Refocusing Knowledge Generation, Application, and Education:
Raising Our Gaze to Promote Health Across Boundaries

Kurt C. Stange, MD, PhD

Those educating healthcare professionals face the undeniable challenge that the current U.S. healthcare system is untenable.\textsuperscript{1} U.S. health care epitomizes low value—spending more than any other country while ranked 37th in the world—between Costa Rica and Slovenia, in its ability to equitably engender health.\textsuperscript{2} The September 14–15, 2010 conference on Patients and Populations: Public Health in Medical Education, sponsored by the Association of American Medical Colleges (AAMC) and the CDC, provided inspiring examples from those who are trying to show the healthcare professionals of the future a better way.

Yet, with U.S. healthcare spending American business into noncompetitiveness,\textsuperscript{3} mortgaging not only our children’s but our grandchildren’s futures, the task is more than to bring a public health understanding into the mainstream of research and medical education.\textsuperscript{4–6} The urgent need is to inspire and enable the younger generation to spring over the current dysfunctional medico-industrial complex, to bubble up diverse new streams that together create a torrential delta of change, so that quality health care becomes about both health and caring, accessible to all, while still leaving resources to strengthen the social and environmental determinants of health.\textsuperscript{5}

This daunting task—providing high-value health care for all while spending less and doing more to improve the actual health of the population—requires a different way of understanding health care and health than the current biomedical model. It requires a more inclusive way of framing the generation of new knowledge and of applying that knowledge in education and practice. This reframing involves raising the gaze and spanning boundaries.

Raising the Gaze

A reductionist biomedical enterprise has made impressive strides in understanding disease mechanisms and in curing or ameliorating certain diseases.\textsuperscript{7–9} But as the predominant health problems increasingly relate to chronic more than acute illness\textsuperscript{10}, as multimorbidity becomes the norm in an aging population\textsuperscript{11–14}, as health behavior, the education and employment of the population, and other social and environmental determinants become the
predominant drivers of health\textsuperscript{15}; a fragmented approach to understanding and advancing health becomes less and less effective, and the need for a complementary more inclusive approach has become more apparent\textsuperscript{7, 16, 17}.

A different lens with which to see the problem becomes vital\textsuperscript{18, 19}. This lens not only focuses on smaller and smaller parts, but also elevates the gaze upward—from molecule to person, from person to system, system to community, community to environment\textsuperscript{20}. Shown in the Figure as four circles, a gaze that takes in the broad factors affecting health includes: individuals and families, primary health care, healthcare systems, public health and communities. This elevated view recognizes that people live in a social context and their health is more than the sum of their diseases\textsuperscript{21, 22}. It recognizes that healthcare systems based on primary care have better population health, higher-quality health care at lower cost, and less inequality than systems based on more fractured approaches\textsuperscript{23–25}. It takes a systems perspective to health care, public health, and community.

As Risa Lavizzo-Mourey and David Williams note in an article in another recent supplement to the \textit{American Journal of Preventive Medicine}:

\begin{quote}
There is more to health than health care. Where we live, work, learn, and play can affect our health more than what happens in the physician’s office. Yet, ask our national leaders, “What determines health?” and you’ll hear about access to health care. As vital as health care and healthcare reform are, they are just part of the answer\textsuperscript{26}.
\end{quote}

Moving beyond health care to a broader view of health as a state that enables people to do valued life activities can totally reframe our health promotion efforts. Health can be understood as:

\begin{itemize}
\item a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity\textsuperscript{21}
\item a resource for everyday life, not the objective of living; it is a positive concept, emphasizing social and personal resources, as well as physical capacities\textsuperscript{27}
\item conditions that enable a person to work to achieve his or her biological and chosen potential\textsuperscript{28}
\item membership in community\textsuperscript{29}
\item the biological, social, and psychological ability that affords an equal opportunity for each individual to function in the relationships appropriate to his or her cultural context at any point in the life cycle\textsuperscript{30}
\item the ability to develop meaningful relationships and pursue a transcendent purpose in a finite life\textsuperscript{31}
\end{itemize}

Any of these inclusive, grounded, meaningful definitions of health helps to refocus energy toward solutions to the U.S. health and healthcare crisis, rather than toward more of the same. The enabling importance of focusing on health is indicated in the Figure by its centrality.
Boundary Spanning

Boundary spanning is reaching across borders to “build relationships, interconnections, and interdependencies” in order to manage complex problems. Boundary-spanning individuals develop partnerships and collaboration by “building sustainable relationships, managing through influence and negotiation, and seeking to understand motives, roles, and responsibilities.” Boundary-spanning organizations create “strategic alliances, joint working arrangements, networks, partnerships, and many other forms of collaboration across organizational boundaries.” Boundary spanning can be a source of innovation and of solving the problems created by working narrowly.

Transdisciplinary, multilevel research, education, and practice, and boundary-spanning efforts to promote health have great potential to build on the strengths of more narrowly focused approaches, while transcending their weaknesses. Many of these boundaries relate to crossing ideologies, disciplines, cultures, markets, peoples, and entrenched worldviews. As shown in the Figure and outlined below, boundaries that are important to span to advance health relate to (1) personalized health care; (2) healing environments; (3) responsible, evolvable organizations; and (4) healthy environments.

1. Personalized health care—a relationship between a clinician and care team with the individual and family that includes:
   - accessibility as the first contact with the healthcare system;
   - a comprehensive whole-person approach;
   - coordination of care across settings, and integration of care of acute and chronic illnesses, mental health and prevention; and
   - a sustained partnership over time.

2. Healing environments—restorative settings and conditions, including:
   - trustworthy, invested interpersonal and interorganizational relationships;
   - situations that enable a balance of action and reflection;
   - physical space that provides access to nature, light, privacy or positive sensory experience; and
   - meaningful work or activity.

3. Responsible organizations that move beyond sustaining past successes to continued development based on making sense of a rapidly changing environment—moving from sustainability to evolvability. Such organizations that enable health by:
   - following sound environmental procedures;
   - operating with integrity;
   - being accountable to employees, customers, vendors and the communities in which they operate;
recognizing the impact of their actions on the physical; emotional and social well-being of individuals and communities; and
devolving to meet emerging needs and conditions.

4. Healthy environments—physical and social surroundings that foster health, including:
• clean air, water and sanitation;
• affordable, accessible, nutritious food, especially fruits and vegetables;
• safe, affordable, comfortable and pest-free housing;
• safe, spacious areas for walking;
• crime-free neighborhoods and violence-free homes;
• economic opportunities; and
• affordable and available education.

Generating and Learning the Relevant Knowledge
Fortunately, different ways of knowing\textsuperscript{19} and of generating knowledge\textsuperscript{55, 56} are emerging. These emergent approaches have great potential to complement the dominant reductionist models of knowledge generation and use\textsuperscript{57–60} to enable boundary spanning that advances health. The new models include participatory\textsuperscript{50, 61–65} and practice-based network research,\textsuperscript{62, 66–76} multimethod approaches that integrate quantitative and qualitative methods,\textsuperscript{77–83} and theories that recognize the complex adaptive nature of the systems that relate to health and health care.\textsuperscript{13, 80, 84–95} Glimmers of support for these more inclusive approaches to research are seen in the NIH Clinical and Translational Science Awards, CDC Prevention Research Centers, and the CDC–AAMC Cooperative Agreement that led to this journal supplement. Even the comparative effectiveness research movement\textsuperscript{96–99} has potential to step in a more systemic direction as it struggles to move from a focus on drugs and devices\textsuperscript{96} to comparing different systems affecting health care and health.\textsuperscript{100}

I invite readers who are interested in the emerging effects of boundary spanning and health to share your own stories or knowledge from other sources at the website of the Promoting Health Across Boundaries initiative (www.PHAB.org).

Daniel Federman, in his address at the 2007 American Association of Medical Colleges Annual Meeting commented:

I believe we should enlist some medical students as agents of change, committed to designing a system of care that is equitable, cost-effective, prevention-oriented, universal, and thus moral. I suggest...an activist focus, and consistent mentoring.\textsuperscript{5, 101}

The 2010 conference on Patients and Populations: Public Health in Medical Education advanced this vision beyond medical students to include multiple disciplines, generations, organizations, and communities that care about health. The hard work of the boundary
spanner is needed in research, education, systems development, and practice. Combined with an inclusive view of health and an elevated gaze, there is great cause for hope. 31

Acknowledgments
Mary Ruhe and Heide Aungst helped to develop many of the ideas contained in this manuscript. Dr. Stange’s time is supported in part by a Clinical Research Professorship from the American Cancer Society and by the Case Western Reserve University/Cleveland Clinic Clinical and Translational Science Collaborative, Grant Number UL1 RR024989 from the National Center for Research Resources (NCRR), a component of the National Institutes of Health and NIH roadmap for Medical Research. Its contents are solely the responsibility of the author and do not necessarily represent the official view of NCRR, the NIH or the ACS.

Publication of this article was supported by the CDC–AAMC (Association of American Medical Colleges) Cooperative Agreement number 5U36CD319276.

References


Figure 1.
Promoting health across boundaries