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Ethical Problems in Planning for and Responses to Pandemic Influenza in Ghana and Malawi

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Ethical problems are addressed in various ways within countries in planning for and response to pandemic influenza. Here we report on a qualitative study, in which 46 policymakers in Malawi and Ghana were interviewed on how they identified and resolved ethical problems. The study results revealed that ethical problems involving conflicts of values and choices were raised in reference to the extent and role of resources (inequities) and nature of public health interventions (intrusive measures), including the extent and processes of decision making, reasoning, and justification. There is a need for an ethical framework within pandemic preparedness plans to resolve and avert these problems.

Keywords: ethical framework, ethical problems, influenza, pandemic planning and responses

INTRODUCTION

Following the unprecedented outbreak of Highly Pathogenic Avian Influenza caused by the H5N1 virus, the World Health Organization (WHO) instigated a movement for preparedness in 2005, requesting that all countries develop pandemic management protocols. This led to the establishment of pandemic plans intended to reduce the intensity and impact of future pandemic influenza (Oshitani, Kamigaki, & Suzuki, 2008). In this context, in accordance with International Health Regulations, Ghana and Malawi developed their first influenza implementation plans in 2005 and 2006, respectively (Government of Malawi, 2006; Republic of Ghana, 2006). The 2009 pandemic influenza, although categorized as mild compared to previous pandemic influenza outbreaks, was a severe disease largely affecting children, pregnant women, and people with underlying chronic illnesses (Skarbinski et al., 2011). The effects of pandemic influenza upon levels of mortality are devastating, as gathered from the three major influenza pandemics of the 20th century—those of 1918, 1957, and 1968 (Potter, 1998). The 2009 pandemic influenza was the first in the 21st century (Moghadas, Pizzi, Wu, Tamblyn, & Fisman, 2011) to test the effectiveness and strength of these preparedness plans.

In severe outbreaks of pandemic influenza, there is growing recognition that least resourced countries, particularly in Southeast Asia and Africa, will be most affected by the disease. Simonsen

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et al. (2013) estimated that half of the global deaths due to pandemic influenza will occur in least resourced countries, where inadequate public health infrastructure, poor sanitation, and poor living conditions will affect prevention and management. During pandemic influenza, policymakers are faced with major planning decision making such as rationing of antivirals, resource allocation, and governance issues (Torda, 2006). Depending on the range of public health interventions to be implemented, there is a range of ethical problems. Many of these will arise as a result of a surge in demand for care, increased demand for resources, and at times tough controversial public health measures, including those that might diminish patient privacy or population movement. For the purpose of this study, ethical problems are defined as situations involving conflict when choosing between equally desirable or undesirable alternatives, and challenges associated with balancing these options (Braunack-Mayer, 2001). Ethical problems involve conflicts of values and choices in situations where, on moral grounds, a person ought to choose either x or y (Christie & Hoffmaster, 1986).

Despite limited bioethics literature around what constitutes an ethical problem (Braunack-Mayer, 2001), studies of pandemic influenza have associated ethical problems with the scarcity and inadequacy of the technical and human resources necessary to respond to infection (Torda, 2006). For example, ethical problems arise if medical professionals fail to treat sick people and decide not to work at the bedside for fear of contracting the disease, or because they feel obliged to stay at home and look after their families, or because of the lack of transport to ferry patients or health workers to locations such as main hospitals (Alexander & Wynia, 2003; Qureshi et al., 2005). Ethical problems emerge also as a result of irrational decision making based on personal emotions and failure to balance individual freedoms against the common good or need to contain infection (Singer et al., 2003).

Most discussions of ethical problems in pandemic influenza draw on studies in high-income countries. A few studies have examined the ethical problems of pandemic influenza in least resourced countries (Katz et al., 2012; Mihigo et al., 2012), although not in the settings of Ghana or Malawi, on which we focus here. Both countries are severely affected by limited capacities in influenza surveillance and disease control strategies, areas most likely to evoke ethical problems. Yet ethical concerns associated with the planning, preparedness, and responses to influenza pandemic remain undocumented, precluding any understanding of the empirical realities in poor resource settings. As least resourced countries, Ghana and Malawi provide a significant test case for assessing (a) how severely limited budgets constrain pandemic preparation and response and (b) the ethical issues that arise from such efforts.

Addressing ethical problems in health requires policymakers to understand how ethical problems emerge, are perceived, and are conceptualized; these need to be considered on the basis of empirical evidence and normative accounts (Callahan & Jennings, 2002; Hoffmaster, 1994). This is important given that ethical problems are contextual and vary across settings, cultures, values, and moral judgments. Thus, a deeper understanding of the types and variety of ethical problems can assist authorities in health policy, ethics, and decision making. More important, evaluating evidence based on empirical accounts necessitates, validates, and clarifies normative ethical accounts, which are often deeply rooted in the way that ethical problems are interpreted and justified by policymakers.

Our study highlights some of the ethical problems that Ghana and Malawi experienced when translating their influenza plans into response actions during the 2009 pandemic and postpandemic period. We present findings from a qualitative study using in-depth interviews conducted

with policymakers involved in the planning for and response to pandemic influenza (PRPI). The aim was to broaden our understanding of policymaker's conceptions of moral or ethical problems they encountered in PRPI and how such problems constituted ethical problems. Through this process of ethical identification and justification, such concerns inform the best means of resolving problems. We conclude that an ethical framework within pandemic preparedness plans is needed to resolve and avert ethical problems encountered.

METHODS

Study Setting

The research on which this article is based was conducted in Ghana and Malawi. Both countries were identified from the first African Regional Conference on Pandemic Influenza A (H1N1) in 2009, held in Johannesburg, South Africa, in which the first author took part. The countries were chosen in order to highlight and provide a multidimensional picture of ethical problems common to low- and middle-income countries. In these settings, limited resources and economic difficulties lead to complex ethical questions about the allocation of scarce resources to respond to pandemics, especially in the presence of major endemic health commitments such as maternal and child health, AIDS, malaria, and tuberculosis. Ghana and Malawi were the focus for several reasons: economic status, health systems, geographical location, influenza surveillance systems, and the availability of a national pandemic preparedness plan. Ghana is a lower middle-income economy with a gross national product (GDP) of US$1,800 per capita in 2013 and continues year after year to spend less than the WHO's proposed average of 5% of GDP on health (Savedoff, 2005). Malawi is a low-income country with a GDP of around US$340 per capita in 2013 (World Bank, 2016) and is among the poorest nations in the world, with limited health expenditure. Although both countries have health systems based around primary health care, Ghana's system is better established than Malawi's, with a national influenza research unit and laboratory and with better hospitals and trained professionals. Ghana and Malawi were among the first countries in Africa to develop pandemic plans, but the countries belong to different geographical regions—Ghana in West Africa and Malawi in southern Africa—providing further comparison. The final choice of countries was made on practical and theoretical grounds, relating to research costs, travel, and convenience. Ghana and Malawi were feasible and practical for the collection of data, as both are English-speaking countries, enabling the study to be conducted without the need of a translator, and both are politically stable and safe.

Study Design

Using a qualitative research methodology, in-depth interviews were conducted with policymakers. This approach was appropriate because it provided a way of uncovering and understanding policymakers' views and experiences of PRPI and generally enabling valuable insights into ethical accounts of pandemic influenza. The choice of qualitative research to study the ethics of PRPI, apart from its ability to engage both the researcher and respondents, was informed by the type of questions that this research posed, for example, "Please tell me *what* ethical problem(s) you had encountered at the level of planning for, or response to, 2009 pandemic influenza?" This was then

followed by other questions or prompts to understand the problem(s) that respondents described as ethical problems. For example, the specific question was, "Please explain to me *how* the problem you describe constituted an ethical problem(s) in your work?" Finally, policymakers were asked, "Please tell me *how* you resolved the ethical problem you described?" According to Hammersley (1992), data can be collected only using methods that engage a somewhat close and relatively prolonged interaction with respondents, in relation to their everyday work or experiences, to better understand important issues in-depth. The style of interrogation—"what and how"—appeal for meaning and experiences, in contrast to "why" questions that look for a comparison used in quantitative studies for the interpretation of numbers (Blaikie, 2008).

Participants and Sampling

Respondents involved in the pandemic planning and response process were chosen for interviews. The selection of respondents involved criteria of weighing actors' responsibilities and involvement in the pandemic planning and response process. They included a range of occupations such as politicians, environmental health officers, medical and nurse directors, veterinary officers, executive directors, scientists, researchers, and managers. The respondents were identified from a pool of heterogeneous actors in governments, civil society, and nongovernmental organizations, who could comment and express their opinions on what they considered to be ethical problems in the PRPI. All policymakers recruited in this study were individuals in positions of power to influence or determine policies. We believe the chosen respondents were not a biased group, but because of their role and responsibility for ethical considerations and ethical decisions to which they were entrusted and expected to execute in their line of work, they were ideally placed to provide thoughtful responses to questions. In addition, we sampled policymakers in Ghana and Malawi because the power relationships within the policy systems in these countries are similar, with policymaking observed at two levels, macro (government) and micro (independent). The former constituted government policymakers and the latter, independent policymakers representing funders, nongovernmental organizations and government agencies, such as the WHO. Although government policymakers are mandated to set policies on pandemic influenza, they are assisted by independent policymakers from the WHO and other agencies who, although they operate within their legal authority, typically influence PRPI policies. Due to the difficulty in identifying respondents involved in PRPI, a snowballing sampling method was used. Robson and McCartan (2016) recommended snowballing sampling for recruitment when there are potential difficulties in identifying respondents. Seventy participants were identified for interviews in Ghana and Malawi. The selection criterion was policymaker's involvement in PRPI. Based on this criterion, 15 were subsequently excluded because they were not involved in the PRPI. Five policymakers declined to participate, and they did not give a reason. Four participants were not interviewed due to data saturation. In the end, 46 participants were interviewed ($N = 22$ Malawi and $N = 24$ Ghana). All participants were contacted with an official letter, information sheet, and consent form, either by e-mail or fax.

Interview Process and Documents

In-depth interviews were conducted between January 2012 and January 2013 and were used to collect data complemented by the review of the pandemic preparedness plans for Ghana and Malawi.

The 2009 pandemic was declared in mid-June 2009, and by April 2011 Ghana and Malawi were vaccinating their population with pandemic vaccines. As a result, conducting interviews was delayed in order to capture ethical problems associated with the vaccine implementation. The interviews provided a level of flexibility that allowed respondents the freedom to critique, comment, explain, and share their experiences, opinions, and attitudes as they wished. The interview guide constituted the following questions: (a) What ethical problems did you encounter in the PRPI? (b) How did you perceive or conceptualize the ethical problems? (c) How did you resolve these ethical problems? The same interview guide was used for Ghana and Malawi in order to find variations between the two countries. All interviews were audio-recorded. Interview duration varied, but the minimum time of the interview was around 48 min and the maximum time was approximately 145 min ($M = 72$ min). The majority of the interviews were held at the interviewee's convenience, usually during lunch hour or after work. All interviewees completed the profile form with their personal data and the role they played in PRPI. All identifying features in the profile form and interview transcript, which might potentially identify participants, were removed before archiving the material. Written consent was obtained from all participants. This study was approved by the ethical committees at University of Nottingham Medical School, United Kingdom, and Ministry of Health in Ghana and Malawi.

Analysis

The data were analyzed using thematic analysis, allowing comparisons of themes within the data to create a summary of participants' views and experiences. This involved coding participants' interviews for ethical problems identified, how such problems were conceptualized and resolved. The analysis drew on a broad definition of an ethical problem to capture emerging themes. Data analysis was ongoing from the first interview, with the first author listening and relistening to the audio recordings, connecting each respondent's comments in order to create superficial themes. This process was repeated by the second author independently, after which both authors agreed that the data reflected the study settings and theoretical themes. All transcribed interviews were exported to NVivo 8 to facilitate the coding and retrieval process. During coding, text was examined closely, line by line, prior to generating codes and analytic themes while reflecting on the definition of an ethical problem (Braunack-Mayer, 2001) and the theory of moral development by Rest (1986) on how to recognize and resolve ethical problems. Generating themes involved three stages: The first stage was open coding, where some features of the data that appeared interesting were identified, labeled, and defined. Initial themes that matched up with data extracts were collated together by labeling and assigning a selection of unique identifiers of text within each data item. For example, policymakers' "failure to act appropriately" or "inaction" was coded as ethical problems appended to conflict in ethical responsibilities and choices to act. The second phase proceeded by reviewing and refining themes in which the connections between concepts such as ethical, legal and technical problems were explored to help build themes and interrelationships. Here, we considered whether potential themes and subthemes formed a coherent pattern, and if not, whether this was problematic. For example, themes that matched the legal or technical problems such as the "lack of funding" to support PRPI activities but did not fit the definition of an ethical problem were redefined or discarded. The third phase involved searching for reemerging themes using respondent suggestions of an ethical problem they described and how they resolved this. For example reemerging themes included issues of integrity for not planning for health workers' absences during the pandemic outbreak; issues around the lack of solidarity and support among high-income countries to low middle countries, especially

when countries actively share virological data for production of vaccines used by the West; and concealing information on the pandemic influenza problem from the public. Throughout the process, emerging themes were subjected to an iterative process, involving constant dialectical movement, until meaning of the patterns in the data was reached. This was useful for giving structure to the extracted data and interpretation for the final analysis. Coded themes and interpretation of data were checked by independent coders to substantiate credibility of the analysis. Further data validation was completed by two respondents who had taken part in the study, consistent with Lincoln and Guba's (1985) recommendation of "member checks."

RESULTS

Of the 50 participants who agreed to be participate, 46 were interviewed in Ghana ($N = 24$) and Malawi ($N = 22$), representing a 90% response rate. Four participants were not interviewed due to data saturation. The broad categories of analysis were events and experiences that policymakers encountered and considered as ethically problematic during the PRPI. Ethical problems were understood as problems involving conflict of choices and values in PRPI, mainly relating to own morals and professional conduct. Building on the themes generated during analysis, policymakers identified ethical problems in relation to three key areas: the extent and process of decision making, reasoning, and justification; the extent and role of resources in PRPI; and the nature and impact of public health interventions. The ways in which these problems manifested were embodied particularly in the way national influenza policies were formulated and implemented. For example, ethical problems arose from PRPI themes such as planning and coordination; influenza surveillance; situation monitoring and assessment; prevention and containment; health system response; and information, education, and communications. These PRPI activities and implementation are documented elsewhere (Sambala, 2014) and are not fully discussed here. However, policymakers described PRPI as "frustrating" and "lacking clarity." Most respondents in Ghana and Malawi suggested that the implementation of pandemic preparedness and responses was "clumsy" and "incomplete." Most policymakers claimed that the elicited actions to address the 2009 H1N1 pandemic not only failed to evoke responses mirrored in the national preparedness plans but also evoked ethical problems. Policymakers identified 56 ethical problems (Table 1).

Each policymaker described one or two problems, with many reflecting genuine ethical problems. Others were technical or legal problems, but policymakers justified their inclusion as ethical because of the conflict and moral dimension to the problems. The themes are structured into four narrative sections followed by corresponding subsections representing the key areas of ethical problems in PRPI. The main extracts from the interview are summarized thematically in the text, but we provide additional quotes in Table 2.

Decision Making, Reasoning, and Judgement

Policymakers expressed ethical problems arising from the competitive choices they had to make of one set of actions (e.g., forcing people to be vaccinated) against alternative actions (e.g., voluntary vaccination). In other instances, ethical problems were expressed when policymakers undertook actions without necessarily considering the potential moral implications of such actions in a manner consistent with ethical principles. Policymakers had to make decisions that sometimes went against

TABLE 1
Ethical Problems Mentioned by the Respondents

1. Failure to act
2. Unfair distribution of resources
3. Lack of transparency
4. Lack of clarity of the flu plans
5. Failure in updating the flu plans
6. Failure by the state to invest in planning and responses
7. WHO poor timing of pandemic redefinition
8. WHO poor release of the pandemic phases
9. Acting inappropriately
10. Poor allocation of resources
11. Lack of consultation on influenza
12. The use of untrained professionals to mitigate and prevent influenza
13. Failure to respond to the pandemic activity on time
14. Lack of a public health infrastructure for monitoring and surveying flu
15. Presence of scientific uncertainty on influenza disease
16. Policymaker lack of competence around planning and responses
17. Inaction
18. Poor funding of the health services
19. Political influence on policymaker's role taking
20. Concerns for professional integrity and reputation
21. Inequities in the provision and access to health services
22. Lack of communication to inform the public on threats of influenza
23. Use of force to quarantine or isolate suspected patients
24. Failure to reason or justify course of actions
25. Adopting regulatory roles due to political pressures
26. Lack of knowledge in epidemiology of influenza
27. Superordinate influence on flu policies
28. Violation of professional conduct
29. Lack of public engagement
30. Lack of connection between seasonal and pandemic influenza
31. Conflicts between individual and public health interests
32. Making mistakes or deliberate errors
33. Prioritisation of limited resources
34. Lack or controversial partnerships
35. Professional and personal conflicts
36. Late acquisitions of vaccines
37. Misunderstanding of herd immunity
38. Misreading epidemiological data
39. Difficulties in moral analysis
40. Intrusive public health measures violating human rights
41. Sensationalist reporting of the media or telling lies
42. Poor or lack of coordination between local or international partners
43. Forcing people to receive vaccines
44. Vaccinating late in postpandemic period when flu had abated
45. Neglecting evidence and values in influenza practice
46. Lack of advance planning for pandemic
47. Misguided advice to persuade people to comply with interventions
48. Disproportionate and unnecessary public health measures
49. Deception and concealing of information on influenza
50. Poor formation and functioning of advisory committees
51. Limited understanding of influenza knowledge
52. Failure in the role of solidarity and reciprocity
53. Conflicts within pandemic leadership
54. Lack of team diversity of expertise working on influenza
55. Political pressures placed upon policymaking
56. Dependent on donor aid/funding

Note. WHO = World Health Organization.

predominant opinions on morality, culture, and society. For example, one policymaker at the local level in Malawi cited the use of untrained influenza surveillance assistants to monitor and capture surveillance data essential for diagnosis, treatment, and prevention of influenza. The policymaker was aware that the use of untrained staff had foreseeable consequences relating to the trust and application of surveillance and monitoring data. However, the policymaker felt that the use of untrained assistants was necessary to resolve staffing problems, compared to inaction, that is, not doing anything about the situation. To some extent, some policymakers felt it was an ethical problem if those tasked to act did nothing (inaction) in response to a problem. A ministerial policymaker in

TABLE 2
Selected Data Extracted From the Interviews in Ghana and Malawi

Ethical Issues Relating to:	Quotes From Malawi	Quotes From Ghana
Authorities' failure to act or act inappropriately	"We need to prioritise the best strategies and a combination of interventions to tackle flu, most of which are not proven in our local context. Without thinking around these issues in-depths about what works, is right or wrong, often we will just implement interventions like vaccination, quarantine and closure of borders whose effects maybe unknown. This may not be right thing to do but we will do it anyway or risks to lose our jobs." #19	"Sometimes choices are not ethical choices at all. Instead of choosing voluntary quarantine as an alternative intervention, we imposed mandatory measures, restricting people's movements and freedoms." #30 "I believe we could have done more to plan for a pandemic influenza but failed to do so because there were no resources to work with." #45
Making mistakes and inaction	"Pandemic decisions or what intervention to prioritise are marked by controversies. There are no easy choices here. In my own experience, devoting resources heavily [for example] in planning for unforeseeable pandemic influenza in the presence of other urgent public health needs like HIV/AIDS, tuberculosis and Malaria are controversial. In these kind of situations, you don't want to be part of any of these decisions whose negative consequences can jeopardise self- interests and professional reputation." #42	"Some decisions such as sending suspected students back in society was an uncalculated move by the top brass in the health service driven by scare, fear and absence of scientific evidence. The hard facts were often overlooked. For example, decision-makers had no idea about the source of the outbreak or its transmissibility pattern. . . . The severity of flu we experienced surely shouldn't have warranted closures as this threat was very mild compared to loss of the education for the students." #15
	"Of course some policymaker's actions neglect the values and judgment when confronted by limited and competitive resources." #09.	"Most ethical problems that I experienced came about as a result of our inability to foresee different scenarios that arise . . . and identify the available options." #13
	"Well, simply following international recommendations to respond either to individual or public health without validating what those actions mean particularly in the local context or interest of local people pose grave public health risks." #24	"The hard facts were often overlooked. For example, decision-makers had no idea about the source of the outbreak or its transmissibility pattern. I strongly feel as though most of the actions undertaken were guess work and such undertaking can be costly." #36
Adoption of regulatory roles, lack of transparency, and consultation	"In the planning and response to a pandemic flu, there are demands for reasoning and judgement informed by the preferences of affected parties and society as a whole. Personally, I know I relied very much on adopting legislation and other WHO policies. You see, this is ethical problem because I did not locate the ethical principles within my work. I am required to act based on reasoning and not necessary what the WHO proposes in the interim." #09	"Who decides? There are many instances where I am made to feel I make decisions but definitely I don't. Politicians or higher authorities indirectly make decision on my behalf. I am told what to do and I just push decisions out there. There are no consultation whatsoever and transparency does not exit. Through investigation of different choices, guided by the true nature of the situation about what others think, can contribute to better ethical choices." #01.

Unfair distribution, poor funding in the health service and abandoning of interventions	"Government funding of the health service is insufficient and the challenges are met by poorly set targets on resource prioritization within the health sector. For example, some activities that we had planned for a pandemic influenza such as testing samples from suspected cases were implemented immediately but subsequently abandoned during the high peak of influenza activity. These are clearly actions that never avoided harm. Such actions are unprofessional and unethical." #16 "Our government only initiated the release of funds for response only at the event stage of the pandemic. They should have released money for planning at the pre-event stage if such money was to maximize health benefits." #11	"Distribution of government resources tends to follow the pattern of burden disease. The higher the deaths from HIV/AIDS means more funding to HIV/AIDS. What about a single death due to influenza? How do you justify such death? Should death be weighted? I ask these questions because we don't have better practices that engage other methods of calculating what should be done to balance goals and resources while considering the needs of everyone. I don't think triage model or giving value to disease burden is useful when it comes to rationing resources especially if allocating resources to those in greatest need is done without considering various rational knowable components of wellbeing, for example, medical and social utilities. This is ethically problematic." #37
Prioritization, allocation, inequities, and justice	"During pandemic vaccination certain group of people particularly children, pregnant mothers and health care workers were valued more than others by giving them vaccines. The reasons being that children and pregnant mothers were vulnerable to the disease and by vaccinating them would reduce morbidity and mortality while vaccinating health workers would protect the essential health infrastructure during the pandemic. How about giving priority to the most productive age group who will equally look after the sick patients in their own homes. With this same justification would be regarded unjust?" You see, the government initially was hesitant to fund pandemic activities due limited healthcare resources but I suspect they wanted to save the money by neglecting the future benefits of planning." #21	"Like I said we prioritised the police, health care workers, pregnant women and children. This is what the WHO had recommended. The problem is sometimes the WHO recommendations although popular and evidence based in determining resource allocation maybe discriminatory and unfair to other affected." #05 "In many cases, allocation of money to interventions and programs is not based on assessment of needs … it is based on obeying the rules and applying them without individual thought sometimes ignoring societal and cultural values. This can run into ethical issues if such interventions do not bring about impact but save money." #7

(*Continued*)

TABLE 2 (*Continued*)

Reporting of the media, vaccination, and human rights	The news media presented ethical problems when they aired wrong information to demerit the priority goals set in the vaccination programme. The consequences of this is that people could no longer make informed decisions or make decisions that they would otherwise not have made." #06 "The target groups were forced to be vaccinated against their will. People have rights and we needed to respect this." #06 "Vaccination programme was not rolled on time to maximize the clinical benefits of vaccines. In fact, the time people started receiving vaccines, the pandemic had abated. I know people argued that the vaccines where useless due to the changing nature of the virus. Most importantly, imagine if these vaccines given had negative effects than benefits, this will drag the public into the contentious." #01	"The problem I found with the media is that they rarely consulted expert opinion or clarification regarding pandemic influenza yet such informed stories on pandemic influenza from experts are vital and it is the responsibility of the media to ensure public trust and transparency are maintained in all their undertakings. This is not about having cunning stories in order sale the paper, sometimes it about just doing the right thing." #29 "The WHO had an ethical obligation to maximise benefits and minimise harm. However, this was not fulfilled due to the failure to make available vaccines to vulnerable and clinical risk groups on time. The vaccines arrived late and this made my work difficult knowing people needed the vaccines in order to be protected." #22 "Some media reports were clearly suggestive that vaccines were more harmful and unsafe than the disease itself. . . . Funny that they couldn't even provide readers evidence about their bold claims." #20
Use of force/Intrusive public health measures	"Under certain circumstances it is acceptable that public health risks downplay individual rights or concerns if such threats are of public interest. Restricting people's movement in absence of epidemiological data is hard to justify and this raise ethical problems."#32.	"Some actions such as sending suspected students back in society were an uncalculated move driven by scare, fear and absence of scientific evidence. This causes a bit of tension because such actions may be deceiving." #04.
Partnerships, coordination, committee	"The national pandemic plan was not supported fully at the national level with weaker government ties between partners, especially those at the local level. Here, there are issues of solidarity and little attention was paid this." #14. "I think the committee was hastily instituted without bringing on board managers who know more, not only in ethics, but strategic management too. I can tell you this group has brought about renewed concerns for confidence and right decision-making." #27. "A diverse working group comprising epidemiologists, bioethicist, public health, medical practitioners, community leaders, members of the public and all concerned parties in government or NGOs is a good beginning for an efficient and effective planning system otherwise there are issues of justice and inequity." #03.	The government failed to extend partnerships and the coordination of national response efforts at district level. There are ethical issues relating to relationship with colleagues and partners." #17. "It is critically important to realize that most active partners such as the WHO and USAID are only concerned with mainstream issues at the national level. Honestly, we feel stuck by limiting our efforts and intended goals only at the national level yet we know that strategic direction is to target people likely to be affected heavily with flu. These people are located at the grassroots level." #10. "The role and responsibilities of the WG [working groups] were to provide leadership for the early detection of ethical issues and the rapid containment of influenza, but I suppose most members had little knowledge of epidemiology and ethics. This can slow us down towards progress." #08.

Note. Quotations are unedited and represent original wording and spelling. WHO = World Health Organization.

Ghana expressed that some inactions, although they may not have negative results, constituted deception and concealment and were likely to damage own integrity and professional conduct. Failure to act and acting inappropriately, as identified by policymakers, were obstacles that clouded policymaker's own judgment, conduct and professionalism.

When asked how they understood and interpreted the ethical problems they encountered, policymakers frequently invoked moral language and concepts tied to personal values, professional obligations, PRPI activities, and implementation. Sometimes there was overlap between personal conflicts of self (policymaker) and significant others (superordinate individuals, society, science), and in these instances it was difficult to balance decisions. Ethical problems due to professional conflicts emerged when a policymaker's role taking was influenced by superordinates' interests, when they were seemingly inclined to promote their superiors' interests against their own personal values. The majority of policymakers knew what was best in terms of professional conduct but at times failed to act accordingly due to external barriers including influence from superiors and conflicting obligations.

Some decisions that policymakers undertook lacked evidence and justification that would have supported their actions as ethical. For example, isolating and quarantining suspected influenza cases, in the absence of laboratory testing to confirm the disease, raised ethical problems around people being detained without valid reasons. A representative from WHO in Ghana reiterated the need for the careful exploration of the ethical problems: "It seems those involved in flu planning and response activities lack the knowledge for ethical reasoning and justification necessary to make good ethical choices in pandemic situations." Another policymaker in Malawi working with the Ministry of Health reiterated, "For most, they are unable to distinguish and identify the underlying ethical values and principles that would inform public health interventions." These comments do not suggest that those responsible for PRPI were unable to perceive or identify what was ethical. It may be that they were unable to frame the ethical consideration, especially when having to balance the conflicting needs of individuals and public health.

Most policymakers demonstrated their ability to "perceive" and "identify" ethical problems, an essential process in moral reasoning and judgment. Detailed analyses on moral judgments, particularly on how policymakers sought moral answers, include the arguments they gave to justify the course of actions, and so highlight their understanding of ethical problems. However, some policymakers had difficulty grasping the general knowledge of moral theories and interpreting situations in moral terms. The lack of technical knowledge in ethics and neglect of relevant facts to justify decisions led to muddled thinking, a rationalization of self-interest, and unpopular professional actions. The response from one policymaker from Malawi illustrates that some decisions were procedural in nature and that policymakers did what they were told by their superordinates, for instance, in determining which groups to prioritize to receive vaccines. From solicited comments from respondents, it is difficult to evaluate whether some policymakers' judgments drew on any specific knowledge of moral reasoning or any field of ethics when identifying ethical problems.

Competence for Influenza Working Committee

Policymakers' conceptions of ethical problems were described in terms of "competency" and failures of the influenza working committee to make informed decisions. When asked to explain why they thought professional incompetency by the committee was an ethical problem, one

policymaker from Malawi was quick to talk about failures of the influenza committee: "I don't think the committee knew what they were doing. There were mistakes in the planning and response outcomes that should have been avoided, such as forcing people to be vaccinated late in the post pandemic period." There were also concerns that the influenza committee lacked specific knowledge of pandemic influenza, including in relation to transmission, peak, and decline, and that committee members lacked the knowledge to inform policymakers how best to tackle the pandemic.

Ethical problems were expressed in relation to limited understanding of the disease. The lack of connection between knowledge of influenza and disease interventions and policies meant that the implementation of influenza-related programs was in doubt and ran the risk of harming the very people the programs meant to protect. Lack of knowledge on the epidemiology of influenza, including its surveillance, presents issues of competence in monitoring the disease and subsequent failure to respond rapidly to the early warning signs of transmission, leading to falsification or misinterpretation of the data; limited capacity to diagnose meant that governments could not verify the causative agent of influenza. According to respondents, this had repercussions on patient safety, especially when false diagnosis lead to the unnecessary prescription of antivirals and vaccines, or inappropriate public health interventions. This in turn undermined trust.

The majority of respondents shared the view that the committees responsible for influenza, both in Ghana and Malawi, failed to recommend well-thought-out actions to address the threats of a pandemic outbreak. A few respondents expressed concern that some of those on the influenza committees were underqualified to carefully advise, plan, coordinate, and execute effective responses to a pandemic influenza. For example, a policymaker explained that a committee in Ghana failed to evaluate the threats or severity of influenza and so was unable to inform policymakers to effectively prepare and respond to the threat of infection. One respondent from Ghana expressed, "I think the committee was hastily instituted without bringing on board professionals who know more, not only in ethics, but [in the] strategic management of diseases." Another respondent from Malawi commented, "The professional composition of speciality of the influenza working committees was non-representative [and so failed] to satisfy ethical analysis." Another respondent from Malawi argued that the team that constituted the committee failed to propose, choose, or decide on relevant actions that were consistent with objectives of pandemic influenza prevention and management, so impeding the capacity of policymakers to think about the implications of the proposed actions. One policymaker remarked,

> I don't think the committee was incompetent nor did they make wrong decisions, but I feel they did not constitute a diverse group of experts from the fields of public health, social science and medicine, well trained in infectious diseases [such as influenza].

Seeking clarification from the respondent about why not having the right individuals on the committee was an ethical problem, he explained that committee members had a contract to provide advisory services, and although this was a job they agreed to do, the results turned out to be disappointing and deceptive. The committee, respondents argued, were supposed to have moral credibility to provide leadership to guide influenza activities. This was not always the case; for example, they failed to interfere in Malawi, where people were forced to accept vaccination at gunpoint. "If actions fail to work or are harmful, it is the ethical responsibility of the committee and policymakers to seek out or develop and try more effective methods."

The working committees in Ghana and Malawi were predominantly composed of experts in animal health, such as veterinary officers whose knowledge was mainly confined to the early detection and rapid containment of avian influenza. After the 2009 pandemic outbreak, the avian influenza working committees in both Ghana and Malawi changed their roles as they moved from avian preparedness to human influenza preparedness, incorporating leadership from the health services. According to a respondent from Ghana, "changing of roles and decision-making in influenza working committees contributed to the lack of clarity on their role in policy formulation and direction."

Extent and Role of Resources

Lack of Funds in the Health Service Operatives

When asked about the ethical problems encountered in planning for and responding to the 2009 pandemic influenza, respondents routinely identified problems associated with the lack of funds to build on operational planning structures and responses. Respondents reported long-running financial and related resource difficulties, which lead to failure to update the national plan regularly, to enhance alertness and preparedness, and to respond adequately to the pandemic. Policymakers had to prioritize resources to urgent activities such as communication and education, although a range of PRPI activities needed to be undertaken. Policymakers mainly argued that the poor funding of PRPI activities jeopardized the best chances of protecting the health and well-being of the population; these subsequently affected policymaker's job performances. Most policymakers referred to large disparities in health status and the provision of and access to health services. Lack of funding specifically to address pandemic influenza prevented a well-organized response system. One respondent from Malawi noted that lack of funds "cut short policy objectives" to respond to the pandemic. This suggests that operational and logistical aspects of health service activities, including community education and surveillance, were poorly resourced and so contributed to the spread of the disease. Another respondent from Malawi noted that important planning priorities in preparedness were "missed," leaving the country poorly prepared to control the emerging pandemic.

Most respondents recognized that the state had a responsibility to provide funds for early warning signals of the outbreak to its population, because this was necessary for rapid diagnosis and case management. Advanced planning and preparedness was considered by respondents to be a critical public health task. As one respondent from Ghana articulated, "The failure by the state to invest in planning and response is like deliberately ignoring the opportunity to protect lives." This ethical problem within pandemic planning relates to failure by the government to meet the ethical need to institutionalize pandemic planning.

Unfair Distribution of Resources in the Health Sector

For some participants, ethical problems occurred in the context of the poor performance of the health service in response to the epidemic, including in relation to the rationing and distribution of limited resources. According to most respondents, health sector resources tended to be directed on the basis of the severity of disease rather than in response to the assessment of risk. One respondent in Malawi viewed pandemic influenza as a "risk," and so of low priority in terms of budgetary allocations. A respondent from Ghana remarked that this was influenced by

external funding, with donor money tied to specific disease initiatives such as HIV/AIDS and tuberculosis, rather than focusing on strengthening the health system in ways that would allow the government to respond to different health problems. There was a general feeling that the health system was unsustainable when it was dependent on donor aid, because of the problems that would emerge were there to be a sudden withdrawal in donor funding and because of the ways in which funds were tied to specific diseases and activities.

Extent and Impact of Public Health Interventions

Prioritization Protocols

Neither Ghana nor Malawi had protocols on how to allocate limited resources or interventions, including in relation to prioritizing treatment during the pandemic. Policymakers spoke of the ethical dilemmas in the context of rationed resources when they needed to decide who should receive the influenza drug, who should be hospitalized, and who should benefit from life-saving prophylactic measures. Prioritization guidelines were widely understood by respondents as protocols of action that promote judgments and intentional action of good or bad, in the context societal and cultural values. A policymaker from Malawi felt that local, social, and cultural factors needed to be taken into account when embracing WHO protocols on pandemic influenza, including those related to public communication and determining priorities. Policymakers from Malawi questioned whether adopting international guidelines or frameworks really worked in their settings, noting that WHO guidelines should not replace country-specific recommendations and reflecting on the assumption that the guidelines would automatically translate into policy. Another policymaker from Ghana expressed concern that the use of global frameworks presented unknown risks during implementation in unique local settings.

The Vaccination Program

Policymakers also identified ethical problems related to the delayed requisition of vaccines and immunization. Most policymakers referred to the delays both by the WHO and the national governments in making vaccines available to vulnerable and clinical risk groups. For most, this was interpreted as a failure of governments to meet the ethical obligation to maximize the clinical benefits of vaccines and minimize harm. Policymakers from Ghana cited failure in relation to solidarity and reciprocity. Given the global responsibility of countries to share virus and surveillance data, those with sufficient resources are obligated to supply vaccines to those in need. However, participants noted that rich countries first stockpiled supplies for their populations before turning to help poor countries. One policymaker from Ghana also criticized WHO for delays in providing the vaccine, commenting that "WHO did not pay critical attention to impoverished countries." Policymakers also blamed their governments for not negotiating contracts with pharmaceutical companies to secure vaccines for use in emergencies, as one participant from Ghana commented: "If the government can't clearly demonstrate that it is trying to help its people . . . then how do you expect foreign partners like the WHO to help you?" However, a policymaker from Malawi argued that vaccine contractual agreements were unnecessary, citing that the 2009 vaccine uptakes were incredibly low, raising debate as to the best means and time to make such resources available and how to coordinate and implement vaccination programs successfully.

There were a number of problems in introducing the influenza vaccination program in Malawi and Ghana. One policymaker expressed concern that authorities in Malawi had resorted to illegitimate strategies such as forcing targeted groups to take the influenza vaccine in order to increase vaccination uptake. A policymaker from Malawi Ministry of Health explained that, when people refused to be vaccinated because of concerns about the safety of the vaccine, then "we called the police to assist at gunpoint." In Ghana, vaccination hesitancy and refusal were dealt with not through violence but through an education campaign and without incentives.

Cooperation and Coordination

Most policymakers cited the lack of cooperation and coordination as making the task of planning and response very difficult. Most felt that their national plans were not supported fully at the national level, and they explained this in relation to weak government ties with partners, especially at the local level. This was reiterated by a policymaker from the Ghana Health Service, who remarked that the "most active government partners [WHO, USAID, Word Bank] were concerned with mainstream issues at the global level, paying less attention to national and local responsibilities." Policymakers often referred to circumstances where support was not available, leaving the implementation of planning activities generally in a state of doubt. A respondent from a government department in Malawi (not Health) similarly noted that the national plan was not supported fully at the national level and that there were weak government ties with partners at the local level.

Epidemiology and Surveillance of Influenza

Constant and effective surveillance of disease risk, patterns of transmission, and outbreaks requires global organization and financial support. Many policymakers argued that success in control strategies lies in good knowledge of the epidemiology of disease. Seasonal influenza viruses constantly evolve over time, and for this reason participants argued the need for regular training to ensure current knowledge. It was unprofessional and unethical for people to perform the tasks of influenza surveillance without appropriate epidemiological training skills. One participant from Ghana mentioned the "lack of orientation on the epidemiology of influenza, including its surveillance … (and) issues of false diagnosis." Another respondent from Malawi commented that misreading epidemiological data on pandemic influenza virus could have "dire repercussions on patient safety especially if false diagnosis leads to the false prescription of vaccines and antivirals." Another noted that although reporting the disease to authorities locally, nationally, and globally was obligatory, the capacity to do so was often confounded by poor practices and lack of public health infrastructure for monitoring and surveillance.

DISCUSSION

We have illustrated the capacity of policymakers to identify and resolve ethical problems that are encountered in planning for and responding to a pandemic influenza outbreak. In accounts from policymakers, an ethical problem was seen to arise when there was apparent irresolvable conflict between two or more equally important choices, when only one could be made. This is

consistent to Braunack-Mayer's (2001) definition of an ethical problem as an action that involves conflict between equally desirable or undesirable alternatives. Most of the ethical concerns in this study emerged in the core tasks of public health practice, particularly in terms of how decisions are made, justified, and implemented. We suggest that such ethical problems are encountered at the level of policy development and implementation and manifested in particular in the key tasks of PRPI.

A number of ethical problems were raised by Ghanaian and Malawian participants in reference to the authorities' failure to act, or to act inappropriately, and to lack of cooperation and partnership, disproportionate and intrusive public health interventions, and lack of the knowledge about the pandemic influenza outbreak. Most of these ethical problems were practical and procedural in nature. These included, for instance, government failure to extend partnerships and to coordinate national response efforts to all districts and towns in order to achieve the intended goals at the national level, and at a procedural level, policymakers' use of international guidelines or implementing instructions from the most powerful actors. The WHO International Health Regulations were procedurally implemented and were part of the legal framework, of which Ghana and Malawi are part, to protect population health through the use of public health intervention such as quarantine and isolation of individuals. The severe reliance on international prioritization protocols (vaccination and resource allocation policies) and guidelines (International Health Regulations) were viewed as procedural in nature, and often replaced country-specific recommendations on how to respond to the pandemic. These observations are consistent with those of Baum, Gollust, Goold, and Jacobson (2009), who argued that ethical problems are facilitated at the practical stage of program implementation where decision-making processes tend to be procedural. Rogers (2004), in a study of public health practice in Scotland, similarly identified responsibility and subordinate decision-making discourse as major actions that prompted ethical problems.

Ethical problems among policymakers were similar in Ghana and Malawi. According to Jones (1991), identification of a moral issue is the first stage in decision making. However, there were instances of differing moral views of what constituted an ethical problem among policymakers. In this study, some policymakers described ethical problems that appeared to resemble technical problems such as lack of resources or equipment, whereas others described ethical dilemmas as ones they encountered in their everyday work. Through the use of interviewer prompts, many policymakers were able to connect their experiences to Braunack-Mayer's (2001) definition of an ethical problem. For example, investing resources in influenza treatment was considered morally right, but upon probing was considered to be morally wrong when in conflict with the need to prevent the transmission of the disease. Detailed analyses of how policymakers sought moral answers, including arguments that justified the course of actions they made, highlight their understanding of ethical problems and illustrate the variation among participants of moral reasoning and recognition. Recognition of an ethical issue, for instance, did not necessarily result in a justified ethical solution. According to Blum (1991), ethical identification is the setting for an action if informed by general values and principles and is an important part of an active beneficial process that helps policymakers to be aware. It begins a deliberation process that generates alternative actions and choice.

Although policymakers in this study were attentive to ethical problems in their work, acting on these problems was limited by various operational factors such as inadequate resources, weak health systems, and difficulties in decision making and justification. Policymakers were aware of the importance of moral considerations as strategies to resolve problems, but they did not engage well with moral theories. Callahan and Jennings (2002) observed that moral reasoning, including

well-informed decisions, are lacking and for the most part not properly framed in public health ethical analysis. The difficulty in finding definitive solutions to complex problems, including those ethical in nature, is partly attributed to the lack of sufficient training in ethics among experts. Callahan and Jennings attributed the narrow application of public health ethics to the fact that there are many moral theories for decision making, making it difficult for professionals to draw on or apply the right discourse.

For both Ghanaian and Malawian respondents, decision making, reasoning and judgment about issues relating to poor health infrastructure, lack of funding, and other health sector challenges were either reflexive or nonreflexive. Decision making was reflexive when decisions were intentional and judgments consciously produced. However, due to the lack of sufficient reasoning for specific ethical problem solving, policymakers often made nonreflexive decisions that involved simply implementing orders from their superiors or obeying rules and applying international guidelines in order to achieve some kind of public health outcome. Nonreflexive decision making contributed to ethical problems due to the nature of prescribing principles and implementing rules and laws that might not necessarily be effective. This was especially so, as most of the ethical problems observed in Ghana and Malawi were contextual and practical rather than universal. Nonreflexive decisions substantially affected the role-taking and decision-making processes. For example, policymakers' readiness to interpret meaning and scope, and identify legitimate and necessary measures that would prevent or resolve ethical situations, were derailed because they did not engage consciously in moral reasoning. Most actions, as one respondent said, created a vacuum between moral judgments and moral actions because policymakers did not assert any particular view of reasoning to reach a decision.

Undertaking nonreflexive actions with the intention of resolving ethical problems, without sufficient attention to the implications of such actions, raises questions about whether this type of decision making provides the best way forward in resolving pandemic ethical problems. Coughlin (2008) emphasized that moral reasoning in public health should allow ethical decisions with the help of judgment and rational analysis through ethical deliberations and actions, as justified by ethical theory, rules, and principles. De Melo-Martín et al. (2007) reiterated this point, arguing that epidemiologists and other biomedical and public health scientists, who largely ignore ethical values in conducting epidemiological research, require engagement in ethical evaluation to avoid bias.

CONCLUSION

Ethical problems emerged in three key areas in the context of pandemic influenza. These included the extent and role of resources in planning for and response to pandemic influenza; the nature and extent of the impact of public health interventions; and the extent and processes of decision making, reasoning, and justification. These ethical problems as experienced by policymakers were structurally similar in Malawi and Ghana. This finding enables us to make evaluative and collective statements on how ethical problems emerge and are determined. The ethical problems encountered in Ghana and Malawi were highly contextual and practical in nature, mostly occurring at the level of decision making, primarily because of inconsistent and conflicting demands, including financial pressures. As a result, identifying and recognizing an ethical issue focused on the routine tasks and practical constraints of public health. In the future, ethical concerns need to be addressed by thorough consideration of sufficient moral reasoning to justify decision-making processes.

Policymakers require an ethical framework as a tool to guide decision making. The purpose of any ethical framework is to consider broad issues of concern while building the basis or platform upon which an issue may be justified and resolved. Thompson, Faith, Gibson, and Upshur (2006) advocated an ethical framework as an instrument to guide decision making, reasoning, and justification to help mitigate ethical problems during an influenza (or other) pandemic. Having such an ethical framework can make a significant contribution to the way policymakers think and address ethical problems. For example, limited vaccine supplies and underresourcing in the health services require an ethical system to guide priority setting, to ensure equitable, fair, and cost-effective access when rationing limited resources. Having an appropriate ethical framework will guide policy by closing gaps that constitute ethical problems and will provide a guide to decision making, including in the context of pandemics, averting ethical concerns while limiting the costs involved when carrying out interventions.

Although ethical frameworks promote actions that are acceptable to individuals and society, the key tasks in planning for and response to pandemic influenza need strengthening. Our findings from interviews suggest that there was limited application of epidemiology and weak surveillance of the disease. Understanding pandemic influenza is an important core in the public health system, as it provides essential data on early warnings, transmission characteristics, incidence, and prevalence. However, these core tasks are not fully performed in the context of limited resources and technical incapacity. To effectively prepare for and respond to influenza pandemics, there is a need for well-trained epidemiologists, a functional public health service, and reliable laboratories and communication channels. These can be enhanced only through financial support and appropriate management.

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