

Invitational Symposium Workshop on the Sustainability and Promise of Telemedicine

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General Introduction

This issue of *Telemedicine and e-Health* presents proceedings from an invitational symposium workshop held on the campus of the University of Michigan on May 18–19, 2012. The program focused on two issues considered critical for the future of telemedicine development, namely, sustainability of this modality of care and taking the field to the next level in realizing its promise. Both issues were addressed from the current spectrum of major policy and delivery contexts, including federal policy agencies, academic medical centers, direct service delivery systems, and a single-payer system.

This issue of the *Journal* includes articles by key speakers at the symposium workshop. These articles constitute a sampling of the perspectives on telemedicine noted above and, it is hoped, provide insight into what sustainability means in the context of specific telemedicine programs and how successful programs have capitalized on various resources and strategies to achieve sustainability. As noted at the outset of the meeting in my introductory remarks,

It is time to deliver on the promise of telemedicine proclaimed by some of us over the course of some four decades. The promise of telemedicine is often said to rest on the simultaneous combination of three pillars: improved access, enhanced quality, and cost savings. Indeed, this is a daunting promise, one that is difficult to fulfill.

The Symposium Workshop

Bringing together a number of thought leaders in the field (see Appendix A for the program and Appendix B for a list of participants), the symposium workshop focused on two basic issues: (1) the sustainability of telemedicine in the current environment and, more specifically, the business models that have been utilized to date and (2) how to realize the promise of telemedicine in future development.

The symposium addressed these issues from a variety of perspectives, including public policy and health systems in the private and public sectors. As a prelude to the discussion on sustainability, representatives from federal agencies (Sherilyn Pruitt, Office for the Advancement of Telehealth; William England, Universal Service Administrative Company) that provide a large share of the funding for research and development in this field described the respective missions of their agencies and the available mechanisms for funding telemedicine programs and projects.

Several speakers representing successful state-based programs (Elizabeth Krupinski, University of Arizona; Dale Alverson, University of New Mexico; Joseph Ternullo, Harvard–Massachusetts General Hospital’s Partners HealthCare; Thomas Nesbitt, University of California Davis; and Karen Rheuban, University of Virginia) addressed the issue of sustainability directly by describing the business models they have used to sustain their own programs in their respective settings and identified the factors that led to their success.

Representatives from federal direct delivery systems included those from the U.S. Army (Ronald Poropatich), the Veterans Administration (VA) (John McCarthy, in cooperation with Adam Darbins), and the Indian Health Service (Mark Carroll). A representative from Ontario, Canada (Edward Brown) provided significant insight into the substantial role of telemedicine in a single-payer system. Finally, a representative of a large-scale and well-established telemedicine program described the scope and range of telemedicine services for Alaska Natives (A. Stewart Ferguson).

This perspective and the issues therein are discussed in more detail in the summary article that follows welcoming remarks by Douglas Strong, CEO, University of Michigan’s Hospitals and Health Centers, and Donald A.B. Lindberg, Director of the National Library of Medicine (by videotape).

Welcome by Douglas Strong

“Good morning. Welcome to Ann Arbor. This is a beautiful day. All days in Ann Arbor are like this. If you believe that, I have a telemedicine package I’d be happy to sell you.

My name is Doug Strong. I am the CEO of the University of Michigan Hospitals and Health Centers. On behalf of the University of Michigan Health System, I would like to extend a warm welcome to you, our distinguished guests, including representatives from Argentina and Canada, the Office for the Advancement of Telehealth, the U.S. Army, the VA, and Universal Service Administrative Company, as well as several leading academic medical centers from around the country. I understand that you will be working hard today and tomorrow to examine various models for the sustainability and performance of telemedicine systems in both public and private sectors here and abroad and how to advance the field to the next level.

As you well know, information technology in general and telemedicine in particular now occupy center stage in healthcare policy reform at the institutional, state, federal, and international levels. As each prior generation in healthcare has faced its own challenges, so it is with us today. In one sense, our challenges may not be all that new. However, the stakes today may be higher than before. Some believe that we are fast approaching the time when we cannot afford to

support the current healthcare system or that to which we aspire without structural changes in the organization, financing, and delivery of health and medical services. Undoubtedly, the tools of telemedicine, telehealth, e-health, m-health...whatever term you prefer and whatever that term means to you...must be considered seriously in all strategies aimed at extending the reach of medical centers to serve the needs of remote and underserved populations, as well as improving quality and safety and controlling costs for all patients.

The University of Michigan Health System is keenly interested in the outcome of your deliberations. We are actively engaged in re-vamping our telemedicine program as an essential component of our strategic plans to extend the reach and variety of our clinical services to a widely distributed patient population. We are expanding the scope of partnerships and collaborations with sister systems and providers throughout our state. We look forward to incorporating the appropriate tools that telemedicine has to offer to fulfill our mission and to achieve our strategic objectives.

The University of Michigan Health System family and I wish you success in this symposium workshop, and we look forward to reading your reports. Though your current stay in Ann Arbor is likely to be short, we hope you enjoy our university and city, and we welcome you to return for a more leisurely stay unencumbered by the hard work ahead of you, both today and tomorrow. Welcome and thank you!"

Greetings from Donald A.B. Lindberg

"Welcome to a wonderful telemedicine meeting and to wonderful Ann Arbor, Michigan. I am sure that my friend Rashid Bashshur will have organized a great experience for you. I really do wish I could be with you.

Were I there, I'd have a few things that I would expect and look for. First, I would ask where are the new applications in telemedicine? That is one of the reasons it is such a wonderful field—there are always new, good applications. And, of course, the follow-up question is, what benefit in medicine will those applications bring? But I am sure I wouldn't have to look too hard at your meeting to find those.

My next question would be, will I find a paper or a demonstration or something that will assure me that you are moving forward and telemedicine is getting built into and integrated into regular healthcare delivery systems, which is to say those that pay for care. The question of a technology being picked up and adopted and adapted by the ordinary health system hinges a lot on evaluation; I realize that. That has always been a touchy point with all of us.

Evaluation can be hard to do, however, and I guess I am as wary as any at your meeting of accepting the idle claim of 'please give us more money for more computers, and we will save you healthcare delivery costs' because that usually doesn't happen. However, in the case of telemedicine, it is really an unusually great opportunity to measure the cost of your systems and also the costs avoided. The major costs avoided obviously are related to travel, and that's not minor at all!

I've been doing work recently with the VA system—a very fine system—but, of course, their beneficiaries are veterans distributed all over the country. They can easily live 4, 5, 6, or 7 hours from the closest VA facility, and the trip would of course entail an overnight

stay. This would mean the patient has to miss work if employed, other family members may have to leave work—there's a lot to accommodate. Well, those are the types of cost that telemedicine can avoid. I mean, one of the early telemedicine applications was to be able to check the battery life of defibrillators—you know, very little computing was involved. Today, a lot of travel expenses are avoided, thanks to telemedicine.

Then the next thing I would look for in wandering around your good meeting—of course, I would probably look for a cup of coffee or something like that, too—but, for content, I would like to find a place where I could see that you all, the experts practicing telemedicine, would have found a way to integrate with or coordinate with or take over, if you will, the people with the new ideas following up on yours of mobile health—people who are focused on the almost ubiquitous availability of smartphones and other handheld devices, which communicate pretty darn well. Now, I am not sure which group would take over which group, but you all certainly had the ideas first! The National Institutes of Health (NIH) is taking a little bit of interest in that development. At the NIH Institute Directors meeting a few months ago, we had a special presentation by the President of Qualcomm. As you know, they make computer chips that are used in smartphones. It was a very good presentation and not particularly commercial, except that of course the business is commercial. He did pass along one interesting piece of information that I will repeat to you. He said, trying, I guess, to reduce the ego of the medical people around here, "You all ought to realize that worldwide, which is our beat, there are more cell phones than there are toothbrushes." So he was focused on the commercial market, which is very large. Nonetheless, mobile technology provides fantastically good telecommunications.

Of course, there are those who package the idea of medicine and commerce together and call it m-health—mobile health. In fact, I have to tell you that, just this morning, I noticed that there will be an m-Health Summit, in the Washington, DC area, December 3–5, 2012. I would hope some of you will attend such a thing. I wouldn't have to remind you that telecommunications ideas started with you all, not with cell phones. Even so, let's figure out this turf. If you invested in cell phone technology, that's great, but if they're taking over, as it seems they may be, then you should work out a good agreement with them.

In the meantime, you have my interest forever, and I wish I could be with you. I wish you the best in all that you undertake. Goodbye."

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Appendix A

SYMPOSIUM PROGRAM: SUSTAINING AND REALIZING THE PROMISE OF TELEMEDICINE UNIVERSITY OF MICHIGAN HEALTH SYSTEM, TELEMEDICINE RESOURCE CENTER

Friday, May 19, 2012		1:30–1:50	Elizabeth A. Krupinski, PhD Arizona Telemedicine Program, University of Arizona
9:00–9:20	<i>Welcome</i> Douglas Strong, MBA CEO, University of Michigan Hospitals and Health Clinics <i>General Introduction</i> Rashid Bashshur, PhD Director of Telemedicine, University of Michigan Health System	1:50–2:10	Dale C. Alverson, MD Medical Director, Center for Telehealth and Cybermedicine Research University of New Mexico
9:20–10:00	<i>Federal Perspective (Chair: Charles R. Doarn, MBA, Editor-in-Chief, Telemedicine and e-Health)</i>	2:10–2:30	Joseph Ternullo, JD, MPH Associate Director of Partners HealthCare, Center for Connected Health
9:20–9:40	Sherilyn Pruitt, MPH Director, Office for the Advancement of Telehealth	3:00–3:30	Thomas S. Nesbitt, MD, MPH (by video) Associate Vice Chancellor, Strategic Technologies and Alliances University of California Davis Health System
9:40–10:00	William England, JD Senior Director, Rural Healthcare Evaluation Universal Service Administrative Company	3:30–3:50	Karen S. Rheuban, MD (by video) Senior Associate Dean for CME and External Affairs Director, Center for Telehealth University of Virginia
10:00–11:00	<i>Direct Delivery Systems</i>	3:50–5:15	<i>Open Discussion</i> Pamela Whitten, PhD Dean Michigan State University Jim Grigsby, PhD Departments of Medicine and Psychology University of Colorado Denver Elizabeth A. Krupinski, PhD Arizona Telemedicine Program, University of Arizona
10:00–10:20	Mark Carroll, MD Telehealth Clinical Consultant Indian Health Service		
10:40–11:00	COL Ronald Poropatich, MD (by video) Deputy Director, Walter Reed Army Medical Center U.S. Army, Telemedicine and Advanced Technology Research Center		
11:00–12:00	<i>Open Discussion</i> John F. McCarthy, PhD, MPH, Director, VA National Primary Care, Department of Veterans Affairs) – <i>Brief Overview of the VA</i> Charles R. Doarn, MBA Professor of Family and Community Medicine University of Cincinnati Gerald Serwer, MD Professor of Pediatric Cardiology University of Michigan Health System Gary Shannon, PhD University of Kentucky	6:00	<i>Dinner</i> <i>Chair: Gilbert Omenn, MD, Professor of Computational Medicine and Bioinformatics University of Michigan</i> <i>Greetings from the National Library of Medicine</i> Donald A.B. Lindberg, MD (by video) Director, National Library of Medicine <i>Greetings from the ATA</i> Jonathan Linkous, MPA Chief Executive Officer, American Telemedicine Association <i>Reflections on the Field</i> Jay H. Sanders, MD President Emeritus, American Telemedicine Association Professor of Medicine (Adjunct), Johns Hopkins University Dale C. Alverson, MD Medical Director, Center for Telehealth and Cybermedicine Research University of New Mexico
1:00–2:00	<i>International Perspective (Chair: Jim Grigsby, PhD, Departments of Medicine and Psychology, University of Colorado Denver)</i>		
1:00–1:30	Edward Brown, MD Chief Executive Officer Ontario Telemedicine Network		
1:30–5:15	<i>Academic Medical Centers (Chair: Pamela Whitten, PhD, Dean, College of Communications, Arts and Sciences, Michigan State University)</i>		

Saturday, May 20, 2012

9:00–10:10 *Special Programs, Populations (Chair: Elizabeth A. Krupinski, PhD, Arizona Telemedicine Program, University of Arizona)*

9:00–9:20 Stewart Ferguson, PhD
Chief Information Officer
Alaska Native Tribal Health Consortium
President, American Telemedicine Association

9:20–9:40 Jonathan Linkous, MPA
Chief Executive Officer, American Telemedicine Association

9:40–10:00 Kathy Duckett, RN, BSN (by video)
Director of Clinical Program
Partners Healthcare at Home

10:00–10:10 Discussion: Home Healthcare (Thomas W. Mann, MBA, Visiting Care Manager, University of Michigan Home Care Services)

10:30–12:15 **Summation, Conclusions, Next Steps**
Jim Grigsby, PhD, Departments of Medicine and Psychology, University of Colorado Denver
Elizabeth A. Krupinski, PhD, Arizona Telemedicine Program, University of Arizona
Jay H. Sanders, MD, Professor of Medicine (Adjunct), Johns Hopkins University
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Appendix B

SYMPOSIUM-WORKSHOP PARTICIPANTS

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