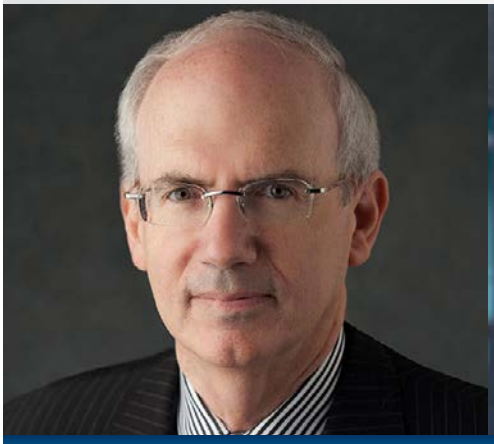
ASSOCIATION OF ACADEMIC HEALTH CENTERS

LEADERSHIP PERSPECTIVES

Optimizing Financial Health: Investing in Innovative, Future-Oriented Facilities



Jeffrey P. Gold, MD
CHANCELLOR
University of Nebraska Medical Center

Ivy Ng, MD
GROUP CEO, SINGAPORE HEALTH SERVICES PTE LTD
Duke-NUS Medical School Singapore

Richard W. Thomas, MD, DDS, FACS
MAJOR GENERAL, U.S. ARMY (RET)
PRESIDENT
Uniformed Services University of the Health Sciences

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PERSPECTIVE

BY **Steven L. Kanter,** MD // AAHC President & CEO

On October 28, 1943, Prime Minister Winston Churchill asked the Parliament of the United Kingdom to appoint a "select committee" to consider plans for rebuilding the House of Commons, which had been damaged by enemy bombs approximately two and one-half years earlier. Churchill, attempting to persuade members of parliament to pursue a particular building architecture—and significantly predating the confluence of architecture and neuroscience as a force in building design[1]—noted, "We shape our buildings and afterwards our buildings shape us."

Churchill's forward-looking statement is important for academic health centers today, as they invest in innovative, future-oriented facilities. To find evidence that this is true, we need look no further than this issue of *Leadership Perspectives,* which focuses on the impressive, state-of-the-art facilities and infrastructure that are central to academic health centers' missions, leadership, and investment strategies that both anticipate and respond to changing dynamics in the healthcare landscape.

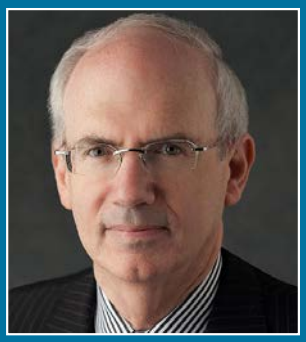
Jeffrey P. Gold, MD, chancellor at the University of Nebraska Medical Center, discusses the importance of aligning elected leaders, taxpayers, business leaders, and philanthropists in service of a shared belief of the importance of investing in innovative, future-oriented infrastructure. Highlighting the many state-of-the-art facilities at the UNMC "500-mile wide campus," he notes that "investments in future-oriented facilities empower us to live our mission…to create a healthy future for all individuals and communities."

Ivy NG, MD, group CEO, Singapore Health Services at the Duke-NUS Medical School Singapore, describes how her institution has invested in innovative infrastructure based on a vision of "Care to Heal, Educate to Empower, and Innovate to Advance." She notes that the state-of-the-art facilities underway or newly built, concurrent with that vision, provide "the full spectrum of longitudinal care with the unified clinical governance…and delivers scale for efficient resource management."

Richard W. Thomas, MD, DDS, FACS, major general, U.S. Army (ret) and president of the Uniformed Services University of the Health Sciences, raises the importance of adaptability at academic health centers. Focusing on how his institution has evolved its facilities into an optimized, innovative infrastructure, he notes that in order to "not only survive, but to succeed, innovation, adaptability, and a sense of urgency have allowed us to continue the USU mission."

These three outstanding commentaries remind us that wise investments in innovative facilities not only lead to better financial health, but also that forward-thinking design impacts the way people respond to their built environments, and can catalyze human achievement.

1. Gepshtein S, Snider J: *Neuroscience for architecture: The evolving science of perceptual meaning*. PNAS July 16, 2019 116 (29) 14404-14406. **https://doi.org/10.1073/pnas.1908868116**



Jeffrey P. Gold, MD
CHANCELLOR
University of Nebraska Medical Center

> “...this is not just a pretty building with amazing technology. It is an investment in our future. This is an investment in our financial health...”

In Nebraska, and at the University of Nebraska Medical Center, we are blessed that our elected leaders, our taxpayers, our business leaders and our philanthropic community, believe strongly in investing in innovative, future-oriented programs, people, and, as we are talking about today, facilities.

Our institution has been the beneficiary of such investments: including the **Fred & Pamela Buffett Cancer Center**, **a highly integrated cancer center**; the Dr. Edwin G. & Dorothy Balbach Davis Global Center, **a greatly advanced clinical simulation facility** and home to the national **Training, Simulation and Quarantine Center**; and currently underway, Project **NExT**, a planned state-of-the-art academic medical center facility and federal all-hazard disaster response military and civilian partnership.

These facilities have been, and will continue to be, game-changers. They enable us to rethink the way **cancer prevention and care are delivered and experienced**. They put us on a faster track to next-generation individual—and community—based caring and care delivery. They provide new tools to **transform learning, teaching, training, and research**. They allow us to continually recruit and retain the very best talent, an excellence that builds upon itself. They ensure that patients—in Nebraska and beyond—will receive care from clinicians who will be **better prepared and more experienced** than any time in our history.

These facilities, our truly **500-mile wide campus**, put us in best position to continue as an invaluable partner in the fight against all-hazard 21st century threats encompassing chemical, nuclear, biological, environmental, and others. And yes, this includes the kind of pandemic we face today.

The key to our success in this area is that we take seriously the word “investment,” as do our investors.

These public and private monies are not merely gifts; and they are not given out of obligation or out of a desire to be associated with our name-brand. After decades of dedication and hard work at UNMC, investors believe in our mission and we are humbled and grateful for that. The funds to build these future-oriented facilities are a true investment—with an **expected return to the communities we serve**.

When we talk about optimizing financial health through investment in these facilities, we must realize that this does not happen in a vacuum. In Nebraska, at UNMC, we take seriously our role as a **driver in our state’s economy**. We know, and our state knows, that our success is all of our success.

Our academic health center is the largest employer in the state. Studies have shown that the University of Nebraska brings a 7-to-1 return on investment in taxpayer dollars. That figure is now exceeding 12-to-1 for our academic medical enterprise. Moreover, we have been able to leverage these **taxpayer dollars** to spur private giving and commercial economic development on a significant and enviable scale.

Dr. Edwin G. & Dorothy Balbach Davis Global Center

These **unique public-private partnerships** have allowed us to accomplish what few other states, certainly few other academic health centers, have been able to achieve. In the case of the Davis Global Center, a nearly $20 million investment by the U.S. federal government, a $25 million investment by the state, paired with our namesakes' families and other private donors, has created a truly remarkable facility dedicated to improving human performance using augmented and virtual reality. And, with our global partners, this is widely shared.

But, this is not just a pretty building with amazing technology. It is an investment in our future. It will optimize healthcare outcomes and regional financial stability. This is an investment in our financial health, in jobs.

These investments in future-oriented facilities empower us to live our mission, to lead the world in transforming lives, and to create a healthy future for all individuals and communities, in Nebraska and beyond.

Ivy Ng, MD
GROUP CEO,
SINGAPORE HEALTH
SERVICES PTE LTD
Duke-NUS Medical
School Singapore

SingHealth is fortunate to have charted its growth these last 20 years in Singapore where economic growth has been steady. Our vision, "Defining Tomorrow's Medicine," rests on three pillars: *Care to Heal, Educate to Empower, and Innovate to Advance*. We have made conscious efforts to invest in all these areas. SingHealth is 30,000 employees strong and is sited over four large campuses and eight primary care community clinics in central and eastern Singapore.

Care to Heal

Our flagship campus was designed to create specialty quaternary national centers around the largest and oldest hospital in Singapore—Singapore General Hospital (SGH). We have five such centers: cardiology, oral health, neuroscience, oncology, and ophthalmology. The new National Cancer Centre of Singapore (NCCS), expected to be completed in a year's time, will be interconnected with the new SGH (to be built) for economies of scale and synergies, both for optimum infrastructure utilization as well as better care coordination and ease of multi-disciplinary collaboration for the patient. NCCS will also house the state-of-the-art Proton Beam Therapy Centre.

While this concentration of high-cost technology and specialists allows economies of scale, patients benefit from efficient access to one-stop care for multiple conditions. The National Centres also operate satellites on the other campuses under a single clinical governance framework to provide care at the appropriate level for these secondary practice settings.

At one of our Integrated Practice Units, which span from primary to tertiary care, we piloted a smaller stand-alone building for the Diabetes and Metabolism Centre (DMC). Entire care protocols are reviewed and revamped to support the elderly who have complicated chronic diabetes. Services wrap around the patient with care in an appropriate setting. Bringing all the necessary services under one roof has resulted in significant improvements in clinical outcomes and patient experience. DMC is now seen as a regional benchmark for complex diabetic cases.

The co-location on each of our campuses of the anchor acute hospital with a community hospital facilitates timely and seamless right siting of patients and facilitates efficient utilization of beds across the system. The ability to cross-cover also allows optimal clinician staffing across both facilities.

Educate to Empower

When Academia was completed in 2013 (a twin-tower construct designed for co-locating the education, research and clinical pathology functions), it was opportune timing for the creation of the SingHealth Institute of Medical Simulation (SIMS). Investments were made in surgical simulators and high-fidelity surgical manikins, among others, along with serious game and XR (extended reality) technologies. SIMS offers a range of signature courses that attract regional participants and is the first and largest healthcare simulation institute in Singapore and South East Asia to have achieved full accreditation by the U.S. Society for Simulation in Healthcare (SSH).

Given the disruption COVID-19 caused in medical training and education, SIMS has proven essential in charting a course for technology-based learning to ensure safe and optimal training.

> "Our infrastructure provides the full spectrum of longitudinal care with unified clinical governance, affords a strong revenue base, and delivers scale for efficient resource management."

Innovate to Advance

Academia also included a major investment in research infrastructure. Close proximity of research facilities to clinical care areas significantly improves the output of clinically impactful projects. Academia houses 49 wet labs and eight dry labs. Shortly after Academia opened, we began to consolidate

all **Singapore Eye Research Institute (SERI)** labs, previously scattered over the island. SERI ranks first globally, in terms of number of eye publications per capita.

Another investment is the **Investigational Medicine Unit (IMU)**, which is a 30-bed unit solely for the conduct of clinical trials (CT), housed within SGH. The 46 on-going clinical trials include one for a COVID-19 vaccine (Lunar-Cov19 vaccine with Arcturus Therapeutics), as well as a COVID-19 antibody treatment with Tychan. An organized clinical trial infrastructure on campus allows efficiencies and the ability to tap into our large patient base to enable us to take the lead with private partnerships.

To quote a cliché, "form has to follow function" to obtain efficiencies and optimized patient experience. With changing models of care, an aging population, and now pandemic considerations, continued investments in infrastructure are key.

Our infrastructure provides the full spectrum of longitudinal care with unified clinical governance, affords a strong revenue base, and delivers scale for efficient resource management. While patients have always been at the heart of infrastructure planning, this has not led to trade-offs in resource optimization, productivity, and economies of scale, but is fully congruent with maintaining financial health.

Richard W. Thomas, MD, DDS, FACS

MAJOR GENERAL, U.S. ARMY (RET)

PRESIDENT

Uniformed Services University of the Health Sciences

This year has demonstrated that an institution's financial health relies on the physical, mental, and spiritual health of those who comprise our esteemed institutions. Paramount to this focus, adaptability has become a hallmark of survivability for both individuals and institutions. Individuals have had to alter personal habits and behaviors, healthcare systems have had to modify processes to ensure the safety of patients, and institutions of higher education have had to adjust their learning platforms.

During my Army career, a perspective often adopted by leaders was "Mission First, People Always." Academic health leaders, like the military, must ensure mission success, while never forgetting that our strength is our people (staff, patients, learners, and even ourselves). In order to not only survive, but also to succeed, innovation, adaptability, and a sense of urgency have allowed us to continue the USU mission of educating the next generation of military healthcare leaders.

The USU CIO had the foresight to prepare the university IT infrastructure and framework to be responsive to evolving requirements, to include potential crises such as COVID-19. USU established an accredited full collaboration suite 10 years ahead of peers; modernized the University's Learning Management System, while reducing per user costs from $1840/user to $4/user; established the Department of Defense's (DoD) first .edu accredited network, securing a gateway for academic access and research collaboration. USU enabled a 4000-fold increase in bandwidth providing a 100 gigabit ethernet connection supporting one of the world's most productive genome sequencing centers; a professional grade "green room" for pre-recording lectures; a robust lecture capture system that provided an additional asynchronous teaching modality; and developed dozens of quick reference guides showing faculty how to perform common distributed learning tasks.

Our focus on military-relevant research, such as infectious and tropical diseases, allowed us to use a foundation already laid to pivot and focus on development of therapeutics and vaccines. The COVID-19 Practice Management Guide, co-developed by USU faculty for DoD, is now widely used in the civilian sector. Our scientists have led the design and implementation of a COVID-19 Registry to provide a centralized data collection platform that will support COVID-19 epidemiology and clinical performance improvement.

To foster these initiatives and many others, USU embarked on a capital campaign to build a new research and education facility based on "research neighborhoods." Evolving from the old standard of individual researchers having individual laboratories, the new layout will bring common themes and interests into the same geographic area ("collaboratories"). These research neighborhoods, both virtual and brick-and-mortar, will nurture innovation of similarly themed discovery pursuits (traumatic brain injury, precision medicine, emerging infectious diseases).

As we navigate this unchartered territory of a pandemic, we will need to look at new ideas, new ways of accomplishing our respective missions. The way that we have accomplished our mission in the past may now be obsolete. And, to optimize our institutions' financial health, we will accomplish this within the context of ensuring that our patients, staff, faculty, and learners remain the priority, always.

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