ARIZONA HEALTH WORKFORCE DEMAND IN A RAPIDLY CHANGING MARKET: PERSPECTIVES OF STATE LEADERS

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EXECUTIVE SUMMARY

The implementation of the Affordable Care Act in Arizona rapidly brought about noticeable increases in the share of Arizonans with health insurance. This, in conjunction with continued demographic changes, has 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. A variety of changes have been made to health care delivery, both at the organizational level and at the statewide policy level to address these developments. This report presents findings from interviews with health care leaders across Arizona about the trends they are observing and their expectations for future health workforce needs.

Methods

We conducted interviews with 16 health care leaders to learn their plans and projections about how health care delivery is changing and impacting worker needs.

Summary of Findings

1. The formation of Accountable Care Organizations and establishment of value-based purchasing are accelerating and driving a focus on population health, integrating information systems, and quality-based payments. However, mergers and shifting coverage also cause disruption for patients and health care workers alike.
2. There is a heightened focus on prevention and wellness, and on bringing care out of the hospital and into community settings. This includes the placement of physical facilities, such as clinics and standalone emergency centers; the deployment of workers to home locations, especially in long-term care and community health outreach; the use of technology to enhance remote monitoring and communication across distances; and greater patient engagement in self-management of chronic diseases.
3. An emphasis on patient-centered care ("consumerism") and patient experience, as well as the need for patient self-management, is leading to increased efforts at patient engagement. This requires that health care workers improve their customer service and critical thinking skills, as well as cultural competency training. Patient navigators and care coordinators may be needed in increasing numbers.
4. The integration of behavioral health and primary care is accelerating but the information systems, reimbursement methods, and licensing that would facilitate this change are currently inadequate. Providers and nurses need cross-training in behavioral health and primary care in order to work in integrated models.
5. Health information technologies, especially electronic health records, are common in the workplace. Remote technologies such as telehealth and remote monitoring systems show great potential for expanding access to care, especially in rural areas, but they are not yet widespread due to lack of reimbursement. Staff, providers and patients all need further education in the use of new technologies, and incumbent staff need training in better documentation and drawdown of data to use information systems to their fullest capacity in population management.
6. New models of care are being piloted, such as community paramedicine, team-based care, primary care and behavioral health integration. New roles are also emerging, including the

increased use of community health workers, dental health aide therapists, and potentially clinical scribes.

7. Changes need to be made to health care education to meet the changing needs of the field.
    a. Graduates, particularly providers, need to understand health care reimbursement, health system organization, population health, and the basic tenets of patient-centered care.
    b. Growing dependence on information technology may require more graduates with skills in data analytics, computer system management, and setup and maintenance of hardware systems and security.
    c. A diminished supply of clinical placements necessary for student and new graduate training has inspired education organizations to use technology to coordinate placements and provide clinical simulation experiences for a range of professions.
    d. The expanded emphasis on primary care has increased demand for and expectations of medical assistants, but interviewees indicated that existing programs for medical assistants do not provide sufficient training for employment in new roles and models of care.
    e. New roles may necessitate new degree programs, including those with an interprofessional focus to meet changes in the field.
8. Regulatory changes can facilitate better use of the health care workforce. These include:
    a. Statewide certification of community health workers
    b. Credentialing of medical interpreters
    c. Expanded scope of practice for dental hygienists, nurse practitioners
    d. Streamlined rule packages for primary care and behavioral health to enhance integration
    e. Streamlined licensure processes to decrease cycle time for hiring out-of-state physicians
    f. Increasing and enhancing the state loan repayment program

Conclusions

As health system transformation continues, a combination of regulatory, education, and training changes will be necessary to facilitate new models of care and address changing demographics. There are shortages or maldistribution in some occupations, particularly behavioral health providers, nurses, and some medical providers, especially in rural areas. New occupations are developing that will require new credentials and training programs, while existing occupations are changing as allied health workers take on increased responsibility that will require more advanced training. Most occupations now require skills in care management, patient engagement, new technology, and team-based care. Employers and educators will 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.

Arizona Healthcare Workforce

This report presents findings from interviews with health care leaders across Arizona regarding the trends they are observing and their expectations for future health workforce needs. For this report, interviews with 16 health care leaders were conducted to assess their plans and projections about how health care delivery is changing and impacting worker needs.

Background: From 2004 to 2013, employment grew in all health occupations by over 75% in Arizona. Future growth projections indicate massive shortages in all roles, but especially for physicians and nurses, with shortfalls as high as 30% for registered nurses and 50% for licensed practical nurses. The Affordable Care Act's provisions are also expected to spur growth in emerging occupations and to increase emphasis on social and preventative care needs, such as behavioral health and dental care coverage. For Arizona, the distribution of health care workers is complicated by significant geographic variation within the state. Arizona includes one of the nation's largest metropolitan areas and some of the most rural areas in the country.

Summary of Findings:

- Accountable Care Organizations and the growth of value-based purchasing have increased the focus on population health, integrating information systems, and quality-based payments, but it also has caused system disruptions.
- Healthcare is shifting its focus away from solely clinical settings to community wellness and prevention, with greater requirements for patient self-management.
- Integration of behavioral health and primary care requires greater integration of information, reimbursement methods, and licensing.
- Staff, providers, and patients all need further education in the use of technologies and data documentation.
- New roles and models of care are being piloted. But more is needed.
- Health care education needs: new providers need to learn the basic tenets of patient-centered care, and how to better use information technology; there needs to be better coordination between hands-on experience and clinical simulations; more medical assistants need updated training; and there needs to be new degree programs to accommodate the new roles.
- Regulatory changes can facilitate better use of the health care workforce by streamlining and expanding certifications, licensure, and communication across health care fields.

Interviewees' Top Three Priorities for health workforce development: 1) better use of technology, 2) training and education, 3) recruitment and retention. Their overall responses indicate a need to simplify and update the processes for students to enter health fields *in all roles* and to improve the attractiveness of the field through compensation.

Conclusions: As health system transformation continues, a combination of regulatory, education, and training changes will be necessary to facilitate new models of care and address changing demographics. Most occupations now require skills in care management, patient engagement, new technology, and team-based care. Employers and educators will 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: HEALTH WORKER DEMAND IN ARIZONA

Arizona, along with the rest of the nation, experienced a deep economic recession starting in December 2007 and a slow economic recovery since mid-2009. While the state's economy has been recovering, there have been significant changes in health care financing and delivery. The state restored and expanded Medicaid coverage, and the implementation of the Affordable Care Act (ACA) of 2010 expanded private health insurance access to thousands in the state. The ACA contains provisions that are spurring an increased emphasis on the integration of care, providing high-value care, and considering population health broadly. In addition, Arizona faces an aging population, with increasing rates of chronic conditions and disabilities.[1]

These factors are driving demand for health care workers across the state. Over the past decade, employment grew in all the health occupations in Arizona, from 75,490 in 2004 to 135,070 in 2013.[2] Shortages of many health workers have been reported in recent years, including for physicians, and survey research has revealed that physicians are the most difficult health professional to recruit, followed by nurse practitioners and physician assistants.[3] Licensed nurse shortages also are a significant concern for Arizona, with projections that Arizona will need 87,200 registered nurses (RNs) by 2025, but supply will be only 59,100 RNs, producing a shortfall of 32 percent. Bureau of Health Workforce (BHW) also forecasts a shortfall of 9,590 licensed practical nurses (LPNs), which is about 50 percent of anticipated demand.[4]

Other health care occupations also are facing substantial growth in demand. About 47,000 new jobs are expected in the allied health professions between 2013 and 2020, with the greatest growth projected for personal care aides, medical records and health information technicians, emergency medical technicians and paramedics, medical and health services managers, medical assistants, and pharmacy technicians. The Affordable Care Act's provisions also are expected to spur growth in emerging occupations, such as expanded function dental assistants, community dental health coordinators, health and transition coaches, community health workers, and integrated care case managers.[5]

The challenge of meeting anticipated demand for health care workers is made more complex by the significant geographic variation found in Arizona. The state has one of the largest metropolitan areas in the United States and some of the most rural areas in the country.[6] The numbers of physicians,

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[1] Borns, Kristin, and VanPelt, Kim. Health Workforce, Healthy Economy. Arizona Health Futures Policy Primer, December 2014.
[2] Data from the Arizona Department of Administration, reported in Irvine, Jane, and William G. Johnson, Allied Health Needs Assessment. Phoenix, AZ: Maricopa Community Colleges. May 14, 2015.
[3] Tabor, Joe, Nick Jennings, Lindsay Kohler, Bill Degnan, Howard Eng, Doug Campos-Outcalt, and Dan Derksen. Arizona Center for Rural Health 2015 Supply and Demand Study of Arizona Health Practitioners and Professionals. Tucson, AZ: University of Arizona. February 2016.
[4] Bureau of Health Workforce, Health Resources and Services Administration, U.S. Department of Health and Human Services. The Future of the Nursing Workforce: National and State-Level Projections, 2012-2025. Rockville, MD: U.S. Department of Health and Human Services. December 2014.
[5] Irvine, Jane, and William G. Johnson, Allied Health Needs Assessment. Phoenix, AZ: Maricopa Community Colleges. May 14, 2015.
[6] Borns, Kristin, and VanPelt, Kim. Health Workforce, Healthy Economy. Arizona Health Futures Policy Primer, December 2014.

physician assistants, nurse practitioners, RNs, and pharmacists per 100,000 population are substantially higher in urban settings of Arizona than rural settings.[7]

To understand the impact of Arizona's aging population, growing insurance coverage, and changing delivery system on current and future needs for health care workers, the Vitalyst Health Foundation and the City of Phoenix commissioned the University of California, San Francisco (UCSF), to conduct a study of current and future health workforce needs in the state. The first phrase of this study involved surveys of hospitals, community health centers, long-term care facilities, and home health agencies in Arizona. The second phase of this survey, which is the focus of this report, involved conducting interviews with 16 state leaders regarding the workforce pressures faced by their organization, their perceptions of employment and education needs, and their expectations for the future.

[7] Tabor, Joe, Nick Jennings, Lindsay Kohler, Bill Degnan, Howard Eng, Doug Campos-Outcalt, and Dan Derksen. Arizona Center for Rural Health 2015 Supply and Demand Study of Arizona Health Practitioners and Professionals. Tucson, AZ: University of Arizona. February 2016.

METHODS

A Steering Committee was convened to guide this research. We developed a list of categories of health care workforce leaders and experts, such as clinic leaders, health system leaders, educators, and state government officials, and developed a list of potential interviewees within each category. The Steering Committee and research team collaborated to prioritize invitations and develop interview questions.

After obtaining approval from the UCSF Committee on Human Research (UCSF's Institutional Review Board), email invitations were sent to 20 individuals between March 22 and April 28, 2016. We conducted semi-structured interviews with 16 people to learn their perceptions of changes in the state's health care delivery system, how these changes will affect workforce employment and training, and their organization's plans to adapt to the rapidly-changing environment. All interviews were at the executive level, were voluntary, and followed the guidelines outlined by the Committee on Human Research.

Six of the interviewees were representatives of statewide associations representing behavioral health, long-term care facilities, hospitals, human resources directors, Native American tribes, and nurses. Interviews were conducted with leaders from two community health centers, two home health agencies, one long-term care facility, and one large health care system. Three interviews were conducted with representatives of Arizona's higher education institutions, and one interview was conducted with a representative of state government.

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 Arizona. Appendix A lists the interview questions that served as a guide for each interview. Questions were modified depending upon expertise of the interviewee.

Interview notes were analyzed to identify key themes describing changes in health care delivery in Arizona, and how these changes are impacting health workforce needs. Challenges faced by interviewees were examined, as were recommended solutions.

FINDINGS

Drivers of change

Interviewees identified multiple factors that are driving changes in health care delivery in Arizona. The rebounding economy and the implementation of the Affordable Care Act (ACA) with the Medicaid restoration/expansion in 2013 brought about a dramatic increase in insurance coverage and a surge in demand for health care services in Arizona. However, the state is facing shortages of medical, dental, and mental health providers, which have been exacerbated by cuts during the recession of 2007-2009, particularly in rural areas.

The mandates of the Affordable Care Act (ACA) are leading to an emphasis on population-based and prevention-oriented care. Related changes in reimbursement models that reward quality rather than volume-based incentives are pushing health care organizations to produce measurable quality improvements—and to make more effective use of technology to track and compile these measures. However, new payment models are still in early stages and not widespread.

Health information technology (HIT) implementation requirements established by the Federal government, as well as financial incentives for meaningful use of HIT, are driving the development of new computer and phone systems, especially in federally-qualified health centers (FQHCs). The widespread use of electronic health records (EHRs) both facilitates and hinders care according to interviewees. It can enhance the ability of organizations to track outcomes, share data, and delegate tasks, but it also confounds interpersonal interactions between patients and clinicians. More advanced technologies like telehealth and home monitoring hold promise to improve access and quality of patient-provider interactions, but reimbursement and training challenges have thus far precluded their widespread adoption. While technology is cited as a potential facilitator in patient care, the benefits are yet to be fully realized for most organizations.

In addition, the ACA included reauthorization of and updates to the Indian Health Care Improvement Act, which allowed Indian Health Services (IHS) to participate in the health care reform, helped modernize systems, and led to an increase in third party revenues to IHS hospitals and clinics. These factors are increasing the demand for care services among the Native American population, and providing more resources to IHS facilities.

Factors driving change at the state level include the transfer of Behavioral Health services out of the Department of Health Services and into the AHCCCS (Arizona Health Care Cost Containment System), Arizona's Medicaid managed care system. The re-institution of KidsCare (CHIP) in Arizona, which will start on September 1, 2016 after a six-year freeze, also helped increase access to, and demand for, care.

Demographic factors are also playing a part in driving change, including an aging patient population, with an increase in chronic disease and cōmorbidities, as well as an aging health care workforce. The need to address behavioral health issues such as substance abuse, dementia and Alzheimer's disease in conjunction with primary care is also changing how care is delivered and organized. The large number of veterans in the state has increased the need for appropriate behavioral health services, and may be a factor behind the relative youth of the long-term care population. Finally, an increase in the number of

single, childless adults in the long-term care population will require changes in workforce composition and compensation as the sector relies less on adult children to provide care.

Despite the increases in health insurance coverage, Arizona has many undocumented residents who are not covered by the ACA or Medicaid expansion. In addition, many providers, especially dental providers, will not accept Medicaid beneficiaries, providing further challenges to accessing care.

New models of care

Many health care organizations, particularly in the Phoenix area, are forming accountable care organizations (ACOs). Banner, Dignity, and Honor Health were mentioned as important players making the shift from fee-for-service reimbursement to value-based reimbursement, with a related focus on population health. Hospital systems have purchased primary care practices in an effort to meet ACO requirements and also acquired smaller hospitals. Some FQHCs are also moving to partner with ACOs and hospitals. This has occurred at the same time as the buyout of insurance companies by other companies, resulting in shifting insurance for patients.

Some organizations are starting to implement team-based care and patient-centered medical homes. This requires that primary care staff in particular work in interdisciplinary teams often made up of physicians and other providers, including nurses, medical assistants, nursing assistants, behavioral health providers, and others.

Large health care organizations have established more urgent care clinics and free-standing emergency departments in a bid to keep individuals out of the hospital emergency rooms. Free-standing emergency rooms are a fairly new development and are open around the clock, although patients would need to be transferred to a hospital for surgery and overnight stays.

Many health care organizations are working towards greater integration of mental and physical health care. A large share of FQHCs have done so for some time, utilizing staff like social workers to help with depression screening and aiding patients in self-management of chronic conditions. The state has a CDC grant to develop integrated systems of care and develop self-management tools for community clinics. At the state level, Regional Behavioral Health Authorities (RHBAs) have been contracted to develop "health homes" that integrate behavioral and physical health for those with serious mental illnesses (SMIs). Under these plans, adult Medicaid beneficiaries with SMIs can receive coordinated, integrated physical and behavioral health care services under one plan and in one place. Behavioral health organizations serving those with SMIs are taking on primary care provision and applying to become FQHCs. However, licensure, Medicaid reimbursement issues and other differences between the information and billing systems established for behavioral and physical health challenge this integration at many organizations, and reported salary differentials between physical and behavioral health staff generate further complications.

Oral health continues to be an area in which a shortage of providers and lack of access to services plague low-income communities and those living in rural areas. Arizona's Medicaid agency – the Arizona Health Care Cost Containment System (AHCCCS) – does not generally cover the cost of adult dental care except for patients of the Arizona Long Term Care System (ALTCS) or in cases of emergency, although

children's dental services are covered. Many dentists reportedly will not work with AHCCCS due to low Medicaid reimbursement rates. This has provoked health care organizations to look at cross-training other physical care providers to do basic oral health screenings, and to experiment with alternative staffing such as dental health aide therapists on reservations or extended scope for dental hygienists, as well as teledentistry to increase access in remote areas.

Overall, interviewees cited a shift towards a "Culture of Health" with a greater focus on health than health care, and an effort to bring health care services into the community and the home. This trend includes home-based care for aging in place, a greater emphasis on self-management for patients with chronic diseases, more health promotion and wellness activities, and an increased role for telehealth to allow patients to monitor conditions and share health information with clinicians from home.

The role of technology

Technology innovations are being explored by health care organizations as potential solutions to some of the challenges associated with the state's distribution of health care workers and provider shortages. A number of those interviewed discussed the potential of telehealth, particularly in rural areas where patients may be isolated and home health visits require hours of driving time. One interviewee observed that a single nurse can monitor 40 to 50 long-term care patients using telehealth technology. However, the costly technology and lack of reimbursement are challenges to full implementation. Home health monitoring also holds promise, especially in rural areas and for those with long-term care needs. This technology could potentially enhance patient engagement in monitoring their own health conditions and reporting back to providers without leaving their homes. The challenge is in validating the home health technology and integrating it with the EHR, as well as training staff and patients to use it properly.

One particular challenge to better leveraging technology for new models of care has to do with sharing health information across physical and behavioral health systems as organizations move to integrate these two aspects of health. Tackling federal requirements around billing and service delivery, and developing and managing IT systems that can handle this integration, will require more sophistication from staff.

Finally, technology can help improve accountability, particularly for staff that meet with patients in their own homes or in the field, by ensuring that staff encounters with patients are recorded with the time of arrival, services provided, and duration of visit.

Rural regions

Shortages of health care workers were reported to be more common in rural areas, and skilled staff and providers are harder to recruit and retain in these areas. Recruiting physicians is particularly difficult, especially surgeons, and organizations find that they also sometimes need to find employment for spouses in order to recruit. Loan repayment programs were cited as one tool for recruitment, although there is reportedly not enough money in the state-supported program. Behavioral health practitioners have recently been included as eligible for loan repayment programs partially due shortages of these providers in rural areas.

Interviewees discussed deploying new types of health care workers such as community health workers, dental health aide therapists, mobile teams, and community paramedicine to reach those in remote communities, including Native American reservations. A pilot community paramedicine program has begun training paramedics throughout the state to provide preventive care in the community, especially for those most at risk of using the 911 system. AHCCCS will begin reimbursing "treat and refer" activities in October 2016.

Many of those interviewed indicated that they actively support programs to interest local high school students in health occupations. However, some also noted that it can be difficult to hire locally and maintain privacy when communities are too small to provide a degree of anonymity. Some organizations use contingent labor and traveling nurses when permanent staff is difficult to recruit and retain.

Impact of changes in the health care system on the health care workforce

Increases in health care demand are spurring new efforts at recruitment and retention, as well as more creative uses of staffing and technology. The increase in demand has required that primary care provider organizations utilize staff more efficiently. This includes increasing the number of nurse practitioners and physician assistants, and requiring that all staff work at the top of their education and scope of practice. With a shortage of providers in some fields, and an increased focus on primary care, many health care organizations are relying more on allied health workers such as medical assistants (MAs), and community health workers (CHWs). However, greater reliance on these types of workers, particularly MAs, is necessitating additional training in soft skills and other competencies that allow them to work at as high a level as permitted by scope of practice regulations. Greater emphasis on population health and primary care has increased the demand for medical assistants, particularly those with good patient communication skills, as health care organizations open more community-based facilities.

Growing insurance coverage for behavioral health services has led to greater demand for behavioral health workers. However, many interviewees indicated that there is a shortage of behavioral health providers, particularly in safety net clinics and in rural areas. Behavioral health trainees who are interested in rural practice have faced challenges due to the need to have adequate supervision during training. Regulations managed by the Board of Behavioral Health Examiners were modified to allow 90% of clinical supervision to be provided electronically via Skype or teleconference so that marriage and family therapists (MFTs) and other providers can finish their clinical hours in rural areas.

Several interviewees noted that the labor market for nurses is complicated. Many indicated that there was a shortage of nurses, and expressed concern that, with an average age of 55, many RNs might need to transition out of acute care and into other roles in hospitals, such as care coordination. However, due to the lack of "new grad" training programs that allow younger nurses to obtain the training and experience needed to fill acute care positions, hospitals are facing a shortage.

Long-term care (LTC) is a growing field due to the aging local population, the large number of people moving to Arizona to retire, and "snowbirds" who live in the state only part of the year. This creates a periodic surge in need for LTC workers, which makes it difficult to staff agencies and organizations that provide long-term care services. Interviewees reported an ongoing shortage of LPNs, the predominant

worker in this field, as well as Certified Nursing Assistants (CNAs). The lack of a career ladder for entry level staff such as CNAs makes it difficult to retain and develop this group of workers. Interviewees also reported shortages of occupational, physical and speech therapists in long-term care. These shortages sometimes result in "poaching" between organizations and inflated salaries.

Some long-term care organizations, which have relied on LPNs and CNAs, have needed to hire more RNs due to rising complexity of patient conditions. However, many RNs reportedly have a hard time adjusting to long-term care employment because much of the work is one-to-one with patients in their homes. There is also a growing need for staff to assist patients with daily functions such as shopping, cleaning, cooking, and accessing medical appointments. One organization noted that these functions are often delivered separately, and that they are moving toward integrating these services into one position – the Attendant Care Worker—who is often retirement-age and frequently a family member.

The introduction of new technology like telehealth or remote monitoring could make health care organizations more efficient, which can increase the capacity to see patients, but also might entail reductions in the workforce. One interviewee noted that the current demand exceeds capacity, and thus it is more likely that technology will be used to increase capacity and access to care. However, many interviewees indicated that health care organizations lack the workforce with specific skills to make full use of new technology tools. While many of those interviewed saw positive benefits to new technology, a few interviewees noted that some nurses and providers are unhappy with EHR documentation requirements that often distract them from their patient focus. This is particularly true for older health care workers. Clinical scribes were noted as one possible solution for assisting providers during patient encounters. Several interviewees noted that technology could not replace the need for face-to-face interactions and critical thinking skills for the practitioners using the new technology.

Finally, the mandate that employers with 50 or more employees provide health insurance might have an adverse impact on the workforce. Health care organizations and agencies might choose to downsize to keep their FTEs below 50 in order to avoid the requirement, or they might choose to use independent contractors to avoid this provision.

Turnover and retention

Interviewees noted both burnout and high demand for certain classes of workers as being important factors in turnover and retention. They cited turnover rates from 14 to 75% depending on occupation and health care sector, with most reporting somewhere around 25%. While burnout has always been a factor in health care, the unusually high demand brought about by Arizona's participation in health care reform and its Medicaid expansion have increased demand and wages for certain types of health care workers. This varies a great deal by occupation. There continues to be a nursing shortage, and nurses appear to frequently change jobs for higher wages and better working conditions, as are occupational, physical, and speech therapists. Employers also noted that nurses are being "poached" by competitor organizations. Some interviewees cite high employee engagement as being key to their successful retention efforts.

Four interviewees in statewide organizations indicated that there was a problem with turnover at the leadership level. As one noted, "The overall changes in health care are affecting leaders. Trying to come

up with a strategic direction is a real crap-shoot right now." However, three interviewees in provider organizations indicated that most of their turnover was for frontline staff, not leadership.

Changes needed to ensure an adequate health care workforce

Those interviewed were asked about the changes they think are needed to ensure that the health care workforce of Arizona can meet current and future health care needs. A variety of recommendations were made regarding the skills required for health workers in the future, educational changes that would ensure adequate skills and numbers of workers, and regulatory changes.

New skills needed for new and existing health care workers

Changes in health care – including the desire to integrate physical, dental, and mental health services – are necessitating new skills and knowledge among existing staff.

- **Training for behavioral health and primary care integration**. Medical providers were cited as needing more education in neuroscience and neuropsychiatry to better understand patient conditions, and more training in using CT scans and MRIs to monitor brain conditions.
- **Training for dental health and primary care integration**. Medical clinicians might need some training in assessing the health of teeth and gums in order to refer patients for dental care or to provide some simple suggestions on oral health care.
- **Interprofessional training** is increasingly necessary for those working in team-based care as patient-centered medical homes became more prevalent.
- **Basic computer skills** are a challenge for older providers and RNs, but also challenging for frontline workers with limited educational preparation, including some mental health and substance abuse peer providers. The continued advance of electronic health record systems requires that staff have good computer skills in order to document patient visits for billing and compliance purposes.
- **Understanding federal requirements for billing and coding** is a growing area of concern as new types of allied health staff became eligible for reimbursement.
- **Data analytics/health informatics/health information technologists**. Staff with expertise in setting up health information and phone systems, trouble-shooting problems, and training other staff to use them was mentioned as an area of need. In addition to more operations-focused staff, individuals with the skills to extract and analyze data from these systems are needed to realize the full potential of these new systems.
- **Translation and cultural competency skills**. The paucity of providers with bicultural and bilingual skills who can communicate with the patient population was cited as an ongoing problem—both for those serving Spanish-speaking populations and on tribal lands. Some providers are utilizing medical assistants as translators. However, as one interviewee observed, just because a staff member is bilingual does not guarantee good medical translation skills. Skills assessment and medical translator training for existing staff is important because many primary care organizations cannot afford to employ translators in a separate role.
- **Training in chronic disease management**, especially for frontline care workers who may observe symptoms they can convey to licensed staff, and training in insurance navigation, were new skills applicable to frontline staff.

- **Soft skills/communication skills**. Patient engagement skills, customer service, and communication skills are critical for incumbent staff and for new graduates entering the health care field. One organization has developed training modules for providers in how to communicate with MAs and patients, and another for MAs to communicate with patients and providers. However, one interviewee observed an improvement in recent years due to health care organizations' emphasis on patient satisfaction ratings. Critical thinking skills also came up as important but often lacking, especially in frontline staff.
- **Understanding patient-centered care**. In addition to improving skills in communicating with patients, staff and providers need to understand what patient-centered care is and how it is operationalized to work in the new models of care like the patient-centered medical home. Taking input from patients is difficult for some providers.
- **Care coordination** skills were cited as very important for new models of care aimed at keeping patients, especially long term care patients, healthy in their homes. Care coordinators can assist patients with accessing necessary care and services as well as tracking their care over time to make sure that their care is followed through and integrated.
- **Using incumbent health workers more efficiently**: Existing staff, such as medical assistants and paramedics, can be cross-trained to provide more preventive care when providers are in short supply.

Skills gaps in new graduate preparation

New graduates into health care occupations sometimes lack important skills and knowledge needed by employer organizations. Specific areas of education were recommended by many of those interviewed.

- **Geriatrics training**: For those working in long-term care, in particular, training in geriatrics is vital to addressing the needs of the state's large senior population. However, it was noted that few new graduates or new employees come prepared with this knowledge.
- **Health care financing and value-based purchasing**. One interviewee noted that medical faculty and, consequently, medical students have little training in health care financing. Existing staff and administrators need additional training in how to prepare for payment reforms.
- **Clinical skills for medical assistants**: As primary care becomes more dependent on the roles of staff like medical assistants, training programs need to prepare these students for expanded roles and responsibilities. However, many come into employment lacking basic clinical skills and sometimes do not have sufficient primary education to function properly.
- **Clinical experience for new RNs**: New RN graduates might not receive enough clinical time in their nursing programs to be prepared to "hit the ground running" when they graduate; as a result, they find it difficult to find employment.
- **Behavioral health technicians**: Many organizations use behavioral health technicians (BHTs), who are often individuals with undergraduate degrees in psychiatry or social work, to address licensed provider shortages. However, because BHTs do not have clinical training to work in the field, they require a great deal of on-the-job training and some purportedly enter the field with unrealistic expectations and subsequently encounter difficulties with the reporting requirements.

Changes needed in health care education

Health care education will need to change to address these skills gaps and new skills needs. In addition, the new occupations and job titles necessary for the changing health care environment are still under development. Interviewees made recommendations regarding how education needs to change, and has changed, to address these needs. Some of those interviewed noted partnerships between educator and employer organizations.

- **"Grow your own" strategies** are one solution to shortages, particularly in rural areas. Employers need to partner with educators to hire and train local people. This will require a focus on programs that interest rural high school students in health careers in their own communities. Some community college programs have online and hybrid health career programs and/or campuses near rural communities.
- **RN residency programs**. New graduate programs sponsored by health care organizations can provide clinical training that new RNs lack and can help address the nursing shortage in hospitals, but these programs are in short supply.
- **New categories of health care worker training**. Educational programs are working with health care employer organizations to develop training programs and degrees for new roles. For example, one community college has developed a program in health care technology systems, which focuses on hardware, as opposed to the software and compliance focus of health information management programs. Arizona State University has developed a College of Health Solutions that takes an interdisciplinary approach to health care and includes degree programs like the Science of Health Care Delivery, which includes topics such as population health, systems engineering, and information science.
- **Concurrent enrollment programs/collaborative programs**. Collaborative programs between community colleges and universities provide one avenue for addressing shortages, including the shortage of clinical laboratory scientists. Interviewees noted the collaborative program between Arizona State University and Phoenix College which allows students to simultaneously earn an associate and a baccalaureate degree through a hybrid online/in-person program while pursuing part of their clinical hours in a state-of-the art simulation lab. Associate's degree-to-bachelor's degree programs in nursing are growing in response to employer interest in hiring baccalaureate-educated RNs.
- **Clinical simulation**. The lack of clinical placements available to health education programs has been exacerbated by the mergers and expansions taking place between health care organizations, which have precluded accepting students for clinical rotations. One response is to develop more robust clinical simulation training facilities and programs.
    - **Integrating clinical placement systems**. Maricopa Community Colleges and local large health care organizations formed a consortium to manage clinical placements. They instituted a set of pre-clinical modules for students and faculty in 45 allied health and 8 nursing programs in the region to standardize preparation for clinicals. They also adopted a cloud-based platform that allows them to centralize placement operations and track hours, relieving health care organizations of the burden of individual tracking and placement operations.

- **Programs for veterans**. Arizona has a large number of veterans, and developing methods of recruiting and training veterans for new careers was cited as important not only for veterans' financial viability, but to fill shortages.
- **Improved medical assistant training**. The quality of medical assistant training needs to be improved to address employer needs.
- **Stronger clinical training for behavioral health care students**. There is some concern that behavioral health and social work programs are not adequately preparing students to work in public health. Graduates need to have stronger clinical training and more background in trauma-informed care and specialized treatment.
- **Better preparation in both behavioral and physical health**. NPs need better preparation in behavioral health, and psychiatric NPs need better training in physical health, to address the need for more cross-trained staff in the integration of physical and behavioral health. Care managers that communicate between the physical and behavioral health side will be in demand, particularly for those with chronic diseases.
- **More community-based placements**. There is a dearth of places to train health professionals in the community. Investing in training infrastructure focused on FQHCs and other ambulatory sites, as well as in rural hospitals and critical access hospitals, would help recruitment efforts in underserved communities.

Regulatory changes

A number of regulatory changes could be made, or have recently been made, that could facilitate needed changes in the health care workforce to address the changing health care landscape.

- **Behavioral analysts**. Arizona was one of the first states to license behavioral analysts. Behavioral analysts work with people with developmental disabilities and autism. Their current location for licensing (the Psychology Board) has limited their scope of practice and some interviewees would like the licensing transferred to the Board of Behavioral Health Examiners to spur a change in the approach to care and because this move might make their services reimbursable.
- **Community health workers.** Although a number of interviewees noted the important role of CHWs and Tribal Health Representatives, there is not yet any certification for CHWs in Arizona. If CHWs were certified, their work would be reimbursable.
- **Oral health care workers**. Expanded scope for dental hygienists would allow for greater access to care where there are shortages of dentists. In 2015, legislation was passed allowing for the use of the dental health aide therapist role on tribal lands.
- **Pharmacists.** Scope enhancement (advanced practice pharmacy designation), similar to what has been established in North Carolina and California, would allow pharmacists to work as providers and prescribe family planning services and medication therapy management.
- **Nurse practitioners.** Medicare does not permit NPs to order home health services for patients. While Arizona has legislation to allow NPs to practice to their full scope, federal law has not yet caught up.
- **Referrals to home health**. Physicians do not want to refer to home health because the process is onerous. This concerns federal regulation that some Arizona interviewees identified as a problem.

- **Integrating primary care and behavioral health**. While there has been a lot of emphasis on primary care and behavioral health integration, regulations have maintained two separate sets of regulations regarding how licensure can happen. The rule packages need to be streamlined into one so the process is less prohibitive.
- **Standardize outcomes in pay-for-performance**. Provider efficiency might be improved if insurance companies could reduce and standardize the number of pay-for-performance metrics providers are required to meet.
- **Increase the adoption of value-based reimbursements** to support new models of care.
- **Integrate dental care and expand access**. AHCCCS does not cover the cost of dental care for adults, with the exception of long-term care. There needs to be an incentive to integrate oral health care and primary care because dental and physical health are closely linked.
- **Credential medical interpreters**. Cultural and linguistic competency is a critical factor in helping minority communities seek care. However, Arizona does not have a credentialing process for health care interpreters. This might both improve translation services and provide a pay increase for those providing this service.
- **Expanding the state loan repayment program**. Until 2015, the state loan repayment program covered primary care and some dental care providers (primary care physicians, dentists, and advanced practice providers like nurse practitioners, physician assistants, and nurse midwives). As of 2015, it includes mental health, pharmacy and geriatric providers, and the annual dollar amount for providers has been increased. This pool of money could be expanded in the next competition via a federal match if the state or other entities were willing to contribute more.

Interviewees' top three priorities

Interviewees were asked to rank their top three priorities for health workforce development. One theme that came up repeatedly (six mentions) was **better use of technology**, especially better implementation of electronic medical records and enhanced training so that staff could input and draw from these records more effectively.

Five interviewees noted that improved **training and education** for incumbent staff and new graduates were of top importance.

Four noted that **recruitment and retention**, particularly of doctors and nurses, was their top priority.

Four noted that better recognition, training, and wages for the **paraprofessional workforce** would help improve care and workforce retention. One noted that credentialing CHWs would standardize training and improve reimbursement for this class of worker. For one, the increase in paraprofessionals was more of a problem than a benefit due to the fact that these positions were not reimbursable and/or required extensive supervision for reimbursement—either way necessitating more licensed provider staff.

Three interviewees commented that **improving reimbursement and wages** would help address issues around recruitment and retention.

Two believe that the state needs to do a better job **streamlining licensing requirements** so that providers and other clinicians could move into the workforce faster.

Other priorities included expanding the scope of practice for advanced practice registered nurses; expanding the state's loan repayment program so that the program could draw down more federal money and incentivize employment in shortage areas; expanding residency programs in shortage areas for the same reason, and generally addressing recruitment and retention issues and shortages.

CONCLUSIONS

As health system transformation continues, a combination of regulatory, education, and training changes will be necessary to facilitate new models of care and address changing demographics. There are shortages or maldistribution in some occupations, particularly behavioral health providers, nurses, and some medical providers, especially in rural areas. New occupations are developing that will require new credentials and training programs, while existing occupations are changing as allied health workers take on increased responsibility that will require more advanced training. Most occupations now require skills in care management, patient engagement, new technology, and team-based care. Employers and educators will 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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APPENDIX

Interview Guide: These are the general questions that will be asked of each interviewee. 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? (prompt: creating an ACO, lower Medicare reimbursements, Medicare penalties for poor quality, more competition in the market, lower private insurance reimbursements, aging of the population, changes in networks and affiliations)
    b) Do these changes include new models of care such as integrating physical and mental health, patient-centered medical home, retail clinics, etc.?
    c) How rapidly are these changes occurring?
    d) Do think these changes will accelerate, decelerate, or continue at the same pace over the next 3-5 years?
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 your think the health care workforce might need to change?
       Prompt: Numbers of workers, ages of workers, types of workers, training, change in what they do?
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? (Preliminary work – overall skills, soft skills, interprofessional skills) (Also keep content on clinical or specific skills)
    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), Medicaid payment policies, etc.?
    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?
    Probe: Change in composition, training needed, overall numbers and distribution across the state's regions?
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? (prompts: clinical experience, soft skills?)

Probe: If this is regional employer, ask about differences in these gaps across regions of the state.

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. (Specifically, how would you suggest this be addressed?)
d) Have you considered developing your own training program or partnering with a program that could? Why or why not?

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) What about turnover of leaders?
    b) How might turnover be addressed?
    c) How do you keep providers engaged and avoid burnout?
    d) Do you have a retention plan?
11. For rural areas: When you have a serious shortage, how are you addressing it? (prompts: travelers, loan repayments, etc.)
    a) Are there innovative models you are using or considering to address needs? (prompts: mid-level, CHWs, etc)
12. In summary, what would be your top 3 priorities to address in planning for and preparing our state's future health care workforce?
13. Is there anything else you'd like to add that we have not asked?