
CITY OF LAS VEGAS

# MEDICAL DISTRICT

## A SYNTHESIS OF AVAILABLE RESEARCH

APPLIED ANALYSIS

## Table of Contents

## Introduction

As the healthcare industry in southern Nevada continues to evolve, the City of Las Vegas (the "City") is seeking to gather existing research that may be pertinent to the "Las Vegas Medical District" ("LVMD"), an area generally bounded by Charleston Boulevard to the south, Martin Luther King Drive to the east, Alta Drive to the north and Rancho Drive to the west. The materials listed below have been synthesized with the purpose of providing the City with a better understanding of 1) *why the healthcare industry has become a major focus for the state*, 2) *what the current supply of healthcare services and infrastructure looks like* and 3) *how various organizations are responding to the state's growing focus on the development of the healthcare sector*. The provided synthesis also seeks to identify any gaps or inconsistencies among the materials.

- ***2015-2017 Biennial Budget Request*** prepared by the Nevada System of Higher Education ("NSHE Budget Request" dated August 2014)
- ***Health Workforce in Nevada – 2013 Edition*** prepared by John Packham, PhD, Tabor Griswold, MS, and Christopher Marchand, BS ("Health Workforce report" dated March 2013)
- ***Industry Sectors and Placemaking: Technical Analysis in Support of Regional Scenario Planning in Southern Nevada*** prepared by ECONorthwest ("Placemaking report" dated August 2013)
- ***Inventory and Services Survey Results*** prepared by the Department of Economic and Urban Development ("Inventory and Services Survey")
- ***Las Vegas Regional Strategic Plan for Medical & Wellness Tourism*** prepared by the Las Vegas Convention and Visitors Authority, the Las Vegas Global Economic Alliance, Las Vegas HEALS and the University of Nevada, Las Vegas ("Medical & Wellness Tourism report" dated July 2014)
- ***Medical Development map*** prepared by ECONorthwest ("Medical Development map")
- ***Medical District Opportunity Site Investment Strategy*** prepared by Southern Nevada Strong ("Medical District Strategy" dated August 2014)
- ***Nevada Medical Center Feasibility Study and Report*** prepared by Wainerdi & Company, LLC ("NMC Feasibility report" dated October 2014)
- ***Nevada Residency and Fellowship Training Outcomes – 2004 to 2014: Key Findings from the Annual UNSOM Graduate Medical Education Exit Survey*** prepared by John Packham, PhD and Tabor Griswold, PhD ("Residency and Fellowship Outcomes report" dated July 2014)
- ***Physician Workforce in Nevada – 2014 Edition*** prepared by John Packham, PhD, Tabor Griswold, PhD, Laima Etchegoyhen, MPH, and Christopher Marchand, MPH ("Physician Workforce report" dated July 2014)
- ***Primary Care Shortages and Expanded Insurance Coverage*** prepared by John Packham, PhD ("Primary Care Shortages report" dated April 2014)
- ***Regents Health Sciences System Committee Memorandum*** prepared by Thomas L. Schwenk, MD ("HSSC Memorandum" dated August 2014)

- ***The Impact of Hospitals and the Health Sector on the Nevada Economy*** prepared by John Packham, PhD, Thomas Harris, PhD, Eugenia Larmore, and Tabor Griswold, MS ("Impact of Hospitals report" dated August 2013)

- ***Unify, Regionalize, Diversify: An Economic Development Agenda for Nevada*** prepared by the Metropolitan Policy Program at Brookings, Brookings Mountain West and SRI International ("Unify, Regionalize, Diversify report" dated 2011)

## Key Findings

**The vast majority of reports reviewed focus on supply, demand and need. They uniformly conclude that the region lacks sufficient healthcare professionals and related services. They further conclude that there are a number of economic opportunities and advantages to providing healthcare and related services to both resident and nonresident consumers. More specific to the Las Vegas Medical District itself, the research suggests the most pertinent developments for the City are the University of Nevada, Las Vegas School of Medicine, the potential expansion of the Cleveland Clinic and the Nevada Medical Center. Given the Las Vegas Medical District's concentration of medical services and infrastructure, its central location and its relative proximity to high-need population clusters, the City's Medical District would appear to be a natural fit for these additional investments, if not one among a relatively short list of alternatives.**

- Making the healthcare industry a priority is an opportunity for Nevada not only to create economic stability and growth, but also to address current (and future) demand and need.

- From an economic standpoint, a stronger foundational healthcare system should be established before the region can expect significant relocation or expansion of other specialized medical industries in the state. Specialty areas may include executive care and medical tourism; biotechnology; research, clinical trials and testing; more advanced, safer imaging/devices; and medical equipment and supplies development and manufacturing.

- Southern Nevada reports a significant under-supply of health professionals – particularly physicians – compared to national rates per capita, even while the nation itself reports a shortage of 80,000 physicians. A predominantly single-payer system (UnitedHealthcare), low reimbursement rates and the absence of a prestigious, locally-based medical school in Las Vegas exacerbate this problem. Existing inventory and supply of healthcare professionals, while growing, appears to be insufficient to meet current (and future) demand and need.

- Several significant developments are currently underway, including:
  - The development of the University of Nevada, Las Vegas ("UNLV") School of Medicine;
  - The development of a Nevada Medical Center, which plans to incorporate features from the largest medical complex in the world, the Texas Medical Center, particularly its "model of collaboration and constructive competition," to improve state healthcare;
  - The development of the medical and wellness tourism industry in southern Nevada beyond its current state;
  - The expansion of graduate medical education; and
  - The development of a full four-year program at the University of Nevada School of Medicine ("UNSOM") in Reno, Nevada.

- Collaboration among organizations to create better healthcare in Nevada is the central theme of current efforts.

# Healthcare Becomes a Priority: *Why the healthcare industry has become a major focus for the state*

## Economic Development Plans Identify Healthcare as an Opportunity

In an effort to develop and diversify the state of Nevada following a debilitating period of recession, the Unify, Regionalize, Diversify report identified seven target industries as opportunities for the state to actively pursue, health and medical services among them. Moving away from "consumption-based industries" the state has traditionally relied on, including tourism, construction and retail, the health and medical services sector was noted as a more stable source of economic development, relying primarily on population trends and government policy.[1]

In fact, as a testament to the stability of the sector, the Health Workforce report shows that from 2007 to 2012, total statewide employment fell by 14.4 percent, while healthcare and social assistance employment grew by 10.0 percent, one of only five industries to do so during the recession (healthcare industry employment, specifically, also grew by 10.0 percent). Conservative statewide projections suggest that from 2010 to 2020, healthcare industry employment will grow by 16.3 percent, higher than overall employment growth of 11.6 percent.[2]

The Unify, Regionalize, Diversify report emphasized the importance of regional economic development efforts.[3] According to the Placemaking report, regional efforts culminated in the Comprehensive Economic Development Strategy ("CEDS") from which a largely similar set of target industries were recommended for southern Nevada, with healthcare and life sciences again noted as an area of opportunity.[4]

Subsequently, Southern Nevada Strong commissioned ECONorthwest in the Placemaking report to take the target industries from the CEDS and identify the preferences of employees in those target industries. The report suggested that a combination of uses and amenities, or "place types," could be used in land-use planning in order to make southern Nevada more competitive in attracting target industries, in this case, healthcare and life sciences.[5]

The Placemaking report suggested that rather than looking at cities with similar existing land-uses such as Orlando, Florida and Phoenix, Arizona, the state should set its sights on cities such as Madison, Wisconsin and Boston, Massachusetts, which represent cities that have developed industries similar to those Las Vegas is trying to develop (or, more specifically, those cities with location quotients of at least 1.0 in the targeted healthcare and life science industries).[6]

Nationally, healthcare industries account for about 12 percent of total employees, but in Nevada this figure is just 9.9 percent.[7] Furthermore, of those healthcare industries in Nevada with 2,000 or more employees, only specialty hospitals, services for the elderly and those with disabilities, and offices of dentists had location quotients of greater than 1.0.[8] To make the health sector a more concentrated industry in southern Nevada, a special set of land-uses and amenities were suggested: housing near hospitals and other "major" medical service providers; healthy communities created by partnerships among different organizations; and active transportation for health professionals and their patients.[9]

In addition to identifying the overall healthcare industry as a target of development efforts, the Unify, Regionalize, Diversify report highlighted a number of healthcare industry subsectors as potential opportunities for the state. Surgical specialties were cited as a way to recapture residents who go out-of-state for medical procedures. Remarkably, in cases where Nevada residents reported going to Arizona and California for medical care, more than 50 percent were going for surgical procedures. Other opportunities included geriatric services (to address both an

aging population and a large retiree influx into southern Nevada) and the "disaggregation" of healthcare jobs typically done by higher-level healthcare professionals (physicians, for example) into tasks for more middle-skill workers. Following the establishment of a stronger foundational healthcare sector, other industries such as executive care and medical tourism; biotechnology; clinical trials and testing; more advanced, safer imaging/devices; and medical equipment and supplies development and manufacturing could emerge.[10]

Despite the opportunities, a number of shortcomings were identified, including insufficient medical resources in a city the size of Las Vegas (in particular, the absence of a locally-based medical school) to spur the development of a strong healthcare sector; a predominantly single-payer market (i.e., UnitedHealthcare, as noted in a Las Vegas Review Journal article, "First look at health insurance costs for 2015 show wildly varying changes," dated July 9, 2014) resulting in low reimbursement rates for providers, and in turn creating a barrier to attracting/retaining medical providers; a high percentage of uninsured and Medicare patients, further intensifying the issue of low collectability and/or reimbursement rates; insufficient workforce to meet the healthcare needs of the population; and some continued uncertainty surrounding the Affordable Care Act.[11]

## Healthcare Demand and Need is High

There are many factors that contribute to the demand and need for healthcare. The Health Workforce report focused on four main contributing factors for the demand of and need for healthcare in Nevada. The major factors included: 1) general population growth; 2) 65 and over population growth; 3) expanded insurance coverage; and 4) poor health status compared to other states.[12]

1) *Population Growth* — Projections show that Nevada will have a "modest" 8.5 percent growth in overall population from 2012 to 2017 (+234,856 persons), with most of the growth centered in Clark County (+161,132 persons).[13]

2) *Population Growth (65+)* — The population aged 65 and over is expected to grow by twice the overall population rate at 17.1 percent (+58,855 persons) during the same timeframe (2012 to 2017).[14]

3) *Expanded Insurance Coverage* — Increased coverage from the Medicaid expansion, the Silver State Health Insurance Exchange and other sources (including employer-sponsored health insurance and Medicare) is expected to raise demand by about 600,000 people from 2012 to 2020.[15] These estimates do not include those who may use healthcare services, but are not covered by any form of insurance (for example, illegal immigrants). Updated information shows that since October 1, 2013, 125,000 to 150,000 of about 600,000 persons who were uninsured now have coverage, most coming from Medicaid/CHIP gains (+63,000 additional insured persons).[16] The changing landscape of healthcare coverage is also expected to create a demand for occupations like "health information technology specialists" and "patient navigators."[17]

4) *Comparatively Poor Health Status* — Relative to what the United Health Foundation calls "health determinants" (the combination of health behaviors, community and environment factors, health policy and clinical care) and health outcomes, Nevada ranks 38th overall. Nevada ranks 39th for health determinants, with particularly poor rankings for high school graduation (#50), violent crime (#50), percentage who are uninsured (#49, though this rank may have changed given recent expansions in coverage) and public health funding per person* (#49). It ranks 32nd for health outcomes, with an especially poor ranking for geographic disparity (#45).[18] State comparisons as they relate to the supply of healthcare are noted in more detail in a later section.

*Note that spending more money on healthcare per person does not necessarily guarantee better health, as evidenced by U.S. life expectancy (about 78 years), which is significantly lower than life expectancy in countries that spend much less on healthcare per person, like Italy and Japan (over 83 years).[19] Still, a number of factors come into play when making international comparisons of healthcare spending, including pricing structures for pharmaceutical drugs and overall reimbursement models.

Some healthcare occupations will be in more demand than others, according to estimates of average annual job openings from 2010 to 2020. Average annual job openings are expected to be highest for registered nurses and home health aides, with 295 annual jobs and 155 annual jobs, respectively, resulting from growth in the field alone, rather than from replacement of health professionals. In fact, among all occupations in Nevada, registered nurses rank 7th and home health aides 21st for growth, two of eleven healthcare occupations listed among the top 100 occupations for growth between 2010 and 2020. Meanwhile, physicians and dentists (among other occupations) are expected to experience growth in annual job openings due mostly to replacement of retired health professionals. Overall, the study suggests healthcare demand will lie in "lower cost, outpatient-based health practitioners, home [healthcare] and clinical services."[20]

## Current Supply: *What the current state of healthcare looks like*

### Existing Infrastructure

The Inventory and Services Survey details the current availability of both medical facilities and services within the Las Vegas Medical District ("LVMD"). The survey consisted of several participants – including the Southern Nevada Health District; the Cleveland Clinic; members of the Nevada System of Higher Education ("NSHE") which includes UNLV, UNSOM and Nevada State College; Valley Hospital; and the University Medical Center ("UMC") – representing 102.9 acres of space, 8,205 full-time employees, 1,390 part-time employees and 580 students (500 at UNLV and 80 at UNSOM per day). Three of the participants, the Cleveland Clinic, UNLV, and UMC indicated plans to develop or expand within the next 10 years.[21]

Within the LVMD, there are three clinics; these include the UNLV Dental Clinic, the UNSOM Out-patient Medical Clinic and the UMC Out-patient Clinic. There are also two hospitals, UMC and Valley. Combined, they offer various teaching disciplines (ranging from psychiatry and emergency medicine to general medical education and internal medicine); oncology clinical trials; and specialties such as kidney transplants, HIV/AIDS, adult trauma I, and neonatal intensive care. Annually, they receive about 40,000 in-patient visits and 144,000 out-patient visits.[22] Statewide, hospitals contribute to the economy both directly and indirectly, with impacts including the following (as estimated by the Impact of Hospitals report):[23]

- Direct employment impact: 29,341 jobs;
- Direct payroll impact: $2.0 billion;
- Direct and indirect employment impact: 57,380 jobs; and
- Direct and indirect payroll impact: $3.0 billion.

UMC is particularly important in that its Children's Hospital of Nevada has the state's only Level II Trauma Center, state-certified Burn Center, Pediatric Sedation Services and approved Transplant Center for solid organ transplants. Moreover, UMC has the state's only Level I Trauma Center and Burn Care Center. UMC also serves as the main location for UNSOM's third and fourth year clinical rotations and has several residency and fellowship programs.[24]

While not a complete inventory of medical facilities and services available valley-wide, other facilities and services include the Veterans Administration ("VA") Southern Nevada Healthcare System, the Federal Medical Center at Nellis Air Force Base and the Children's Heart Center Nevada (which works with Sunrise Hospital & Medical Center).[25]

Generally, medical space built before 2000 was heavily concentrated in the urban core of the valley, with notable (albeit, less concentrated) development in the West portion of the valley. Medical development has now extended outward from the urban core to suburban areas, as evidenced by medical space built between 2000 and 2013.[26]

## Human Capital

While demand and need for healthcare in Nevada is high, and though facilities such as UMC and Valley Hospital see thousands of patients per year, supply appears to be insufficient both at the statewide and county level.

*Insufficient Supply – Low State Rankings*

In Nevada, the number of Medical Doctors ("MDs") per capita falls short in comparison to both Mountain Region states and the nation, with rates at just 83 percent and 68 percent of the comparative totals, respectively.[27] In fact, Nevada has only five specialty areas (of 39 total specialty areas tracked by the American Medical Association) that rank higher than other states in the Mountain Region (cardiovascular diseases, forensic medicine, internal medicine, plastic surgery and transplant surgery) and only one specialty area (forensic medicine) that ranks higher than the nation in terms of MDs per capita.[28]

Compared to other states, Nevada ranks low in the number of licensed health professionals per 100,000 population for several categories, notably, physicians (#45), physicians in surgical specialties (#51), physicians in general surgery (#51), physicians in orthopedic surgery (#51), registered nurses (#50), physicians in psychiatry (#50) and optometrists (#49).[29] Updated figures from the Physician Workforce report show low rankings for other categories as well, including active MDs and Doctors of Osteopathy ("DOs") (#46) and active primary care MDs and DOs (#48).[30] Some positives did include physicians in anesthesiology (#21), clinical nurse specialists (#26) and dentists (#31), though anesthesiology was the only category in which the per capita rate was at least equal to the national average. While these comparisons "beg the larger question of what is the appropriate or desired number of health professionals in Nevada," the Health Workforce report finds the rankings troubling and suggests the "treading water trend," explained in more detail below, is one reason for Nevada's lack of improvement in its rankings.[31]

Moreover, the fact that there is already a shortage of 80,000 primary care physicians nationwide makes these state rankings even more troubling.[32]

*Insufficient Supply – Low Per Capita Growth ("Treading Water Trend")*

One of the foremost problems surrounding the supply of licensed health professionals is the "treading water trend," whereby "strong growth in the number of licensees [is] being offset by modest per capita gains."[33] Overall, from 1980 to 2012, the number of MDs grew by 425.4 percent (to 6,153 MDs), but per capita growth grew by just 51.7 percent (to 223 MDs per 100,000 population). Furthermore, 35 of the 39 specialty areas experienced growth in the number of licensed MDs from 1992 to 2012, while per capita figures experienced declines in 17 of the 39 total specialties and 8 of the 10 surgical specialties.[34]

The Health Workforce report notes that the use of licensed health professionals as a proxy for supply does come with limitations. Accordingly, its authors recommend that licensure and re-licensure applications ask for a "minimum set of

data points" such as current employment status, type of employment or practice, hours worked per week, and retirement plans. In general, there is a great need for more accurate, more complete data on supply and demand in the healthcare sector.[35] It is also likely that Nevada would benefit from a greater variety of resources from which to draw reliable data.

*Insufficient Supply – Graduation and Retention*

Research suggests current output of health professionals will not be enough to meet demand, despite increases in enrollment and graduation.[36] Encouraging and attracting medical students to come and stay in Nevada is especially important. In 2014, UNSOM match results revealed that 77.8 percent of students were matched out of state for their graduate medical education. The five-year average was not much different with 83.1 percent being matched out of state.[37] These figures are discouraging as students who finish both their undergraduate ("UME," generally years 5 through 8 of a candidate's post-high school education) and graduate medical education ("GME," generally years 9 through 12 post-high school) in one state are 70 percent likely to stay in that state, meaning more health workforce supply for Nevada.[38] Data from 2012 demonstrates this phenomenon unambiguously:[39]

- 36.8 percent of active physicians who completed their UME in Nevada are currently practicing in Nevada (#27 rank); and
- 55.8 percent of active physicians who completed their GME in Nevada are currently practicing in Nevada (#9) (Note the Residency and Fellowship Outcomes report shows that in 2014, of those who finished their GME at UNSOM, 50.6 percent said they would remain in Nevada to either start their clinical practice or continue their GME. Longer-term trends were closer to 49.8 percent);[40] and
- 79.1 percent of active physicians who completed both their UME and GME in Nevada are currently practicing in Nevada (#5).

*Insufficient Supply – In-state Geographic Disparities*

Current population distribution does not align perfectly with health workforce distribution, suggesting possible geographic disparities. Clark County and the 14 rural and frontier counties show signs of being underserved. For example, 69.3 percent of the healthcare workforce is in Clark County, even though 72.1 percent of Nevada's population resides there.[41] In the 14 rural and frontier counties, only 6.2 percent of the healthcare workforce is employed there, even though those areas represent 10.6 percent of the population. Washoe County and Carson City appear to be overrepresented with 24.2 percent of the healthcare workforce, despite having only 17.3 percent of the population.[42]

Health Professional Shortage Areas ("HPSAs") might be a better way of "identify[ing] geographic areas and populations within those areas who are not adequately served by available healthcare resources." Population-to-provider ratios are the most important basis in assigning HPSA designations, but population health status and socioeconomic conditions are taken into account as well. Primary medical care HPSAs are severe in rural and frontier counties, with 66.9 percent of the population in those counties living in a primary care HPSA, compared to 32.6 percent of the population in urban counties (defined as Carson City, Clark County and Washoe County).[43] Clark County, specifically, has 31.5 percent of its population (630,638 persons) living in a primary care HPSA.[44] Overall, 10 of 14 rural and frontier counties have their entire population living in a primary care HPSA.[45] Updated information shows 52 percent of rural residents and 32 percent of urban residents living in a primary care HPSA.[46] In addition, 56.5 percent of rural populations and 33.1 percent of urban populations live in a dental HPSA; 10 of 14 rural counties have their entire population living in a dental HPSA. In Clark County, specifically, 34.0 percent of the population is in a dental HPSA (680,884 persons). An interesting note here is that primary medical care and dental HPSAs for Clark County are present in the urban core of the County, but absent in suburban areas. Mental HPSAs are the most severe, with 16 (with Clark County soon joining the ranks) of 17 county populations living entirely in mental HPSAs.[47]

The lack of mental hospitals and staff at a time when mental health is becoming an increasingly important issue must be addressed. Some developments are pressing forward on this issue and they are noted in more detail below.

## Major Developments Currently Taking Place: *How various organizations are responding*

### Medical Wellness and Tourism

Regarding the creation of a medical tourism industry, the Medical & Wellness Tourism report agrees with the Unify, Regionalize, Diversify report that this industry is a suitable one for southern Nevada and asserts that not only has the foundation been laid, but the industry has also had various successes. Furthermore, the Medical & Wellness Tourism report says that in addition to the medical tourism industry, there are other key opportunities for the state. These are general health and wellness and continued education conferences, spa and wellness tourism (which makes use of the world-class spas in Las Vegas), clinical trials (also mentioned in the Unify, Regionalize, Diversify report) and support services such as wellness travel agents and medical facilitators. Generally, the medical and wellness tourism industry, the report claims, is already moving forward using existing resources. Existing resources (beyond the traditional medical services and infrastructure described earlier) include bio-skills labs for medical meetings and continuing education; McCarran's Terminal 3 (which connects Las Vegas to places all around the world); and sectors such as leisure and hospitality and information technology that can take on the Affordable Care Act's emphasis on patient satisfaction, electronic medical records and prevention and wellness. Other resources include well-known professionals and facilities located in southern Nevada and "niche disciplines" such as age management, fertility and dental.[48]

As efforts to develop the medical and wellness tourism industry continue, the Medical & Wellness Tourism report cautions that recruitment of healthcare professionals, the expansion of medical education and stronger collaboration among sectors are needed if the industry is to flourish. Qualified physicians need to be recruited, particularly from medical conferences.[49] Additional spots for graduate medical education need to be created. Furthermore, "centralized infrastructure" for current and future clinical trials (including those conducted by the Cleveland Clinic and Comprehensive Cancer Centers of Nevada, as well as potential clinical trials at UNLV) and the construction of two medical schools by UNLV and the Roseman University of Health Sciences (for which there has been little discussion, despite confirmation from the Roseman University website and various news articles dating back to 2013 and early 2014) should help in both filling the gap in health professionals and expanding the medical and wellness tourism industry. Finally, connecting industries beyond just the wellness and medical industries is important in making the development process efficient. The report recommends that these industries collaborate with the tourism, economic development and educational industries in southern Nevada in order to eliminate barriers that might confront medical and wellness tourism. If Las Vegas could capture even a piece of the $500 billion medical and wellness tourism industry and attract some of the eight million patients who go to other countries to receive services, this would be significant.[50] Updated information from the NMC Feasibility report states that the Nevada Medical Center, explained in more detail below, "aligns remarkably well with plans for expanding medical and wellness tourism in our State," and plans to help recruit "medical conventions, conferences, and symposiums."[51]

## Nevada Medical Center

The NMC Feasibility report concludes that the Nevada Medical Center, a group of autonomous member institutions (including, but not limited to, "healthcare providers, research institutions, colleges and universities") working together to improve the state of health in Nevada, is feasible. In addition, among the over 80 community leaders and health professionals interviewed, interest in the Nevada Medical Center is high.[52]

The Nevada Medical Center plans to incorporate features from the largest medical complex in the world, the Texas Medical Center, particularly its "model of collaboration and constructive competition." It cites partnerships that have already taken place, including: the partnership between the Mike O'Callaghan Federal Medical Center at Nellis Air Force Base and the VA Southern Nevada Healthcare System, the Sustained Medical Airmen Readiness Trained ("SMART") Program (a partnership between UMC, UNSOM and the Federal Medical Center to provide training opportunities for Air Force medical personnel); the Las Vegas HEALS organization; and the Las Vegas Healthy Communities Coalition. The Nevada Medical Center will have statewide councils (for example, a Council of Nurse Executives, a Council on Undergraduate and Graduate Professional Education, a Council of Chief Medical Officers and an Executive Council) for professionals to get together to solve various healthcare issues.[53]

Operations would be housed within the existing space of the LVMD (near UMC, UNSOM and the UNLV Shadow Lane Campus), with a possibility of acquiring land at a later time. A large component of the Nevada Medical Center would be the creation of two Academic Health Science Centers, one in Las Vegas (for which UMC would be the foundation) and another in Reno. These centers would allow for "collaborative and innovative patient care and projects [to] be undertaken by medical schools, healthcare providers, and researchers."[54]

Currently, the Nevada Medical Center has a 501(c)(3) designation, a core group and Board of Directors actively trying to recruit a president and executive staff, and is in the process of trying to secure funding (which is expected to come from a variety of sources including "government and charitable support" and even "complementary businesses" such as parking and laundry services). Furthermore, the study suggests partnerships with Switch (for "discounted computing, data storage and telecommunications") and the LVMD (for "infrastructure projects such as a District Energy System") may be possible.[55]

## UNLV School of Medicine and UNSOM

A UNLV School of Medicine is in the works, with Dr. Barbara Atkinson announced as its planning dean. The school has been approved by the Regents and is planned to open in 2017 with about 60 students, eventually reaching a class size of 120 students.[56] The NSHE Budget Request is asking for $26.7 million in funds for the 2016/2017 biennium to go toward the medical school.[57] The UNLV School of Medicine is expected to have the following impacts by 2030, according to Tripp Umbach:[58]

- Economic impact: $1.2 billion;
- Employment impact: 8,000 jobs;
- State General Fund revenues: $60 million; and
- ROI to State General Fund: $1.15 generated for every $1.00 of investment in both the UNLV School of Medicine and UNSOM

In addition, UNLV submitted an accreditation application according to a Las Vegas Review Journal article, "UNLV takes step toward accredited medical school." (September 29, 2014) A location has not yet been selected, but possibilities include a ten-acre space close to UMC, land near the VA hospital in North Las Vegas and land in the City of Henderson owned by St. Rose Hospital. The initial plans include the development of five buildings (with two

research buildings) along with the following specialties: cardiology, neuroscience, cancer, orthopedics and mental health and addiction.

At UNSOM, a full four-year campus for approximately 70 students is expected for completion in the 2018/2019 school year with clinical education (third and fourth year rotations) to be made available in Reno, following an agreement with Renown Health.[59] In addition, UNSOM's agreement with MountainView Hospital will add 150 more residency slots in the next five years.[60] The NSHE Budget Request is asking for $5.1 million in funds for the 2016/2017 biennium that will go toward the expansion of UME at UNSOM. A one-time expenditure of $4.3 million is also being requested for UNSOM that will go toward "equipment and instructional technology" in support of GME. A separate $9.9 million in funds are included in the NSHE Budget Request for expansion of GME.[61]

The HSSC Memorandum details other developments that have taken or will take place by UNSOM, including, but not limited to:[62]

- The opening of the Patient Care Center in Henderson (southern Nevada);
- Two new fellowships in cardiology and GI beginning July 1, 2014 (southern Nevada);
- Plans for new pulmonary/critical care and orthopedic surgery programs beginning July 2015 (southern Nevada);
- Plans for a new neurology residency program (northern Nevada);
- Plans for a family medicine residency program at St. Mary's Hospital (northern Nevada);
- The possibility of a new family medicine residency program at Carson-Tahoe Hospital (northern Nevada);
- The continued launch of the new Practice Management and Clinical Electronic Medical Record system, with Pediatrics and Obstetrics/Gynecology (in Las Vegas) to be brought on-line as of September 2014 (statewide);
- Pilot implementation in several departments of new physician salary plans based on clinical and academic productivity (statewide); and
- A new rural family medicine residency program in Winnemucca (beginning in Las Vegas July 2014 and moving to Winnemucca July 2015).

## Las Vegas Medical District ("LVMD")

Since 1997 when its boundaries were first established, the LVMD has been the target of both planning and revitalization efforts by the City, and efforts have recently ramped up with the release of the Medical District Strategy.[63]

The Medical District Strategy release highlights the findings of the Opportunities and Barriers Report, which addressed not only regional demand, but also the current state of the area in and around the LVMD study area. The study area is comprised of the current medical district (referred to as the "core" study area) and the Symphony Park area near downtown Las Vegas, an area to which the LVMD hopes to expand. The study area also includes a narrow section of Charleston Boulevard between Rancho Drive and Valley View Boulevard. The Opportunities and Barriers Report concluded that "the study area is not perceived as a complete, cohesive medical district and, as a result, has not competed well with newer medical facilities at the fringe of the region."[64]

The analysis conducted in the Medical District Strategy "identifies the investments and policy changes that are necessary" to transform the LVMD study area into an economic powerhouse and to revitalize the study area and surrounding neighborhoods.[65] The study emphasized a number of priorities, including:

- *Securing commitments for new or expanded medical facilities in order to create a sense of certainty during the planning process.* Public investment would also be necessary to incentivize others to invest in the area.[66]

- *Coordinating the phases of development.* Development of Site 2 in the Symphony Park area would be ideal due to the potential expansion of the Cleveland Clinic. However, without a secured commitment from the Cleveland Clinic, it is likely the first phase will instead be the development of the "core" study area, particularly Sites 3 and 4 (the study notes that these parcels are the "largest" and "least constrained by existing development"). Site 3 is privately-owned by Valley Health System LLC and Site 4 is owned by Clark County, making it easier to develop those areas as medical land uses. Site 4 is being targeted as a potential location for the UNLV School of Medicine (in part due to its proximity to NSHE properties). Both sites are being targeted as potential locations for the expansion of UMC and Valley Hospital.[67]
- *Reducing the amount of land being used for surface parking.* Of the 160 acres of the current LVMD, about 120 acres are devoted to surface parking. Moving towards shared parking would help open up land for use in redevelopment.[68]
- *Attracting facilities, healthcare professionals, residents and visitors to the area.* This would be accomplished through improved access to the area (for pedestrians, drivers and bus users), improved safety, mixed-use development (like retail establishments and housing), open spaces and the creation of a distinct LVMD brand and identity. This priority makes use of the recommendations highlighted in the Placemaking study.[69]

In addition, the Medical District Strategy stresses that in order to compete with the newer medical development "at the fringe" of the valley, differentiation through the marketing of the LVMD as a "high-quality urban environment" will be extremely important.[70]

The study suggests the next step for the City will be to use the findings and recommendations in the two analyses—the Opportunities and Barriers Report and the Medical District Strategy—to create a Facilities Master Plan that will "coordinate and support the planned facility expansions of major medical users in the study area."[71] Transforming the LVMD into a cohesive whole, with land-uses appropriate for a medical district will be a lengthy, but important step in the expansion of healthcare in southern Nevada.

Beyond planning efforts, the LVMD has a number of developments that have taken or are currently taking place in the form of research projects and grants at NSHE institutions located within the LVMD. According to the NSHE and the websites of its member institutions, major developments include, but are not limited to:

- *Mountain West Research Consortium Clinical Translational Research – Infrastructure Network ("CTR-IN")* – This is a $20 million grant from the National Institutes of Health ("NIH"), involving 13 universities in 7 states (Alaska, Hawaii, Idaho, Montana, Nevada, New Mexico and Wyoming), with UNLV as the host. The purpose of the grant is to increase the "capacity" of clinical and translational research in participating states and to increase the competitiveness of NIH grant applications from participating states. The grant period is from September 2013 to June 2018.
- *UNLV-UNSOM Interprofessional Health Equity Symposium* – This second-annual symposium, held at the UNLV School of Dental Medicine on October 10, 2014, had more than 170 participants. The symposium's theme was Health Inequities and the Healthy Nevadans 2020 Goals, and the event included 13 poster presentations featuring a variety of research projects.
- *Clinical Simulation Center of Las Vegas* – This is a 31,500 square-foot facility shared by the UNLV School of Nursing, Nevada State College School of Nursing and UNSOM. There are a number of on-going and completed research projects occurring at the Center.
- *UNLV School of Dental Medicine research (totaling $13.7 million in announced funding as of 2014), with major funding including*:
    - HRSA Geriatric Education Center ($4.3 million, 2010-2015)
    - HRSA Dental Faculty Loan Repayment Plan ($1.7 million, 2010-2015)
    - NIH/NIDCR; Regulation of Platelet-activating Factor Acetylhydrolase during Inflammation ($360,000, 2011-2015)

- *UNLV School of Nursing research, with major funding including:*
  - Equipment for Warfighter Casualty Care and Management Research ($444,000, 2014-2015)
  - Nevada GEC Consortium 2010-2015 ($385,000, 2010-2015)

As the number of research projects and grants continues to grow at institutions within the LVMD, out-of-state organizations may be more inclined to sponsor those institutions' additional research efforts in the future. Locating the UNLV School of Medicine within the LVMD may further increase that possibility.

### Other Developments and Initiatives

Similar to problems cited in earlier sections of this synthesis, the NMC Feasibility report cites two major problems with healthcare in Nevada: 1) healthcare comprising only six percent of gross state product; and 2) low reimbursement rates leading to high patient-to-primary care doctor ratios and causing several private hospitals to "[operate] in the red."[72]

With healthcare becoming more of a priority for Nevada, it is anticipated that healthcare will comprise a greater share of the gross state product. Regarding the issue of low reimbursements to providers, some solutions have been formulated. MGM, for example, contracts directly with doctors to eliminate deductibles and reduce out-of-pocket expenses. It pays doctors based on healthcare quality, and it appears to be working, with 88 percent of participants reporting satisfaction with the program.[73] The Culinary Workers Union Culinary Health Fund has programs such as "Dr. Tomorrow," allowing participants to get an appointment within 24 hours for non-emergencies; "Good Night Pediatrics," an urgent care clinic for common illnesses and injuries open between 5 pm and 5 am every day; and the "Healthy Pregnancy Program," which gives a $100 incentive to mothers (post-delivery) for taking steps toward good prenatal health.[74]

Furthermore, in response to the geographic disparities present in the state, the NMC Feasibility report recommends that virtual healthcare be used to reach rural areas in Nevada.[75]

Finally, the NSHE Budget Request includes $73,650 in funds for the Western Interstate Commission on Higher Education to create a "'Mental Health Expansion' stipend program" for behavioral mental health and post-graduate nursing.[76] This may address some of the shortages in mental health professionals in Nevada.

## Endnotes

[1] See, "Unify, Regionalize, Diversify: An Economic Development Agenda for Nevada." Metropolitan Policy Program at Brookings, Brookings Mountain West, and SRI International. 2011. Pages 4-7, 38. See also, "Moving Nevada Forward: A Plan for Excellence in Economic Development" as cited in "Industry Sectors and Placemaking: Technical Analysis in Support of Regional Scenario Planning in Southern Nevada." ECONorthwest. August 2013. Page 8. This report cites Nevada's Economic Development Plan, which followed the Unify, Regionalize, Diversify report and featured the same target industries.
[2] See, Packham, J., Griswold, T. and Marchand, C. "Health Workforce in Nevada – 2013 Edition." March 2013. Pages 16-18, 20. See also, "Unify, Regionalize, Diversify report." Page 38.
[3] See, "Unify, Regionalize, Diversify report." Page 9.
[4] See, "Placemaking report." Pages 7-8.
[5] See, "Placemaking report." Pages 6-8, 12.
[6] See, "Placemaking report." Page 11.
[7] See, "Health Workforce report." Page 13.
[8] See, "Health Workforce report." Page 21.
[9] See, "Placemaking report." Page 14.

[10] See, "Unify, Regionalize, Diversify report." Pages 38-39.
[11] See, "Unify, Regionalize, Diversify report." Pages 38-40. See also, "2015-2017 Biennial Budget Request." Nevada System of Higher Education. August 2014. Page 62. (Taken from the inclusion of the Tripp Umbach report, "Economic Impact and Return on Investment to the State General Fund Related to Medical Education Expansion in Nevada") The report says, "Las Vegas has the smallest share of its economy tied to health services in comparison to any other of the top 100 U.S. metropolitan areas and it is also the largest U.S. metropolitan area without an allopathic medical school."
[12] See, "Health Workforce report." Pages 6-7.
[13] See, "Health Workforce report." Pages 7-8. See also, "NSHE Budget Request." Page 61. (Taken from the inclusion of the Tripp Umbach report, "Economic Impact and Return on Investment to the State General Fund Related to Medical Education Expansion in Nevada") The report says population in Nevada is expected to grow from 2.75 million in 2012 to 3.7 million by 2030.
[14] See, "Health Workforce report." Pages 7, 9.
[15] See, "Health Workforce report." Pages 7, 9.
[16] See, Packham, J. "Primary Care Shortages and Expanded Insurance Coverage." Presentation. April 2014. Page 4.
[17] See, "Health Workforce report." Pages 6-7.
[18] See, "Health Workforce report." Pages 7-8, 10.
[19] See, "Nevada Medical Center Feasibility Study and Report." Wainerdi & Company, LLC. October 2014. Page 15.
[20] See, "Health Workforce report." Pages 18, 21-24.
[21] See, "Inventory and Services Survey Results." Department of Economic and Urban Development. Pages 1-2. Note the results represent Las Vegas Medical District inventory and services only.
[22] See, "Inventory and Services Survey." Pages 1-2.
[23] See, Packham, J., Harris, T., Larmore, E. and Griswold, T. "The Impact of Hospitals and the Health Sector on the Nevada Economy." August 2013. Page 2.
[24] See, "NMC Feasibility report." Page 17. See also, "Inventory and Services Survey." Page 1. See also, "Unify, Regionalize, Diversify report." Page 39. See also, "Medical District Opportunity Site Investment Strategy." Southern Nevada Strong. August 2014. Page 12.
[25] See, "NMC Feasibility Report." Page 16.
[26] See, "Medical Development map." ECONorthwest. Map.
[27] See, Packham, J., Griswold, T., Etchegoyhen, L. and Marchand, C. "Physician Workforce in Nevada – 2014 Edition." July 2014. Pages 4-5. See also, "Primary Care Shortages report." Page 13. See also, "Health Workforce report." Pages 33, 38-39. The Health Workforce report contains the original concepts and data for the cited material.
[28] See, "Physician Workforce report." July 2014. Pages 4-5. See also, "Primary Care Shortages report." Pages 12-13. See also, "Health Workforce report." Pages 33, 38-39. The Health Workforce report contains the original concepts and data for the cited material.
[29] See, "Health Workforce report." Pages 43-44.
[30] See, "Physician Workforce report." Pages 7-8.
[31] See, "Health Workforce report." Pages 32, 43-44.
[32] See, "NSHE Budget Request." Page 61. (Taken from the inclusion of the Tripp Umbach report, "Economic Impact and Return on Investment to the State General Fund Related to Medical Education Expansion in Nevada").
[33] See, "Health Workforce report." Pages 32, 39.
[34] See, "Physician Workforce report." Pages 4, 30-31, 43, 46-47. See also, "Health Workforce report." Pages 32-37, 39, 42. This report contains the original concepts and data for the cited material. Note that some professions have declined overall (for example, EMS First Responders and medical lab technicians).
[35] See, "Health Workforce report." Pages 4, 64-66.
[36] See, "Health Workforce report." Page 59. See also, "Physician Workforce report." Page 10. This report shows enrollment in medical schools in Nevada increased 278.8% from 2002 to 2012 (#1 rank). See also, "NSHE Budget Request." Page 61. (Taken from the inclusion of the Tripp Umbach report, "Economic Impact and Return on Investment to the State General Fund Related to Medical Education Expansion in Nevada").
[37] See, "Primary Care Shortages report." Pages 16-17.
[38] See, "NSHE Budget Request." Page 61. (Taken from the inclusion of the Tripp Umbach report, "Economic Impact and Return on Investment to the State General Fund Related to Medical Education Expansion in Nevada") The report adds that, "Nationally, students who only complete GME in the state have less than a 50% chance of remaining in the same state." See also, "NMC Feasibility Report." Page 18.

[39] See, "Physician Workforce report." Page 9. Note that as of 2012, there were only 211 active physicians who completed both their UME and GME in Nevada.
[40] See, Packham, J. and Griswold, T. "Nevada Residency and Fellowship Training Outcomes – 2004 to 2014: Key Findings from the Annual UNSOM Graduate Medical Education Exit Survey." July 2014. Page 1.
[41] See, "Health Workforce report." Page 13. See also, "Physician Workforce report." Pages 6-7. The report notes a similar distribution of MDs compared to the distribution of population in Nevada.
[42] See, "Health Workforce report." Page 13. See also, "Physician Workforce report." Pages 6-7. The report notes a similar distribution of MDs compared to the distribution of population in Nevada.
[43] See, "Health Workforce report." Pages 45, 47-48.
[44] See, "Health Workforce report." Page 47.
[45] See, "Health Workforce report." Pages 47-48.
[46] See, "Primary Care Shortages report." Page 14.
[47] See, "Health Workforce report." Pages 47-57.
[48] See, "Las Vegas Regional Strategic Plan for Medical & Wellness Tourism." Las Vegas Convention and Visitors Authority, Las Vegas Global Economic Alliance, Las Vegas HEALS and the University of Nevada, Las Vegas. July 2014. No pages provided.
[49] See, "Medical & Wellness Tourism report." No pages provided.
[50] See, "Medical & Wellness Tourism report." No pages provided.
[51] See, "NMC Feasibility Report." Page 20.
[52] See, "NMC Feasibility Report." Pages 6-7, 14, 22, 25.
[53] See, "NMC Feasibility Report." Pages 6, 10, 18-20, 22-23.
[54] See, "NMC Feasibility Report." Pages 8, 17.
[55] See, "NMC Feasibility Report." Pages 8, 10, 24.
[56] See, "NMC Feasibility Report." Page 18. See also, "NSHE Budget Request." Pages 56-57.
[57] See, "NSHE Budget Request." Pages 7, 22-23.
[58] See, "NSHE Budget Request." Pages 62-68. (Taken from the inclusion of the Tripp Umbach report, "Economic Impact and Return on Investment to the State General Fund Related to Medical Education Expansion in Nevada")
[59] See, "NSHE Budget Request." Page 57. See also, "NMC Feasibility Report." Page 17.
[60] See, "NMC Feasibility Report." Pages 17-18. See also, "Regents Health Sciences System Committee Memorandum." Thomas L. Schwenk, MD, University of Nevada, School of Medicine. Page 1.
[61] See, "NSHE Budget Request." Pages 7, 22-23, 56.
[62] See, "HSSC Memorandum." Pages 1-2.
[63] See, "Medical District Strategy." Pages 7, 9.
[64] See, "Medical District Strategy." Pages 8-9, 17, 19.
[65] See, "Medical District Strategy." Page 9.
[66] See, "Medical District Strategy." Pages 9-10, 26, 29-32.
[67] See, "Medical District Strategy." Pages 19-26.
[68] See, "Medical District Strategy." Pages 9-10, 27, 33.
[69] See, "Medical District Strategy." Pages 10, 15-18, 27, 45.
[70] See, "Medical District Strategy." Pages 14, 17.
[71] See, "Medical District Strategy." Page 9.
[72] See, "NMC Feasibility Report." Page 16. See also, "Physician Workforce report." Page 43. There might be a discrepancy here as the overall trend has been a drop in the individuals per one physician.
[73] See, "NMC Feasibility Report." Page 18.
[74] See, "NMC Feasibility Report." Page 18.
[75] See, "NMC Feasibility Report." Page 24.
[76] See, "NSHE Budget Request." Pages 21, 23.