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Review

Achieving large ends with limited means: grand strategy in global health

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ABSTRACT

Unprecedented attention is focused on global health, with a four-fold increase in development assistance in the last 15 years and the scope of global health expanding beyond infectious disease to include chronic disease and health systems strengthening. As the global impact of health is more widely understood, it has become a crucial element of international relations, economic development, and foreign affairs. At this potential leverage point in the global health movement, the application of grand strategy is of critical importance. Grand strategy, i.e., the development and implementation of comprehensive plans of action to achieve large ends with limited means, has been refined through centuries of international relations and the management of states but has been inadequately applied to global health policy and implementation. We review key principles of grand strategy and demonstrate their applicability to a central global health issue: maternal mortality. The principles include: start with the end in mind, take an ecological approach, recognize that tactics matter, use positive deviance to characterize practical solutions and foster scale-up, and integrate timely intelligence and data into health interventions and improvement efforts. We advocate for the greater use of grand strategy in global health.

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Unprecedented attention is focused on global health, with a four-fold increase in development assistance in the last 15 years.[1] Additionally, with globalization and the accelerating risks of pandemic disease, the scope of global health has expanded beyond infectious disease to include chronic disease, health systems strengthening, and overall development.[2-6] As the impact of global health is more widely understood, it is also increasingly recognized as a central aspect of international relations, economic development, and foreign affairs.[3,7,8]

Given this increasing prominence and potential leverage point in the global health movement, the understanding and application of grand strategy is of critical importance. Grand strategy,[9,10] i.e., the development and implementation of comprehensive plans of action to achieve large ends with limited means, has been refined through centuries of international relations. One

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of humankind's oldest endeavors, grand strategy has long been applied to the management of states, where national security is viewed as a large end attainable through strategic thinking and action. In contrast, grand strategy has been inadequately applied to global public health, despite the enormity of the Millennium Development Goals (MDG)[11] and the complexity of coordinated action required in order to achieve these goals.

In this paper, we advocate for the enhanced application of grand strategy to global health. We discuss principles of grand strategy that provide valuable insight into underdeveloped areas of global health, including leadership and strategic problem solving. We review five key principles of grand strategy and demonstrate their applicability to a central global health challenge: maternal mortality.

1. Start with the end in mind

A fundamental precept in grand strategy is to begin with the end, or the objective to be achieved, in mind.[9,10] Effective grand strategy also requires that means (or actions) are appropriately aligned with the desired ends, increasing the likelihood that the ends will be accomplished. The global health community has devoted extraordinary attention to defining its desired ends, which have been carefully specified in the MDGs[11] to be achieved by 2015. While eight discrete goals have been established, with 21 targets and measurable indicators, the articulation of goals alone is not sufficient to ensure attainment. Progress has been slow and practical accomplishments limited, and some argue that the MDGs are too ambitious and the means or resources are insufficient to achieve success.[12]

2. Take an ecological approach

Grand strategy takes an ecological view of the world, recognizing the interrelationships among dynamic influences and accepting that a change in one component may have unintended impact on other components.[9] The field of global health recognizes diverse determinants of health and views economic, political, sociologic, cultural, and biological factors as inextricably linked.[13] Nevertheless, global health is frequently considered to be within the scientific realm and is inadequately engaged in the more strategic realms of national and international affairs. A grand strategic view of global health asserts that achievement of intended health goals requires leaders to engage experts in economic development, international security, and other disciplines in strategic problem solving that leverages the interrelationships among sectors. Transformational leaders in global health, therefore, will be those with expertise not only in medicine and public health but also in disciplines such as economics, political science, law, and international relations. Furthermore, those whose actions most affect global health are often not based in health organizations but rather other sectors, such as Ministries of Finance and Commerce, and therefore should also be educated to appreciate the centrality of health to international economic and political affairs.

3. Recognize that tactics matter

Grand strategy maintains that effective strategy attends not only to *what* will be done but *how* it will be done.[9,10] Hence, *both policy* and *implementation tactics* are part of the means to achieve ends, and success depends upon careful and comprehensive execution of both elements. Similarly, global health is beginning to embrace the study of implementation science and translating ideas into practice, although these topics are still nascent.[14] The challenge in global health is that too often the coordination between the strategic levels of policymakers and the operational levels of front-line clinicians and communities is limited. Inattention to the relationship between what will be done and how it will be done can result in failed efforts and uncoordinated, ineffective actions at all levels. Both implementation and operations (tactics) have been identified as critical research areas in global health.[15] Nevertheless, despite calls for building management capacity in low-income settings,[16] the vast majority of funding continues to support clinical and public health human resource development[17,18] rather than managerial development. Similarly, the majority of research funding supports biomedical research, with less attention to applied health services or implementation research.[19] Without systematic alignment of the tactics with the larger goals, action plans emerge with overly ambitious ends that quickly overstretch available means or induce the wrong means.[9] Accordingly, strategies to translate science into effective interventions must fully engage all stakeholders in both development and implementation of action plans.[20]

4. Use positive deviance to characterize practical solutions and foster scale-up

The integration of learning and practice is central to grand strategy.[21,22] Today in global health, this integrative notion is at the core of the 'positive deviance' approach to implementation research, first employed in health to achieve dramatic reductions in childhood malnutrition in Vietnam.[23] The positive deviance approach maintains that solutions to problems facing a community often exist within that community, and because these indigenous strategies rely on resources that already exist locally, they are more likely to be adopted and sustained. The demonstrated success of positive deviance, its application in diverse settings and with varied health conditions[24] and its consistency with the principles of grand strategy, suggest the benefits of continued investment in this model. In order to leverage the opportunities generated by positive deviance approaches, we must invest in gathering accurate, comprehensive data to characterize practices across the spectrum of global health initiatives. In addition to large-scale initiatives, global health also includes many smaller experiments with natural variation in outcomes; however, there is little systematic qualitative or quantitative research devoted to cataloguing these experiments and describing their impact. Such evidence could inform decisions about which initiatives to scale up and how to successfully accomplish this. In addition, this complementary nature of learning and practice is consistent with the

growing appreciation that it is essential to look across cultures for effective approaches in the common pursuit of global health goals.[13] While policymakers may design interventions with a clear vision of the large ends in mind, the means should be determined collaboratively by the community, the planners, and the donors.[25] Such collaboration is essential to beneficiaries to recognize they are both part of the problem and essential to its solution and for health interventions to be successful and sustainable.

5. Integrate timely intelligence into health interventions and improvement efforts

Timely and accurate intelligence (i.e., data) is fundamental to successful planning and implementation of grand strategic action.[21] Similarly, in contemporary global health, strategic leaders often argue for the need for credible evidence that can drive reforms,[26] and recent efforts to describe good practices for generating high quality health information[27] highlight current limitations and important features of global health data. Facilitating timely and grounded evidence to inform policy is therefore a fundamental part of grand strategy of relevance to global health. Unfortunately, although the need for evidence is widely agreed to in principle, data collection and analytic aspects of major initiatives are often insufficiently developed or neglected.[27] While public health has a history of using epidemiological data to support interventions,[28,29] the role of data as 'intelligence', as it is called in grand strategy, is less appreciated. Observers note that foreign aid does not target country priorities and that national policymaking is at odds with regional and community needs and preferences. Lack of coordination in both the international and domestic arenas is a symptom of the broader issue of inadequate information flow between levels of the hierarchy, and failure to appreciate intelligence as precise and detailed information about what is occurring at the front line. Although vital records and public health surveillance capacity are essential, more nimble approaches to capturing timely, grounded experience are also needed. For instance, timely tracking of performance metrics such as antiretroviral treatment and retention rates could facilitate data feedback that is central to delivery system improvements. Additionally, new technologies such as cell phones and personal digital assistants (PDAs) provide potential for front-line information not previously possible. Investment in these technologies therefore may have returns far beyond individual patient care. If used tactically to inform and adjust policies, such timely data could become the intelligence needed to achieve larger strategic goals.

6. A case application: maternal mortality

Reducing maternal mortality has been recognized as a central priority for improving global health for more than twenty years.[30] Nevertheless, the application of core principles of grand strategy has been uneven. We argue that the application of a grand strategy framework in pursuit of the goal of reducing maternal mortality can result in two potential positive outcomes. The first outcome is steady and positive progress toward accomplishing the large end of reducing maternal mortality itself. The second potential outcome is the development of country capacity to address pressing concerns in global health using a deliberate strategic approach that has been tested and refined over centuries. Acquiring capacity for grand strategic thinking can serve the interests of individuals, communities, and countries through sustained and strategic efforts to meet a myriad of health challenges.

Start with the end in mind. Although a key element of grand strategy – start with the end in mind – is demonstrated by the establishment of MDG 5 (reduce the maternal mortality ratio by three-quarters between 1990 and 2015), defining the end is only the earliest stage of developing grand strategy. Achievements in reducing maternal mortality, while notable,[31–33] have been mixed and progress will likely fall short of the goal.[34] As we have advocated, other core principles are critical to achieving those ends.

The ecologic approach. Health experts recognize the varied determinants of maternal mortality.[35–37] However, this holistic perspective is not widely shared by leaders in national security, economic growth and political development, all of whom have considerable influence on health,[38] and who could collaborate in the design of synergistic and potentially powerful interventions to effect widespread change. Ecologic interventions integrating economic welfare and health might include: micro-financing for emergency transportation services for women with complicated labor, providing payments for women to care for new mothers and healthy babies in their communities and attention toward forms of sexual violence that bring about high risk pregnancies, particularly in the young. A comprehensive understanding of the causes and effects of maternal mortality would also underscore the positive ripple effects of interventions to reduce maternal mortality, such as improved productivity, education and economic development.[31]

Tactics matter. Despite the importance of designing strategies to meet MDG 5, its accomplishment depends fundamentally on the ability to implement the strategy. Implementation of evidence-based interventions to reduce maternal mortality, such as effective emergency transportation systems, strong supply chains for medications, and reliable quality of labor and delivery care, requires strong logistics and coordination.[32,39] Such coordination is especially taxing on middle management, the core group that can connect and align strategic goals with front-line tactics. Despite this need, however, many low-income countries lack middle management capacity as key human resource and financial management functions remain centralized with government agencies rather than decentralized to the front-line organizations that provide health care.[16] The grand strategic approach would recommend focus on health center and hospital management as well as front-line staff empowerment to enable effective execution of the evidence-based strategies to reduce maternal mortality.

Use positive deviance to foster practical solutions and scale-up. Extraordinary improvements have been experienced for instance in Peru, Thailand, Mexico and Sri Lanka.[32,37,40-42] For instance, Sri Lanka has reduced mater-

nal deaths from between 500 and 600 maternal deaths per 100 000 live births in 1950 to 60 maternal deaths per 100 000 in 2005. Moreover, Sri Lanka accomplished this reduction while spending a smaller percentage of GDP on health than most countries at its income level.[32] Mexico has accelerated declines in maternal mortality from an average reduction of only 1.8% per year between 1990 and 2000 to 3.9% per year between 2000 and 2005.[42] Despite these examples of positive deviance, the wisdom from these experiences has been inadequately harvested, replicated, and scaled-up to meet MDG 5. A grand strategic approach would extract and synthesize the wisdom from these success stories and focus on replicating the experience in new environments. Although effort has been made to document success stories,[33] greater evidence is needed not just about *what* was done but rather about *how* successful interventions were implemented. Without such evidence, the wisdom of positive deviance is underutilized, and adoption and scale-up of successful strategies remains limited.

Timely intelligence and data. There is a notable lack of reliable maternal mortality data, particularly in low-income settings where maternal mortality is high.[43] Questions remain as to what data should be collected and how to collect such data. Since the first call to action in 1987, ambiguity due to these unanswered questions has persisted among important stakeholders. While all espouse the value of data collection, inadequate commitment has resulted in skepticism, underutilized resources and underwhelming results.[44] In circumstances where measurement metrics are agreed upon, surveillance systems are often not well established, and the availability of data can vary considerably between regions and across the rural–urban divide.[39] Capacity to generate systematic, reliable data on real time interventions and improvements is imperative but often undervalued, as data are captured to demonstrate compliance with program requirements rather than to assess impact. Specifically, data on maternal mortality will require investment both in vital records systems and in longitudinal medical records systems or registries that can routinely gather data as a byproduct of providing services. Targeted and practical research using these data is needed to inform and support tactics. Although the data infrastructure and mindset shifts required to champion real-time intelligence are substantial, these investments are essential for investigating key determinants of outcomes and for targeting interventions.

7. Conclusions

Major accomplishments in global health have been attained to date, including placing 2 million people on antiretroviral treatment in 2008,[45] and detecting and treating 4.6 million additional cases of tuberculosis.[46] Such achievements can largely be attributed to knowledge generated by the fields of public health, epidemiology, medicine, nursing and the behavioral sciences. However, the conceptualization of global health as a widely scoped, interdisciplinary sphere[13] requires us to think broadly and creatively about sources of learning and insight. The teachings of classic grand strategy offer unique and important contributions to current efforts to articulate desired large ends and to develop effective, coordinated implementation strategies to achieve these ends – eliminating health inequities[47] and ensuring optimal quality of care among nations and for all people.

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