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# Impact of the 2010 Affordable Care Act on the California Health Care Labor Force

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## Executive Summary

The implementation of the Affordable Care Act in California has rapidly brought about noticeable increases in the share of Californians with health insurance. This has, unsurprisingly, led to growth in the demand for health care services, causing policymakers, health care delivery organizations, and educators to be concerned about the adequacy of the current and future health workforce of the state. This report presents findings from interviews with health care leaders across California about the trends they are observing and their expectations for future health workforce needs, and from quantitative models that project future health workforce demand in various scenarios.

## Methods

We conducted interviews with 15 health care leaders to learn their plans and projections about how health care delivery is changing and impacting worker needs. In addition, we extended a previously-developed quantitative model to examine how multiple scenarios would change the demand for health care workers. The quantitative scenarios were determined after the interviews were completed to ensure the scenarios reflected health leaders' expectations and observations.

## Results

Seven themes arose from the interviews:

1. There is heightened focus on measuring quality, costs, and patient satisfaction among employers, which has increased the need to educate staff on understanding data, implementing treatment protocols, and engaging with patients to improve patient satisfaction scores. Strong leadership at all levels of organizations is needed to facilitate the transition to an evidence-based model of care.
2. Patient expectations are leading to an increased need for patient engagement. This requires that health care workers improve their customer service skills and critical thinking skills. Patient navigators and care coordinators are needed in increasing numbers.

3. Health information technologies and other digital health tools are diffusing rapidly, but are expensive, introduce stress into the workplace, and may produce occupational health hazards.
4. The ACA and health care reform have created new vehicles for patients to access care, including community-based care centers, retail clinics, onsite employer clinics, and technology-based visits. This demands that health workers develop skills in using technology and in providing care in a variety of settings, including home health. Health care workers need to understand population health tools and strategies.
5. New models of care are being piloted, such as community paramedicine, the use of community health workers, team-based care models, and behavioral health integration. Health care workers need to learn how to work in new teams, and with different teams. Enhanced time management skills are required to manage multiple projects and roles.
6. The education system needs to be re-tooled to meet health care needs. Graduates have strong technical skills but need more education in “soft skills” such as interpersonal communication and teamwork. They also need to understand health care reimbursement, health system organization, and basic business skills. Staff will be increasingly pushed to use all of their skills, and regulatory changes and organization policy changes be needed to permit them to do so.
7. Leadership is needed to respond to health system changes and ensure balanced implementation of solutions. Executives and clinicians need to understand the changes occurring and lead change. Clinicians in particular need to embrace their role in system transformation, and develop the skills required to lead teams.

The quantitative model was used to forecast changes in health worker demand that would occur if (1) hospital utilization declines due to more effective primary and preventive care, (2) increased use of telemedicine, (3) increased use of registered nurses as care coordinators and case managers, (4) increased employment of social workers and counselors in medical offices and clinics to integrate behavioral health, and (5) increased use of medical assistants and licensed vocational nurses as care coordinators. Total projected employment growth is greatest in the models in which there is greater RN employment or greater medical assistant and LVN employment to serve in expanded roles such as care management.

### ***Recommendations***

As health system transformation continues, it is clear that some occupations are likely to grow more rapidly than others – particularly registered nurses, counselors,

social workers, medical assistants, and – possibly – LVNs. These occupations were also identified in interviews as needing greater skills in care management, health system organization, team-based care, and quality improvement. Employers and educators are likely to need to both expand their education programs in these areas and reassess the curricular content of their programs to ensure an adequately sized and skilled workforce in the future.

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### Background

The implementation of the Affordable Care Act in California has rapidly brought about noticeable increases in the share of Californians with health insurance. This has, unsurprisingly, led to growth in the demand for health care services, causing policymakers, health care delivery organizations, and educators to be concerned about the adequacy of the current and future health workforce of the state. This report presents findings from interviews with health care leaders across California about the trends they are observing and their expectations for future health workforce needs, and from quantitative models that project future health workforce demand in various scenarios.

This research builds on a prior study conducted in 2014. The SEIU-UHW Education Fund contracted with Health Systems Innovation Network (HSI) to conduct an analysis of the potential impact of the 2010 Affordable Care Act (ACA) on the demand for health care workers in California. The study focused on aligning two microsimulation models – the CalSIM model developed at UCLA and the ARCOLA model developed by HSI and the University of Minnesota to assess how the ACA would affect insurance enrollment in California. The two models were calibrated to provide a greater level of detail than the CalSIM model, and a greater level of precision for California than the ARCOLA model. The resulting estimates of insurance enrollment were then connected to data maintained by HSI on the utilization of health services by type of insurance. This resulted in estimates of growth in health service demand spurred by the ACA. Employment data from the U.S. Census Bureau’s American Community Survey was then linked to the estimates of service demand to determine how the ACA would affect projected growth in health care labor force demand in California. The study culminated in a webinar delivered to SEIU-UHW Education Fund and key partners.<sup>1</sup>

The study completed in 2014 had two limitations: (1) it assumed that the types of services demanded by the newly insured and those who move into Medi-Cal and Covered California plans would use services following historic patterns, and (2) it assumed that the mix of health workers used to deliver each type of service would remain stable. These assumptions are not likely to be valid, due to rapid changes in access to primary care and preventive services, expansions of accountable care

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<sup>1</sup> <http://www.seiu-uhweduc.org/file/pdf-documents/ACA-Labor-Force-Impact-Webinar---1-24-14.pdf>

organizations (ACOs), growth of patient-centered medical homes, movement toward performance-based payment, and implementation of tele-health technologies. Thus, SEIU-UHW Education Fund asked HSI to conduct a second study, to ascertain how these emerging trends in health care might affect health workforce demand and the skills required of future health care workers. This second phase of work effort was funded by SEIU-UHW, the Health Workforce Initiative of the California Community Colleges Chancellor's Office, Kaiser Permanente, The California Hospital Association, and The California Workforce Development Board. Representatives from these organizations as well as SEIU-UHW were charged with steering the process and approving final recommendations.

## **Methods**

The Phase II study consisted of two components: (1) interviews with health care leaders to learn their plans and projections about how health care delivery is changing and impacting worker needs, and (2) quantitative modeling of multiple scenarios to assess how changes in health service utilization and staffing might impact the demand for health care workers. The quantitative scenarios were determined after the interviews were completed to ensure the scenarios reflected health leaders' expectations and observations. This report summarizes our findings from the interviews, strategic considerations or potential action items organizations can implement to improve the current and future labor force, and outputs of the quantitative scenarios.

## **Findings from Interviews**

Interviews were conducted with 15 health care leaders from across California. Interviewees were identified as experts in education or health care employment by the Steering Committee. All interviews were at the executive level, were voluntary, and followed the guidelines as outlined by the Committee on Human Research, UCSF's Institutional Review Board.

Most of these interviews (13) were representatives of delivery systems, with 6 from northern California, 2 from the Central Valley, 4 from southern California, and 1 from the Inland Empire. Two of the health systems were federally qualified health centers, and two were rural hospitals/systems. The other two interviews were with representatives from the California Association of Primary Care and Leading Age. Given that the interviews were anonymous, Figure 1 illustrates the organizations and locations of the 15 interviews.

Interview questions were semi-structured and focused on how the interviewee thought changes in health care delivery, technology, education, skills,

reimbursement, regulation, impact of newly insured, and job turnover would impact the future health care workforce in California. Appendix A lists the interview questions that served as a guide for each interview. Questions were modified depending upon expertise of the interviewee.

Seven themes emerged from the interviews which we summarize along the following three dimensions: (1) Drivers of Change, (2) Responses of health care organizations and (3) Changes required in the workforce. See Appendix B for details on the seven themes.

**Figure 1. Map of 15 Organizations Interviewed in Phase II**



### ***Drivers of change***

The health leaders identified multiple factors that are driving changes in health care delivery. First and foremost is the ACA. The implementation of the ACA in California, which includes both a Medi-Cal expansion and subsidies for insurance purchase through the Covered California system, has led to an increase in the number of Californians with health insurance. This is leading to greater demand for services, and well as an increase in the complexity of care needs of those seeking health care.

In addition, the ACA and Center for Medicare and Medicaid Services have pushed toward reimbursement systems that provide higher pay for better patient outcomes, and penalties for poor outcomes. This has increased the focus of

organizations on measuring the results of their work, and also pushed organizations to attend to population health issues. Leaders anticipate that they will need good quality metrics in order to be paid for their services, and they will face penalties for not meeting quality goals. Organizations are actively striving to “bend the cost curve” in order to maintain their competitiveness as reimbursement changes are implemented.

A second driver of health service change is patient expectations. Patients have greater access to information about health care organizations, and are demanding a higher level of quality. Quality includes both objective outcomes, such as low rates of hospital-acquired infections, and subjective outcomes, such as patient ratings of staff attentiveness. Patients are also seeking greater guidance from health care providers in their care decisions, which is increasing demands on the time of providers.

The third driver identified by those interviewed is technology. Electronic health records are making it easier to share information between health care organizations and with patients. Health care innovation is turning toward cost-saving technologies, and away from cost-increasing technologies. Electronic communication platforms are enabling providers to communicate with patients through email and video. While there are benefits to incorporating technology, there are drawbacks specifically related to the workforce. Greater use of health information technology has led to a shift from bedside engagement to informatics. Patients and staff are complaining of a lack of interpersonal interactions. The use of electronic health records often demands more time, thus increasing the workload and requiring more time per provider per appointment or more workforce to help “free up” the provider time. There has also been an increase in occupational health issues. As one interviewee noted, “sitting is the new smoking.”

### ***Responses of health care organizations***

Health care organizations are responding to these three drivers in multiple ways. First, there is an increased emphasis on providing outpatient care. In addition to greater focus on traditional settings such as medical offices and community clinics, providers are identifying new methods for patients to access services. New care settings, such as retail clinics and urgent care centers, are expanding, which need to be staffed properly and integrated with traditional care settings. Expansions of outpatient services are increasing the demand for workers in these settings.

Second, health care leaders identified new models of care delivery that they are piloting. These include partnerships with organizations with which they had not previously collaborated, and implementation of team-based models of care delivery.

For example, one interviewee described how paramedics are triaging patients in the field while working with a hospital-based nurse or MD to determine the best course of action. Some employers are providing onsite employer clinics to bring care to employees. Leaders noted that partnerships are being established between hospitals and clinics to ensure appropriate follow-up after hospital discharge and enroll patients in medical homes. These approaches are often driven by efforts to align financing of health care services, develop accountable care organizations (or similar arrangements), and avoid penalties for readmissions and adverse events.

Third, organizations are actively seeking to increase patient engagement in health care. This is occurring through several mechanisms, including new and expanded use of technology, explicit care coordination programs, and motivational interviewing strategies. New staff roles are being developed, which require different skills than those of traditional health care positions.

### ***Changes required in the workforce***

Health care leaders discussed multiple changes required to ensure the health workforce can meet emerging demands in the health care system. In addition to the need to increase the supply of specific worker categories, employers noted that regulations need revision to facilitate new models of care, education needs to be updated to meet skill needs, and the existing workforce needs additional training. Health care organizations also anticipate that care will increasingly shift to ambulatory care settings. Many organizations are experimenting with new vehicles for patients to access care, such as community wellness programs, school-based clinics, and mini-clinics. They are testing e-visits through video, telephone, and email. And, they are experimenting with increased use of alternative health workers, such as sitters to monitor patients at high risk for falling or with behavioral health issues. Some are also using community health workers (or other staff) to educate patients on other resources available such as access to food and shelter.

In order to achieve health system transformation, employers know they cannot rely solely on the influx of well-trained new health care workers. They need to improve the capacity of the incumbent workforce to meet emerging needs. Health workers will need to work “at the top of their license, education, and experience,” doing the highest level of tasks they are permitted by law. This may require modernization of practice regulations and/or revisions to union contracts. They also need to improve their patient communication and team communication skills. Physicians in particular need to become more adept at guiding teams with constructive feedback and delegate to others effectively. Those interviewed noted that continuing education

programs should also focus on information technology, quality improvement and measurement, and the overarching health care landscape.

Greater reliance on community-based settings of care is leading to a need to educate health workers on population health and to teach workers to do their jobs both independently and in teams. For example, home health aides need to be comfortable with using digital tools for professional guidance and consultation, and need critical thinking skills to determine when consultation is needed. As partnerships across care settings continue to increase, health workers need to be comfortable working in teams with individuals of varied skills and knowledge. Staff need to be knowledgeable about the metrics on which organizations are being rated in new reimbursement models, primarily to understand the rationale for why metrics are important and to explain this rationale to patients. Staff also need to be trained on how to use technology, interpret data, and understand the rationale for treatment protocols and increased standardization of care.

As patients are becoming more attuned to quality metrics, due to both greater access to quality data and financial incentives to seek high-value care, they are “shopping” for health care in a new way. Employees of health care organizations need to be effective at engaging with patients, and at explaining care decisions and treatment protocols. These skills are expected to increase patient satisfaction and increase measurable quality of care. These skillsets are not just for new graduates. Existing employees may likely benefit from courses on customer service and critical thinking skills. As many staff are already working long hours, it is important to support them through this period of continuous education, which may require staffing up in the short-term as these skills are being acquired and improved.

While improvements are being made, many patients are still confused by complex, uncoordinated health care systems, and need guidance from health professionals to ensure that patient care goals are met. Health care leaders expressed the need to reorganize their workforce to focus on disease management and care management more effectively. They also indicated a need to incorporate patient navigators, care coordinators, and/or “concierge” services to help guide patients throughout the processes of care.

New health care technologies are facilitating efforts to improve quality of care and focus on population health, but implementation of these technologies requires considerable forethought. Two main technologies that were noted are digital health tools – such as video visits and electronic transmission of radiology – and care coordination technologies – which involves both mobile devices such as tablet computers and well-designed care management software. These systems are expensive to implement and it is time-consuming to train staff to use them. It is

also increasingly difficult to recruit and retain information technology staff to help maintain systems due to competition from the technology industry (e.g., most experienced IT staff would rather work for Google or Facebook). In the short-term new technologies appear to increase the demand for workers' time, but in the long-term, there should be significant efficiency and quality gains. The leaders we interviewed were uncertain about how these changes will affect the overall demand for health workers – either in the numbers of jobs or types of positions that will be needed.

Many of the leaders we interviewed felt that the current education system produces graduates with strong technical skills, but is not designed to produce the skills and knowledge needed of health care workers as these new trends gain momentum. New graduates tend to lack overall knowledge of how the health care system is organized and operates, and many need more focused attention on soft-skills such as interpersonal communication, how to work in teams, how to adapt quickly to changes in the environment, and greater critical thinking skills. In addition, many health care workers, especially nurses are trained largely in inpatient settings and are not prepared to work in ambulatory care settings. Education programs that are closely aligned with employers are perceived as doing a better job of preparing new graduates with these skills. Those interviewed recommended that employers strengthen their relationships with education programs, create internships and residencies for a range of health workers (not just physicians), and improve onboarding programs.

To respond to the changes in the health care system and ensure a balanced implementation of solutions, highly-capable leadership is needed. Most health care executives understand the changes that are occurring, and some anticipate the responses needed to address those changes, but this knowledge and planning needs to trickle down to lower layers of the management team. Leadership is needed to drive changes in education and regulation, and to ensure that care providers shift their focus to team-based care. Organizations need to identify potential leaders across their organizations and provide those emerging leaders with the knowledge and support to guide change. They also need to develop approaches to help care providers adopt administrative roles, either as a normal component of their job or as a completely new role.

### ***Strategic Considerations from the Interviews***

Based on our findings from the interviews, we identified four areas for strategic consideration (i.e., potential actions organization can take to improve the workforce): education, turnover, regulatory, and new roles/positions.

Education

- Health care organizations need to improve their relationships with education programs, or build new relationships if they do not exist. One organization is testing the value of having faculty be part of the care team with the idea that they will have a better understanding of how to anticipate and react to real-time changes in health care delivery.
- Employers should offer residency and internship programs across a range of occupations, including nurse practitioners, physician assistants, and registered nurses. They also should establish transitional programs for nurses and other professionals shifting from one type of care setting to another (e.g., from hospitals to ambulatory care, or skilled nursing facilities).
- From a policy standpoint, ensure a public funding stream for continuous education.
- Education programs need to focus on teaching specific skills noted by interviewees as currently having gaps as illustrated in Figure 2.

**Figure 2. Skills and Knowledge Required for the Future Health Workforce**

Soft Skills	Healthcare Landscape	Analytic Skills	Business 101
<ul style="list-style-type: none"> <li>- Professionalism</li> <li>- Customer Service</li> <li>- Communication (e.g., engage the patient in dialogue)</li> <li>- Motivational Interviewing</li> <li>- Peer to peer communication</li> <li>- Strong work ethic</li> <li>- Time mgmt.</li> <li>- Function independently</li> </ul>	<ul style="list-style-type: none"> <li>- ACA skills – quality, pt. experience/satisfaction</li> <li>- Pop. health and wellness</li> <li>- Disease mgmt.</li> <li>- Social determinants of health</li> <li>- Case mgmt.</li> <li>- Lean/Six Sigma</li> <li>- Reimbursement</li> </ul>	<ul style="list-style-type: none"> <li>- Basic problem solving</li> <li>- Understanding rationale – why are we doing the things we do?</li> <li>- Data mining</li> </ul>	<ul style="list-style-type: none"> <li>- Business concepts</li> <li>- Project management</li> <li>- How to give constructive feedback</li> <li>- Sensitivity training</li> <li>- Team player</li> </ul>

Turnover

Turnover was not a large concern for most of the individuals we interviewed, but nonetheless organizations have developed strategies to address and reduce turnover. Specific turnover prevention approaches include:

- Ensuring alignment of the prospective employee with the vision and mission of the organization
- Improving pay
- Explaining fringe benefits clearly
- Reimbursing for tuition for both advanced degrees and continuing education
- Offering educational courses and additional training
- Conducting surveys of new employees at regular intervals (e.g., 30, 60, 90 days) to identify onboarding issues

- Improving the onboarding process with peer interviewing and clinical rotations
- Changing workplace culture to make the workplace more appealing

### Regulatory

A number of regulatory changes could help alleviate some of the current challenges with the health workforce:

- Changes to the scope of practice for NPs, CRNAs, MAs, and CNAs
  - All of these professionals could practice with greater independence. For example, NPs could be prepared to deliver babies in rural locations, and MAs could be trained to draw blood safely.
  - Certified registered nurse anesthetist practice should be supported by regulation and payment policies
  - The role of the pharmacy technician could be expanded to include some medication management and to integrate the pharmacy technician into the care team
  - Medical laboratory technologists could be authorized to perform more complex tests
- Organizations should revise internal policies to optimize the scope of practice of their workforce. Many organizations restrict workers from providing care even at the scope of practice level currently permitted.
- Minimum nurse-to-patient staffing ratio regulations could be modified to allow organizations to improve staffing in more flexible ways.
- Payment system reform should continue to support improved delivery of care
  - FQHCs should be reimbursed for nursing visits and care coordination
  - MFTs should be allowed to bill for their services
  - Digital services (telehealth and related) should be more broadly reimbursable
- Accountable Care Organization changes are needed. At present, billing in ACOs is generally through primary care physicians, and thus the roles of other health care providers are hidden. Improvement in the process of care requires accurate data, which will require regulations that require accurate billing information.
- Laws around partnerships between health care organizations need to be reassessed. It is presently difficult to develop a network of care providers because of anti-trust provisions. California's regulations should be reassessed to ensure they are not more onerous than federal standards.
- Health care organizations should continue to work with their associations to support policy and legislative changes.

### *New Roles and Positions*

Those we interviewed identified a number of specific areas of need, both for increased skills and increased numbers:

- Leadership skills for all occupations
- RNs prepared for labor and delivery, surgery, intensive care, pediatrics, emergency care, and primary care, in addition to more experienced RNs willing to work night shifts
- Providers who are dedicated to working in FQHCs; many leave after 1 year of training
- Navigators, care coordinators, transitional nurses, in all care settings
- Non-licensed staff such as medical assistants and LVNs who can supplement RNs and MDs
- Ideally, these new staff would be adept at working with electronic health records and health information technology
- More Nurse Practitioners in primary care
- Pharmacy Technicians to help physicians with medication management
- Laboratory Technicians
- Behavioral health professionals – MFTs, psych techs, social workers, clinical psychologists
- MDs who will work in rural areas
- Receptionists/Administrative Assistants, to ensure replacements due to turnover and promotions
- Generalist physicians in academic medical centers
- Data analysts / data mining
- Health coaches / preceptors
- Nursing informatics
- IT experts and support staff, including those knowledgeable about ICD10
- Para-professionals such as personal care aides with good training
- Community Liaisons, who are college-educated and can be engaged in community health
- Sitters – non-professionals to monitor patients who are at high risk of hurting themselves or others

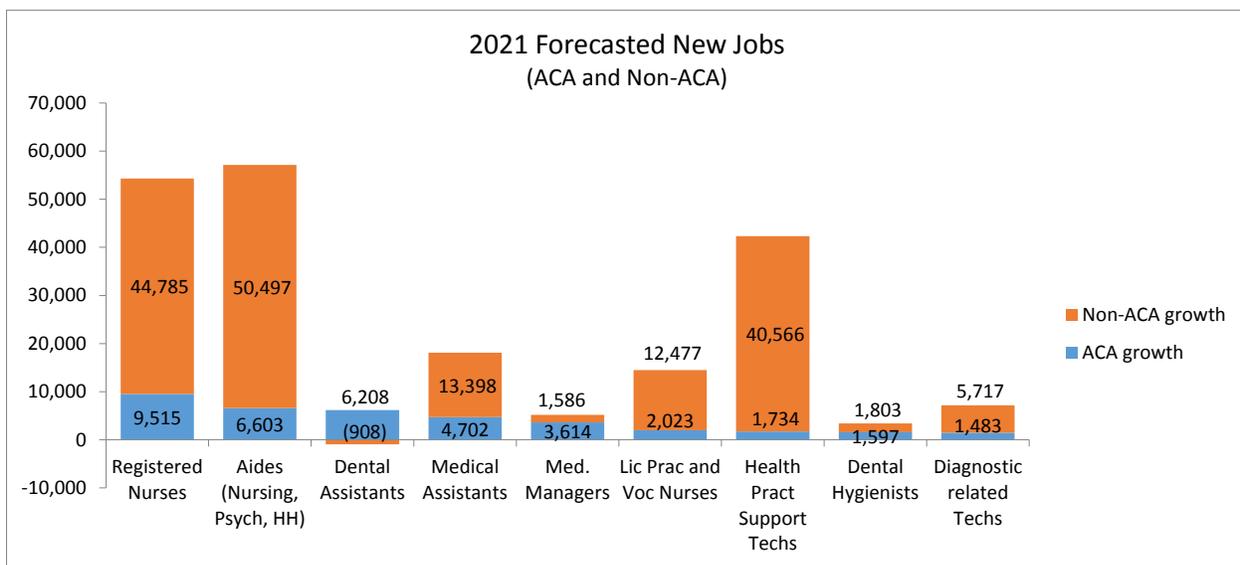
### **Quantitative Scenarios and Rationale at the State Level**

The interviews conducted for this study, and a scan of the literature, led us to identify a set of scenarios to quantitatively model to help provide a sense of the potential growth of health worker demand. The quantitative models were developed in the Phase I study, using the ARCOLA model, which projected future demand for health services across 12 health care sectors, and then used Bureau of

the Census and Bureau of Labor Statistics data to estimate how service demand growth would equate to occupational growth. The occupational categories used in this paper were derived from those used in the American Community Survey and are described in Appendix C.

The Phase I study results estimated that total employment growth due to the ACA would be 48,112 jobs, with the number of new jobs differing across occupations. The share of ACA-based growth was compared with overall employment growth projected by the Employment Development Department, as shown in Figure 3. For many occupations, employment growth caused by general population growth and utilization of health services far surpasses the additional growth caused by the ACA. However, for some occupations, including dental assistants, medical assistant, and medical managers, the ACA accounts for a relatively large share of overall employment growth.

**Figure 3. Projected Changes in Employment in the Baseline Scenario and Scenario 1**



Many interviewees were hesitant to provide numeric estimates of future demand for health workers. Thus, we selected scenarios based on our qualitative assessment of the trends described in the interviews and the literature. The scenarios were based on changing specific growth rates for services or personnel use. Five scenarios were developed and are described in detail below.

**Scenario 1. Slower growth in hospital demand, due to more effective preventive care.**

For this scenario, we assumed slower growth in hospital demand by 10 percentage points. The rationale came from interviewees who believe there will be a continued shift to accountable care organizations and patient-centered medical homes, which provide preventive care more effectively, and thus should reduce hospitalizations. We also noted that *Community Hospital 100 White Paper Survey: Utilization of Healthcare Services Special Report* estimated 3% decrease in hospital utilization over 5 years.

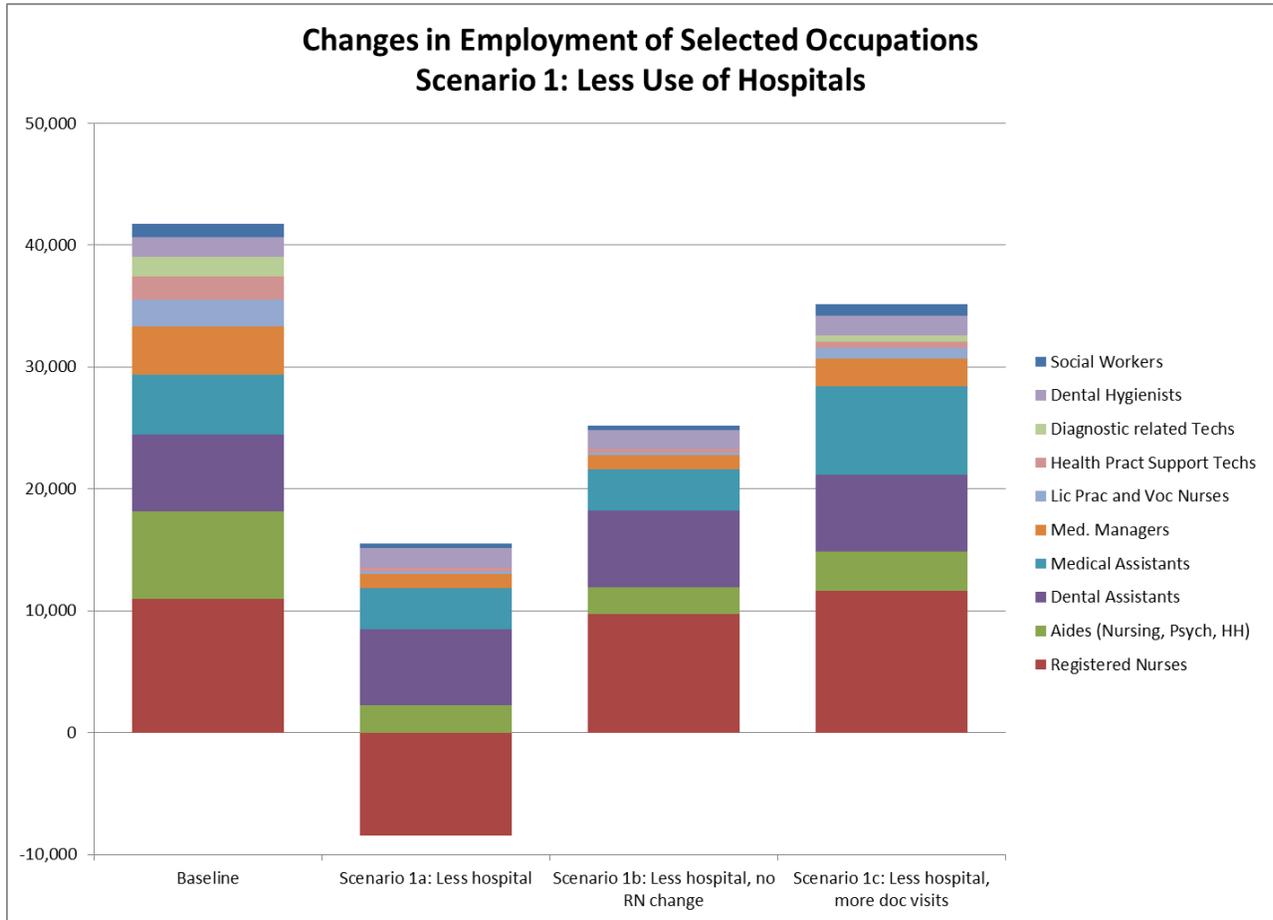
We calculated the impact of three specific cases for this scenario:

- a) Slower growth in hospital demand; holds constant all staffing ratios
- b) Slower growth in hospital demand, but rather than reductions in RN staff, RNs will be shifted to other non-acute-care departments. Employment of other staff may decline.
- c) Slower growth in hospital demand with a 10 percentage point greater use of physician and other outpatient services. This case is motivated by the possibility that achieving reductions in hospital utilization will require greater use of ambulatory care.

This scenario resulted in negative employment growth for hospitals, as compared with the positive growth forecasted in Phase I. The Phase I model estimated that total employment growth would be 48,112 jobs. In scenario 1a, only 9,838 total jobs are needed; in scenario 1b, 28,100 jobs are needed, and in scenario 1c, 40,757 jobs are needed.

Figure 4 illustrates the estimated changes in employment for the 10 occupations projected to have the largest changes in the baseline scenario and Table 1 provides the data for the 14 occupations projected to have the largest changes. Scenario 1a, in which there is a reduction in hospitalizations, would lower projected demand growth for many occupations, particularly those used intensively in hospitals such as registered nurses, aides, medical managers, licensed vocational nurses, and health technicians. In fact, registered nurse employment is projected to decline in this scenario. If hospitals choose to redeploy RNs to other departments, or utilization of physician services increases, RN employment would continue to grow at a similar rate as in the baseline scenario. In general, increases in physician services would preserve at least some employment growth for most occupations, and increase growth for some occupations such as counselors.

**Figure 4. Projected Changes in Employment in the Baseline Scenario and Scenario 1**



**Table 1. Projected Employment Changes in the Baseline Scenario and Scenario 1**

<b>New Jobs by Occupation</b>	<b>Baseline</b>	<b>Scenario 1a: Less hospital</b>	<b>Scenario 1b: Less hospital, no RN change</b>	<b>Scenario 1c: Less hospital, more doc visits</b>
<b>Total</b>	48,112	9,898	28,100	40,757
<b>Registered Nurses</b>	10,988	-8,478	9,724	11,651
<b>Aides (Nursing, Psych, HH)</b>	7,160	2,222	2,222	3,167
<b>Dental Assistants</b>	6,293	6,288	6,288	6,351
<b>Medical Assistants</b>	4,925	3,355	3,355	7,257
<b>Med. Managers</b>	3,966	1,158	1,158	2,280
<b>Lic Prac and Voc Nurses</b>	2,219	217	217	856
<b>Health Pract Support Techs</b>	1,905	300	300	546
<b>Diagnostic related Techs</b>	1,619	20	20	458
<b>Dental Hygienists</b>	1,579	1,571	1,571	1,607
<b>Social Workers</b>	1,090	362	362	945
<b>Emergency Techs/Param</b>	962	730	730	730
<b>Counselors</b>	894	712	712	1,678
<b>Misc Techs</b>	652	124	124	576
<b>Phlebotomists</b>	570	104	104	136

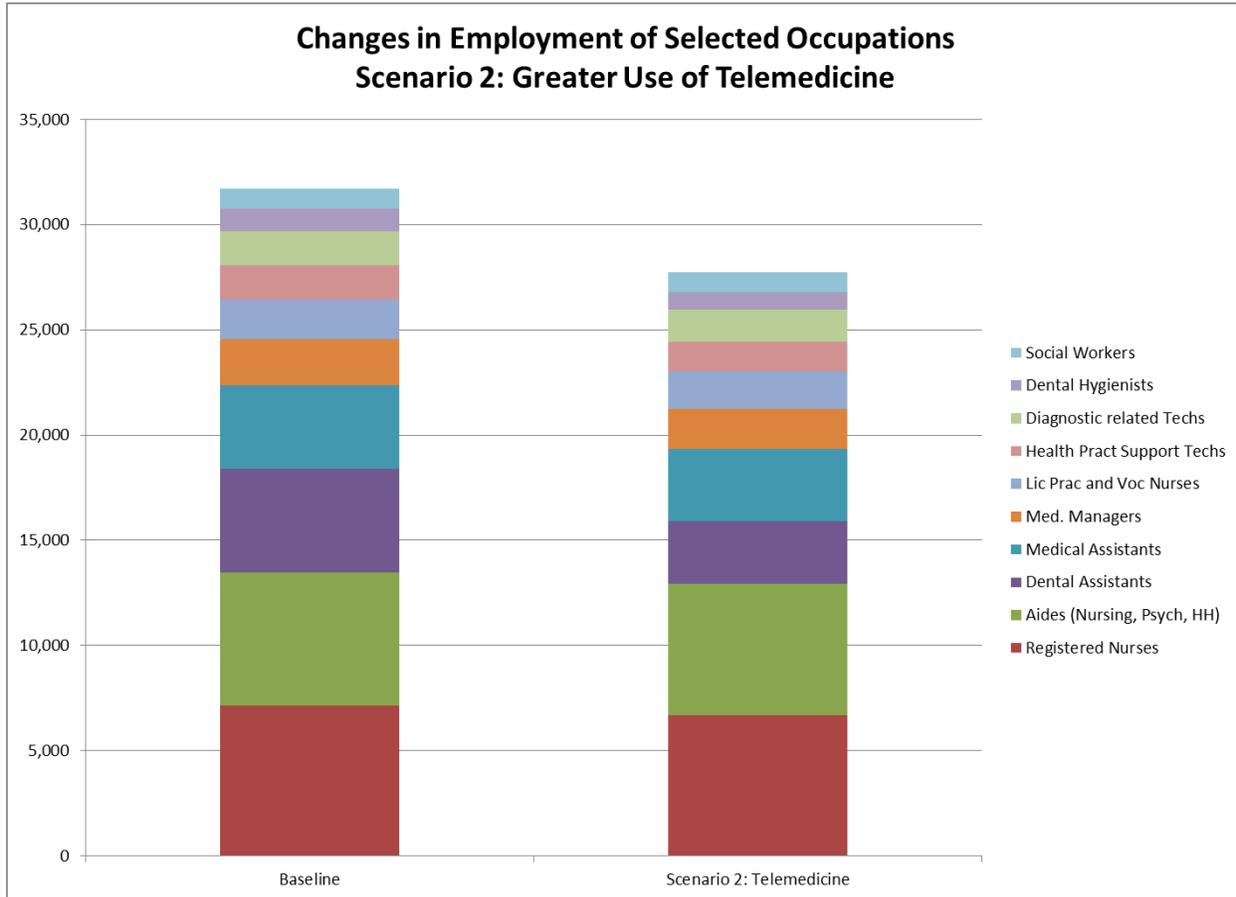
Note: Occupation categories are defined by the Bureau of the Census. See Appendix C for definitions.

***Scenario 2. Slower growth in physician and clinic visits due to effective use of telephone, video, and email consultations.***

For our second scenario, we assumed that visits to physician offices and clinics would not grow as rapidly due to increased use of telephone, digital, and virtual visits. Most interviewees believe we will see an increase in digital and virtual visits, but the extent to which this will impact staffing remains unknown. Taking a conservative approach, we reduced growth in physician office and outpatient center visits by 5 percentage points. As seen in Figure 5 and Table 2, the impact of this scenario on total projected employment growth is small in the affected settings (physician offices and clinics), with about 6,500 less job growth than the 48,112

forecasted in the baseline model. The largest changes in employment growth occur for medical assistants, social workers, and counselors.

**Figure 5. Projected Changes in Employment in the Baseline Scenario and Scenario 2**



**Table 2.**

**Table 2. Projected Employment Changes in the Baseline Scenario and Scenario 2**

<b>Total New Jobs by Occupation</b>	<b>Baseline</b>	<b>Scenario 2: Telemedicine</b>
<b>Total</b>	48,112	41,783
<b>Registered Nurses</b>	10,988	10,024
<b>Aides (Nursing, Psych, HH)</b>	7,160	6,687
<b>Dental Assistants</b>	6,293	6,262
<b>Medical Assistants</b>	4,925	2,974
<b>Med. Managers</b>	3,966	3,405
<b>Lic Prac and Voc Nurses</b>	2,219	1,899
<b>Health Pract Support Techs</b>	1,905	1,782
<b>Diagnostic related Techs</b>	1,619	1,400
<b>Dental Hygienists</b>	1,579	1,561
<b>Social Workers</b>	1,090	798
<b>Emergency Techs/Param</b>	962	962
<b>Counselors</b>	894	411
<b>Misc Techs</b>	652	426
<b>Phlebotomists</b>	570	554

Note: Occupation categories are defined by the Bureau of the Census. See Appendix C for definitions.

***Scenario 3. Increase in RN staffing in physician offices, outpatient centers, home health, hospitals, and other key settings due to increased case management role of RNs.***

In scenario 3, RN employment is increased by 10 percent in physician offices, outpatient care centers, home health, and hospitals due to their being employed as case managers (or care coordinators). It is widely expected that RNs will assume a greater role in care management and patient navigation, although there are varying perspectives regarding whether these roles will be best filled by RNs or other professionals such as community health workers. We explore the possibility of other workers serving as case managers in Scenario 5. Scenario 3 leads to an estimated change in RN job growth from 10,988 in the baseline scenario to 33,232. Figure 4 and Table 3 show the effect of this scenario on projected RN employment.

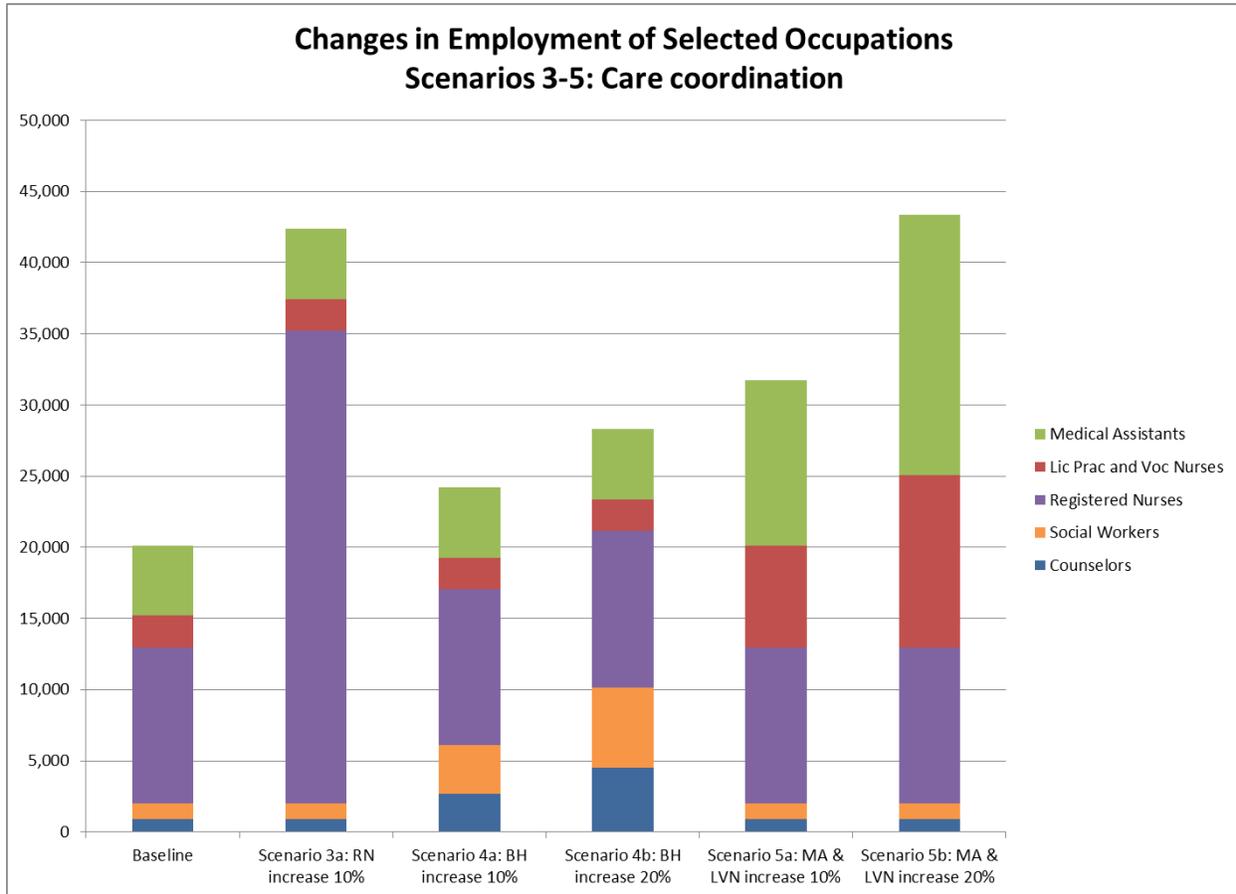
#### ***Scenario 4. Increase in employment of social workers and counselors.***

Scenario 4 assumes an increase in employment of social workers and counselors by 10 percent in offices of physicians, offices of other health practitioners, outpatient care centers, home health care, other health care services, hospitals, nursing care facilities, and residential care. The rationale for this scenario is that integration of health care between medical and behavioral health will lead to greater demand for professionals with behavioral health knowledge. Many of those we interviewed indicated that their health care organizations are actively seeking to expand their employment of behavioral health professionals. Note that this scenario could also be interpreted as greater use of community health workers and social workers as care managers; it was not possible to exclusively identify community health workers in the employment data upon which we relied. We also computed the impact of an even greater increase in demand – 20 percent – for social workers and counselors. These scenarios lead to an increase in estimated job growth for counselors and social workers ranging from 4,000 to 8,000 above the baseline scenario, as presented in Figure 4 and Table 3.

#### ***Scenario 5. Increase in employment of medical assistants and LVNs.***

In scenario 5, we consider the possibility that health care organizations will use medical assistants and licensed vocational nurses more intensively to support physicians and other providers, and to potentially serve as care managers and care navigators. As in scenario 4, we increased demand for medical assistants and LVNs by 10 percent and 20 percent in offices of physicians, offices of other health practitioners, outpatient care centers, home health care, other health care services, hospitals, nursing care facilities, and residential care. These two occupations are needed to support MDs, NPs, and RNs, and are anticipated by those interviewed to play a greater role in patient navigation, health coaching, and other patient-centered medical home functions. As seen in Figure 6 and Table 3, in the scenario with 10 percent growth, demand for LVNs increases by 7,143 (compared with the baseline growth of 2,219) and demand for medical assistants increases by 11,631 (compared with 4,925). In the scenario with 20 percent growth, demand for LVNs increases by 12,068 and demand for medical assistants increases by 18,338.

**Figure 6. Projected Changes in Employment in the Baseline Scenario and Scenarios 3-5**



**Table 3. Projected Changes in Employment in the Baseline Scenario and Scenarios 3-5**

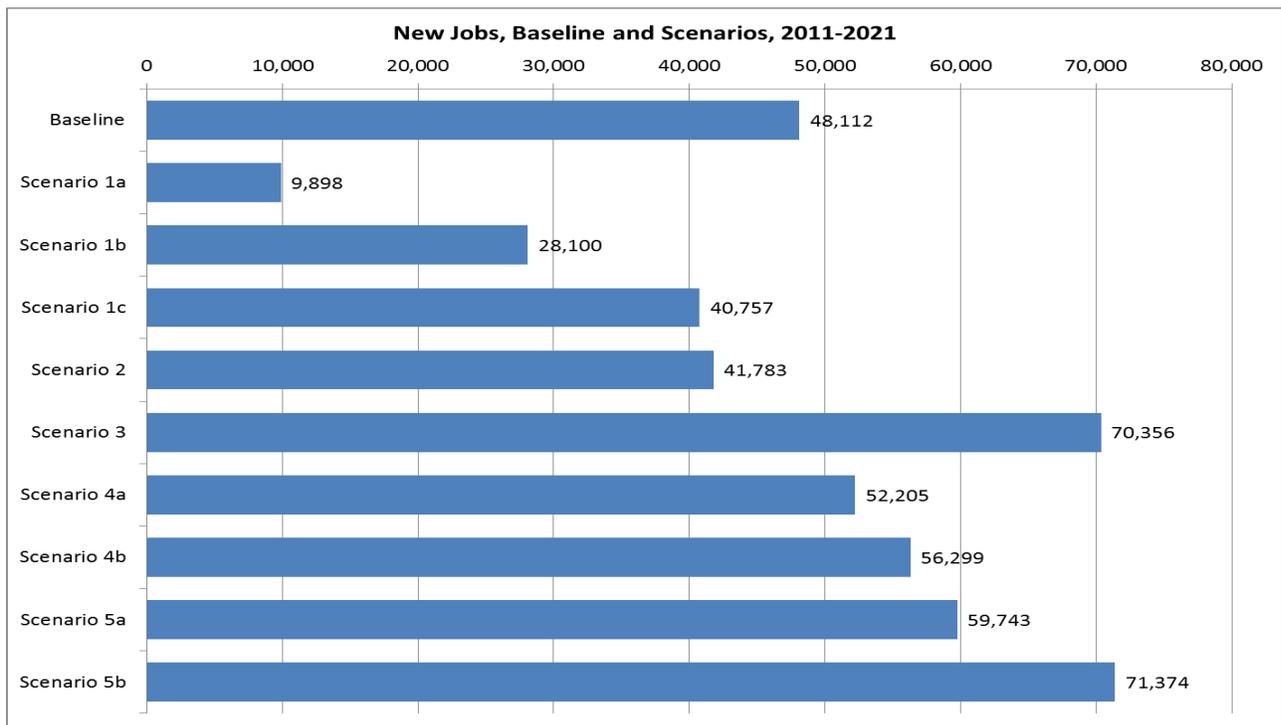
Total New Jobs by Occupation	Baseline	Scenario 3a: RN increase 10%	Scenario 4a: BH increase 10%	Scenario 4b: BH increase 20%	Scenario 5a: MA & LVN increase 10%	Scenario 5b: MA & LVN increase 20%
<b>Counselors</b>	894	894	2,693	4,493	894	894
<b>Social Workers</b>	1,090	1,090	3,384	5,678	1,090	1,090
<b>Registered Nurses</b>	10,988	33,232	10,988	10,988	10,988	10,988
<b>Lic Prac and Voc Nurses</b>	2,219	2,219	2,219	2,219	7,143	12,068
<b>Medical Assistants</b>	4,925	4,925	4,925	4,925	11,631	18,338
<b>Total</b>	48,112	70,356	52,205	56,299	59,743	71,374

Note: Occupation categories are defined by the Bureau of the Census. See Appendix C for definitions.

### Aggregate Results and Regional Findings

Overall employment growth projected in the scenarios is summarized in Figure 7. Total projected employment growth is greatest in the models in which there is greater RNs employment or greater medical assistant and LVN employment to serve in expanded roles such as care management (Scenarios 3 and 5b). Employment growth is lowest in the scenario in which hospital utilization is reduced and there are no other changes in workforce utilization.

**Figure 7. Overall Net Employment Growth Due to the Affordable Care Act in the Scenarios**



The interviewees did not provide enough detail to develop scenarios in which utilization of hospitals or specific personnel might change differently in one region versus another. However, differences in employment growth can occur across regions due to differences in the mix of health care providers in the region. For example, in regions with relatively large shares of hospital beds, reductions in hospital utilization have a greater effect on regional employment than in regions with relatively small shares of hospital beds. Regional forecasts that arise from assuming each scenario applies equally to every region are presented in Table 4.



**Table 4. Projected Changes in Total Employment, by Region**

TOTAL EMPLOYMENT	Region 1		Region 2		Region 3		Region 4		Region 5		Region 6		Region 7	
Baseline	715		9,462		3,125		5,204		2,070		12,136		14,047	
Scenario 1a: Less hospital	204	-71%	920	-90%	715	-77%	1,799	-65%	591	-71%	2,620	-78%	2,677	-81%
Scenario 1b: Less hosp, more RN	448	-37%	4,959	-48%	2,019	-35%	3,249	-38%	1,443	-30%	6,875	-43%	8,354	-41%
Scenario 2: Telemedicine	580	-19%	8,221	-13%	2,837	-9%	4,502	-13%	1,718	-17%	10,255	-15%	12,517	-11%
Scenario 3a: RN increase 10%	1,043	46%	14,419	52%	4,683	50%	6,974	34%	3,146	52%	17,454	44%	20,810	48%
Scenario 3b: RN increase 20%	1,100	54%	14,905	58%	4,799	54%	7,140	37%	3,279	58%	18,061	49%	21,287	52%
Scenario 4a: BH increase 10%	777	9%	10,367	10%	3,322	6%	5,796	11%	2,262	9%	13,294	10%	14,861	6%
Scenario 4b: BH increase 20%	808	13%	11,272	19%	3,518	13%	6,387	23%	2,454	19%	14,452	19%	15,676	12%
Scenario 5a: MA & LVN up 10%	857	20%	11,460	21%	3,640	16%	6,305	21%	2,450	18%	16,131	33%	17,153	22%
Scenario 5b: MA & LVN up 20%	999	40%	13,457	42%	4,155	33%	7,405	42%	2,830	37%	20,126	66%	20,260	44%

### Interpretation of Scenarios and Conclusions

The scenarios developed for this study were each calculated in isolation – except for scenarios 1b and 1c, we did not assume there would be multiple changes in utilization of services or demand for workers. In order to consider combined scenarios, one can add together or interpolate between the scenarios presented. For example, if half of future care managers are medical assistants and LVNs, and half are RNs, anticipated future job growth would likely be halfway between the changes between the baseline and the scenarios 3 and 5.

In all cases, one should recognize that the scenarios are only projections based upon models that encompass a number of assumptions, which may not hold true in the future. The baseline model and scenarios should thus be viewed as guides to the magnitude of changes that might occur, rather than firm projections of the specific number of jobs that will be created.

The quantitative scenarios should be interpreted in combination with the qualitative findings to guide workforce policy. It is clear that some occupations are likely to grow more rapidly than others – particularly registered nurses, counselors, social workers, medical assistants, and – possibly – LVNs. These occupations were also identified in interviews as needing greater skills in care management, health system organization, team-based care, and quality improvement. Employers and educators are likely to need to both expand their education programs in these areas and reassess the curricular content of their programs to ensure an adequately sized and skilled workforce in the future.



## **APPENDIX A: Interview Questions**

These are the general questions that will be asked of the group. Some interviews may focus on only a subset of these questions depending upon the interviewee's expertise and position.

1. What is your title and your role within this organization? How long have you been with this organization?
2. What kinds of changes in health care delivery are you seeing at your workplace or around you?
  - a) What is driving these changes?
  - b) Do these changes include new models of care such as integrating physical and mental health, patient-centered medical home, retail clinics, etc.?
3. From what you have seen and heard, how do you think changes in health care delivery will impact the health care workforce?
  - a) In what ways do you think the health care workforce might need to change?
4. Are you planning for health workforce changes in your health care system (education program offerings)?
  - a) Please tell us about those changes in a couple of examples.
5. From your experience and what you've seen and heard, what new skills do you think the current health care workforce might need to compete in these changing delivery models?
  - a) Could you give us some examples of new skills needed and why you think those skills will be important?
6. From what you've seen and heard about changing models of care, do you think changes in the education of the health care workforce will be needed?
  - a) What kinds of changes?
  - b) Could you give us some examples?
7. From your perspective are there regulatory changes needed in the health care workforce such as changes in scope of practice (the legal description of practice by a profession)?
  - a) What kind of changes might be needed?
  - b) Can you give us some examples?
8. What is your perspective on how future technology might impact the health care workforce?
9. From your experience, how well prepared are new graduates in the skills needed in your organization to competently deliver care?
  - a) If this is a problem, what are the most significant gaps in preparation?
  - b) Please discuss a couple of examples.
  - c) Please discuss any models you know that successfully address these gaps in skills needed by new graduates.
10. Some suggest that turnover is high in some health care jobs, especially entry-level jobs. What is your perspective and/or experience of turnover in health care jobs?
  - a) How might turnover be addressed?
11. In summary, what would be your top 3 priorities to address in planning for and preparing our state's future health care workforce?
12. Is there anything else you'd like to add that we have not asked?

## **APPENDIX B: Seven Themes from Interviews and Their Impact on the Workforce**

### **Theme #1: There is heightened focus on the metrics (quality, costs, patient satisfaction)**

- Number of efforts focused on Triple Aim
  - Pay for quality
  - Increase access
  - Bend the cost curve
- Reimbursement models are changing
  - Need to meet quality metrics to get paid - or risk being penalized
  - Need to train staff on the quality metrics, but more importantly the rationale for why they are needed
  - Need leadership to ensure quality metrics are being met
  - Need partnerships between hospital and clinics to ensure appropriate follow up to prevent 30-day readmissions; care across the continuum is now becoming a reality
- As patients and employers are now “shopping” for health care, it’s important to demonstrate high patient satisfaction and quality scores
  - Need to engage with patients
  - Need to explain/educate patients on treatment protocols

**Impact on Workforce:** need to train staff more quickly on use of technology/interpreting data and rationale for treatment protocols; soft skills to engage with patients; leadership and increased staffing during ramp up period

### **Theme #2: Patient expectations are leading to an increased need for patient engagement**

- Patients own their own care – Providers offer suggestions
  - Health care is becoming more consumer driven
  - Patient needs to be viewed as a partner
  - The patient, family and friend experience is now more important and thought to drive quality
  - Patients are more technologically savvy – some are going to want to talk about information they find on the internet
- Increased cost sharing among patients (increase in Consumer Drive Health Plans (CDHPs))
  - Some patients are putting off or underutilizing benefits
  - Low cost/high quality leaders are gaining market share
- Patients don't understand or know how to navigate complex, uncoordinated care systems

**Impact on workforce:** Need a refresher on customer service skills (not only how to engage but also how to diffuse angry patients) and critical thinking skills. Reorganize workforce to focus on disease mgmt., care coordination. Need navigators, coordinators, and/or concierge services.

### **Theme #3: The benefits of technology do not come without costs**

- Benefits
  - Innovation
  - Digital health – cheaper/quicker service, video visits, apps (improve access)
    - Soon people will be able to take photos of a rash and send to a doctor
    - Will not replace MDs but there are opportunities to outsource algorithms
  - Care coordination
    - Not just about a person but information sharing about patients' conditions/health status (internal and external comm.)
  - iPhones, iPad, other mobile apps allow for quick access to information – good resources for staff (ex. HH aides)
- Costs
  - Need cash to acquire and resources to implement
    - Expensive to implement and learning curve is time consuming (EHRs, HIT, other interfaces, ICD10)
    - Extra amount of workflow (before would just write in chart, now need to find right boxes to check off)
  - Need IT staff – hard to recruit talent
    - Top folks want to work for Google or Facebook; or live in ideal locations (urban/high pay environments)
  - Occupational health issues with workforce – increase in obesity, carpal tunnel
  - Shifting workforce from bedside to informatics, not engaging with patients
    - How do you make patient feel engaged through technology?
  - As Technology becomes available, it's not necessarily the most cost effective solution (e.g., MRI vs Xray)

**Impact on workforce:** Short-term - Stress, time constraints, frustration, burnout. Long-term – efficiency, but also occupational health hazards. No one was comfortably commenting on how technology will either impact numbers or types of positions – uncertainty remains

### **Theme #4: The ACA and health care reform have spurred new vehicles of access**

- Increased community health focus
  - Population health and wellness in the community
  - Smaller centers becoming part of the community – lobbies are “community centers”; hire locals
  - School-based clinics
- Development of onsite employer clinics

- Bring care to the patient; works for large employers
- Technology based visits
  - Digital health offerings – still figuring out what this means (video visits/email/patient portals)
    - Zipnosis – patients call MD/keeps patient out of ED
  - Rite Aid – can push a button to access an MD
  - Telehealth – Mix of early/late adopters; for those that use it – they see the benefit, but need to train workforce
    - Some still in pilot testing phase; not yet reimbursed for these services
- Continued shift to ambulatory settings
  - Hospital-based providers will become more specialized as patients will be sicker
  - Need to train more in ambulatory settings – particularly home health and community based settings

**Impact on workforce:** Need to educate on what skills are needed for population health; teach independence particularly for home health aides; Increase comfort level with providing care via technology

**Theme #5: The status quo is no longer a viable option; many are piloting new models of care**

- Pilot models are viewed as a cautious approach give uncertainty around anticipated outcomes and reimbursement
  - Paramedic pilot study – paramedics now triaging in the field; work with base nurse or MD to determine best course of action. Care for patients in the home
  - Using more Community health workers (CHWs), the challenge is the reimbursement structure – not sure how to fund it
- Forming narrower networks
  - ACO/ACO like partnerships – to help manage financial risk; each ACO is different so need flexibility
  - Increased relationships across the board – medical groups (OP follow up, assign to medical home through ED), employers)
    - Developing research institutes and specialty-specific centers; provide coverage in areas with no services; helps with continuum of care
  - Many offering an insurance product to manage their employees – managing care and risk
- Other models
  - Team-based care – pilot project with MA as a health coach (funded by Cal Endow); other testing use of a health coach
  - Integrate primary care with behavioral health - focus on addressing more social issues (access to food, shelter); debate – should this be part of health care premiums?

- Medical home models/group appointments – may not be transferable to all communities
- How to help employees care for parents that live far away (when working with a large employer)

**Impact on workforce:** Need to learn new skills and to work with new people – face-to-face and via technology; time management (people are now doing more); coping with challenges of change – need people who are nimble

### **Theme #6: It's not just about growth, but re-tooling the education system and current workforce**

- Disconnect between education system and practice for new grads
  - Most have strong technical skills but need to learn to be adaptable and work on soft skills (interpersonal communication, teamwork, professional dress and expectations)
  - Need to understand changes in the health care landscape (system operations, reimbursement/insurance, business 101) and with increased technology – analytics to understand the full story around a patient's health
  - Those with relationships with schools seem to be better at preparing new grads
- Staff are complacent – need to focus on incumbent workers and practice transformation
  - Work at top of license (ex. MAs to draw blood, NPs to work independently)
  - Engage patients as a partner; similar to new grads, current employees need customer service and team based skill
  - MDs need to be comfortable working in teams and giving constructive feedback
  - Continuing education should also focus on IT, quality, health care landscape
  - More training in ambulatory and rural settings
- Just because the focus is on re-tooling doesn't mean we don't need growth for some positions
  - Replacement for retirements and shortage of PCPs – need more NPs and MAs
  - Need some new positions (paraprofessionals, concierge services)
- Turnover not a major concern – varies by geography and position (see strategic considerations for details)

**Impact on workforce:** Need stronger relationships with schools; residency/internships; need onboarding and continuous education in the workplace; need regulation and/or change in union contracts to allow employees to work at the top of their license or beyond. Need to develop job descriptions and training for new positions.

## **Theme #7: Leadership is needed to respond to the changes and ensure balanced implementation of solutions**

- Most executive level individuals understand the changes occurring and some anticipate the responses needed to address those changes, but this needs to trickle down to all levels
- Shifting from provider-based to team-based
  - Asking MDs to see themselves as partners with colleagues, which requires new skills and leading in a new way
- Someone needs to drive these changes
  - Education
  - Regulatory
  - Ensuring a balance – focus on quality vs technology vs education vs patient experience
- Engage in health care coalition networks – a lot of changes are happening across organization within a community; there are benefits in working together

**Impact on workforce:** Needs skills in team-based care, critical thinking, decision-making, and providing feedback in a constructive way. Need to determine who is a leader and understand the implications– balance having a care provider vs an administrator due to promotion/new role

## **APPENDIX C: Occupational Categories Used in This Study**

Occupational categories used by the Bureau of the Census for the American Community Survey were the basis for the occupation projections. The specific categories and definitions are:

3255 Registered nurses (SOC 29-1141)

3600 Nursing, psychiatric, and home health aides (SOC 31-101 group, includes nurse assistants, first aid attendants, home health aides, patient sitters, orderlies, etc.)

3640 Dental assistants (SOC 31-9091)

3645 Medical assistants (SOC 31-9092, includes medical assistants, hospital clinic assistants, ocular care assistants, etc.)

0350 Medical Managers (SOC 11-9111)

3500 Licensed practical and licensed vocational nurses (SOC 29-2061)

3420 Health practitioner support technologists and technicians (SOC 29-205 group, includes optometric technologists, dietetic technicians, operating room technicians, pharmacy technicians, respiratory therapy technicians, veterinary technicians, etc.)

3320 Diagnostic related technologists and technicians (SOC 29-203 group, includes cardiac catheterization technologist, cardiology technologist, echocardiographer, MRI technologist, mammography technologist, radiographic technologist, x-ray technician, EKG technician, ultrasound technician, etc.)

3310 Dental Hygienists (SOC 29-2021)

2010 Social Workers (SOC 21-102 group, includes bereavement counselor, case worker, child welfare worker, clinical social worker, drug abuse worker, hospice social worker, health care social worker, juvenile officer, medical case worker, oncology social work, protective services social worker, etc.)

3400 Emergency medical technicians and paramedics (SOC 29-2041)

2000 Counselors (SOC 21-101 group, includes addiction counselor, career counselor, certified alcohol counselor, family counselor, mental health consultant, vocational advisor, etc.)

3535 Miscellaneous health technologists and technicians (SOC 29-209 group, includes EEG technologist, hearing aid consultant, orthoptist, perfusionist, dialysis technician, rehabilitation technician, etc.)

3649 Phlebotomists (SOC 31-9097)