Health security as a public health concept: a critical analysis

William Aldis

There is growing acceptance of the concept of health security. However, there are various and incompatible definitions, incomplete elaboration of the concept of health security in public health operational terms, and insufficient reconciliation of the health security concept with community-based primary health care. More important, there are major differences in understanding and use of the concept in different settings. Policymakers in industrialized countries emphasize protection of their populations especially against external threats, for example terrorism and pandemics; while health workers and policymakers in developing countries and within the United Nations system understand the term in a broader public health context. Indeed, the concept is used inconsistently within the UN agencies themselves, for example the World Health Organization's restrictive use of the term 'global health security'. Divergent understandings of 'health security' by WHO's member states, coupled with fears of hidden national security agendas, are leading to a breakdown of mechanisms for global cooperation such as the International Health Regulations. Some developing countries are beginning to doubt that internationally shared health surveillance data is used in their best interests. Resolution of these incompatible understandings is a global priority.

KEY MESSAGES

- Although the concept of health security is becoming accepted in public health literature and practice, there is no agreement on scope and content.

- Incompatible understanding of the concept between developed and developing countries sets the stage for breakdown in global cooperation.

- Breakdown in cooperation on vital global activities such as disease surveillance could be avoided by sharing benefits of improved surveillance through global commitment to strengthen response capacity (health systems) in the most vulnerable countries.

World Health Organization Regional Office for South East Asia, Indraprastha Estate, New Delhi 110002, India. Tel: +91-11–2337–0804. Fax: +91-11–2337–0197. E-mail: aldisw@post.harvard.edu

Introduction

What is 'health security'? Despite the availability of a vast literature on 'human security', 'health security' and 'global public health security', there is no universally agreed definition. Widespread but inconsistent use of the term by global public health stakeholders with widely divergent perceptions, priorities and agendas has created confusion and mistrust. This paper explores the origins—and more important, some of the consequences—of that confusion, which is leading to breakdown of communication and collaboration on several important global public health initiatives, such as global communicable disease surveillance under the World Health Organization's International Health Regulations (IHRs). There is significant and growing opposition to the use of a 'security' justification for global health cooperation, particularly on the part of some developing countries. This opposition has not so far been recognized or understood by many academicians and policy-makers in western countries.

This paper also proposes some steps to relieve the present state of confusion, and to assure continuing global cooperation. These measures must begin by reaching consensus between various stakeholders on the meaning and implications of 'health security'. Reaching consensus on what is meant by 'health security' and 'global public health security', while necessary, will not be easy, because hidden national security agendas will have to be brought out into the open.

Because problems around the concept of 'health security' occur at the intersection of several fields or disciplines which do not share a common theoretical approach or academic methodology, it is difficult to proceed from any unified theoretical approach, however useful this might be as a guide to further study of these complex issues. Diverse players in the 'health security' game include practitioners in the fields of security studies, foreign policy and international relations, development theory and practice of United Nations (UN) agencies and others, and in health development in developing countries themselves. Even within the UN system, there appear to be significant differences in understanding and application of the concept of 'health security', for example between the United Nations Development Programme (UNDP) and the World Health Organization (WHO).

Given the fact that it is words and meanings which are in doubt here, perhaps further research should employ the tools of socio-linguistics: what are the origins and consequences of a word or concept being used by different 'speech communities' (in this case, the different stakeholders in global public health), and how can these different usages, and the confusions that result, be resolved? Whatever approach is taken, progress is needed soon. Considering the many rapidly evolving global health problems before us, we have no margin for error and no time to waste.

Methods

A literature review identified approximately 300 publications relevant to human security, health security, global health security and related topics. These were located through online literature searches, non-governmental organization (NGO) and agency websites, and consultation with colleagues. This review was supplemented by an internet search using a commercial search engine in order to develop a simple frequency analysis of usage of the term 'health security', and also by interviews with key informants. Interviews were particularly helpful in recovering information from settings such as drafting committees of the World Health Assembly for which no written record was available. Confirmation through second sources was obtained whenever possible. The analysis was strengthened by direct participation of the author in some of the policy-related events, although information from this participation was not used as a source for any of the factual findings contained in this paper.

Findings

Human security, health security, health and security, global public health security

In 1994 the UNDP published its annual Human Development Report, titled *New Dimensions of Human Security* (UNDP 1994). Although numerous commissions and national groups have issued reports on human security, the UNDP report has been particularly influential. The report describes human security in terms of security of individuals as well as nation-states, and as a platform for sustainable development. As only one of many attempts to define human security (also see, for example, Nef 1999; Reed and Tehranian 1999; Thomas 1999; Axworthy 2001), the UNDP Human Development Report identified seven categories of threats to human security: economic, food scarcity, health, environment, personal, community and political. This report began the process of linking health concerns to human security, a process which many writers have taken forward (Chen *et al.* 2003).

In May 2003, the Commission on Human Security submitted a report titled *Human Security Now* to the Secretary General of the United Nations (Commission on Human Security 2003). This report described human security as complementary to state security, but with emphasis on human rights and human development. Of the ten policy recommendations of the Commission, one referred to health: 'according higher priority to ensuring universal access to basic health care'. Soon after the submission of the Commission's report, a Human Security Unit was established in the UN Office for Coordination of Humanitarian Affairs (OCHA), which gave human security an organizational base within the United Nations.

The preamble of the 1946 constitution of the WHO refers to '. . . happiness, harmonious relations and *security* of all peoples'. The constitution states that 'the health of all peoples is fundamental to the attainment of peace and *security*' (WHO 2005a). As used here, 'security' seems to refer to 'health and security' (the contribution that health makes to global security) rather than to 'health security' (securing health itself). However, a potentially useful distinction between 'health and security' and 'health security' has not been developed in the literature, with some authors using the terms interchangeably.

In 2001, the World Health Assembly's Resolution 54.14 'Global health security: epidemic alert and response' linked the health security concept to a global strategy for prevention of movement of communicable diseases across national borders. This resolution supported the revision of the IHRs, and was the first step in associating 'global health security'

with IHR compliance. This was taken forward in 2007, when health security was selected as the theme of the World Health Day and of the annual World Health Report (WHR), titled *A Safer Future: Global Public Health Security in the 21st Century* (WHO 2007a). Significantly, this report addresses only 'global public health security', which is defined as '...the activities required...to minimize vulnerability to acute public health events that endanger the collective health of populations living across geographic regions and international boundaries'. The report makes a distinction between 'global public health security' and 'individual security', which will be addressed in a subsequent report. Thus the 2007 WHR focuses only on 'specific issues that threaten the health of people internationally', with emphasis almost exclusively on global compliance with the revised IHRs, which came into force in June 2007. WHO went further to link health security to communicable disease control when it re-named its Communicable Disease Cluster as 'Health Security and Environment'. While these relatively restrictive uses of the terms 'global public health security' and 'health security' provide clarity and focus, they exclude many other global public health concerns (e.g. maternal mortality reduction, child survival, nutrition), and seem to deviate from a broader interpretation of the concept shared by other UN agencies (UNDP 1994; UNICEF 1998). WHO has not fully addressed the larger questions on the definition, scope and implementation of 'health security' (Lancet 2007). Security for whom? Security for which values? How much security? Security from what threats? Security by what means? (Baldwin 1997).

Recurrent themes

Stimulated by the work of UNDP, the Commission on Human Security and others, an extensive and rapidly expanding literature on human security and health security has emerged. This literature is extraordinarily diverse, reflecting a lack of common definition and understanding of 'security', 'human security', 'health security', 'health and security', 'individual health security' and 'global public health security' (Paris 2001). However, despite surprising and substantial divergences in the views and understandings of different authors on the scope and content of human security and health security, the literature does contain recurrent themes. Some of these recurrent themes are:

1. *Protection against threats*: These threats are described from many different viewpoints. In the UNDP's 1994 Human Development Report and many publications which followed, human security is distinguished from the previous state-centred concept of security. This understanding of human security includes protection of vulnerable people against hunger, disease and repression; poverty reduction; and 'empowerment' of people. Other writers, however, emphasize threats to populations as a whole, such as emerging pandemic-prone communicable diseases such as SARS and avian influenza. Many recent publications emphasize bio-terrorism (Greenberg 2002; Gursky 2004; Aginam 2005) and indeed, in some national legislation, the concept of health security and protection from bio-terrorism seem almost interchangeable (United States House of Representatives 2002).

2. *Emergence of new global conditions for which existing approaches are inadequate*: These include the challenge of providing medical aid and humanitarian intervention in 'failed states', in which conflicts within rather than between states have replaced the dynamic of superpower competition of the Cold War. Some observers have raised concerns that intervention in these situations may be motivated more by the security interests of intervening states than by humanitarian (including health) concerns (McInnes 2004). In these cases, pre-emptive intervention in particular, especially if military forces are involved, is open to criticism that the principles of neutrality, impartiality, independence and universality which usually guide humanitarian interventions will not be respected (Patel *et al.* 2004). It is at this point of intersection between classical security concerns (peacekeeping, maintenance of law and order) and humanitarian operations where lack of common understanding of the term 'health security' is especially problematic.

3. *Engagement of new actors, including military establishments*: Although concerns have been raised by a minority of observers and by NGOs (Knudsen 2001; Bristol 2006), there is increased (and in some cases routine) involvement of military units in public health interventions. An example is the involvement of foreign militaries in the response to the 2005 Asian tsunami disaster. While this assistance was welcome, low-altitude surveillance flights over areas such as the politically sensitive Aceh region of Indonesia by foreign armed forces were a potential source of concern. Other examples of foreign military presence under the justification of public health assistance are the US Naval Medical Research Units (NAMRU) laboratories in Cairo, Jakarta and Lima. When avian influenza was first detected in Egypt in 2002, national authorities were dependent on the CAIRO NAMRU-3 lab for sub-typing of the virus as H5N1 (Meleigy 2007). This type of arrangement has been described as 'dual usage' for public health and military purposes (Chen 2004). While some observers support and encourage this kind of assistance and recommend that it be accelerated (Chretien 2006), there is obviously a potential for conflict of interest (Fidler 2005). In another example of military cooperation overseas, the US Department of Defense collaborates with national authorities to receive data from more than 260 sites in 56 countries, including weekly internet-based reporting from civilian hospitals in 18 provinces and 6 army hospitals in a single south-east Asian country (Sanchez 2006). Taking this one step further, it has been proposed that 'since the health services are now in the front line...they could legitimately request support from government defence and security budgets' (Health Protection Agency 2001). If support of this kind is accepted by multilateral international agencies, it could certainly raise questions concerning their neutrality and independence (Calain 2007a). A senior WHO official agrees with the suggestion to fund public health activities from security budgets, and suggests that governments create 'a special body to address both public health and national security...to get these two sectors working together' (WHO 2007b).

4. *Linkage to foreign policy interests*: There is increasing acceptance that health is a legitimate foreign policy concern (Katz and Singer 2007). In 1999, the United Nations Security Council considered a health problem for the first time, declaring HIV/AIDS a national security threat. The scope of foreign policy health concerns has since been expanded to include problems of trans-border spread of other communicable diseases and protection of the poor and those living in failed states (Ingram 2005; Amorim *et al*. 2007; Fidler 2007). It is hoped that donor countries can be persuaded that it is in their foreign policy interest to provide increased development aid (Smith 2002). However, the trend to link foreign policy interests to health problems has been criticized on the grounds that it may result in injecting great power politics and narrow national security interests into health and humanitarian matters (Farmer 1999; Mcinnes and Lee 2006), as well as on more theoretical grounds by the security studies community (Elbe 2005). There is no consensus on the role and limitations of foreign policy in public health and health security, and the subject has been described as 'divided politically and fragmented analytically' (Feldbaum and Lee 2004).

Uncritical insertion of military and foreign policy (political) interests into the arena of global public health is problematic. Much of the literature makes simplistic assumptions about natural harmony between 'health security', 'global public health security', national security and foreign policy. Other observers take a more cautious view:

> Global health is a humanitarian endeavour that seeks to improve the world's health including the most vulnerable peoples, while national security works to protect the interests of people within a given state . . . While there is potential to expand global health activities through partnership with the security and foreign policy communities, treating global health issues as national security threats may focus attention disproportionately on countries or diseases which pose security threats to wealthy nations, rather than on the greatest threats to global health. The global health community should carefully scrutinize areas where global health and national security interests overlap. (Feldbaum *et al*. 2006)

Convergence of public health and bio-defence

The 1995 sarin gas attack in the Tokyo subway system by the terrorist group Aum Shinrikyo and the 2001 mailing of weaponized anthrax spores through the US postal system sensitized policymakers in industrialized countries to the vulnerability of their populations to chemical and bio-weapons, and more important, brought about a convergence of national bio-defence programmes with existing disease control activities. The harmonization of programmes for security from disease with bio-defence, while superficially a positive development, does have profound implications which have not been fully explored (Kelle 2007). This process has been described as a 'securitization' of public health or 'drafting of public health to fight terror' (Gursky 2004). In some countries, the role of public health services is increasingly seen as provision of defence against

bio-terrorism (Jolly and Ray 2007); with increasing investment for this purpose displacing usual public health functions, such as routine immunization, screening and health promotion (Staiti *et al*. 2003).

Growing concerns of developing countries

Developing countries are increasingly suspicious of global health initiatives justified on grounds of 'global health security'. The 2005 revision of WHO's IHRs set off several highly contentious late night drafting sessions, with one western country arguing for broad powers for international collective action, including early entry into the territory of affected countries without their invitation, in the event that a member state's actions to control an epidemic were felt to be inadequate to prevent international spread. This introduction of the concept of preemption into the IHR was rejected by the majority of countries.

A more specific rejection of the 'global health security' rationale came in November 2007, at WHO's Intergovernmental Meeting on Influenza Viruses and Benefit Sharing. This meeting attempted to resolve the crisis that followed Indonesia's refusal to share virus isolates from human cases of H5N1 influenza A infection (avian influenza), on the grounds that Indonesia was unlikely to receive any benefits including vaccines or technology transfer (Enserink 2007). During a long and heated debate, Portugal, then president of the European Union, attempted to introduce the term 'global health security' into a draft statement. Portugal stated that 'global health security' should prevail over other laws. This was vigorously opposed by Indonesia, Brazil, Thailand and India; with Brazil stating that it was not committed to working under the security concept. The meeting ended with no agreement (Shashikant 2007).[1]

Member states' concerns about 'health security' were carried forward into the meeting of WHO's Executive Board in early 2008. In a discussion on implementation of the IHRs, the concept of 'global health security' was challenged by Brazil, with the claim that there was no clear meaning of the term and it enjoyed no consensus among members of the World Health Assembly. Brazil further noted that the word 'security' did not appear anywhere in the revised IHRs, yet had been introduced in the WHO secretariat's report to the Executive Board, in which IHR was described as an 'important instrument for ensuring that the goal of international public health security is fully met'. The representative of Brazil stated that it 'had no idea what the goal of international health security' was. The US then intervened to provide its interpretation of 'global health security', and Brazil suggested that member states should work on a definition of the term (Tayob 2008).

So far, these debates have done nothing to clarify the definition of 'health security'. A search of the term using an internet search engine confirms an alarming lack of agreement on the meaning and scope of the concept. Of the first 100 citations found on the search, 44 referred only to bio-terrorism or trans-border spread of disease, 36 referred to effects of rising health care costs and health insurance in developed countries, 2 referred only to HIV/AIDS, 10 referred to unrelated matters (e.g. electronic home protection systems), and only 7 referred to 'health security' in the sense intended by the UNDP.

Discussion

Distortion of 'global public health'?

Taken together, the introduction of a threat protection mentality, foreign policy agendas, military interests and bioterrorism concerns into global public health, under the concept of global public health security, have subtly altered our understanding of global public health. A re-assignment of policy priorities and re-allocation of resources is underway (Staiti *et al*. 2003; Feldbaum *et al*. 2006), without sufficient clarity on definitions or intent (particularly surrounding the concept of 'security'), and without consensus of the global community (Shashikant 2008). Developing countries are unlikely to accept a 'global health security' justification for international agreements which are not perceived to benefit all countries. This is well demonstrated by the reactions of WHO member states Brazil, India, Thailand and Indonesia in recent WHO negotiations cited above (Shashikant 2008). The increasing use of foreign military forces in international disaster response further complicates the situation.

Relationship of 'health security' to existing public health approaches

A good beginning point in assessing the proper role of the 'health security' concept in today's global public health is to put it into the context of established understandings and approaches. Is the emphasis placed on protection against threats consistent with pre-existing public health approaches, such as those based on primary health care, and district health systems? Perhaps because the health security concept originated outside the public health community, very little attention has been given to its added value with respect to existing public health concepts. Does health security supplement, replace or conflict with existing approaches?

The main difficulty in analysing the place of the health security concept in relation to existing public health approaches is the problem of inconsistency in definition and understanding of the concept, as described above. For those who understand health security as it is presented in UNDP's 1994 Human Development Report, the concept is not incompatible with a primary health care approach, emphasizing community involvement, self-sufficiency and protection of vulnerable groups such as pregnant women and the poor. But if health security is defined exclusively in terms of protection of national populations against external threats such as bio-terrorism, the concept becomes disengaged from usual public health epidemiologic approaches, which measure and respond to differential levels of risk and disease burden within populations. These contradictions are well understood by opinion leaders on human and health security (Jolly and Ray 2007), but remain unresolved. To the extent that it is not responsive to the particular needs of the most vulnerable, the theoretical and operational underpinnings of 'health security' (and more important, the benefits to individuals, families and communities, especially in poor countries) remain obscure.

Even if a people-centred understanding of human security and health security is universally accepted (certainly not now the case), questions remain as to the operational implications at the individual and community level. Can existing approaches of primary health care and district health systems be 'co-opted' to deliver the protection and empowerment envisioned for health security? There is a technical basis for this, at least for the communicable disease surveillance element of 'health security'. Community-based outbreak surveillance as part of an integrated disease surveillance and response system is already established in many countries, and is proving to be a valuable tool for early detection and response (WHO 1998). But these systems perform best, and are most sustainable, when they are part of a comprehensive public health system (WHO 2005b). Are international partners and donors willing to fund all of the core functions now being provided by these systems? If not, health security will evolve as a parallel and competing initiative at country level.

A deeper question is the incompatibility of a threat protection mentality implied in some interpretations of 'health security' with the more optimistic emphasis on community-based self reliance which characterizes pre-existing public health concepts such as primary health care. The first priority stated in the UN document *Human Security Now*—protection—implies a primary role of outside helpers, with perhaps a passive role of communities and individuals themselves. This distinction may seem obscure, but differing underlying attitudes can affect the acceptability of a social initiative. Is the threat protection approach which seems to be embedded in the health security concept part of a more general divide between a 'fear-driven' foreign policy approach which has emerged in some countries (Stabile and Rentschler 2005), while a more optimistic attitude is gaining strength in others (Moisi 2007)?

Future directions: a danger of breakdown in global cooperation?

We have shown that there is insufficient global consensus on the meaning of 'health security' and on the scope and intent of national and global programmes designed to ensure it. This lack of agreement has already contributed to the failure of a major international negotiation, the Intergovernmental Meeting on Influenza Viruses and Benefit Sharing in November 2007. This failure could expose us to a global avian-derived human influenza pandemic. International cooperation on implementation and enforcement of the recently revised IHRs is equally at risk, as developing countries become aware that in some cases unconditional open sharing of surveillance data may not be in their national interests (Calain 2007b). Strengthening of surveillance for epidemic-prone diseases brings little benefit to any country which lacks the public health infrastructure necessary for an effective response. In Laos, for example, there have been at least four donor-supported surveillance initiatives (ASEAN Disease Surveillance Network, US Navy EWORS, Rockefeller Foundation funded Mekong Basin Disease Surveillance Project, and the JICA Global Surveillance Network). Although these initiatives do include support for response, there is not sufficient investment in basic health services in Laos to ensure that response is sustainable and sufficiently broad-based to deal with a variety of potential threats. Surveillance data, while of great value in providing early warning to other countries of possible international spread of disease, may be of little practical value to the country originating the data (Calain 2007b). Disaster response,

including containment of disease outbreaks, begins with local and national response based on a viable health system (Watts 2005) followed only days or weeks later by international support (Ungchusak *et al.* 2007).

Conclusions

Ambiguity and confusion surround the concept of 'health security'. This has caused damage to international relationships, and is likely to lead to more serious problems in the future. The global public health community must work toward a common understanding of the concept, starting with acceptance that there is a problem. While this might seem obvious from the evidence presented above, it is not evident to many stakeholders, and an open exchange of views is urgently needed, particularly between stakeholders in developing countries, industrialized countries, the humanitarian community, and military organizations. Late night accusations which pop up during drafting sessions at the World Health Assembly are symptoms of deeper mistrust, and it is necessary to move towards a more open and constructive dialogue, perhaps through consensus conferences sponsored by WHO in cooperation with several of the many existing bodies which have a stake in the 'health security' concept. Reaching consensus on what is meant by 'health security' and 'global public health security', while necessary, will not be easy: hidden national security agendas will have to be brought out into the open.

Beyond achieving clarity and openness on the definition of health security, what concrete steps must be taken to reassure developing countries that international health cooperation based on a security concept is in their national interest? In the important case of international surveillance under the IHRs, it is obvious that surveillance data is useful only to those countries with a sufficient response capacity. We need a collective global commitment to build up sustainable response. This cannot be limited to outbreak containment alone, but must be built into strengthened health systems.

The WHO has stated unequivocally that 'functioning health systems are the bedrock of health security' (WHO 2007c), but it remains to be seen whether development partners, including donors in developed countries, are prepared to make the technical and financial commitments for development of health systems which are necessary to ensure that poor countries benefit from timely and open sharing of information in accordance with the global health security concept. The cost of these commitments should not be under-estimated; it is much more expensive to develop and maintain a national health system than to introduce national communicable disease surveillance and outbreak containment alone. But failure to do this may result in breakdown of health security for rich and poor alike.

Endnote

[1] Even before the November 2007 Intergovernmental Meeting, public health officials in Indonesia had serious concerns about the security implications of H5N1 virus sharing. In 2006, Indonesian officials saw reports in the media that Indonesian H5N1 viral sequences submitted earlier to WHO had been submitted to the Los Alamos National Laboratory in the US. This was distressing because this is understood to be a national security, not a public health, facility. The Laboratory's website clearly states that 'The mission of Los Alamos National Laboratory is national security' (Los Alamos National Laboratory 2008). Indonesian Minister of Health Siti Fadilah Supari later commented that 'Whether they used it to make vaccine or develop chemical weapon, would depend on the need and the interest of the US government'. She was critical of the lack of transparency of the process: 'In a transparent mechanism, anybody has the right to know where the viruses go, what process they are undergoing, and who processes them' (Supari 2008).

Acknowledgements

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COMMENTARY:

Health security or health diplomacy? Moving beyond semantic analysis to strengthen health systems and global cooperation

Katherine Bond

Introduction: Health security and the value of semantic analysis

The rise in spending for global public health in the last decade has been motivated by two concurrent forces: the realization by governments that health, or rather disease, has national and global security implications; and the generosity of citizens and philanthropists responding to health inequities, disasters and emergencies (Fauci 2007; Garrett 2007). Fidler (2007) has labelled this interest as 'a new global social contract for health'. The paper by Aldis (2008) in this issue raises concerns about the 'health security' motive, and has explored the origins and range of interpretations of the terms 'health security', 'human security' and 'global public health security'. Aldis highlights several tensions along a continuum of human security, public health and bio-defence that play out in policies and programmes, tensions that may not be explicitly acknowledged by the institutional proponents of 'health security', or by the governments receiving donor assistance. The varying interpretations and applications of these terms have far-reaching implications in terms of global health governance, institutional and bureaucratic structures, and negotiation processes relating to current health emergencies.

Common themes cited in the paper include 'protection against health threats'; new global threats such as emerging infectious diseases and security implications of 'failed states'; the convergence of public health and military/security interests, as in the use of military resources for disaster relief; and the unaligned goals and objectives between public health goals and foreign policy interests. These issues are highly relevant in light of the pandemic threat and response in Southeast Asia; emerging debates about the trade-offs between targeted, vertical, disease-focused donor aid versus health systems strengthening more generally; and most dramatically, in the current national and global response to Cyclone Nargis.

Aldis concludes that fundamentally absent from the 'health security' concept are processes that lead to the cultivation of trust and the promotion of dialogue. Further, the lack of clarity and misapplication of concept will lead to: (1) a distortion of priorities within developing country health systems, leading to their further deterioration and fragmentation; and (2) a breakdown in global cooperation. But are these consequences inevitable, or can we by-pass an intractable debate on health security and move directly toward health systems strengthening and health diplomacy goals? What other trends in global and regional cooperation must be taken into consideration?

Harnessing health security investments in surveillance to strengthen health systems

First and foremost, there is an ongoing need to advocate for broader investments in health systems, including human resource development, infrastructure and delivery. In a recent editorial targeting the Toyako G8 Summit, Reich *et al*. (2008) call for more effective action on health systems that address some of the concerns raised by Aldis. These include: (1) health systems improvements that provide increased protection for individuals in ways that empower recipients and engage local actors; (2) allocation for funds within existing organizations to balance disease-specific and systems-oriented approaches (referred to as a 'diagonal' approach complementing vertical and horizontal approaches); and (3) enhanced learning from interventions that aim to improve health systems. Such a commitment on the part of the G8 would, indeed, help to provide more balance to those investments motivated by health security threats, and facilitate the management of investments by developing countries.

Meanwhile, efforts are being made to harness existing investments, particularly those motivated to ensure International Health Regulations (IHR) compliance, to build stronger surveillance systems, and to optimize the use and deployment of resources that currently exist. Surveillance remains a core function of primary care and of public health systems more broadly. How surveillance functions is a reflection of the overall strength and resilience of the health system at any given level. As many have pointed out (Calain 2006; Fidler 2007; Garrett 2007), global resources through vertical streams have benefited national-level surveillance systems focused on specific diseases, but often do not flow to the surveillance units themselves or are not accompanied by commensurate investments in health delivery. As a result, many poorer countries have been unable to respond rapidly to outbreaks that do not fall within those areas, and are challenged in consolidating data on disease outbreak patterns

Associate Director, The Rockefeller Foundation, Africa Regional Office, Nairobi, Kenya. (formerly Southeast Asia Regional Office, Bangkok, Thailand) E-mail: kbond@rockfound.org

as a whole. Greater collaboration and consensus among donors, governments and technical partners are being targeted to develop a cadre of health professionals skilled in field epidemiology, informatics and monitoring and evaluation; and further investments in public health laboratory capacity are forthcoming. Relatively low-cost/high-impact policy studies and activities are being undertaken to identify, enumerate and map resources, calculate actual resources in relation to need, and deploy resources more efficiently. Direct communication of findings is needed between surveillance and workforce planning units within Ministries of Health for both short-term and longer-term training and deployment, particularly in low-resource settings.

At the same time, the development and monitoring of core indicators could alert policymakers and the public about the state of their national surveillance system (for example: number of surveillance staff per population, budget allocated for surveillance as percentage of total health budget, number of outbreaks detected, declared and contained, etc.). The promotion by WHO of Integrated Disease Surveillance and Response (IDSR) in Africa, and its application in countries such as China with integrated web-based and step-wise surveillance, offer lessons in how better to operationalize 'diagonal' systems. Finally, interest in compliance with the IHR (2005) can be expanded to cover public health surveillance that may be of national or sub-national concern, and that prioritizes both communicable and non-communicable diseases.

Building trust and policy coherence through health diplomacy

While there may appear to be a breakdown in collaboration within the multilateral system, alternative forms of collaboration are emerging in regional bodies, bilateral agreements and private or non-state organizations (Kickbusch *et al*. 2007). Fidler (2007) has referred to this proliferation of multiple actors in global health as resulting in a 'Tragedy of the Global Health Commons', since least developed countries cannot adequately support multiple activities that further fragment already fragile capacities. However, where countries have a strong stake and sense of ownership in these agreements, and where they build on geographic, political, economic and cultural affinities, they can bring about unusual forms of cooperation across borders, formulation of normative practices and standards to emerging threats, and economies of scale and efficiencies in resource mobilization.

In particular, regional bodies are gaining greater prominence in resolving health and security threats, where multilateral and bilateral negotiations have faced challenges. The role of the East African Community in supporting the peace process in Kenya, and the emerging centrality of ASEAN in coordinating the humanitarian response to Cyclone Nargis are two recent examples of this growing trend. Regional disease surveillance networks in the Middle East, the Mekong Basin and East Africa were formed by health officials motivated to build trust, and collaborate in disease outbreak detection and response, with the ultimate goal of promoting peace in areas prone to endemic disease, poverty and conflict (Bellagio Call to Action 2007).

The terms 'health diplomacy' or 'medical diplomacy' offer alternatives to 'health security' that make more explicit possibilities for the cultivation of trust and negotiation of mutual benefit in the context of global health goals. Global health diplomacy has been defined as a 'bridge for peace and security' (Novotny and Adams 2008); 'winning hearts and minds of people in poor countries by exporting medical care, expertise and personnel to help those who need it most' (Fauci 2007); and 'multi-level, multi-actor negotiation processes that shape and manage the global policy environment for health' (Kickbusch *et al*. 2007).

National efforts to develop health diplomacy are based on an 'emerging recognition of the need for policy coherence, strategic direction and a common value base in global health' (Kickbusch *et al*. 2007). Countries such as Brazil and Thailand that play an active role in global health diplomacy and negotiation on the multilateral and bilateral stages share two key characteristics: (1) they exhibit close cooperation between International Health departments within the Ministry of Health and the Ministry of Foreign Affairs; and (2) they recognize the implications of trade and other foreign policy tools on their population's health. The broader move toward policy coherence is reflected in a call for the establishment of the European Council on Global Health (Kickbusch and Matlin 2008).

The emerging health diplomacy movement points to the need for core capacities in the public health and diplomatic arenas. Among these are an understanding of international relations among public health professionals and greater recognition by diplomats of the population health outcomes of foreign policy. More specifically, training would include perspectives on globalization, social determinants of health and cultural competence, macro-economics and political negotiation (Novotny and Adams 2008).

Finally, communities and citizens are often not considered in the formal policy arena but play an important role in meeting foreign policy goals and in cultivating trust and friendship across national borders, particularly in times of crisis and emergency. Future foreign policy and global health efforts need to ensure dialogue with affected communities and be more intentional in engaging and citizens groups in defining needs and goals.

While it is likely that health security—or at best, human security in its broadest definition—will remain a prominent rationale for developed countries to invest in global health initiatives, a more coherent approach to foreign policy and health diplomacy could result in better alignment between the health security goals of developed countries and health equity and development goals of developing countries, while at the same time recognizing and channelling the growing financial and technical contributions of private citizens, companies and organizations.

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