Strategic Planning for the University of Nevada School of Medicine and the Nevada Health Sciences Center

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Introduction

This document summarizes the current environmental context for the University of Nevada School of Medicine. As we move toward an integrated health sciences center in Clark County and a possible alignment with the Nevada Hospital Association, we face a number of internal and external challenges and questions. I believe that only by candidly and openly acknowledging and discussing each of these can we achieve our overarching goal – improving health care for every Nevadan while strengthening and diversifying our economy. This is by no means inclusive, but the following areas are highlighted:

1. The four goals of the school of medicine, an analysis of how we arrived at them and their implications for planning and resource allocation.
2. The current status of the school of medicine, and some of the challenges and opportunities that we face.
3. The core principles underlying a robust, built to last affiliation with a hospital system.
4. Finally, for our convenience I have included copies of the Nevada Hospital Association correspondence with NSHE.

Clearly, I have omitted many important areas for future discussion and decision, and I apologize for this. It is not my place, nor my intention to speak for the diverse constituents who ultimately must work cooperatively to achieve our goal. However, the school of medicine and NSHE face an extremely aggressive deadline in declaring our interest and intentions with respect to the Nevada Hospital Association. Hence, I have highlighted issues from the perspective of the medical school.

We have an extraordinary opportunity to transform the face of health care in Nevada, and we the faculty and staff of the school of medicine are totally and completely committed to this goal.

November 20, 2005
John A. McDonald, dean, school of medicine.

The looming health care crisis in Nevada

Our health care crisis, like the unseen underwater menace of an iceberg, is largely hidden from view, visible only to providers and educators, economists, health policy analysts, and government officials. However, by every measure – adverse health outcomes, access to care, availability of physicians and other health care providers, and the facilities to care for our rapidly growing and aging population – Nevada faces a health care crisis. The school of medicine is committed to addressing the health needs of the state now and in the future. It is up to us, the leaders of the state system of higher education, and our stakeholders, to articulate our concerns and solutions before our health care system sinks.

In 2002, the Innova Corporation estimated the need for physicians in Nevada, based on conservative estimates using national averages[1]. Table 1 demonstrates the projected need for physicians in Nevada through 2030. Similar need exists for virtually every category of health care provider (nurses, physician assistants, physical therapists, speech therapists, pharmacists, etc).

Physician Needs Summary - 2010			
Specialties	Median Need	2000 Supply	Variance
Family	739	263	(476)
Internal	591	279	(312)
Psychiat	287	41	(245)
General	286	81	(205)
Pediatri	343	151	(192)
Ob/Gyn	291	145	(146)
Ophthalmolo	148	41	(106)
Other	522	417	(105)
Orthopedic	176	82	(94)
Dermatolog	89		(89)
Aggregate Total	3,709	1,859	(1,850)

Physician Needs Summary - 2020			
Specialties	Median Need	2000 Supply	Variance
Family	810	131	(678)
Internal	648	140	(508)
Other	584	208	(375)
Pediatri	376	75	(300)
Psychiat	314	21	(294)
General	313	40	(273)
Ob/Gyn	319	73	(246)
Orthopedic	197	41	(156)
Ophthalmolo	162	21	(141)
Dermatolog	103		(103)
Aggregate Total	4,064	929	(3,135)

Physician Needs Summary - 2030			
Specialties	Median Need	2000 Supply	Variance
Family	872		(872)
Internal	698		(698)
Pediatri	405		(405)
Ob/Gyn	344		(344)
Psychiat	338		(338)
General	337		(337)
Orthopedic	214		(214)
Ophthalmolo	174		(174)
Cardiolog	140		(140)
Dermatolog	118		(118)
Aggregate Total	4,377	0	(4,377)

Table 1. Projected shortfall of physicians in Nevada over the next 30 years.

These shortages cannot be met simply by graduating more MDs. Because of the paucity of residency training positions in Nevada (lowest in the nation of any state with a medical school), the majority of our graduates train out of state. About 40% return to Nevada to practice medicine. In contrast, physicians who complete post-MD specialty training in Nevada are almost twice as likely to remain here.

Other studies agree with the Innova analysis. The Western Interstate Commission on Higher Education's (WICHE) Workforce Brief for Nevada states that "The increase in the need for trained medical personnel relates to an unfolding demographic change: the aging of the baby boom generation." WICHE predicted a need for growth rate of 26% in the ranks of physicians in Nevada from 2000-2010.[2]

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[1] Ellerbe Becket Corporation. 2002 report on the Development and Site Master Plan for the proposed University of Nevada Medical Center.
[2] Workforce Brief Nevada http://wiche.edu/workforce/nv.pdf

The American Medical Association cites several pressures on the physician workforce in Nevada[3]:

> "In 1999, the supply of doctors willing to take care of Medicare patients was 18.3 per thousand beneficiaries compared to a national average of 15.7. With an influx of younger people moving into the state, this ratio may have declined in the last few years and could drop again if the Medicare pay cut spawns a rash of retirements. Physicians in the state have seen liability insurance premiums increase by up to 35% in the last year and many are above the 50 year mark where a national survey has found that 80% of physicians were thinking of leaving or cutting back on their medical practices even before the Medicare pay cuts. In fact, with nearly 64% of its family physicians age 50 or older and nearly a third (32.7%) age 60 or older, Nevada appears to be exceptionally vulnerable to retirements of its older physicians."[3]

Nevadans suffer disproportionately from poor health and lack of access to health care

Compounding the increased need for health care providers, is the limited access to health care providers. In 2003 the Great Basin Primary Care Association ranked Nevada 49th in the nation in access to medical, dental, and mental health care. Not surprisingly, this is reflected in increased death rates from chronic obstructive pulmonary disease, cigarette consumption, suicide, and deaths from drug overdose[4].

Missions of the school of medicine

In response to this challenge, the school of medicine plans the following initiatives.

1) Increase the number and diversity of physicians in Nevada.

We will sharply increase the medical school class size and expand postgraduate residency and fellowship programs.

2) Train these physicians for the health care system of the future.

We will work with health related colleges and programs of the University of Nevada, Reno and University of Nevada Las Vegas and other health care educators and providers to create educational, health care and research programs that will foster patient-centered, evidence-based multidisciplinary care.

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[3] State by State Impact of 2003-2005 Medicare Cuts, Compiled by the American Medical Association (August 2002) http://www.acponline.org/hpp/state_impact4.htm
[4] Healthy People Nevada 2010
http://health2k.state.nv.us/nihds/publications/HP%202010.pdf

3) Expand biomedical and biotechnology research and development within the state.

Academic health care centers are economic engines, integrating medicine with cutting edge research. We will become an even more robust center for basic and translational biomedical research.

4) Become a health care information resource for Nevada, providing stake holders and policy makers with the accurate and timely information they need to make decisions about resource allocation.

Health care has multiple stake-holders, often with competing priorities and vision. To effect the most economical and effective health system for Nevadans, a central unbiased source of information and analysis is required. The school of medicine in cooperation with the state universities, and other health care participants will provide this resource.

The growing health care crisis in Nevada

All regions in Nevada face current or projected shortfalls in health care providers and facilities. Northern Nevada has an aging physician population and shortages of specific providers. For example, Washoe County has a severe shortage of pediatric psychiatrists. There is no pediatric kidney specialist who routinely accepts patients with Medicaid coverage – patients must travel to Las Vegas for care if not cared for voluntarily. Rural Nevada has chronic difficult attracting and retaining health care providers of all kinds.

In southern Nevada, shortages in mental health professionals and facilities result in emergency rooms filled with patients awaiting medical evaluation. Shortages in obstetrical care are highly visible to the public. Other health care access and quality problems are not. The most vulnerable elements of society suffer the most from diminished access to health care. Care is delayed or not provided, resulting in much poorer outcomes and ultimately greatly increased expense to the individual and society.

Physician and hospital needs assessment

In November of 2003, the consulting firm Booz Allen Hamilton released a comprehensive report evaluating the need for a new hospital in Las Vegas. That report, commissioned by the Cleveland Clinic Foundation and the City of Las Vegas, indicated that population growth and aging will result in roughly a doubling of community bed need in the next 30 years. Facilities on the drawing board will meet at most 40% of that need. Another study commissioned by school of medicine from the Innova Group that we will review in detail at our meeting confirmed a striking need for physicians in almost all medical specialties (Table 1).

Clearly, Nevada and particularly Clark County face a growing need for hospital beds, physicians, and all other health care providers. The school of medicine is committed to addressing these and other health care needs. This section outlines the four specific approaches and the rationale supporting them.

Expanding the number and diversity of health care providers in Nevada

Expanding postgraduate training is an effective strategy to increase the physician work force

Increasing the number of residency training positions (e.g. training in surgery, internal medicine, pediatrics, psychiatry, obstetrics and gynecology) and subspecialty fellowship training (e.g., gastroenterology, pulmonary and critical care, surgical subspecialties, etc.) is an effective strategy to increase providers in clinical specialties currently in short supply.

Historically, school of medicine emphasized primary care and family medicine, reflecting the unique urban-rural-frontier nature of Nevada and the demographics of the state when the school was founded. However, the increasing complexity of modern medicine and our aging population drive increasing need for medical specialists and subspecialists. The top 10 physician needs as determined by the Innova Survey are outlined in Table 1. These projected demands will be considered when planning new residencies, but the ability of school of medicine faculty, private physicians and affiliate hospitals to support residency programs are also important considerations.

Graduates of school of medicine have a 40% likelihood of remaining in or returning to Nevada to practice after completing residency training. In contrast, 70% of physicians completing postgraduate residency training practice in the same region in which they train. Most residency training positions are supported by the Center for Medicare and Medicaid Services (CMS). CMS has capped the number of postgraduate positions in existing programs. In effect, there is no provision for federal funding of physician training to accommodate the needs of a rapidly growing state like Nevada. This is particularly problematic as Nevada already has the lowest number of Medicare funded residency training positions in the United States among states with medical schools – 8/100,000 population. Surrounding western states (California, Utah, Arizona, New Mexico) have two to three times more funded residency positions per capita.

In response to a one time reallocation existing CMS positions, school of medicine was successful in adding 35 new CMS-funded residency positions this year. 25 of these positions are based at University Medical Center, and 10 at Washoe Medical Center. Additional residency growth will require, new hospital based programs, alternative sources of funding or national changes in Medicare regulations acknowledging demographic changes in states such as ours.

Increasing residency training has beneficial effects beyond increasing the supply of physicians. Academic health care centers incorporating educational, clinical and research in teaching hospitals provide a high level of patient care service for complex illnesses, and train the physicians of tomorrow. Supporting additional residency positions will require a significant commitment from sponsoring hospitals and school of medicine. New faculty must be recruited, and strong, self-sustaining programs in the relevant specialties (e.g.,

pulmonary and critical care medicine, cardiology, gastroenterology, nephrology, neurology) created.

Expanding residency programs requires additional faculty and support
Undergraduate medical education (i.e. the 4 year curriculum leading to the M.D. degree) and postgraduate residency training programs must meet rigorous requirements for accreditation, including appropriate facilities, patient mix, dedicated and qualified faculty, a structured curriculum, and protected time for research. Thus, expanding residency training opportunities will require a substantial investment in additional physician faculty and support staff.

Faculty members must have protected time for curriculum development, hands-on teaching and professional and scholarly development. Because the majority of school of medicine clinical faculty salary is derived from patient care revenue, faculty time devoted to teaching students and residents must be offset by other revenue sources including state salary support for faculty, clinical revenues, and philanthropy. A study from the University of Pittsburgh estimates that each internal medicine resident costs a medical school $37,000 in 2004 dollars. These costs are in addition to direct resident salary and fringe (DME) and funding to offset inefficiencies of residency programs (IME), and accrue directly to the school of medicine.

Expanding school of medicine class size - another strategy to increase the physician work force
Another mechanism to expand our physician work force is to increase the medical school class. Current lecture facilities in Reno will accommodate 91 students, but our laboratory space limits our ability to increase. Currently we plan to increase our class size from 52 to 57 in 2006, and to 62 in 2007. Expansion beyond that number will require construction of new laboratory teaching facilities. We are also reviewing the possibility of initiating a baccalaureate-MD degree program.

When adequate funding and facilities are available, and the political environment appropriate, expansion of the undergraduate medical educational program to Las Vegas will be considered.

Implications for Planning and Resource Allocation

1) Targeted expansion of teaching faculty with academic credentials.
2) Creation of specialty and subspecialty programs with clinical centers of excellence.
3) Much closer integration of planning and operations with hospital affiliates.

Partnering with health related colleges and programs within UNR and UNLV to create novel multidisciplinary programs that train the health care providers of the future.

Our current model of medical education and care is driven by hospital based treatment of acute illness. Medical reimbursement patterns and history drive this system, not logic or patient outcomes. Everyone agrees that the current double-digit rate of inflation of medi-

cal care costs and one dollar in seven going to health care cannot be sustained. 80% of health care expenditures are consumed by 20 common chronic diseases (cardiovascular disease and stroke, cancer, arthritis, diabetes, etc). Moreover, even when there are well established treatments, they are frequently underutilized.

Efficient (better patient outcome for dollars spent) and effective (correct, timely treatment based on available evidence) medical care for chronic disease is best delivered by multidisciplinary teams. For example, a patient with diabetes may require care by an endocrinologist who prescribes the most appropriate medication, a pharmacologist who monitors drug interactions, an ophthalmologist for annual eye exams, a podiatrist who provides foot care preventing debilitating infections, cardiologist, renal specialist, and nutritionist.

Clearly, it is more efficient to localize these expensive resources in one setting, and much more convenient for the patient. In this paradigm, the patient and their family members assume a central role in disease management.

We have an ideal opportunity to introduce this model of care to Nevada. The school of medicine, UNR and UNLV, under the leadership of Chancellor James Rogers, are charged to create a Health Sciences Center in Las Vegas. This center will combine health related programs – medicine, nursing, social work, physical therapy, speech therapy and audiology, psychology, physical therapy etc. - from UNLV, school of medicine and UNR. This nexus facilitates the creation of a novel environment in which to deliver patient-centered, evidence-based learning and patient care in a multidisciplinary environment.

This model of care, articulated in the Institute of Medicine publication *Crossing the Quality Chasm*, combines information technology and multidisciplinary care teams to provide the most appropriate care supported by data to patients with common, chronic diseases. A new facility combining learning facilities and clinical practice in Las Vegas will allow student health care providers from a range of disciplines to train and practice as teams, not individuals.

It is essential to involve other stake holders, the Nevada Division of Health and Human Services, Nevada Hospital Association, local medical societies, insurance providers, community groups, policy makers, business leaders, foundations and granting agencies in this effort. Without tying reimbursement to patient outcomes and best practices, we will be training providers for an environment that does not currently exist.

The new Lou Ruvo Alzheimer's Disease Institute will be a flagship state-wide effort specializing in multidisciplinary care for patients with dementia and other chronic progressive neurological disease. This Institute can provide a model that we can expand to care of other chronic illnesses including cardiovascular disease, diabetes, arthritis, digestive problems, and lung disease.

Implications for Planning and Resource Allocation

1) Requires new alignment of multiple health programs and universities with all the political hurdles this entails.
2) Depends critically upon a new level of communication and integration between disparate stake-holders, policy makers and private providers and institutes.
3) Communicating and obtaining buy-in for this new approach to health care education and delivery internally and externally will be difficult and time consuming.
4) Will we be a fully integrated academic medical center, or an educational and research center and affiliations with existing hospitals?

Expanding biomedical and biotechnology research and development within the state.

We often focus on the economic cost of health care without considering the collateral benefits to the economy. In Nevada, hospitals contribute substantially to the economies of their communities. Academic health care centers in particular are economic engines, bringing extraordinary benefits to the states in which they are housed. Academic medical centers account for 1 of every 54 jobs in the United States, and rival the internet based economy in size. In Nevada, with a relatively non-diversified economy, health care was the only sector that did not decline after 9/11/2001.

Biomedical and biotechnology are extraordinarily powerful economic engines for diversified economies, and the school of medicine is partnering in three exciting new ventures. The Lou Ruvo Institute for Alzheimer's Disease ("The Ruvo Institute") was created by the Keep Memory Alive Foundation in Las Vegas. This will be the only free standing Institute in Nevada devoted to providing care and access to clinical trials for patients with Alzheimer's Disease and other forms of dementia. The Institute will be an integral component of the School of Medicine, and staffed by school of medicine faculty and staff.

The second major affiliation is between the Nevada Cancer Institute (NVCI), a free-standing cancer research, education and care center and school of medicine. In addition to obvious similarity in mission with school of medicine, the NVCI offers a real prospect for rapidly increasing the biotechnology enterprise in Nevada. school of medicine has an Affiliation Agreement with the NVCI and is actively pursuing the enhancement of joint offerings for the benefit of all Nevadans.

The Center of Excellence for Chronic Fatigue Syndrome is a third new program that will be centered on the School of Medicine campus in Reno. This Center will house an integrated program of patient care, clinical and translational research on this devastating disease.

Developing new space for biomedical research and development on our Reno and Las Vegas campuses is essential to harness this potential. Academic medical centers join physicians, scientists, other health care providers and students in an atmosphere of inquiry. We lack the ability to do this in our current facilities.

School of medicine scientists have a remarkable record of research funding, surpassing their peers at the most prestigious institutions. There is simply no more space available for our growing biomedical research programs on the Reno campus. We cannot accommodate the important and growing partnership with the Nevada Cancer Institute in Reno, nor can we provide the basic science partners for academic physicians critical in growing vibrant clinical research. Finally, we lack research support for our physicians in Las Vegas.

On the Reno campus, we are planning construction of a new biomedical research building in partnership with the Whittemore Foundation and the Nevada Cancer Institute. The necessary funding for this construction has been made possible by a $10 million appropriation to school of medicine, and by increasing the share of so-called indirect cost from research grants to UNR faculty retained by the institution. Previously, 25% of these funds were returned to the state general fund.

A new commitment to biomedical and translational research is required in Clark County.

We face an interesting opportunity in defining exactly what the results of a successful new research effort in a health sciences center will resemble. Medicine and biomedical research are transforming rapidly from single, individual investigator-based laboratories funded via individual research grants (so-called "RO1 awards") to groups of investigators carrying out multi- and interdisciplinary research focused on medically relevant topics. Whatever our vision, I believe it is important to not simply emulate much older, larger and successful health care systems and academic medical centers using conventional benchmarks. Our unique demographics, politics, history and financial abilities make this unlikely to succeed.

Implications for Planning and Resource Allocation

1) Requires significant reinvestment in facilities and faculty and significant investment in research infrastructure, particularly clinical and translational research.
2) Requires careful study to determine the best programmatic fit for Nevada's needs.
3) Inter- and multidisciplinary research does not fit the typical paradigm of strong departments and colleges. Alternative administrative and reward structures may have to be considered.
4) Organization and governance must be tailored to mission and goals.

Utilizing school of medicine as a health care information clearing house for Nevada.

Aligning need with limited resources calls is best accomplished via a critical, balanced panel that can evaluate health care needs and resources and make recommendations to educators, policy makers and consumers of health care. The Medical Education Council was established by the Nevada legislature in 2003. This non-partisan panel with broad health care community representation (The state of Nevada, Nevada Hospital Association, Nursing, school of medicine, the dental school, the Touro University Nevada College of Osteopathic Medicine, State Department of Health and Human Services) and associated staff will provide accurate and unbiased advice on the optimal distribution of

residency training positions to align with Nevada's needs. In addition, the Medical Education Council scope includes advising the public sector on a broad range of health care needs.

The Medical Education Council's activities are particularly critical in view of the potential concentration of political power and care in the form of outstanding institutes that focus on specific diseases. These institutes will have transforming effects on the management of the diseases they treat. Without embedding them in a larger integrated health care system expanding their reach, their impact will be diminished. This is particularly true given the unique urban-rural-frontier nature of Nevada. Optimal care delivery cannot depend upon representatives from each major disease in a small community. Rather, school of medicine's existing personal rural connections, telemedicine and informatics can be used to help local practitioners, care providers and patients access the best care.

Implications for Planning and Resource Allocation

1. Requires significant resources beyond reach of school of medicine or Medical Education Council.
2. Finding common ground to bring the diverse parties together is a challenge. Communicating and obtaining buy-in for this new approach to health care policy making will be difficult and time consuming.