Global Medicine in the 21st Century: A Vision for Academic Health Systems

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Introduction:

The health care industry has long been seen as playing by different rules than the rest of the economy. While healthcare has led in certain areas of technology – such as imaging and bio-pharmaceuticals – it has long been a laggard in the utilization of information technology – a staple of almost every other industry. Thus, it is without surprise that US healthcare, and their crown jewels of education, research and clinical care – Academic Health Systems (AHSs) - have taken a somewhat different path to globalization. As globalization has become a major strategy for almost every sector of the US economy, healthcare has only played at the fringes. However, healthcare is now faced with the real threats of global pandemics, unsustainable clinical care and research costs at home, medical tourism, and health disparities nationally and globally.

Thus, academic health systems are a late entrant into the area of globalization, as the threats and opportunities are greater than ever. This paper examines the rationale for academic health systems to "go global" and explores the scope of different approaches currently underway. By investing in global medicine through international public-private partnerships, AHS's will be better equipped to meet the challenges of today, while being able to contribute to and lead the global healthcare system of tomorrow.

What is Global Medicine:

The lexicon of globalization owes a lot to Thomas Friedman, who described the 21st century world as flat. For global healthcare and medicine, the activities have been variably described as international medicine, flat medicine, world care, and global health.[i] The term global health has been widely adopted in circles engaged in global health inequalities especially in under-resourced countries. In this paper we introduce the term "Global Medicine" to cover more broadly the building and delivery of the tripartite mission in all economies. This concept includes the entire enterprise of delivering care to patients, training the providers of today and tomorrow, conducting research which addresses global needs, developing collaborative and entrepreneurial opportunities, and advancing the standards of medicine at home and abroad in all economies.

Why must AHS's Go Global?

We are at a time in history when academic health systems (AHS's) must be engaged in global activities. The reasons range from reducing global health disparities, to amplifying the impact of the research, education, and clinical care missions, to responding to the challenges of a rapidly changing world. Indeed, AHS's have the capability to contribute and lead these global initiatives.

Barriers between nations are coming down. Information technology allows the sharing of ideas and experiences across care teams and patient populations. Thus, collaboration has never been easier, but with that has come an increasing demand for services from informed patients. International travel allows for physical resources to be more easily shared, but with that comes the relative ease and rapidity of transmitting communicable diseases such as SARS to distant populations and, thus, the shared responsibility among global medical communities of preventing and controlling potential pandemics. Furthermore, chronic diseases are no longer the plight of the developed world alone. In fact diabetes, obesity, hypertension and other chronic diseases are emerging as the leading disease burdens globally.[ii] Thus, there is a need to share and improve the Western approaches in addressing these areas, including preventive measures and effective medications for global implementation.

Meet Global Responsibility:

No longer is it sufficient for academic health systems to focus on providing care only to those who come through their doors. AHS's must now be involved with local community health, increasing access, and developing models of effective care delivery to help address health disparities locally and nationally.

The responsibility to act to does not end at the US border, as health disparities are even more severe worldwide. Poor environment, poor hygiene, poor economic development and poor access to healthcare have led to a dramatic increased disease burden and shortened life expectancy in 5 billion of the world's 6 billion citizens.[iii] Such burden and instability reduces opportunities for economic growth in the developing world and can threaten to destabilize the global economy and politics, making our efforts abroad both an economic and moral imperative.

Amplify Impact:

Engaging in global medicine has the great potential to amplify the impact of the academic mission, while building an international brand and reputation. For example, global medicine can support the research enterprise through international collaborations, and broaden the audience for research results, laying the ground work for becoming a true "global" thought leader. The

education mission can be advanced through reaching new sets of talented students and increasing exchange opportunities for existing students. Furthermore, the clinical enterprise can be expanded through an increased international presence and visibility. New models of care can be more easily developed and health management expertise can be formally tapped, shared and strengthened through international collaboration.

Also, it is important to recognize the bi-directional potential of global medicine activities. The learning from collaboration works both ways and new talent, ideas, business models and even technologies can be imported back home from abroad.

Meet New Challenges:

Lastly, given how globalization will drive major changes in the US healthcare system and in AHS's specifically, going global is not an option – it is a long-term strategic imperative. One such change is in clinical care. For example, US AHS's have historically been major resources for specialty care and training worldwide, with many international patients traveling to US AHS's for care. The landscape has changed since 9/11/01, and international patients are looking for alternatives in other countries. Add to that the increasing pressure from reduced reimbursement by US payers and from competing providers, whether they are at home (such as specialty hospitals) or abroad (such as medical tourism facilities), and it is not without surprise that some AHS's have turned to global activities in order to attract more patients from abroad or develop other sorts of revenue opportunities.

US AHS's are also threatened with the emergence of other types of global competitors, beyond just clinical care. Countries such as the United Kingdom are investing in the creation of Academic Health Systems,[iv] and research dollars have increasingly gone abroad, in part due to the lower cost of conducting research in emerging economies.[v] This is not limited to basic science research, as clinical research is experiencing tremendous international growth. For example, while the US represents nearly half of all global clinical trial sites recruiting patients, its market share has been decreasing.[vi] Conversely, while the emerging economies combined represent only 17% of actively recruiting sites, they are experiencing tremendous annual growth (ranging from 5.5% in South Africa to 19.6% in India and 47.0% in China). However, this growth presents problems, since it has been predicted that by 2011, India alone could represent 15% of global clinical trial sites, but at current levels of training, India would have only 10% of the trained human capital (clinical research assistants and investigators) needed to run those trials.[vii] This

trend may represent not only advantages related to lower costs and faster patient enrollment, but also the increasing regulatory burdens being placed upon clinical research in the US.[viii]

In short, it is important for AHS's to become players in (and leaders of) the emerging global marketplace of medicine. It is only a matter of time before international harmonization of healthcare quality and standards will occur and the global healthcare systems will converge, leading to the creation of a new paradigm and a common healthcare market. The emergence of international accrediting bodies such as the Joint Commission International (JCI) is one signal of this alignment. Thus, by engaging early on, AHS's can gain a seat at the table, stay at the front of the pack, offer up strengths while recognizing weaknesses, and remain competitive while understanding the new dynamics early enough to prepare the home institution for change.

What Do AHS's Have to Offer?

Despite the current state of the US health system, US AHS's have much to offer other countries in raising their standard of care especially in specialty care and healthcare administration. AHS's have been innovators and have been particularly successful in integrating activities across missions and across the spectrum of discovery and care delivery.

Put simply, US AHS's have a history of mission-based excellence. In education, that includes innovative teaching methods, such as evidence and problem-based learning, as well as a track record of success in training leading physicians, providers and scientists. In research, basic science from US AHS's has led to breakthrough discoveries. There is also a history of successful translation and commercialization of research[ix], coupled with a committed culture of quality and integrity. In care delivery, US AHS's have experience with integrated-delivery systems, evidence-based medicine, state-of-the-art technologies, and providing cutting-edge care to patients. Beyond specialty and advanced care alone, US AHS are also emerging as major leaders and drivers of improving healthcare in under-resourced countries, through their research and commitment to the global health disparities mission.

What is the Scope of Activities Underway?

With such a compelling case for AHS's to engage in global medicine, it is not surprising that many institutions are already moving in this direction. Activities cover the scope of the academic

missions, from care to education to research to health system design, as well as business opportunities such as developing and managing hospitals abroad. [See Table 1 below]

The activities represent different levels of commitment and reflect a variety of different perceived institutional strengths and priorities.

The Duke University School of Medicine and Health System are engaged in a broad range of activities, the most established of which is the Duke-National University of Singapore Graduate Medical School (described in more detail below) [See Table 2 below]. The Duke Global Health Institute (DGHI) operates in 15 countries in a wide range of activities in research, education and service-related projects addressing health disparities. One recent project is the DGHI's work with the Duke Fuqua School of Business and the Rockefeller Foundation to improve the healthcare workforce in developing countries. Duke Clinical Research Institute is further developing its global network of clinical research, especially in Asia, and is leading an initiative in Singapore to establish a Singapore Clinical Research Institute. Duke is also developing strategic partnerships (for example with Peking University) in areas of healthcare delivery and systems development, health administration and management training.

Given this broad array of activities at Duke and elsewhere, there is a developing understanding of the opportunities and risks posed by these activities and the lessons that can be learned from these experiences.

Potential Risks for Engaging in Global Medicine:

The types of risk that face global medicine activities are varied and real. They include but are not limited to financial, organizational, legal/political, and reputational risks. The primary goal for global medicine may not be to generate profits, but, like any other activity, it needs to be financially viable. That requires adequate capitalization, a sustainable business model, as well as adequate financial protection for existing activities. This is a particular challenge with new environments, different government policies and new business partners, with all of the uncertainties that come with such uncharted territory.

New activities often present organizational and managerial challenges, as well. This is no different for global medicine. There are bandwidth concerns for existing faculty and staff, and concerns about diluting intellectual and institutional assets at home. Since new hires may be

required abroad, these pose unique human resource challenges – including employment and benefits – and ensuring that the new staff is of high quality with a mind-set that is compatible with the culture of the home institution. Furthermore, if the new activities do not align well with existing programs, it will present internal challenges, requiring extra effort to establish buy-in at home.

The myriad legal and political risks vary from setting to setting, depending on the legal structure of the country, as well as the political environment and its relationship with foreign interests. Business practices in many countries are incongruent with US standards, and managing political relationships can take a large amount of effort from senior executives. Furthermore, if engaging in clinical care delivery or human subject research, where the potential for direct human harm is highest and most visible, the risks increase dramatically.

Lastly, the risk to an institution's reputation is ever present and can manifest itself along any of the dimensions above – or in additional, unforeseen ways. In the area of healthcare and medicine where there is involvement of human subjects, these risks are further amplified. However, an institution's brand brings value to potential partners, and if the brand is not part of the project, it is more difficult to get credit for your successes. In short, AHS's are taking calculated risks in an area with short-term uncertainty, but also long-term strategic importance.

How to Go Global – Duke Philosophy and Lessons Learned

While global medicine is still in its infancy, two early lessons can be gleaned from some of the existing activities: 1) stick to your key principles; and 2) where possible, engage in partnerships.

Key Principles:

The fast-changing international environment requires flexibility and frequent mid-course corrections. However, certain key principles, as self-evident as they may sound, can help guide activities through the turbulent waters. One such principle is that activities must be mission-driven. The financial draw of some potential partnerships can be tempting, but avoiding "mission-creep" is critical to ensure that activities ultimately strengthen and amplify (and not dilute) the mission. One cautionary tale is that of Harvard Medical International (HMI). Originally set up by Harvard University to handle international activities in medical educational and academic missions, it was recently transitioned to Partners Healthcare System due, in large part, to a misalignment of mission expectations between HMI's successful hospital consulting

and management business with Harvard University's focused interest in academic, education, and research missions.[x]

Another principle is to leverage the home institution's strengths. As tempting as it might be to develop new capabilities through global activities, that is often more than an institution can handle. Not only are the partners provided with a product of uncertain quality, but being able to measure whether that activity is successful is challenging without an existing track-record and a deep understanding of success and failure in that space.

Another principle is to protect one's existing assets (e.g. personal, intellectual, financial, or reputational assets). The home institution as well as local partners need to be protected not only because doing so is an existing obligation, but because the success of and ultimate returns from global medicine activities are dependent on the local community's willingness to partner in the effort and their perceived gains from the activities.

Finally, engaging as a long-term partner is also critical. Experience, as well as game theory, shows us that without a long-term perspective – with multiple iterations of the "game" - building durable win-win relationships is difficult. Cultural differences remain large between many nations (particularly between east and west) and they are best explored and overcome through personal interaction. Similarly, trust is as important as ever, and remains an asset that is best developed "on the ground." Therefore, if feasible, having a local "base of operations" can be a valuable asset. This is because it not only provides a way to build those critical personal relationships, but it also signals a long-term commitment to potential partnerships.

Public-Private Partnership Model:

As stated, partnerships are critical in global medicine. The problems are too large and the solutions too complicated, to be addressed alone. Thus, partnerships should be actively sought out, but also established in a rigorous and deliberate fashion. Given the complexities of healthcare and medicine, the socio-legal and political issues in different countries and the significant resources and support needed, an emerging model of effective implementation is through public-private partnerships (PPP). PPPs, also sometimes referred to as P3s, are an increasingly popular tool to accomplish important goals that are too complex to be addressed from a singular silo or parochial perspective:

> "There is a certain consensus in the policy literature to the effect that government does some things best, the private sector other things, and the not-for-profit still different things. In theory, public-private…partnerships could combine the best of each…The public sector draws attention to the public interest, stewardship and solidarity…The private sector is thought to be creative and dynamic…[and the] not-for-profit (or 'third sector') is strong in areas that require 'compassion and commitment to individuals'…This sector excels when commerce involves 'moral codes and individual responsibility for behavior'."[xi]

PPPs can serve different needs. For example, PPPs have been explored to improve the efficiency and responsiveness of government by selectively contracting with the private sector to deliver public services, such as through charter school programs or private insurance plans in Medicare. They have also been explored in order to fill needs that market forces have neglected, such as the Drugs for Neglected Diseases Initiative.[xii]

Academic institutions can serve the private or public function in any public-private partnership, and they are uniquely placed to serve as go-between industry and government. AHS's can serve a private function as a government contractor. It can also serve a public function by helping ensure quality in the activities conducted largely by private industry. Put another way, AHS's have the potential to be flexible and collaborate across many different activities in many different ways.

Developing PPPs requires three major areas of analysis and due diligence: 1) the partner, 2) the nature of the partnership, and 3) the specifics of the agreement. For starters, finding good partners is critical. In evaluating potential partners, one must consider issues such as a track-record of successful business relationships, cultural compatibility/understanding, and alignment of goals. For example, partnerships between the non-profit and public sectors are increasing in both number and success.[xiii] One reason cited for this success is the alignment of goals and interests between these types of partners.[xiv]

Just as critical as the partner itself is the nature of the partnership. Simply put, do the needs of one partner fit the strengths of the other, and does a partnership meet the goals of each party? For example, if the goal of a partner is to become a leader in translational research, then a gap analysis should be conducted to identify the capabilities and gaps of the partnering country or entity in pre-clinical, clinical, and health services research. Once the needs are identified, it is essential to ensure that those needs align with the AHS's strengths and interests. Further, when conducting such an analysis, it is important to remember that partnerships can and ideally should

be bidirectional. Capabilities are rapidly emerging in many countries and the partnering entities have strengths and experiences that can be valuable and portable to US AHS's.

Lastly, once partners and appropriate partnerships are identified, it is imperative to reach a clear understanding and agreement on shared missions, goals, values and expectations. The following 5 elements of any agreement are critical to mitigate failure and guide success: 1) completed strategic and operational plans, including key decisions and processes for mid-course corrections; 2) clear lines of responsibility; 3) achievable goals; 4) incentives for partners; and 5) performance metrics for monitoring progress.[xv]

In many ways, doing PPPs correctly is a daunting task. There have been successes that can be used as models. For example, in the year 2000, the Singaporean government launched their Biomedical Sciences Initiative, investing over $15 billion in educational infrastructure, research institutes, recruitment of world class scientists, and incentives to industry. The government also recognized that there was a research gap between their new PhD scientists and clinicians – a gap that needed to be filled by physician scientists. So Singapore partnered with the Duke School of Medicine – and through a $400 million commitment – Duke and the National University of Singapore founded a new graduate medical school with the explicit goal of increasing the supply of clinician-scientists to fill this gap.[xvi] In so doing, a pipeline of future innovators has been created that, over the long-run, will help turn the government's vision into a reality. Indeed, Singapore recognized another gap – clinical and outcomes research - and is asking Duke to help establish the Singapore Clinical Research Institute as well as building a health services research infrastructure.

Conclusion:

The world is changing rapidly. As threats to the health of the world's population increase, so do the opportunities to make an impact. If not done correctly, investing heavily in global medicine has many potential pitfalls, but the risks of inaction are too great to ignore. By leveraging their myriad strengths through public-private partnerships, US academic health systems can amplify the impact of their mission-based activities and improve the health disparities at home and abroad.

Tables and Figures:

Table 1: Selected Global Medicine Activities from Academic Health Systems			
Activity	US Institution	Location/Foreign Institution	Citation
Clinical Care:			
-Consulting/Advising	Harvard Medical International	Wockhardt Hospitals, India	http://www.wockhardthospitals
-Management Contract	Johns Hopkins	Tawam Hospital, Abu Dhabi, UAE	http://www.hopkinsmedicine.o
-Ownership Stake	MD Anderson	Spain	http://www.tmc.edu/tmcnews/(
Research:			
-Research Center	University of Pittsburg Medical Center	Palermo, Italy	http://www.upmc.com/Commu
Education:			
-Undergraduate Medical Education	Weill Cornell Medical College	Qatar	http://www.cornell.edu/visiting

Table 2: Selected Duke Global Medicine Activities	
Activity	Details
Duke - National University of Singapore Graduate Medical School	
Duke Global Health Institute	
Operational Activities Across Research, Education and Service Delivery	15 Countries (e.g. India, China, Honduras, Russia, Tanzania, Uganga, etc.)
Duke Clinical Research Institute	
Global Clinical Trials	64 Countries
Singapore Clinical Research Institute	

Other	
Health Administration	Developing program with PKU
Clinical Care	WorldCare Wellness, PKU Heart Center

[i] Crone, RK “Flat Medicine? Exploring Trends in the Globalization of Health Care” *Academic Medicine*, Vol. 83, No. 2/February 2008.

[ii] Abegunde D, Mathers C, Adam T, Ortegon M, and Strong K, “The burden and costs of chronic diseases in low-income and middle-income countries.” *The Lancet* , Volume 370 , Issue 9603 , Pages 1929 – 1938

[iii] Global Burden of Disease and Risk Factors, Edited by Alan D. Lopez, et. al., April 2006, The World Bank Group. ISBN: 0-8213-6262-3 http://www.dcp2.org/pubs/GBD

[iv] “Plans announced for the UK's largest Academic Health Sciences Centre,” April 10, 2008. http://www.guysandstthomas.nhs.uk/news/newsarchive/newsarticles/20080410ahsc.aspx; Accessed May 14, 2008.

[v] Clark, DE and Newton, CG, “Outsourcing lead optimisation – the quiet revolution,” *Drug Discovery Today* Volume 9, Issue 11, June 2004, Pages 492-500

[vi] Thiers FA, Sinskey AJ, and Berndt ER, “Trends in the globalization of clinical trials” *Nature Rev. Drug Discov.* **7**, 13–14 (2008) http://www.nature.com/nrd/journal/v7/n1/pdf/nrd2441.pdf

[vii] Bhalla V, Goodall S, Janssens B, et al., ”Looking Eastward: Tapping China and India to Reinvigorate the Global Biopharmaceutical Industry,” Boston Consulting Group, August 2006

[viii] Glickman SW, McHutchison JG, Peterson ED, Califf RM, Schulman KA. “Made in the USA, tested overseas.” Unpublished data.

[ix] Association of University Technology Managers, “U.S. Licensing Activity Survey – F.Y. 2006” http://www.autm.net/events/file/AUTM_06_US%20LSS_FNL.pdf

[x] February 4, 2008, “HMS Spin-Off Will Drop Harvard Name” The Crimson http://www.thecrimson.com/article.aspx?ref=521684

[xi] Rosenau, PV “Introduction: The Strengths and Weaknesses of Public-Private Policy Partnerships” *American Behavioral Scientist 1999; 43; 10-34.*

[xii] Pécoul, B. “New drugs for neglected diseases: from pipeline to patients.” *PLoS Med* **1**(1), e6 (2004).

[xiii] Lowry, RC “Nonprofit organizations and public policy,” *Review of Policy Research*, 14 (1-2): 107-116.

[xiv] Charles C. Hinnant “Nonprofit Organizations as Inter-regional Actors: Lessons from Southern Growth” *Review of Policy Research* 1995,14 (1-2) , 225–234.

[xv] Rosenau, PV “Introduction: The Strengths and Weaknesses of Public-Private Policy Partnerships” *American Behavioral Scientist 1999; 43; 10-34.*

[xvi] Williams, RS; Casey, PJ; Kamei, RK; Buckley, EG; Soo, KC; Merson, MH; Krishnan, RK; Dzau, VJ. “A Global Partnership in Medical Education Between Duke University and the National University of Singapore,” *Academic Medicine*. 83(2):122-127, February 2008.