Transforming America's Health Care Workforce

Maximizing Quality, Patient Outcomes & Cost-Effectiveness

PQC PARTNERSHIP FOR QUALITY CARE
America's health providers and caregivers

The Future is Now:

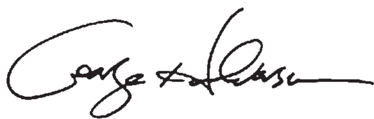
Transforming America's Health Care Workforce

In May 2010, members of the Partnership for Quality Care (PQC) gathered at Vanderbilt University's Center for Better Health to address the foremost challenges facing our health care system in preparation to deliver on the promise of national health care reform. The PQC is composed of the nation's leading health care providers and health care unions, including urban, teaching hospitals, academic medical centers, religious hospitals and the nation's largest and fastest-growing health care unions. Together, PQC providers and health care workers care for more than 60,000 patients each year and represent more than 2 million of the nation's 14 million doctors, nurses and health care workers.

Developing a workforce ready to deliver coordinated, comprehensive, high quality care was identified as a top concern among health care providers and unions who took part in the Vanderbilt meeting. For more than five months a group of leading health care education and training experts explored the lessons learned in the delivery of care and analyzed the design of education and training programs throughout the full spectrum of the health care system. The recommendations of this advisory group point to how greater coordination and analysis of our nation's investment in the health care workforce could yield a workforce with increased diversity, flexibility and skills; one that is better able to provide team-based, coordinated, continuous care for patients.

In addition, much of the national discussion on the readiness of our nation's health care system to expand and improve the delivery of care has focused on the readiness of our physician and nursing workforce. This report and its recommendations are meant to broaden the dialogue to include service, professional and technical workers who are essential to the patient care team.

We are on the path to building a healthier America. To achieve that goal, America needs a health care workforce that is ready to meet that challenge. The future is now. Let's get to work.



George Halvorson, Chair

Dennis Rivera, Secretary

Executive Summary

In recent years, our nation has seen a dramatic shift in best practices for our health care system. Breakthroughs in research, the way care is delivered, and how we deploy the skills of our workforce have carved out a roadmap to achieve improved outcomes for patients at lower cost.

The expansion of coverage and the many payment reforms, pilots, and demonstration projects within the Patient Protection and Affordable Care Act (PPACA) have the potential to catalyze this transformation of our health care delivery system. If implemented in partnership with health providers, front-line health care workers and other stakeholders, the law has the potential to more rapidly transform our current health care system into a sustainable, patient-centered system that improves the health and well-being of millions of patients each year.

As health care providers strive to improve care, it is critical to note that a health care delivery system is only as effective as its workforce. The growth, education and training and readiness of the health care workforce – both current and future – is essential for health care reform to succeed in improving care and lowering overall health care costs. Our health care workforce encompasses not only doctors and nurses, but also the millions of allied health and service workers who make up a majority of the health care workforce. The most effective workforce planning includes all of these groups.

Trends for which health care providers and health care workers must prepare, include:

- Expansion of coverage to 32 million more Americans and increased demand for care;
- Pressure to create cost efficiencies in care delivery, as well as new opportunities for providers to recoup savings from improved care;
- An emphasis on quantifiable measures of quality and value to the health care consumer and the payer;
- Increased focus on the coordination and integration of care; and
- Increased focus on preventive and primary care services.
- New and shifting roles and responsibilities for health care workers, especially under models of care for individuals with multiple and severe chronic conditions.

These changes come on top of existing challenges within the health care workforce and its state of readiness. Today, the United States faces persistent health care worker shortages, including primary care providers, registered nurses (RNs), pharmacists, physical therapists and home health care aides. Demand for a range of health care services is expected to intensify with the aging of the country's population, and trends show this demand will be complicated by an aging health care workforce that is retiring in greater numbers. In addition, though health information technology is a tool with tremendous potential, it is increasingly evident the application of this tool to the benefit of patients, health care workers and providers will require careful assessment across the entire workforce.

This paper summarizes the foremost issues affecting the growth and preparedness of the health care workforce, the factors threatening the adequacy of supply, as well as the factors influencing health care workers' ability to deliver the right kind of care in the right setting.

The paper then describes the kinds of changes we can expect to see in our health care delivery system in the coming years, as a result of both legislative changes and new models of how best to deliver care for patients suffering the kinds of chronic illnesses that will dominate our health care system. It takes two representative examples of the kinds of changes we can expect to see in our health care delivery system in the coming years, and discusses the workforce implications of these two examples. It then highlights other major challenges to which the health care workforce and the health care training system must adapt, and indicates the role of the health care workforce in implementing better health care practices.

To meet the challenges outlined in this paper the Partnership for Quality Care (PQC), suggests that the nation's workforce development policies be informed by three fundamental principles:

1. America's health care system must maximize the skills and deployment of every member of the current health care workforce to the fullest extent of their training and individual capabilities;

2. Our nation's health care workforce must be prepared to meet the evolving needs of the health care delivery system, which will require investing in the following areas: increased opportunities for education and

training, recruitment of new health care workers; and opportunities for advancement and career growth within the current workforce;

3. Our national health care system needs a comprehensive approach to workforce structure to deliver the highest quality care. This will require a flexible workforce; one able to transition to more effective models of care delivery and positions that support patient-centered care. It will also require a workforce trained in team-based approaches to care and in continuous quality improvement.

Recommendations:

We propose that federal and state policymakers consider the following recommendations related to the growth, readiness and effectiveness of our nation's health care workforce:

1. Incorporate a workforce component in all major demonstrations, pilots and grant funded programs authorized by the Patient Protection and Affordable Care Act (ACA). This workforce component should have a mandate to include all levels of front-line workers, thereby improving team-based care, comprehensive quality, and the efficiency of our care delivery system.

The ACA includes a variety of programs designed to test innovative strategies for reducing cost and delivering care in a more efficient manner. All of these programs will have an effect on the roles and responsibilities of the providers and front-line health care workers involved. As new models of care delivery are being tested, it is critical to determine how to best utilize the skills and experience of the existing health care workforce, as well as determine the needs for additional workforce and/or new job categories and job skills needed to implement these models. It is vital to note that the workforce roles being piloted and studied should go well beyond physicians and nurses to include all care providers.

Programs focused on retraining workers into new job categories and ensuring these new jobs are tied into meaningful career ladders should be a special priority. In addition, pilots or demonstrations that have a component to improve care by changing the culture of health care organizations into "learning organizations" able to empirically test new delivery approaches to care by integrating the insights of all front-line workers in a formalized, systematic way, should receive special attention.

By including workforce components in ACA demonstration and pilot projects our nation can ensure that we are testing, measuring and implementing changes necessary to achieve gains in quality and efficiency.

The programs and entities outlined below should be prime candidates to include workforce components in their demonstration projects and/or pilots:

- Center for Medicare and Medicaid Innovation (SS 3021);
- Medicare shared savings program and Accountable Care Organizations (SS 3022);
- National Pilot Program on Payment Bundling (SS 3023 and 10308);
- Medicaid State Option to Provide Healthy Homes for Enrollees with Chronic Conditions (SS2703); and
- Childhood Obesity Demonstration Project (SS 4306).

2. . Establish stand-alone demonstration/research grants through existing institutions and new ACA programs/pilots/demonstrations to enable health care providers and educators to develop and test workforce education innovations.

In addition to including workforce components in all ACA demonstration projects, the U.S. Department of Health and Human Services, as well as other agencies, should focus on creating stand-alone opportunities to test workforce innovations that improve education or training for health care workers of all levels, throughout the entire care spectrum and in all health care settings (home, long-term care, outpatient, inpatient, etc.).

Priority areas should include demonstrations that target:

(1) Sector-based, targeted workforce development using career paths built for incumbent health care workers;

(2) Tuition and wrap-around services funding for expanded implementation of effective workforce training and education innovations. This can be targeted to institutions, to organizations representing health care workers or directly to health care workers; and

(3) The curriculum necessary to provide new skills and competencies needed to promote team-based care, better health outcomes, and more coordinated care in existing occupations as well as in new occupations.

These provisions should also be included in grant

applications for both existing and new programs, such as the graduate nurse education demonstration authorized by SS 5509 of the Patient Protection and Affordable Care Act.

3. Formally bring together representatives of front-line workers of all skill levels, a diverse set of employers and educational institutions to develop a national "adaptability infrastructure" to ensure new health care workers have the skills they need on the job when they graduate, and the ability to change care settings throughout their career.

Education and training programs must be closely linked with health care system changes. The ACA presents a crucial opportunity to strengthen our health care system by facilitating the development of a nationwide "adaptability infrastructure" where graduates have the skills they need on the job when they graduate, and members of the current workforce can move from one clinical area or setting to another as organizational needs change.

There are several avenues through which this effort can be facilitated. One avenue includes the National Health Care Workforce Commission established in the ACA. Another is an informal working group convened by top level staff at the Departments of HHS, Education, and Labor that brings together representatives of front-line workers of all skill levels, a diverse set of employers and educational institutions. A key focus would be maximizing federal investments by coordinating training and education funding across federal departments (i.e., labor, education, defense, health), reduce the likelihood of disparate programs and grow promising programs to scale more quickly by leveraging existing private and public dollars.

4. Launch an innovations center to share and disseminate best practices in worker education and training.

There are many examples of innovative programs that improve the quality and efficiency of health care by ensuring that worker-centered learning is supported in a flexible and effective manner and that education and training leads to a new position or new career.

An innovations center could not only create a centralized location for organizations to find information on what kinds of workforce training and educational programs have proven themselves effective, but it could also be closely tied into the development of demonstrations and pilots outlined in the first two recommendations made in this paper. This would ensure that policymakers and organizations were testing and supporting the most effective models of health care workforce integration to most effectively implement the health care quality and effectiveness improvement goals these pilots and demonstrations are trying to achieve.

This innovations center could be organized by the Workforce Commission established by the ACA. We recommend an innovations center focus on:

- Maximizing efforts to ensure that adult learners have the economic and social supports they need to return to school or continue their training, which also helps federal agencies maximize their investments in workforce education and training.
- Ongoing sharing of effective practices and learning across health care entities that are developing or implementing team-based, coordinated care models and other new models of employee engagement to improve front-line care and make health care affordable.
- Programs that allow health care facilities to transfer an existing worker's clinical strengths and institutional expertise to a new position without beginning an entirely new educational process.
- Comparisons of the effectiveness of various workforce development and education strategies.
- Partnerships between education, labor and providers.

5. Support a wide variety of education and training programs designed to increase minority representation in health care professions at all levels, and encourage practice in underserved communities.

This has been a long-standing priority for federally funded health care programs, and a multi-pronged approach has been embraced by many federal agencies and achieved success. To further facilitate this goal, we encourage federal agencies' investment in existing health care training programs to:

- Increase scholarship and loan repayment programs that increase the racial and ethnic diversity of the health care workforce, particularly in health care professions with

low rates of minority participation.

- Reward blended instruction that includes academic preparation and ESL in combination with programs that lead to a degree and/or certificate. Such programs help adult and immigrant workers gain academic and job skills together.

- Better leverage the existing workforce's bilingual and interpretative skills to increase the number and availability of care team providers who can support patients at every point of care.

- Support health career-oriented high schools and middle schools in inner-city communities; build career ladders for current entry-level workers; and develop mentors, educational support, and remedial services for educationally and financially disadvantaged students.

6. . The ACA authorized a number of new programs that still need funds to be appropriated. The following programs create opportunities to improve patient care by investing effectively in our workforce and we urge Congress to approve full support for them:

- Community-Based Transitions Program (SS 3026);

- Delivery System Research and Improvement (SS 3501; SS 933; SS 934) – this has particular importance in new ways of gaining skills and the impact of technologies and skill requirements;

- Community Health Workforce (SS 5313) – this provides an opportunity to bridge language and health education gaps, enhancing culturally competent care;

- ACA-established Workforce Commission.

We also believe the programs below are worthy of consideration and support:

- Pediatric Accountable Care Organization Demonstration Project (SS 2706);
- Individualized Wellness Plans (SS 4206);
- Demonstration to Provide Access to Affordable Care (SS 10504);
- Community-Based Collaborative Care Networks (SS 10333);
- Community Health Teams (SS 3502);
- Medication Management for the Chronically Ill (SS 3503 and 935); and
- Community Transformation Grants (SS 4201).

There have been several programs established under existing federal law that have improved the health care delivery system. We encourage the development of programs modeled upon the following:

- Expansion of the incumbent care workforce as found in several American Recovery and Reinvestment Act (ARRA) health care grants.

- Innovative demonstrations that enhance the skills throughout the health workforce continuum. For instance, ARRA supported training hospital environmental service workers in green energy, waste monitoring and green cleaning practices. These provide a health benefit to patients and staff, and create potential cost savings for hospitals, by focusing on workers who are often overlooked as a formal part of the health care team.

Section I:

Current Health Care Workforce Challenges

The health care workforce is comprised of a wide array of clinical professions and occupations that provide wellness, medical, behavioral, and public health services. Doctors, nurses and allied health care workers operate in many different systems of care, with some quite organized and others entirely decentralized. There is significant state-by-state variation, with licensure and credentialing requirements that outline the minimum necessary training as well as the tasks and responsibilities for which this training prepares a worker. Much research has focused on the role of physicians and nurses; however, the provision of modern, complex health care demands a robust and proficient ancillary health care workforce, which includes administrative, service and technical staff that support the provision of clinical services.

This section provides an overview of the status quo – the current workforce situation and its importance in the broader employment context, as well as the health care workforce challenges that the United States has long faced, even before accounting for any system changes driven by widespread adoption of new quality-enhancing practices in health care delivery and by the implementation of the PPACA.

Health Care Workforce Overview and Recent History:

Health care employment is a vibrant economic engine throughout the United States. Employment in health care settings and in health care occupations comprised more than 12 percent of total employment in the United States in 2008, with more than 18.6 million Americans working in a health care setting or in a health care occupation. Between 2008 and 2018, health care sector employment is projected to grow by nearly 23 percent, compared to about 9 percent for all other sectors, creating more than 3 million jobs over this time period.[1] Yet, despite this substantial growth in the supply of health care workers, for many professions and occupations it is not projected to be sufficient to meet demand for their services.*

There are two primary factors behind the steady growth in demand for health care services over recent decades: patients are living longer lives and technological advances have made it possible to treat conditions and diseases that were in the past untreatable. In addition, national GDP growth has long been correlated with a growth in health care services and spending, and the United States has seen significant GDP growth for decades.

Perhaps the greatest factors affecting workforce readiness and demand over the most recent decade include: rising rates of chronic diseases and co-morbidities among a growing patient base that have required more complex health care services in a variety of settings; a steady trend toward improved outcomes in ambulatory and community-based care; and increasing technological sophistication at all levels of care. This growing complexity in health care delivery has often not been met with the kinds of system delivery changes that would enable workers to more easily manage these complexities, so the demand for highly skilled workers has increased perhaps more than it needed to.

Workforce Shortages Are a Persistent Problem at Every Level:

Even the most casual observer of the nation's health care system is aware that the trends outlined above have created persistent workforce shortages. It is important to note that factors behind shortages are complex, and are frequently in flux. To find appropriate solutions, it is important to review the kinds of workforce shortages we face, the drivers of these shortages, the consequences of these shortages, and what has been changing them over time.

Workforce Shortages are Costly and Compromise Patient Care:

Health care workforce shortages can severely limit access to health care. Shortages particularly affect the provision of primary care to underserved populations in rural and urban communities because the safety-net providers that care for these groups are at a great disadvantage in

* Our nation's largest economic downturn since the Great Depression has created a non-typical labor market throughout the economy, and health care has been no exception. By slowing job growth in health care and virtually eliminating job growth in other areas of the economy, it appears the recession has eased persistent health care worker shortages. However, an economic recovery should be expected to signal the return of workforce shortages. When the economy is strong, shortages in health care typically worsen.

competing to hire workers in all disciplines due to more difficult work settings and lower pay as a consequence of lower care reimbursement rates.

Evidence exists that shortages of health care professionals negatively affect the quality of care and patient outcomes in hospital settings.[2] For example, one study found that more RN hours were associated with shorter lengths of stay and lower rates of urinary tract infections, pneumonia, upper gastrointestinal bleeding, shock or cardiac arrest.[3] Another recent study comparing ratios of patients-to-hospital staff nurses in California, Pennsylvania, and New Jersey found that lower patient-to-nurse ratios were associated with significantly lower mortality and lower levels of nurse burnout and job dissatisfaction as well as reports of higher quality of care.[4]

These poorer outcomes generate financial costs to the health care system. In addition, there are direct human resources costs of replacing staff including the costs of temporary labor, recruiting, training, and the learning curve.[5] For example, it is estimated to cost $30,000-$64,000 to replace an acute care nurse.[6]

Types of Workforce Shortages Vary:

Fluctuations in health care workforce labor markets can lead to widespread workforce imbalances, which include:

- Profession imbalances, such as shortages of physical therapists, or specialty imbalances within professions, such as shortages of primary care physicians and general surgeons;
- Geographic imbalances, including differences in the supply of health care workers between rural and urban areas, or between economically disadvantaged and affluent communities;
- Institutional and service imbalances, such as shortages of long term care staff acute care as compared to acute care;
- Imbalances between publicly- and privately-sponsored health care providers; and
- Gender or racial and ethnic imbalances in a health care profession.[7]

Short-Term Factors Affect Supply and Demand:

Short-term factors that create supply and demand gaps can include competition for workers, or a growing demand for health care services created by increased access due to insurance market changes, or due to a sudden surge in a particular disability or disease. Supply and demand are also affected by the increased intensity and complexity of services, discussed more in the following sections.[8]

Because years of training are required to become a health care professional, the supply of health care professionals tends to be slow to respond to short-term changes in demand. For example, a registered dietician requires a specialized academic degree and 1,200 hours of formal, supervised practice as part of an accredited program and passage of an accreditation exam; as well as specific state licensure requirements.

In addition, the highly specialized nature of our current health care training and licensure systems creates persistent workforce distortions. For many positions, even workers with significant clinical experience cannot transition to new areas without repeating a significant part of their educational process, so organizations are forced to hire new graduates rather than retrain. Many job categories also lack clear career ladders for growth, promotion and advancement, so health care workers are unwilling to make a significant financial contribution to their education in support of what looks like a "dead-end" career. This is especially true for allied health care workers.

One common consequence of these educational response lags is overproduction in response to short-term trends, resulting in current shortages being followed several years later by short-term surpluses, followed by a reactionary constriction of pipeline production that historically prefaces a new cycle of shortage. This cycle highlights the inadequacy of workforce projections as well as care delivery transformations that rely overwhelmingly on production of new workers: they almost inevitably lead to boom-and-bust cycles that do not serve the needs of patients, workers, or health care organizations.

Workplace Factors Contribute to Shortages and Impact Patients:

Workplace factors affect both the recruitment and retention of health care workers, and can affect the care provided to patients. Many health care jobs are physically and emotionally demanding, and some positions may not provide competitive wages and benefits. This is especially true of entry-level, direct-care workers such as nursing aides or home health aides. Furthermore, many clinical

positions inadvertently minimize patient contact through poor system design. In some instances, clinicians are under economic pressure to see more patients in less time, potentially jeopardizing the quality and effectiveness of the services provided. Too much paperwork and poorly implemented health information technology also may contribute to health care worker burnout.

A 2004 report by the Institute of Medicine (IOM) outlined a number of factors in the work environment that affected patient safety, and many of these had workforce implications. They included more acutely ill patients, shorter hospital stays, redesigned work, changes in nurse staffing, frequent patient turnover, high staff turnover, long work hours, rapid increases in new knowledge and technology, and increased interruptions and demands (e.g., paperwork). Some of these issues are systemic and unlikely to change, such as higher acuity and shorter hospital stays, but other negative factors can be reversed through thoughtful and well-informed health care workforce policy. In particular, health care workforce policies can address the supply of workers needed to maintain adequate staffing, reduce staff turnover, and promote the effective use of health care workers in terms of staffing mix and responsibilities.[9]

A major factor in current workforce models that deters retention is the insufficient ability for the majority of health care workers to have a voice in the decisions that affect their day-to-day work environment, or a means to leverage their knowledge toward improvement and innovation within the care delivery system. In addition, many supervisory and managerial staff are experienced and trained in clinical care, but not necessarily trained in management skills, potentially leading to strain in their own job performance and conflict with their staff. This will be discussed in greater depth in our next section, which focuses on the challenges the health care system faces.

Short-term and workplace factors explain why workforce shortages in health care have been so persistent despite decades of efforts to eliminate them. In spite of a "silver lining" effect that the current recession has brought to the health care industry as competition for workers declines, a number of long-term factors point to a worsening of these shortages in the future.

Group Health Cooperative in Washington has partnered with health care workers from SEIU Health care 1199NW to implement *Rapid Process Improvement Workshops* designed to improve specific areas of care delivery and build a team-based and patient-centered approach to care. This process leverages the knowledge base of the existing workforce, developing workforce-generated ideas and initiatives for process change to achieve specific care goals, and enlisting full workforce participation in testing and implementing these changes. This collaborative model has been used to implement groundbreaking medical home models that have led to both career advancement opportunities for workers and improved patient outcomes.

Long-Term Factors Indicate Shortages will Increase

In the long-term, factors that will likely contribute to future health care workforce shortages and misdistribution include the growing racial and ethnic diversity of the country's population, retirements from an aging health care workforce, and growing demand for health care services by an aging population.[10]

Racial and Ethnic Factors:

Racial and ethnic imbalances persist in many health professions and occupations. Taken together, more than 34 percent of the U.S. population is comprised of racial and ethnic minorities, but many health care professions are predominantly non-Hispanic White. Furthermore, the statistics on diversity in the health care workforce can be misleading. For example, while Black/African Americans seem well represented in registered nursing relative to their representation in the U.S. population (10 percent versus 12 percent), nearly a third of them are from other countries (especially the Caribbean and Africa), and may have little in common culturally with U.S.-born Black/African Americans who make up most of this racial group in the population. Further, racial/ethnic minorities are much more likely to be found in entry-level, lower-paying health care occupations, as shown in Exhibit 1.

Exhibit 1. Racial/Ethnic Distribution of Selected Health Care Professions and the Population, United States, 2008

	Non-Hispanic White	Non-Hispanic Black	Hispanic/ Latino	Asian/ Pacific Islander
Speech-Language Pathologists	88.6%	4.9%	4.2%	1.6%
Dental Hygienists	88.1%	2.1%	4.6%	3.8%
Dentists	76.6%	2.9%	5.6%	13.3%
Registered Nurses	76.6%	9.8%	4.4%	7.7%
Respiratory Therapists	76.1%	10.8%	5.7%	5.2%
Pharmacists	74.3%	6.2%	3.7%	14.5%
Physicians and Surgeons	70.6%	4.9%	5.8%	17.1%
Licensed Practical Nurses	65.3%	23.1%	6.3%	3.3%
Social Workers	63.7%	20.8%	10.4%	2.8%
Home Health Aides/ Nursing Aides/ Psychiatric Aides	50.1%	31.6%	11.7%	3.9%
Population	65.4%	12.1%	15.4%	4.5%

Source: American Community Survey, 2008

While many policymakers support a more diverse workplace as a basic matter of social and economic equality, there is reason to believe a more diverse health care workforce could also help ameliorate some kinds of health outcomes disparities. For instance, in communities where care is compromised by historic mistrust, minority health care providers can create new opportunities to bridge the divide between caregivers and patients, largely because they are more trusted in their communities.[11] Others have suggested that diversity among health care providers may improve cultural competence at the system and organizational level because organizations will create institutional structures to anticipate and integrate varying cultural assumptions among their providers, which extends to their approach to patients.[12]

Partnerships focused on the existing health care workforce can dramatically improve its diversity across providers and professions.

In New York State, only 14 percent of nurses are non-white. A labor-management training program led by the 1199SEIU United Health care Workers East and New York's leading hospitals had a graduate composition of nearly 1,000 nurses that was 89 percent non-white, with significant Caribbean (36 percent), African-American (14 percent) and Hispanic/ Latino (9 percent).

There are ways to achieve increased diversity in the health care workforce: in nursing, the impact of career ladders for entry level workers to advance into higher level health care professions can be seen in the increase in nurses of diverse backgrounds as reported in the 2010 HRSA nursing survey.[13]

The 'Aging Out' of the Health care Workforce:

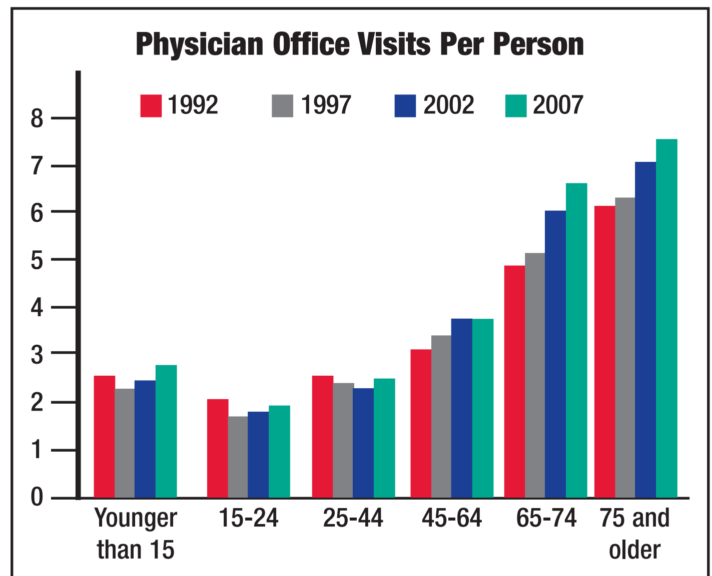
Severe shortages are believed to lie ahead as the working population continues to age.[14] This extends beyond the well-known physician and nursing shortages to all levels of allied healthcare. For instance, the aging of the clinical laboratory scientist (CLS) workforce is colliding with increased demand for these professionals due to competition from the biotech industry and a higher clinical use of more effective tests to better treat patients. At the same time, there is a lack of academic programs and clinical CLS training opportunities to bring new CLS online. As a result, in California there are only two new CLS for every seven that are facing retirement. For one health care provider in the northern California region, 26 percent of their CLS are within five years of retirement. This is a workforce shortage with clear quality implications: if test results are expensive, slow or unavailable because we lack the professionals to perform them, patient care can be compromised.

Exhibit 2. Median Age for Selected Health Care Occupations in the United States, 2008

	Median Age
Dentists	50
Physicians and Surgeons	46
Registered Nurses	46
Licensed Practical Nurses	45
Respiratory Therapists	44
Pharmacists	42
Social Workers	42
Speech-Language Pathologists	42
Home Health Aides/ Nursing Aides/ Psychiatric Aides	40
Civilian Labor Force	41

Source: American Community Survey, 2008

Exhibit 3. Average Number of Ambulatory Office Visits per Person, By Age Cohort



Sources: NCHS National Ambulatory Medical Care Survey, Annual Summaries 1991-2006, and 2007 NAMCS Public Use Data File as prepared by AAMC.

Aging U.S. Population Will Continue to Increase Demand:

An aging population obviously increases demand for health care services, and the baby boom generation turns 65 between 2011 and 2029. In addition to the higher rates of chronic disease among all elderly relative to the young, earlier diagnoses and improved treatment have increased life expectancy for people with diseases such as HIV/AIDS and cancer. As these individuals age, the new geriatric population will have even more long-standing, extremely complex health conditions than age alone would suggest. These factors combine to demand new skills in the health care workforce, and absent any care delivery changes, a need for an incredible number of workers in a wide variety of settings.

Outdated Models of Care Delivery Have Created Workforce Deficits:

Our health care system, like any other industry, is a product of both its history and its current pressures. Today's health care workforce is optimized to deliver care under our existing medical paradigm. Under that paradigm, greater focus is placed on acute care services, i.e., the care of injuries and short-term illness incidents or disease complications, rather than on primary care, preventive care, or managing chronic conditions.[15]

However, it is well-noted that the longer life expectancy of the population, advances in medicine, and new public health challenges (obesity, inactivity) mean that a greater disease burden is attributed to chronic conditions that need to be managed rather than acute conditions that respond well to short-term, intensive interventions. Chronic diseases such as cardiovascular disease, asthma, diabetes, depression and cancer are responsible for 75 percent of health care costs and 70 percent of deaths in the United States annually.[16] Yet the health care workforce composition, training and deployment are all geared towards an acute care delivery model.

Different Settings Have Different Workforce Needs:

Exhibit 4 compares and contrasts the three major settings in healthcare. The settings differ in terms of the services that are delivered, the focus of the services, the composition of the patient base, and the health care workforce used. For instance, more than 85 percent of health workers in long-term care are nurses or nursing or personal care aides, whereas they only comprise 14 percent of the workforce in an inpatient care setting. The nation's health care system needs ways to adapt every level of our health care workforce to new clinical settings and new clinical demands in response to patient need.

Exhibit 4. Characteristics of the Health care Delivery System

	Inpatient Care	Ambulatory Care	Long-term Care
Delivery	• Hospitals	• Doctor's offices • Hospitals * Clinics	• Nursing homes • Home healthcare • Assisted living
Focus of Services	• Acute care	• Preventive care • Acute care • Some chronic care	• Chronic care
Patient Base	• All ages • Older adults over-represented	• All ages • Older adults over-represented	• Overwhelmingly older • Some non-older adults with disabilities
Workforce*	• Registered nurses (38%) • Nursing aides (14%) • Technicians (13%) • Physicians and surgeons (esp. specialists) (7%) • LPN's (6%) • Health care services managers (5%) • Therapists (5%)	• Physicians (17%) • Other practi-tioners (12%) • Technicians (12%) • Registered nurses (esp. nurse practitioners) (11%) • Medical assistants (11%) • Therapists (5%) • Health care services managers (4%)	• Nursing and personal care aides (60%) • Registered nurses (15%) • LPN's (11%) • Health care services managers (3%) • Social workers (3%) • Therapists (2.5%) • Technicians (1%)

Fragmentation, Lack of Care Coordination Compromise Care, Especially for Chronically Ill Patients:

The chart on the left implies a frequent criticism of the health care system: often, the left hand does not know what the right hand is doing. As patients move across care settings, and even between different care providers in the same setting, there is often a fragmentation of services, lack of coordination of services across providers and settings, and insufficient provider knowledge of chronic disease management.[17] This is a small and manageable problem when a patient's health concern is acute or sporadic.

However, effective treatment of chronic illness requires coordination of acute, chronic, and preventive services as well as communication and teamwork among related health care generalists and specialists, as well as non-clinical experts to treat the social challenges presented by disease or the management of disability. It also requires much greater patient engagement, education and knowledge.

The current default is for patients themselves to coordinate care. However, patients are frequently not up to this task due to their poor health, lack of family and social support, as well as the unrealistic expectation that the patient or family members can effectively coordinate extremely technical and complex medical care. The health care delivery system typically offers little assistance in case management and its availability is usually limited to more intensive models of care such as some in-home programs (e.g., hospice), residential care, and nursing home care.

In an AARP study, 66 percent of physicians reported that their training did not adequately prepare them to fill a coordination of care role, and 85 percent of physicians reported that lack of coordination of care for chronically ill patients resulted in serious problems. (AARP, 2003).

From a workforce perspective, this can severely comprise care quality as well as a health care professional's work experience. The professional suffers when there is a lack of recognition that new positions are required on the

* Data are taken from 2000 U.S. Census. Numbers indicate percentage of health care workers in each setting represented by the individual occupation. Ambulatory care includes all health care practitioner offices and outpatient care centers. Long term care includes nursing homes, residential care facilities, and home health care services.

care team, insufficient training specific to this patient base, including new skills and competencies, and a lack of adequate time and support for coordination of care.

Finally, it is worth noting that the chart above outlining the health worker population in various sites of care did not include the patient's home as a care setting. However, many chronic conditions are most effectively managed by small, daily interventions like nutritional changes, electronic monitoring, and compliance with medication. The problem with many care coordination models is that they overlook an essential component to care coordination –the home care worker. This is especially true for models that coordinate care for individuals who are dually eligible for Medicare and Medicaid, many of whom rely heavily on long term care services. Care for the "dual eligible" population is plagued with disproportionately high cost services and poor quality outcomes resulting from a fragmented care system. Home care workers are well positioned to conduct the day-to-day management and monitoring of the individual in their home to better inform the overall care plan and prevent future health problems. These workers are directly able to address the barriers dual eligible individuals face in remaining healthy, such as difficulty making appointments due to mobility limitations, health declines and institutionalization from frequent falls, inadequate food intake, and medication management problems. While there are individual examples of success, our nation as a whole lacks a robust health care infrastructure to effectively educate and support patients outside of institutional settings, and lack job pathways, training paradigms, and organizational supports to link efforts to provide care in the home to care provided in institutional settings.

SEIU is working with providers in Los Angeles, Washington State and Boston to develop care coordination pilots that integrate consumer-directed home care workers into multi-disciplinary care teams providing services for individuals with multiple chronic conditions. SEIU and its partners are creating home care worker training programs that include curricula on specific disease states and monitoring and measurement techniques. They are also exploring ways to facilitate home care worker involvement with other members of the care team and with the consumer to execute a care plan, and ways of extending home care worker responsibility to include regular assessments and review and resolution of presenting problems. Under these models, home care workers could also be responsible for making appointments if the consumer is unable to, arranging transport, and accompanying the patient to the clinic. These pilots could serve as best practice models for larger scale multi-disciplinary care coordination models.

Perioperative nurses are in high demand, but are difficult to train, recruit, and retain. Attrition in some education and training programs can be as high as 50 percent.

In Northern California, Kaiser Permanente, a coalition of California health care unions, and four area community colleges are partnering to reduce the likelihood that caregivers will terminate their education before completion. This partnership is increasing the percentage of perioperative graduates by: creating job shadowing programs for prospective students; providing supplemental coursework and hands-on training; and using a detailed interviewing tool.

Training and Education Must Integrate Clinical Experience and Patient Care

Many educational institutions focus their care training solely in institutional settings, with outpatient sites of care as optional rotations, as separate post-graduate residencies, or left to employer training. In addition, exposure to patient care typically comes long after academic training, instead of being integrated from the first day. Finally, educational programs are often not integrated into providers' specific day-to-day care approaches, resulting in students who cannot "hit the ground running" and often need to be re-trained by employers or supervised for a long period of time before they can work on their own. This creates significant frustration for new workers, and also contributes to turnover and high costs, especially in a worker's first year on the job.

Without formal sector-based connections in local labor markets that link together educational institutions, employers, and worker representatives, , it will be difficult to develop programs that meet the specific needs of health care workforce training at this intersection of tremendous change. These connections can help ensure that health care workers are trained to work in a structure of team-based, patient-focused care, care that cuts across multiple settings, and care that uses cutting edge information and other technologies.

Data and Information Gaps:

Lack of relevant and timely data on the health care workforce is a significant barrier to the development of effective health care workforce programs and policies that could support improvements in the health care delivery system. Expanded, prompt collection of data about the health care workforce is essential for the public and private sector. Otherwise, stakeholders, including educational institutions and the public, cannot respond effectively to shortages.

While there have been major investments in health care workforce development through both federal and state programs, little has been done to systematically evaluate program outcomes. There is a critical unmet need to compare effectiveness of various workforce development strategies to better quantify return on investment as well as impact on patient outcomes.

Section II:

Improving the Efficiency and Quality of Care; Best Approaches to Workforce Challenges

The health care delivery system is attempting to respond to the challenges outlined in the first part of our paper. Increasingly, providers are shifting to integrate care across different settings, as well as renewing their emphasis on primary and preventive care as they move to more effectively manage chronic diseases. There are substantial differences in the approaches that are being employed, driven in part by the structure and organization of participating health care providers, the reimbursement systems in place, the health care needs of the population served, and the availability of appropriate health care workers.

It is not yet clear what models of care are most effective in improving patient outcomes. In addition, health care is an extremely local profession, and it is not reasonable to expect that the care paradigms that are effective in one geographic location or with one patient population will work equally well with other patients in another place. With these caveats in mind, there is emerging general agreement on the principles that underlie more effective care paradigms, and many provider organizations as well as public policies are moving to embrace the following:

- Care that is patient-centered;
- Care that is coordinated among multiple providers and where transitions across care settings are actively managed;
- Team-based care where there is active communication and collaboration between care providers in the delivery of care; and
- Clear accountability for the total care of the patient.[18]

There are also clear indications that some consequences of hierarchical traditions in health care are becoming a significant challenge to ensuring quality care. As indicated earlier, the need for continuous quality improvement – both in terms of cost-efficient operational efficiency and improved patient outcomes – demands constant innovation from front-line workers. But few health care organizations have robust, formal structures to solicit, test, and implement improvement suggestions from front-line staff. This is especially true of non-physician staff. New training paradigms are needed to support front-line innovations in care in the face of a traditional medical culture that does not support these efforts.

There is little substantive information on how the health workforce will be affected by health care reform, but it appears that reform will directly impact the number and types of health care workers needed and the skill sets these workers must have. As new models of care are planned, staffing configurations must:

- Consider current (and future) shortages;
- Incorporate new skill sets, including knowledge of successful disease management strategies, effective provider-to-provider communication, teamwork, use of clinical decision support tools, meaningful use of IT, quality improvement and interdisciplinary collaboration;
- Enable health care providers and the health care workforce to adapt their incumbent workforce to new innovations and changes in the kinds of care demanded; and
- Include culturally competent health care providers.
- Include the full participation of direct care workers in care coordination and care management models.

Successful Elements of Chronic Disease Management:

As noted in the first section of this paper, chronic disease management demands the development of new models of care, and it is the need to respond to the demands of their patients' chronic disease that has driven many providers and policymakers to change care delivery approaches. An estimated 90 million Americans live with one or more chronic illnesses, and this burden will likely increase as the population ages and we more effectively manage diseases which used to be lethal, such as has happened in HIV/AIDS and with some cancers. Chronic illnesses are among the nation's costliest conditions, with five conditions (asthma, diabetes, heart disease, hypertension, and mood disorders) accounting for nearly half of U.S. health care expenditures.[19]

Chronic care treatment must meet different goals from acute case management. It must be proactive in preventing and addressing likely complications and co-morbidities and empowering patients; focus on long-duration episodes of care, rather than isolated incidents, and the team delivering care is multi-disciplinary and

includes many different kinds of providers within a single organization and even across organizations.[20]

A meta-analysis of research on the chronic disease model yielded six elements that were most likely to improve patient outcomes and processes of care for chronic disease.

Elements of the Chronic Care Model

Delivery System Design

Care management roles
Team practice
Care delivery/coordination
Proactive follow-up
Planned visit
Visit system change

Self-Management Support

Patient education
Patient activation/psychosocial support
Self-management assessment
Self-management resources and tools
Collaborative decision-making with patients
Guidelines available to patients

Decision Support

Institutionalization of guidelines/prompts
Provider education
Expert consultation support

Clinical Information Systems

Patient registry system
Use of information for care management
Feedback of performance data

Community Resources

For patients
For community

Health care Organization

Leadership support
Provider participation
Coherent system improvement and spread

Source:[21]

As noted earlier, the health care workforce has historically been structured to provide services based on the acute model of care,[22] which does not anticipate the extended period of supervision, observation, and support across settings and providers demanded by chronic conditions.[23] New models are evolving,[24] and entail a significant redesign of current medical practice.[25]

Widely agreed-upon characteristics of successful disease management programs will demand new skills from current workers, or new classifications of workers to support these efforts. Examples of these programs include:

- more rigorous adherence to clinical guidelines, with clear clinical justifications for deviation;
- support for guideline implementation (e.g., reminder systems, case managers, or specialty involvement in care);
- aggressive follow-up; and
- emphasis on newer self-management approaches rather than traditional patient education.[26]

Effective chronic care management programs often integrate a team approach with complementary roles for various providers. Rather than have all aspects of care handled by a single overworked physician, aspects of care are provided by team members with specialized training and expertise in these areas (e.g. nurse case managers, health educators), which helps ensure appropriate skills as well as adequate time for patient assessment, interaction and follow-up. Such a model often takes advantage of new ways of delivering care, such as integrating electronic reporting via e-mail or other device, telephone support, and even group visits so patients can form peer support groups. This should include a role for home care workers as the “eyes and ears” of the care team in the patient’s home, a role which will provide essential data to inform and adjust, if necessary, the care plan and help prevent worsening and newly developing conditions. This demands new skills of workers; not just training in technological or subject area expertise, but also new ways of communicating information, and new ways of working with their colleagues within new care systems that are more frequently changing to better adapt to the needs of patients.

New Models of Care Demand New Caregiver Skills and Deployment:

Effective chronic disease management calls for new models of care in many settings, which many providers have attempted to implement on their own. In addition, the Patient Protection and Affordable Care Act includes multiple provisions that are intended to change financial arrangements and information systems to support and encourage these changes to primary care.

What has not been outlined in the new legislation's public documents is the cultivation of new skill sets among primary care providers that new care delivery approaches require. These include, but are not limited to:

- Managing and participating in teams (eg., building team culture, team design, participating in decision-making processes, goal setting and oversight of teamwork);
- Negotiation and conflict resolution;
- Incorporating wellness and preventive care;
- Operations design for clinical protocols and medical work flow, staffing models, data requirements, and information flow; and
- Data management and analysis to effectively track clinical performance, financial control, and pay-for-performance contracts.[27]

This points to a need for care organizations to have greater managerial skills among front-line workers and a deeper understanding of organizational and team behavior, as well as the ways complex systems can be improved, or how they may fail and inadvertently harm patients.[28]

The next two entries in this paper examine the workforce implications of patient-centered medical homes and of interdisciplinary care teams as two representative examples of how the health care workforce must change in order to effectively implement care improvements. Interdisciplinary care teams are seen by many as a valuable resource to creating the kind of delivery system infrastructure that enables providers to better care for patients with chronic illnesses, in all health care settings. Patient-centered medical homes were expressly encouraged by the PPACA to help providers better care for chronically ill patients in the primary care setting, so the workforce implications of this new care delivery organization approach are of particular interest.

Patient-Centered Medical Home. The patient-centered medical home, is given special focus by the PPACA, and its workforce challenges are outlined in the section below as a representative example of the kinds of challenges faced by the workforce as we create new systems of care. Within a medical home model, a primary care physician facilitates and manages patient-centered primary care and coordinates care, including care provided by specialist physicians. Depending upon the model, patients may select their own physician or non-physician provider, such as a nurse practitioner, or they may be assigned to a medical home based on the service area in which they reside. Teams are based on patient need and include primary care providers, specialists, midlevel providers, pharmacists, physical and occupational therapists (Rosenthal, 2008). E-mail and/or Internet-based communication may be increasingly incorporated within the medical home model; these must be reimbursed, however, for successful incorporation into the health care structure.

Medical homes are relatively new. Therefore, it will take time to discern the appropriate structures or various dynamics between health care workforce players. Not all aspects of care coordination need to be performed by physicians or nurses, and many of the functions that comprise office-based care coordination may be more effectively conducted by appropriately trained and supervised support staff (Antonelli and Antonelli, 2004). Furthermore, if medical homes improve patient outcomes and reduce unnecessary hospitalizations, specialists and/or hospitals should expect to see a reduction in their revenue. Success will be more likely if primary care reforms, such as the medical home model, are aligned with reform strategies that foster shared accountability among all providers for measurably and transparently improving the quality of care and reducing its cost

Interdisciplinary Care Teams. As noted above, a critical component of many new models of care in all care settings is the use of interdisciplinary teams to address multiple health problems through a case management approach to care. Research of patient care teams suggests that teams with greater cohesiveness and collaboration are associated with better clinical outcome measures, as well as higher patient satisfaction and improved

patient outcomes.[29]

The configurations of these teams should be expected to vary, depending upon the needs of patients and the resources of the health care institutions involved, but typical members include physicians, nurses, social workers, therapists and dieticians. Such teams not only employ a different constellation of professionals than traditional models of care, but may employ them in different settings (e.g., at home rather than in a hospital). The roles for these professionals may also change. Social workers, who currently have limited involvement in the provision of primary care, may experience a tremendous expansion of their role in clinical settings. Dietitians, who serve patients primarily in institutional settings or only treat patients with nutrition-related conditions such as diabetes, may become more visible in routine medicine, helping patients to maintain health in collaboration with other service providers.

While studies suggest that interdisciplinary clinical teams produce outcomes superior to more traditional models, currently there is insufficient research on which combinations of health care workers work best across various health care settings.[30] It is also important to note that interdisciplinary care teams can be mis-characterized as "substitution" for physicians or other care providers. Appropriate care team models are not using an "under-study" approach, and substitution is not the goal. Improved results appear to be possible by creating new kinds of care teams, and at this time it is crucial to determine how we can build teams that work best for improved patient outcomes, based upon care settings as well as on patients' clinical, cultural, and other personal aspects. This is especially true for individuals who receive home care, especially those dually eligible for Medicare and Medicaid. Most consumers who receive long term care in their homes and communities, particularly dual eligible consumers, see a home care worker far more frequently than they would see a doctor, nurse, care coordinator, or other care coordination team member. Consequently, home care workers are best positioned to observe and report changes in consumers' general health and well-being as a vital part of the interdisciplinary care team.

Despite the promise of the interdisciplinary team approach to healthcare, the education and training of health care workers still takes place in disciplinary "silos," giving doctors, nurses and health care workers little guidance in how to interact effectively with other professionals to support a patient's care. Moreover, the clinical roles of medical professionals have traditionally been specialized, with little room for delegating tasks to those outside a particular profession. The shift from autonomous practice with an individual physician to newer models of group based decision-making with shared authority and accountability may be difficult for many physicians, as it is not a model in which they received their original training and can therefore be perceived as a threat to their professional identity.[31]

As the roles and responsibilities of the workforce change in the new models of care, it will be critical to develop new approaches to education and training of the health care workforce based on these emerging models of care and workforce configurations (interdisciplinary models of education and training). The emerging models of health care delivery do not envision the integration of care between providers and settings as a job solely formal 'case management' staff. In addition, care providers need to be able to look across their own "silos" and be able to draw linkages and take a whole systems approach to patient care.[32]

Evidence suggests that existing primary care practices are not well-positioned for this shift, as the required infrastructure – such as IT or care coordination staff and tools – is not widespread, nor are the activities associated with coordinated care such as team meetings, performance feedback, and automated reminders.[33]

Section 2.3 Role of the Health care Workforce in Implementing Better Health care Practices:

The new demands upon the health care workforce go well beyond the development of interdisciplinary care teams and medical homes for primary care. Success of most new care models will, in large part, depend on how well the country's health care workforce is deployed. In addition, the overall cost-effectiveness of our health care system will be significantly impacted by how tasks are distributed. As new service delivery models are developed and their effectiveness evaluated, a holistic approach to workforce development must become a critical component for both investment into and evaluation of the best approaches in terms of health care quality, cost and access.

As the roles and responsibilities of the workforce change within new models of care, it will be critical to develop new approaches to the education and training of the health care workforce based upon emerging models of care and workforce configurations. It is absolutely vital that an equal or greater focus be given to the current workforce as to new workers just beginning their education. The old paradigm of an individual who selected a profession at the beginning of his/her career and then continued to practice with occasional continuing education until retirement no longer applies. Health care workers must be able to grow in their role, and to have access to training and education to expand and even change their role without taking a break from their career. The infrastructure for a flexible, adaptive, and continually improving workforce is essential if our health care system is to transform to meet the challenges ahead.

Below are several specific challenges the health care workforce faces in response to the coming changes in our health care system:

New Professions: With increasing automation of billing and other activities, there will be opportunities to transition workers from purely administrative jobs to jobs more focused on patient care. As we create new professions, programs to certify and train these workers in new professions—without a break in employment – can be implemented first in partnership with health care employers and worker representatives, so that valuable institutional knowledge is not lost as certain job functions become redundant.

At Kaiser Permanente hospitals and clinics throughout California, labor and management have worked to create two programs to leverage the current workforce's linguistic skills. Since 1996, *The Health care Interpreter Certificate Program* has trained more than 1,000 full-time medical interpreters, while the *Qualified Bilingual Specialist Program* has identified, assessed and trained more than 7,000 caregivers to facilitate communication between patients, their families and health care staff. This has resulted in improved workflow, as well as increased patient health and patient satisfaction.

The SEIU 775NW Training Partnership Advanced Home Care Aide Apprenticeship Program

The SEIU 775NW Training Partnership runs the most innovative intermediate level training program for home care workers in this country. In a profession facing chronic workforce shortages largely due to low pay and benefits and substantial barriers to advancement, the Advanced Home Care Aide Apprenticeship Program is a modernized, adult learner centered training program. The Program has created a statewide career track for home care aides which provides access to more highly skilled work and higher rates of pay and benefits. Through this program, entry level home care workers can participate in a competency-based on-the-job training certification program which creates a pipeline to roles with increasing responsibility, possibly as part of a care team. The Partnership is also working with community colleges to link the apprenticeship certificate to high demand college certificates and degrees in healthcare (e.g. Medical Assistant).

Geriatric Training. Workers in some health care professions and occupations will need better training in geriatric issues. The current standards for geriatric education vary by profession and occupation, but generally should be increased through required curricula, continuing education, and establishment of specialty programs or credentials.

New Models of Care. Health care workers in some professions may need to find new ways of providing services. This may include more services being provided at the homes of patients, in group settings, in nursing homes and assisted living facilities, or through the Internet. Home health care and assisted living settings are expected to employ many more health care professionals in the next 10 years or so. Employment in nursing homes is also expected to rise, although more moderately.

Scope of Practice Changes. The formal or informal scope of practice for many professions and occupations may change as a response to greater demand due to

population aging. Many allied professions and occupations (e.g., pharmacy technicians, dental hygienists, therapy assistants, nursing aides) might potentially assume a greater role in providing of services to patients. This is especially true as improved care delivery support systems make it possible for health care workers to access decision support, to access full information about a patient, and for their supervisors to better track the appropriateness of the prescribed treatment plan. These are created at a state level, and there is need to work within and between states to ensure that as delivery systems change, patient care is the paramount driving force in determining the appropriate scope of practice. We must also create appropriate programs to ensure that every worker is being utilized to their maximum and performing to their full scope of practice.

Workforce-Based Programs. Workers will need specific training programs that meet their professional needs and the needs of the employer. New forms of portable and recognized credentialing should be developed for workers who have completed programs and/or practical training in quality improvement, care coordination, and other special skills that are a critical part of the care delivery system. Additionally, with new information and training there are opportunities to bring workers not typically thought of as direct care providers, such as housekeeping staff into the patient care support team.

Innovation in Educational Delivery: A significant challenge for workers, especially mid-career workers, is that a traditional, classroom-based educational or training approach creates barriers to learning. In addition, this presents a special challenge to those who have already committed themselves to rural areas, or high poverty urban areas with poor transportation. Furthermore, as states cut back on public education infrastructure, it becomes accessible to even fewer. Distance education through new technologies is a new, incredible opportunity to give the health care workforce the education they need, at a time and location that is convenient.

Culturally Competent Care. New employees brought into the health care system must be able to provide culturally competent care to effectively treat disease and manage chronic conditions. In addition, we must find new ways to leverage the incumbent employees already in the workforce for the skills they possess, especially their language skills.

Workforce Pipeline Programs: To address current and future shortages, as well as a lack of diversity in the health care workforce, pipeline programs will be needed, especially those focused on recruiting individuals from underserved communities and underrepresented minority groups. Career advancement for incumbent workers facilitates the pipeline process, both by creating opportunities for new workers to fill in existing jobs and also by making entry-level jobs more appealing by demonstrating the potential for career advancement. There is a need for health care facilities and educational institutions to develop programs that address barriers to career advancement such as family responsibilities, a need for remedial education, or lack of financial or other resources to take time off and go to school full time for several years.

Conclusion:

Our health care system has an enormous opportunity in the coming years for policymakers, health care providers, community leaders, and others to come together and change our health care system to more affordably provide the best quality care for every patient.

Achieving this lofty goal demands the participation of every single health care worker at every level of care. When it comes to our health care workforce, we need to address the legacy challenges left to us by years of workforce shortages, outdated training and educational paradigms, and inflexible systems that were often not able to integrate the knowledge and expertise of many front-line workers. We also need to address the new challenges of new systems of care and new delivery options, as well as prepare our health care workforce to better serve patients in a more patient-focused system.

This challenge cannot be solved by focusing on pipeline solutions alone, and it cannot be solved simply by training more doctors and nurses. We must develop innovative solutions to better educate and train our entire health care workforce, including millions of allied health care and service workers, in new ways of delivering care to ensure best outcomes for patients.

We suggest the following principles guide our approach to health care workforce expansion and development in the coming decade ...

1. America's health care system must maximize the skills and deployment of every member of the current health care workforce to the fullest extent of their training and individual capabilities.

2. Our nation's health care workforce must be prepared to meet the evolving needs of the health care delivery system, which will require investing in the following areas: education and training for all workers, recruitment of new health care workers, and opportunities for advancement and career growth for the current workforce.

3. Our national health care system needs a comprehensive approach to workforce structure to deliver the highest quality care. This will require a flexible workforce, one able to effectively transition to more effective models of care delivery and positions that support patient-centered care. It will also require a workforce trained in team-based approaches to care, and in continuous quality improvement.

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