



work2future  
**Healthcare Report**

April 2013

**[bw]** RESEARCH  
PARTNERSHIP

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## INTRODUCTION

From 2008 to 2013 Silicon Valley, like the rest of the country, experienced a considerable decline in overall employment with a slow, sometimes unnoticeable recovery. Many of the region's prominent industry sectors lost over five and some even ten percent of their total workforce in just a year or two following the great recession. However, since the beginning of that precipitous drop in regional, statewide, and national employment, one industry has stood out and has shown strong employment gains throughout these trying economic times and is expected to continue to add more jobs in the years ahead. Healthcare in Silicon Valley not only provides a broad array of in-demand occupations, many with strong salaries and opportunities for career advancement, the industry also plays a critical role in maintaining the high quality of life in the region.

BW Research Partnership, Inc. (BW Research) partnered with work2future to conduct research of the Healthcare industry in Silicon Valley with particular emphasis on the City of San José and Santa Clara County. The primary research objectives of the study were to:

- Describe the size and scope of the Healthcare industry within Silicon Valley's economy;
- Assess the employment landscape for Healthcare and evaluate how changes in demographics, technology, and legislation can impact the demand for talent;
- Evaluate employers' workforce needs and hiring difficulties and their perception of training needs; and
- Identify training, education, and workforce development strategies to support the Healthcare industry.

The findings of this research were based on an extensive examination of established labor market data and direct feedback gathered from Silicon Valley's Healthcare employers and stakeholders. The findings of the research provide a comprehensive assessment of the role Healthcare plays in the regional economy and what is driving demand for Healthcare workers within Silicon Valley.

This report has been organized into four foundational questions;

1. Why is the Healthcare industry important to the region's workforce development efforts and what is driving change?
2. How are the needs of Healthcare employers changing and what skills are key to working in this industry?
3. What are the key Healthcare occupations and career pathways work2future should focus on?
4. What role could work2future play in supporting Healthcare employers and assisting Healthcare job seekers?

## WHY IS HEALTHCARE IMPORTANT TO THE REGION'S WORKFORCE DEVELOPMENT EFFORTS?

In Silicon Valley, Healthcare employment accounts for about one in every seven jobs within the region. Unlike many of Silicon Valley's leading employment clusters, Healthcare is considered a mature industry that has been long-established as a key employer within the region as well as within the nation. Healthcare provides a broad range of occupational opportunities from high-paying, high-skill positions such as physicians to entry-level positions like Personal Care Aides. The industry has also shown steady, consistent growth in employment at a time when the rest of the economy has been rocked by significant downturns and slow recovery.

However, this mature industry, with a wide array of occupations is now facing structural changes that will impact both the total demand for workers and the skills that are required for those positions. These structural changes to Healthcare can be largely classified into one of the following three categories, which include;

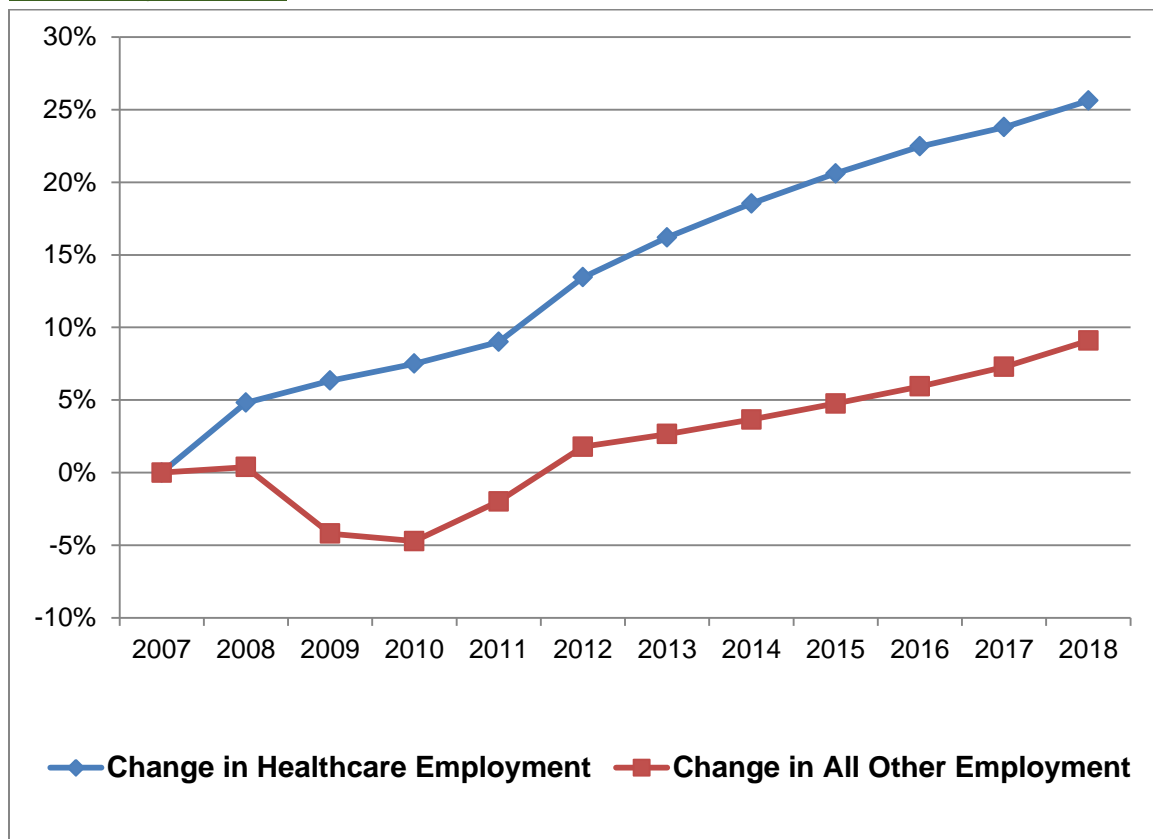
- **Demographics:** A graying population will increase the demand for services while reducing the supply of Healthcare's skilled workers. Santa Clara County's population will get considerably older in the next five years while the size of the region's working age population (25 to 59 years old) sees little to no growth.
- **Technology:** The development and increased adoption of Healthcare Information Technology (HIT), telemedicine, and other innovative services and products will have a considerable impact upon the skills profile of Healthcare workers.
- **Legislation:** In particular, the Patient Protection and Affordable Care Act (PPACA or just ACA) will largely be implemented in 2014. The goal of the legislation is to increase access to Healthcare while reducing the overall percentage of the nation's GDP spent on Healthcare. Even with these known objectives, there is considerable uncertainty surrounding the impact of this legislation and its effect on the Healthcare workforce.

### DRIVEN BY DEMOGRAPHICS NOT MACROECONOMIC INDICATORS

From an economic and educational planning perspective, one of the critical realities of Healthcare compared to most other industries is that the demand for its services and ultimately the demand for its workforce is driven more by the demographic composition of its residents than broad macro-economic indicators, like consumer and investor confidence. This is predicated on the reality that older residents (60+) are considerably more likely to need and use Healthcare services than their younger counterparts. This is valuable because while much of the regional economy will see a drop in demand for its workforce during cyclical downturns, Healthcare is at least somewhat insulated from these corrections. The most recent economic downturn, the great recession, which really started to be felt in late 2008, demonstrated this phenomenon.

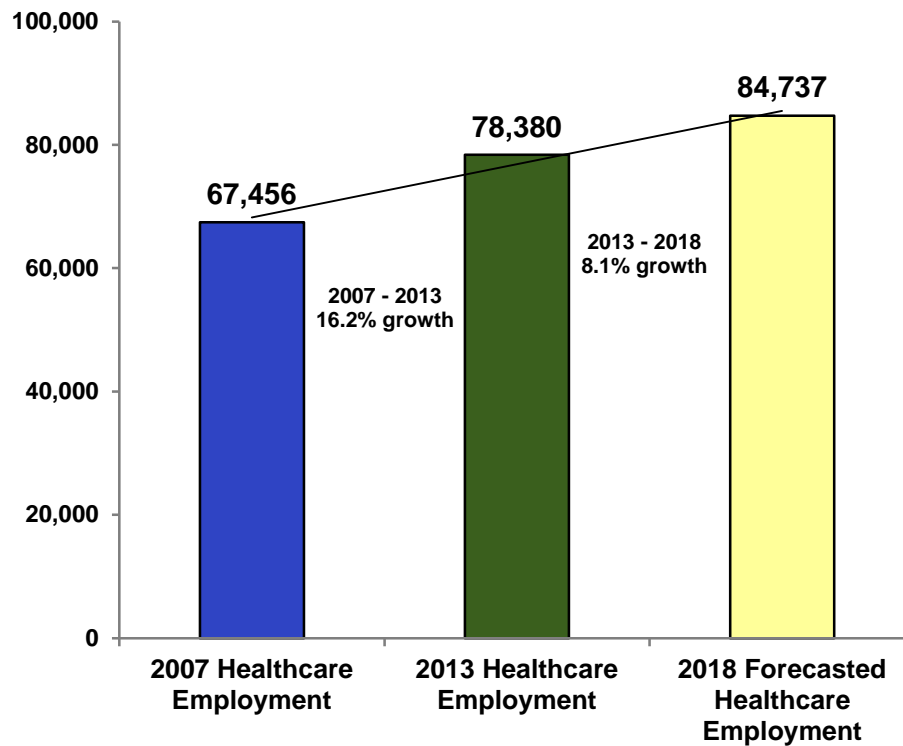
The figure below illustrates the change in Healthcare employment over time in Santa Clara County in comparison to the change in employment in all other industries over the same time period. As demonstrated by the chart, Healthcare increased employment by about seven percent from 2007 to 2010 while the rest of the economy saw a drop in employment of almost five percent, a net difference of over ten percent.

**Figure 1: Change in Healthcare Employment Compared to Change in All Other Employment in Santa Clara County, 2007-2018**



Despite the economic downturn, Santa Clara County saw 16 percent employment growth in the Healthcare industry (10,924 added workers) from 2007 to 2013. Growth is also expected over the next five years, although at half the rate (8%).

**Figure 2: Santa Clara County Healthcare Employment Growth, 2007-2018<sup>1</sup>**

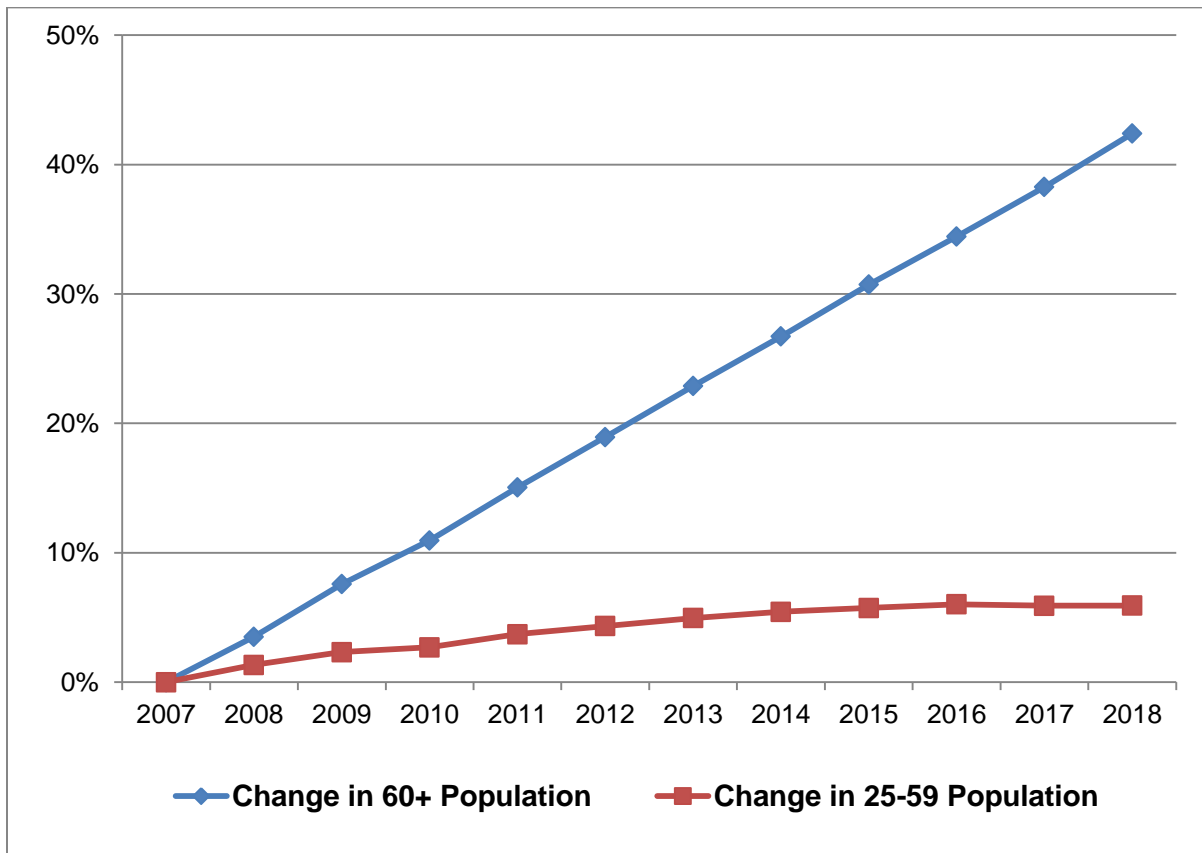


<sup>1</sup> Source: EMSI Complete Employment 2013.1

## THE GRAYING POPULATION

The population of the United States is gradually getting older, and Silicon Valley is no exception. In fact, Santa Clara County is experiencing the “graying” of its population at a greater rate than California or the United States as a whole. Since pre-recession levels in 2007, the proportion of Santa Clara County inhabitants that are 60 years of age or older has increased by nearly two percentage points (increase of 58,297 people) and is expected to increase again by almost two percentage points over the next five years.

**Figure 3: Change in Population for Different Age Cohorts in Santa Clara County, 2007-2018<sup>2</sup>**



The 60 and over cohort will generate considerable demand for Healthcare services in Silicon Valley. The “baby boomer” generation (born between 1946 and 1964) has been found to have higher incidences of chronic disease, disability, and lower self-rated health than the previous generation at the same age.<sup>3</sup> The increased prevalence of enduring medical conditions coupled with the disproportionate use of Healthcare services by older adults already, will greatly increase Healthcare utilization in Santa Clara County.

<sup>2</sup> Source: EMSI Complete Employment 2013.1

<sup>3</sup> For more information on this research, see Dana E. King, MD, et al., The Status of Baby Boomers' Health in the United States: The Healthiest Generation?, JAMA Internal Medicine, February 2013.



**Has the “baby boomer” generation benefited from significant improvements in medicine?** In a February 2013 study completed by the West Virginia School of Medicine and the Medical University of South Carolina and submitted to the Journal of the American Medical Association (JAMA), the authors report that the answer is not a simple one. While life expectancy has increased steadily due to advances in medicine, overall health has not. Ailments such as hypertension, diabetes, obesity, and hypercholesterolemia exist at a higher proportion in “baby boomers” than in the previous generation.<sup>4</sup> However, “baby boomers” are less likely to smoke tobacco and experience the ill effects related to smoking.

## AN INDUSTRY IN TRANSITION

The Healthcare industry as a whole has not always been known for adopting and integrating technology as a central component in the services it provides, however, that has changed considerably in the last few years and will continue to change considerably in the years ahead. Health Information Technology (HIT), telemedicine, and the creation and adoption of new diagnostic tools and remote devices will have a considerable impact on the skills that Healthcare workers will require in the future.

### *Health Information Technology (HIT)*

Health Information Technology (HIT) is a term used to encompass the collection, transmission, analysis, and storage of medical information. This information includes medical records, insurance and billing details, diagnostic test results, and many other technical patient data. Ultimately, HIT has been designed to provide faster and more efficient communication between Healthcare providers and systems, leading to higher patient satisfaction and a reduction in medical errors. HIT was also supposed to provide cost reductions to employers, but so far most evidence is very mixed as to whether any cost reductions have resulted from the implementation of HIT.

### *Telemedicine*

Telemedicine is another technological advancement that has the potential to streamline the care-giving process while reducing operating expenses. Using high-speed data lines, telemedicine visually connects the physician with a patient in a remote location. This allows patients in remote areas to consult with a specialist that may not be available in their region. In situations where time is of the essence, telemedicine offers an inexpensive course for immediate consultation.

Additionally, there have been many advances in the development and manufacturing of medical technologies, such as miniaturization, robotics, rapid prototyping, photonics, advanced machining, nanotechnology, stem cells, and digital imaging. As these new technologies become integrated into clinical settings and processes, the sophistication of devices improves the quality of patient care. These technological advances may also

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<sup>4</sup> For more information on this research, see Dana E. King, MD, et al., The Status of Baby Boomers' Health in the United States: The Healthiest Generation?, JAMA Internal Medicine, February 2013.

reduce Healthcare expenditures by increasing the speed in which medical problems are diagnosed and treated.

### **LEGISLATION DRIVING DEMAND**

Because so much of the Healthcare industry is paid for and regulated by the federal government, legislation and its related requirements have a considerable impact upon this industry, and over the next 12 months, we will see the most considerable legislation to impact Healthcare in 50 years since the passage of Medicare in 1965.

#### ***Patient Protection and Affordable Care Act (PPACA)***

The Patient Protection and Affordable Care Act (PPACA), also referred to as Obamacare, was signed in 2010 but will not be largely implemented until early 2014. This law extends Healthcare coverage to 30 million uninsured Americans within four years, while at the same time, expands coverage for many others. It also improves access for preventive services, provides incentives for businesses to provide Healthcare benefits, and establishes a workforce infrastructure, among other provisions aimed at improving access and quality of care. Expanding coverage to 30 million Americans will significantly increase the demand for Healthcare services, and in turn, will increase the demand for Healthcare practitioners, such as Physicians, Registered Nurses, Nurse Practitioners, and Physician Assistants.

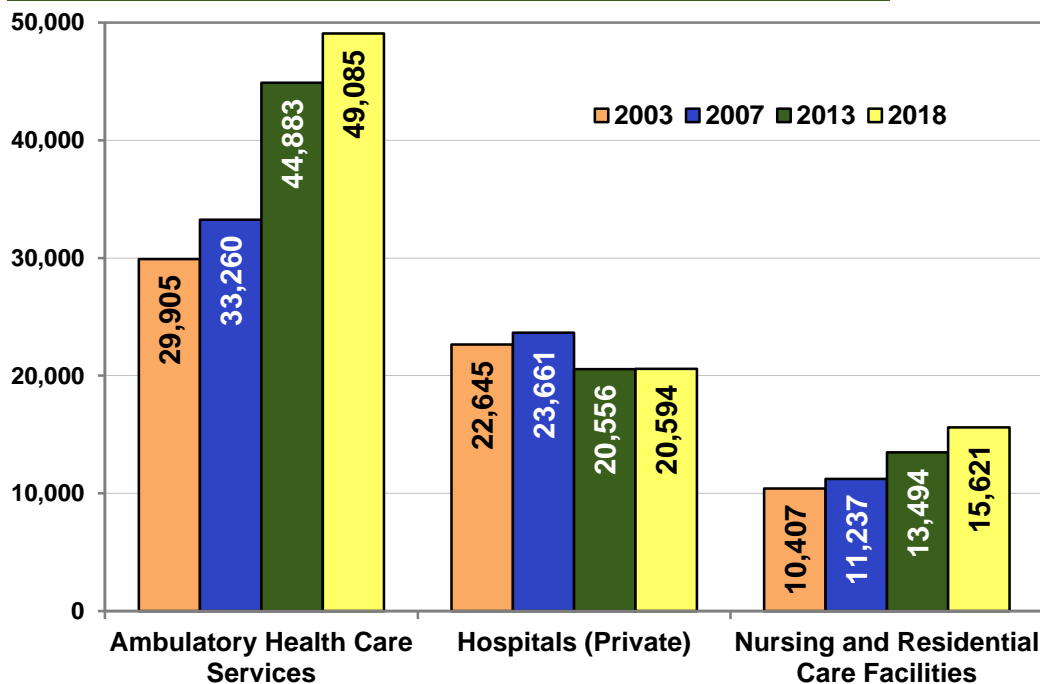
## HOW ARE THE NEEDS OF HEALTHCARE EMPLOYERS CHANGING?

With the relative importance of demographics, technology, and legislation, the point may be lost that all of these issues are ultimately being driven by the demands of the consumer. In Healthcare, the consumers are not only the people that are using the services, but also those paying for it – whether it be private health insurance providers or public health insurance providers. From a consumer perspective, Healthcare users are looking for services that do not require them to always go to a hospital or even be serviced at home and payers are looking for new ways to reduce costs while ensuring some quality of care. The emphasis on new ways to provide Healthcare services while reducing costs has considerable implications for the workforce needs of Healthcare workers in the future.

### CHANGING COMPOSITION OF HEALTHCARE EMPLOYERS

Employment in Healthcare services is changing. Historically, Healthcare services and jobs were largely funneled through the hospitals. That is changing and not too slowly. The demand for more rehabilitation and remote care out of the hospital, the need for greater specialized services, and the goal of reducing costs have all contributed to more Healthcare services being provided at smaller outpatient centers and clinics.

Figure 4: Healthcare Segment Employment in Santa Clara County, 2003-2018<sup>5</sup>



<sup>5</sup> Source: EMSI Complete Employment 2013.1

The Healthcare industry employment data by segment demonstrates that while Healthcare has been growing, it has not been growing at the same rate for each segment of the industry. The change in the following industry Healthcare segments has considerable implications on workforce development.

- **Hospitals:** This segment typically accounts for some of the largest single employers in a given community. In Santa Clara County, there are just over 20 private hospitals, which account for over 20,000 jobs, averaging about 1,000 employees per organization. The average annual wage for this segment is approximately \$125,000, the highest of the three segments.
- **Ambulatory Care Health Services:** This Healthcare segment includes physicians' offices, outpatient care centers, community clinics, diagnostics centers, and other similar types of employers. This segment averages about 12 employees per location in Santa Clara County, almost one-hundredth the size of hospitals. The average annual wage for this segment is approximately \$89,000.
- **Nursing and Residential Care Facilities:** This Healthcare segment is made up of those facilities that provide Healthcare and life assistance services for the elderly, disabled (physically or mentally) or other individuals that cannot live on their own. This segment averages about 37 employees per location in Santa Clara County. The average annual wage for this segment is approximately \$42,000, the lowest of the three.

As Healthcare employment increasingly moves to smaller employers, in the Ambulatory care segment, there are considerable implications for recruiting, hiring, and training employees. Historically, Healthcare has had strong programs and support for incumbent work training, career ladders, and internal employee development practices. That was largely possible because big hospitals, with economies of scale, were able to have internal training and planning resources that are generally not found in smaller physicians' offices or outpatient centers. The following workforce implications will only become stronger as more Healthcare employment is found in Ambulatory Healthcare Services;

1. Employers are generally less willing to hire individuals that are not able to hit the ground running and/or require additional training and experience to be able to effectively complete their job.
2. A greater number of Healthcare employees will need to be more self-reliant as they work in an environment with less of a support network. This is particularly important with the use of technology, as there are fewer people to provide answers or problem solve with technical applications or devices.
3. Work experience and on-the-job training will become more challenging as smaller employers are generally less able or willing to provide internships or other related training programs.
4. Union representation as a percentage of the Healthcare workforce will likely decline as unionized workers are considerably more likely to be found in large hospitals when compared to physicians' offices, outpatient centers, or clinics.

**Defining Career Ladders, Career Pathways, and Career Lattices:** The Healthcare industry has done as much as any industry in identifying and developing career ladders and career pathways. Most literature does not differentiate between a career ladder and a career pathway, but for this study we want to have a clear differentiation.

**Career Ladder:** A clearly defined progression from a given occupation to another occupation or set of occupations based on meeting training, education, or experiential requirements.

**Career Pathway:** A general description of the possible occupations and/or industry employment opportunities that are available to those occupations that have developed relevant and comparable skills.

**Career Lattice:** A general description of the possible occupations and industries, outside of their current industry, that an occupation could transfer to considering the current skills and abilities associated with that position.

## FOUNDATIONAL SKILLS

Healthcare employers can typically categorize their human resource needs into one of three categories. These categories include:

**Clinical Skills:** This has historically been the central requirement for Healthcare employers; are they trained and experienced in the clinical requirements of the position they are applying for? Positions such as Registered Nurses, Health Technicians, and Radiology Technologists all have very specific clinical requirements. The clinical skills for these positions will be the foundation for Healthcare requirements; however, employers are increasingly saying they must have clinical and technical skills.

**Technical Skills:** With the increased adoption of HIT, telemedicine, and other technical applications and diagnostic devices, employers are putting technical skills on the same level of importance as clinical requirements. These technical skills include the ability to effectively use the computer to input, analyze, and respond to data. According to employers, even younger employees who would be expected to be more digitally literate than their older counterparts often need additional contextual training in these technical skills.

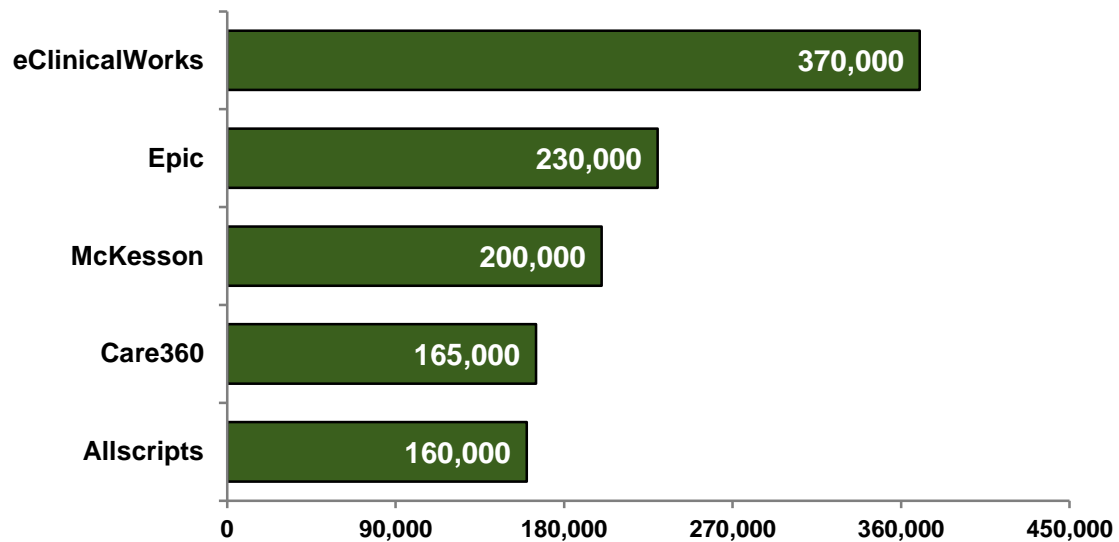
**Ten percent of the nurses that went to work at a new Bay Area hospital facility had to quit, retire, or find new work because they were not able or comfortable working with the higher technology requirements of the new facility.** This example was provided by a training executive for a large Healthcare organization in the Bay Area.

**People & Communication Skills:** This is a particularly important area in Silicon Valley and Santa Clara County as it is a diverse population with different languages and cultural backgrounds. The ability to provide culturally and linguistically competent care, along with the ability to interact and communicate with people in general is an area that employers are increasingly identifying as an area of need.

## ELECTRONIC MEDICAL RECORDS AND ELECTRONIC HEALTH RECORDS

Healthcare employers are focused on individuals who have the technical skills to effectively use the tools that Healthcare employers are increasingly reliant upon. The most often cited technical tool is the Electronic Medical Records software (EMR) or the Electronic Health Records software (EHR). The figure below provides an assessment of the market leaders in the EMR and EHR space.

**Figure 5: Top 5 Electronic Medical Record (EMR) Software by Number of Users Nationwide, 2012<sup>6</sup>**



<sup>6</sup> Source: The 20 Most Popular EMR Solutions, Capterra, 2012

The table below provides the profile for each of the top five most used EMR software packages.

**Table 1: Target Consumers for Electronic Medical Record (EMR) Software by Employer Type<sup>7</sup>**

	Hospital	Large Practice	Medium Practice	Small Practice	Single Practitioner
eClinicalWorks	✓	✓	✓	✓	✓
Epic	✓	✓	✓		
McKesson	✓	✓	✓	✓	✓
Care360	✓		✓	✓	
Allscripts	✓	✓	✓	✓	✓

<sup>7</sup> Source: The 20 Most Popular EMR Solutions, Capterra, 2012

## WHAT ARE THE KEY HEALTHCARE OCCUPATIONS AND CAREER OPPORTUNITIES THAT WORK2FUTURE SHOULD FOCUS ON?

### KEY HEALTHCARE OCCUPATIONS

The primary research portion of the project was comprised of 26 executive interviews. Healthcare providers were asked about nine entry-level occupational categories that are expected to grow considerably in Silicon Valley from 2013 to 2018.

Two-thirds of the occupational categories listed are projected to grow by 10 percent or more over the next five years in Santa Clara County (expected growth: Personal Care Aides: 25%; Home Health Aides: 22%; Licensed Practical and Licensed Vocational Nurses: 11%; Health Technologists and Technicians, All Other: 11%; Radiologic Technologists and Technicians: 10%; Medical Secretaries: 10%).

**Table 2: Growth in Santa Clara County Healthcare Occupations, 2013-2018<sup>8</sup>**

	2013 Jobs	2018 Jobs	2013-2018 Change in Jobs	% Change 2013-2018
<b>Personal Care Aides</b>	6457	8067	1610	24.9%
<b>Home Health Aides</b>	5183	6347	1164	22.5%
<b>Licensed Practical and Licensed Vocational Nurses</b>	2081	2320	239	11.5%
<b>Health Technologists and Technicians, All Other</b>	1076	1196	120	11.2%
<b>Radiologic Technologists and Technicians</b>	858	943	85	9.9%
<b>Medical Secretaries</b>	3310	3634	324	9.8%
<b>Registered Nurses</b>	13008	13887	879	6.8%
<b>Medical Assistants</b>	4724	5001	277	5.9%
<b>Receptionists and Information Clerks</b>	6383	6752	369	5.8%
<b>Overall Healthcare</b>	<b>78,380</b>	<b>84,737</b>	<b>6,357</b>	<b>8.1%</b>

The following section lists occupational categories, top work activities or skills associated with the category, occupational career opportunities with California median wage, and occupation-specific training providers and programs in the region.<sup>9</sup>

<sup>8</sup> Source: EMSI Complete Employment 2013.1

<sup>9</sup> Descriptions of occupational categories are taken from the Bureau of Labor Statistics (BLS) Occupational Employment Statistics website: <http://www.bls.gov/oes/home.htm> and the U.S. Department of Labor's O\*NET Online website: <http://www.onetonline.org/>. Activities or skills for each occupational category are sourced from the detailed work activities (DWAs) provided by the Texas Workforce Commission's Strategic Workforce Assessment (SWAP) website: <http://www.texasindustryprofiles.com/apps/swap/>. Career opportunities and training providers are sourced from the Virtual Career Network (VCN) Healthcare website: <https://www.vcn.org/Healthcare/>. California median wage is sourced from the O\*NET Online website:



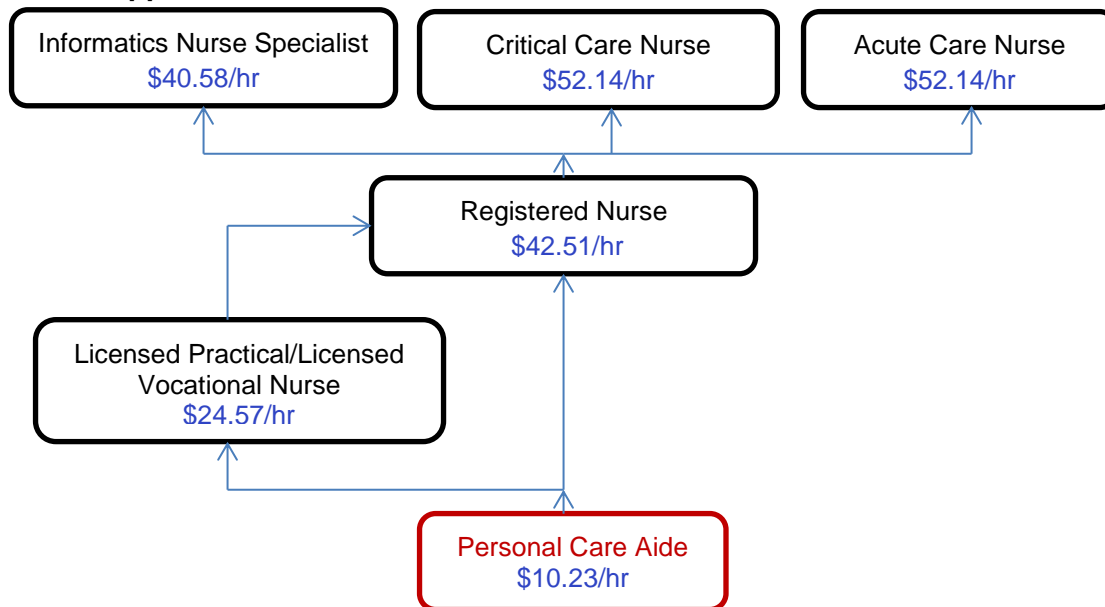
## Personal Care Aides

Assist the elderly, convalescent, or persons with disabilities at their location of residence or residential care facilities. May assist with bathing or feeding at the patient's home or living care facility and provide guidance for the patient or family regarding cleanliness, nutrition, and household activities.

### Top Activities or Skills of Personal Care Aides

- Assisting clients with understanding of personal or interactive problems
- Ability to provide first aid
- Ability to teach patients personal hygiene techniques
- Communication of health and safety information
- Care for mentally ill or disabled individuals
- Plan and cook meals for customers or patients.

### Career Opportunities



### Training Providers – Personal Care Aides

Higher Education Institution	Name of Program(s)	Type of Program
Foothill College	Geriatric Home Aide – Non-Credit	Some college (HS + 1-4 years, no degree)
Gavilan College	Home Health Aide	Some college (HS + 1-4 years, no degree)
Mission College	Home Health Aide	Some college (HS + 1-4 years, no degree)

<http://www.onetonline.org/> and the U.S. Department of Labor's CareerOneStop website:  
<http://www.careeronestop.org/>.

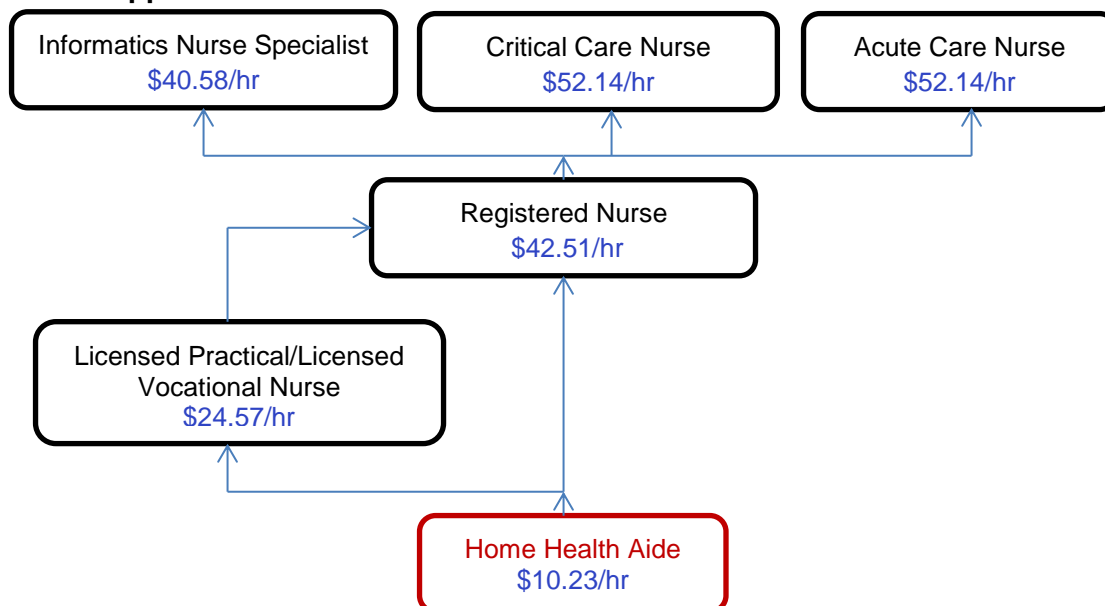
## Home Health Aides

Provide routine medical care such as cleaning wounds and replacing bandages, as well as placement of topical medications to the elderly, convalescent, or persons with disabilities. Home health aides monitor and report changes in health status and may provide personal care related to hygiene.

### Top Activities or Skills of Home Health Aides

- Ability to fit patients with a prosthetic device
- Teach principles of medicine or laboratory procedures
- Must be able to administer medications, treatments, or injections
- Observation of patient or client medical condition
- Ability to provide first aid
- Care for mentally ill or disabled individuals.

### Career Opportunities



### Training Providers – Home Health Aides

Higher Education Institution	Name of Program(s)	Type of Program
Foothill College	Geriatric Home Aide – Non-Credit	Some college (HS + 1-4 years, no degree)
Gavilan College	Home Health Aide	Some college (HS + 1-4 years, no degree)
Mission College	Home Health Aide	Some college (HS + 1-4 years, no degree)

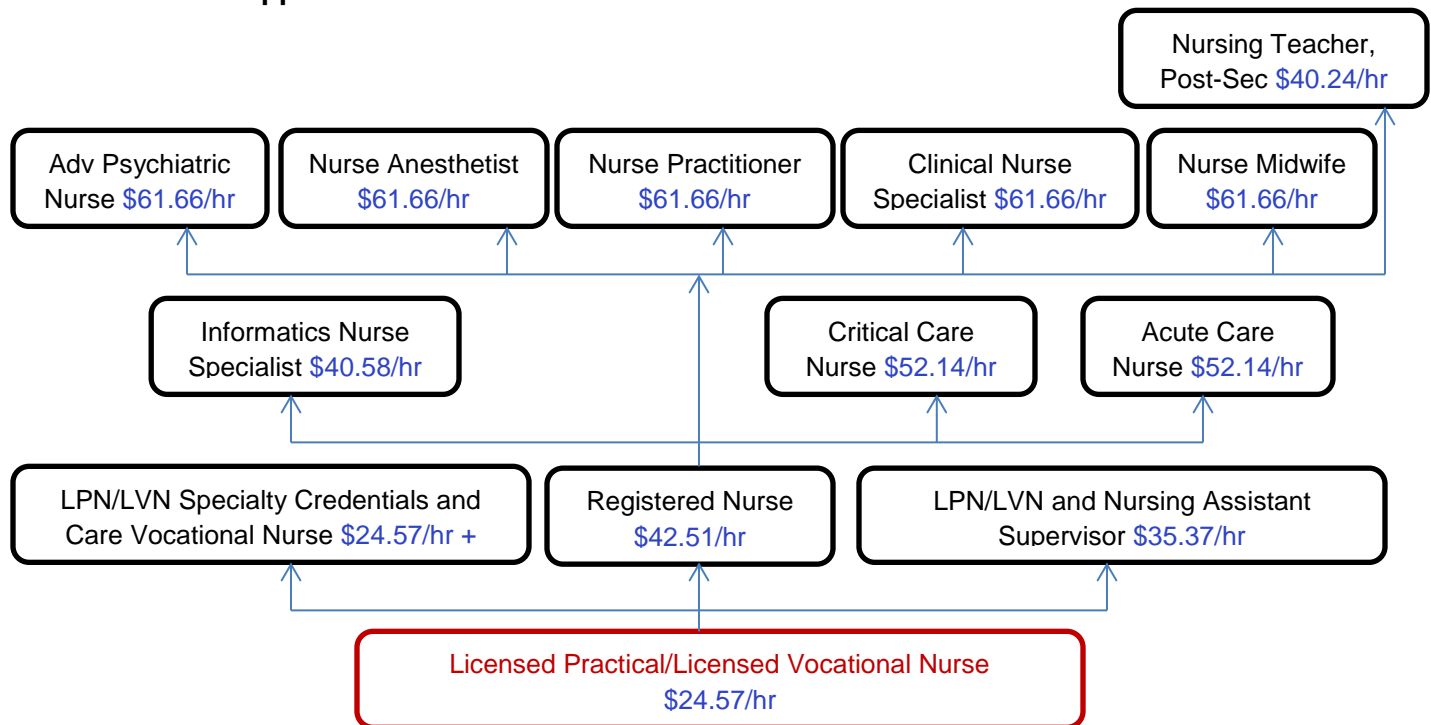
**Licensed Practical Nurses (LPN's) and Licensed Vocational Nurses (LVN's)**

Licensed Practical and Licensed Vocational Nurses care for ill or injured persons, convalescent, and disabled persons in hospitals, clinics, nursing homes, private homes, or similar settings and can work under the supervision of a registered nurse.

**Top Activities or Skills of Licensed Practical and Licensed Vocational Nurses**

- Must maintain licenses, certifications, qualifications, and knowledge through continuing education activities
- Ability to understand and use medical terminology
- Able to communicate and understand technical and scientific information
- Analyze medical data
- Ability to collect clinical data
- Observation of patient or client condition.

**Career Opportunities**



## Training Providers - Licensed Practical and Licensed Vocational Nurses

Higher Education Institution	Name of Program(s)	Type of Program
Hartnell College	Vocational Nursing	Some college (HS + 1-4 years, no degree)
Mission College	Vocational Nursing, Thirty Unit Option LVN	Some college (HS + 1-4 years, no degree)
Mission College	LVN to RN Nursing	Associate's degree (HS + 2 or more years)
Merritt College	Licensed Vocational Nursing	Associate's degree (HS + 2 or more years)
Foothill-De Anza Community College District	Licensed Vocational Nurse Transition to Registered Nurse (De Anza)	Associate's degree (HS + 2 or more years)
Chabot College	LVN to RN Nursing	Associate's degree (HS + 2 or more years)

### Health Technologists and Technicians, All Other

The Health Technologists and Technicians occupational category includes Neurodiagnostic Technologists, Ophthalmic Medical Technologists, and Surgical Assistants.

**Neurodiagnostic Technologists** conduct electroneurodiagnostic (END) tests such as electroencephalograms, evoked potentials, polysomnograms, or electronystagmograms. They may also perform nerve conduction studies.

**Ophthalmic Medical Technologists** assist ophthalmologists by performing ophthalmic clinical functions and related photography. They may also provide information to other ophthalmic personnel. Ophthalmic Medical Technologists may also assist in surgical procedures and perform eye exams, administer eye medication, and instruct patients about corrective lenses.

**Surgical Assistants** assist surgeons during surgery with duties such as tissue extraction, insertion of tubes or intravenous lines, and closure of surgical wounds. They also perform preoperative and postoperative duties to facilitate patient care.

#### **Top Activities or Skills of Health Technologists and Technicians, All Other<sup>10</sup>**

- Ability to care for or provide basic medical assistance for patients
- Able to communicate and understand technical and scientific information
- Ability to understand and use medical terminology
- Communication of health and safety information
- Prepare patients for tests, therapy, or treatments
- Communication of health and safety information
- Ability to write technical health or medical documents.

#### **Career Opportunities**

There is little consensus on career opportunities for Health Technologists and Technicians, All Other.

#### **Training Providers – Surgical Assistants**

Higher Education Institution	Name of Program(s)	Type of Program
Las Positas College	Surgical Technology	Some college (HS + 1-4 years, no degree)
Las Positas College	Surgical Technology	Associate's degree (HS + 2 or more years)

<sup>10</sup> Since Health Technologists and Technicians is a broad occupational category, work activities and skills are pulled from clustered Healthcare occupations.

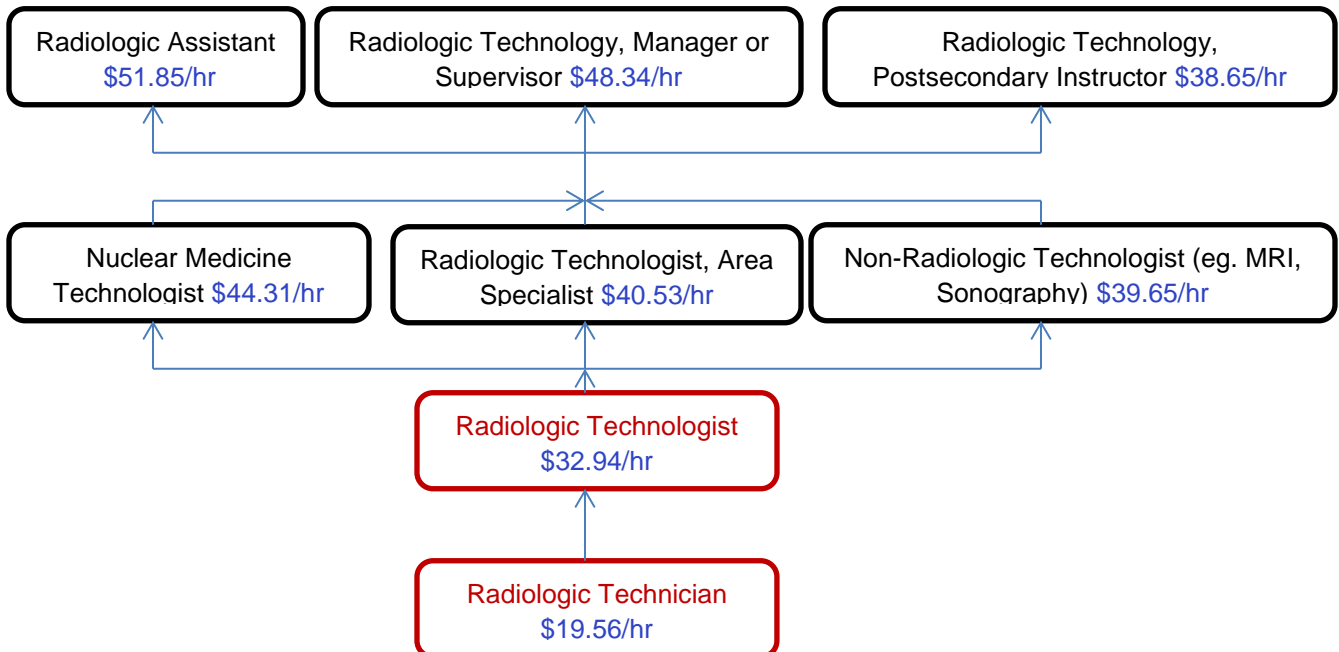
## Radiologic Technologists and Technicians

Radiologic technologists and technicians produce X-ray films of human body parts for use in diagnosing medical problems. They prepare patients for examinations, position operating equipment, and set controls to ensure that the exam is appropriately administered. Radiologic technologists are responsible for recording, processing, and maintaining patient data and treatment records. Radiologic technicians are also tasked with maintaining X-ray equipment.

### Top Activities or Skills of Radiologic Technologists and Technicians<sup>11</sup>

- Ability to care for or provide basic medical assistance for patients
- Safely use radiologic or magnetic imaging equipment while complying with government regulations
- Review and evaluate developed x-rays, video tape, or computer generated information
- Record thorough and accurate patient medical histories
- Position imaging equipment and adjust controls based on specification of examination
- Ability to oversee comfort of patients while positioning and immobilizing them on examination tables
- Understand and execute computer commands to document and specify scan sequences.

### Career Opportunities



<sup>11</sup> Detailed work activities not available through the Texas Workforce Commission's Strategic Workforce Assessment Program (SWAP) website. Work activities were sourced from the U.S. Department of Labor's O\*NET Online website: <http://www.onetonline.org/>.

**Training Providers – Radiologic Technologists and Technicians**

Higher Education Institution	Name of Program(s)	Type of Program
<b>Peralta Community College System Office</b>	Radiologic Science (Merritt)	Some college (HS + 1-4 years, no degree)
<b>Merritt College</b>	Radiologic Science	Associate's degree (HS + 2 or more years)
<b>Cabrillo College</b>	Radiologic Technology	Associate's degree (HS + 2 or more years)
<b>Cañada College</b>	Radiologic Technologist	Associate's degree (HS + 2 or more years)
<b>Foothill College</b>	Radiologic Technology	Associate's degree (HS + 2 or more years)

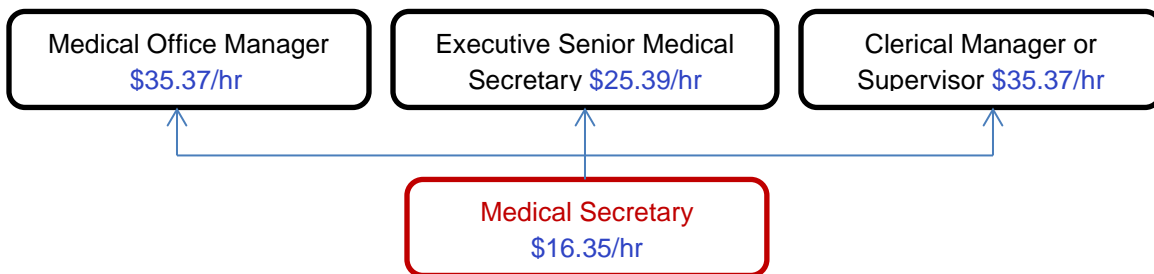
## Medical Secretaries

Perform secretarial duties using specific knowledge of medical terminology and hospital, clinic, or laboratory procedures. Medical secretaries may also be responsible for scheduling appointments, billing patients, filing and compiling medical records, medical charts, reports, and correspondence.

### Top Activities or Skills of Medical Secretaries

- Delegation of appropriate administrative support activities
- Maintain confidentiality of information
- Ability to prepare technical, managerial, financial, or informational reports
- Maintain records, files, reports, logs, or listings
- Prepare billing statements
- Preparation of government, business, or other forms
- Ability to communicate with medical staff and patients.

### Career Opportunities



### Training Providers – Medical Secretaries

Higher Education Institution	Name of Program(s)	Type of Program
Las Positas College	Administrative Medical Assistant, Medical Record Clerk I & II	Some college (HS + 1-4 years, no degree)
Mission College	Medical Office Assistant, Medical Billing and Coding	Some college (HS + 1-4 years, no degree)
West Valley College	Medical Billing and Coding + Medical Terminology	Some college (HS + 1-4 years, no degree)
Cañada College	Medical Administrative Assistant, Medical Billing Specialist	Some college (HS + 1-4 years, no degree)
Ohlone College	Administrative Medical Specialist w/ Medical Billing and Coding + Medical Terminology	Some college (HS + 1-4 years, no degree)
Cabrillo College	Medical Administrative Assistant, Dental Administrative Assistant	Some college (HS + 1-4 years, no degree)
San Jose City College	Medical Administrative Assistant	Associate's degree (HS + 2 or more years)



## **Registered Nurses**

Registered Nurses assess patient health issues and needs, develop and implement nursing care plans, and maintain accurate medical records. They administer nursing care to ill, injured, convalescent, or disabled patients. Registered Nurses may also advise patients on health maintenance and disease prevention or provide case management. In addition, nurses educate patients and the public about various medical conditions and provide advice and emotional support to patients' family members. Registered Nurses record patients' medical histories and symptoms, help perform diagnostic tests and analyze results, operate medical machinery, administer treatment and medications, and help with patient follow-up and rehabilitation.

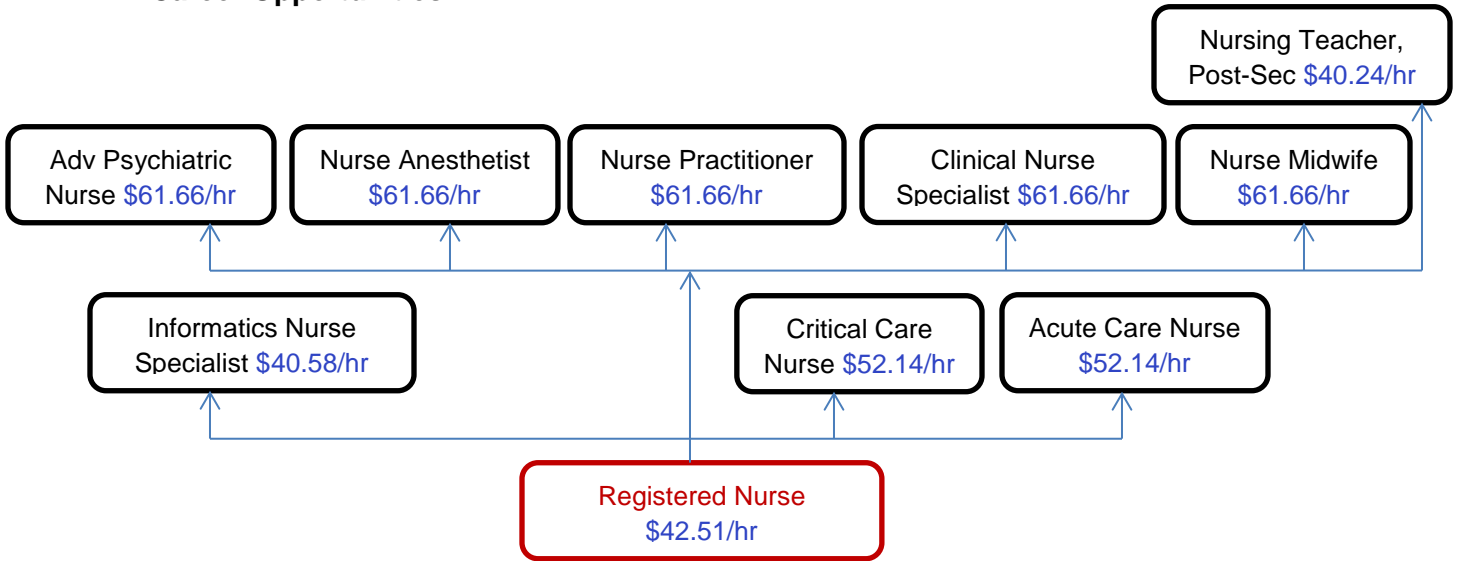
The Registered Nurses occupational category covers many subspecialties. Some of the high-demand specialties include:

- *Critical Care Nurses* – provide specialized care for critically-ill or seriously injured patients that require close monitoring and extensive medication protocols and therapies.
- *Emergency or Trauma Nurses* – provide initial assessment and care for patients with life threatening conditions and work in stand-alone emergency rooms or hospitals.
- *Informatics Nurse Specialists* – apply knowledge of nursing with informatics knowledge to assist in the design, development, and evolution of computerized Healthcare systems.

### **Top Activities or Skills of Registered Nurses**

- Ability to diagnose medical condition of patients
- Perform minor surgery
- Ability to write technical health or medical documents
- Administer anesthetics to patients
- Educate patients in use of supportive or health-related devices
- Use knowledge of medical terminology
- Ability to research health improvement issues.

### Career Opportunities



**Training Providers – Registered Nurses**

Higher Education Institution	Name of Program(s)	Type of Program
<b>Foothill-De Anza Community College District</b>	Primary Care Associate/Family Nurse Practitioners (FNP's) (Foothill), Perinatal Issues, End of Life Care	Some college (HS + 1-4 years, no degree)
<b>Mission College</b>	Clinician/Practitioner Consultant	Some college (HS + 1-4 years, no degree)
<b>Gavilan College</b>	Registered Nursing	Some college (HS + 1-4 years, no degree)
<b>College of San Mateo</b>	Nursing	Associate's degree (HS + 2 or more years)
<b>Hartnell College</b>	Registered Nursing	Associate's degree (HS + 2 or more years)
<b>Merritt College</b>	Associate Degree Nursing (ADN)	Associate's degree (HS + 2 or more years)
<b>De Anza College</b>	Registered Nursing	Associate's degree (HS + 2 or more years)
<b>Evergreen Valley College</b>	Nursing	Associate's degree (HS + 2 or more years)
<b>Monterey Peninsula College</b>	Nursing	Associate's degree (HS + 2 or more years)
<b>Ohlone College</b>	Registered Nursing	Associate's degree (HS + 2 or more years)
<b>Foothill College</b>	Primary Care	Associate's degree (HS + 2 or more years)
<b>San Jose State University</b>	Nursing	Bachelor's degree (HS + 4 or more years)
<b>Cal State Monterey Bay</b>	Nursing	Bachelor's degree (HS + 4 or more years)

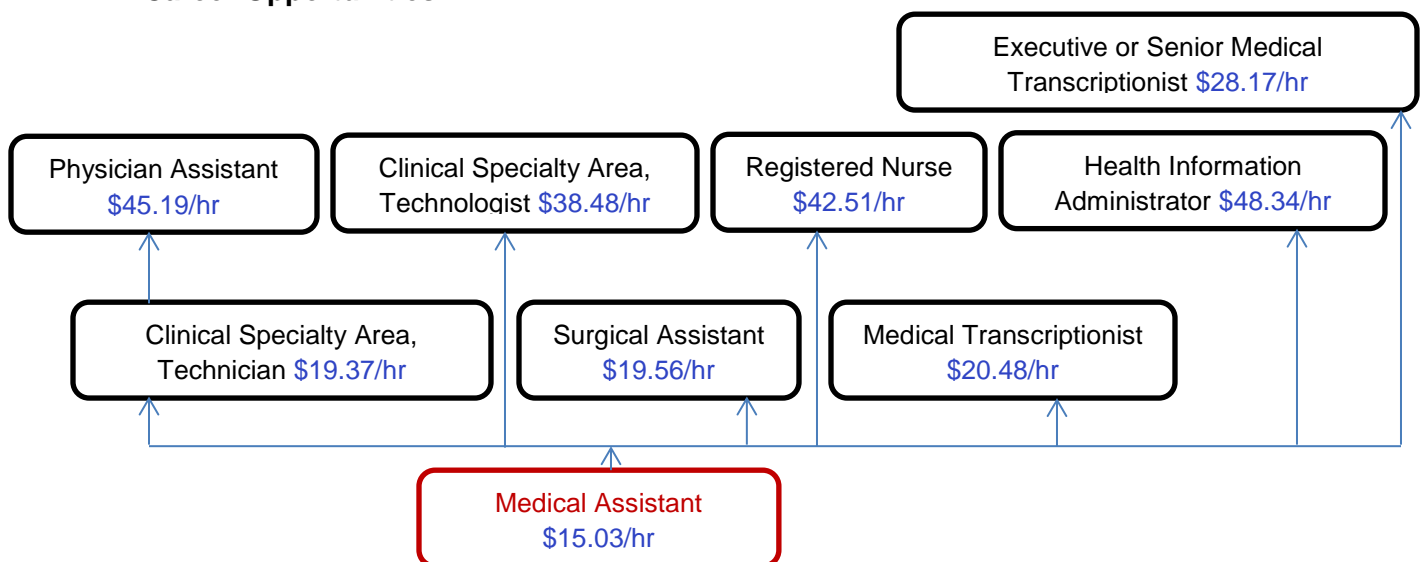
## Medical Assistants

Medical Assistants perform administrative and clinical duties under the supervision of a physician. Administrative duties include scheduling appointments, maintaining medical records, billing, and coding information for insurance purposes. Clinical duties may include taking and recording any vital signs and medical histories, drawing blood, and preparing patients for medical examinations.

### Top Activities or Skills of Medical Assistants

- Construction of medical supportive devices
- Ability to fit patients with a prosthetic device
- Use knowledge of medical terminology
- Educate patients in use of supportive or health-related devices
- Ability to process medical records
- Ability to diagnose medical condition of patients
- Perform noninvasive or invasive medical diagnostic techniques.

### Career Opportunities



## Training Providers – Medical Assistants

Higher Education Institution	Name of Program(s)	Type of Program
Las Positas College	Administrative Medical Assistant, Medical Record Clerk I & II	Some college (HS + 1-4 years, no degree)
De Anza College	Medical Reception, Medical Secretary, Insurance Coding Specialist	Some college (HS + 1-4 years, no degree)
Foothill-De Anza Community College District	Medical Coding, Medical Reception, Medical Secretary	Some college (HS + 1-4 years, no degree)
Cañada College	Medical Assistant, Medical Coding Specialist	Some college (HS + 1-4 years, no degree)
Ohlone College	Administrative Medical Specialist w/ Medical Billing and Coding + Medical Terminology, Advanced Coding for the Physician's Office	Some college (HS + 1-4 years, no degree)
Cabrillo College	Medical Administrative Assistant, Medical Assistant, Medical Insurance Specialist	Some college (HS + 1-4 years, no degree)
Mission College	Medical Coding and Billing, Medical Office Assistant, IV Insertion	Some college (HS + 1-4 years, no degree)
West Valley College	Advanced Coding for the Physician's Office, Medical Billing and Coding, Medical Assistant	Some college (HS + 1-4 years, no degree)
San Jose City College	Medical Assistant - Administrative	Associate's degree (HS + 2 or more years)
Monterey Peninsula College	Medical Office Procedures	Associate's degree (HS + 2 or more years)

## **Receptionists and Information Clerks**

Receptionists and Information Clerks answer inquiries or provide information to the general public, customers, visitors, and other interested parties regarding activities conducted at an establishment and locations of departments, offices, and employees within the organization (in this case medical establishments).

### **Top Activities or Skills of Receptionists and Information Clerks**

- Ability to operate computers to enter, access, calculate, and retrieve data
- Maintain records, reports, files, listings, or logs
- Ability to fill out business, government, or other forms
- Answer questions from employees, colleagues, patients, or public
- Maintain patient and account records
- Ability to examine documents or files to obtain information
- Obtain information from colleagues, employees, and patients.

### **Career Opportunities & Training Providers**

No consensus exists on career opportunities for Receptionists and Information Clerks for the Healthcare industry. Furthermore, Receptionists and Information Clerks typically only require a high school education or equivalent.

## WHAT ROLE COULD WORK2FUTURE PLAY IN SUPPORTING HEALTHCARE EMPLOYERS AND ASSISTING HEALTHCARE JOB SEEKERS?

work2future could play several roles in supporting Silicon Valley Healthcare employers and assisting potential job-seekers. These roles include:

### 1. Educate and Assist Job-Seekers on their Healthcare Career Pathways

Identifying and working toward a career pathway in Healthcare can feel like you are trying to make it out of a towering labyrinth, especially for younger job-seekers who have little to no experience in the working world. Healthcare has many different occupations in many different segments, with specific clinical and increasingly technical requirements. Making it through this labyrinth will become increasingly important as a growing portion of Healthcare's most skilled and experienced workers retire and go from working for the Healthcare system to becoming high propensity users of the system. It is also important to note that training and education programs for Healthcare are costly both in terms of time and resources, and putting people on a path that they have the ability and interest in is critical.

work2future can play a critical role in educating new and/or young job-seekers on the career opportunities in Healthcare and then assisting these job-seekers in taking the appropriate steps to get trained and employed within the industry. This could include offering several different services:

- **A brief introductory seminar on Healthcare occupations** in Santa Clara County. This 60 to 90 minute seminar would introduce young job-seekers to the different Healthcare career pathways that are available based on someone's interest and abilities and his/her willingness to take on additional training and education. This seminar could be developed in conjunction with local Healthcare employers and educators and could include presenters who have moved successfully into Santa Clara's Healthcare workforce.
- **A reliable and current source of local labor market information**, documenting the changing nature of employment in San Jose, Santa Clara County, and Silicon Valley. This labor market information could include key metrics, such as employment growth in different Healthcare segments and key occupations as well as total number of Healthcare openings in the region or the capacity to meet overall demand for specific occupations and skill sets.
- **Connect job-seekers with employers to offer and expand experiential training programs**. Increasingly, Healthcare employers have talked about the importance of having some work experience to go along with training and educational programs. work2future could play a valuable role in connecting, pre-screened and pre-qualified interns or temporary employees with regional Healthcare employers.
- **An in-person resource to introduce and assist job-seekers in the use of the different online tools**. The Healthcare industry has several valuable online

resources to assist individuals who are looking for employment opportunities. These online resources provide assessment tools, additional information on the challenges and rewards associated with each occupational opportunity, as well as identifying the local training resources. As comprehensive as these tools are, they can require a brief introduction to assist people in maximizing all that they have to offer.

**Some of the most valuable online resources for those job-seekers that are considering Healthcare include;**

[www.vcn.org](http://www.vcn.org) – A comprehensive resource developed to guide job-seekers to choose a Healthcare position, find training and education providers, complete an assessment, and become prepared for challenges and opportunities associated with different Healthcare careers.

[www.exploreHealthcareers.org](http://www.exploreHealthcareers.org) – Developed for late high school and college students to learn about all of the opportunities in the Healthcare industry, this online resource provides extensive information on the many different occupations that are available in the Healthcare industry, including those positions found in gerontology, sports medicine, and veterinary medicine.

[www.healthcareers.com](http://www.healthcareers.com) – This online database focuses more on those occupations that are further along the Healthcare career pathway (Nurse Practitioner, Registered Nurse, and Clinical Lab Scientist) and is meant for those job seekers who have experience in the Healthcare industry and have a good sense of the position they are looking for.

## 2. Facilitate Training Programs in Career Ladder Occupations

Healthcare, unlike some of the region's newer industries, has clearly identified skills, training, and education that are required to progress along several different career ladder opportunities. Whether we are talking about Medical Assistants, Registered Nurses, or Radiologic Technicians, there are mapped out career ladders that are largely agreed upon by Healthcare employers. Ten years ago when Healthcare employment was more likely to be found at the region's hospitals, career ladder training programs were largely developed and implemented by those same hospitals. As outpatient care centers, physicians' offices, residential care facilities, and clinics have taken a larger role in the region's Healthcare employment, career ladder training programs have become less prevalent, providing an opportunity for a new facilitator to help reinvigorate an important component in talent development within the region.

While work2future could play a valuable role as a facilitator in career ladder training programs, it is critical to note that employers and educators would need to play a foundational role in developing and implementing any career ladder training program. Likely changes driven by technology, legislation, and consumer demand mean that the skills and requirements for career progression may be more fluid in Healthcare than they have been in the past. Employers will play a critical role in updating and revising training programs that are contextually appropriate and ensure graduates are ready to move successfully to the next rung of their career ladder.



### 3. Digital Literacy for Registered Nurses

In speaking with Silicon Valley's Healthcare employers, several themes were consistently communicated, including the challenges of an aging workforce. This was repeatedly noted for Registered Nurses who were often not comfortable with a lot of the technical requirements that nursing is experiencing. There is also a growing demand for nurses in more specialized areas of training and education, including clinical informatics, surgical services, and nurse researchers which increasingly require higher levels of technical expertise in both the use of new diagnostic tools and/or the ability to use software applications to analyze and gather data. All of these trends combined with the growing use of EMR and telemedicine mean that being a Registered Nurse requires considerably more training and education than the clinical requirements that were singularly important more than ten years ago.

**Ten percent of the nurses that went to work at a new Bay Area hospital facility had to quit, retire, or find new work because they were not able or comfortable working with the higher technology requirements of the new facility.** This example was provided by a training executive for a large Healthcare organization in the Bay Area.

Any technical training programs for Registered Nurses would need to include foundational digital literacy. As alarming as this may be, given that we are talking about employees in Silicon Valley, a surprisingly large number of Healthcare employers talked about their Registered Nurses inability to use a computer or a basic software application without additional training. This training could also include some introduction to the major EMR software solutions (eClinicalworks, Epic, McKesson, Care360, Allscripts) as well as some of the technical trends associated with remote care, telemedicine, and new diagnostic devices. Like the career ladder training programs, this would need to be developed and implemented in conjunction with Healthcare employers and educators.

### 4. Clinical Contextual Training for Technically-Skilled Workers Looking for Healthcare Employment

Santa Clara County has more capacity to train and prepare registered nurses and other Healthcare occupations than most comparable communities across the state. In 2011, the County had the capacity to produce just over 600 registered nursing degrees and certificates, which is roughly equal to the 603<sup>12</sup> additional (175) and replacement (438) Registered Nurses that are needed every year in the County to keep up with the growing demand for Registered Nurses along with those Registered Nurses that need to be replaced. However, the overall capacity to produce a Registered Nurse who has the appropriate degree, does not speak to the growing demand for technical skills, the ability to meet the increased specialization of nurses, and the ability to continually update skills in an industry that is facing considerable structural changes.

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<sup>12</sup> Calculation of 605 registered nurses is taken from 2013 to 2014 forecast for additional Registered Nurses in Santa Clara County from EMSI (4<sup>th</sup> quarter 2012), which totaled 175, and BW Research 2010 survey research results of the Bay Area's Healthcare employers that revealed 2.5 replacement jobs for every new job among Registered Nurses.

The South Bay Registered Nurse Transition Collaboration has recently offered a 16 week immersive training program that focuses on continuing education for recently graduated unemployed Registered Nurses. According to their brochure “*This program provides an opportunity for the newly licensed Registered Nurse to put all elements of prior learning into guided clinical practice situations and to begin the transition to Registered Nurse professional role development.*” This collaborative program could provide a valuable model for improving training and education for the region’s Healthcare workforce. work2future could consider an evaluation process that identifies that relevant inputs and outcomes based on this program and what could be replicated and/or improved for other occupations within the region’s Healthcare industry.

## APPENDIX A – DETAILED WORK ACTIVITIES (DWA) FOR OCCUPATIONAL CATEGORIES<sup>13</sup>

### Personal Care Aides – SOC 39-9021

DWA Title	Prime Skills	Prime Abilities
Assist clients in understanding personal or interactive problems	Social Perceptiveness	Oral Expression
Provide first aid	Critical Thinking	Deductive Reasoning
Teach personal hygiene	Instructing	Oral Expression
Communicate health and safety information	Speaking	Oral Expression
Plan menu of options	Critical Thinking	Deductive Reasoning
Care for mentally ill or special needs individuals	Social Perceptiveness	Problem Sensitivity
Lift ill or injured individuals	Service Orientation	Problem Sensitivity
Observe patient or client condition	Monitoring	Problem Sensitivity
Cook food for customers or patients	Service Orientation	Information Ordering
Provide in home patient care	Service Orientation	Problem Sensitivity
Use hair, cosmetic, or nail care instruments	Operation and Control	Finger Dexterity
Care for children or adolescents	Service Orientation	Selective Attention
Change used linens	Service Orientation	Multilimb Coordination
Transport ill or injured individuals	Service Orientation	Gross Body Coordination
Coordinate social service activities with resource providers	Coordination	Oral Expression
Counsel people regarding issues, problems, or grief situations	Active Listening	Oral Expression
Empathize with others during counseling or related services	Social Perceptiveness	Problem Sensitivity
Work with persons with mental, physical, and social disabilities or illnesses	Service Orientation	Oral Comprehension
Administer medications, treatments, or injections	Service Orientation	Problem Sensitivity
Interview persons to gather required information	Active Listening	Oral Expression
Clean used linens	Operation and Control	Manual Dexterity
Maintain dental or medical records	Writing	Written Expression
Perform dental hygiene procedures	Equipment Selection	Information Ordering
Purchase food or beverages	Management of Material Resources	Deductive Reasoning
Identify home safety hazards	Complex Problem Solving	Problem Sensitivity
Relate to clients' socioeconomic conditions	Active Listening	Problem Sensitivity
Collect social or personal information	Active Listening	Oral Comprehension
Prepare dishes, glassware, silverware, or utensils through washing or polishing	Service Orientation	Manual Dexterity

<sup>13</sup> Provided by the Texas Workforce Commission's Strategic Workforce Assessment (SWAP) website: <http://www.texasindustryprofiles.com/apps/swap/>

Relay information to supervisor or proper officials	Speaking	Oral Expression
Instruct patients in home programs or basic living skills	Instructing	Oral Expression
Train family members to provide bedside care	Instructing	Oral Expression
Use proper personnel protection in health care and other settings	Operation and Control	Problem Sensitivity
Use personal care procedures	Social Perceptiveness	Problem Sensitivity
Feed food to individuals	Service Orientation	Arm-Hand Steadiness
Provide guests with assistance or directions	Service Orientation	Oral Expression
Assist handicapped persons	Service Orientation	Static Strength
Assist individuals with dressing, undressing, grooming, or bathing	Service Orientation	Manual Dexterity
Record client's personal data	Writing	Written Expression
Drive automobile, van, or light truck	Operation and Control	Multilimb Coordination
Clean rooms, floors or work areas	Operation and Control	Manual Dexterity

### Home Health Aides – SOC 31-1011

DWA Title	Prime Skills	Prime Abilities
Fit patients for prosthetic device, using static or dynamic alignment	Service Orientation	Deductive Reasoning
Teach principles of medicine or laboratory procedures	Instructing	Oral Expression
Administer medications, treatments, or injections	Service Orientation	Problem Sensitivity
Care for mentally ill or special needs individuals	Social Perceptiveness	Problem Sensitivity
Lift ill or injured individuals	Service Orientation	Problem Sensitivity
Maintain dental or medical records	Writing	Written Expression
Observe patient or client condition	Monitoring	Problem Sensitivity
Provide first aid	Critical Thinking	Deductive Reasoning
Work with persons with mental, physical, and social disabilities or illnesses	Service Orientation	Oral Comprehension
Maintain record of medication or equipment dispensed to patient	Writing	Written Expression
Encourage patients to participate in activities	Speaking	Oral Expression
Instruct patients in methods to improve functional activities	Instructing	Oral Expression
Transport ill or injured individuals	Service Orientation	Gross Body Coordination
Communicate health and safety information	Speaking	Oral Expression
Give massage using massage therapy techniques	Service Orientation	Arm-Hand Steadiness
Use nursing practices or procedures	Critical Thinking	Deductive Reasoning
Prepare patients for tests, therapy, or treatments	Service Orientation	Oral Expression
Provide in home patient care	Service Orientation	Problem Sensitivity
Care for children or adolescents	Service Orientation	Selective Attention
Change used linens	Service Orientation	Multilimb Coordination
Train family members to provide bedside care	Instructing	Oral Expression

Identify physical injury	Complex Problem Solving	Problem Sensitivity
Prepare medications for dispensing or use	Service Orientation	Information Ordering
Use proper personnel protection in health care and other settings	Operation and Control	Problem Sensitivity
Monitor patient condition and health	Complex Problem Solving	Problem Sensitivity
Monitor children to detect signs of ill health or emotional disturbance	Monitoring	Problem Sensitivity
Use health or sanitation standards	Reading Comprehension	Written Comprehension
Use scientific research methodology and procedures	Critical Thinking	Written Comprehension
Cook food for customers or patients	Service Orientation	Information Ordering
Purchase food or beverages	Management of Material Resources	Deductive Reasoning
Purchase housekeeping or cleaning supplies or equipment	Management of Material Resources	Deductive Reasoning
Identify home safety hazards	Complex Problem Solving	Problem Sensitivity
Perform safety inspections	Quality Control Analysis	Problem Sensitivity
Dispense prescribed medications and pharmaceuticals	Management of Material Resources	Finger Dexterity
Develop dietary-care plans	Critical Thinking	Written Expression
Maintain relationships with external agencies, organizations, and communities	Social Perceptiveness	Oral Expression
Establish/Maintain relationships with related industry professionals	Social Perceptiveness	Oral Expression
Instruct patients in home programs or basic living skills	Instructing	Oral Expression
Provide in-home therapy and resources	Service Orientation	Problem Sensitivity
Collect specimens from patients	Complex Problem Solving	Deductive Reasoning
Feed food to individuals	Service Orientation	Arm-Hand Steadiness
Administer enemas, irrigations, or douches to patients	Service Orientation	Deductive Reasoning
Clean rooms, floors or work areas	Operation and Control	Manual Dexterity
Take vital signs	Complex Problem Solving	Problem Sensitivity
Weigh patients to update records	Service Orientation	Finger Dexterity
Assist patients in performing breathing exercises	Service Orientation	Deductive Reasoning
Entertain patients in care	Service Orientation	Oral Expression
Assist patients in walking or exercising	Service Orientation	Multilimb Coordination
Assist individuals with dressing, undressing, grooming, or bathing	Service Orientation	Manual Dexterity
Use sanitation practices in health care settings	Critical Thinking	Problem Sensitivity
Set-up patient care equipment	Installation	Information Ordering
Use knowledge of nursing terminology	Critical Thinking	Oral Comprehension
Provide clerical assistance to customers or patients	Service Orientation	Oral Expression
Deliver prescribed medications and pharmaceuticals	Service Orientation	Multilimb Coordination
Use personal care procedures	Social Perceptiveness	Problem Sensitivity

Monitor entrance or exit of persons	Monitoring	Problem Sensitivity
Motivate patients to practice exercises	Service Orientation	Oral Expression

### Licensed Practical and Licensed Vocational Nurses – SOC 29-2061

DWA Title	Prime Skills	Prime Abilities
Maintain licenses, certifications, qualifications, and knowledge currency through continuing education activity	Active Learning	Deductive Reasoning
Consult with colleagues or experts regarding specific issues	Speaking	Problem Sensitivity
Use knowledge of medical terminology	Critical Thinking	Oral Comprehension
Communicate technical or scientific information	Speaking	Oral Expression
Review technical, operating, service, or repair manuals or publications	Reading Comprehension	Written Comprehension
Analyze medical data	Critical Thinking	Problem Sensitivity
Collect clinical data	Complex Problem Solving	Oral Expression
Ascertain information from doctor's prescription	Reading Comprehension	Written Comprehension
Handle infectious materials safely according to procedures	Critical Thinking	Written Comprehension
Use oral or written communication techniques	Speaking	Oral Expression
Use hazardous materials information	Reading Comprehension	Problem Sensitivity
Prepare technical, managerial, financial, or informational reports	Writing	Written Expression
Process medical records	Reading Comprehension	Information Ordering
Observe patient or client condition	Monitoring	Problem Sensitivity
Perform emergency medical procedures	Reading Comprehension	Problem Sensitivity
Fit patients for prosthetic device, using static or dynamic alignment	Service Orientation	Deductive Reasoning
Administer medications, treatments, or injections	Service Orientation	Problem Sensitivity
Monitor body response variations	Critical Thinking	Inductive Reasoning
Follow dental or medical office procedures	Critical Thinking	Written Comprehension
Prepare patients for tests, therapy, or treatments	Service Orientation	Oral Expression
Lift ill or injured individuals	Service Orientation	Problem Sensitivity
Transport ill or injured individuals	Service Orientation	Gross Body Coordination
Maintain dental or medical records	Writing	Written Expression
Set-up medical oxygen equipment	Installation	Information Ordering
Communicate health and safety information	Speaking	Oral Expression
Conduct laboratory research or experiments	Complex Problem Solving	Deductive Reasoning
Obtain information from clients, customers, contractors, co-workers, patients, witnesses, attorneys, litigants	Complex Problem Solving	Oral Comprehension
Monitor patient condition and health	Complex Problem Solving	Problem Sensitivity
Collect blood or tissue samples	Complex Problem Solving	Problem Sensitivity
Use nursing practices or procedures	Critical Thinking	Deductive Reasoning

Provide first aid	Critical Thinking	Deductive Reasoning
Examine patients following appropriate examination room procedures	Reading Comprehension	Problem Sensitivity
Prepare medical treatment room	Service Orientation	Information Ordering
Evaluate patient's skills or capacities	Monitoring	Inductive Reasoning
Understand properties or composition of drugs	Active Learning	Inductive Reasoning
Apply appropriate physical restraint	Social Perceptiveness	Deductive Reasoning
Follow patient care procedures and protocols	Service Orientation	Deductive Reasoning
Dispense prescribed medications and pharmaceuticals	Management of Material Resources	Finger Dexterity
Prepare medications for dispensing or use	Service Orientation	Information Ordering
Work with persons with mental, physical, and social disabilities or illnesses	Service Orientation	Oral Comprehension
Treat medical condition of patient	Critical Thinking	Inductive Reasoning
Identify physical injury	Complex Problem Solving	Problem Sensitivity
Apply traction to patients	Critical Thinking	Deductive Reasoning
Teach medical self-care	Instructing	Oral Expression
Assess therapy needs of patient of client	Critical Thinking	Problem Sensitivity
Implement nutritional practices and techniques	Critical Thinking	Deductive Reasoning
Counsel individuals concerning diet	Service Orientation	Oral Expression
Care for mentally ill or special needs individuals	Social Perceptiveness	Problem Sensitivity
Monitor children to detect signs of ill health or emotional disturbance	Monitoring	Problem Sensitivity
Encourage patients to participate in activities	Speaking	Oral Expression
Use dental treatment procedures	Reading Comprehension	Finger Dexterity
Perform dental hygiene procedures	Equipment Selection	Information Ordering
Perform safety inspections	Quality Control Analysis	Problem Sensitivity
Motivate workers and other people to achieve work goals	Management of Personnel Resources	Oral Expression
Provide in home patient care	Service Orientation	Problem Sensitivity
Use behavior modification techniques	Critical Thinking	Oral Expression
Schedule meetings or appointments	Coordination	Information Ordering
Train family members to provide bedside care	Instructing	Oral Expression
Provide in-home therapy and resources	Service Orientation	Problem Sensitivity
Use sanitation practices in health care settings	Critical Thinking	Problem Sensitivity
Sterilize laboratory, medical, or veterinary equipment or instruments	Operation and Control	Manual Dexterity
Record medical history or data	Writing	Written Expression
Inventory medical supplies or instruments	Management of Material Resources	Deductive Reasoning
Take vital signs	Complex Problem Solving	Problem Sensitivity

Send/Receive work-related email	Operation and Control	Written Comprehension
Label blood samples	Reading Comprehension	Near Vision
Administer enemas, irrigations, or douches to patients	Service Orientation	Deductive Reasoning
Assist patients in performing breathing exercises	Service Orientation	Deductive Reasoning
Assist in examining, evaluating, or treating patients	Service Orientation	Problem Sensitivity
Assist patients in walking or exercising	Service Orientation	Multilimb Coordination
Use knowledge of nursing terminology	Critical Thinking	Oral Comprehension
Retrieve files or charts	Complex Problem Solving	Deductive Reasoning
Deliver prescribed medications and pharmaceuticals	Service Orientation	Multilimb Coordination
Follow institutional care procedures and protocols	Critical Thinking	Written Comprehension
Set-up patient care equipment	Installation	Information Ordering
Collect specimens from patients	Complex Problem Solving	Deductive Reasoning
Feed food to individuals	Service Orientation	Arm-Hand Steadiness
Weigh patients to update records	Service Orientation	Finger Dexterity
Entertain patients in care	Service Orientation	Oral Expression
Motivate patients to practice exercises	Service Orientation	Oral Expression
Assist individuals with dressing, undressing, grooming, or bathing	Service Orientation	Manual Dexterity
Use personal care procedures	Social Perceptiveness	Problem Sensitivity
Provide clerical assistance to customers or patients	Service Orientation	Oral Expression

### Medical Secretaries – SOC 43-6013

DWA Title	Prime Skills	Prime Abilities
Delegate appropriate administrative support activities	Management of Personnel Resources	Oral Expression
Write administrative procedures services manual	Writing	Written Expression
Maintain confidentiality of data and information according to procedures	Judgment and Decision Making	Written Comprehension
Use oral or written communication techniques	Speaking	Oral Expression
Maintain records, reports, files, listings, or logs	Writing	Written Expression
Write business correspondence	Writing	Written Expression
Prepare technical, managerial, financial, or informational reports	Writing	Written Expression
Fill out business, government, or other forms	Writing	Written Expression
Operate computers to enter, calculate, access, and retrieve data	Critical Thinking	Information Ordering
Prepare billing statements	Writing	Written Expression
Take messages, meeting notes, shorthand and dictation	Writing	Written Expression
Arrange teleconference calls	Complex Problem Solving	Deductive Reasoning
Maintain processes and procedures manual	Complex Problem Solving	Information Ordering



Document provision of administrative services	Writing	Written Expression
Maintain travel expense accounts	Management of Financial Resources	Information Ordering
Prepare correspondence relating to financial discrepancies	Writing	Written Expression
Date stamp messages, mail, or other information	Management of Material Resources	Finger Dexterity
Perform clerical duties including typing, accepting orders, or sorting mail	Writing	Wrist-Finger Speed
Supervise staff, personnel, workers and others	Management of Personnel Resources	Problem Sensitivity
Recommend solutions of management problems	Speaking	Oral Expression
Confer with client regarding type of arrangement desired	Speaking	Oral Expression
Maintain inventory of supplies and office forms	Management of Material Resources	Number Facility
Participate in organizational meetings or activities	Active Listening	Oral Comprehension
Take complaints by phone, email, or in-person	Active Listening	Problem Sensitivity
Refer callers to appropriate personnel	Service Orientation	Oral Expression
Make presentations to internal and external persons	Speaking	Oral Expression
Dictate correspondence to be recorded	Speaking	Oral Expression
Maintain customer and account records	Management of Financial Resources	Written Expression
Transcribe spoken or written information or data	Writing	Wrist-Finger Speed
Ensure correct grammar, punctuation, or spelling in written communication	Reading Comprehension	Written Expression
Compile data for financial reports	Complex Problem Solving	Information Ordering
Fill out purchase requisitions	Writing	Information Ordering
Disburse organizational funding	Management of Financial Resources	Deductive Reasoning
Maintain record of organization expenses	Writing	Information Ordering
Maintain inventory of office equipment or furniture	Complex Problem Solving	Information Ordering
Reconcile financial records	Mathematics	Inductive Reasoning
Schedule individual, group, or organizational training	Coordination	Information Ordering
Greet customers, guests, visitors, or passengers	Speaking	Oral Expression
Analyze dental data	Critical Thinking	Problem Sensitivity
Perform noninvasive or invasive medical diagnostic techniques	Complex Problem Solving	Problem Sensitivity
Answer calls using multi-line telephone system	Speaking	Oral Expression
Distribute correspondence or mail	Management of Material Resources	Information Ordering
Evaluate importance of incoming telephone calls	Judgment and Decision Making	Inductive Reasoning
Retrieve files or charts	Complex Problem Solving	Deductive Reasoning
Type letters, documents or correspondence	Writing	Written Expression
Maintain appointment calendar	Complex Problem Solving	Information Ordering
Sort mail letters or packages	Complex Problem Solving	Manual Dexterity

Respond to requests for information	Writing	Written Expression
Send/Receive work-related email	Operation and Control	Written Comprehension
Advise internal and external clients, customers, and managers on technical matters, problems, procedures, and	Speaking	Oral Expression
Analyze medical data	Critical Thinking	Problem Sensitivity
Perform emergency medical procedures	Reading Comprehension	Problem Sensitivity
Interview persons to gather required information	Active Listening	Oral Expression
Follow dental or medical office procedures	Critical Thinking	Written Comprehension
Follow dental or medical x-ray procedures	Critical Thinking	Written Comprehension
Authorize credit charges	Mathematics	Deductive Reasoning
Calculate medicine dosages	Mathematics	Mathematical Reasoning
Collect dental laboratory diagnostic data	Complex Problem Solving	Problem Sensitivity
Document medical prognosis	Writing	Written Expression
Fit medical supportive devices	Complex Problem Solving	Arm-Hand Steadiness
Interpret employee's medical evaluations	Critical Thinking	Problem Sensitivity
Maintain dental or medical records	Writing	Written Expression
Order medical laboratory tests	Complex Problem Solving	Oral Expression
Post medical insurance billings	Complex Problem Solving	Information Ordering
Use knowledge of medical terminology	Critical Thinking	Oral Comprehension
Use knowledge of dental terminology	Critical Thinking	Deductive Reasoning
Write computer software, programs, or code	Programming	Information Ordering
Set-up dental equipment	Installation	Manual Dexterity
Use accounting terminology	Mathematics	Deductive Reasoning
Process medical records	Reading Comprehension	Information Ordering
Cultivate micro-organisms for study, testing, or medical preparations	Critical Thinking	Deductive Reasoning
Prepare records of customer charges	Writing	Written Expression
Provide customer service	Service Orientation	Oral Expression
Compute payment schedule	Mathematics	Number Facility
Obtain information from clients, customers, contractors, co-workers, patients, witnesses, attorneys, litigants	Complex Problem Solving	Oral Comprehension
Advise other medical practitioners on disease-related issues	Speaking	Oral Expression
Relay information to supervisor or proper officials	Speaking	Oral Expression
Examine documents for completeness, accuracy, or conformance to standards	Reading Comprehension	Problem Sensitivity
Maintain relationships with clients	Social Perceptiveness	Oral Expression
Maintain telephone logs	Writing	Information Ordering
Provide clerical assistance to customers or patients	Service Orientation	Oral Expression

Assist in examining, evaluating, or treating patients	Service Orientation	Problem Sensitivity
Record medical history or data	Writing	Written Expression
Store medical laboratory specimens	Critical Thinking	Deductive Reasoning
Inventory medical supplies or instruments	Management of Material Resources	Deductive Reasoning
Maintain medical supportive devices	Equipment Maintenance	Problem Sensitivity
Code medical procedures on claims	Critical Thinking	Deductive Reasoning
Complete patient bills	Writing	Information Ordering
Process account invoices	Management of Financial Resources	Information Ordering
Maintain insurance records	Complex Problem Solving	Information Ordering
Assist patients in performing breathing exercises	Service Orientation	Deductive Reasoning

### Registered Nurses – SOC 29-1141

DWA Title	Prime Skills	Prime Abilities
Diagnose medical condition of patient	Complex Problem Solving	Problem Sensitivity
Perform minor surgery	Complex Problem Solving	Inductive Reasoning
Write technical health or medical documents	Writing	Written Expression
Administer anesthetics to patients	Service Orientation	Problem Sensitivity
Administer rehabilitation interventions	Service Orientation	Problem Sensitivity
Deliver babies	Service Orientation	Deductive Reasoning
Set-up incubators in hospitals	Installation	Information Ordering
Educate patients in use of supportive or health-related devices	Instructing	Oral Expression
Consult with staff or users to identify operating procedure problems	Speaking	Oral Expression
Research health improvement issues	Science	Written Comprehension
Teach principles of medicine or laboratory procedures	Instructing	Oral Expression
Use knowledge of medical terminology	Critical Thinking	Oral Comprehension
Maintain licenses, certifications, qualifications, and knowledge currency through continuing education activity	Active Learning	Deductive Reasoning
Attend academic, business, or other conferences and events	Active Listening	Oral Comprehension
Consult with colleagues or experts regarding specific issues	Speaking	Problem Sensitivity
Communicate technical or scientific information	Speaking	Oral Expression
Use oral or written communication techniques	Speaking	Oral Expression
Make presentations to internal and external persons	Speaking	Oral Expression
Observe patient or client condition	Monitoring	Problem Sensitivity
Collect clinical data	Complex Problem Solving	Oral Expression
Communicate health and safety information	Speaking	Oral Expression
Treat medical condition of patient	Critical Thinking	Inductive Reasoning

Educate patients regarding diagnosis	Instructing	Oral Expression
Obtain information from clients, customers, contractors, co-workers, patients, witnesses, attorneys, litigants	Complex Problem Solving	Oral Comprehension
Prepare technical, managerial, financial, or informational reports	Writing	Written Expression
Administer medications, treatments, or injections	Service Orientation	Problem Sensitivity
Document medical prognosis	Writing	Written Expression
Follow patient care procedures and protocols	Service Orientation	Deductive Reasoning
Monitor body response variations	Critical Thinking	Inductive Reasoning
Prepare patients for tests, therapy, or treatments	Service Orientation	Oral Expression
Use clinical problem solving techniques	Complex Problem Solving	Inductive Reasoning
Review technical, operating, service, or repair manuals or publications	Reading Comprehension	Written Comprehension
Use scientific research methodology and procedures	Critical Thinking	Written Comprehension
Identify physical injury	Complex Problem Solving	Problem Sensitivity
Counsel people regarding issues, problems, or grief situations	Active Listening	Oral Expression
Ascertain information from doctor's prescription	Reading Comprehension	Written Comprehension
Understand properties or composition of drugs	Active Learning	Inductive Reasoning
Perform a comprehensive patient assessment	Systems Evaluation	Problem Sensitivity
Apply drug information to patient treatment	Judgment and Decision Making	Deductive Reasoning
Follow dental or medical office procedures	Critical Thinking	Written Comprehension
Implement life support procedures	Reading Comprehension	Problem Sensitivity
Prepare medical treatment room	Service Orientation	Information Ordering
Assess therapy needs of patient of client	Critical Thinking	Problem Sensitivity
Maintain confidentiality of data and information according to procedures	Judgment and Decision Making	Written Comprehension
Use knowledge of investigation techniques	Critical Thinking	Inductive Reasoning
Handle infectious materials safely according to procedures	Critical Thinking	Written Comprehension
Interpret medical laboratory test results	Critical Thinking	Problem Sensitivity
Order medical laboratory tests	Complex Problem Solving	Oral Expression
Perform emergency medical procedures	Reading Comprehension	Problem Sensitivity
Follow surgical procedures	Reading Comprehension	Deductive Reasoning
Examine patients following appropriate examination room procedures	Reading Comprehension	Problem Sensitivity
Practice preventive procedures in medical therapy setting	Learning Strategies	Problem Sensitivity
Evaluate patient's skills or capacities	Monitoring	Inductive Reasoning
Perform safety inspections	Quality Control Analysis	Problem Sensitivity
Use intervention techniques	Speaking	Oral Expression
Follow operating room procedures	Reading Comprehension	Problem Sensitivity

Conduct medical tests	Complex Problem Solving	Problem Sensitivity
Evaluate patient or client response to therapy or treatment	Complex Problem Solving	Inductive Reasoning
Monitor patient condition and health	Complex Problem Solving	Problem Sensitivity
Conduct laboratory research or experiments	Complex Problem Solving	Deductive Reasoning
Apply traction to patients	Critical Thinking	Deductive Reasoning
Provide physical therapy services to patients	Service Orientation	Extent Flexibility
Coordinate patient activities with rehabilitation team	Coordination	Oral Expression
Prepare medications for dispensing or use	Service Orientation	Information Ordering
Maintain record of medication or equipment dispensed to patient	Writing	Written Expression
Give massage using massage therapy techniques	Service Orientation	Arm-Hand Steadiness
Confer with staff or other professionals concerning treatment	Speaking	Oral Expression
Identify childhood or adolescent diseases	Critical Thinking	Problem Sensitivity
Advise other medical practitioners on disease-related issues	Speaking	Oral Expression
Counsel individuals concerning diet	Service Orientation	Oral Expression
Encourage patients to participate in activities	Speaking	Oral Expression
Instruct patients in methods to improve functional activities	Instructing	Oral Expression
Instruct patients in home programs or basic living skills	Instructing	Oral Expression
Lift ill or injured individuals	Service Orientation	Problem Sensitivity
Provide in home patient care	Service Orientation	Problem Sensitivity
Monitor children to detect signs of ill health or emotional disturbance	Monitoring	Problem Sensitivity
Prepare surgical trays, cases, equipment, instrumentation, or supplies for surgery	Management of Material Resources	Information Ordering
Set-up medical oxygen equipment	Installation	Information Ordering
Monitor medical oxygen equipment	Monitoring	Problem Sensitivity
Teach medical self-care	Instructing	Oral Expression
Use health or sanitation standards	Reading Comprehension	Written Comprehension
Care for mentally ill or special needs individuals	Social Perceptiveness	Problem Sensitivity
Train family members to provide bedside care	Instructing	Oral Expression
Advise internal and external clients, customers, and managers on technical matters, problems, procedures, and	Speaking	Oral Expression
Monitor operating conditions	Operations Monitoring	Problem Sensitivity
Maintain dental or medical records	Writing	Written Expression
Use nursing practices or procedures	Critical Thinking	Deductive Reasoning
Develop dietary-care plans	Critical Thinking	Written Expression
Guide individuals or families in nutritional areas	Instructing	Oral Expression
Follow radiation safety procedures	Critical Thinking	Problem Sensitivity
Develop treatment plans	Complex Problem Solving	Written Expression

Prepare long term or short term plans	Complex Problem Solving	Deductive Reasoning
Monitor operating procedures of radiation producing equipment	Operations Monitoring	Problem Sensitivity
Motivate workers and other people to achieve work goals	Management of Personnel Resources	Oral Expression
Assess applicant, staff, or individual skill levels	Critical Thinking	Inductive Reasoning
Conduct clinical investigations	Complex Problem Solving	Oral Expression
Monitor inmate activity	Monitoring	Problem Sensitivity
Use behavior modification techniques	Critical Thinking	Oral Expression
Monitor atmospheric or meteorological processes and conditions	Monitoring	Problem Sensitivity
Transport ill or injured individuals	Service Orientation	Gross Body Coordination
Provide in-home therapy and resources	Service Orientation	Problem Sensitivity
Send/Receive work-related email	Operation and Control	Written Comprehension
Use sanitation practices in health care settings	Critical Thinking	Problem Sensitivity
Conduct patient assessments	Complex Problem Solving	Problem Sensitivity
Take vital signs	Complex Problem Solving	Problem Sensitivity
Motivate patients to practice exercises	Service Orientation	Oral Expression
Record medical history or data	Writing	Written Expression
Set-up patient care equipment	Installation	Information Ordering
Explain testing procedures to patient	Speaking	Oral Expression
Follow institutional care procedures and protocols	Critical Thinking	Written Comprehension
Weigh patients to update records	Service Orientation	Finger Dexterity
Collect specimens from patients	Complex Problem Solving	Deductive Reasoning
Administer enemas, irrigations, or douches to patients	Service Orientation	Deductive Reasoning
Assist in examining, evaluating, or treating patients	Service Orientation	Problem Sensitivity
Sterilize laboratory, medical, or veterinary equipment or instruments	Operation and Control	Manual Dexterity
Inventory medical supplies or instruments	Management of Material Resources	Deductive Reasoning
Assist patients in performing breathing exercises	Service Orientation	Deductive Reasoning
Assist patients in walking or exercising	Service Orientation	Multilimb Coordination
Deliver prescribed medications and pharmaceuticals	Service Orientation	Multilimb Coordination
Instruct on topics such as health education or disease prevention	Instructing	Oral Expression
Enter analysis of medical tests or clinical results into computer for storage	Complex Problem Solving	Finger Dexterity
Use personal care procedures	Social Perceptiveness	Problem Sensitivity
Feed food to individuals	Service Orientation	Arm-Hand Steadiness
Use knowledge of nursing terminology	Critical Thinking	Oral Comprehension

**Medical Assistants – SOC 31-9092**

DWA Title	Prime Skills	Prime Abilities
Construct medical supportive devices	Installation	Manual Dexterity
Fit patients for prosthetic device, using static or dynamic alignment	Service Orientation	Deductive Reasoning
Educate patients in use of supportive or health-related devices	Instructing	Oral Expression
Perform noninvasive or invasive medical diagnostic techniques	Complex Problem Solving	Problem Sensitivity
Compound pharmaceuticals or medical preparations	Reading Comprehension	Deductive Reasoning
Set-up incubators in hospitals	Installation	Information Ordering
Prescribe or recommend drugs, medical devices or other forms of treatment	Judgment and Decision Making	Deductive Reasoning
Diagnose medical condition of patient	Complex Problem Solving	Problem Sensitivity
Use knowledge of medical terminology	Critical Thinking	Oral Comprehension
Maintain dental or medical records	Writing	Written Expression
Process medical records	Reading Comprehension	Information Ordering
Post medical insurance billings	Complex Problem Solving	Information Ordering
Take messages, meeting notes, shorthand and dictation	Writing	Written Expression
Ensure correct grammar, punctuation, or spelling in written communication	Reading Comprehension	Written Expression
Use oral or written communication techniques	Speaking	Oral Expression
Calculate medicine dosages	Mathematics	Mathematical Reasoning
Conduct laboratory research or experiments	Complex Problem Solving	Deductive Reasoning
Conduct medical laboratory tests	Complex Problem Solving	Deductive Reasoning
Fit medical supportive devices	Complex Problem Solving	Arm-Hand Steadiness
Write computer software, programs, or code	Programming	Information Ordering
Cultivate micro-organisms for study, testing, or medical preparations	Critical Thinking	Deductive Reasoning
Observe patient or client condition	Monitoring	Problem Sensitivity
Prepare patients for tests, therapy, or treatments	Service Orientation	Oral Expression
Encourage patients to participate in activities	Speaking	Oral Expression
Communicate health and safety information	Speaking	Oral Expression
Administer medications, treatments, or injections	Service Orientation	Problem Sensitivity
Collect blood or tissue samples	Complex Problem Solving	Problem Sensitivity
Counsel individuals concerning diet	Service Orientation	Oral Expression
Obtain information from clients, customers, contractors, co-workers, patients, witnesses, attorneys, litigants	Complex Problem Solving	Oral Comprehension
Prepare medical treatment room	Service Orientation	Information Ordering
Prepare technical, managerial, financial, or informational reports	Writing	Written Expression
Maintain record of medication or equipment dispensed to patient	Writing	Written Expression
Determine cleaning or sterilization method for medical or surgical instrumentation	Judgment and Decision Making	Deductive Reasoning

Provide customer service	Service Orientation	Oral Expression
Follow dental or medical office procedures	Critical Thinking	Written Comprehension
Follow dental or medical x-ray procedures	Critical Thinking	Written Comprehension
Follow patient care procedures and protocols	Service Orientation	Deductive Reasoning
Fill out business, government, or other forms	Writing	Written Expression
Schedule meetings or appointments	Coordination	Information Ordering
Coordinate activities of assistants	Coordination	Information Ordering
Perform emergency medical procedures	Reading Comprehension	Problem Sensitivity
Interpret medical laboratory test results	Critical Thinking	Problem Sensitivity
Lift ill or injured individuals	Service Orientation	Problem Sensitivity
Practice preventive procedures in medical therapy setting	Learning Strategies	Problem Sensitivity
Treat medical condition of patient	Critical Thinking	Inductive Reasoning
Set-up medical oxygen equipment	Installation	Information Ordering
Monitor medical oxygen equipment	Monitoring	Problem Sensitivity
Prepare sterile solutions, infusions, or intravenous packs	Management of Material Resources	Manual Dexterity
Prepare bodies for interment	Equipment Selection	Arm-Hand Steadiness
Order supplies, materials, or equipment	Management of Material Resources	Oral Expression
Set-up laboratory equipment	Installation	Manual Dexterity
Transport ill or injured individuals	Service Orientation	Gross Body Coordination
Calibrate laboratory equipment	Operation and Control	Manual Dexterity
Analyze medical data	Critical Thinking	Problem Sensitivity
Interview persons to gather required information	Active Listening	Oral Expression
Prepare medications for dispensing or use	Service Orientation	Information Ordering
Examine patient prescription(s)	Reading Comprehension	Problem Sensitivity
Apply drug information to patient treatment	Judgment and Decision Making	Deductive Reasoning
Use nursing practices or procedures	Critical Thinking	Deductive Reasoning
Calculate medical diagnostic test results	Mathematics	Mathematical Reasoning
Care for mentally ill or special needs individuals	Social Perceptiveness	Problem Sensitivity
Collect clinical data	Complex Problem Solving	Oral Expression
Document medical prognosis	Writing	Written Expression
Assist patients, students, or other individuals in improving and developing work skills	Instructing	Oral Expression
Interpret employee's medical evaluations	Critical Thinking	Problem Sensitivity
Order medical laboratory tests	Complex Problem Solving	Oral Expression
Conduct medical tests	Complex Problem Solving	Problem Sensitivity



Provide first aid	Critical Thinking	Deductive Reasoning
Provide in home patient care	Service Orientation	Problem Sensitivity
Teach medical self-care	Instructing	Oral Expression
Examine patients following appropriate examination room procedures	Reading Comprehension	Problem Sensitivity
Use hair, cosmetic, or nail care instruments	Operation and Control	Finger Dexterity
Work with persons with mental, physical, and social disabilities or illnesses	Service Orientation	Oral Comprehension
Prepare billing statements	Writing	Written Expression
Administer tests to determine qualifications	Complex Problem Solving	Problem Sensitivity
Conduct tests or analyses of blood samples	Critical Thinking	Deductive Reasoning
Schedule individual, group, or organizational training	Coordination	Information Ordering
Purchase supplies, materials, or equipment	Management of Material Resources	Information Ordering
Record medical history or data	Writing	Written Expression
Store medical laboratory specimens	Critical Thinking	Deductive Reasoning
Maintain medical supportive devices	Equipment Maintenance	Problem Sensitivity
Code medical procedures on claims	Critical Thinking	Deductive Reasoning
Use knowledge of nursing terminology	Critical Thinking	Oral Comprehension
Retrieve files or charts	Complex Problem Solving	Deductive Reasoning
Set-up patient care equipment	Installation	Information Ordering
Collect specimens from patients	Complex Problem Solving	Deductive Reasoning
Feed food to individuals	Service Orientation	Arm-Hand Steadiness
Weigh patients to update records	Service Orientation	Finger Dexterity
Provide clerical assistance to customers or patients	Service Orientation	Oral Expression
Entertain patients in care	Service Orientation	Oral Expression
Motivate patients to practice exercises	Service Orientation	Oral Expression
Administer enemas, irrigations, or douches to patients	Service Orientation	Deductive Reasoning
Sterilize laboratory, medical, or veterinary equipment or instruments	Operation and Control	Manual Dexterity
Assist in examining, evaluating, or treating patients	Service Orientation	Problem Sensitivity
Take vital signs	Complex Problem Solving	Problem Sensitivity
Complete patient bills	Writing	Information Ordering
Assist patients in performing breathing exercises	Service Orientation	Deductive Reasoning
Explain testing procedures to patient	Speaking	Oral Expression
Assist patients in walking or exercising	Service Orientation	Multilimb Coordination
Assist individuals with dressing, undressing, grooming, or bathing	Service Orientation	Manual Dexterity
Inventory medical supplies or instruments	Management of Material Resources	Deductive Reasoning
Use sanitation practices in health care settings	Critical Thinking	Problem

		Sensitivity
Answer calls using multi-line telephone system	Speaking	Oral Expression
Analyze patient activity	Monitoring	Problem Sensitivity
Conduct patient assessments	Complex Problem Solving	Problem Sensitivity
Label blood samples	Reading Comprehension	Near Vision
Prepare sample for laboratory testing, analysis, or microscopy	Management of Material Resources	Deductive Reasoning

### Receptionists and Information Clerks – SOC 43-4171

DWA Title	Prime Skills	Prime Abilities
Operate computers to enter, calculate, access, and retrieve data	Critical Thinking	Information Ordering
Maintain records, reports, files, listings, or logs	Writing	Written Expression
Refer callers to appropriate personnel	Service Orientation	Oral Expression
Fill out business, government, or other forms	Writing	Written Expression
Interview persons to gather required information	Active Listening	Oral Expression
Obtain information from clients, customers, contractors, co-workers, patients, witnesses, attorneys, litigants	Complex Problem Solving	Oral Comprehension
Maintain customer and account records	Management of Financial Resources	Written Expression
Answer questions from employees, colleagues, customers, or public	Speaking	Oral Expression
Take messages, meeting notes, shorthand and dictation	Writing	Written Expression
Collect deposits, payments, funding, or fees from internal and external parties	Management of Financial Resources	Oral Expression
Verify information for credit investigations	Reading Comprehension	Problem Sensitivity
Examine files or documents to obtain information	Reading Comprehension	Written Comprehension
Resolve customer or public complaints	Negotiation	Inductive Reasoning
Communicate with customers, employees, or contractors to disseminate information	Speaking	Oral Expression
Train workers in use of equipment, computers, or work-related procedures	Instructing	Oral Expression
Arrange teleconference calls	Complex Problem Solving	Deductive Reasoning
Compile information on findings from investigation of accidents	Complex Problem Solving	Information Ordering
Make presentations to internal and external persons	Speaking	Oral Expression
Transcribe spoken or written information or data	Writing	Wrist-Finger Speed
Take complaints by phone, email, or in-person	Active Listening	Problem Sensitivity
Analyze legal questions	Reading Comprehension	Inductive Reasoning
Verify investigative information	Reading Comprehension	Problem Sensitivity
Assist public in complying with postal service regulations	Service Orientation	Deductive Reasoning
Schedule individual, group, or organizational training	Coordination	Information Ordering
Provide Notary service	Management of Financial Resources	Information Ordering
Respond to requests for information	Writing	Written Expression

Send/Receive work-related email	Operation and Control	Written Comprehension
Process payroll documents, records, or checks	Management of Financial Resources	Information Ordering
Evaluate qualifications or eligibility of applicant for employment	Critical Thinking	Inductive Reasoning
Explain credit application information	Speaking	Oral Expression
Maintain balance sheets	Mathematics	Information Ordering
Use oral or written communication techniques	Speaking	Oral Expression
Develop policies, protocols, procedures, methods, or standards	Complex Problem Solving	Inductive Reasoning
Provide clerical assistance to customers or patients	Service Orientation	Oral Expression
Communicate by telephone, two-way radio or mobile phone	Operation and Control	Oral Expression
Type letters, documents or correspondence	Writing	Written Expression
Maintain telephone logs	Writing	Information Ordering
Process account invoices	Management of Financial Resources	Information Ordering
Explain rules, policies, laws or regulations	Speaking	Oral Expression
Provide guests with assistance or directions	Service Orientation	Oral Expression
Provide information about facilities	Speaking	Oral Expression
Calculate rates for organization's products or services	Mathematics	Mathematical Reasoning
Schedule meetings or appointments	Coordination	Information Ordering
Make travel reservations	Coordination	Information Ordering
Answer calls using multi-line telephone system	Speaking	Oral Expression
Evaluate importance of incoming telephone calls	Judgment and Decision Making	Inductive Reasoning
Greet customers, guests, visitors, or passengers	Speaking	Oral Expression
Understand legal terminology	Critical Thinking	Oral Comprehension
Compile information through interviews	Active Listening	Oral Comprehension
Evaluate information from employment interviews	Management of Personnel Resources	Inductive Reasoning
Issue identification documents to employees, members, or visitors	Writing	Written Expression
Index information resources	Complex Problem Solving	Information Ordering
Maintain inventory of supplies and office forms	Management of Material Resources	Number Facility
Operate business machines	Operation and Control	Information Ordering
Classify information according to content or purpose	Reading Comprehension	Information Ordering
Organize legal information or records	Complex Problem Solving	Information Ordering
Generate application-based templates for repetitive tasks	Critical Thinking	Inductive Reasoning
Use labor market information	Critical Thinking	Written Comprehension
Record historical information	Writing	Written Expression
Identify appropriate software for project or task	Judgment and Decision Making	Fluency of Ideas
Maintain travel expense accounts	Management of	Information

	Financial Resources	Ordering
File documents in court or with the proper agency division	Complex Problem Solving	Information Ordering
Order supplies, materials, or equipment	Management of Material Resources	Oral Expression
Relay information to supervisor or proper officials	Speaking	Oral Expression
Date stamp messages, mail, or other information	Management of Material Resources	Finger Dexterity
Evaluate reliability of source information	Critical Thinking	Deductive Reasoning
Compile information for court cases	Complex Problem Solving	Information Ordering
Schedule activities, classes, or events	Coordination	Information Ordering
Relay information to patrons, passengers, or others	Speaking	Oral Expression
Perform clerical duties including typing, accepting orders, or sorting mail	Writing	Wrist-Finger Speed
Package goods for shipment or storage	Management of Material Resources	Information Ordering
Edit written material	Reading Comprehension	Written Comprehension
Process individual, group, or organizational invoices	Reading Comprehension	Information Ordering
Provide clients with travel information	Service Orientation	Oral Expression
Describe points of interest to tour group	Speaking	Oral Expression
Develop travel itinerary	Coordination	Inductive Reasoning
Reconcile financial records	Mathematics	Inductive Reasoning
Schedule guest recreational activities	Time Management	Information Ordering
Check-in/Check-out customer using computer or cash register	Operation and Control	Information Ordering
Obtain financial information from individuals	Active Listening	Information Ordering
Perform office equipment maintenance not requiring service call	Equipment Maintenance	Manual Dexterity
Obtain general information in legal office setting	Complex Problem Solving	Information Ordering
Compute payment schedule	Mathematics	Number Facility
Escort group on city or establishment tours	Service Orientation	Oral Expression
Contract meeting facilities	Coordination	Information Ordering
Maintain appointment calendar	Complex Problem Solving	Information Ordering
Maintain file of job openings	Management of Personnel Resources	Information Ordering
Distribute correspondence or mail	Management of Material Resources	Information Ordering
Assist handicapped persons	Service Orientation	Static Strength
Sort mail letters or packages	Complex Problem Solving	Manual Dexterity
Balance cash register	Mathematics	Number Facility
Schedule meeting facilities	Coordination	Information Ordering

## APPENDIX B – EXECUTIVE INTERVIEW TOPLINES

### *Introduction*

Hello, may I please speak to \_\_\_\_\_, my name is \_\_\_\_\_ and I'm with BW Research, an independent research firm. I am part of a research team that is working for the City of San Jose and work2future a workforce investment board, a Silicon Valley organization that is committed to helping job-seekers find meaningful employment and assist Silicon Valley employers to ensure they have qualified, productive employees.

**(If needed):** The results of this study will be used to better understand the needs of Silicon Valley's Healthcare employers.

**(If needed):** Depending on your input, this discussion could take anywhere from 10 to 15 minutes of your time.

All of your responses will be kept strictly confidential and all results aggregated so that nothing will be attributed to you individually unless you give us permission to do so.

Let's go ahead and begin.

PLEASE NOTE TRADITIONAL ROUNDING RULES APPLIED  
NOT ALL PERCENTAGES WILL EQUAL EXACTLY 100%

**Screener Questions**

**SCREENER  
 A**

Does your organization provide Healthcare or social assistance services in Silicon Valley?

100% Yes  
0% No  
0% DK/NA

**SCREENER  
 B**

Are you a manager or decision maker involved in the hiring process or involved in training and developing staff at your organization?

100% Yes  
0% No  
0% DK/NA

**SCREENER  
 C**

How many locations does your firm have and how many are in Silicon Valley? [IF NEEDED. Silicon Valley includes the counties of Santa Clara and San Mateo County and Southwest Alameda County]?

50% One location  
10% Two locations  
35% Three locations  
5% Four locations

**Q1** What is your title or position within the organization?

- 60% Administrator/ Manager (Clinical Manager, Business Manager, etc.)
- 30% President/ Director (HR Director, Program Director, etc.)
- 10% Other

**Q2** Which part of the Healthcare industry would you most closely identify with?

- 25% Skilled nursing
- 25% Long-term or residential care facility
- 15% A hospital or large doctor's office with 100 or more employees
- 15% Community clinic or smaller doctor's office with less than 100 employees
- 10% Outpatient medical center
- 10% Other

**Q3** How many permanent and temporary employees (IF NEEDED, full-time and part-time) do you have in Silicon Valley?

- 10% 1 to 4 employees
- 25% 5 to 24 employees
- 45% 25 to 99 employees
- 20% 100 or more employees

**Q4** Over the last three years, has your company grown, declined or stayed about the same, in terms of Silicon Valley employment. If it has grown or declined, by about how many people?

Breakdown:

30% Grown  
 70% Stayed the same  
 0% Declined  
 0% DK/NA

**Growth in Employment over the last 3 years**

(Calculated by only examining Healthcare firms with both current and past data)

	<u>3 years ago</u>	<u>Current</u>
n	6	6
Mean	2047.67	2220.50
Median	75.00	82.50
Total Employees	12286	13323
Change		1037
% Growth		<b>8%</b>



**Q5** If you currently have [TAKE Q3#] permanent and temporary employees in Silicon Valley, how many more or less employees do you expect to have in the Silicon Valley 12 months from now?

Breakdown:

- 45% More
- 45% Same number of employees
- 0% Same number of employees
- 10% DK/NA

**Expected Employment in 12 months**

(Calculated by only examining Healthcare firms with both current and projected data)

	<u>Current</u>	<u>12 months</u>
n	9	9
Mean	44.56	49.89
Median	28.00	30.00
Total Employees	401	449
Change		48
% Growth		<b>12%</b>

**Q6** Of your current [TAKE Q3#] permanent and temporary employees in Silicon Valley, how many of these employees provide direct care to patients?

- 15% No employees provide direct care to patients
- 10% 25% to 49% of employees provide direct care to patients
- 20% 50% to 74% of employees provide direct care to patients
- 55% 75% to 100% of employees provide direct care to patients

**Q7**

Thinking about the people you hire in Silicon Valley, how much difficulty does your organization have finding qualified applicants who meet your hiring standards?

45% Little to no difficulty

45% Some difficulty

5% Great difficulty

5% DK/NA

Please tell me how satisfied your organization is with the following issues and attributes regarding the Silicon Valley’s education and training system and the available workforce.

**Q8**

Is your company satisfied, dissatisfied, or neither satisfied nor dissatisfied with Silicon Valley’s: \_\_\_\_\_? (GET ANSWER AND THEN ASK:) Would that be very (satisfied/dissatisfied) or somewhat (satisfied/dissatisfied)?

RANDOMIZE						
	<u>Very satisfied</u>	<u>Somewhat satisfied</u>	<u>Neither sat nor dissatisfied</u>	<u>Somewhat dissatisfied</u>	<u>Very dissatisfied</u>	<u>DK/NA</u>
<b>A.</b> Capacity at regional Colleges and University to provide clinical and technical training	30%	45%	5%	15%	0%	5%
<b>B.</b> Public K-12 education system	5%	15%	20%	0%	15%	45%
<b>C.</b> Community colleges	10%	40%	35%	0%	5%	10%
<b>D.</b> Worker re-training and skill upgrade programs	15%	20%	30%	5%	0%	30%
<b>E.</b> Ability to recruit high skill talent	20%	55%	15%	5%	0%	5%
<b>F.</b> Ability to find qualified entry-level employees	45%	20%	10%	10%	5%	10%

**Q9** [For each "Somewhat Dissatisfied" or "Very Dissatisfied" response in Q8, ask:] What are your specific issues of concern in this area?

**A. Capacity at regional Colleges and University to provide clinical and technical training**

Don't think we produce enough of highly qualified due to the budget and resources of Colleges.

Some of the nursing classes are hard to get into.

When new hires need more training.

**B. Public K-12 education system**

I don't think education-wise, we can't afford the resources for years. We don't give full potential to the students.

Scores and funding have gone down.

They don't give them the right education tools and overcrowding is not good.

**C. Community colleges**

They are supposed to be able to cater to needs for students so they can graduate and go into the line of work or business they want and be fully qualified. They aren't doing this and students are staggering waiting for classes to be open and offered.

**D. Worker re-training and skill upgrade programs**

The people who were retrained were really not motivated to work. They were people who were used to huge benefit packages or unionized jobs and they were expecting similar perks. They just went through the retraining process because they were paid for it and once they were done with it; they had no intention of finding a job.

**E. Ability to recruit high skill talent**

We need to train and homegrown them here.

**F. Ability to find qualified entry-level employees**

They don't flock to this business. Not everyone wants this type of job. It's a vocation.

This is a special niche. I need someone with a heart, mental and physical capacity to fill the job. It's a difficult niche to fill.

This type of work - difficult to recruit and type of education they need is readily available in Colleges. It's kind of a specialty.

**Q10** How many openings is your organization currently trying to fill?

45% No openings  
 45% 1 to 4 openings  
 5% 5 to 10 openings  
 5% 11 or more openings

**Q11** Do you hire any workers or occupations through Unions and if so, which occupations (IF YES) Do you plan to continue hiring through Unions in the future, why or why not?

20% Yes  
 70% No  
 10% Not sure

**Yes**

The physicians, investigators, and technicians. It is county policy to go through Union.

This is a union building; Nurses and kitchen staff and maintenance.

Nurses, Nurse Practitioners, EVS Workers, Medical Assistants, Social Workers. We negotiate with the Unions, we don't hire through the Unions. California is a highly populated state with a lot of Unions. Nurses are already Union members.

Nursing - Part of our system wide contract.

**No**

Just privately owned.

They become unionized once they are our employees. There are just no unions for the kind of people I hire.

We are small, don't see the need.

We don't hire people outside of regular full or part time. We don't hire temps all because they have to go through rigorous background, drug and finger-printing tests. We are a secure facility.

**Q12**

Can you tell how health information technology or HIT is currently impacting your hiring, overall will you increase, decrease or keep hiring the same as a result of implementing HIT or are you not implementing HIT? What occupations will be impacted by HIT and how so?

- 26% Implementing HIT, hiring to stay the same, all occupations impacted
- 26% Not implementing HIT
- 21% Implementing HIT, hiring to stay the same, no occupations impacted
- 11% Implementing HIT, hiring to increase, all occupations impacted
- 16% Not applicable/ not sure

**Q13**

Now I would like to ask you about the Affordable Care Act that was passed by Congress and goes into full effect next year. Has this legislation impacted your hiring, if so, has it increased or decreased hiring and what do you expect are the biggest impacts from its implementation.

- 53% No impact
- 32% Decreased hiring
- 11% No impact yet, but expect decreased hiring
- 5% Not sure

**Q14** What percentage of your current employees do you expect to retire in the next three years, is this a challenge for your organization and if yes, how are you dealing with it?

- 26% No retiring employees, not a challenge
- 42% 1% to 4% of employees retiring, not a challenge
- 21% 5% or more of employees retiring, not a challenge
- 11% Not sure, not a challenge

**Q15** Please tell me if your organization hires individuals that would fall under the following occupational categories, if yes how many are currently employed at your Silicon Valley location.

Here's the (first/next) one \_\_\_\_\_ (READ ITEM): Does your Silicon Valley location(s) hire this occupation and if yes how many do you currently employ?

RANDOMIZE			
	<u>Yes</u>	<u>No</u>	<u>DK/NA</u>
<b>A.</b> Home Health Aides	11%	89%	0%
<b>B.</b> Personal Care Aides	32%	63%	5%
<b>C.</b> Medical Assistants	32%	63%	5%
<b>D.</b> Receptionists and Information Clerks	79%	16%	5%
<b>E.</b> Medical Secretaries	21%	79%	0%
<b>F.</b> Licensed Practical and Vocational Nurses	53%	47%	0%
<b>G.</b> Radiologic Technologists and Technicians	16%	79%	5%
<b>H.</b> Registered Nurses	79%	16%	5%
<b>I.</b> Health technologists and technicians	21%	79%	0%

**Q19**

A local training provider is interested in helping prepare workers for the Healthcare industry to meet your most pressing talent needs. When thinking generally about the people who apply for [OCCUPATION NAME] at your organization, what do you consider to be the most glaring deficiency that might be remedied from a short-term training or educational program?

- 49% No deficiencies
- 15% Communication skills/ bedside manner
- 15% Mental health training
- 9% Experience
- 6% Understanding of medical coding/ terminology
- 4% Attention to detail
- 2% Other

*(Combined responses across all occupations asked)*



**Q20** What would you say are the top three challenges facing your organization in the next one to three years?

**First**

Acquisition - Being acquired.

Being able to get payments from insurance companies because Medicare payments are becoming lower and lower.

Budgeting, cuts in Medical and Medicare.

Changes in Medicare Regulations

Dealing with the employees. Most are insubordinate. Sometimes they insist whatever they think is right.

Developing relationships with Healthcare Providers.

Effects of Healthcare reform.

Funding Streams.

Getting patients because of the economy. It's hard.

Getting the right staff for the job.

Growth

Health Information Technology (HIT)

I don't see any issues.

Increasing staff because of budget cuts. Our workload increases but our staffing does not.

Insurance company payments.

Medicare and Medical Cuts

Reimbursement with Affordable Care Act

The rising baby boomer population and the cost of Healthcare is going to force pressures on this industry like you've never seen before.

**Second**

Affordable Healthcare Act

Changing demographics will tap existing resources of Medicare and Medicaid

Competitive market for senior living.

Continuity of care and these Prop 63 money, these people that they are bringing up to help us. They aren't doing anything to help us.

Cost containment on products.

Employees don't want benefits.

Healthcare Reform.

More challenging in terms of care of residents in the facility.

Occupancy.

Reaching clients.

Regulatory Issues

Technology

The smaller practices are being bought out by the bigger practices.

**(Q20 Cont.)****Third**

HIPPA

Location of our company.

Making sure we survive and don't lose patients as a stand-alone Hospital.

Meeting the needs of our patients.

None

None.

We can't discharge people. I need help and support with patience. I need help in protecting other residents.

Working closely with local entities such as hospitals, assistant living, and home care.