



2017

ECONOMIC &
HEALTH IMPACT
OF HOSPITALS

SANTA CLARA COUNTY

EXCELLENCE THROUGH LEADERSHIP & COLLABORATION



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EXECUTIVE
SUMMARY

This report, commissioned by the Hospital Council of Northern and Central California, estimates the economic impact of hospital spending in Santa Clara County. All operational data are reported in 2017 dollars, updated for inflation from base data reported for 2014/2015.

Hospitals and hospital-related spending, such as long-term care facilities, generate **\$18.5 billion** in spending annually, **91,936 jobs** in the county and **\$10.7 billion** in labor earnings.

ECONOMIC IMPACT OF HOSPITALS AND RELATED SPENDING IN SANTA CLARA COUNTY

IMPACT TYPE	EMPLOYMENT	LABOR INCOME	OUTPUT
Direct Effect	28,972	\$5,385,690,009	\$7,744,759,633
Indirect Effect	41,031	\$3,925,470,120	\$7,104,234,434
Induced Effect	21,933	\$1,392,134,795	\$3,656,391,822
TOTAL EFFECT	91,936	\$10,703,294,924	\$18,505,385,889

Hospitals and other health care establishments in Santa Clara County provide a wide variety of employment opportunities. The wages and salaries for the health care professionals employed by these entities are 40 percent to 60 percent higher than the average wage earner in Santa Clara County.

The projected growth for jobs in Santa Clara County from 2014 to 2024 is much greater in health care compared to all employment growth. Employment projections reflect 1.3 percent annual expected growth in Santa Clara County for all employment over this period. Health care-related jobs, in contrast, are projected to grow by 1.7 percent to 1.8 percent annually, greatly exceeding total employment growth.

The health care sector in Santa Clara County is showing great gains in the sector’s relative importance to the County’s economy. Ranked second largest

sector, its employment level is 80 percent of the largest sector level (2015), up from 72 percent in 2010.

Employment in the health industry is more stable and less cyclical. While some job losses occurred during the latest recession, the industry bounced back more than the overall County economy, with post-recession growth exceeding all industries.

Hospitals in Santa Clara County provide approximately \$4 billion annually in charity care, Medi-Cal shortfall and a wide range of other community benefits.

The County’s hospitals will fuel the construction industry over the next three to five years, generating up to \$2.6 billion in total economic impacts, \$1 billion in labor earnings and 13,722 construction-related jobs.



01

INTRODUCTION

Santa Clara County is the heart of Silicon Valley,

home to innovation, flourishing industries and new technology that have transformed people's daily lives. The culture in our valley is unlike any other place in the country. We thrive on collaborating and working collectively to make our region the best place to live, work and play.

Hospitals in Santa Clara County are strong drivers in the local economy, deliver high quality patient care, provide "safety net" services to residents in need, improve community health outcomes and serve as a vital element in the region's emergency response plans. **Keeping our patients and community healthy is a passion for all of our hospitals.**

Almost all of the economic data used in this report are publicly available, most of it vetted through State of California audits. In a small number of cases where hospital data were not publicly available, the Hospital Council of Northern and Central California directly obtained data from the hospitals and/or ALH Urban & Regional Economics modeled data based on countywide hospital trends. The study uses standard techniques (e.g., input-output analysis and IMPLAN) to estimate these impacts using government-generated data for Santa Clara County. All findings are presented in 2017 dollars.

Stories highlighting key partnerships, programs and services designed to improve patient care and health outcomes and to address health disparities, including personal stories of community members, are interspersed throughout this report in six categories:

- Innovation in Health Care
- Providing Access to Care
- Addressing Chronic Disease
- Supporting Mental Wellness
- Helping Vulnerable Communities
- Promoting Prevention and Wellness



INNOVATION IN
HEALTH CARE

Better Health Pharmacy Provides Free Medications

The rising cost of prescription drugs is making it nearly impossible for many low-income people to get the medications they need. About 23 percent of American adults reported missing a dose or skipping prescriptions due to the cost. **Santa Clara Valley Medical Center's** Better Health Pharmacy is the first and only surplus drug redistribution program in California that collects unused prescription medications and then provides them to patients for free.

The pharmacy is not only a lifeline for patients who can't afford their medications, it also prevents waste. While patients go without their medication due to the high cost, about \$100 million in unused drugs are destroyed in California each year. It was illegal to donate unused medications until a law was enacted in 2005 that allows counties to recover surplus prescription drugs from nursing homes as well as pharmaceutical manufacturers and wholesalers.

Better Health Pharmacy accepts unused, unopened and unexpired medications (except controlled substances like narcotic pain medications) from state-regulated facilities. The pharmacy then fills prescriptions for patients who can't afford their medications.

The effort began in 2008 as a small program serving only facilities within the Santa Clara Valley Health & Hospital System. The pharmacy expanded to its own dedicated location in downtown San Jose in 2015.

A Santa Clara County Public Health Department pharmacist and a technician staff the Better Health Pharmacy. They rely on a dedicated group of volunteers to operate. The pharmacy also partners with Sirum, a nonprofit founded by Stanford University students, to collect the bulk of its medications from noncounty facilities.



Comprehensive Stroke Centers Provide Leading-edge Treatment Options

Stroke is a leading cause of long-term disability in the United States. Every second counts when treating a stroke and avoiding the serious complications that can result when the brain is deprived of oxygen for too long. South Bay residents are fortunate to have three hospitals with Comprehensive Stroke Center designation: Good Samaritan Hospital, Regional Medical Center of San Jose and Stanford Health Care. About 100 hospitals in the nation, less than one percent, are designated as advanced Comprehensive Stroke Centers.

Good Samaritan Hospital and **Regional Medical Center of San Jose** are part of Good Samaritan Health System. Good Samaritan Hospital was one of the nation's first Joint Commission-certified Comprehensive Stroke Centers, equipped with sophisticated technology and highly skilled staff capable of providing an array of leading-edge treatment options. Good Samaritan Hospital was the first community hospital in the nation to use intravenous thrombolytic therapy, the groundbreaking, blood-clot-busting treatment to dissolve clots, restore circulation to the brain and prevent further damage.

At Comprehensive Stroke Centers, highly specialized physicians, nurse practitioners, technologists and nurses are available 24/7 to respond immediately with treatments, from stroke medications to interventional techniques. Advanced imaging systems help to save valuable time, preserve viable brain tissue and identify the exact nature of the stroke. Additional advancements available at Comprehensive Stroke Centers include more aggressive interventional therapies, which can extend the treatment window for many more hours.

It was that interventional treatment that saved the life of 71-year-old Kelem Tadesse, who suffered an ischemic stroke that did not respond to blood-clot-busting drugs (tPA) alone. Tadesse, who had no history of high blood pressure, maintained a healthy diet and exercised almost daily, said she woke up at 3:00 a.m. overcome with nausea. She told her husband she might be having a stroke, though she says she was unfamiliar with the signs of stroke and had no basis for the reference.

She was rushed to Regional Medical Center of San Jose by ambulance, where interventional radiologist Dr. Arash Padidar performed a minimally invasive thrombectomy to remove a blood clot that had developed in her brain. Instead of opening Tadesse's skull to perform brain surgery, a catheter was inserted into her groin and then passed through her arteries to the brain, where it retrieved the blood clot. The clot-busting drug, tPA, was also administered to break up smaller clots. Blood flow was restored to Tadesse's brain in just 15 minutes.

**“It’s like a dream,” she said.
“I had a stroke and brain
surgery on Sunday, and was
released from the hospital on
Wednesday, back to normal.
It’s a miracle.”**

Tadesse made a full recovery and did not require any rehabilitation. She has since returned to thank the experienced stroke team at Regional Medical Center for having the expertise to save her life with no lasting disabilities.



Physicians Perform Rare “Domino” Transplant

Tammy Griffin had the rare opportunity to hear her heart beat in another person’s chest last year. Griffin had donated her heart to Linda Karr, after receiving a new heart and lungs from a third donor, in an exceptionally uncommon procedure known as a heart-lung-heart “domino” transplant performed at **Stanford Health Care**. A highly unusual procedure, it has been performed at Stanford Health Care only eight times, and not since 1994.

Organs available for transplant are in short supply. Heart-lung combinations are even more rare because a set of heart and lungs is usually split up so that the organs can benefit two people instead of just one. Domino transplantation of a heart-lung and heart does, however, benefit two people.

“The extraordinary work of Dr. Joseph Woo and his team demonstrates the very best of an academic medical center, where our research informs the development of revolutionary treatments like the domino procedure, which we then use to save the lives of our patients,” said Dr. Lloyd Minor, Carl and Elizabeth Naumann Dean at Stanford Medicine.

Both women are grateful for the generosity of the donor and his family, who set the life-saving domino transplant in motion.

New Equipment Aims to Reduce Complications and Improve Outcomes

O'Connor Hospital recently acquired the PINPOINT Endoscopic Fluorescence Imaging System to assist physicians in the operating room. It is the only laparoscopic imaging system combining high-definition white-light video and fluorescence imaging through a single laparoscope to help identify critical structures more precisely.

PINPOINT improves the ability to assess visually the quality of blood flow and tissue perfusion and visualize critical anatomy in real-time, enabling physicians performing complex, high-risk procedures to avoid conditions that could lead to healthy tissue and organs being damaged. It also helps to identify and remove poorly perfused tissue that could lead to serious and costly postoperative complications.

O'Connor Hospital physicians have used PINPOINT in thoracic, lung and gynecological oncology procedures to identify and biopsy possible cancerous lymph nodes. The new technology helps to lessen the risk of complications and improve patient outcomes and recovery time.

Like many areas of surgery, orthopedics has evolved and improved, including new procedures and new technologies that make advancements possible. **St. Louise Regional Hospital** recently acquired a Hana® orthopedic table for hip replacement procedures.

This table has unique patient-positioning capabilities, which allow surgeons to have better access to the hip area and take advantage of imaging equipment during a procedure. Surgeons can perform hip replacement using an anterior approach, which is a less invasive, tissue-sparing alternative to traditional hip replacement surgery. It provides the potential for less pain, faster recovery and improved mobility because the muscle tissues are spared during the surgical procedure.

02

ECONOMIC IMPACT
OF HOSPITALS AND
RELATED SPENDING

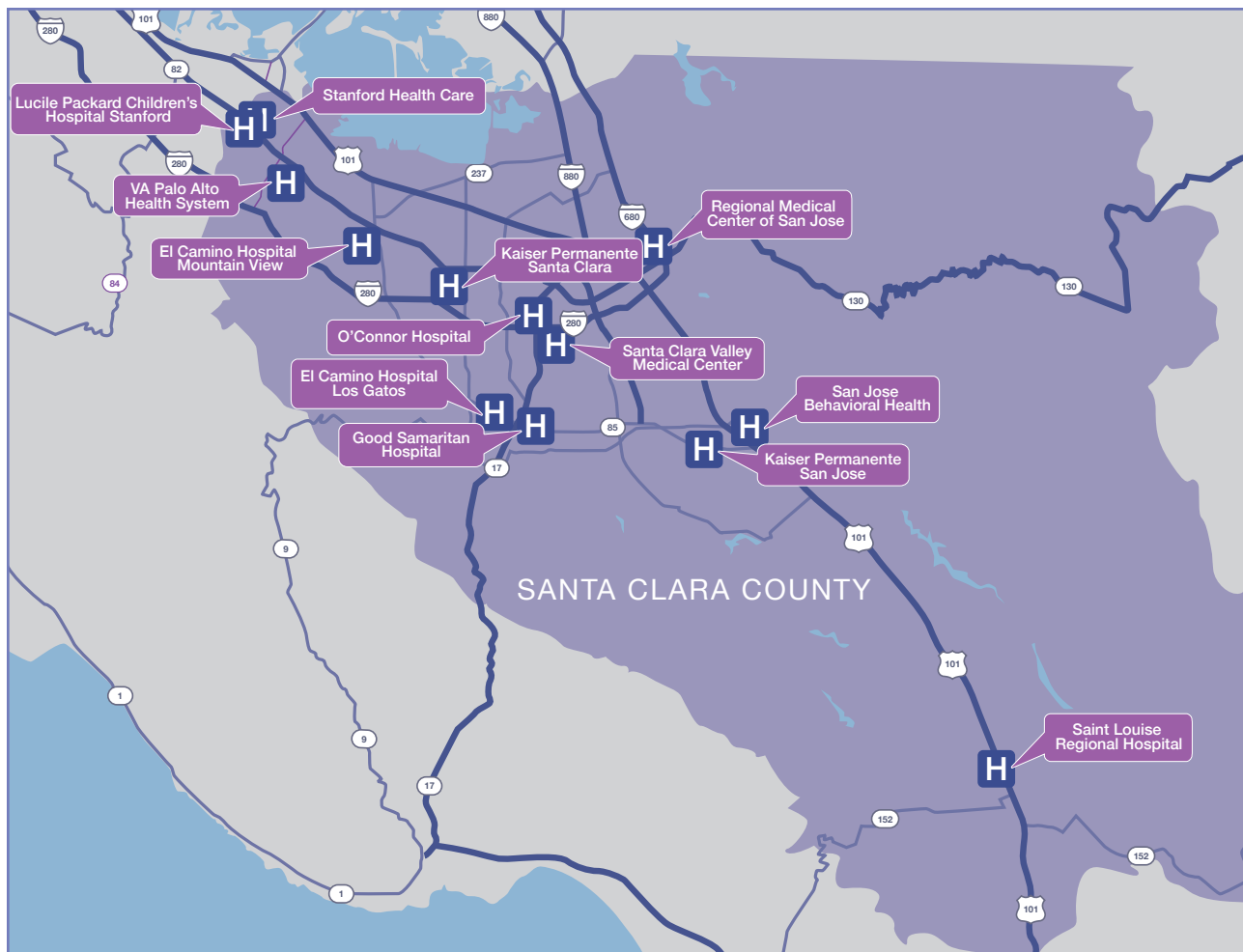
Table 1 summarizes the analysis contained in this report. Hospitals and hospital-related spending, such as long-term care facilities, generate \$18.5 billion in spending annually, 91,936 jobs in the county, and \$10.7 billion in labor earnings.

2017 | TABLE 1 | ECONOMIC IMPACT OF HOSPITALS AND RELATED SPENDING
IN SANTA CLARA COUNTY

IMPACT TYPE	EMPLOYMENT	LABOR INCOME	OUTPUT
Direct Effect	28,972	\$5,385,690,009	\$7,744,759,633
Indirect Effect	41,031	\$3,925,470,120	\$7,104,234,434
Induced Effect	21,933	\$2,392,134,795	\$3,656,391,822
TOTAL EFFECT	91,936	\$10,703,294,924	\$18,505,385,889

The total economic impact has several individual components. The direct spending of **\$7.7 billion*** comprises the dollars that the hospitals spend directly on salaries, supplies, etc. Of this amount, **\$5.4 billion** comprises labor income, which is paid to hospital employees and other hospital-based providers. In addition to this direct spending, there are indirect and induced impacts, generally referred to as “multiplier effects.” Hospital-related spending indirectly produces **\$7.1 billion** in spending at local businesses that provide goods and services for Santa Clara County hospitals. Finally, the wages and salaries paid to health care employees induce further expenditures totaling another **\$3.7 billion** within Santa Clara County.

Santa Clara County’s hospitals are depicted in Figure 1.





PROVIDING ACCESS
TO CARE

Teen Health Van Serves At-risk Youth

Lucile Packard Children's Hospital

Stanford provides high-quality, expert care to at-risk, homeless and uninsured youth through its mobile Teen Health Van. The van increases access, convenience, continuity and quality of care for this underserved group. While the mobile medical unit has been in operation since 1995, a new, state-of-the-art Teen Health Van was placed into service in 2015 through a partnership with Samsung and the Children's Health Fund.

Each exam room in the van is equipped with flat-screen monitors and tablets loaded with interactive technology and health education resources. When used together, the medical provider is able to illustrate symptoms, demonstrate treatments and discuss other health issues to better engage patients and improve outcomes. The mobile medical unit serves nearly 300 youth ages 10 to 25 annually and engages them in more than 3,000 patient encounters.

The Teen Health Van provides comprehensive care at seven locations from San Francisco to San Jose. Program partners are the high schools and shelters that provide space for clinic activities and whose staff refer teens to the program. They work collaboratively with the Teen Health Van team to assure a safety-net

of health care, social services and educational programs for the youth. Social workers provide group classes on topics such as violence and dating, anxiety and relaxation, communication in relationships, eating disorders, body image, and drug and alcohol education. All services and medications are provided at no cost.

During scheduled visits, the Teen Health Van brings much more than medical care to underserved teens. Care can be one of the few reliable and positive supports in their lives, offering much-needed inspiration and relationships.



New Graduate Program Aims to Retain Quality Nurses

Ensuring that patients have access to quality care requires highly trained health professionals. To address the statewide nursing shortage, **O'Connor Hospital** recently designed and implemented a new nursing preceptorship program to provide enhanced training and promote the retention of recent nursing school graduates. The program builds confidence and competence among new nurses so they are well equipped, professionally and emotionally, to begin their careers in health care.

In early 2016, O'Connor Hospital began promoting the new program using primarily social media outlets and word-of-mouth. After receiving more than 200 applicants, 20 nurses were interviewed and selected to participate in the first implementation of the program.

Using integrated classroom instruction and clinical teaching on the patient floor, the 13-week, hands-on program partners recent graduates with managers and mentors who can instruct and supervise the new nurses in their chosen specialty, such as oncology, orthopedics, labor and delivery, intensive care unit or emergency department. The nurses spend two days in a classroom setting concentrating on a focused subject, such as medication or patient assessment. The following two days are spent with the specific unit, applying their education to their practice. All nurses are assessed on their progression throughout the program, and they receive evaluation feedback from their peers and managers on areas of success and goals for the upcoming weeks.

At the end of the first program, 17 nurses were extended offers for employment, which is 85 percent of the program participants. Incorporating the critical learnings and success of the program's first round, O'Connor Hospital is currently working with its second group of 20 new nursing graduates.



RotaCare Provides Diabetes Education to Underserved

South County residents who have diabetes but don't have regular access to health care can get the education they need to keep their chronic disease under control thanks to a partnership between **St. Louise Regional Hospital** and RotaCare Gilroy. Located at South Valley Middle School, the RotaCare clinic offers free medical services to those who have the greatest need and the least access to health care in Gilroy and nearby communities.

Utilizing a recent sponsorship from St. Louise Regional Hospital, the RotaCare clinic launched a new educational series on diabetes and hypertension. The four-week class met weekly and covered signs and symptoms of diabetes, early detection, and control through weight management and other healthy lifestyle choices. At the end of the inaugural series, each participant received a certificate of completion at a celebratory ceremony. Many proud students invited their adult children to share their success.

Diabetes has been recognized as a major health care need in Santa Clara County, particularly in the southern county area. St. Louise Regional Hospital has conducted numerous research surveys verifying this critical health care need. The hospital's Center for Advanced Wound Care and Hyperbaric Medicine treats many patients with diabetes-related wounds.



“By the time we see diabetic patients, many times their wounds are severe,” said Lauren Robertson, executive director of the Wound Care Unit. “We treat the patient and guide them toward better education and understanding of the severity of diabetes. Having a community education class is a wonderful opportunity to catch these patients before they become serious.”

Telehealth and Patient Navigators

For **Kaiser Permanente**, telehealth – or the virtual delivery of medical, health and education services – has become a key component to providing care when and where members choose. In 2015, approximately 52 percent of patient transactions were conducted online through virtual visits or through the Kaiser Permanente Care App. Virtual visits offer a convenient, secure and easy way to bridge the distance between a patient and provider via a secure video link using a smart phone or tablet. Primary care physicians and other providers are able to leverage the technology as they deem appropriate for the condition and patient.

Currently, more than nine million members have access to their digital health records and other digital health care features and functions. In 2014-15, Kaiser Permanente refilled 17 million patient prescriptions, scheduled four million appointments and viewed 37 million tests online.

The complexities of the health care system may be a barrier to accessing needed services, and many patients have an additional hurdle to overcome – language and cultural barriers. Kaiser Permanente South Bay partners with Asian Americans for Community Involvement (AACI) to support their Patient Navigation Center, which hires, trains and deploys culturally competent, multi-cultural Patient Navigators to assist patients with a focus on visit enhancement.

Through a partnership with AACI, San Jose City College and Evergreen Valley College offer a one-year Patient Navigation certificate. Patient Navigators build AACI's capacity to improve access to care, disease screening, diagnosis time and medication adherence, while reducing patient anxiety and avoidable ER visits.

03

EMPLOYMENT

Hospitals and other industry establishments in the Santa Clara County contribute a multitude of employment opportunities with strong earnings potential. Health care practitioners and technical professionals in Santa Clara County on average earn \$54.50 an hour, or \$113,360 annually in salary, usually with significant benefits. In contrast, the average wage for all occupations in the County is \$37.80 per hour, or \$71,350 per year. The wages and salaries for the County's health care professionals are 40 percent to 60 percent higher than the average for the metropolitan area.

THE AVERAGE WAGE *for*

HEALTH CARE PRACTITIONERS & TECHNICAL PROFESSIONALS



\$54.50 | **\$113,360** + significant
hourly | annually benefits

ALL OCCUPATIONS WITHIN THE SANTA CLARA REGION



\$37.80 | **\$71,350** + possible
hourly | annually benefits

THE WAGES AND SALARIES FOR THESE
HEALTH CARE PROFESSIONALS ARE NEARLY

40–60%
higher

THAN THE
average
FOR THE METROPOLITAN AREA.

Table 2 presents occupational data for Santa Clara County and California from the United States Bureau of Labor Statistics, derived from national surveys of employers. These data demonstrate that the wage profile in Santa Clara County is approximately 20 percent higher than the state. More significantly, Table 2 shows that there are many health care support occupations for less skilled workers generated by hospitals and the health care industry. These occupations in Santa Clara County also pay higher than statewide.

2015 | TABLE 2 | MEAN HEALTH CARE WAGES & SALARIES IN SANTA CLARA COUNTY & CALIFORNIA

	SANTA CLARA COUNTY		CALIFORNIA
ALL OCCUPATIONS	\$37.80	\$71,350	\$55,260
HEALTH CARE PRACTITIONERS & TECHNICAL OCCUPATIONS	\$54.50	\$113,360	\$95,230
Dentists, General	\$91.18	\$189,650	\$170,490
Dietitians and Nutritionists	\$36.87	\$76,680	\$72,320
Pharmacists	\$68.46	\$142,400	\$135,750
Family and General Practitioners	\$96.04	\$199,760	\$198,380
Internists, General	\$112.30	\$233,590	\$199,200
Obstetricians and Gynecologists	NA	NA	\$209,100
Pediatricians, General	\$81.57	\$169,660	\$197,800
Psychiatrists	\$123.14	\$256,130	\$250,090
Physicians and Surgeons, All Other	\$109.55	\$227,850	\$203,920
Physicians Assistants	\$56.70	\$117,930	\$107,810
Occupational Therapists	\$48.05	\$99,950	\$88,850
Physical Therapists	\$47.16	\$99,010	\$95,300
Respiratory Therapists	\$44.31	\$92,170	\$79,370
Speech-Language Pathologists	\$45.29	\$94,210	\$88,330
Registered Nurses	\$58.47	\$121,610	\$101,260
Nurse Practitioners	\$68.77	\$143,050	\$120,930
Medical and Clinical Laboratory Technologists	\$45.17	\$93,960	\$83,000
Medical and Clinical Laboratory Technicians	\$25.60	\$53,250	\$47,740
Radiologic Technologists and Technicians	\$46.04	\$95,770	\$76,070
Emergency Medical Technicians and Paramedics	\$22.07	\$45,910	\$37,410

Pharmacy Technicians	\$20.94	\$43,550	\$40,170
Surgical Technologists	\$32.08	\$66,720	\$59,380
Licensed Practical and Licensed Vocational Nurses	\$28.36	\$58,990	\$51,870
Medical Records and Health Information Technicians	\$29.94	\$62,270	\$48,590
Diagnostic Medical Sonographers	\$52.31	\$108,800	\$95,880
Health Technologists and Technicians, All Other	\$28.72	\$59,730	\$51,340
Optometrists	\$63.35	\$131,770	\$118,750
Health care Practioners and Technical Workers, All Other	\$48.12	\$100,090	\$70,680
HEALTH CARE SUPPORT OCCUPATIONS	\$19.59	\$40,750	\$35,180
Home Health Aides	\$13.27	\$27,610	\$27,580
Nursing Assistants	\$15.92	\$33,120	\$31,110
Occupational Therapy Assistants	\$27.73	\$57,680	\$63,550
Physical Therapist Assistants	\$32.25	\$67,080	\$62,630
Physical Therapist Aides	\$15.99	\$33,260	\$29,590
Medical Assistants	\$21.44	\$44,590	\$35,440
Medical Transcriptionists	\$24.62	\$51,200	\$44,000
Health care Support Workers, All Other	\$25.04	\$52,080	\$43,500

As shown in figure 2, according to the California Employment Development Department, health care related employment consistently grew throughout Santa Clara County over the ten years ending in 2015. The only deviation from this trend was the Great Recession-induced declines in hospital employment, which experienced a quick recovery. In the years following the recession, employment growth in health care sectors greatly exceeded the pace of growth across all industry sectors, demonstrating the industry's strong growth potential.

2005-2015 | FIGURE 2 | GROWTH IN SANTA CLARA COUNTY HEALTH CARE JOBS

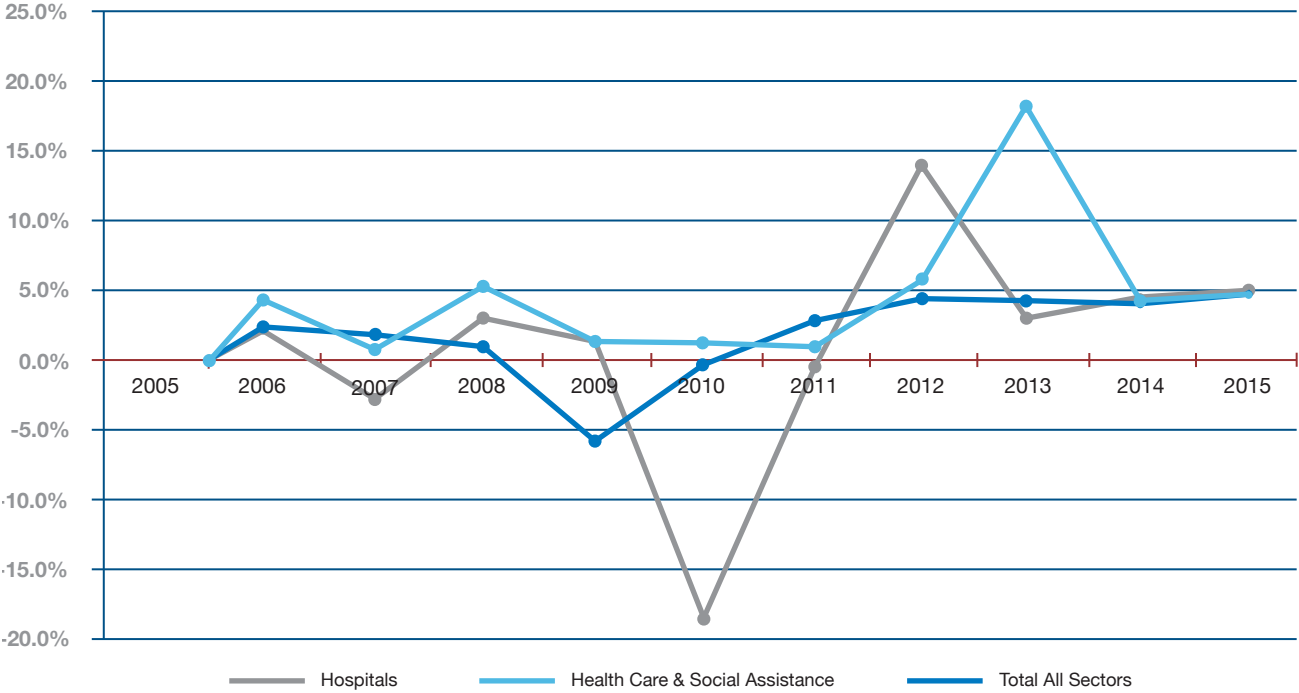


Table 3 also indicates that employment opportunities for health care practitioners and health care support will continue to grow into the future, indicating a strong and stable economic outlook. These rates of growth are 1.7 percent and 1.8 percent, respectively over the 10 years between 2014 and 2024. These growth rates are well above the projected general employment growth rate of 1.3 percent. These higher growth rates are also a reflection of the tendency for health care spending to grow at a faster pace than the rest of the economy.

2014–2024 | TABLE 3 | PROJECTED GROWTH OF HEALTH CARE JOBS IN SANTA CLARA COUNTY

OCCUPATIONAL TITLE	ESTIMATED EMPLOYMENT 2014	PROJECTED EMPLOYMENT 2024	NUMBER CHANGE 2014–2024	PERCENT CHANGE 2014–2024	ANNUAL AVERAGE
Total, All Occupations	1,072,700	1,217,600	144,900	13.5%	1.3%
Health care Practioners/Technical Occupations	40,810	48,310	7,500	18.4%	1.7%
Health care Support Occupations	17,440	20,830	3,390	19.4%	1.8%



ADDRESSING CHRONIC DISEASE

Working Together to Challenge Diabetes

Recent studies have shown Santa Clara County has experienced a steady increase in diabetes among adults. To address this emerging community need, **El Camino Hospital** partnered with Community Services Agency in Mountain View, West Valley Community Services, Sunnyvale Community Services and Second Harvest Food Bank to design and deliver the Challenge Diabetes Program to low-income residents.

The program provides culturally relevant screenings and educational materials in multiple languages, including Spanish and Mandarin, and is offered at no cost to community members. While the program includes regular testing and monitoring of blood glucose, the real focus is on diet and education. Participants also receive free monthly groceries and referrals to local health care clinics to help them manage their condition.

The long-term goal of this collaborative effort is to reduce participants' risk of developing or exacerbating Type 2 diabetes, while the near-term goal is to increase participants' knowledge of the risks and causes of diabetes, how to manage the disease, nutritious food options, and the value of physical activity.



PHASE Takes Heart Disease Program into the Community

Heart disease is the leading cause of death in the United States. To make heart disease treatment more accessible and affordable, **Kaiser Permanente** is awarding nearly \$6 million in grants over the next three years to community organizations across Northern California to expand the reach of its Preventing Heart Disease and Strokes Everyday (PHASE) program. Kaiser Permanente has reduced heart attacks and stroke-related hospital admissions among its members by 60 percent since it began the program in 2002.

“Before the implementation of PHASE, patients with heart disease often needed many office visits and phone calls before getting the appropriate treatment,” said Dr. Marc Jaffe, an endocrinologist and internist at Kaiser Permanente, South San Francisco. “With the PHASE program now in place, we are seeing tremendous results as Kaiser Permanente and its partners are making heart disease treatment more accessible, affordable, consistent and convenient in the communities we serve.”

PHASE combines medications and lifestyle changes to provide an evidence-based, cost-effective treatment for people with existing heart disease and those at greatest risk for developing it, including individuals with diabetes who are aged 55 years and older.

Kaiser Permanente began sharing the program with community health centers in 2006 through a combination of grant funding, clinical expertise and physician mentors. Today, 112 clinic sites in Northern California are providing care to more than 115,000 patients with diabetes and hypertension.





04

CHARITY CARE

Santa Clara County's hospitals provide an extensive array of community benefits, including subsidized or free medical care services. A community benefit is a service, program, or project provided or funded by the hospital that either directly or indirectly fulfills an ongoing need or service delivery gap that has been identified through the hospital's needs assessment processes. The primary purpose of a community benefit program is to improve the health status of the community in general, or improve the health status of a group of community members for whom disparities exist.

Santa Clara County's hospitals provide a significant amount of unreimbursed and charity care for community members, including Medi-Cal shortfall. This care comes in various forms, ranging from county indigent programs, provision for bad debts, uncompensated Medi-Cal funding, and other unreimbursed care. The value of these community benefits is challenging to aggregate, but figures provided by some of the hospitals indicate that the County's hospitals provide approximately **\$4 billion** annually in charity care, Medi-Cal shortfall, and a wide range of other community benefits.



SUPPORTING
MENTAL WELLNESS

ASPIRE Teaches Teens and Young Adults New Coping Skills

National statistics illustrate the gravity of mental health issues among adolescents: One in five teens aged 13 to 18 have or will have a serious mental illness. This heightens the likelihood they will drop out of school and be more vulnerable to substance abuse, violence and suicide.

Silicon Valley is not immune. A cluster of teen suicides in 2008-09 served as a wakeup call that galvanized local schools, parents and health care professionals to act. **El Camino Hospital** convened a coalition of psychiatrists, psychologists and school counselors to explore ways to address this local crisis.

The following year, El Camino Hospital launched ASPIRE (After-School Program Interventions and Resiliency Education), an intensive outpatient program for youth experiencing significant depression or anxiety and at risk of hurting themselves through illicit drug use, self-harm and other destructive behaviors. Demand for this one-of-a-kind therapeutic program has been strong ever since. Most insurance plans do cover the program, and El Camino Hospital is committed to serving all members of the community regardless of their ability to pay.

ASPIRE helps participants develop the skills they lack to cope with stress and regulate their emotions.

While a variety of therapeutic approaches are used, the focus is primarily dialectical behavior therapy, a method designed to change ineffective patterns of behavior. Therapists also teach concepts of mindfulness, distress tolerance and self-acceptance. ASPIRE has been so successful that El Camino Hospital created a middle school program as well as a program for young adults.

The Western Association of Schools and Colleges accredited the ASPIRE curriculum, which means high school students can receive academic credit for completing the program. Accreditation sends a powerful, stigma-reducing message that frames mental health care as an educational process.



Adolescent Mental Wellness Conference

In response to the growing need for mental health resources for Bay Area youth, **Lucile Packard Children's Hospital Stanford** and Stanford Medicine hosted the Adolescent Mental Wellness Conference in 2016 to expand the community conversation about mental health.

The conference brought together hundreds of policy makers, educators, clinicians, and teens and their families, all with the shared goal of enhancing support for the mental health needs of kids and teens.

Too often teens feel ashamed, unsupported and alone. They don't know where to turn, and neither do their families. The conference sought to change this. Conference attendees were charged to work as a team to help break the stigma associated with mental health by highlighting resources and best practices, discussing public policies around mental health and connecting through the sharing of their own stories and experiences.

Restoring Hope, Embracing Change

Treatment at **San Jose Behavioral Health** is an intensely personalized experience for adults and adolescents who struggle with behavioral and mental health issues. Patients follow individualized treatment plans specially designed with their specific strengths, needs, and treatment goals in mind. Treatment includes medication management, individual therapy, group therapy, experiential therapy, family therapy and meetings, and comprehensive discharge/aftercare planning.

The goal at San Jose Behavioral Health is to alleviate symptoms, establish stability, and address the underlying issues that have caused distress and prevented patients from living the healthier lives that they desire and deserve.

San Jose Behavioral Health offers acute inpatient treatment, partial hospitalization programming and intensive outpatient programming, followed by a comprehensive discharge and aftercare plan. The plan is developed to identify the services and resources that will allow the patient to maintain and build upon the progress made while in treatment.

San Jose Behavioral Health also serves as a local hub for The Jason Foundation, Inc. (JFI), a nonprofit organization dedicated to increasing the awareness and prevention of youth suicide. Free educational materials and training programs are available to students, parents, teachers, church groups and other community organizations to help identify and assist at-risk youth. JFI's intention is to empower youth, educators and parents to help recognize when young people are in pain and get professional help involved as soon as possible.



05

BREAKDOWN OF
ECONOMIC IMPACT

Hospitals

This section includes a more detailed overview of the economic impact figures presented at the beginning of this report. To estimate the economic impact of Santa Clara County hospitals, this study relied upon audited information reported to the State of California's Office of Statewide Health and Planning Development (OSHPD).¹ Since the latest data available were for 2014 or 2015, the audited financial disclosure reports were inflated to 2017 dollars using the Consumer Price Index. Several hospitals in the study are not required to provide reports to OSHPD (i.e., the VA Hospital and the two Kaiser Permanente hospitals) and one hospital is too new to have a report on file (San Jose Behavioral Health Hospital). In those cases, general hospital expenditures data were provided directly by the hospital, while others were modeled or estimated based on trends observed among the reporting hospitals.

To estimate the economic impact of each hospital, this report used each hospital's operation expenses by classification, with additional disaggregation based on detailed expenditures reported for supplies, purchased services, and other direct expenses. The operation expenses by classification includes expenditures for salaries and wages, employee benefits, physician's professional fees, other professional fees, supplies, purchased services, depreciation, leases and rentals, interest, and all other expenses. The categories of depreciation and interest were excluded from the economic impact analysis, as they do not reflect expenditures that directly benefit the local economy.

The hospital expenditures were also combined with expenditures associated with long-term care facilities. These expenditures, also presented in audited reports with OSHPD, reflect almost 50 facilities operating in Santa Clara County, with total annual inflation-adjusted expenses of \$515 million. The reported expense categories include salaries and wages, employee benefits, and other expenses.

¹ Reports are available at:
<https://siera.oshpd.ca.gov/financialdisclosure.aspx>

Table 4 presents the sum of all Santa Clara County hospital expenditures, as well as some operating characteristics. These total \$10.2 billion. The addition of the long-term care facility spending brings this total to \$10.7 billion. Not all these expenditures are made in Santa Clara County, but these are measured through indirect and induced impacts, often referred to as “multiplier effects,” which measure the effects of expenditures in the local economy. These impacts include direct and indirect jobs, personal income and economic activity, or output that is generated by the hospitals and long-term care facilities.

The expenditure data were incorporated into an economic impact model for Santa Clara County. The model is based on software developed by economists at IMPLAN (IMpact analysis for PLANning) and geographic-specific economic data collected by the U.S. Government, which is then processed and packaged for use by IMPLAN. The IMPLAN model is designed to generate analysis regarding the economic impacts of a range of economic catalysts.

2017 | TABLE 4 | SELECTED DATA FOR SANTA CLARA COUNTY HOSPITALS

HOSPITAL	LICENSED BEDS	TOTAL CENSUS PATIENT DAYS	OUTPATIENT VISITS	EXPENDITURES
El Camino Hospital	443	89,788	184,839	\$722,433,921
Good Samaritan Hospital San Jose	474	81,019	131,550	\$488,892,025
Lucile Packard Children's Hospital Stanford	302	81,804	228,185	\$1,060,055,764
O'Connor Hospital	358	47,729	174,843	\$340,628,389
Regional Medical Center of San Jose	282	62,117	103,207	\$392,224,041
Saint Louise Regional Hospital	72	9,838	56,095	\$101,968,856
San Jose Behavioral Health*	80	2,788	5,200	\$23,563,360
Santa Clara Valley Medical Center	574	128,657	823,293	\$1,365,813,112
Stanford Health Care	613	150,326	662,820	\$3,134,729,962
Kaiser Foundation Hospital (San Jose and Santa Clara)	595	127,138	NA	\$729,662,000
Veteran's Administration Palo Alto	917	NA	NA	\$1,889,324,525
TOTAL	4,710	781,204	2,370,032	\$10,249,295,954

* Reflects full-year projections based on partial-year performance, as this facility opened in October 2016.

The impact of Santa Clara County's hospitals on the County's economy is greater than the total of the hospitals' direct spending. This is because money spent by the hospitals is spent again by the hospitals' employees and local businesses. Employees use their salaries and wages to purchase goods and services from other businesses. Businesses make their own purchases and hire employees, who also spend their salaries and wages throughout the County. A chain reaction of indirect and induced spending continues, with subsequent rounds of additional spending gradually diminished through savings, taxes, and expenditures made outside the county. This economic ripple effect is measured by what is known as an "input-output" economic model, which uses a series of "multipliers" to provide estimates of the number of times each dollar of "input," or direct spending, cycles through the economy in terms of "indirect and induced output," or additional spending, personal income, and employment.

The types of economic impacts measured by multipliers can be defined in the context of this study as follows:²

- **Direct impacts** refer to impacts from the economic activities associated with Santa Clara County's hospitals.
- **Indirect impacts** measure output (gross sales), jobs, and labor income associated with the businesses and organizations that support the hospitals' activities.
- **Induced impacts** accrue when Santa Clara County hospital employees and indirect industry employees spend their wages on local goods and services. These expenditures in turn stimulate other sectors in the local economy.

More technical information about economic impact analysis and IMPLAN is presented in the Appendix.

² Indirect impacts are the changes in inter-industry purchases as they respond to new demands of directly affected industries. Induced impacts typically reflect changes in spending from households as income increases or decreases due to changes in production. For more explanation of indirect and induced impacts, see Appendix A.

The expenditures data were processed through the IMPLAN model and the results of this analysis are summarized in Table 5. Adding in direct, indirect, and induced impacts, the total economic impact of hospital and related spending in Santa Clara County is \$18.5 billion.

2017 | TABLE 5 | ECONOMIC IMPACT OF HEALTH CARE PROVIDERS IN SANTA CLARA COUNTY

IMPACT TYPE	EMPLOYMENT	LABOR INCOME	OUTPUT
Direct Effect	28,972	\$5,385,690,009	\$7,744,759,633
Indirect Effect	41,031	\$3,925,470,120	\$7,104,234,434
Induced Effect	21,933	\$1,392,134,795	\$3,656,391,822
TOTAL EFFECT	91,936	\$10,703,294,924	\$18,505,385,889

Construction Over a Three-to Five-Year Horizon

Santa Clara County's hospitals are constantly improving patient care through upgrading their facilities. Construction efforts are driven by multiple objectives, including meeting stringent seismic requirements imposed by the State of California. Most of the hospitals provided information on estimated construction costs for the next three to five years. These costs vary depending upon the status of each hospital's efforts to meet California's hospital seismic requirements and other improvement or expansion plans.

The hospitals provided capital construction funding estimates over the next three to five years, some of which have high expected expenditures and some of which are low, reflecting recent completion of major construction activity. Hospital construction projects are typically among the costliest construction projects in Santa Clara County, especially when considered in the aggregate. The total amount of upcoming construction is estimated at \$1.9 billion.

Table 6 shows that the level of planned construction activity over the next three to five years translates into a total construction impact of \$2.6 billion on the Santa Clara County economy, 13,722 temporary jobs in construction and related supplier industries, and \$1.0 billion in payroll over the next three to five years. Although these are nonrecurring impacts, they are significant during the construction period and will comprise a significant contribution to Santa Clara County's economy and employment base. These impacts are in addition to the hospitals' ongoing operations impacts.

2017

TABLE 6

ECONOMIC IMPACT OF PLANNED HOSPITAL CONSTRUCTION PROJECTS
WITHIN SANTA CLARA COUNTY

IMPACT TYPE	EMPLOYMENT	LABOR INCOME	OUTPUT
Direct Effect	9,924	\$736,501,655	\$1,916,000,000
Indirect Effect	1,538	\$145,585,997	\$335,144,738
Induced Effect	2,260	\$138,720,433	\$364,005,429
TOTAL EFFECT	13,722	\$1,020,808,085	\$2,615,150,167



HELPING
VULNERABLE
COMMUNITIES

Homeless Veterans

The **VA Palo Alto Health Care System** helps homeless veterans get back on their feet through its Palo Alto Domiciliary, twice recognized as a National Center of Clinical Excellence. It treats homeless and/or substance-dependent veterans with the goal of returning them to optimal independent living. In recent years, the Domiciliary has grown into a one-source provider addressing many components of the continuum of care for homeless veterans.

Its two residential programs – Homeless Veterans Rehabilitation Program and First Step – use behavioral therapy to help veterans practice and refine new skills and behaviors. The strength of these programs is the continuum of care that extends beyond the residential phase of treatment. The aftercare programs allow outpatients to practice skills learned in residential treatment and check in with care providers and peers.

The U.S. Department of Housing and Urban Development-VA Supportive Housing (HUD-VASH) program helps veterans obtain permanent housing with case management. The Grant Per Diem and Health Care for Homeless Veterans programs contract with shelters and other providers to house veterans in the community. In addition, a housing resource group has been created at nearly every clinic in the system to provide veterans with individualized housing assistance.

Medical Respite for the Homeless

The Medical Respite Program for the homeless is a collaborative program between the Hospital Council of Northern and Central California and participating member hospitals, Santa Clara County's Valley Homeless Healthcare Program (VHHP), and HomeFirst, a local homeless services provider. The program provides homeless individuals with a clean, safe place to recuperate from acute hospitalization and continue with self-care.

Participating hospitals include **El Camino Hospital, Good Samaritan Hospital, Kaiser Permanente San Jose Medical Center, Kaiser Permanente Santa Clara Medical Center, O'Connor Hospital, Regional Medical Center of San Jose, Santa Clara Valley Medical Center** and **Stanford Health Care**.

The program serves homeless adults recovering from acute medical conditions who are medically stable, independent in activities of daily living and able to care for themselves. In 2015, the program expanded from 15 to 20 beds for homeless clients discharged from participating hospitals.

HomeFirst's shelter provides clients with semi-private rooms and support space. VHHP provides staff for the program as well as an onsite clinic that provides primary care to clients.

In addition to helping clients recover from acute hospitalization, the program provides them with an opportunity to break the cycle of homelessness by connecting them to services, including housing, entitled benefits, and substance abuse and mental health treatment. These interventions are needed to help homeless patients achieve better health outcomes and improve their quality of life.

Ramon had been homeless for more than 20 years, but with help from the program, he is now housed, sober and has even reconnected with his children. After 110 days in the Medical Respite Program, Ramon moved into his own apartment and continued to get help through an intensive, case-management program.

“The value of this program is that you get your life back,” he said. “I learned I never want to go back to the streets again.”

Treatment for Opioid Addiction

Addiction can keep homeless individuals from getting back on their feet and off the street. **Santa Clara Valley Medical Center's** Valley Homeless Healthcare Program is a patient-centered, nonjudgmental program focused on the multiplicity of needs that are often associated with opioid addiction. Suboxone (buprenorphine) treatment has been provided to those addicted to opioid drugs since 2010.

The program offers a tiered approach that reduces access barriers by providing walk-in availability, scheduled appointments and integrated group medical visits that allow for differing levels of support throughout treatment. Patients can access a range of services, including medical care, psychiatry and psychology. Social workers connect them to needed services such as housing and transportation.

This customized care has resulted in a 70 percent retention rate at 24 weeks. In addition, program outcomes include a 20 percent decrease in homelessness and a 27 percent increase in employment/school enrollment among those treated for addiction.

This study has estimated the economic impact of hospital and hospital-related expenditures in Santa Clara County. Overall, hospitals and hospital-related spending generate \$18.5 billion in spending annually and 91,936 jobs. Further, hospitals and other medical establishments in Santa Clara County provide a wide variety of employment opportunities. The wages and salaries for these health care professionals is 40 percent to 60 percent higher than the average for Santa Clara County. Hospitals and health care spending also generate jobs for less skilled workers.

2017 | TABLE 7 | HOSPITAL & RELATED ECONOMIC IMPACTS IN SANTA CLARA COUNTY

IMPACT TYPE	EMPLOYMENT	LABOR INCOME	OUTPUT
Direct Effect	28,972	\$5,385,690,009	\$7,744,759,633
Indirect Effect	41,031	\$3,925,470,120	\$7,104,234,434
Induced Effect	21,933	\$1,392,134,795	\$3,656,391,822
TOTAL EFFECT	91,936	\$10,703,294,924	\$18,505,385,889

The projected growth for health care jobs in Santa Clara County from 2014 to 2024 is greater than overall employment growth expectations. Growth rates of 1.7 percent and 1.8 percent annually are forecasted for health care practitioners and support workers, which are well above the projected general employment growth rate of 1.3 percent. Employment in the health industry sector is also generally stable. Despite recent declines in hospital employment during the Great Recession, hospital employment recovered quickly and growth has since outpaced the rate of growth across all industry sectors. This includes jobs across the economic spectrum, including high-paying professional jobs and important support worker jobs with fewer workforce barriers to entry. Santa Clara County’s hospitals also provide millions of dollars a year in charity and unreimbursed charity care. And more economic growth will result from hospital spending on construction over the next three to five years, with an estimated \$2.6 billion in economic impacts generating 13,722 jobs and \$1.0 billion in labor earnings.



PROMOTING
PREVENTION AND
WELLNESS

No Patients, Just Dancers

Each week, a group of 15 to 20 individuals with Parkinson's Disease (PD) and some family members make their way to the first-floor dance studio at **Stanford Health Care**. Parked along the edges of the room are walkers, motorized scooters, jackets and shoes. In the center is a circle of chairs where participants sit. They are no longer Parkinson's patients, just dancers.

Professional dancer Damara Ganley leads the group through a series of movements. The group moves in unison, smiling and encouraging each other through each song. "Dance has benefits for everyone," Ganley said. "It's a way to use your body in an artful way. Dance allows them a way to move consciously. It is a massage for weary shoulders."

Dance for PD started in 2001 as a collaboration between the Mark Morris Dance Group in New York and the Brooklyn Parkinson's Group. Today, the program is offered in 100 communities across the U.S. and in 16 countries.

Dr. Helen Bronte-Stewart, MSE, who directs the Stanford Comprehensive Movement Disorders Center, brought the program to Stanford. A dancer herself, she helped design the first-floor studio of the Stanford Neuroscience Health Center to accommodate

movement classes and, with Ganley, received a grant from the National Parkinson's Foundation to offer the class for free.

"As physicians, we stress the importance of physical activity, social interaction and mental stimulation to our patients with Parkinson's disease," said Dr. Bronte-Stewart, who is also co-director of the Stanford Balance Center. "Dance for PD gives them all three. But it is much more than a possible therapy or treatment; the PD dancers have told us that this type of dance restores their self-image and brings them joy."



School Program Targets Obesity

Kaiser Permanente South Bay has partnered with the Public Health Institute to implement the California Project LEAN (Leaders Encouraging Activity and Nutrition) program. California Project LEAN works to advance nutrition and physical activity policies in schools and communities to prevent obesity and other chronic diseases. Efforts center on youth and parent empowerment approaches, policy and environmental change strategies, and community-based solutions that improve nutrition and physical activity environments, primarily in low-resource, high-need communities. Project LEAN is creating positive, organizational change in the Alum Rock, Gilroy, Morgan Hill and San Jose Unified school districts.

Recreation Therapy; Not Just Fun and Games

Recreation therapy is actually serious business. The **VA Palo Alto Health Care System** long ago recognized the complexity and interdependence of each veteran's physiological, psychological and social needs and developed therapeutic recreation into a specialized, professional field.

Recreation and creative arts therapies are nonconventional, noninvasive and not pharmacological. The therapist and veteran agree on the methods (such as art, music, adapted sports, meditation, canine interventions or outdoor adventure programs) that will produce positive clinical results leading to an improvement in the veteran's health and wellness.

VA Palo Alto's Recreation Therapy Service has evolved significantly over the past five years. In 2013, the Welcome Center in Menlo Park was funded and built to expand recreation and art therapy programs for veterans. The building houses a historical room, community room, kitchen, art therapy room, open guitar studio, fitness room and a service-dog training area. Classes include art, music, CrossFit, yoga, boot camp and healthy cooking and nutrition.

One program highlight is the service-dog training program. It offers therapeutic interventions for veterans and active-duty military personnel with post-traumatic stress disorder (PTSD). They learn to train service dogs for their comrades with combat-related physical disabilities. Veterans who are diagnosed with PTSD and train a service dog report less anxiety and depression. In addition, they tend to be more sociable, have a positive outlook, a mission-driven focus and a renewed sense of purpose.

The Palo Alto Division will be opening a new, state-of-the-art fitness and wellness facility attached to the Aquatic Center, and the Menlo Park Division will open a sports field complex with a field house. Both of these facilities will provide adapted sports programs and health and fitness opportunities for veterans.

07

CONCLUSION

Economic and Health Impact

Hospitals in Santa Clara County are strong drivers in the local economy, deliver high quality patient care, provide “safety net” services to residents in need, improve community health outcomes and serve as a vital element in the region’s emergency response plans.

Hospitals and health care facilities provide critical health services, with an impact now totaling \$18.5 billion annually. Over 91,000 county jobs accompany these impacts, directly or indirectly supported by the hospital sector, with \$10.7 billion in annual employee wages. Hospitals and other medical establishments in Santa Clara County generate a wide variety of employment opportunities, providing employment for a range of skilled and unskilled workers.

The wages and salaries for Santa Clara County’s health care workers are 40 percent to 60 percent higher than the average County job. Santa Clara County’s health care worker average wages and salaries are also almost 20 percent higher than wages and salaries earned by health care workers throughout California.

The health care sector in Santa Clara County is the second largest sector, with employment equal to over 80 percent the level achieved by

the largest sector in 2015, rising from 72 percent in 2010, thus showing great gains in the sector’s relative importance to the County’s economy. The \$2 billion in planned construction activities over the next three to five years will result in a construction impact of \$2.6 billion on the Santa Clara County economy, 13,722 temporary jobs in construction and related supplier industries, and \$1.0 billion in payroll.

The hospitals’ impacts go far beyond monetary and labor impacts. **The hospitals provide an extensive array of community benefits to economically disadvantaged populations and the broader community.** Each year these benefits are valued at many millions of dollars, including free or subsidized medical care through charity care or under-compensated costs of government-funded programs, such as Medi-Cal.

These benefits represent substantial additional impacts generated by the hospitals, positively affecting the quality of life for Santa Clara County’s residents and especially vulnerable populations.

Technical Analysis

The economic impacts shown in this report are based on the economic theory of input-output analysis. Input-output analysis relies on large matrices of industry data showing what is purchased and what is produced by various segments of the economy. These transaction matrices describe the interconnectedness of the industries, households and government entities in a specific geographic area. The output of one industry will appear as the input of other industries. Certain simplifying assumptions are made, such as that productive resources will always be combined in the same proportions to produce any amount of a final product. This makes it possible to determine the total quantities of various goods that must be produced to obtain a given amount for final consumption.

Input-output models describe both the transactions between a particular region and the rest of the world (imports and exports), as well as economic activities within a region. In the case of hospitals, they purchase goods and services from industries in the local economy (and elsewhere in the world) creating additional demand for production at these industries. They also provide services that are purchased by local households and government.

In this case, the IMPLAN (IMpact analysis for PLANning) input-output model was used to derive multipliers used in the economic impact analysis of hospitals in Santa Clara County. The IMPLAN model was originally developed by the U.S. Forest Service but is now widely used by numerous state and federal government agencies, academic institutions and private companies in the United States. The IMPLAN software performs calculations and provides an interface for users to model final demand changes. IMPLAN then estimates the ripple effects of these changes in expenditures on the county's economic sectors through the use of economic multipliers.

The IMPLAN model incorporates economic base data for a specific geography, in this case Santa Clara County, to describe commodity flows from producers to intermediate and final consumers. Industries producing goods and services for final use create final demand that drives the model. Industries like hospitals purchase specific types of goods and services from intermediate and final producers who in turn purchase goods from other industries. This trickle-down cycle can be described using multipliers to show how a \$1 change in final demand (created in this case by hospitals) translates into a given amount of additional output, income and employment for other local industries.

Multipliers are a numeric way of describing the secondary impacts stemming from a change in final demand. Using local economic base data allows the model to control for the types of buyers and suppliers that exist (or do not exist) within the local area and what must be purchased outside the local area. This limits the volume of transactions that can occur locally; hence the size of the multipliers.

In addition to accounting for purchases between industries or businesses, the IMPLAN model also accounts for additional spending by households. The households in this case are the families of the hospital employees, as well as the families of employees at supported local supplier industries. Transactions between industries or businesses are called indirect impacts, whereas transactions between households and businesses are called induced impacts. The value of services produced by the hospitals in this study represents the direct impacts. Direct, indirect and induced impacts can all be quantified in terms of three variables: output, income and employment. The application of these three types of impacts to the hospitals in Santa Clara County is illustrated in the following matrix in Table 9.

TABLE 9 | CHARACTERIZATION OF ECONOMIC MULTIPLIERS

TYPE OF MULTIPLIER	DIRECT	INDIRECT	INDUCED
Employment	Hospital employees and those providing services directly to hospitals	Jobs created by vendors of goods and services	Retail and service jobs generated by employee spending
Labor Income	Employee/service provider income	Vendor employee income	Retail/service employee income
Output	Hospital expenditures	Vendor expenditures	Employee expenditures

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