

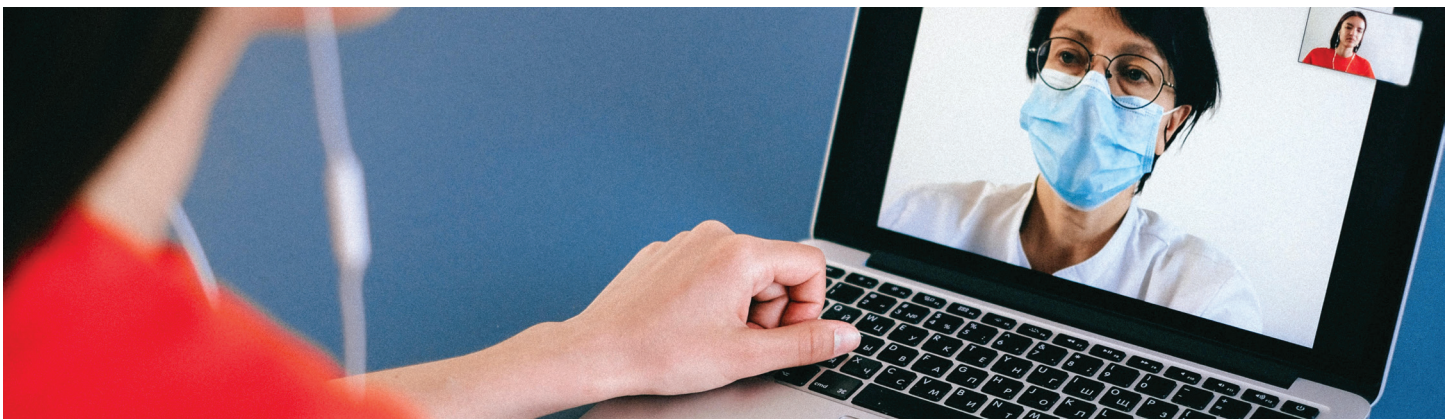
# HEALTHCARE & MEDTECH

## ADVANCING INNOVATION IN MARICOPA, AZ

Healthcare and MedTech flourish in the City of Maricopa, a young city that has come of age in the 21st Century. Incorporated in 2003, Maricopa's modern infrastructure and highly educated younger population will grow opportunities to provide healthcare solutions that have lasting impacts on regional and national public health and innovation in medical technologies.

Propelling this progress are Maricopa's residents. The Healthcare and MedTech sector is expanding in Maricopa, thanks to existing and future medical research and healthcare facilities, and the presence of area colleges and universities. Maricopa's residents are highly educated, with nearly 65 percent having some college, and 25.3 percent holding a bachelor's or graduate/professional degree.

Strategically located less than 45 minutes from Downtown Phoenix, the City of Maricopa offers existing and emerging businesses the full range of expertise and support available from universities, research campuses and nationally ranked healthcare systems.



# EMERGENT TRENDS IN GLOBAL HEALTHCARE

The SARS-CoV-2 (COVID-19) pandemic accelerated digital transformation of the Healthcare and MedTech sector exponentially. During the pandemic, life sciences saw agility, increased speed to market and greater efficiencies. While the sector average for new drug development and review is 8.2 years, two types (mRNA and Viral Vector) of novel COVID-19 vaccines were developed, tested and authorized in less than a year. As a result, companies are reassessing and challenging their previous processes to enhance efficiencies.<sup>1</sup>

## PATIENT ACTIVISM

Even prior to the global COVID-19 pandemic, patients were taking initiative in their own healthcare. The pandemic accelerated this trend with the advent of virtual medical visits as well as patient advocacy. Today, patients represent two major trends: those focused on convenience, and who are beginning to experiment with new, digital-first entrants that facilitate in-home experiences; and patients with multiple chronic conditions — seeking higher-touch clinical support models in the home and digitally, as well as wanting guidance in managing their personal health.<sup>2</sup>

## VIRTUAL HEALTHCARE

Virtual healthcare has become more common in recent years and accelerated during the pandemic. With growth in visit volume, virtual care providers like Teladoc, Amwell and MDLive experienced large increases in usership over the last 18 months. Patients who cannot attend an in-person visit can quickly connect with a doctor from behind a computer screen. This increased consumerization, on both the retailer and virtual healthcare sides, improves patients' access to primary care, particularly for those who live in rural areas.<sup>3</sup>

## ARTIFICIAL INTELLIGENCE (AI) – AR, VR, MR AND XR

Alternate realities offer numerous possibilities for healthcare. Augmented reality (AR), virtual reality (VR) and mixed reality (MR), or extended reality (XR), provide valid solutions in education, vein or surgical visualization, relaxing patients, curing PTSD, speeding up recovery in physical therapy – or even supporting medical presentations. AR is the enhancement of the real-world environment. It gives an image of the real world, projecting digital information onto the existing surroundings. VR is an entirely immersive process with a VR headset that covers the eyes, thus reality, entirely. It shuts out the external world, offering an immersive experience. MR/XR combines the AR and VR. It merges the real world and digital objects into an interactive reality.

## WEARABLES

Another rapidly accelerating trend in healthcare is wearable electronics and handheld portable devices that provide on-demand diagnostic information for patients and their healthcare providers. GoX Labs, located at the WearTech Applied Research Center in Phoenix, is developing a human exoskeleton wearable technology that can improve worker safety and performance.

<sup>1</sup> <https://www2.deloitte.com/global/en/pages/life-sciences-and-healthcare/articles/global-life-sciences-sector-outlook.html>

<sup>2</sup> <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/pharmacys-new-era-in-the-home>

<sup>3</sup> <https://www.forbes.com/sites/forbestechcouncil/2021/11/29/three-trends-expected-to-accelerate-for-healthcare-providers-in-2022/>

Wearable innovations like these only represent the beginning of what is possible using these technologies, and why it's important to have a highly skilled workforce that can meet these growing demands.<sup>4</sup>

# HEALTHCARE AND MEDTECH INNOVATION IN ARIZONA

## ARIZONA'S BIOSCIENCE ROADMAP

In 2002, the Flinn Foundation, a privately endowed, philanthropic grantmaking organization, prepared a long-term strategic plan to propel Arizona into becoming both a global competitor and national leader in bioscience by 2025. Since 2002, Arizona has become an important center of biosciences, and this sector has grown exponentially, primarily in its two largest metro areas – Phoenix and Tucson.

In fact, Arizona has become a national leader in biosciences across several disciplines in the healthcare and biomedical industry. University alignment with industry has helped to propel the Phoenix Metro in this sector, attracting exceptional candidates with resources essential to support technology advancement and research in the practice and science of the healthcare biomedical field.<sup>5</sup>

2020 AZ National Job Growth Rank	MedTech Category
1	Bioscience and Healthcare Manufacturing
1	Medical Equipment, Pharmaceuticals and Chemicals Manufacturing
2	Bioscience and Healthcare Industry
Top 5	Pharmaceutical Manufacturing
Top 5	Medical Equipment Manufacturing

*Tech Connect: MedTech in Arizona: From audacious goal to thriving sector, 2021<sup>6</sup>*

With several nationally recognized medical institutes in the region, the number of available workforce candidates is far greater in Phoenix than in San Diego or San Jose. With nearly 6,000 graduates from related degree programs in 2020, the highly educated workforce in Greater Phoenix is among the most sought-after talent pool by healthcare and biomedical institutes across the nation.<sup>7</sup> Arizona's MedTech innovators are changing the way consumers, medical providers and the world view health and technology and their discoveries and treatments will further propel the state among the most innovative and forward-thinking Healthcare and MedTech center in the nation.

## JOBS

There are 133,000 total biosciences jobs in Arizona, with 34,000 of them non-hospital bioscience jobs. The industry's job base grew 5.4 percent in Arizona from 2018-2020, more than tripling the U.S. growth rate of 1.4 percent. Over the past 20 years, the share of bioscience jobs among Arizona's private sector has increased from 3.9 percent to 5.5 percent.<sup>8</sup>

<sup>4</sup> <https://azbigmedia.com/business/health-care/asu-maricopa-ida-partner-develop-medtech-workforce/>

<sup>5</sup> <https://flinn.org/wp-content/uploads/2020/04/April-2020-Presentation-The-Latest-Data-on-Arizonas-Bioscience-Sector.pdf>

<sup>6</sup> <https://www.gpec.org/ecosystem-healthcare-and-biomedical/>

<sup>7</sup> [https://www.aztechcouncil.org/techconnect\\_summer2021\\_aca/](https://www.aztechcouncil.org/techconnect_summer2021_aca/)

<sup>8</sup> <https://www.gpec.org/ecosystem-healthcare-and-biomedical/>

## NATIONAL INSTITUTES OF HEALTH (NIH) GRANTS

Arizona hit a record-high \$297 million in National Institutes of Health funding in 2021, a 5 percent increase over the previous year and more than double the \$133 million from 2002. The state's share of NIH funding—distributed to universities, hospitals, research institutes, and companies—stands at a record high of 0.85 percent.<sup>9</sup>

## R&D EXPENDITURES

University bioscience research and development grew to \$623 million at Arizona's three public universities in 2022. Arizona had \$623 million in bioscience academic research and development expenditures in the latest reporting period, a 3.6 percent increase over the previous reporting period.<sup>10</sup>

## VENTURE CAPITAL

Venture capital funding for bioscience firms in 2022 reached a record high for Arizona at \$240 million.<sup>11</sup> The yearly average over the previous four years was \$66.5 million. Bioscience IT and medical devices each received 32 percent of venture capital investments.<sup>12</sup>

# HEALTHCARE AND MEDTECH EDUCATION

There are many notable medical schools located throughout Arizona and very proximate to the City of Maricopa. The University of Arizona's (UArizona) College of Medicine and Arizona State University's (ASU) and Mayo Clinic's School of Medicine, as well as other institutions, offer innovative programs in healthcare and health technology.

UArizona, with main campus locations in Tucson and at the Phoenix Biomedical Campus in Downtown Phoenix, offers health professional colleges of Medicine, Nursing, Pharmacy and Public Health, three affiliated academic medical centers, and the statewide UArizona Cancer Center. UArizona is a leader in medical education, outreach, patient care and groundbreaking research.

Of the more than 6,000 applications for the Class of 2024, the college admitted 100 students. Since the college welcomed its first class in 2007, the UArizona College of Medicine – Phoenix has graduated 593 physicians.<sup>13</sup>

ASU's Healthcare and MedTech enterprise encompasses R&D, postsecondary, graduate and post-doc education across all of its campuses and disciplines, from centers, institutes and academic units, such as the Edson College of Nursing and Health Innovation and College of Health Solutions, to partnerships with Mayo Clinic School of Medicine (MedTech Accelerator Program), Barrow Neurological Institute, Dublin City University, SkySong, the ASU Scottsdale Innovation Center, and other centers of research, medicine, public service and industry. The School of Life Sciences serves as an academic hub for interdisciplinary centers, institutes and attracting research talent. Dynamic laboratories, state-of-the-art technologies and a vast expansion of research infrastructure now support more than 5,015 students and 107 faculty members. Many pursue discovery and translational research, providing an entrepreneurial climate to bring the best research ideas to fruition.<sup>14</sup>

<sup>9</sup> <https://www.businesswire.com/news/home/20220420005900/en/Arizona%E2%80%99s-Bioscience-Sector-Hits-Record-Highs-20-Years-Into-Strategic-Plan%C2%A0%C2%A0>

<sup>10</sup> <https://flinn.org/arizonas-bioscience-sector-hits-record-highs-20-years-into-strategic-plan/>

<sup>11</sup> <https://flinn.org/arizonas-bioscience-sector-hits-record-highs-20-years-into-strategic-plan/>

<sup>12</sup> <https://flinn.org/arizonas-bioscience-sector-hits-record-highs-20-years-into-strategic-plan/>

<sup>13</sup> <https://phoenixmed.arizona.edu/newsroom/news/college-medicine-phoenix-welcomes-its-largest-class-students>

<sup>14</sup> <https://health.asu.edu/about>



The WearTech Applied Research Center, a collaboration between ASU and local government, economic and healthcare organizations, opened in October 2021. This first-of-its-kind facility will support an entrepreneurial ecosystem to improve quality of life and human performance through the development of innovative wearable technologies.<sup>15</sup> ASU graduates more than 4,500 engineers and technologists per year.<sup>16</sup>

## ARIZONA MEDTECH COMPANIES AND HEALTHCARE ORGANIZATIONS

Banner Health is a non-profit health system based in Phoenix. It operates 30 hospitals and several specialized facilities across six states. The health system is the largest employer in Arizona and one of the largest in the U.S., with over 50,000 employees. Banner provides emergency and hospital care, hospice, long-term/home care, outpatient surgery, labs, rehabilitation services, pharmacies and primary care. Banner has partnered with the University of Texas MD Anderson Cancer Center, one of the original three comprehensive cancer centers in the U.S., and has built a \$90 million cancer center in Gilbert, Arizona.<sup>17</sup>

The MedTech Accelerator is a flagship program of the Mayo Clinic and ASU Alliance for Health Care, providing early-stage medical device and healthcare technology companies with an entrepreneurial curriculum and personalized business development plans to accelerate go-to-market and investment possibilities. The accelerator provides emerging companies with a multi-day immersive curriculum in healthcare entrepreneurship including lectures and workshops with world-class scientific and engineering experts, resources to navigate regulatory pathways, and tools for product commercialization and customer acquisition.<sup>18</sup>

## ARIZONA AND MARICOPA ARE PREPARED FOR THE FUTURE OF HEALTHCARE AND MEDTECH

Despite the hardships brought on by the pandemic, Arizona's Healthcare and MedTech sector has been remarkably resilient. This is due largely in part to a solid and growing statewide infrastructure paired with unprecedented collaboration amongst health-related businesses of all shapes and sizes.<sup>16</sup>

While much of the U.S. economy and job market declined during the pandemic, Arizona reported rapid growth in the MedTech sector over the last year. According to the Phoenix Business Journal, the state ranked eighth in tech job growth on a national level. While many other states saw a net loss of tech jobs in 2020, Arizona added an estimated 2,500 jobs during this period with no signs of this growth slowing down. Arizona ranked fifth in projected tech job gain for the period between 2020 and 2030.<sup>19</sup>

<sup>15</sup> <https://www.atsu.edu/school-of-osteopathic-medicine-arizona/prospective-students/life-in-mesa-az>

<sup>16</sup> <https://news.asu.edu/20200324-arizona-impact-building-resilience-silicon-desert>

<sup>17</sup> <https://www.bannerhealth.com/about/glance>

<sup>18</sup> <https://research.asu.edu/mayo-clinic-and-asu-medtech-accelerator-boosts-health-startups>

<sup>19</sup> <https://www.qsbsexpert.com/qsbsexpert-effects-on-national-growth-in-the-tech-and-medtech-industry-in-arizona-and-beyond/>

## BANNER HEALTH CENTER

The first major medical facility in Maricopa, Banner Health Center is the result of a public/private partnership between the City of Maricopa and Banner Health. Recognizing a critical need for medical services among Maricopa's rapidly growing population, the city started discussions with Banner Health in 2006, with the partnership solidifying in 2010.

Banner Health Center focuses on primary care and provides residents of Maricopa and surrounding communities with access to Family/General Medicine, Internal Medicine, Pediatrics and OB/GYN physicians. Ancillary services, including laboratory services, general X-ray imaging and patient education are also offered. One innovative feature of the center is the consult room, which connects patients in Maricopa to physicians and specialists from Banner's other branches via live video feed.

Banner Health plans to expand the 41,000-square-foot facility in the future as Maricopa's population continues to grow and additional medical services are needed. Two more phases are envisioned, which include expanding the facility and increasing staff.<sup>20</sup>

## DIGNITY HEALTH

The Dignity Health, Arizona Service Area includes five hospitals – St. Joseph's Hospital and Medical Center, Chandler Regional Medical Center, Mercy Gilbert Medical Center, St. Joseph's Westgate Medical Center and Arizona General Hospital.

Dignity Health Medical Group Family Medicine - Maricopa is a medical group that offers many services, including primary care, family medicine and internal medicine. This Maricopa medical group is one of the best in Arizona. As part of the Dignity Health network, Dignity Health Medical Group Family Medicine - Maricopa provides high quality, compassionate care and access to Maricopa and nearby communities.<sup>21</sup>

## EXCEPTIONAL HEALTHCARE

Construction on the City of Maricopa's first community hospital was completed in December 2021. Exceptional Healthcare has opened its Exceptional Community Hospital-Maricopa in the heart of Maricopa on State Route 347. The 20,000-square-foot Phase One, state-of-the-art facility is the first facility of its kind in Maricopa and includes a specialty internal medicine hospital, a 24-hour emergency department, a digital imaging suite – including CT Scan, X-Ray, mobile MRI and ultrasound – an in-house laboratory, and outpatient and inpatient hospital beds for acute admissions and overnight observation of patients. This \$18 million facility is expected to employ between 60 and 100 employees. Exceptional



<sup>20</sup> <https://www.maricopaeda.com/healthcare/>

<sup>21</sup> <https://locations.dignityhealth.org/dignity-health-medical-group-family-medicine-maricopa>

Healthcare is forging partnerships with medical groups from across the region to best integrate its new facilities into the overall healthcare marketplace and ensure patients enjoy the maximum efficiencies possible. In 2022, Exceptional Healthcare broke ground on Phase Two of construction, which will include a new Fast Track care option to provide improved efficiency and patient care in the Emergency Department.<sup>22</sup>

## NUTEX HEALTH

Nutex Health was founded in 2011 and is based in Houston, Texas. Nutex is slated to open and operate Maricopa ER & Hospital, the second hospital in the City of Maricopa, to be located on four acres of land it purchased at the southeast corner of John Wayne Parkway and Bowlin Road (Copper Sky Park). This Maricopa location is due to open in 2023.

Nutex Health operates micro-hospitals, free-standing emergency rooms and community hospitals in in eight states including Arizona.<sup>20</sup> Discussions are underway about the potential development of an Innovation Center which could include research labs, behavioral health and sports psychology facilities classrooms, student/staff housing, co-working space and other amenities.

In addition to these Maricopa Healthcare and MedTech facilities, there are more than 2,000 such firms and institutions in Arizona. Among them are:



## TGEN, THE TRANSLATION GENOMICS RESEARCH INSTITUTE

TGen, the Translational Genomics Research Institute, is an affiliate of City of Hope. TGen is an Arizona-based, nonprofit medical research institute dedicated to conducting groundbreaking research with life-changing results. TGen works to unravel the genetic components of common and complex diseases, including cancer, neurological disorders, infectious disease and rare childhood disorders. By identifying treatment options in this manner, TGen believes medicine becomes more rational, more precise and, well, more personal.<sup>23</sup>

## ONCOMYX

OncoMyx was founded on breakthrough research demonstrating the myxoma virus is highly immuno-interactive and can selectively infect and kill a broad range of cancer cell types. As a virus that is nonpathogenic to humans, myxoma does not have to overcome pre-existing immunity. With a large genome, myxoma is ideal for multi-arming, creating a precision medicine approach with a unique oncolytic virus that activates the cancer immunity cycle and expands the therapeutic effectiveness of immunotherapies.

To advance the next generation of oncolytic immunotherapies we have assembled the top team with decades of experience in developing targeted cancer treatments, immunotherapies and virotherapies. The OncoMyx team has extensive experience in advancing novel cancer therapies through clinical development and has successfully brought new drugs to market. The OncoMyx scientific advisory board is composed of experts in tumor immunology, oncolytic viruses and oncology drug discovery and development.<sup>24</sup>

<sup>22</sup> <https://azbigmedia.com/business/exceptional-healthcare-will-open-maricopa-hospital-in-mid-december/>; <https://www.inmaricopa.com/exceptional-community-hospital-maricopa-to-expand/>

<sup>23</sup> <https://www.tgen.org/>

<sup>24</sup> <https://www.oncomyx.com/about-us/about-oncomyx/>



## BIOLAB SCIENCES

BioLab Sciences is a regenerative medicine company focused on creating new ways to heal the body. BioLab Sciences is uncovering better ways to address orthopedic injuries, wound care, pain management, aesthetic medicine, respiratory ailments, cardiovascular indications, ophthalmic issues and more. BioLab Sciences is transforming wound care through MyOwn Skin™, a remarkable biotechnology that leverages a small sample of a patient's own skin from a non-surgical procedure to produce up to three four-inch by four-inch skin grafts in a week.<sup>25</sup>

## STRYKER

Medical technology company Stryker is an internationally recognized leader in medical device manufacturing. The company's Sustainability Solutions division reprocesses single-use medical devices, which are collected and then inspected, cleaned, tested and sterilized before being repackaged and returned to hospitals for use. More than 20 million devices are reprocessed per year by the company with a 99.98 percent success rate, diverting more than 25 million pounds of waste from landfills over the past five years.

The company, which offers products and services in orthopedics, medical and surgical, and neurotechnology and spine, made more than \$14.4 billion in global sales last year and employed 43,000 people worldwide, according to the official website.<sup>26</sup>

## MEDTECH'S BEST FUTURE IS HERE

The Healthcare and MedTech sector will only continue to strengthen in Maricopa, as the regional impact of job growth and innovation campus expansion provide the perfect incubator for Maricopa to thrive in this sector for years to come. Maricopa is a vibrant community offering a high quality of life and a strong sense of the worth for all area residents. In addition, the City of Maricopa is home to a highly educated workforce that supports a favorable business climate for Healthcare and MedTech innovation and growth. With top-ranked schools and access to advanced research centers and a highly skilled regional workforce, Maricopa will continue to support the knowledge economy.

As companies consider the future, Maricopa has the room to continue supporting business growth and providing employees flexibility in how and where they choose to work. The population will continue to grow as people want access to Maricopa's top-ranked schools, city amenities, and abundant, well-priced quality housing options. Maricopa is positioned to serve the region by fostering technology and creative companies where innovative breakthroughs and big ideas continue to be encouraged.

<sup>25</sup> <https://www.biolabsciences.net/about-3>

<sup>26</sup> <https://ktar.com/story/4797372/medical-technology-company-stryker-leases-new-manufacturing-facility-in-chandler/>