS cardholders. One respondent referred to this action as only a withdrawal of services, not a strike, while another perceived it as a strike. *"Now, with NHIS, we've withdrawn services – we've striked – and that has fatally affected things, people" (Respondent F)*.

CHAG-GoG MOU and balance of power

Power and the dynamics of negotiation were recurring themes throughout the interview. Respondents in the secondary transcripts discussed the years of negotiations between the two actors, notably regarding human resource management. They stated that CHAG is currently in constant collaboration with the MOH. An interview respondent stated, *"CHAG is always at the table. Even with negotiations with health partners – it is always GHS, MOH and CHAG" (Respondent A)*.

In addition, the importance of the personal power of specific actors in shaping the current engagement between CHAG and MOH was recognized- with some noting that the strength of the relationship was highly dependent on who was in power. *"Occasionally there are issues of mistrust – it depends on who is in charge, leadership" (Respondent E)*. One of the interviewees discusses the and personal qualities of the executive head such as charisma and trust. The responder considered the leader's decision to deny services to NHIS cards as a unique strength that earned the institution's trust and led to the leader being perceived as someone willing to act when necessary.

"One major thing that really endeared him to the heart of the many institutions of CHAG is that, around that time, the institutions were having challenges with National Health Insurance, and health financing, in general, was a challenge, so when he took over, within the shortest period of time CHAG embarked on a withdrawal of service." (Respondent C)

The nature of the CHA-GoG MOU also affects the balance of power. CHA state PPE unlike contracting and PPP arrangements, are formalized under an MOU (9). As with CHAG, these MOUs often lack enforcement measures. For instance, the MOU between CHAG and the MOH provides that either party may cancel the agreement by providing a written notice three months before the expiration (108). Even the fact that CHAG employees receive the same service conditions as GHS employees is, according to Yeboah (2017), a "partnership practice" and not a contractual requirement (43). The absence of enforceability mechanisms within the MOU may affect the balance of power between the two actors. For example, Yeboah comments that in some instances when CHAG played more of a critical role in the relationship- - i.e., the withdrawal of services to the NHIS card holders- there were subtle threats from the government to withdraw financial support (43). On the other hand, some have

commented on CHAG's 'non-striking position' as a significant negotiating power in the relationship with the government. One respondent commented, "*And CHAG does not go on strike, that is one big negotiating power*" (Respondent C)

Sharing of resources

Managing HRH between CHAG and the GoG from the data was an essential element of the PPE during strikes. At the time, the GoG was responsible for up to 90% of salaries at CMIs. However, CHAG staff members are not MOH employees. CHAG Secretariat facilitates all administrative concerns pertaining to employment, distribution, promotions, and employee transfers in consultation with the MOH and MOF. To recruit health personnel to more remote and semi-rural areas of the country, CHAG employees have different, typically additional conditions of service, such as fuel and housing allowances, than public sector employees.

Even the current arrangement of human resource sharing was not a straightforward formal policy. Another theme that emerged from the interview transcripts was the evolution of the secondment policy between CHAG and GoG. In the 2000s, the GoG implemented a new HR management process through the secondment policy (109). This policy allowed government employees to be 'seconded' to CHAG member organizations. This means that government-paid personnel, specifically employees recruited by and claimed to work for the MOH/GHS, were assigned to positions in CHAG facilities. CHAG management and the seconded employees experienced several challenges with the secondment policy. Some facility managers felt the seconded staff lacked discipline and could not adhere to the institution's organizational structure. According to one respondent "*previously, the government was seconding, but they came to work, but we couldn't control them as not our employees*" (Respondent E). After significant negotiation between CHAG and the GoG, the secondment policy seemed to have been phased out and amended over time (although there was no formal cancellation process of the policy) (109).

"Secondment – we scrapped that – it was an HR and management decision, way before CHAG got rid of it, we stopped it ... the identity and commitment was terrible." (Respondent I)

The amended secondment policy may contribute to contention over how employees identify in CHAG facilities (as government or CHAG staff) (43). It may also influence the tensions observed in strike incidents when CHAG staff wish to join their striking counterparts.

Discussion

This study was an initial exploration into the interaction of one private entity (CHAG) and the GoG (mostly through its MOH) during health worker strikes from 2010-2016. Noting that this was the first study of its kind, we aimed to describe the context of health worker strikes in Ghana, to explore how the engagement between CHAG and the GoG occurred and the implications of this engagement for health system resilience.

Implications of CHAG-GoG engagement for health systems resilience

Our findings suggest that health worker strikes in Ghana should be classified as a chronic system stressor. In health systems resilience literature, shocks are defined as "*sudden events that alter the vulnerability of a system and its components*", while stressors refer to "*long-term trends that erode*

the capacity of a specific system or process and increase the vulnerability of its actors" (110). Although health worker strikes did not occur 'every day' throughout the analyzed time, they were rarely unanticipated. Strikes almost always resulted from months or years of failed negotiations with the government. The threats and occurrences of strikes emerged from long-term systemic challenges related to human resource management in the nation, often due to grievances over codified conditions of service, delayed payment of premiums, wage differentials between professionals and salary disputes- similar to previous studies in Ghana (33,39,41,111) and findings in other LMICs (21,23,28,34).

Important aggravating factors for strikes in Ghana included political tensions in the nation over contentious elections, the use of dismissive and aggressive language by government officials and professional unions and a decrease in trust due to the government's perceived failure to meet and adhere to bargaining agreements. Importantly the lack of trust in government's willingness to keep promises often meant labor groups prolonged strikes until they received concrete assurances from the government. Similarly, a lack of trust in their leaders and a perception of health workers that their concerns are not being taken seriously by the government were cited as significant reasons for strikes in Nigeria (34).

Notably, the broader literature on PPE for health system resilience indicates that these collaborations are increasingly relevant when public sector services cease (112). This was particularly true in the context of strikes in Ghana. Workers withdrew emergency services in six of the ten strike incidents we identified. In the global literature, the continuation of emergency services during strikes was cited as one of the primary resilience mechanisms that led to constant or decreased mortality rates (22,24,26). The withdrawal of emergency services is thus a concerning finding in Ghana, making continuing services in private hospitals all the more crucial. The withholding of emergency services was also noted as a major concern in Kenya (26,27,113) and Nigeria (34), with one study attributing the increased mortality rates in their findings in part to this (27).

Though the overall consequences of health worker strikes in Ghana for health system outcomes were undetermined, the overall opinion was that the strikes significantly impacted the health system and disproportionately impacted the poor. These claims were supported by the study by Ampofo et al (2022) which found a 70% decline in service utilization in public hospitals during a three-day nursing strike. The trend of health worker strikes disproportionately affecting the poor is consistent with findings in other LMIC contexts (45).

Given that health worker strikes in Ghana may be viewed as a chronic system stressor, there is a need for Ghana to nurture everyday resilience. Though prior studies have utilized the everyday resilience lens on health worker strikes have primarily focused on facility and sub-district managers (21,28), we feel it is also crucial to understand how macro-level interactions within the health system might foster system resilience. The tactics and capacities available to the facility and regional administrators and health professionals are frequently influenced by leadership and governance at a national level (19).

Building on the concept of everyday resilience, Kagwanja et al (2020) creates a conceptual framework that integrates two major concepts in resilience thinking: 'resilience strategies' and 'resilience capacities' (114). Resilience 'strategies' refers to how a system responds to a shock or stressor, which can be absorptive, adaptive, and transformative (18). Absorptive strategies refer to strategies that

allow the system to continue delivering services without any meaningful change to its original structure (19,114). In contrast adaptive strategies require the system to make some adjustment in response to the shock (19,114). At a point where a system must implore strategies that fundamentally alter its original structure then the strategy is regarded as transformative (19,114). The question, therefore, becomes how we know when a resilience strategy during health worker strikes is beneficial to the health system rather than detrimental. According to Chima (2013), the goal when health worker strikes occur is for the strikes to be "ethical" in which effective responses safeguard the poorest households and communities from health-related financial losses and, at the very least, preserve core and emergency services (25).

This case study found evidence of system-level interactions between CHAG and the GoG to maintain service continuity during strikes which allowed for mostly absorptive resilience strategies. These strategies included public announcements in press briefings and media statements encouraging patients to seek care in CHAG facilities. There were also isolated reports of the government opening public facilities to private providers and attempts by the government to issue directives to CHAG facility managers. In contrast to studies exploring health system resilience during strikes in Kenya (21,27,28), these interactions were not ad-hoc, taken on by individual frontline managers and inconsistent but occurred on a national level and were a national approach to responding to strikes and applied to all CHAG member facilities.

However, the population's use of these services and the extent to which CHAG institutions could continue providing quality health care despite the increasing patient load is questionable. There is limited evidence of government actions to assist CMIIs in managing the increased patient load. Evidence also suggests that the rising patient load sometimes overburdened CMIIs (95,115). A study by Adam et al (2018) at a faith-based hospital in Kenya during a 100-day doctor strike in 2017 found an increase in pediatric and obstetric mortality rates during the strike period (27)- raising concern about private facility's ability to provide quality care when overburdened.

There was some evidence of 'adaptive' strategies, such as CHAG lobbying its social capital to advocate for renegotiation and the conclusion of the strike action and improving conditions for health workers, although this evidence was relatively limited. Waithaka et al (2020) report on innovative solutions used by frontline health managers during strike incidents in Kenya- including performing surgeries at public facilities but managing patients in private facilities; opening facilities to private providers that CHAG and the GoG could potentially consider.

There was limited evidence of CHAG-GoG relationship leading to 'transformative' strategies. The approach to strikes throughout the time analyzed followed the same pattern, with little indication of the system becoming better at preventing or responding to strikes. We could not find any significant mention of health worker strikes in key policy documents in Ghana. There was scant indication of the government's preparedness for future strike incidents during this time.

CHAG-GoG also conferred on the system important resilience capacities that it could draw on during strikes. The ability of the government to use the NHIS as a mechanism to protect some individuals from paying excessive costs in CHAG facilities can be regarded as a 'contextual capacity' (aiding the health system to absorb the shock). Studies in Kenya found that the poor were significantly impacted by strikes as they struggled to afford the high charges in private facilities, with some having to sell assets

to access care (21,28). Though Kenya has a National Health insurance scheme, in 2013, only 16% of the nation was enrolled. The larger percentage of the population enrolled in the NHIS in Ghana (40%) in 2013 (52) may have aided Ghana in better-protecting patients from financial catastrophe during this time. However, there were significant structural issues with the NHIS, including conflicts between CHAG and the GoG over unpaid claims and some reports of private facilities denying services to NHIS cardholders as a result (65,116).

Moreover, CHAG facilities remained open due to the 'non-striking convention' of the organization (43) which can arguably be regarded as a 'cognitive capacity'. The consistency of CHAG's convention and approach to strikes may also be regarded as a 'behavioral capacity' as behavioral capacities rely partly on the development of learned routines that provide a first response to a shock or stressor (117).

However, stating CHAG has a 'non-striking convention' may be an oversimplification and not capture the nuances of interaction and views within CHAG. CHAG is a vast, complex organization comprised of diverse denominational bodies, member institutions, and individual health workers who may not share the institution's values. In some instances, CHAG secretariat itself had engaged in forms of protest when it deemed necessary, as evidenced by the withdrawal of services to NHIS card holders.

Additionally, health worker strikes frequently resulted from legislative changes that had unforeseen implications for the nation, particularly difficulties with SSSS (40). The SSSS, founded in response to the fragmentation of public sector salaries, unintentionally led to additional strikes due to complaints about the grading structure and late premium payments (39,40,60). The SSSS contributed partly to the high public sector wage bill, which in turn contributed to the context of slow economic growth and high budget deficit- a crucial macro-contextual factor in the case. Parallels can be drawn between the SSSS and analyses of other national HRH policy initiatives. Agyepong et al (2012) study of the ADHA policy process revealed that the policy was initially formed as a response to doctor strikes. However, the exclusion of other public sector workers from the policy, in addition to implementation difficulties, led to a series of further strikes (42). It is important then that health policy makers in Ghana learn from these cases in nurturing resilience, by creating policies that fully consider the 'complex adaptive nature' of the health system(42).

Implications of (and for) the CHA-State PPE

Our findings also further our understanding of the CHA-State model and the implications of this model for health worker strikes in Ghana. The CHA-State model, as shown in the context of Ghana, is founded on trust, shared values, and the nature of the long-term interaction between the two actors. The model also suggests that the CHA-State engagement is characterized by a hierarchical relationship in which the public sector purchases services, and there is limited knowledge sharing and collaboration between the two actors (10). This appeared to be the case in health worker strikes as we found limited evidence to suggest that CHAG and GoG collaborated extensively during this period.

The CHA-State PPE is significantly influenced by a delicate balance of power. Health systems are commonly conceived as social systems (118). The essence of complexity in health systems resides in the multiple interactions between various actors and their power-influenced social relationships (118). Whyle and Olivier (2017) argue that there is an atypical balance of power between CHAs and their respective governments due to their mutual dependence (10). In the context of health worker strikes, the balance of power appears to tilt in favor of CHAG. Some respondents in the larger AHPSR

study highlighted that CHAG's non-striking position is an essential negotiating instrument for the organization, sometimes used to gain certain benefits from the government. This mutual dependence between CHAGs and their governments explains this relationship's absence of institutional accountability mechanisms (9). Some have noted the CHA-State model's lack of enforceability to be a strength (119). However, important elements of fragility within that balance may need to be considered. For example, the reporting of subtle indications from the government to withdraw funding when CHAG takes on more of a critical position. Noting the lack of binding agreements in CHAG-MOH MOU these threats could materialize without legal ramifications.

In addition, Gilson (2012) notes that policies are not just formal written policies but the actual activities on the ground that become policy (120). This can be seen in both the amendment of the secondment policy and the non-striking convention of CHAG, which are both not documented and formal policy positions. The implication for health worker strikes is the extent to which CHAG can continue to enforce this position on staff members.

Even though effective integration of private actors, particularly FBPHs, has been cited as essential for resilience, it has been argued that increased interdependencies between FBPHs and the public sector have the potential to render health systems more vulnerable and less resilient (121). The concern is that increased integration may expose the private sector to the same challenges as the public sector (43,58,122). The amended secondment policy meant that CHAG staff were on the government payroll and were thus also affected by salary disputes and contestations in the public sector. It also meant that some (including some CHAG staff) might view CHAG employees as public sector employees and the non-striking position as a betrayal of their interests. Some union members have strongly criticized CHAG for discouraging staff participation in strikes (84). These findings are relevant for several countries in Africa as the issue of secondment has been contentious, with many nations experiencing difficulties with the implementation and others scraping the practice entirely (12,109).

Relevance of findings for Ghana post-2016

Health worker strikes remain a persistent chronic stressor in Ghana (33,50,123) and several of the challenges noted above remain. In recent years, there have been strikes by other professional unions, such as physician assistants (124-126) and anesthetists (127,128), -reportedly over similar issues of conditions of service, salary delays and disputes, and in reaction economic challenges facing the nation. Like before, CHAG sent communications to CMIs to remain open during strikes (129-131). For example, during a strike by the GNRMA, CHAG requested its members to obey CHAG non-striking mandate during a countrywide strike by the GNRMA in 2020. The association attorneys responded harshly to this order by calling CHAG's behavior repugnant and insisted that CHAG's behavior showed it was "in bed with the government" (132,133).

Though there have been some notable improvements in the accreditation of providers and registration of the population onto the NHIS, there are still reports of frequently delayed payments to providers (134). In recent strikes, CHAG has taken more of a mediatory role. For example, during the 2020 strikes organized by the Ghana Association of registered Anesthetists, it was observed that CHAG played a key role in advocating between the union and the GoG. CHAG facilitated a meeting between the striking anesthetists and the MOH, which was acknowledged as a major factor in the strike's conclusion (135,136).

Conclusion and recommendations

Even though our results were unique to Ghana and CHAG-GoG PPE, we believe there are important takeaways that can be used to guide future strategies regarding strikes and PPE arrangements.

Firstly, though the primary focus of governments should be on steps to address the underlying HRH challenges that are frequently the root causes of strikes, it may no longer be acceptable for states to solely seek to avert strikes. There may be a presumption that the health system will always self-correct and that strikes will inevitably end. But as our study indicated, strikes in Ghana were a persistent chronic stressor, with some strikes lasting nearly two months. The GoG and, similarly, other LMICs, need to ask important questions about their preparedness for future and prolonged health worker strikes and how to cultivate 'everyday resilience'. To this end, we recommend that nations develop 'preparedness' and 'response' policies at a national, local, and regional level that outlines governments' plan to continue services in the advent of strikes.

Secondly, in cultivating resilience during strikes - our study highlights the key role FBHPs can contribute. The engagement between CHAG and GoG provided important resilience capacities and strategies that the health system could draw on and use in responding to strikes. We found evidence of system-level interactions between CHAG and the GoG during strikes that allowed for adaptive and absorptive strategies. These interactions were consistent and taken on at a national level. This interaction was partly attributed to the unique CHA-State engagement model between the two actors and CHAG's non-striking convention, which meant that even though CHAG staff were affected by the outcomes of strikes, CHAG facilities remained open and continued delivering services.

Thirdly, in ensuring preparedness for future strikes, we identified important challenges and complexities with this engagement that need to be addressed by both CHAG and the GoG. There was limited evidence to suggest that the GoG provided additional resources and support to private facilities (apart from quasi-government facilities). There is significant room for the government to ensure adequate support of private facilities during strikes and for innovative 'adaptive' strategies that can be used during this time, such as opening public facilities to CHAG workers.

Our analysis also showed the importance of the NHIS as a link between Ghana's public and private health systems, allowing patients to seek care in the private sector when public services are interrupted. This is pertinent for numerous African nations that have or are contemplating contributory health insurance programs. The challenges facing the scheme in Ghana concerning late payment of suppliers also highlight the fragility of these insurance schemes and the necessity for system-based initiatives to enhance these schemes towards the objective of UHC.

There are also important considerations for CHAG - and similar private entities moving forward. CHAG must assess and analyze the type of support CMIs require during strikes and proactively seek collaboration with the government to ensure this support exists. CHAG also needs to consider the interest of workers within its organization and the challenges to its non-striking position. CHAG may find it beneficial to engage in an open dialogue with denominational bodies, CMI facility managers, and staff regarding its non-striking convention, and to find ways for health workers to demonstrate solidarity with public sector workers while ensuring the continuation of essential health services. There is also potential for CHAG to contribute to the implementation of transformative strategies during strikes. We recommend that CHAG utilize the software features of its engagement with the

GoG, such as its trust with the government and its negotiation and innovative skills, to expand its role as an advocate and mediator between the government and health workers for improved working conditions and HRH management.

Fourthly, the GoG and other LMICs should continue to attempt to avert strikes. In doing so, we recommend that the government proactively and, with a keen appreciation of the complex adaptive nature of the health system, build collaborative solutions with professional bodies and other stakeholders to manage HRH-related challenges in the nation. We also recommend strengthening collective bargaining policies and procedures. These policies should clearly outline the process for bargaining, the time frames with which actors must respond and, importantly, the remedial options available to actors when there is a lack of response.

Lastly, responsiveness policies and strategies must consider not only hardware factors such as financial resources, availability of beds etc. but also software factors that are often important causes and aggravators for strikes. Governments must consider the language used during strikes and how leaders interact with professional unions. The government should seek to nurture and build trust with professional unions and workers.

This study was significantly impacted by the limited research on health worker strikes in LMICs and the nature of the CHA-State PPE. We recommend that future studies are needed to understand patient behavior and choices during strikes, quantitative research on the economic and health system impact of strikes; and evaluative studies into best practice guidelines (including how to collaborate with the private sector) nations can adopt to respond effectively to strikes. There is scope for further research in related areas. Since our investigation primarily addressed the macro-level interactions between CHAG and the MOH, we did not delve deeply into how health workers and managers in CMIs perceive and handle potential tensions arising from their conflicting roles during strikes.

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Availability of data and materials

Data for study available from author upon request.

Ethics Approval

The research was conducted in accordance with international, national, and institutional ethical norms. The University of Cape Town's (UCT) Human Research Ethics Committee (HREC Ref: 647/2022) granted ethical permission for the study (Appendix 12). The study also operated under the existing ethical considerations of the primary study, approval for which has been obtained from the WHO Research Ethics Committee, GHS Ethical Review Committee and UCT HREC.

Competing interests

Author declares they have no competing interests.

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Appendices

Appendix 1: Table of relevant results for scoping review on health worker strikes in Ghana

Source	Source Type	Title	Focus and/or methodology	Relevance
Awori and Tettey-Eno	Journal article	An evaluation of the effects of industrial unrest at the Korle-bu Teaching Hospital (KBTH), Accra, Ghana	Assessed the impact of industrial unrest from the perspective of a cross-section of 50 patients and nurses at KBTH from the period 2000-2008. Statistical data was gathered from randomly selected study subjects	Explored the views of nurses regarding the reasons behind the health worker strikes that occurred from 2004 to 2008 and the effects of these strikes on the healthcare system. The nurses identified unequal pay between themselves and other health workers as the main reason for the strikes. Most of the nurses agreed that the strikes had a negative impact on their patients. Additionally, they felt that the government did little to effectively address the strikes. The study suggested that the government should work towards reducing the wage gap in Ghana and establish crisis management committees at hospitals during strikes to prevent further harm to patients.
Agyepong et al (2012)	Journal article	When 'solutions' of yesterday become problems of today': crisis-ridden decision-making in a complex adaptive system (CAS)- the Additional Duty Hours Allowance in Ghana	The paper explores the implication of the ADHA policy on increasing health worker strikes in the early 2000s. The study implored a case study methodology of decision-making processes around the Additional Duty Hours Allowance Policy in Ghana through the analysis of secondary data and selected key-informant interviews.	The paper examines the factors behind the health worker strikes in Ghana in the early 2000s, primarily in reaction to the ADHA policy. The strikes are portrayed as highly political and complex events that are influenced by various players. The paper emphasizes the necessity of strike resolution policies and strategies to comprehend the complexities of adaptive systems and the influence of interest, power, and interactions among different stakeholders.
Seniwoliba 2013	Journal article	Ghana's numerous worker strikes; a cause of concern	The study reports on stories and issues on labor unrest in Ghana and factors that cause labour unrest in Ghana in all sectors, including the health sector. Data was collected from internet sites such as ghanaweb, myjoyonline, citinews, and Google.	The paper delves into the broader context of labor unrest in Ghana that contributes to health worker strikes. This includes both economic factors such as compensation, wages, bonuses, and allowances, and non-economic causes such as the failure to implement policies, discrimination, and segregation. The paper also examines the Labor Act of 2003 and its impact on the health worker strikes in Ghana. In conclusion, the paper suggests that the labor laws in Ghana should be re-evaluated to give the National Labor Commission the power to impose penalties on individuals who ignore Alternative Dispute Resolution provisions. This would lead to more effective practices and resolve disputes more efficiently.

Asamani et al (2020)	Journal article	The imperative of evidence-based health workforce planning in implementation: lessons from nurses and midwives unemployment crisis in Ghana	The paper explores policy decisions made by the Government of Ghana to expand and liberalise the training of health workers in Ghana and the policy lapses that resulted in unintended paradoxical unemployment in the nation.	The paper explains the causes of strikes amongst unemployed trained nurses and midwives. The liberalisation of training of health workers allowed the profit-driven private sector to train nurses and midwives. This led to a large number of applicants beyond what the health system could absorb and resulted in strikes by unemployed nurses and midwives for health sector jobs.
Seniwoliba 2014	Journal article	Single Spine Pay Policy, Can Ignorance delay the benefits it has on the Ghanaian public service worker	The Paper explores the history of the Single Spine Salary Structure in Ghana and the tensions it created for public service workers.	The Paper explains how the Single Spine Salary Structure contributed to increasing strikes in public sectors in Ghana, including healthcare workers.
Daily Guide (2015, August 2020)	Media report (GNA)	Doctors defy Gov't order	2015 doctor strike	Explains the context of the 2015 doctor strikes in Ghana. Relevance to resilience for strikes- discussion of labour laws in place to allow for resolution of strikes.
The Finder (2015, August 17)	Media report (GNA)	Doctors' strike: 500 dead in 17 days	2015 doctor strike	The paper examines the impact of the 2015 doctor strikes in Ghana. According to the Health Insurance Service Provider Association, 500 people lost their lives during the nationwide strike. The report suggests that these deaths were likely a result of the strike. The paper also explores the economic situation in Ghana at the time that could have potentially fuelled the strike.
Reuters (2015, August 14)	Media Report (GNA)	Doctors likely to call off strike, union says	2015 doctor strike	Reports on some of the reasons behind the 2015 doctor strike in Ghana. The Ghana Medical Association (GMA) highlights that the strikes were not solely about payment but rather about the government's failure to provide a clear and defined set of working conditions for doctors.
KasapaFM (2015, August 12)	Media Report (GNA)	Withdrawal of doctors' salary on point – Mahama	2015 doctor strike	The Progressive People's Party (PPP) advises government to engage with striking doctors in the 2015 doctor strike in a respectful manner and desist from political polys and insults. Comments that the government should not resolve labour issues by using party communicators in the media. Accused both the NDC and the NPP of using the strikes as a political opportunity. Accuses the government of leaking negotiation documents to the media and urged the government to negotiate in good faith.
Daily Guide (2015, August 8)	Media Report (GNA)	Pain & anguish as Doctors dump hospitals	2015 doctor strike	Explores conditions during the 2015 doctor strike. Doctors withdrew emergency and OPD services leaving many to have to rely on services in the private sector.

Ghana Web (2015, August 8)	Media Report (GNA)	Doctors' Strike: Out-Patient Departments empty (Photos)	2015 doctor strike	The report provides information on the situation in public and private hospitals during the 2015 doctor strikes in Ghana. As a result of the Ghana Medical Association's (GMA) decision to withdraw emergency and OPD services during the strike, patients were redirected to private hospitals and quasi-government institutions. The report mentions that the increased number of patients in private hospitals created difficult and challenging conditions due to the overflow of patients.
Tv3 Network (2015, August 7)	Media Report (GNA)	No pressure on us – 37 Military Hospital	2015 doctor strike	The report focuses on the conditions in private hospitals during the 2015 doctor strikes in Ghana. To deal with the increased patient load during the strike, a private hospital implemented various strategies, including recalling staff members who were on leave and setting up tents to provide additional space for patients. These measures were taken to ensure that the hospital could continue to provide services to patients despite the strain on the healthcare system caused by the strikes.
Ghanaian Times (2015, August 7)	Media Report (GNA)	GHS boss appeals to doctors to end strike	2015 doctor strike	Describes the strategies used by the government during the 2015 doctor strike in Ghana to ensure the provision of healthcare services. The Ghana Health Service (GHS) collaborated with private sector doctors by granting them access to public health facilities and encouraging them to take on a greater share of the public health needs in the capital. This was done to address the shortage of healthcare providers caused by the strike and ensure that patients continued to receive the necessary medical care.
KasapaFM (2015, August 11)	Media Report (GNA)	Catholic Church adopting slave labour in Ghana – ex-Minister	2015 doctor strike	National Catholic Health Service dismisses 14 employees for joining the national doctor strike, in doing so, affirming their non-striking position.
Sarapong (2013)	Media Report (GNA)	Doctors in Ghana continue to strike over a salary dispute	2013 Nurse strike	Reports on the 2013 national doctor strike in the public sector in Ghana. During the strike, doctors suspended outpatient and emergency services, but continued to provide in-patient services. The strike was a result of a long-standing salary dispute between the Ghana Medical Association (GMA), the Ministry of Health (MOH), and the Social Security and National Insurance Trust (SSNIT). Patients were directed to seek medical assistance from private institutions and the government stated that it would support these institutions in handling the increased patient load. The report provides information on the events of the 2013 national doctor strike and its impact on the healthcare system.

Olivier and Kwamie (2017)	Journal paper	The history of public- (faith-based) private health sector partnership in Ghana.	historically-focused mixed-methods study using geospatial mapping to explore the historical role of CHAG in Ghana towards UHC	Discusses the secondment strategy between the Christian Health Association of Ghana (CHAG) and the Ministry of Health (MOH) has changed the way CHAG staff are compensated and managed. Currently, the majority of CHAG staff receive their salaries from the MOH but are managed and administered by CHAG, and they receive the same conditions of service and benefits package as the Ghana Health Service (GHS) staff. Additionally, CHAG has a strict policy against strikes, and during health worker strikes, patients are redirected to CHAG facilities by the government.
Yeboah and Buckle (2017)	Journal paper	The evolving partnership between the Government of Ghana and national faith-based health providers: leadership perspective and experiences from the Christian Health Association of Ghana	Narrative of the evolving relationship between CHAG and the MOH	CHAG holds a strict non-striking stance and this allows for continuous delivery of health services even during strikes by health workers in Ghana, thereby reducing the negative impact on vulnerable populations. 2) Issues with delayed payments from the NHIA to CHAG and MOH have added tension to their relationship. 3) CHAG played a critical role during the indefinite strike by government pharmacists in September 2016, as the MOH publicly directed patients to receive services at CHAG facilities.
Negotiations: No invite from govt to GMA	Government Briefing	Negotiations: No invite from govt to GMA	2015 doctor strike	During the 2015 doctor strikes, the government instructed the public to seek care from alternative healthcare facilities that were still in operation. The government also released a list of these facilities and emphasized that NHIS card holders were eligible for treatment at a large number of private and faith-based healthcare facilities as well as community-based health planning services across the country. This was an effort to ensure that the healthcare needs of the population were still being met despite the strikes.
Duho (2016, September 6)	Media Report (GNA)	Pharmacists in govt hospitals begin indefinite strike	2016 Pharmacist strike	In September 2016, pharmacists in the public sector in Ghana embarked on an indefinite strike for improved salaries and conditions of service. During the strike, the public was directed to receive pharmaceutical services from private providers and facilities.
MOH (2015, June 26)	MOH Draft Document	Draft Conditions of service for medical doctors and dentists	The draft conditions of service that were negotiated between the MOH and the GMA during the 2015 strikes	The context for 2015 strikes and the nature of the HRH crisis persistent in Ghana, and the history of this crisis.
Joy News (2015, August 18)	Press statement	Press statement delivered by the Minister of Health, Hon. Alex Sebgefia on the ongoing illegal strike action by the GMA on 18th August	2015 doctor strike	A public press statement by the Minister of Health during the 2015 doctor strikes directed patients seeking care to CHAG facilities and other private facilities. Minister of Health notes steps taken by the government to respond to strikes, including providing resources to private facilities and re-enlisting retired doctors. Minister also publishes a public list of facilities still in operation during the strike.

Appendix 2: Expert checking consent and information sheet

Dear Sir / Madam,

My name is Dr Bettina Buabeng-Baidoo. I am a student in the division of Health Policy and Systems at the University of CapeTown. I will be conducting a study as a partial requirement of a master's degree in Public Health and request your expert assistance in a short expert checking process.

Study information

The purpose of this study is to investigate the relationship between the Christian Health Association of Ghana (CHAG) and the Government of Ghana (GoG) during health worker strikes in Ghana from 2010 to 2016. The primary objective of this study is to describe the engagement between CHAG and the GoG during health worker strikes and to investigate how this engagement can contribute to the resilience of the health system. This research is a sub-study of a larger WHO - Alliance for Health Policy and Systems Research (AHPSR)-funded project titled "Systems integration towards universal health coverage: Strengthening the collaborative relationship between faith-based non-profit providers and the Ghanaian public health system."

Procedures

To ensure that all information and conclusions in my master's thesis are accurate, I would appreciate your assistance in reviewing our initial analysis results of the data. It should not take more than an hour to conduct this review. You are not required to conduct research in order to provide feedback and corrections for the study. All the necessary case report data and materials will be emailed to you along with instructions; a consent and confidentiality statement (attached) must be signed and returned before data can be distributed. May you kindly provide your feedback by (*approximate date will be provided*). You have the option of providing feedback digitally or via a telephone conversation. Please note that if you choose a phone call, you will not be recorded, and nothing you say will be transcribed.

Risk

The study is a low-risk, single case study investigation into the interaction between CHAG and GoG during health worker strikes. You will not be put in danger during or after the review of this study. Your contributions and reviews are entirely voluntary, and you may opt-out of the process at any time. You may remove statements or feedback from the final study at any time prior to its publication (*approximate date will be given*).

Confidentiality

The expert-reviewing procedure will be completely anonymous, and your information will not appear on any documents. Data will be stored on a computer protected by a password. Expert and organization names will be eliminated from data and replaced with generic terms. You may request that your name be included in the final article by contacting the primary investigator. Please complete and return the confidentiality statement below if you are willing to act as an expert reviewer for this study.

Confidentiality Statement

I confirm that:

My involvement in the study is voluntary - I may opt out at any stage or remove the statement before (*approximate date will be given*).

My contribution to the study is as an expert 'reviewer' of secondary data, not a study participant.

I will not receive any monetary or other benefits for expert checking.

I will keep the study data on a password-protected computer and keep all information pertaining to the study confidential

I will provide true and accurate information to the best of my knowledge.

Signed: _____

Date: _____

Should you require any further information or have concerns, please use the below contact details:

Dr Bettina Buabeng-Baidoo- Primary investigator

Email: bbuabengbaidoo@gmail.com

Tel: +27 (0) 792194855

Information or concerns about the Primary investigator

Dr Jill Oliver – Principal Investigator & Supervisor

Email: jill.olivier@uct.ac.za

Tel: +27 (0)21 406 6489

Information or concerns about your rights and the ethical approval for the study

University of Cape Town

The Faculty of Health Sciences Human Research Ethics CommitteeE 52, Room 24, Old Main Building, Groote

Schuur Hospital, Observatory, 7925

Telephone: +27 21 406 6492

Fax: +27 21 406 6411

Permission for the study

Ethical clearance has been obtained from the University of Cape Town's Human Research Ethics Committee(HREC REF: TBC).

I thank you kindly for your time and contribution

Sincerely,

Dr Bettina Buabeng-Baidoo

Appendix 3: Expert checking guide

Name: (optional)

Please complete the information below

1. Current position and title
2. Organisation
3. Number of years in current role

Please review the attached study draft article titled 'Public-Private engagement during health worker strikes in Ghana: Case-study of CHAG-state interaction health worker strikes' and make any comments on the document regarding information you deem to be incorrect or areas in need of adaption and further information. Please also consider:

1. Are there any additional sources you believe will be of value?
2. Are the interpretations derived from the data accurate?
3. Have all the relevant themes been explored in sufficient detail?

Appendix 4: Primary study research brief



**Alliance for
Health Policy and
Systems Research**



UNIVERSITY OF GHANA

INFORMATION BRIEF

Systems integration towards universal health coverage:

Strengthening the collaborative relationship between faith-based non-profit providers and the Ghanaian public health system

While there are broad assumptions that collaboration between different sectors would support health systems strengthening, there is a dearth of systematic evidence on the effects of such relationship-building on the health system: its evolution or what strategies need to be put in place. One of the main challenges is the diversity of non-state actors in LMIC settings, each requiring a different approach for regulation and alignment with national priorities and systems functioning.

There is a particular cluster of faith-based non-profit (FBNP) providers who tend to operate in loose networks of health facilities with a shared religious identity, non-profit status, and an overt intent to provide 'quality healthcare to the rural poor' – usually with governance connections to a local religious group. The collaborative relationship and approach between FBNPs and their state actors has been distinct from that of other non-state actors in most LMIC contexts. Because of shared goals (increased outreach of health services to the poor and ultimately UHC), FBNPs have usually been seen to have a more natural 'fit' with the state-run system.

In each country where such FBNPs are present in a significant quantity, a similar set of interventions or mechanisms have been attempted over a number of years as part of a broader intervention to strengthen the relationship between FBNPs and the state system - effectively to 'align' them with the state priorities and functioning – and the stated purpose of such efforts is usually UHC, based on the assumption that FBNPs should be serving the poor often in mainly rural areas. However, there is still a lack of evidence available on whether such intervention strategies have been successful or not - whether they have in fact strengthened the relationship or the system, whether they have improved reach and access within the national system or ultimately supported the goal of reaching UHC.

Question: *In which respects has the relationship between faith-based non-profit providers and the Ghanaian government been strengthened (and in which respects undermined) through the series of health systems interventions and mechanisms attempted over the last fifty years? If so, how has this been achieved? Can this be said to have strengthened the system towards UHC in Ghana?*

Hypotheses: *Improved collaboration between FBNPs and the state would result in improved services within the FBNPs and would extend the reach of the national system to under-served populations.*

Approach: Described as a 'historical realist-style case study'

Hypotheses driving the approach:

- Health systems are complex adaptive systems that are influenced by multiple factors (social/cultural, political, economic, and other) as they change – but the contribution of multiple factors to good health and 'plausible pathways' can be identified.
- Causal/explanatory links can be made between systems interventions, the state of this relationship, and its influence on UHC.
- The factors that should prove to be important to the successful implementation of these (and other such) interventions intended to improve integration of systems towards UHC are likely to include: power differences & flows between stakeholders; trust & relational factors; historical roles & responsibilities; organisational cultures & clashes; financial, human resource & informational limitations
- An interdisciplinary approach is required to understand complex systems change over time.
- Looking at any one of these strategies in isolation or over a shorter period of time would not adequately uncover such interactions - or the greater impact on UHC.

Timeline

Phase 1: January 2016 – December 2016 - Historical case narrative study

Phase 2: January 2016 – June 2017 - Case study (fieldwork including archival searches, key informant interviews)

Phase 3: July 2017-December 2017 - Cross-case analysis and followup

Phase 4: Jan2018-May2018 - Writeup and consultation

Primary Investigators

Dr. Jill Olivier (University of Cape Town)
Dr. Aku Kwamie (University of Ghana)

Key Partners and Advisors

Christian Health Association of Ghana, Mr Peter Yeboah (CHAG)
Prof. Irene Agyepong (GHS & UG)
Prof. Lucy Gilson (UCT)

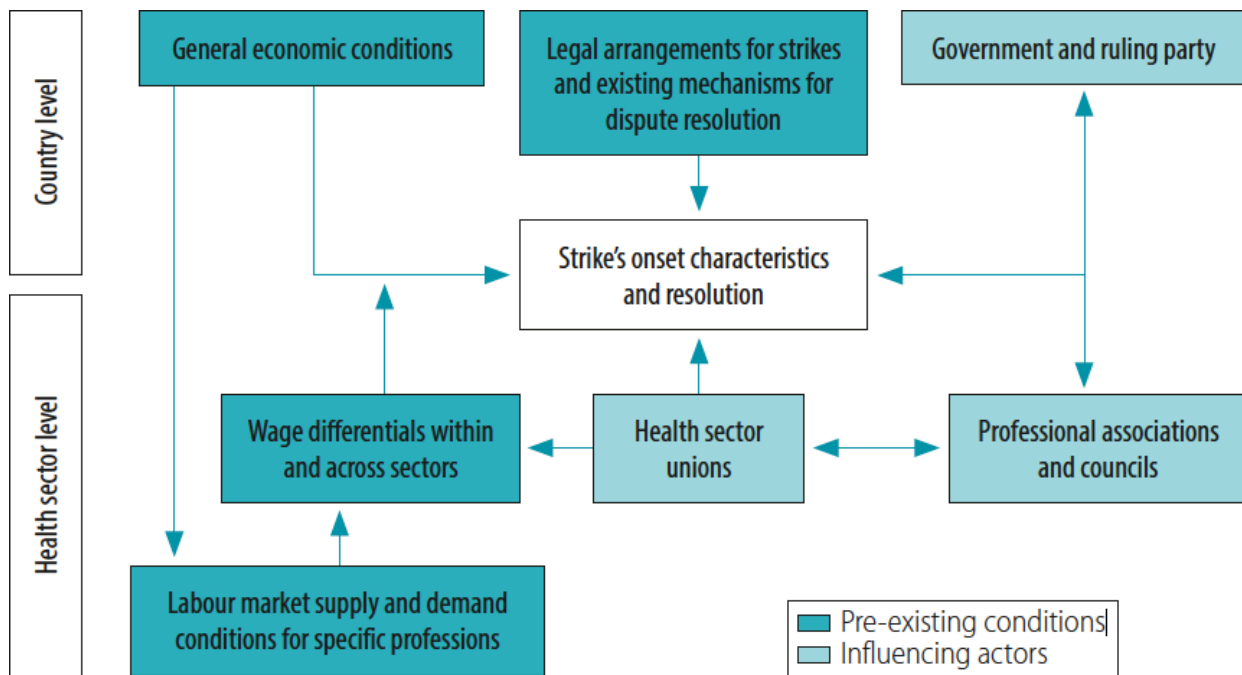
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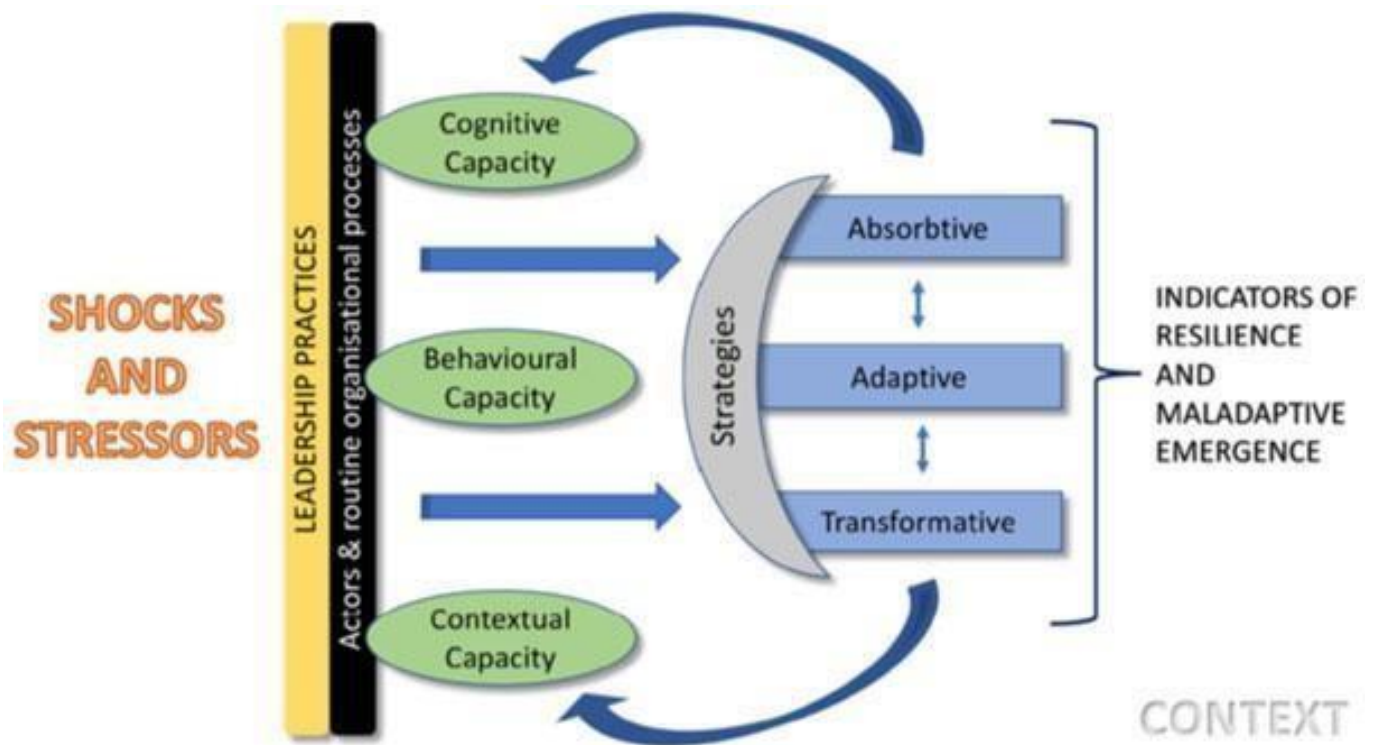
Dr. Jill Olivier: Senior Lecturer & Research Coordinator, University of Cape Town, Health Policy and Systems Division, School of Public Health and Family Medicine, Anzio Road, Observatory, 7925, South Africa jill.olivier@uct.ac.za Tel: +27 (0) 21 4066489

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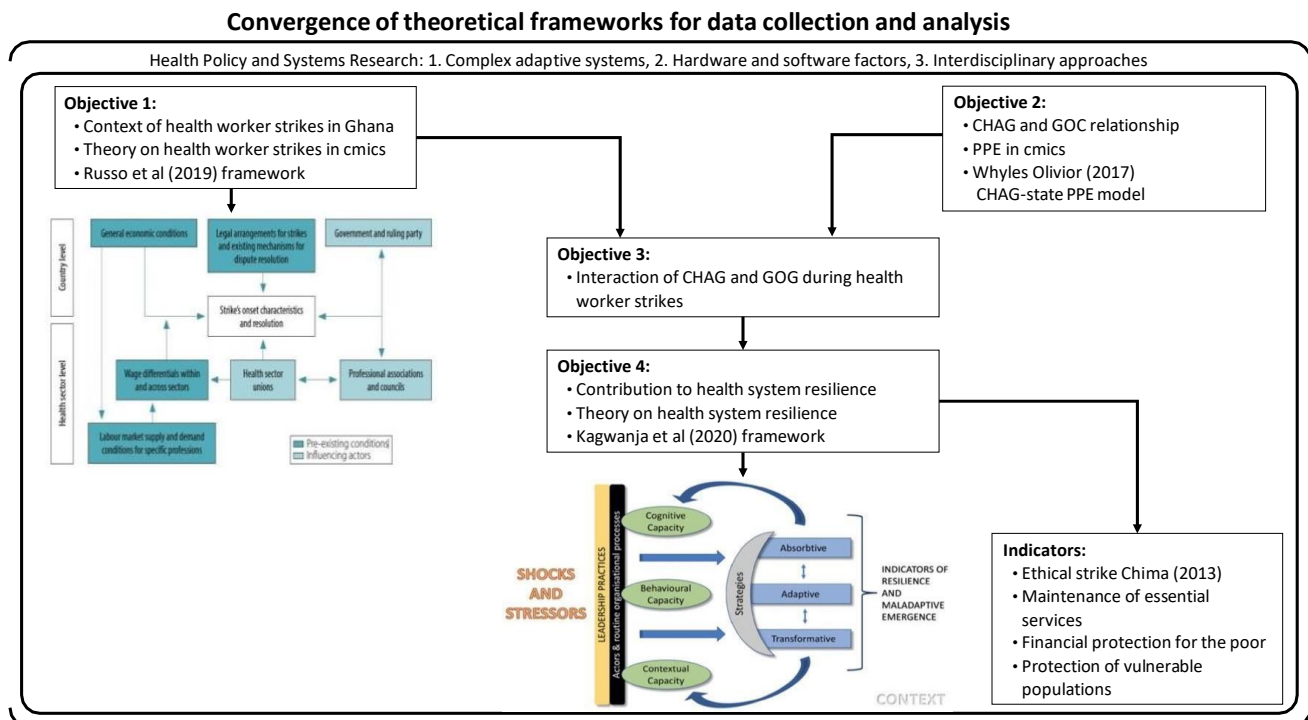
<http://www.who.int/alliance-hpsr/en/> <http://www.publichealth.uct.ac.za/> <http://sph.ug.edu.gh/> <http://www.chag.org.gh/> www.irhap.uct.ac.za

Appendix 5: Russo et al (2019) Framework



Appendix 6: Kagwanja et al (2020) framework

Appendix 7 Theoretical Frameworks for data collection and analysis



Appendix 8: Themes context of health worker strikes (embedded strike incidents)

Themes	2013 GMA Strike	2015 GMA Strike	2016 GHOSPA Strike
Duration	8 April 2013-8 May 2013	July 30, 2015-August 24, 2015	5 September 2016-10 October 2016
Actors	<i>Professional workers union</i> -Doctors represented by the Ghana Medical Association (MA9-MA14), J5 <i>Fair wages and salary commission</i> -Doctors seeking for payment schedule proposed by FWSC to be overturned. MA8, MA11, MA12, J5 <i>National Labour Commission</i> -Doctors seeking the NLC to overturn payment schedule of FWSC -Strike resolved in part by intervention from NLC MA9, MA10, MA11, MA3, J5, J11 <i>Minister of Health</i> -Condemns doctors for striking, referring to the strikes as unlawful. -Directed by Presidency to ensure protection of health of citizens. MA10, <i>Prominent political figures and groups calling for end to strikes</i> -Kofi Annan -Clergy calls for resolution MA7, MA14 <i>Condemnation from other governmental bodies</i> -The government federation of labour condemned doctors for striking MA9, MA5	<i>Pharmacists represented by GHOSPA</i> MB26 (partially withdrawn services) -Psychiatric nurses (MB50, 57, 67) <i>National Labour Commission</i> -Gave directive for doctors to return to work. MB1, MB2 -Unable to enforce own ruling. Credibility as arbitrator questioned (MB9) MB1, MB2, MB9, MB39, <i>President Mahama</i> -Describes strikes as illegal MB23 -Declares not a single cedi outside the budget on unplanned expenditure MB24, MB25 -Comments aggravating strikes MB36 MB23, MB24, MB25, MB36 <i>Prominent political figures and groups calling for end to strikes:</i> MB15, MB26 <i>Minister of Health</i> -Condemns doctors for striking, referring to the strikes as unlawful. -Threatened to freeze the salaries of doctors (did not manifest) MB25 -Issue directive for doctors to return to work -Bringing in Cuban doctors to work in hospitals (MB12, MB13) MB5, MB12, MB13, MB18, MB25 <i>Minister of Employment and Labour Relations</i> -Agreement with doctors to sign codified conditions of service by September 30. MB4, MB5, MB9,	<i>Professional workers union</i> -600 members of the Government Hospital Pharmacist Association. MC1-MC16 <i>Fair wages and salary commission</i> -Being asked by pharmacists to address the issue of their market premiums MC1, MC2, MC3, MC5, MC6, MC8, MC13 <i>National Labour Commission</i> -Blamed for delay in responding to pharmacists grievances -Took GHOSPA to court (MC8) MC1, MC2, MC3, MC4, MC5, MC6 <i>Employment and Labour Relations Minister</i> -Minister states there is no budget to pay striking pharmacists as the demanded for market premium adjustment was not accounted for in budget MC8, <i>Labour Division of the High Court</i> -NLC filed a complaint against GHOSPA at the labour division of the High Court MC8 <i>Ministry of Health</i> -Called on by GHOSPA to resolve their challenges MC12 -Gave directive for other health workers to act as pharmacists in public hospitals MC11

Strike Onset	<i>Salary Disputes</i> -Decrease in salaries due to placement of doctors on the Single Spine Salary Structure. MA1, MA4, MA8, MA12, MA12, J5, J11 SSSS -Complaint of reduction of pensions of doctors since being placed on the SSSS. MA1, MA4, MA8, MA12, MA13, J11, T1 <i>Delays by Fair Wages and Salary Commission</i> -Failure of the Fair Wages and Salary Commission to pay the difference between salaries prior to movement onto SSSS. MA1, MA4, MA8, MA12, MA13, J11 <i>Conditions of service</i> MA12, MA13, J11	<i>Conditions of service</i> -Uncodified conditions of service for Ghanaian doctors. Issue had been a long-standing issue. GMA notified government of request to formalise conditions of service seven months prior. - include a formula for calculating how additional hours doctors work each month are calculated and remunerated MB1, MB4, MB5, MB9, MB14, MB20, MB22, MB28, MB30 <i>Delayed response</i> -GMA states government did not respond to request after 7months (MB16) and therefore embarked on strike action. MB1, MB9, MB14, MB16, MB30 <i>Breakdown in negotiations</i> MB13, MB15, MB18, MB23, MB29, MB44 <i>Salary dispute</i> -Strikes not directly related to salaries but conditions of service affect overall salaries. -Salary not the main issue - Pharmacists complaint over salaries MB22, MB30, MB43, MB48, MB68,67,69 MB48, MB68, MB67,69 <i>Payment arrears</i> -Psychiatric nurses demanding government pay back their payment arrears MB50, MB57	<i>Salary disputes</i> -GHOSPA demanding that their salary grade structure, interim market premium and conditions of service should be reviewed by the Fair Wages and Salaries Commission. MC1, MC2, MC3, MC6, MC9, MC12, MC13 <i>Wage disparities</i> -Pharmacist claim that market premium they received was lower than other pharmacists at quasi-government facilities MC1, MC2, MC3, MC6, MC9, MC14, T1 SSSS -The pharmacists claimed that since the inception the SSSS seven years ago, pharmacists in government hospitals had been receiving lower salaries than their counterparts in other quasi-government institutions such as the Legon Hospital and the Food and Drugs Authority. MC1, MC2, MC3, MC6, T1 <i>Delayed Response</i> -Ongoing issue for six years with no resolution MC3, MC4, MC5, MC6, MC9, MC10, MC11, MC12, MC13, MC14 <i>Breakdown in negotiations</i> MC3, MC4, MC5, MC6, MC8, MC9, MC10, MC11, MC13, MC14 <i>Conditions of service</i> -demand by pharmacists for their condition of service to be reviewed MC1, MC3, MC6, MC13 <i>Previous unsuccessful strikes</i> -Previous strikes reported by GHOSPA in 2012 and 2013 MC12
Strike resolution	-<i>National Labour Commission intervened</i> and ordered government to pay the conversion difference to doctors in three instalments. -Meeting between GMA, Trade Union Congress for the formation of a Single Spine Post Migration Committee to address the conversion difference and pension MA3 <i>Persuasion by external actor</i>	<i>Persuasion by external actors</i> -A number of actors joined forces to persuade the doctors to end the strike, including the National House of Chief, various religious organisations, political groups MB2, MB6, MB7, MB35, MB41, -GMA executive due to pressure from actors to end strike decided to call of the strikes and to continue negotiations with government. -Decision to end strike not welcomed by all in the GMA.	<i>Committee to review</i> The MOH instituted a committee to look into the strike which developed a report titled: "Road map for Implementation of Recommendations on GHOSPA. -An emergency national meeting was held by GHOSPA on 10 October 2016 to decide if the strike should be called off. At the meeting GHOSPA members agreed to call of the strike and return to work

	MA7	MB3, MB8, -Directive from NLC to return to negotiating table MB1,	
Strike characteristics and impact	<i>Withdrawal of outpatient and emergency services</i> -Outpatient services were initially withdrawn, then in third week emergency services were withdrawn by doctors at almost all public hospitals in the nation. MA1, MA7, MA8, MA12 <i>Inpatients attended to MA1, MA8</i> <i>Congruent with other public sector strikes</i> - <i>Primary and secondary school teachers and university lecturers were also on strike MA4</i>	<i>Withdrawal of outpatient and emergency services</i> -Outpatient services were initially withdrawn, then in third week emergency services were withdrawn by doctors at almost all public hospitals in the nation- including district hospitals (MB9). Doctors threatened to resign in masse if their demands were not met, but strikes ended before this occurred (MB28, MB58, MB60). MB8, MB9, MB14, MB19, MB21, MB28, MB31, MB42, MB45, MB61 <i>Court involvement</i> -Case brought against the GMA by the Union Front Party MB23 <i>Increased mortality</i> -According to HIPSGA approximately 500 patients died during the first two weeks of the strikes. Number is estimated to be related to strikes as many patients died while being transported from one hospital to another. Number suspected to be under-reported due to rural numbers not being included. <i>Nurses at hospitals providing basic care</i> MB42, MB44 <i>Perception of severe impact on patients</i> -Minister pleading with doctors to go back for fear of strikes having lasting public health impacts MB29 -vulnerable patient groups i.e. diabetes MB34, MB10, MB11, MB13, MB16, MB17, MB19, MB21, MB28, MB29, MB32, MB24, MB42	<i>Withdrawal of services</i> Led to a complete shutdown of national pharmacies -Only inpatients attended to. MC1, MC5, MC7, MC11, MC14 <i>Inpatients attended to</i> <i>-Inpatients admitted prior to the onset of the strikes were attended to MC6, MC</i>
Macro political and economic factors	<i>Congruent with other public sector strikes</i> MA4 <i>Primary and secondary school teachers and university lecturers were also on strike</i> MA4 <i>Political Elite (MA4)</i> <i>Economy</i> <i>-Energy crisis, economic slowdown and budget deficit</i> MA4	<i>Slow economic growth, rising debt</i> -Ghanaian economy at time characterised by slow economic growth, rising debt and a large budget deficit primarily due to the 2012 passage of a public sector wage bill. -IMF loan to Ghana with condition of reducing public sector wage bill from 55% to 30%. -Energy crisis (MB26, MB47, MB54) MB17, MB22, MB26, MB47, MB54 <i>Political Elections</i> -Rising political tension in nation due to national government elections in the following year.	<i>Economy</i> <i>-Continued slow economic growth and rising debt</i> MC4, MC5 <i>Elections</i> -Rising political tensions ahead of the 2016 election year in Ghana with elections held in December. There was growing discontent with the NDC Mahama administration. MC4, MC5

		MB17, MB22, MB24, MB47 Narrative of strikes used by political parties -Case brought against the GMA by the Union Front Party (MB23) -NPP accused of being behind the doctors strikes (MB24, 47) -NPP condemns NDC handling of strikes (MB24, MB55, MB58) -GMA claims strikes not politically fuelled (MB48) MB11, MB17, MB22, MB26, MB47, MB48, MB55, MB58 <i>Congruent with other public sector strikes</i> MB58 -University Teachers Association of Ghana also on strike MB41	
Aggravating factors and impact	<i>Allowances paid to parliamentarians</i> -Prior to onset of strikes, fifty thousand Ghana Cedis was paid to Ghanaian parliamentarians as rent money. Six weeks later, forty six thousand Cedis was paid as exgracia. <i>Condemnation from other governmental bodies</i>	<i>Condemnation from other governmental bodies</i> MB10 <i>Directives from government perceived as intimidation</i> MB12, <i>Language</i> -Aggressive language used by those in the government (especially party communicators in the media and the GMA increasing tensions and other political commentators) MB3, MB6, MB7, MB10, MB15, MB20, MB26, MB28, MB30, MB31, MB31, MB34, MB38, MB59 -Between political parties MB24, MB26 -Using of unprintable words MB59 <i>Allowances paid to parliamentarians</i> MB17,	-Directive issues by government Directive was issued by government for the pharmacists to return to work, heightens tensions <i>Perception of severe impact on patients</i> <i>Patients affected</i> MC1, MC5

Appendix 9: Unique identifier sources

Unique Identifier	Article Title	Date	Source/Author	Links/Citation
MA1	Doctors in Ghana continue to strike over salary dispute	12/04/2013	BBC News	https://www.bbc.com/news/av/world-africa-22128960
MA2	Ghana: GMA Reacts To Government's Position On Doctors' Strike	12/04/2013	All Africa	https://allafrica.com/stories/201304150896.html
MA3	Ghana's public doctors call of one month strike	08/05/2013	Ghana Business news	https://www.ghanabusinessnews.com/2013/05/08/ghana-s-public-doctors-call-off-one-month-strike/
MA4	Ghana hit by waves of public sector strikes	25/04/2013	Equal Time	https://www.equaltimes.org/ghana-hit-by-wave-of-public-sector-strikes?lang=en#.Y0wHR6hBxpQ
MA5	Doctors strike, never again	11/05/2013	Ghana News (opinion)	https://newsghana.com.gh/doctors-strike-never-again/
MA6	Doctors Call of Strike	07/05/2013	Joy News	https://www.myjoyonline.com/doctors-call-off-strike/
MA7	Ghana Doctors Strike, Kofi Annan intervenes	24.04/2013	IGIHE	https://en.igihe.com/health/ghana-doctors-strike-kofi-annan-intervenes
MA8	Doctors declare another strike, pharmacists set to follow	07/04/2013	Berekumcity.com	https://www.berekumcity.com/news/national-news/doctors-declare-another-strike-pharmacists-set-to-follow
MA9	Ghana federation of labour slams doctors strike action	30/04/2013	Peace FM	https://www.peacefmonline.com/pages/local/news/2013-04/162785.php
MA10	Doctors strike is illegal and insensitive- govt asserts	10/04/2013	Myjoyonline.com	https://www.modernghana.com/news/457729/doctors-strike-is-illegal-and-insensitive-govt-asserts.html
MA11	Doctors strike in the offing if	06/04/2013	Kessben	https://kessbenonline.com/2013/04/06/doctors-strike-in-the-offing-if/
MA12	Chief of Staff meets parties to the doctors strike	13/02/2013	Joy Online	http://www.justiceghana.com/index.php/en/2012-01-24-13-46-34/6262-doctors-end-strike-action-resume-work-on-Wednesday
MA13	GHANA: DOCTORS STRIKE-WHY AGAIN?	22/04/2013	Kobby Blay	https://kobbyblay.wordpress.com/2013/04/22/ghana-doctors-strike-why-again/
MA14	Clergy pleads with doctors to call off intended strike	08/02/2013	Joy Online	https://www.myjoyonline.com/clergy-pleads-with-doctors-to-call-off-intended-strike/
MA15	Patient surge as Ghana's doctors strike	21/04/2013	Buisness Recorder	https://fp.brecorder.com/2013/04/201304211176962/
MA16	Ghana's Budget Deficit Target Under Threat Amid Strikes	18/04/2013	Bloomberg	https://www.bloomberg.com/news/articles/2013-04-18/ghanaian-public-workers-strike-may-threaten-deficit?leadSource=uverify%20wall

MA17	Public sector strikes test Ghana's deficit-cutting mettle	16/04/2013	Reuters	https://www.reuters.com/article/ghana-strikes-idUSL3N0D20RA20130416
MA19	Doctors warn Nunoo-Mensah to be mindful of lis language	21/10/2013	Ghana Web Database	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Doctors-warn-Nunoo-Mensah-to-be-mindful-of-lis-language-289491
MA20	Health Ministry commends doctors for ending strike	08/05/2013	Ghana Business news	https://www.ghanabusinessnews.com/2013/05/08/health-ministry-commends-doctors-for-ending-strike/
MA21	Government to bring in more Cuban doctors	30/04/2013	Joy Online	https://www.myjoyonline.com/government-to-bring-in-more-cuban-doctors/
MA22	Doctors' strike hits Komfo Anokye hard, worst in 59-year history of hospital	06/05/2013	Graphic.com	https://www.graphic.com.gh/news/health/doctors-strike-hits-komfo-anokye-hard-worst-in-59-year-history-of-hospital.html
MA23	Ministry commends doctors for ending strike	08/05/2013	Peace FM	https://www.peacefmonline.com/pages/local/health/201305/163690.php
MA24	Mahama's economic policy inspires strike action - O. B Amoah	04/04/2013	Ghana Web	https://www.ghanaweb.com/GhanaHomePage/business/Mahama-s-economic-policy-inspires-strike-action-O-B-Amoah-269930
MA25	Missionary Hospitals will treat NHIS patients	11/03/2013	Joy FM	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Missionary-Hospitals-will-treat-NHIS-patients-267317
MA26	BoasiakoCash and Carry system back in B/A from Monday	08/03/2013	Ghana Web	https://www.ghanaweb.com/GhanaHomePage/health/Cash-and-Carry-system-back-in-B-A-from-Monday-267009
MA27	Missionary hospitals restore services to Health Insurance card holders	15/03/2013	Ghana Web	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Missionary-hospitals-restore-services-to-Health-Insurance-card-holders-267789
MA28	NHIA pays outstanding claims	23/03/2013	Ghana News Agency	https://www.ghanaweb.com/GhanaHomePage/health/NHIA-pays-outstanding-claims-268759
MA29	Missionary hospitals will refuse NHIS patients	10/03/2013	Joy Online	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Missionary-hospitals-will-refuse-NHIS-patients-267207
MA30	Current state of NHIS is very frightening – Dr. Anane	11/03/2013	Joy Online	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Current-state-of-NHIS-is-very-frightening-Dr-Anane-267352
MB1	Patients happy to meet doctors as they resume work	24/08/2015	tv3network.com	https://3news.com/patients-happy-to-meet-doctors-as-they-resume-work/
MB2	We're resuming duty with a heavy heart - Doctors	24/08/2015	starrfmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/We-re-resuming-duty-with-a-heavy-heart-Doctors-377267
MB3	GMA leadership to be impeached over strike	24/08/2015	starrfmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/GMA-leadership-to-be-impeached-over-strike-377341
MB4	Doctors to sign conditions of service Sept. 30	22/08/2015	starrfmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Doctors-to-sign-conditions-of-service-Sept-30-376968
MB5	Doctors to receive August salaries despite strike	22/08/2015	starrfmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Doctors-to-receive-August-salaries-despite-strike-376982

MB6	Doctors slam Nunoo-Mensah over football comment	21/08/2015	starrfmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Doctors-slam-Nunoo-Mensah-over-football-comment-376833
MB7	Doctors' strike: House of Chiefs meets GMA, FWSC	21/08/2015	starrfmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Doctors-strike-House-of-Chiefs-meets-GMA-FWSC-376845
MB8	Doctors end strike, go back to work on Monday	21/08/2015	Citi FM Online	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Doctors-end-strike-go-back-to-work-on-Monday-376877
MB9	Doctors defy Gov't order	20/08/2015	Daily Guide	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Doctors-defy-Gov-t-order-376416
MB10	Doctors deliberately slaughtering patients – Austin Gamey	20/08/2015	peacefmonline	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Doctors-deliberately-slaughtering-patients-Austin-Gamey-376484
MB11	Minority pleads with doctors to resume work	20/08/2015	kasapafmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Minority-pleads-with-doctors-to-resume-work-376547
MB12	GMA parries Health Minister's threats and intimidation	19/08/2015	tv3network.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/GMA-parries-Health-Minister-s-threats-and-intimidation-376325
MB13	Minister begs doctors to go back to work	19/08/2015	Today Newspaper	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Minister-begs-doctors-to-go-back-to-work-376102
MB14	Blame gov't for 'unfortunate' loss of lives – Dr. Ankobea	18/08/2015	peacefmonline	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Blame-gov-t-for-unfortunate-loss-of-lives-Dr-Ankobea-375912
MB15	Gov't must be serious in solving doctors' strike - Kabila	18/08/2015	peacefmonline	https://www.ghanaweb.com/GhanaHomePage/politics/Gov-t-must-be-serious-in-solving-doctors-strike-Kabila-375919
MB16	We won't fall for your tricks – GMA to Gov't	18/08/2015	kasapafmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/We-won-t-fall-for-your-tricks-GMA-to-Gov-t-375944
MB17	Doctors' strike: 500 dead in 17 days	17/08/2015	The Finder	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Doctors-strike-500-dead-in-17-days-375648
MB18	Negotiations: No invite from govt to GMA	17/08/2015	The Finder	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Negotiations-No-invite-from-govt-to-GMA-375651
MB19	Doctors strike: Mad rush for native doctors	17/08/2015	Daily Heritage	https://www.ghanaweb.com/GhanaHomePage/health/Doctors-strike-Mad-rush-for-native-doctors-375725
MB20	Jawula slams doctors over stance on conditions of service	17/08/2015	tv3network.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Jawula-slams-doctors-over-stance-on-conditions-of-service-375755
MB21	Doctors' front cracks over strike	17/08/2015	Public Agenda	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Doctors-front-cracks-over-strike-375760
MB22	Doctors likely to call off strike, union says	14/08/2015	Reuters	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Doctors-likely-to-call-off-strike-union-says-375209

MB23	Doctors' Strike: Hearing of suit against GMA adjourned	13/08/2015	tv3network.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Doctors-Strike-Hearing-of-suit-against-GMA-adjourned-374989
MB24	Negotiating with a “dead goat” is difficult – Sir John	12/08/2015	peacefmonline	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Negotiating-with-a-dead-goat-is-difficult-Sir-John-374618
MB25	Withdrawal of doctors’ salary on point – Mahama	12/08/2015	kasapafmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Withdrawal-of-doctors-salary-on-point-Mahama-374700
MB26	Prof. Delle appeals to doctors to return to work	11/08/2015	Today Newspaper	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Prof-Delle-appeals-to-doctors-to-return-to-work-374301
MB27	Negotiate with doctors — PPP advises gov’t	11/08/2015	Today Newspaper	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Negotiate-with-doctors-PPP-advises-gov-t-374303
MB28	Strike: Doctors study gov’t counter-proposals	11/08/2015	tv3network.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Strike-Doctors-study-gov-t-counter-proposals-374310
MB29	Doctors don't strike beyond 24hrs in civilised societies	11/08/2015	atinkafmonline	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Doctors-don-t-strike-beyond-24hrs-in-civilised-societies-374389
MB30	GMA to Gamey: 'You are part of our problem'	11/08/2015	kasapafmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/GMA-to-Gamey-You-are-part-of-our-problem-374399
MB31	We plan embarking on an indefinite strike - GMA Boss	11/08/2015	peacefmonline	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/We-plan-embarking-on-an-indefinite-strike-GMA-Boss-374428
MB32	Doctors to announce next line of action Wednesday	11/08/2015	kasapafmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Doctors-to-announce-next-line-of-action-Wednesday-374509
MB33	Catholic Church adopting slave labour in Ghana – ex-Minister	11/08/2015	kasapafmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Catholic-Church-adopting-slave-labour-in-Ghana-ex-Minister-374511
MB34	Doctors’ strike:Diabetic patient pleads for quick end	11/08/2015	Ghana News Agency	https://www.ghanaweb.com/GhanaHomePage/health/Doctors-strike-Diabetic-patient-pleads-for-quick-end-374512
MB35	Dr Tetteh urges striking doctors to go back to work	10/08/2015	Ghana News Agency	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Dr-Tetteh-urges-striking-doctors-to-go-back-to-work-374159
MB36	Mahama owes striking doctors no apology - Kwakye-Ofosu	10/08/2015	peacefmonline	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Mahama-owes-striking-doctors-no-apology-Kwakye-Ofosu-374191
MB37	Gov’t hindering progress of negotiations - GMA	10/08/2015	peacefmonline	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Gov-t-hindering-progress-of-negotiations-GMA-374197
MB38	We’ll insult anyone who insults us – GMA	10/08/2015	kasapafmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/We-ll-insult-anyone-who-insults-us-GMA-374234

MB39	Go to NLC or resign now - Gamey to striking doctors	10/08/2015	kasapafmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Go-to-NLC-or-resign-now-Gamey-to-striking-doctors-374235
MB40	Sack Nunoo-Mensah; he doesn't deserve his salary - Ken Kuranchie	10/08/2015	kasapafmonline.com	https://www.ghanaweb.com/GhanaHomePage/politics/Sack-Nunoo-Mensah-he-doesn-t-deserve-his-salary-Ken-Kuranchie-374239
MB41	Strikes: Christian Council appeals to churches to intervene	09/08/2015	Ghana News Agency	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Strikes-Christian-Council-appeals-to-churches-to-intervene-373952
MB42	Pain & anguish as Doctors dump hospitals	08/08/2015	dailyguideghana.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Pain-anguish-as-Doctors-dump-hospitals-373844
MB43	'Gov't not truthful to Ghanaians'	08/08/2015	dailyguideghana.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Gov-t-not-truthful-to-Ghanaians-373852
MB44	Doctors' Strike: Out-Patient Departments empty (Photos)	08/08/2015	www.ghanaweb.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Doctors-Strike-Out-Patient-Departments-empty-Photos-373860
MB45	Striking Doctors to meet Parliament	08/08/2015	tv3network.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Striking-Doctors-to-meet-Parliament-373576
MB46	No pressure on us – 37 Military Hospital	07/08/2015	tv3network.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/No-pressure-on-us-37-Military-Hospital-373577
MB47	NPP manipulating Doctors – Anita	07/08/2015	dailyguideghana.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/NPP-manipulating-Doctors-Anita-373644
MB48	Don't reduce our demands to partisan politics - GMA	07/08/2015	peacefmonline	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Don-t-reduce-our-demands-to-partisan-politics-GMA-373679
MB49	GHS boss appeals to doctors to end strike	07/08/2015	Ghanaian Times	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/GHS-boss-appeals-to-doctors-to-end-strike-373707
MB50	GMA strike is 'crude and wrong' - Kofi Adams	06/08/2015	peacefmonline	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/GMA-strike-is-crude-and-wrong-Kofi-Adams-373447
MB51	Mahama's Gov't is lazy - Nana Akomea	06/08/2015	peacefmonline	
MB52	'Workers shouldn't be allowed to strike for more than 72hrs'	06/08/2015	peacefmonline	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Workers-shouldn-t-be-allowed-to-strike-for-more-than-72hrs-373458
MB53	Mahama's comment on doctors strike, a wrong move – Dr Amoako Baah	06/08/2015	kasapafmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Mahama-s-comment-on-doctors-strike-a-wrong-move-Dr-Amoako-Baah-373460
MB54	No cash for striking doctors	05/08/2015	Daily Guide	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/No-cash-for-striking-doctors-373261
MB55	No Gov't can meet GMAs demands - Kennedy Agyapong	05/08/2015	Daily Post	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/No-Gov-t-can-meet-GMAs-demands-Kennedy-Agyapong-373277

MB56	Striking doctors adopted bad negotiation tactics – Ben Ephson	05/08/2015	kasapafmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Striking-doctors-adopted-bad-negotiation-tactics-Ben-Ephson-373279
MB57	Mahama to Doctors: 'I'm determined, no matter the political cost'	05/08/2015	tv3network.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Mahama-to-Doctors-I-m-determined-no-matter-the-political-cost-373286
MB58	NPP to doctors: 'Consider the poor; call off strike'	05/08/2015	kasapafmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/NPP-to-doctors-Consider-the-poor-call-off-strike-373178
MB59	NDC slams GMA's Dr. Serebour	04/08/2015	kasapafmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/NDC-slams-GMA-s-Dr-Serebour-372995
MB60	Dissenting doctors tell Serebour to resign alone	04/08/2015	The Republic	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Dissenting-doctors-tell-Serebour-to-resign-alone-373001
MB61	The worst is yet to come - Doctors warn	12/02/2013	Ghana News Agency	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/The-worst-is-yet-to-come-Doctors-warn-264790
MB62	GMA strike is wrong and "uncivilized" - Austin Gamey	12/02/2013	CitiFM	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/GMA-strike-is-wrong-and-uncivilized-Austin-Gamey-264791
MB63	Prof. Akosa slams GMA over strike	12/02/2013	radioxyzonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Prof-Akosa-slams-GMA-over-strike-264824
MB64	GMA strike is illegal - NLC	11/02/2013	CitiFM	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/GMA-strike-is-illegal-NLC-264712
MB65	Ghana's doctors demanding better working conditions	2015		https://www.youtube.com/watch?v=VWR9NtODQCw
MB66	Ghanaian Doctors Strike Over Conditions of Service	08/08/2015		https://www.voanews.com/a/ghanaian-doctors-strike-over-conditions-of-service-/2908499.html
MB67	GHOSPA declares strike	04/08/2015	Pulse.com	https://www.pulse.com.gh/ece-frontpage/another-strike-ghospa-declares-strike/fyrw7kl
MB68	Government pharmacists embark on strike across the country	29/07/2015	News Ghana	https://newsghana.com.gh/government-pharmacists-embark-on-strike-across-the-country/
MB69	Pharmacists to strike Friday	29/07/2015	starrfmonline.com	http://www.ghanareview.com/Restyle/index2.php?class=News&date=2015-07-29&id=64570
MB70	Press statement delivered by the Minister of Health, Hon. Alex Sebgefa on the ongoing illegal strike action by the GMA on 18th August	18/06/2015	Joy News	https://www.facebook.com/JoyNewsOnTV/posts/press-statement-delivered-by-the-minister-for-health-hon-alex-sebgefa-on-the-on/943787905693116/
MB71	Ghana: Government issues directives to minimize effects of the GMA strike	18/08/2015	all Africa	https://allafrica.com/stories/201508191000.html
MB72	Christian health facilities struggle to deal with increased patient numbers	10/08/2015	Joy Online	https://www.myjoyonline.com/christian-health-facilities-struggle-to-deal-with-increased-patient-numbers/
MB73	Sacked doctors are not being punished- CHAG	11/08/2015	Pu;se.com	https://www.pulse.com.gh/ece-frontpage/sacked-doctors-sacked-doctors-are-not-being-punished-chag/86mxxlv

MB74	Come, let's save lives; 37 Hospital invites 148 doctors who voted against strike	15/08/2015	Graphic Online	https://www.graphic.com.gh/news/general-news/come-let-s-save-lives-37-hospital-invites-148-doctors-who-voted-against-strike.html
MB75	Doctors strike: Ministry releases list of operational health facilities	14/08/2015	Graphic Online	https://www.graphic.com.gh/news/general-news/doctors-strike-ministry-releases-list-of-operational-health-facilities.html
MB76	Korle Bu Cardio Centre overstretched due to doctors strike	13/08/2015	Graphic Online	https://www.graphic.com.gh/news/general-news/korle-bu-cardio-centre-overstretched-due-to-doctors-strike.html
MB77	Ghana to Bring Cuban Doctors to Mitigate Medical Strike	19/08/2015	Al Jazeera	https://allafrica.com/stories/201508201287.html
MB78	Catholic Health Services threatens legal action against NHIA	15/10/2015	Graphic Online	https://www.graphic.com.gh/news/general-news/catholic-health-services-threatens-legal-action-against-nhia.html
MB79	Private hospitals reject NHIS cards	25/08/2015	Daily Guide	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Private-hospitals-reject-NHIS-cards-373150
MC1	Pharmacists in govt hospitals begin indefinite strike	09/06/2016	Graphic Online	https://www.graphic.com.gh/news/general-news/pharmacists-in-govt-hospitals-begin-indefinite-strike.html
MC2	GHOSPA to consult members on strike over market premium	11/10/2016	Graphic Online	https://www.graphic.com.gh/news/general-news/ghospa-to-consult-members-on-strike-over-market-premium.html
MC3	We will call off the strike if government shows commitment- GHOSPA	13/09/2016	Pulse.com.gh	https://www.pulse.com.gh/news/local/ghospa-strike-we-will-call-off-strike-if-government-shows-commitment-ghospa/1khrvc6
MC4	We are ready to face NLC in court- striking pharmacists	13/09/2016	Pulse.com.gh	https://www.pulse.com.gh/ece-frontpage/ghospa-strike-we-are-ready-to-face-nlc-in-court-striking-pharmacists/2n057h9
MC5	GHOSPA strike bad? Pharmacy Chamber	14/09/2016	Peace FM	https://www.peacefmonline.com/pages/local/news/2016-09/292029.php
MC6	Government and hospital pharmacists to strike September 5	02/09/2016	Ghana Web	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Government-hospital-pharmacists-to-strike-September-5-466897
MC7	Pharmacy shop attendants record high sales over GHOSPA strike	08/09/2016	TV43	https://www.youtube.com/watch?v=GqxSpmbEUfU
MC8	We can't pay striking pharmacists	09/09/2016	Daily Guide	https://www.modernghana.com/news/718444/we-cant-pay-striking-pharmacists.html
MC9	Govt pharmacists lay down tools	05/09/2016	Ghana Review International	http://www.ghanareview.com/Restyle/index2.php?class=all&date=2016-09-05&id=66633
MC10	GHOSPA asks government for clear roadmap	14/09/2016	Peace FM	https://www.peacefmonline.com/pages/local/health/2016-09/292007.php
MC11	Don't engage non-experts as pharmacists	27/09/2016	Ghanaian Times	https://www.businessghana.com/site/news/General/136034/Don%E2%80%99t%20engage%20non-experts%20as%20pharmacists%20%E2%80%93%20GHOSP

MC12	Address our concerns or face our wrath-GHOSPA threatens	11/07/2016	Pulse.com.gh	https://www.pulse.com.gh/ece-frontpage/aggrieved-pharmacist-address-our-concerns-or-face-our-wrath-ghospa-threatens/3b0dvnw
MC13	Pharmacists Leave Hospitals Empty	06/09/2016	Daily Guide Network	https://dailyguidenetwork.com/pharmacists-leave-hospital-empty/
MC14	Ghanians should forgive us - striking pharmacists	13/09/2016	Ghana Web	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Ghanians-should-forgive-us-striking-Pharmacists-469381
MC15	Gov't hails CHAG's contribution to healthcare	09/06/2016	Ghana News Agency	https://www.ghanaweb.com/GhanaHomePage/health/Gov-t-hails-CHAG-s-contribution-to-healthcare-446069
MC16	Nurses, midwives start 'red week'	31/10/2016	Class FM	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Nurses-midwives-start-red-week-482322
MC17	NHIA in Ghc420m arrears	16/10/2016	The Finder	https://www.ghanaweb.com/GhanaHomePage/health/NHIA-in-Ghc420m-arrears-415883
MC18	Bishop Titi Offei can't think far; I also can't think far	05/10/2016	Opinion Piece	https://www.ghanaweb.com/GhanaHomePage/features/Bishop-Titi-Offei-can-t-think-far-I-also-can-t-think-far-474916
MC19	Extend NHIS to cover herbal medicines - Monic Star Center CEO	26/11/2016	The Chronicle	https://www.ghanaweb.com/GhanaHomePage/health/Extend-NHIS-to-cover-herbal-medicines-Monic-Star-Center-CEO-488855
MC20	Hospitals ignore directive to ease GHOSPA strike	22/09/2016	3 News	https://www.ghanaweb.com/GhanaHomePage/health/Hospitals-ignore-directive-to-ease-GHOSPA-strike-471497
MC21	We are worried patients can't access drugs - Pharmacists	26/09/2016	Ultimate FM	https://www.ghanaweb.com/GhanaHomePage/health/We-are-worried-patients-can-t-access-drugs-Pharmacists-472512
MC22	Committee on NHIS presents report to Health Ministry	17/09/2016	Ghana News Agency	https://www.ghanaweb.com/GhanaHomePage/health/Committee-on-NHIS-presents-report-to-Health-Ministry-470504
MC23	Dispense drugs to patients despite GHOSPA strike - Hospitals told	11/09/2016	Class FM	https://www.ghanaweb.com/GhanaHomePage/health/Dispense-drugs-to-patients-despite-GHOSPA-strike-Hospitals-told-469045
MC24	Herbal medicine: The shortcomings of professional association	19/08/2016	Opinion Piece	https://www.ghanaweb.com/GhanaHomePage/features/Herbal-medicine-The-shortcomings-of-professional-association-1-463751
MC25	NHIS cards issued to hit 17m by end of 2016	02/07/2016	Class FM	https://www.ghanaweb.com/GhanaHomePage/health/NHIS-cards-issued-to-hit-17m-by-end-of-2016-452252
MC26	GNAInvest more in NHIS – NGO to gov't	14/03/2016	Ghana News Agency	https://www.ghanaweb.com/GhanaHomePage/health/Invest-more-in-NHIS-NGO-to-gov-t-423161
MC27	NHIS: Tariffs increased by 27%	23/02/2016	Class FM	https://www.ghanaweb.com/GhanaHomePage/health/NHIS-Tariffs-increased-by-27-418030
MC28	Patient surge as Ghana's doctors strike	21/04/2013	The Business Recorder	https://fp.brecorder.com/2013/04/201304211176962/

MC29	NHIA pays outstanding claims	23/03/2013	Ghana News Agency	https://www.ghanaweb.com/GhanaHomePage/health/NHIA-pays-outstanding-claims-268759
MC30	Missionary hospitals will refuse NHIS patients	10/03/2013	Joy Online	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Missionary-hospitals-will-refuse-NHIS-patients-267207
MC31	GHOSPA strike: Health Ministry directs GHS, CHAG to ensure uninterrupted pharm. services delivery	14/09/2016	Kasapa Fm	https://kasapafmonline.com/?p=70910
	Ghana: Pharmacists to Continue Strike After Impasse With Govt	08/06/2016	all Africa	https://allafrica.com/stories/201609091218.html
MD1	Lawyers, Doctors Gear for A Showdown	01/11/2011	The Republic Newspaper	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Lawyers-Doctors-Gear-for-A-Showdown-222775
MD2	Labour Commission rules on GMA and FWSC disputes	14/11/2011	GNA- Frank Atiase	https://www.ghanaweb.com/GhanaHomePage/business/Labour-Commission-rules-on-GMA-and-FWSC-disputes-223566
MD3	NLC gives ruling on Ghana Medical Association's compulsory arbitration process	08/11/2011	Ghana Business News	https://www.ghanaweb.com/GhanaHomePage/business/Labour-Commission-rules-on-GMA-and-FWSC-disputes-223566
MD4	PUSAG Urges Doctors To End Strike	25/10/2011	GNA- Lens	https://www.ghanaweb.com/GhanaHomePage/regional/PUSAG-Urges-Doctors-To-End-Strike-222339
MD5	Doctors earn a fraction of what presidential aides get	24/10/2011	New Crusading guide	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Doctors-earn-a-fraction-of-what-presidential-aides-get-222209
MD6	Doctors' strike, Kadhafi's death highlighted in media	23/10/2011	Pana	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Doctors-strike-Kadhafi-s-death-highlighted-in-media-222177
MD7	Bishop Appeals to GMA to call off strike	20/10/2011	GNA	https://www.ghanaweb.com/GhanaHomePage/health/Bishop-Appeals-to-GMA-to-call-off-strike-222017
MD8	Doctors Say Strike Still Not Over	19/10/2011	GNA	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Doctors-Say-Strike-Still-Not-Over-221972
MD9	Coalition Of Ngos In Health Appeals To Doctors To End Strike Action	17/10/2011	GNA?	https://www.ghanaweb.com/GhanaHomePage/regional/Coalition-Of-Ngos-In-Health-Appeals-To-Doctors-To-End-Strike-Action-221870
MD10	NPP man Wants Doctor's Salaries Withheld	17/10/2011	Daily Post	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/NPP-man-Wants-Doctor-s-Salaries-Withheld-221865
MD11	Christian Council appeals to doctors to end strike	16/10/2011	GNA	https://www.ghanaweb.com/GhanaHomePage/health/Christian-Council-appeals-to-doctors-to-end-strike-221761
MD12	Doctors strike impacts on Police and 37 Military Hospitals	12/10/2011	GNA	https://www.ghanaweb.com/GhanaHomePage/health/Doctors-strike-impacts-on-Police-and-37-Military-Hospitals-221477
MD13	Forum appeals to GMA to end Strike	12/10/2011	GNA	https://www.ghanaweb.com/GhanaHomePage/regional/Forum-appeals-to-GMA-to-end-Strike-221475
MD14	Statement by the Forum for Governance & Justice on GMA strike	12/10/2011	myjoyonline	https://www.myjoyonline.com/statement-by-the-forum-for-governance-justice-on-gma-strike/

MD15	Mills blames NPP for doctors' strike	12/10/2011	Statesman	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Mills-blames-NPP-for-doctors-strike-221544
MD16	President Mills announces measures to contain doctors' strike	12/10/2011	Ghana Business News	https://www.ghanabusinessnews.com/2011/10/17/president-mills-announces-measures-to-contain-doctors-strike/
MD17	Gov't to prevent doctors from going on strike in the future – Haruna Iddrisu	17/10/2011	myjoyonline	https://www.myjoyonline.com/govt-to-prevent-doctors-from-going-on-strike-in-the-future-haruna-iddrisu/
MD18	Mills will meet striking doctors when necessary- Council of State Member	18/10/2011	myjoyonline	https://www.myjoyonline.com/mills-will-meet-striking-doctors-when-necessary-council-of-state-member/
MD19	Mills blamed for prolonged doctors' strike	26/10/2011	Modern Ghana	https://www.modernghana.com/news/357796/mills-blamed-for-prolonged-doctors-strike.html
MD20	Doctor says the strike action will continue	11/10/2011	GNA	https://www.ghanaweb.com/GhanaHomePage/regional/Doctor-says-the-strike-action-will-continue-221396
MD21	Doctors deny refusing to negotiate with FWSC	11/10/2011	GNA	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Doctors-deny-refusing-to-negotiate-with-FWSC-221386
MD22	Full text of statement by Ghana Medical Association	10/10/2011	GNA	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Full-text-of-statement-by-Ghana-Medical-Association-221521
MD23	KATH rejects critically injured accident victim	11/10/2011	GNA	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/KATH-rejects-critically-injured-accident-victim-221565
MD24	Ministry of Health ask striking doctors to resume work	11/10/2011	GNA	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Ministry-of-Health-ask-striking-doctors-to-resume-work-221352
MD25	Patients in Ho laud doctors for keeping faith with them	11/10/2011	GNA	https://www.ghanaweb.com/GhanaHomePage/health/Patients-in-Ho-laud-doctors-for-keeping-faith-with-them-221387
MD26	Tarkwa and Prestea doctors are not on strike	10/10/2011	GNA	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Tarkwa-and-Prestea-doctors-are-not-on-strike-221303
MD27	Gov't surprised at doctors, junior nurses strike	09/10/2011	Joy News	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Gov-t-surprised-at-doctors-junior-nurses-strike-221205
MD28	KATH closes door to new patients	08/11/2011	GNA	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/KATH-closes-door-to-new-patients-221144
ME1	Health Ministry to meet FWSC over Pharmacists strike	02/04/2012	Radioxyzonline	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Health-Ministry-to-meet-FWSC-over-Pharmacists-strike-234709
ME2	Striking public sector workers to lose salary	03/04/2012	GNA	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Striking-public-sector-workers-to-lose-salary-234868
ME3	Pharmacists must be realistic & honest	08/04/2012	GW- Amenyo, Andrew	https://www.ghanaweb.com/GhanaHomePage/features/Pharmacists-must-be-realistic-honest-235310
ME4	Pharmacists in Government Hospitals commended for calling off strike	22/04/2012	GNA	https://www.ghanaweb.com/GhanaHomePage/regional/Pharmacists-in-Government-Hospitals-commended-for-calling-off-strike-236631

ME5	Hospital Pharmacists withdraw emergency services	29/04/2012	Joy Online	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Hospital-Pharmacists-withdraw-emergency-services-272451
ME6	Gov't pharmacists vow to continue strike	22/05/2013	GNA	https://www.ghanaweb.com/GhanaHomePage/health/Gov-t-pharmacists-vow-to-continue-strike-274715
ME7	Government pharmacists call off strike	11/04/2012	Myjoyonline	https://www.myjoyonline.com/government-pharmacists-call-off-strike/
ME8	Pharmacists in Government Hospitals commended for calling off strike	20/04/2012	GNA	https://www.ghanaweb.com/GhanaHomePage/regional/Pharmacists-in-Government-Hospitals-commended-for-calling-off-strike-236631
ME9	Non-migration of GHOSPA unto the SSSS	04/07/2012	GNA	https://www.ghanaweb.com/GhanaHomePage/regional/Non-migration-of-GHOSPA-unto-the-SSSS-243840
MF1	Government Pharmacists call off strike	25/09/2012	GNA	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Government-Pharmacists-call-off-strike-251295
MF2	Striking KATH consultants likely to call off strike today	17/09/2012	Radioxyonline	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Striking-KATH-consultants-likely-to-call-off-strike-today-250634
MF3	Korle Bu surgery department to be closed down	15/09/2012	Radioxyonline	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Korle-Bu-surgery-department-to-be-closed-down-250543
MF4	Handover government properties- Bagbin charges striking pharmacists	14/09/2012	GNA	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Handover-government-properties-Bagbin-charges-striking-pharmacists-250460
MF5	I am ready to face the Pharmaceutical Council - Korle-Bu CEO	12/09/2012	GW- Kojo Frimpong	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/I-am-ready-to-face-the-Pharmaceutical-Council-Korle-Bu-CEO-250221
MF6	Korle-Bu CEO Breaks Into Pharmacy To Save Lives	11/09/2012	Al-Hajj	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Korle-Bu-CEO-Breaks-Into-Pharmacy-To-Save-Lives-250077
MF7	Pharmacists vow to continue strike action	10/09/2012	GNA	https://www.ghanaweb.com/GhanaHomePage/health/Pharmacists-vow-to-continue-strike-action-250054
MF8	Pharmacists in Brong Ahafo Regional and Sunyani Municipal hospitals strike	04/09/2012	GNA	https://www.ghanaweb.com/GhanaHomePage/regional/Pharmacists-in-Brong-Ahafo-Regional-and-Sunyani-Municipal-hospitals-strike-249525
MF9	Pharmacists' strike, 'neither here nor there' - FWSC	04/09/2012	GNA	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Pharmacists-strike-neither-here-nor-there-FWSC-249515
MF10	Don't blame us for pharmacists strike - Fair Wages	03/09/2012	Radioxyonline	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Don-t-blame-us-for-pharmacists-strike-Fair-Wages-249412
MF11	Pharmacists threaten strike..	12/07/2012	GNA	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Pharmacists-threaten-strike-244699

MF12	Pharmacists issue new strike warning	24/03/2012	Ghanasoccernet	https://ghanasoccernet.com/pharmacists-issue-new-strike-warning
MF13	Post single spine salary structure technical committee inaugurated	24/11/2012	Ghana Business News	https://www.ghanabusinessnews.com/2012/11/23/post-single-spine-salary-structure-technical-committee-inaugurated/
MG1	Pharmacists call off partial strike	01/09/2015	GNA	https://www.ghanaweb.com/GhanaHomePage/health/Pharmacists-call-off-partial-strike-379170
MG2	Pharmacists pull plug on 2nd phase of strike	14/08/2015	Tv3network.com	https://www.ghanaweb.com/GhanaHomePage/health/Pharmacists-pull-plug-on-2nd-phase-of-strike-375039
MG3	GHOSPA suspends 'partial strike'	01/09/2015	3 News	https://3news.com/ghospa-suspends-partial-strike/
MG4	Public sector pharmacists call off strike	02/09/2015	Graphic Online	https://www.graphic.com.gh/news/general-news/public-sector-pharmacists-call-off-strike.html
MH1	Nurses call off strike	08/10/2015	StarfmOnline.com	https://www.ghanaweb.com/GhanaHomePage/health/Nurses-call-off-strike-386529
MH2	Mahama blames Health Ministry for nurses' strike	07/10/2015	StarfmOnline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Mahama-blames-Health-Ministry-for-nurses-strike-386267
MH3	Psychiatric nurses paid outstanding salary arrears	07/10/2015	Tv3network.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Psychiatric-nurses-paid-outstanding-salary-arrears-386151
MH4	Mental nurses abandon post«	04/10/2015	Guide	https://www.ghanaweb.com/GhanaHomePage/health/Mental-nurses-abandon-post-385598
MI1	MoH commends nurses for calling off strike	13/11/2016	classfmonline	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/MoH-commends-nurses-for-calling-off-strike-486309
MI2	Nurses to decide way forward today	11/11/2016	classfmonline	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Nurses-to-decide-way-forward-today-485714
MI3	Nurses and midwives give gov't ultimatum to address their concerns	01/11/2016	GNA	https://www.ghanaweb.com/GhanaHomePage/health/Nurses-and-midwives-give-gov-t-ultimatum-to-address-their-concerns-482588
MI4	Nurses threaten national strike	29/10/2016	Daily Guide Africa	https://www.ghanaweb.com/GhanaHomePage/health/Nurses-threaten-national-strike-481828
MI5	Nurses' strike affecting mental healthcare - Chief Psychiatrist	03/11/2016	Todaygh.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Nurses-strike-affecting-mental-healthcare-Chief-Psychiatrist-483283
MI6	Mahama's comment on Psychiatric Hospital misconstrued - Victor Bampoe	02/10/2016	Starrfmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Mahama-s-comment-on-Psychiatric-Hospital-misconstrued-Victor-Bampoe-483092
MI7	Psychiatric Hospital 'frees' patients over strike	01/10/2016	Starrfmonline.com	https://www.ghanaweb.com/GhanaHomePage/health/Psychiatric-Hospital-frees-patients-over-strike-482753
MI8	Psychiatric hospital risks shutdown	01/10/2016	Starrfmonline.com	https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Psychiatric-hospital-risks-shutdown-482647

J1	THE SINGLE SPINE PAY POLICY: CAN IGNORANCE DERAIL THE BENEFITS IT HAS ON THE GHANAIAAN PUBLIC SERVICE WORKER?	Apr-14	Seniwoliba JA	Seniwoliba JA. The Single Spine Pay Policy: Can Ignorance Derail the Benefits it Has on the Ghanaian Public Service Worker?. European Scientific Journal. 2014 Mar 1;10(8).
J2	The imperative of evidence-based health workforce planning and implementation: lessons from nurses and midwives unemployment crisis in Ghana	Dec-20	Asamani et al	Asamani JA, Amertil NP, Ismaila H, Akugri FA, Nabyonga-Orem J. The imperative of evidence-based health workforce planning and implementation: lessons from nurses and midwives unemployment crisis in Ghana. Human resources for health. 2020 Dec;18(1):1-6.
J3	When 'solutions of yesterday become problems of today': crisis-ridden decision making in a complex adaptive system (CAS)—the Additional Duty Hours Allowance in Ghana	Oct-12	Agyepong et al	Agyepong IA, Kodua A, Adjei S, Adam T. When 'solutions of yesterday become problems of today': crisis-ridden decision making in a complex adaptive system (CAS)—the Additional Duty Hours Allowance in Ghana. Health policy and planning. 2012 Oct 1;27(suppl_4):iv20-31.
J4	Health worker (internal customer) satisfaction and motivation in the public sector in Ghana	Oct-04	Agyepong et al	Agyepong IA, Anafi P, Asiamah E, Ansah EK, Ashon DA, Narh-Dometey C. Health worker (internal customer) satisfaction and motivation in the public sector in Ghana. The International journal of health planning and management. 2004 Oct;19(4):319-36.
J5	Association between health worker motivation and healthcare quality efforts in Ghana	Dec-13	Alhassan et al	Alhassan RK, Spieker N, van Ostenberg P, Ogink A, Nketiah-Amponsah E, de Wit TF. Association between health worker motivation and healthcare quality efforts in Ghana. Human resources for health. 2013 Dec;11(1):1-1.
J6	An evaluation of the effects of industrial unrest at the Korle-Bu Teaching Hospital (KBTH), Accra, Ghana	Aug-15	Awori and Tettey-Enyo	Awori SN, Tettey-Enyo A. An evaluation of the effects of industrial unrest at the Korle-Bu Teaching Hospital (KBTH), Accra, Ghana.
J7	Ethical Leadership, Job Satisfaction, and Organisational Commitment among Health Workers in Ghana: Evidence from Central Region Hospitals	Feb-22	Amoah et al	Amoah C, Jehu-Appiah J, Boateng EA. Ethical Leadership, Job Satisfaction, and Organisational Commitment among Health Workers in Ghana: Evidence from Central Region Hospitals. Journal of Human Resource and Sustainability Studies. 2022 Feb 24;10(1):123-41.
J8	Assessing the effects of industrial unrest on Ghana health service: A case study of nurses at Korle-Bu teaching hospital	Jan-11	Gerald DG	Gerald DG. Assessing the effects of industrial unrest on Ghana health service: A case study of nurses at Korle-Bu teaching hospital. International Journal of Nursing and Midwifery. 2011 Jan 31;3(1):1-5
J9	Ghana's numerous workers strikes; a cause for concern	Sep-13	Seniwoliba JA	Seniwoliba JA. Ghana's numerous workers strikes; a cause for concern.
J10	The impact of strike action by Ghana registered nurses and midwives on the access to and utilization of healthcare services	Oct-22	Ampofo et al	Ampofo PO, Tenkorang-Twum D, Adjorlolo S, Chandi MG, Wuni FK, Asiedu E, Kukula VA, Opoku S. The impact of strike action by Ghana registered nurses and midwives on the access to and utilization of healthcare services. Plos one. 2022 Oct 14;17(10):e0275661.

J11	Challenges of Single Spine Salary Structure in Ghana	Dec-17	Asare and Mpere	Asare BE, Mpere DL. Challenges of Single Spine Salary Structure in Ghana. The African Review: A Journal of African Politics, Development and International Affairs. 2017 Dec 1:203-23.
J12	Single spine, double spine or multiple spine: solving labour conflicts and making public sector jobs more rewarding in Ghana	Dec-14	Brako and Asah-Asante	Brako I, Asah-Asante K. Single spine, double spine or multiple spine: solving labour conflicts and making public sector jobs more rewarding in Ghana. Modern Africa: politics, history and society. 2014 Dec 30;2(2):117-40.
J13	IMPLEMENTATION OF SINGLE SPINE PAY POLICY IN PUBLIC SECTOR OF GHANA: ANALYSIS AND RECOMMENDATIONS FROM ORGANIZATIONAL DEVELOPMENT PERSPECTIVE	Dec-15	Oppong, Dickson and Asumeng	Oppong S, Dickson E, Asumeng M. Implementation of Single Spine Pay Policy in Public Sector of Ghana: Analysis and Recommendations from Organizational Development Perspective. Poslovna izvrsnost. 2015 Dec 20;9(2):83-99.
J14	The evolving partnership between the Government of Ghana and national faith-based health providers: leadership perspective and experiences from the Christian Health Association of Ghana	May-17	Yeboah and Buckle	Yeboah P, Buckle G. The evolving partnership between the Government of Ghana and national faith-based health providers: leadership perspective and experiences from the Christian Health Association of Ghana. Development in Practice. 2017 Jul 4;27(5):766-74.
J15	Towards universal health coverage: a mixed-method study mapping the development of the faith-based non-profit sector in the Ghanaian health system	Dec-18	Grieve and Olivier	Grieve A, Olivier J. Towards universal health coverage: a mixed-method study mapping the development of the faith-based non-profit sector in the Ghanaian health system. International Journal for Equity in Health. 2018 Dec;17(1):1-20.
J16	Models of engagement between the state and the faith sector in sub-Saharan Africa—a systematic review	Jul-17	Whyle and Olivier	Whyle E, Olivier J. Models of engagement between the state and the faith sector in sub-Saharan Africa—a systematic review. Development in Practice. 2017 Jul 4;27(5):684-97.
T1	THE IMPLEMENTATION OF THE SINGLE SPINE SALARY STRUCTURE (SSSS) IN GHANA	Jul-15	Larbe M	Larbi MD. The Implementation of the Single Spine Salary Structure (Ssss) in Ghana (Doctoral dissertation, University of Ghana).
T2	PUBLIC-PRIVATE PARTNERSHIP IN THE CONTEXT OF GHANA'S HEALTH SECTOR REFORM: A CASE STUDY OF PRIVATE NOT-FOR-PROFIT ORGANISATIONS IN THE VOLTA REGION OF GHANA	Dec-14	Adzei F	Adzei FA. Public-Private Partnership in the Context of Ghana's Health Sector Reform: A Case Study of Private Not-For-Profit Organisations in the Volta Region of Ghana (Doctoral dissertation, University of Ghana).
T3	THE LABOUR ACT 2003, ACT 651 AND ORGANIZED LABOUR STRIKES: CASE STUDY OF GHANA MEDICAL ASSOCIATION	Sep-12	Martinson C	Martinson C. The Labour Act 2003, Act 651 and Organized Labour Strikes: Case Study of Ghana Medical Association. Unpublished Masters' thesis. Kwame Nkrumah University of science and Technology: Kumasi. 2012
T4	STRIKE AS A TOOL FOR RESOLVING EMPLOYEE DISSATISFACTION A CASE STUDY OF KOMFO ANOKYE TEACHING HOSPITAL (KATH)	Jan-14	Addison M	

T5	Towards Universal Health Coverage: Mapping the Development of the Faith-Based Non-Profit Sector in the Ghanaian Health System	Sep-17	Grieve A	
T6	An organisational typology of public-private engagement for health in Southern Africa: A systematic review	Mar-15	Whyle E	
P1	Labour Act 651 Ghana			https://www.ilo.org/legacy/english/inwork/cb-policy-guide/ghanalabouract2003section109.pdf
P2	Constitution of Ghana			https://www.constituteproject.org/constitution/Ghana_1996.pdf
P3	Pharmacy Act 1994 (Act 489)			https://www.moh.gov.gh/wp-content/uploads/2016/02/Pharmacy-Act-1994-Act-489.pdf
P4	Memorandum of Understanding Ministry of Health and Christian Health Association of Ghana			
P5	Draft Conditions of service	Jun-15	Ministry of Health	
C1	Support for Doctors n CHAG-member facilities within the context of the ongoing doctors' strike action	Aug-15	Christian Health Association of Ghana	
C2	Withdrawal of OPD services by medical in government hospitals and clinics	Aug-15		

Appendix 10 Expanded table themes from embedded cases - engagement of CHAG and GoG during health worker strikes

	2013	2015	2016
Theme: Coordination at national level to continue service delivery	Sub-theme: Patients publicly redirected to CHAG facilities MA20, E7, S1, J14, J15, T2 <i>"Managers of health facilities must be in constant communication with quasi health institutions to ensure the delivery of seamless emergency care during the period"</i> Sub-theme: CHAG non-striking position ensures facilities remain open MA20, E7 <i>"the government is grateful to the Police, Military, Christian Health Association hospitals, all other health professionals and traditional medicine practitioners for the dedicated services they rendered during the strike action"</i>(MA20) (E7) Sub-theme: Continuation of services in public facilities E5, MA22, S3 <i>Doctors from Cuba- "government is bringing in more doctors from Cuba, as part of contingency measures to deal with the three-week-old strike by doctors"</i> (E5) <i>"Government is bringing in more doctors from Cuba, as part of contingency measures to deal with the three-week-old strike by doctors"</i>(MA22) <i>"Seeking to put emergency plans in place"</i> S3 Sub-theme: Traditional Healers MA20, MA22	Sub-theme: Patients publicly redirected to CHAG facilities MB44, MB18, MB70, MB71, J14, J15, T2, C1 <i>"Patients were referred to private hospitals and quasi-government institutions due to the GMA withdrawing emergency and OPD services during the strike."</i> <i>"Managers of health facilities must be in constant communication with quasi health institutions to ensure the delivery of seamless emergency care during the period"</i> <i>List of available hospitals released-</i> MB18,23, 28 <i>"Friends from the media, additionally, about 25 quasi health facilities, 178 hospitals/clinics of the Christian Health Association of Ghana (CHAG), private health care providers and retired doctors across the country are supporting in delivering healthcare"</i>- (MB70) (MB71) <i>"I take this opportunity to thank all members of the GMA and other health workers who have continued to work; the Christian Health Association of Ghana (CHAG)"</i> (MB70) Sub-theme: CHAG non-striking position ensures facilities remain open MB33, MB73, T2, C1 <i>"In line with our convention, inspired by Christian values, ethics and unique identity, we are obliged and restraint from embarking upon strike action to resolve matters of such nature. Their decision further contravenes the policy guidelines for house officer training as circulated by our office. Consequently, management finds the actions of the House Officers as a breach of these principles and thus undesirable in our system."</i> (MB33) Sub-theme: Challenges to CHAG non-striking position M33, C1 <i>"The Ghana Medical Association should take them (NCHS) on. I am not amused by the stance taken by the Catholic Church. The principle that they have adopted means they are adopting slave labor in Ghana".</i> (MB33) <i>"The catholic church was saying they give young doctors top-up: that's arbitrary, it doesn't have a symmetry, they can stop any time."</i> (MB33) Sub-theme: CHAG facilities difficulty managing patient load MB44, MB72, C1	Sub-theme: Patients publicly redirected to CHAG facilities MC1, MC31, J14(770), T2, P3 <i>"Accordingly, the general public could access pharmaceutical services in those facilities," the statement said in part.</i>" (MC31) (MC31) <i>"It also directed all service delivery Agencies (GHS, CHAG, Teaching Hospitals) to comply with some interim directives whilst they try to resolve the issues"</i> (MC31) (MC31)(43) Sub-theme: CHAG non-striking position ensures facilities remain open MC31, J14(770) <i>"We are also pleased to announce to the public that CHAG Facilities are fully operational in line with their non-strike tradition"</i> Minister of Health (MC31) Sub-theme: Challenges to CHAG non-striking position EMC16 <i>Workers at CHAG facilities asked to stand in solidarity</i> Sub-theme: Continuation of services in public facilities MC20, MC21 <i>Deploying other professionals: To open up space for pharmacist clerks to work, but appears contingency plans are not being followed</i> (MC20) (MC21)

	"And traditional medicine practitioners for the dedicated services they rendered during the strike action"	<i>"Conditions in private hospitals are challenging due to the overflow of patients."</i> (MB44) <i>"Already there was pressure on us before the Ghana Medical Association strike and currently the situation is getting worse day in day out" Peter Yeboah stated.</i>" (MB72) Sub-theme: Continuation of services in public facilities Quasi-government institutions MB49, MB18, MB70, MB71, MB74, MB46 "Police hospital for instance had to recall staff on leave, while tents have been erected to manage the numbers" (MB46) "At a district level we have asked medical assistants and retired medical doctors to offer a helping hand to patients" (MB49) "The Ministry of Health has not only presented assorted medical supplies but also posted additional nurses and midwives to the Police and 37 Military Hospitals to assist their colleagues to provide adequate and proper healthcare. Similar interventions are being rolled out in other health facilities" Doctors from Cuba: "Government is also retaining all the Cuban doctors who have completed their rotations and are programmed to leave for Cuba anytime soon." MB77, "Physicians and Medical Assistants are being deployed wherever possible under the supervision of Doctors who are ready and willing to work." (MB70) Sub-theme: Sharing of resources MB49, <i>"GHS had, in the meantime, linked up with the private sector doctors by giving them access to public health facilities and encouraging them to bear more of the load of public health needs in the capital."</i>	
Theme: Financial Protection	Sub-theme: NHIS card holders assured free service at NHIS facilities MA14, Sub-theme: Challenges with NHIS system MA24, MA25, MA26, MA27, MA28, MA29, MA30 <i>"Five labor groups have embarked on strikes this year, they are the Christian</i>	Sub-theme: NHIS card holders assured free service at NHIS facilities MB18, MB70, MB71, MB76 <i>"NHIS card holders are eligible for treatment in 1000 NHIS0credentialed private and faith-based healthcare facilities and community-based health planning services across the country."</i> Sub-theme: Challenges with NHIS system MB78, MC22, E54	Sub-theme: Challenges with NHIS system MC27 NHIS tariffs to increase by 27% Patients turning to traditional healers MC19 <i>Extend NHIS to cover herbal medicines - Monic Star Center CEO (E39) (MC24)</i>

	<i>Health Association, who suspended services to NHIS cardholders" (MA24)</i> <i>"CHAG announced medical facilities will not continue to provide services to NHIS cardholders effective Monday, March 2013. The association said that the NHIA owed its members GH50million as of January 31 2013" (MA25)</i>	<i>Threaten to take NHI to court: "we would not stop agitating for our institutions to be paid for the services rendered to patients who have paid their premiums and taxes expected to fund their care". Rev. Afrifa-Agyekum (MB78)</i> Private hospital denies patients with NHIS cards during strike due to debt owed to them (E54) Sub-theme: Affordability of services in CHAG facilities MC18 <i>Expense of services at CHAG facilities (MC18)</i>	
Theme: Advocacy	Sub-theme: CHAG acting as mediator MA14 <i>"Concerned Clergy Association of Ghana, CCG, is appealing to the leadership of the Ghana Medical Association, to reconsider their intended industrial action slated for the 11th of February 2013</i>	Sub-theme: CHAG acting as mediator MB72, C1 <i>"We are all appealing to the government and the GMA to settle the issue amicably because the up and down is delaying and it is not healthy for our country currently" CHAG director stressed."</i>	

Appendix 11 CHA-State PPE Model (Source Whyte and Olivier (2017))

Table 2. The common CHA–State PPE found in SSA – lying across PPP and contracting out models.

	PPP	Contracting-out
Management and decision-making	Shared-decision making	Transfer of decision-making responsibility
Degree of collaboration	Close collaboration, large degree of negotiation and trust	Hierarchical relationship – public sector “buys” services
Knowledge transfer	High levels of knowledge transfer	No knowledge transfer due to low levels of collaboration
Risk-sharing	Always has a risk-sharing component	Can involve risk-sharing but does not necessarily do so.
Resource sharing	Sharing of financial, infrastructural, and/or human resources	Limited resource sharing aside from transfer of funds
Payment mechanisms	Always includes some form of performance-based payment	Private partner paid directly by public authority, not necessarily performance-based
Payment schedule	Private party bears all initial costs and is paid in instalments, moving payments “off-budget”	Various: no shifting of costs “off-budget”
Service-mix/bundling	Mixed/bundled services contracted out to a single private partner, streamlining incentives and increasing efficiency	No bundling, each contract involves the provision of a single set of services
Length of contract	Long-term contract	Generally shorter-term contract

Appendix 12 Ethics Clearance



UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Human Research Ethics Committee



Room 45 E-52-E-Floor- Old Main Building
Groote Schuur Hospital
Observatory 7925
Telephone [021] 406 6492
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Website: www.health.uct.ac.za/home/human-research-ethics

24 October 2022

HREC REF: 647/2022

Dr J Olivier

Division of Public Health & Family Medicine
Falmouth Building-FHS
Email: Jill.Olivier@uct.ac.za
Student: Bbnbet001@myuct.ac.za

Dear Dr Olivier

PROJECT TITLE: PUBLIC-PRIVATE ENGAGEMENT DURING HEALTH WORKER STRIKES IN GHANA: CASE-STUDY OF THE CHAG-STATE INTERACTION- SUB-STUDY 190/2015
MASTERS CANDIDATE-MS BETTINA BUABENG-BAIDOO-

Thank you for submitting your study to the Faculty of Health Sciences Human Research Ethics Committee (HREC) for review.

It is a pleasure to inform you that the HREC has **formally approved** the above-mentioned study.

Approval is granted for one year until the 30 October 2023.

Please submit a progress form, using the standardised Annual Report Form (FHS016) if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period.

(Forms can be found on our website: www.health.uct.ac.za/fhs/research/humanethics/forms)

The HREC acknowledge that the student: Ms Bettina Buabeng-Baidoo will also be involved in this study.

Please quote the HREC REF 647/2022 in all your correspondence.

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Please note that for all studies approved by the HREC, the principal investigator **must** obtain appropriate institutional approval, where necessary, before the research may occur.

Yours sincerely

PROFESSOR M BLOCKMAN
CHAIRPERSON, FACULTY OF HEALTH SCIENCES HUMAN RESEARCH ETHICS COMMITTEE
Federal Wide Assurance Number: FWA00001637. Institutional Review Board (IRB) number:
IRB00001938 NHREC-registration number: REC-210208-007

HREC/ref 647.2022

This serves to confirm that the University of Cape Town Human Research Ethics Committee complies to the Ethics Standards for Clinical Research with a new drug in patients, based on the Medical Research Council (MRC-SA), Food and Drug Administration (FDA-USA), International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use: Good Clinical Practice (ICH GCP), South African Good Clinical Practice Guidelines (DoH 2020), based on the Association of the British Pharmaceutical Industry Guidelines (ABPI), and Declaration of Helsinki (2013) guidelines. The Human Research Ethics Committee granting this approval is in compliance with the ICH Harmonised Tripartite Guidelines E6: Note for Guidance on Good Clinical Practice (CPMP/ICH/135/95) and FDA Code Federal Regulation Part 50, 56 and 312.

Appendix 13: Journal Style Guide

Aims and scope

International Journal for Equity in Health presents evidence relevant to the search for, and attainment of, equity in health across and within countries. International Journal for Equity in Health publishes research which improves the understanding of issues that influence the distribution of health and healthcare within populations. This includes the discussion of political, policy-related, economic, social and health systems- and services-related influences, particularly with regard to identifying and understanding the systematic differences or the lived experiences of one or more aspects of health in population groups defined demographically, geographically, or socially.

Although there is a large amount of literature on the 'social determinants' of health, the journal focuses heavily on understanding what influences at the level of the individual, and, what influences at the community level. The literature is relatively sparse on studies that look at what influences the policy and political arenas, and is especially deficient in analyses that examine the population-attributable fraction of ill health resulting from social, behavioral, medical, or biological factors, and the interrelated contributions of these spheres of influence. Such information and the insight derived from it is required by policy-makers in order to make informed choices and evidence-based decisions, and this is the focus of International Journal for Equity in Health.

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Please note that your manuscript must include a 'Declarations' section including all of the subheadings (please see below for more information).

Title page

The title page should:

- present a title that includes, if appropriate, the study design e.g.:
 - "A versus B in the treatment of C: a randomized controlled trial", "X is a risk factor for Y: a case control study", "What is the impact of factor X on subject Y: A systematic review"
 - or for non-clinical or non-research studies a description of what the article reports
- list the full names and institutional addresses for all authors
 - if a collaboration group should be listed as an author, please list the Group name as an author. If you would like the names of the individual members of the Group to be

searchable through their individual PubMed records, please include this information in the “Acknowledgements” section in accordance with the instructions below

- indicate the corresponding author

Abstract

The Abstract should not exceed 350 words. Please minimize the use of abbreviations and do not cite references in the abstract. Reports of randomized controlled trials should follow the [CONSORT](#) extension for abstracts. The abstract must include the following separate sections:

- **Background:** the context and purpose of the study
- **Methods:** how the study was performed and statistical tests used
- **Results:** the main findings
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- **Trial registration:** If your article reports the results of a health care intervention on human participants, it must be registered in an appropriate registry and the registration number and date of registration should be stated in this section. If it was not registered prospectively (before enrollment of the first participant), you should include the words 'retrospectively registered'. See our [editorial policies](#) for more information on trial registration

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Three to ten keywords representing the main content of the article.

Background

The Background section should explain the background to the study, its aims, a summary of the existing literature and why this study was necessary or its contribution to the field.

Methods

The methods section should include:

- the aim, design and setting of the study
- the characteristics of participants or description of materials
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- the type of statistical analysis used, including a power calculation if appropriate

Results

This should include the findings of the study including, if appropriate, results of statistical analysis which must be included either in the text or as tables and figures.

Discussion

This section should discuss the implications of the findings in context of existing research and highlight limitations of the study.

Conclusions

This should state clearly the main conclusions and provide an explanation of the importance and relevance of the study reported.

List of abbreviations

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