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ORIGINAL ARTICLE

A bioethical framework for health systems activity: a conceptual exploration applying 'systems thinking'

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Abstract
Recognizing that the health system is a complex and dynamic network of actors and activities, this paper seeks to push the field of bioethics to develop a more holistic approach from the health systems perspective. Expanding upon the work of existing public health frameworks and drawing upon concepts from related areas such as governance, human rights, and organizational ethics, our provisional list of ethical considerations for health systems fall under the following categories: Holism, Sustainability, Evidence & Effectiveness, Efficiency, Public Engagement & Transparency, Accountability & Feedback, Equity & Empowerment, Justice & Fairness, Responsiveness, Collaboration, and Quality. By outlining these key domains, we hope to stimulate global discussion and further development of an ethics framework that will help guide ongoing work to strengthen health systems. This will be particularly important for low- and middle-income countries where resources are highly constrained and health systems efforts have scaled-up dramatically in the past decade.
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Introduction

Since its emergence in the last century, the field of bioethics has been constantly evolving to address new issues, deepen our understanding of moral duties in health, science and medicine, and expand its scope to address challenges from a variety of perspectives. While the early tradition of bioethics focused on the protection of *individual-level* interests, emphasizing the importance of autonomy, beneficence, non-maleficence, and justice from the perspective of what was due to individual patients or research participants (Belmont Report, 1979; Beauchamp & Childress, 2009), more recent work has broadened the scope to address public health ethics from a population-based approach (Kass, 2001; Childress *et al*, 2002; Baum *et al*, 2007). In fact, a recent review article details 13 of the most prominent or novel frameworks for public health ethics, providing an overview of the ways different principles, values, and theoretical approaches can be employed to evaluate public health interventions (Lee, 2012).

Although much progress has been made in putting forth new models and frameworks to address bioethical issues beyond the bedside, there are several limitations of existing models to activities at the level of the health system. In recent years, there has been increasing attention to policies and interventions that reshape or strengthen health systems, targeting the infrastructure

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for delivering health rather than a specific disease or health problem. However, most of the dominant ethical frameworks for public health aim to evaluate discrete interventions targeted at specific health issues, such as smoking, injury, or infectious diseases. While many of the action-guiding frameworks cited above are successfully used to produce guidance on individual policies and programs, they are limited when considering the ethical issues at play when introducing change at the higher and more complex levels of a health system. Health systems constitute a dynamic network of infrastructural inputs, processes for oversight and implementation, and service delivery mechanisms with multiple actors and institutions involved across the various domains of the system (Pariyo *et al*, 2011). The World Health Organization (WHO) outlines six critical building blocks, or sub-systems, comprising the overarching health system, ranging from service delivery and workforce to financing, technology, information and leadership (WHO, 2007). These components are deeply interconnected and constantly changing, with interventions in one sub-system potentially having dramatic interactions and downstream effects on another (de Savigny & Adam, 2009). The frameworks mentioned above were not developed to assess deeper ethical questions regarding how we should evaluate the ethics of interrelated activities and interventions at the health systems level nor assign obligations to the various stakeholders involved.

In addition, many disease-specific or vertical interventions have system-level effects extending far beyond the health issue of interest (de Savigny & Adam, 2009). How should these individual programs be assessed ethically with due consideration for the morally relevant impacts they may have on other aspects of the system? These interdependencies and relationships require a different level of ethical analysis. For example, scaling-up activity in one area of the system, such as the HIV response, may draw critical economic and human resources away from other systems activities, such as public health insurance. In an article describing the intricacies and ethical challenges of the U.S. health-care delivery system, Werhane (2002) argues for a 'systems approach' to ethics, noting that, 'a system has properties or characteristics that are lost or at best, obscured, when the system is broken up into components'. This astute observation calls for an ethics framework that accounts for systems level impacts of health interventions. In addition, the increased intensity of scrutiny for health systems in low and middle income countries (LMIC) as well as the rapidly expanding pace of research on these systems provides an opportunity for more conceptual exploration of such a framework with potential global application.

In this paper, we begin to explore a broader ethical framework to consider moral issues at the level of health systems. For instance, how should system-wide activities, processes, and investments be orchestrated and prioritized? How well do existing frameworks inform health systems interventions and programming? What additional considerations or nuanced interpretations are needed for a comprehensive account of health systems ethics? The development of a guiding framework for health systems functioning is particularly important in the context of the global work to strengthen health systems and foster appropriate stewardship of critical health resources, particularly in LMIC where this work has scaled up dramatically in the past decade (Sundewall *et al*, 2011).

Understanding the importance of a systems-level view, this paper seeks to push the field to develop a more holistic approach to ethics that addresses impacts on and changes to the health system, expanding upon the work of existing public health frameworks and drawing upon concepts from related areas such as governance, human rights, and even business and organizational ethics. Table 1 displays the domain that this systems approach will occupy alongside traditional bioethics and public health ethics frameworks. (The lower, right-hand box depicts the proposed 'health systems' domains.) In the following sections, we will define in detail our definitions of these candidate conceptual domains, review their coverage in the existing health systems and ethics literature, and provide moral justification for why they should be included in an ethical framework for health systems. These considerations will ensure that systems-level actors direct greater attention to key areas of moral relevance and system-wide impacts when introducing policy changes, programs, or system interventions. We then offer preliminary suggestions for operationalizing these considerations and call for more conceptual and empirical work to enhance this discourse and inform necessary action.

Assessing the landscape for health systems ethics

In seeking to develop an approach for ethics at the health systems level, we turned to the existing literature to examine which core principles, values, and considerations put forth in various bioethical models, public health ethics frameworks, and additional literature related to health delivery would resonate in a systems account of public health ethics. We also positioned ourselves within a large health systems consortium – Future Health Systems (FHS) – and conducted numerous individual and group consultations. FHS is a research partnership of seven institutions covering five LMICs funded by the U.K. Department for International Development. The consortium aims to generate knowledge to reshape health systems to benefit the world's poor and work with partner countries in the transformation their health sectors. We selected colleagues and reviewed papers based on their prominence in the field as well as their applicability to health systems guidance, especially in the LMIC context.

Through our conceptual explorations and discussions with colleagues, we sought to identify particular areas of convergence for ethical norms and values related to health systems operations and activities. We also explored how general moral considerations raised more nuanced or specific ethical questions from the 'systems' perspective.

Table 1 Bioethics, public health ethics, and health systems ethics

	Scope	*Traditional issues*	*Principles and considerations*
Bioethics/clinical ethics	Patient-provider relationship Individual-level assessment of outcomes	Informed consent and patient agency Reproductive and end-of-life decision-making Use of emerging technologies/bedside rationing Clinical research ethics Confidentiality	**Autonomy** **Beneficence** **Non-maleficence** Justice/fairness Utility Caring
Public health ethics	Population-level initiatives, programs, and interventions targeting a *particular health issue* Population-level health outcomes for *a specific health issue*	Trade-offs between individual autonomy and the public good Resource allocation and rationing Evaluation of proposed public health interventions	**Population-level utility** **Evidence** **Justice/fairness** **Accountability** **Costs/efficiencies** **Political feasibility** Beneficence Non-maleficence Autonomy
Health systems ethics	System-wide functioning, oversight and strengthening Population-level health outcomes on balance across all priority health issues	Evaluation of health systems interventions Agenda setting for system and prioritization of activities and investments Obligations of key stakeholder groups (e.g., government actors, health care providers, civil society, etc.) Appropriate procedures and processes for decision-making Assessing effects of individual interventions on the broader health system Delivery of quality health services to those in need when they need them	**Holism** **Sustainability** **Efficiency & Effectiveness**: Evidence-informed action **Transparency & Public Engagement** **Accountability** **Responsiveness/Dynamism** **Justice/Fairness** (Distributive & Procedural) **Intra – and Inter-sector Collaboration** **Quality** Beneficence Non-maleficence Autonomy

Modified from Baum *et al* (2007).
Note: The above table depicts differences between traditional biomedical ethics, public health ethics, and the new domain of health systems ethics. It is adapted from a table depicted in Baum *et al* (2007) differentiating bioethics from public health ethics. Edits include the addition of the 'Scope' column as well as some edits to content in the 'Traditional Issues' box for Public Health Ethics.

Using these inputs, we generated the following domains of health systems considerations as candidates to comprise a working ethics framework with a systems perspective. These considerations promote greater scrutiny of programs, policies, and interventions that are morally relevant to the functioning of the health system and its ability to deliver on key public health objectives. We discuss key elements of these candidate categories below (Table 2).

Candidate domains for health systems ethics considerations

Holism

Attention to holism requires taking a system-wide perspective when evaluating the merit of a particular change in the health system or new policy for strengthening an area of the system. This is morally relevant because failure to account for impacts of a particular intervention in one sub-sector on other critical components of the system could lead to damaging outcomes for the overall functioning of system, thereby limiting its capacity to promote health gains (Adam *et al*, 2012). Given the complex and dynamic nature of health systems, the notion of approaching health systems improvement at multiple levels through integrated strategies has been broadly discussed in the literature, though the idea has been articulated in varying ways. We borrow the term 'Holism' from the principles laid out by Swanson *et al* (2010) to guide health systems strengthening efforts. The authors highlight the need to consider the impact of any particular strengthening activity on the whole health system, favoring inputs that have net positive effects on the functioning of the system and safeguarding against short-sighted activities that may actually weaken the system in the long run. They state that 'strengthening one component or even several components of a health system does not necessarily strengthen the entire system', and stress the importance of considering the broader impacts of a particular action on other key components, processes, and relationships within the system.

Table 2 Candidate considerations for health systems ethics (HSE)

Consideration	*Definition*	*Proposed application or meaning for HSE*	*References*
Holism	Health system activities must be perceived and evaluated as part of the whole integrated network of components (actors, inputs, processes, sub-systems) comprising the system	The benefits and harms associated with a particular activity must be calculated with due consideration for impacts on interrelated areas within the system and net gains or losses for the health system overall	*de Savigny et al* *Werhane* *Swanson et al* *Pfeiffer et al* *Siddiqi et al* *Hunt & Backman*
Sustainability	Health systems must plan for the long term to ensure that improvements in services and outcomes can be maintained over time	Appropriate planning and prioritization of activities should consider the time horizon for investment and permanence of impacts. Appropriate transition/exit plans should be in place for shorter-term activities to minimize harms associated with withdrawal	*Swanson et al* *Pfeiffer et al* *Hunt & Backman*
Evidence and effectiveness	Health systems have an obligation to produce knowledge and engage in evidence-based decision-making to ensure investment in effective health promotion strategies	Health systems must make a commitment to generating information about different health strategies through research and have processes in place to translate knowledge into policy based on existing evidence	*Kass* *Baum et al* *Swanson et al* *Siddiqi et al* *Hunt & Backman* *PHLS*
Efficiency	With limited resources, health systems must invest funds in programs that are the best value for money. In order to be efficient, activities must also be effective at producing the desired outcomes. Further efficiencies can be achieved by cutting out wasteful spending and eliminating redundancies across the system	Inefficient uses of limited resources represent opportunity costs, in which greater benefit could have been realized through alternative allocations. Efficiency and effectiveness support the greatest achievement of benefit	*Kass* *Baum et al* *Werhane* *de Savigny et al* *Swanson et al* *Pfeiffer et al* *Siddiqi et al* *Hunt & Backman* *Brock & Wikler* *PHLS*
Public engagement and transparency	Health systems actions and rationale for decisions should be clearly communicated to the public, with opportunities for input from various interest groups	Active engagement with the public facilitates culturally respectful approaches and also signifies to the population that they are valued. Health systems efforts should make information publically available and have opportunities for input from multiple stakeholder groups	*Kass* *Baum et al* *Childress et al* *Swanson et al* *Siddiqi et al* *Hunt & Backman* *PHLS* *Upshur* *Daniels* *EuroPHEN*
Accountability and feedback	Health systems should be held accountable for their decisions and actions, enabling the public to oversee activities through feedback mechanisms and by providing open access to information	Accountability ensures that health system operations are in keeping with their core obligations and can reduce waste, corruption, misappropriation of limited resources, public dissatisfaction, and harms associated with ill-informed policies	*Hunt & Backman* *PHLS* *EuroPHEN* *Rawls*
Equity and empowerment	Health systems should strive for equal access to necessary health goods, the empowerment of the disenfranchised, and the mitigation of disparities across the population	Promoting equity requires positive actions to increase access to basic health needs and negative duties to refrain from contributing to further disparity gaps. Approaches should focus on the marginalized and work to empower those who are worst off	*Swanson et al* *Siddiqi et al* *Hunt & Backman* *PHLS* *EuroPHEN*

Table 2 (*Continued*)

Consideration	*Definition*	*Proposed application or meaning for HSE*	*References*
Justice and fairness	Health systems must support fair allocation of finite health resources as primary social goods as well as fair distribution of benefits and burdens of associated with health programs and systems	There must be a focus on fair allocation of health-related resources, with adequate justification of unequal distributions based on differential need or expected benefit. Programs should not disproportionately burden select groups while benefiting others	*Kass* *Baum et al* *Hunt & Backman* *Daniels*
Responsiveness	The health needs of the population are constantly changing while new innovations emerge. Health systems must be responsive to the current needs of their people and dynamic enough to adapt their efforts and strategies	Timely response to the changing contexts of the population and health promotion tools available can translate into tremendous health gains and prevention against serious health threats	*de Savigny et al* *Siddiqi et al* *PHLS* *EuroPHEN*
Collaboration	This theme is instrumental to many principles above, and requires various actors to work with colleagues, organizations and external institutions for a set of common goals	Collaboration within the system as well as with other sectors can promote efficiency, stakeholder engagement, justice, timely response, and facilitate a higher functioning health system	*Swanson et al* *PHLS* *de Savigny et al*
Quality	Health systems ought to provide the highest quality health services, interventions, and policies to achieve optimal health gains in the population	Promoting quality services requires inputs to measure performance and investment to improve services and programs with poor quality	*de Savigny et al* *Hunt & Backman* *Swanson et al* *Pfieffer et al* *Siddiqi et al* *Werhane*

Similarly, Werhane (2002) describes a systems approach to thinking that requires 'conceiving of the system as a whole with interdependent elements, subsystems, networks of relationships and patterns of interaction'. In order to do this, she suggests a 'multiple perspectives approach' in which an activity, policy, or program is evaluated from the position of the various stakeholders and accounts for the many sub-components of the system it will likely effect. Thunhurst (2012) also stresses the importance of adopting 'whole-systems approaches' to public health problems, urging for actors to map out the key systems components driving a problem and tackle health issues on multiple and simultaneous levels, using both bottom-up and top-down approaches, combining broad and targeted strategies. He provides examples from both developed and developing countries that have utilized whole-systems approaches to address issues such as inadequate uptake of primary health services, emphasizing local input and community engagement as central to the success of the initiatives.

While holism is not explicitly described in the Pfeiffer *et al* (2008) guidance for non-governmental organizations (NGOs) and their role in health systems, their discussion of the consequences of disjointed activities and fragmentation of service delivery strongly resonates with the importance of the holistic systems perspective. They emphasize that NGOs do not operate in isolation, and any code of conduct guiding NGO activity must take into account the relationships NGOs have with each other, communities, national and local government, and other stakeholder groups within a health system.

Holistic ideology has also been implicit in frameworks for assessing health systems governance. Siddiqi *et al* (2009) emphasize the need to evaluate health governance with a holistic sense of health, looking beyond simple provision of health services. For example, a governance principle of 'strategic vision' demands that public health leaders adopt a broad, long-term perspective and that health be integrated into a comprehensive development strategy. Such approaches also caution that the absence of a strategic vision can contribute to fragmentation of the health system. This holistic perspective has also been stressed in an account of health systems strengthening from a human rights approach. In discussing progressive realization of the right to health, Hunt & Backman (2008) declare an obligation of states to create comprehensive, national plans to develop and strengthen health systems, taking into account both public and private sector actors. Furthermore, the authors bring in additional holistic considerations with respect to their person-centered approach, in which multiple aspects of wellbeing must be addressed in promoting health of individuals and communities. They extend this further to assert obligations of the health system to address underlying determinants of health beyond the provision of services and care.

In their paper, Swanson *et al* (2010) also applied the term 'holism' with a second interpretation, endorsing *holistic thinking* for the *application* of their set of proposed principles. They encourage balanced consideration of multiple guiding criteria, ensuring that health planners assess activities and investments not just with attention to one criterion such as efficiency, but with due regard for others, such as equity and social mobilization. This holistic application is relevant in emphasizing that no one principle should take precedence over the others, a feature common to many frameworks for medical and public health ethics (Childress *et al*, 2002; Baum *et al*, 2007; Beauchamp & Childress, 2009). In keeping with this second interpretation of holism, our proposed framework will also adopt a non-hierarchical approach in which proposed considerations must be considered on balance.

Given its coverage and varying manifestations, we propose the following explication of 'Holism' within a health systems ethics framework: (1) individual public health initiatives should be evaluated with due consideration for their impact on interrelated components of the health system and on the system overall; and (2) interventions targeted at health systems strengthening ought to factor in multiple aspects of the system to assess whether it will produce a net positive improvement (net benefit) across the various sub-systems, prospectively and during its evaluation. This will often require comprehensive strategic plans with well-articulated goals for improvement, as well as uptake of more sophisticated systems mapping tools that can assist actors in evaluating the intricate interactions of systems activities.

Based on the definition above, the justification for including Holism in an ethical framework is clear. Failure to adequately take account of the interrelated components of a health system when addressing one area will likely result in fewer benefits produced than possible with a holistic approach, and potentially produce adverse consequences for other areas of the system. Furthermore, the associated benefits and burdens on systems components may be disproportionately affecting different subsets of the population, raising equity and justice issues. Lastly, if the actors are charged with the stewardship and improvement of a health system, their use of narrow approaches that do not account for whole-system impacts may result in net harms to the very system they were charged to protect and strengthen. As public health practitioners and policy makers, there is an implicit moral duty to produce health benefits as a social good, to limit negative impacts of actions on the population, to minimize health disparities, and to abide by the remit to improve the functioning of the health system. Therefore, holism is instrumentally valuable in realizing these aims and promoting existing norms for public health practice.

Sustainability

Another overarching theme in health systems is the importance of sustainability. Sustainability is the long-term ability to mobilize and allocate sufficient resources, both human and financial, to address public health needs and maintain improvements gained over time (Olsen, 1998). Beyond ensuring continued access to services, sustainability is critical from a systems perspective because with so many complex relationships between different aspects of the health system, the collapse of a particular function, process, or input can set off a cascade of negative ripple effects across the system. Therefore, it is crucial to ensure that development and investment in particular health systems functions remain steadily supportable or self-sustaining. In the same way that some stress the importance of healthcare organizations to have long-term organizational viability and financial stability in order to continue serving their patient populations, the same is true of a health system charged with protection and enhancement of the public's health (Werhane, 2002).

Sustainability appears as a critical component in a number of guiding frameworks for health systems. From the human rights approach to health systems stewardship, sustainability has been discussed in the context of progressive realization, which builds on ideas of 'non-retrogression' in which there can be no backsliding in improvements to quality and access of services that support the highest attainable standard of health in a particular context (Hunt & Backman, 2008). Sustainability considerations are also embodied in the call for having a long-term strategic vision for a health system, as discussed by Siddiqi *et al* (2009). From the perspective of NGO involvement in public health activities, Pfeiffer *et al* (2008) highlight how non-integrated programs with uncertain funding periods may leave beneficiaries without care or appropriate linkages to public services in the long run. And Swanson *et al* (2010) affirm the importance of sustainability across key areas of health systems strengthening, including the importance of continuous and predictable financing and social mobilization to produce 'enduring partnerships and health-promoting activities'.

Given the cross-cutting significance of 'sustainability', we propose that it be included in a framework for health systems ethics. By doing this we suggest that new investments at different points in the health system carry normative value because failure to maintain inputs can often result in a loss of critical services for health consumers or impoverishment of interrelated areas of the health system. There is also the potential risk that when short-term interventions lead to wide adoption of a new health strategy in favor of the existing norm, subsequent discontinuation of the new approach due to inadequate political or financial support may result in beneficiaries not only losing newly acquired benefits, but ending up worse off if they fail to revert to their prior standard of healthy practice. Lastly, we maintain that sustainability serves to bolster the public's trust in the public health sector, a critical ingredient for the long-term success of a high functioning health system and uptake of future public health initiatives (Childress *et al*, 2002). Beyond evaluating the sustainability of new activities, this consideration can

also steer the focus of investments for health systems strengthening toward initiatives that promote sustainability of other areas of the system, such as training of health workers and effective leaders and building health infrastructure. Given these considerations, sustainability is an important consideration for health systems ethics.

Evidence and effectiveness

The dialogue around evidence-based decision-making has become pervasive in the public health arena, with more sophisticated analytics and dedicated agencies emerging to establish the effectiveness of various health policy approaches (Fielding & Briss, 2006; Brownson *et al*, 2011). In the context of limited resources, greater justification has been required to support investment in both existing and novel approaches to improving the health sector. An established evidence base can demonstrate how likely a particular approach is to succeed, estimate the magnitude of the beneficial effect, and flag potential unintended negative consequences before an intervention is brought to scale. Therefore, it is not surprising that many existing health system frameworks identify an obligation to produce knowledge and engage in evidence-based decision-making.

In Swanson *et al*'s (2010) treatment of obligations to evidence-informed action, the authors discuss the importance of health systems having appropriate structures and processes in place to collect and analyze data on a number of measures that can improve systems performance and quality of services. Kass (2001) and Baum *et al* (2007) both have requirements for evidence-informed actions in their public health ethics frameworks. Similarly, the Public Health Leadership Society (2002) calls for public health systems to actively use information to guide effective health promotion activities. Siddiqi *et al* (2009) pair effectiveness with efficiency as a single governance principle, highlighting the direct influence that the former has on efficiency, discussed in greater detail below, and whether or not something will be a good value for money. In addition, Hunt & Backman (2008) call for health situation analyses to inform the development of national health plans and assert an obligation of the state to conduct research in order to evaluate effectiveness of various interventions. Their commitment to evidence-based decisions is also clear through their articulation of 'intelligence and information' as a central governance principle.

An obligation to develop the evidence base for health systems interventions has clear ethical implications. This evidence will highlight what policies and interventions are likely to produce the greatest benefit; and thus are more worthy of investments. It also avoids the potential misuse of limited resources supporting strategies that do not actually work to strengthen the health system. Further, it can protect populations from unintended harms, particularly when these adverse impacts are discovered in a pilot phase or trial prior to scale-up. Lastly, understanding comparative effectiveness can help maximize positive impacts of investments in the health system and lead to more efficient use of limited resources, discussed further below.

Therefore, we propose that 'evidence and effectiveness' have a clear role in ethical analysis of policies, interventions, and activities from a health systems perspective. It is not enough to measure effectiveness of a particular action or input on one component of the health system; a holistic approach requires assessment of downstream effects (positive and negative) of activities on related areas of the system.

Efficiency

Beyond the commitment to supporting effective health systems solutions, there is also the concern that the system and its components be efficient. A commitment to efficiency requires that resources are utilized in such a way as to maximize the benefits produced while minimizing unnecessary expenditure of resources (*technical* efficiency). It also refers to the types and mix of interventions used in a health system to achieve optimal overall population health (*allocative* efficiency). Notions of cost efficiency (or cost effectiveness) are included in this concept. Health systems have an obligation to allocate health systems inputs efficiently to best contribute to the protection and improvement of the public's health, and these considerations are widely discussed in many of the existing frameworks (WHO, 2000).

Swanson *et al* (2010) include efficiency as one of their 10 principles, stressing the importance of efficiency to generate the greatest output with scarce resources and reduce waste and redundancy in the health system. They further discuss *allocative* efficiency, ensuring the right prioritization and mix of interventions to improve health outcomes. Siddiqi *et al* (2009) also include efficiency in their framework for governance, stating that 'processes and institutions should produce results that meet population needs and influence health outcomes while making the best use of resources'. Werhane (2002) brings efficiency to bear, particularly in light of economic stability of healthcare organizations, but cautions that efficiency considerations must not become the overriding priority. The Baum *et al* (2007) framework includes efficiency as an evaluative criterion for public health action, noting that any investment carries with it opportunity costs and trade-offs that are critical to the ethical analysis of selecting that approach.

From a systems perspective, technical and allocative efficiency are critical for appropriate stewardship of limited resources and can be achieved through mechanisms such as better integration of management processes, elimination of wasteful inputs, and harmonization of health activities to yield better health outcomes. As Brock & Wikler (2006) have argued, efficiency is not simply an economic concern, because improving health is a moral good, thus selecting an allocation of resources that yields greater benefits than alternative allocations is an

important ethical criterion for evaluation of policies and programs. While the call for efficiency is consistent with utilitarian arguments for maximizing health gains, proponents of cost-effectiveness analysis often position this as one of many relevant considerations for priority-setting in a health agenda (Williams, 1996).

Due consideration of efficiency is therefore critical to ethically sound stewardship of resources for promoting public health. Investments in programs that produce insufficient benefit or suffer from operational inefficiencies deprive populations of benefits that could be realized through alternative approaches. From the systems perspective, commitments to efficiency may also require that programs be assessed through comparative efficiency approaches, rather than examining the cost-effectiveness of one approach in isolation. Clearly efficiency must be balanced with other important moral consideration, such as justice and fairness; however, all else being equal, health systems actors should opt for the most efficient programs, working to maximize benefits while freeing up resources for other initiatives.

Transparency and public engagement

The importance of transparency and stakeholder engagement is widely recognized by health systems experts and ethicists alike (Daniels, 2000; Childress *et al*, 2002; Upshur, 2002; Baum *et al*, 2007; de Savigny & Adam, 2009). As such, many of the approaches mentioned in this paper place emphasis on transparency of decisions and involvement of communities, often through civil society organizations. For example, Hunt & Backman (2008) describe transparency as essential to an effective health system and achievement of the highest attainable standard of health. It also enables active participation of stakeholders in the health system, which they include as a separate but related component of their right-to-health approach. Siddiqi *et al* (2009) include both transparency and a commitment to public participation in their framework. They assert the critical importance of stakeholders having a voice in decision-making for health and the need for transparent, free-flowing information surrounding the processes and institutions across the health system. For Swanson *et al* (2010), public engagement is also implicit in their push for social mobilization and collaboration.

In both the Public Health Leadership Society (2002) and European Public Health Ethics Network (EuroPHEN, 2006) documents, transparency, engagement and public trust are particularly salient operating principles. Three of the 12 principles issued by the Public Health Leadership Society fall under this category, including community input on health initiatives, provision of information to communities, and engagement in activities that foster public trust. Similarly, EuroPHEN states that, 'Public health policy should be implemented in a transparent manner'. Kass (2001) and Baum *et al* (2007) also discuss the role of transparency and public outreach in the context of procedural justice, ensuring that the processes associated with adoption of a particular strategy are at least fair, even if the allocation is not perfectly equitable.

From a systems perspective therefore, we propose that transparency and stakeholder engagement are all the more critical as a guiding norms for health systems such that actions and decisions are open and based on wider inputs, especially from the people who are served. With so many different stakeholder groups involved across different areas of the health system, it is crucial to have a mechanism for input and expression of differing interests across these actors. Without transparency of information, health system activities and performance indicators are easily obscured and lost among the complex networks of policies, inputs, and actions simultaneously operating at any given time. Transparency also enables effective collaboration across the health system, both between internal parties and with external actors. Beyond their instrumental value in improving the design and uptake of policies and programs, transparency and public engagement are morally relevant to demonstrating respect for persons and as a mechanism of procedural justice in keeping with Daniels's (2000) accountability for reasonableness (Beauchamp & Childress, 2009). Transparency also provides the broader platform for accountability, discussed below, to ensure that health systems operations are in keeping with their core obligations, minimizing corruption, misappropriation of limited resources, and policies without a supporting evidence base.

Accountability and feedback

Although closely related, we differentiate 'accountability and feedback' from 'transparency and engagement' to ensure that it is given appropriate weight. Transparency and engagement in the early phases of an initiative could still lack necessary accountability and feedback to the population once it is operational. It is not enough to involve stakeholders during the development of new policies and programs, the health system must continue to monitor their progress, relay this information to the public, and be held accountable that the objectives set forth in the early stages are being met during implementation. In their account, Hunt & Backman (2008) state that transparency is instrumental to accountability and progressive quality improvement; and Siddiqi *et al* (2009) assert the importance of stakeholders and free-flow of information as instrumental to having successful accountability mechanisms.

One of the criteria issued by the Public Health Leadership Society (2002) falling under this category is the provision of information to communities. EuroPHEN (2006) calls for implementation of policies 'in a transparent manner that facilitates accountability' and emphasizes access to information so as to foster accountability and public trust. This provision of information to the public ought to include information on the impact of health systems programs, policies and even research. For research, the requirement for feedback to communities is set forth in existing

international guidelines such as the Helsinki Declaration (1964) and CIOMS (2002). However, we believe that such types of information on health outcomes, intervention effects, and even financial outlays ought to be part of public feedback around health systems operations.

Low educational levels, lack of power, and enhanced vulnerability provide cogent reasons why this feedback of health information is acutely needed in LMIC, even though these same circumstances have been cited as limitations to accountability and, in some instances, reasons to avoid feedback to communities (Mehrotra & Jarrett, 2002). Where local education levels are low and civil society organizations are weak, a commitment to accountability and feedback may require educational initiatives and strengthening of community organizations to provide greater oversight (Daniels *et al*, 2000).

The health system is charged with the protection and promotion of public health, but the population also has a role to play in ensuring that the health sector fulfills this duty. In order to do so, they need access to information and the capacity for oversight. Therefore, 'accountability and public feedback' is essential in health systems ethics to ensure appropriate investment and stewardship of limited resources for achieving health gains.

Equity and empowerment

Across the ethics and health systems literature, a commitment to health equity is pervasive, with concerns for equal access to necessary health goods, the empowerment of the disenfranchised, and the mitigation of disparities across the population. These issues also abound in the current literature on ethics of health systems; for example, the Public Health Leadership Society (2002) includes a principle for empowerment and equality of access to basic health resources, EuroPHEN (2006) discusses the importance of identifying disenfranchised populations to ensure inclusiveness, and Siddiqi *et al* (2009) similarly pair inclusion with equity.

Operationalizing equity within health systems includes both promoting positive actions and minimizing negative ones; that is working to ensure equitable opportunity for health across a population and refraining from practices or policies that would further exacerbate existing harmful disparities. Hunt & Backman (2008) characterize these dual aims by using the terms 'Equity, equality, and non-discrimination'. To promote equitable health systems, Swanson *et al* (2010) include the following obligations: disaggregate indicators to measure and report on disparities, modify approaches to ensure the marginalized are reached, and work to empower the disenfranchised to take a more active stake in the design and operation of health systems. This last statement raises the bar to actively promoting not only equity in health outcomes, but empowering communities to become active participants in their local or national health system. Establishing such mechanisms would allow health systems to address multiple ethical dimensions – including enhanced transparency and accountability.

The moral justification for including equity and empowerment in an ethical framework for health systems is firmly rooted in social justice theory, particularly as laid out by Powers & Faden (2006). As outlined above, our account of equity and empowerment embodies Powers and Faden's twin aims of social justice, ensuring equitable opportunity to realize health gains and addressing systematic disadvantage by empowering those who are marginalized. There is a clear role for the health system to embrace ideals of equity, inclusiveness, and non-discrimination. These characteristics all fall under considerations of social justice and highlight the central importance of health in promoting human flourishing and equality of opportunity for individuals to participate in the production of their health and the health of societies. It is in this spirit that we believe that equity and empowerment ought to be a guiding consideration for health systems ethics.

Justice and fairness

Although the ideals of equity largely address areas related to social justice, there are further obligations to consider distributive and allocative justice. This relates to the fair allocation of finite health resources as primary social goods, as well as fair distribution of benefits and burdens associated with health programs and systems (Rawls, 1971; Daniels, 1985). The Kass (2001) ethics model asserts that programs must be implemented fairly, requiring that unequal distributions must be justified by evidence of differential need, expected benefit, or to remedy past injustice. Further, understanding that many public health initiatives carry some level of burden to individuals or societies, whether through taxes, user fees, or some individual-level restrictions on behavior, it is important that burdens are not imposed in a discriminatory way, and that, on balance, the associated benefits justify the imposition. Baum *et al* (2007) address this need to strive for equitable distribution of benefits and burdens and demand sufficient justification for unequal distributions. Hunt & Backman (2008) additionally discuss fair allocation of health-related resources, using the example of having a fair balance of health facilities in rural and urban areas.

At the macro-system level, considerations of distributive justice will have important implications for agenda setting, financing of programs, and assessment of interventions that may not have direct benefits for many of the persons on whom the burdens will be imposed. This last point also demonstrates the need for public engagement to ensure buy-in for programs that may disproportionately affect certain individuals. Kass (2001) and Baum *et al* (2007) stress the importance of evidence in informing distribution strategies, assessing levels of burden of disease, and providing justification for unequal allocations, further showcasing the interrelatedness of the considerations within our framework

Thus, consistent with current frameworks we propose that justice and fairness are relevant to the work of health systems as they are core ethical concerns for addressing the

health of populations. The system as a whole must be fair and use just means for improving the health of populations.

Responsiveness

Another important consideration emerging from the literature surrounds the notion that health systems ought to be responsive to population needs, that public health threats should be addressed in a timely manner, and that the system must be dynamic enough to adapt and respond to the constantly changing health needs of the population (PHLS, 2002; EuroPHEN, 2006; Siddiqi *et al*, 2009). This principle of responsiveness is central to ensuring that the health system achieves its ends of protecting and promoting the public's health in both the near and long term. The World Health Report 2000, in discussing responsiveness, highlights how responsive health systems demonstrate respect for persons and their dignity when providing the services that populations express as priority needs (WHO, 2000). This in turn can also bolster trust of the system and utilization of services.

Responsiveness is also dependent upon having effective mechanisms for measuring health and program level indicators in order to supply evidence for action and timely response by the health system. This is becoming increasingly possible with the use of information technology, real-time data capacity, epidemic intelligence units, and surveillance systems that detect changing health threats and monitor their spread (Hammond *et al*, 2010; Labrique *et al*, 2012). This issue is also becoming more relevant with the need for rapid health system responses to acute events and disasters – earthquakes, tsunamis, blasts – that often impose very large shocks on health systems, especially in LMIC (Huang *et al*, 2010). Thus responsiveness has become a key feature of a dynamic health system capable of addressing real-time needs of the population.

We propose that a timely response to a changing context can provide the most benefit and prevent serious harms (e.g., rapid spread of SARS or influenza) and thus is an important component of an ethically responsible health system. As characterized above, responsiveness is firmly rooted in principles of beneficence, non-maleficence, and respect for persons.

Collaboration

Given the multiple subsystems comprising the larger health system and the impact of other sectors on health outcomes, collaboration is critical both at intra- and intersectoral levels. Open communication between various actors within the health system and in complementary areas related to finance, transportation, and environmental protection is needed to facilitate comprehensive approaches to complicated health issues. For example, Swanson *et al* (2010) address collaboration, emphasizing the need for partnerships across different stakeholder groups involved in health systems strengthening, though this could be more broadly applied.

Collaboration also has instrumental value in facilitating transparency, accountability, and stakeholder engagement. In addition, the process of collaboration and networking will also have implications for efficiency, enabling different components of the system to achieve synergies and cut down on duplication. Working with colleagues, organizations, and external institutions for a set of common goals is an important characteristic of effective action within health systems ethics. Better processes for policy formulation and implementation should be developed in order to facilitate appropriate collaboration among relevant actors to ensure both maximum impact of initiatives and appropriate representation of key stakeholders.

Quality

Every health system ought to have a commitment to providing the highest quality health services, interventions, and policies possible to achieve optimal health gains in the population. This drive for quality, in all aspects of the health system, is an important outcome in itself but it is also instrumental in promoting efficiency and effectiveness, sustainability, and equity. It requires sustained efforts to ensure high-quality services are provided throughout the health system, advancing public health goals, fostering trust in the system among beneficiaries, and working toward an increasingly higher standard of care, consistent with the human rights position of progressive realization (Hunt & Backman, 2008).

Striving for the delivery of quality health services has been a central goal of health systems strengthening efforts, especially in LMIC, for decades. The very notion of Primary Health Care as enshrined at Alma Ata (1978) was a push for defining a basic minimum package of *quality* health care that all people of the world ought to have – promoted in the 'health for all by the year 2000' motto. The issue of access to high-quality services has also been a hotly debated area in research ethics discourse regarding standard of care provided to trial participants in the developing world, both in clinical research and health systems innovation (Lie *et al*, 2004).

Commitment to high-quality health services is largely tied to considerations of beneficence in producing greater health gains; however, there are also elements of respect for persons that support provision of greater quality services. Ensuring quality of care, products, and programs denotes a view of beneficiaries as humans deserving of appropriate treatment and care, and not simply consumers of health as a market good. It is for this reason that we assert a commitment to quality as a central guiding ethical norm for health systems.

Discussion

This set of proposed health systems ethics considerations serves as a provisional list of morally relevant considerations that should be used to guide policies and actions targeting health systems improvement and innovation. It

is intended to be a first attempt to *identify* and *define* what kinds of considerations are relevant for the health systems context. Enumerating considerations for health systems ethics immediately raises the question of hierarchy; should one consideration take precedence or override another? As noted above, this provisional framework does not assign greater weight to any one consideration, as the relative importance of each will vary depending on both the type of intervention and the context in which it is introduced. This is similar to many contemporary ethical frameworks that do not espouse a hierarchical order but rather a *balancing* of principles (Childress *et al*, 2002; Baum *et al*, 2007; Beauchamp & Childress, 2009).

There will likely be many instances when various commitments come into conflict, such as those related to efficiency and equity. As we continue to move forward with this project and test the application of the framework to various kinds of health systems strengthening activities, we hope to produce additional guidance for weighing and balancing competing considerations for a given situation. However, at this stage, the framework only tries to enumerate and explain the proposed guiding norms. As noted above, many of these principles are closely interconnected and related; thus they must be balanced as is appropriate to the situation and with attention to actions that might better align with a greater number of the principles outlined. The overall coherence of a particular health systems strategy with the framework can support its adoption, even if it does not perfectly fit with every consideration.

A comparative analysis of our proposed health systems ethics with other frameworks allows obvious similarities and differences to be highlighted. Tables 1 and 2 demonstrate the coherence of this proposed framework with other commonly used approaches to bioethics, public health ethics, and health systems governance. These comparisons highlight the areas of convergence but also demonstrate the unique perspective that systems thinking can bring to the specification and application of common principles and morally relevant considerations as they relate to improvements in health systems. It is important to overtly state that not all of the considerations listed above are unique to the health systems ethics framework. However, the interpretation and application of these norms when adopting the health systems perspective often requires a broader conception of what their meaning is, and application across many programs, policies, and even the activities of other sectors.

An important consideration not addressed in this paper is the challenge of operationalizing these candidate norms in practice. In other words, how will the application of each affect the conduct of activities in health systems and how will the complete list of principles potentially change the nature and types of such actions? Moreover, how can this framework influence the criteria used to evaluate the success of health system interventions. In a recent review of evaluations of 103 health systems strengthening interventions, less than half (43%) of the evaluations reviewed assessed impacts across multiple health systems building blocks, failing to comprehensively assess system-wide effects (Adam *et al*, 2012). The authors urged for evaluations to 'explore the wider range of impact on the health system as a whole', particularly for complex interventions with effects across different sub-components of the health system. This framework could be a useful foundation to identify key metrics to be included in these more comprehensive, systems-focused evaluations.

Moving forward, we will need to conduct pilot tests for the impact of our proposed domains in the real world, but this provisional framework is a first step in outlining what is morally relevant to health systems. With continued global dialogue and feedback, we will continue to develop actionable recommendations, test the application of this framework for evaluation health systems policies and initiatives, and provide case studies of how it can be applied to specific examples of health systems interventions. We also recognize that there is an ongoing academic discourse on the very scope of public health itself, including positions put forward by Gostin & Bloche (2003) and Epstein (2003); however, we are not engaging in this debate given that this paper focuses on activities falling under the scope of the health sector, however it is defined in the settings in which it will be applied.

In proposing a set of candidate ethical considerations for health systems, we hope to generate international discussion on how health systems activities should be ethically evaluated. The pace of health systems strengthening and support activities is increasing annually, and the need for concerted thinking around these ethical issues is becoming more important. An ethics framework for health systems will be particularly relevant in LMIC, where there is significant investment in securing major health gains with great attention to improving functions to realize these gains (WHO, 2000). The increased intensity of scrutiny for health systems in LMIC as well as the rapidly expanding pace of research on these systems provides an opportunity for more conceptual exploration and application of new ethics approaches. We hope that this set of guiding principles will generate a wider global debate on this issue and help inform a stronger ethical analysis of health systems decisions and policies.

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