Uploaded to the VFC Website

2019

This Document has been provided to you courtesy of Veterans-For-Change!

Feel free to pass to any veteran who might be able to use this information!

For thousands more files like this and hundreds of links to useful information, and hundreds of "Frequently Asked Questions, please go to:

Veterans-For-Change

If Veterans don't help Veterans, who will?

Note: VFC is not liable for source information in this document, it is merely provided as a courtesy to our members & subscribers.

STRENGTHENING THE CONNECTION BETWEEN HEALTH PROFESSIONS EDUCATION AND PRACTICE

PROCEEDINGS OF A JOINT WORKSHOP

Patricia A. Cuff and Erin Hammers Forstag, *Rapporteurs*

Global Forum on Innovation in Health Professional Education

Board on Global Health

Health and Medicine Division

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

THE NATIONAL ACADEMIES PRESS
Washington, DC
www.nap.edu

THE NATIONAL ACADEMIES PRESS 500 Fifth Street, NW Washington, DC 20001

This activity was supported by contracts between the National Academy of Sciences and Academic Collaborative for Integrative Health, Academy of Nutrition and Dietetics, Accreditation Council for Graduate Medical Education, Aetna Foundation, American Academy of Nursing, American Association of Colleges of Nursing, American Association of Colleges of Osteopathic Medicine, American Association of Colleges of Pharmacy, American Board of Family Medicine, American College of Obstetricians and Gynecologists, American Council of Academic Physical Therapy, American Dental Education Association, American Medical Association, American Nurses Credentialing Center, American Occupational Therapy Association, American Osteopathic Association, American Physical Therapy Association, American Psychological Association, American Speech-Language-Hearing Association, Association of American Medical Colleges, Association of American Veterinary Medical Colleges, Association of Schools and Colleges of Optometry, Association of Schools & Programs of Public Health, Association of Schools of Allied Health Professions, Athletic Training Strategic Alliance, Council on Social Work Education, Jonas Nursing and Veterans Healthcare, Josiah Macy Jr. Foundation, National Academies of Practice, National Association of Social Workers, National Board for Certified Counselors, National Board of Medical Examiners, National Council of State Boards of Nursing, National League for Nursing, Organization for Associate Degree Nursing, Physician Assistant Education Association, Society for Simulation in Healthcare, University of Michigan Center for Interprofessional Education, University of Toronto, U.S. Department of Veterans Affairs, and Weill Cornell Medicine–Qatar. Any opinions, findings, conclusions, or recommendations expressed in this publication do not necessarily reflect the views of any organization or agency that provided support for the project.

International Standard Book Number-13: 978-0-309-49096-2
International Standard Book Number-10: 0-309-49096-0
Digital Object Identifier: https://doi.org/10.17226/25407

Additional copies of this publication are available from the National Academies Press, 500 Fifth Street, NW, Keck 360, Washington, DC 20001; (800) 624-6242 or (202) 334-3313; http://www.nap.edu.

Printed in the United States of America

Suggested citation: National Academies of Sciences, Engineering, and Medicine. 2019. *Strengthening the connection between health professions education and practice: Proceedings of a joint workshop*. Washington, DC: The National Academies Press. doi: https://doi.org/10.17226/25407.

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

The **National Academy of Sciences** was established in 1863 by an Act of Congress, signed by President Lincoln, as a private, nongovernmental institution to advise the nation on issues related to science and technology. Members are elected by their peers for outstanding contributions to research. Dr. Marcia McNutt is president.

The **National Academy of Engineering** was established in 1964 under the charter of the National Academy of Sciences to bring the practices of engineering to advising the nation. Members are elected by their peers for extraordinary contributions to engineering. Dr. C. D. Mote, Jr., is president.

The **National Academy of Medicine** (formerly the Institute of Medicine) was established in 1970 under the charter of the National Academy of Sciences to advise the nation on medical and health issues. Members are elected by their peers for distinguished contributions to medicine and health. Dr. Victor J. Dzau is president.

The three Academies work together as the **National Academies of Sciences, Engineering, and Medicine** to provide independent, objective analysis and advice to the nation and conduct other activities to solve complex problems and inform public policy decisions. The National Academies also encourage education and research, recognize outstanding contributions to knowledge, and increase public understanding in matters of science, engineering, and medicine.

Learn more about the National Academies of Sciences, Engineering, and Medicine at **www.nationalacademies.org**.

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

Consensus Study Reports published by the National Academies of Sciences, Engineering, and Medicine document the evidence-based consensus on the study's statement of task by an authoring committee of experts. Reports typically include findings, conclusions, and recommendations based on information gathered by the committee and the committee's deliberations. Each report has been subjected to a rigorous and independent peer-review process and it represents the position of the National Academies on the statement of task.

Proceedings published by the National Academies of Sciences, Engineering, and Medicine chronicle the presentations and discussions at a workshop, symposium, or other event convened by the National Academies. The statements and opinions contained in proceedings are those of the participants and are not endorsed by other participants, the planning committee, or the National Academies.

For information about other products and activities of the National Academies, please visit www.nationalacademies.org/about/whatwedo.

PLANNING COMMITTEE ON STRENGTHENING THE CONNECTION BETWEEN HEALTH PROFESSIONS EDUCATION AND PRACTICE[1]

Barbara Brandt (*Co-Chair*), National Center for Interprofessional Practice and Education
Lucy Savitz (*Co-Chair*),* Kaiser Permanente Center for Health Research
Kennita R. Carter, Health Resources and Services Administration
Ronald Cervero, Uniformed Services University of the Health Sciences
Steven Chesbro, American Physical Therapy Association
Sara E. Fletcher, Physician Assistant Education Association
Erin Fraher, University of North Carolina at Chapel Hill
Alex F. Johnson, Massachusetts General Hospital Institute of Health Professions
Christine M. MacDonell, Commission on Accreditation of Rehabilitation Facilities International
Javaid I. Sheikh,* Weill Cornell Medicine–Qatar
Joanne Spetz, University of California, San Francisco
Kate Tulenko,* Corvus Health

Consultants

Jill Duncan, Institute for Healthcare Improvement
Brenda K. Zierler, University of Washington

*Assisted in planning but unable to attend the workshop.

[1] The National Academies of Sciences, Engineering, and Medicine's planning committees are solely responsible for organizing the workshop, identifying topics, and choosing speakers. The responsibility for the published Proceedings of a Joint Workshop rests with the workshop rapporteurs and the institution.

GLOBAL FORUM ON INNOVATION IN HEALTH PROFESSIONAL EDUCATION[1]

Caswell Evans (*Co-Chair*), University of Illinois at Chicago College of Dentistry
Deborah Powell (*Co-Chair*), University of Minnesota
Malcolm Cox (*Co-Chair Emeritus*), University of Pennsylvania, formerly U.S. Department of Veterans Affairs
Susan Scrimshaw (*Co-Chair Emeritus*), The Sage Colleges
Frank Ascione, University of Michigan
Timi Agar Barwick, Physician Assistant Education Association
David Benton, National Council of State Boards of Nursing
Joanna Cain, University of Massachusetts Medical School
Kathy Chappell, American Nurses Credentialing Center
Steven Chesbro, American Physical Therapy Association
Amy Aparicio Clark, Aetna Foundation
Darla Spence Coffey, Council on Social Work Education
Darlene Curley, Jonas Nursing and Veterans Healthcare
Jan De Maeseneer, Ghent University
Marietjie de Villiers, Stellenbosch University
Kim Dunleavy, American Council of Academic Physical Therapy
Kathrin (Katie) Eliot, Academy of Nutrition and Dietetics
Elizabeth (Liza) Goldblatt, Academic Collaborative for Integrative Health
Catherine Grus, American Psychological Association
Susan Hanrahan, Association of Schools of Allied Health Professions
Neil Harvison, American Occupational Therapy Association
Eric Holmboe, Accreditation Council for Graduate Medical Education
Elizabeth Hoppe, Association of Schools and Colleges of Optometry
Holly Humphrey, Josiah Macy Jr. Foundation
Emilia Iwu, Jonas Nursing and Veterans Healthcare
Pamela Jeffries, The George Washington University School of Nursing
Sandeep (Sunny) Kishore, Young Professionals Chronic Disease Network
Kathleen Klink, Veterans Health Administration
Chao Ma, Peking Union Medical College
Andrew Maccabe, Association of American Veterinary Medical Colleges
Laura Magaña Valladares, Association of Schools & Programs of Public Health
Lucinda Maine, American Association of Colleges of Pharmacy

[1] The National Academies of Sciences, Engineering, and Medicine's forums and roundtables do not issue, review, or approve individual documents. The responsibility for the published Proceedings of a Joint Workshop rests with the workshop rapporteurs and the institution.

Beverly Malone, National League for Nursing
Mary E. (Beth) Mancini, Society for Simulation in Healthcare
Angelo McClain, National Association of Social Workers
Lemmietta G. McNeilly, American Speech-Language-Hearing Association
Mark Merrick, Athletic Training Strategic Alliance
Donna Meyer, Organization for Associate Degree Nursing
Warren Newton, American Board of Family Medicine
Björg Palsdottir, Training for Health Equity Network (THEnet)
Miguel Paniagua, National Board of Medical Examiners
Rajata Rajatanavin, Mahidol University
Lucy Savitz, Kaiser Permanente Center for Health Research
Wendi Schweiger, National Board for Certified Counselors
Nelson Sewankambo, Makerere University College of Health Sciences
Stephen Shannon, American Association of Colleges of Osteopathic Medicine
Javaid I. Sheikh, Weill Cornell Medicine–Qatar
Susan Skochelak, American Medical Association
Zohray Talib, The George Washington University
Maria Tassone, University of Toronto
Deborah Trautman, American Association of Colleges of Nursing
Michelle Troseth, National Academies of Practice
Richard (Rick) W. Valachovic, American Dental Education Association
Cynthia A. Walker, Medtronic
Alison J. Whelan, Association of American Medical Colleges
Adrienne White-Faines, American Osteopathic Association
Xuejun Zeng, Peking Union Medical College
Brenda Zierler, University of Washington

Health and Medicine Division Staff

Patricia A. Cuff, Senior Program Officer
Ambar Saeed, Research Associate (*through September 2018*)
Anna Fahlstrom, Research Assistant
Daniel Cesnalis, Financial Associate
Julie Pavlin, Director, Board on Global Health

Reviewers

This Proceedings of a Joint Workshop was reviewed in draft form by individuals chosen for their diverse perspectives and technical expertise. The purpose of this independent review is to provide candid and critical comments that will assist the National Academies of Sciences, Engineering, and Medicine in making each published proceedings as sound as possible and to ensure that it meets the institutional standards for quality, objectivity, evidence, and responsiveness to the charge. The review comments and draft manuscript remain confidential to protect the integrity of the process.

We thank the following individuals for their review of this proceedings:

Ron Cervero, Uniformed Services University of the Health Sciences
Gerri Lamb, Center for Advancing Interprofessional Practice, Education and Research
Leslee Taylor, Commission on Accreditation of Athletic Training Education
Kate Tulenko, Corvus Health

Although the reviewers listed above provided many constructive comments and suggestions, they were not asked to endorse the content of the proceedings nor did they see the final draft before its release. The review of this proceedings was overseen by **Bruce N. Calonge,** The Colorado Trust. He was responsible for making certain that an independent examination of this proceedings was carried out in accordance with standards of the National Academies and that all review comments were carefully considered. Responsibility for the final content rests entirely with the rapporteurs and the National Academies.

Contents

1

Introduction[1]

This workshop, said Barbara Brandt, director of the National Center for Interprofessional Practice and Education (the National Center), which co-hosted the event, will explore "the intersection of health professions education and practice." Both sectors, she continued, are working toward the same goal of improving the health of patients and populations, without compromising the mental stability and well-being of the workforce or its learners. However, while education and practice have the same goal, there is a need for greater alignment between the sectors to more fully realize these desired outcomes. For example, said Brandt, educators, practitioners, and administrators must learn to adapt and respond to the growing role of technology within a wider context in order to most effectively apply higher education within health systems.

These messages of cross-sector collaboration opened the joint workshop, which brought together members of the National Academies of Sciences, Engineering, and Medicine's Global Forum on Innovation in Health Professional Education with affiliates of the National Center. Held on November 13 and 14, 2018, in Washington, DC, this open event was titled Strengthening the Connection Between Health Professions Education and Practice, and offered a unique opportunity for both groups to

[1] The planning committee's role was limited to planning the workshop, and the Proceedings of a Joint Workshop was prepared by the rapporteurs as a factual account of what occurred at the workshop. Statements, recommendations, and opinions expressed are those of individual presenters and participants and are not necessarily endorsed or verified by the National Academies of Sciences, Engineering, and Medicine. They should not be construed as reflecting any group consensus.

explore urgent issues. The objective of the workshop, said Brandt, was to explore ways of "effectively educating the needed health workforce in settings appropriate for high quality clinical practice, while also assessing the necessary investments and potential outcomes of new models of care with learning." (See Box 1-1 for the full Statement of Task.)

Brandt underscored one of the core beliefs of the National Center, which is that health delivery systems and the health professions education must transform simultaneously. Both systems, she said, need to shift toward a more interprofessional, outcomes-based model. While many people agree that such a shift is necessary, added Brandt, there are a wide range

BOX 1-1
Statement of Task

An ad hoc committee will plan and conduct a 1.5-day public workshop to explore methods and methodology for bridging health professions education and practice in ways that improve information flow between learning and application. The workshop will look at various models of training by bringing together multiple health professions across the education-to-practice continuum. Invited presentations and discussions will engage a global audience in topics such as

- Analyzing the implications of a rapidly changing health system on the education, training, and re-training of health professionals
- Examining emerging research on learning and application of health professions education
- Designing education to reflect a future health system within a global and interconnected society
- Considering external factors—like financing, availability of preceptors, faculty reward and development, and community engagement—that form the supportive elements to better integrate key aspects of education and practice
- Utilizing continuing professional development and workplace learning for evaluating the effectiveness of information flow between education and practice
- Increasing access to experiential opportunities while analyzing how trainees might provide increased value in practice that is in line with the trend toward value-based payments

The committee will develop a workshop agenda, select and invite speakers and discussants, and moderate the discussions. Following the workshop, a proceedings of the presentations and discussions at the workshop will be prepared by a designated rapporteur in accordance with institutional guidelines.

This workshop is a joint activity with the National Center for Interprofessional Practice and Education, whose aim is to connect and integrate education and care together.

of opinions on how to make it happen. This workshop was designed to explore the range of opinions by examining different models and by facilitating interprofessional and cross-sectoral conversations.

The 1.5-day workshop began with presentations on a series of topics, and ended with participants dividing into breakout groups. These small group discussions allowed participants to engage with colleagues from other professions and across sectors while encouraging in-depth exploration of the topics. Appendix A lays out the agenda set up by the workshop planning committee (see page v for the list of planning committee members). This Proceedings of a Joint Workshop follows the general structure of the agenda. Chapter 2 summarizes the presentations and conversations on workforce and training data. It also explores the challenges of making data-driven changes in workforce and education. Chapter 3 focuses on patients' roles within care and education innovations, as well as the importance of keeping the patient at the center of a rapidly changing system. Chapter 4 explores the role of health care in developing the health workforce. Chapter 5 captures the presentations and conversations about two innovative models of health professional training: one based in a prison setting and one based in public housing. Chapter 6 summarizes discussions raised around the small group conversations, which explored ways to support the next generation of educators. Chapter 7 builds on Day 1 discussions by dividing the participants into two tracks: Track One explored strengthening connections among all stakeholders within and across education and practice, whereas Track Two looked at preparing health professionals to work in an evolving health system. This final chapter ends with messages of urgency expressed by individual participants after engaging in 1.5 days of intense dialogue on how best to strengthen the connections between health professions education and practice. It is noted in Chapter 6 but should be underscored for the entire proceedings that any suggestions made throughout the workshop and captured in this Proceedings of a Joint Workshop were made by individual participants and should not be interpreted as consensus opinions or recommendations.

2

Workforce and Training Data

Highlights

- The shift away from hospital employment is not reflected in the training of health professionals. (Fraher)
- In addition to the challenges in finding settings and supervisors, there are stringent regulatory requirements about who can oversee nursing education, which could complicate efforts to have nurses trained in community-based settings. (Corless, Fraher)
- Transforming the system will require "humility by all involved" and resisting the tendency to protect one's own profession. (Bushardt)
- Students and faculty need to better understand the realities of the health care system. (MacDonell, Skochelak)
- A change in training toward greater community-based settings would require a shift in dollars. (Cox, Spetz)

NOTE: These points were made by the individual workshop speakers/participants identified above. They are not intended to reflect a consensus among workshop participants.

CURRENT WORKFORCE DATA

In order to move ahead with new care and delivery models, said Erin Fraher, associate professor in the department of family medicine at the University of North Carolina at Chapel Hill, it is critical to begin with a data-based understanding of the current state of the health workforce. Some of this data was presented by Fraher, who focused her presentation on four needs-based arguments:

- New care delivery and payment models require a broader definition of who is in the health workforce.
- Health care services and the health workforce are shifting into ambulatory and home settings; therefore, training needs to reflect this shift.
- Efforts to reform training need to focus not just on the workforce pipeline but also on retooling the existing workforce.
- Higher quality data are needed to measure shifts in employment, training, and clinical placements.

Current Health Care Workforce

Fraher began with an overview of the people who make up the health workforce. She noted that, while the workforce is often thought of in terms of "traditional" professions such as physicians and nurses, there are a wide variety and a huge number of other professions within health care. Professionals such as nursing assistants, social workers, and mental health workers are growing in number and are "increasingly at the forefront" of health care, said Fraher. Tables 2-1 to 2-3 provide a snapshot of the range and distribution of the health care workforce in 2017.

Shift Away from Hospitals

Most of the people working in health care, said Fraher, are not employed in hospitals. Among professionals classified as health practitioners and technical/support staff, 39 percent work in hospitals. Yet, 42 percent work in ambulatory settings, 15 percent in nursing and residential care facilities, and 5 percent in social assistance settings (note in Fraher, 2018: Sums to 101 percent due to rounding). Job growth is also heavily weighted toward non-hospital settings (see Figure 2-1). In 2018 alone, said Fraher, the ambulatory sector added 21,100 jobs—representing more than 60 percent of all new health care hires—compared with 8,200 new hospital hires.

Several changes in the health care system are contributing to the move away from hospital employment, added Fraher, including an increasing

TABLE 2-1 Health Care's "Traditional" Jobs in a Sampling from 2017

Who is in the health workforce? The usual professions you think of...			
Sample Health Care Jobs in the United States, 2017			
Physicians and Surgeons	877,616	Pharmacists	309,330
Nurse Practitioners	234,000[a]	Optometrists	37,240
Physician Assistants	122,555	Chiropractors	33,630
Registered Nurses	2,906,840	Occupational Therapists	126,050
Licensed Practical and Licensed Vocational Nurses	702,700	Physical Therapists	225,420
Dentists	198,517	Speech Therapists	142,360
Dental Hygienists	211,600	Respiratory Therapists	128,250
Total (sample professions):	6,256,108		

[a]This number has been revised since prepublication release.
SOURCE: Presented by Fraher, November 13, 2018.

TABLE 2-2 Support Occupations in a Sampling from 2017

Who work with many others			
Sample Support Occupations in the United States, 2017			
Nursing Assistants	1,453,670	Psychiatric Technicians and Aides	65,770
Home Health Aides	820,960	Phlebotomists	122,550
Medical Assistants	646,320	Surgical Technologists	100,270
Pharmacy Technicians and Aides	453,680	Opticians Dispensing	75,450
Dental Assistants	337,160	Ophthalmic Medical Technicians	48,060
Therapy Assistants and Aides	194,850	Orderlies	52,630
Health Information Technicians	204,220	EMTs	251,860
Total (sample professions):	4,827,450[a]		

[a]This number has been revised since prepublication release.
NOTE: EMT = emergency medical technician.
SOURCE: Presented by Fraher, November 13, 2018.

TABLE 2-3 Mental Health and Social Service Workforce in a Sampling from 2017

And increasingly with mental health and social service workers			
Sample Mental Health and Social Service Occupations in the United States, 2017			
Health Care Social Workers	167,730	Substance Abuse, Behavioral Health and Mental Health Counselors	241,930
Mental Health and SUD Social Workers	112,040	Community Health Workers	54,760
Social and Human Service Assistants	384,080	Marriage and Family Therapists	42,880
Rehabilitation Counselors	103,840	Clinical, Counseling, and School Psychologists	108,060[a]
Total (sample professions):	1,215,320		

[a]This number has been revised since prepublication release.
NOTE: SUD = substance use disorder.
SOURCE: Presented by Fraher, November 13, 2018.

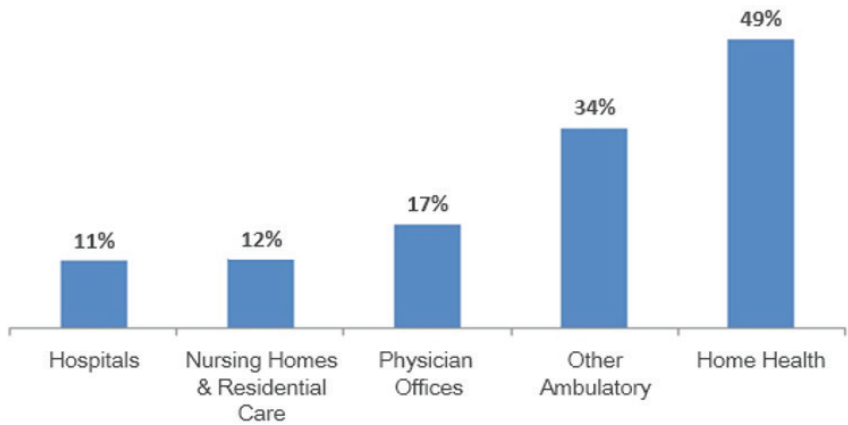

FIGURE 2-1 A decade's worth of health care job growth identified by setting, 2007–2017.
SOURCES: Presented by Fraher, November 13, 2018. Authors' analysis of Bureau of Labor Statistics Current Employment Statistics data. Ani Turner, Charles Roehrig, Katherine Hempstead, What's Behind 2.5 Million New Health Jobs?, *Health Affairs Blog*, March 17, 2017, https://www.healthaffairs.org/do/10.1377/hblog20170317.059235/full (accessed July 26, 2019). Copyright © 2017 Health Affairs by Project HOPE–The People-to-People Health Foundation, Inc.; Turner et al., 2017.

focus on social determinants of health, new fee-for-service models, and payers referring more patients for home health services. However, this shift away from hospital employment is not reflected in the training of health professionals. Most health professionals are still trained in acute care settings, said Fraher, and there is "an unwritten supposition" that health professionals need to start in inpatient settings to gain the necessary skills (Bodenheimer and Mason, 2016). This idea is now being questioned and there have been calls in fields such as nursing and pharmacy, Fraher said, to expand workforce training into the variety of settings in which professionals will actually work. For example, the American Society of Health-System Pharmacists Research and Education Foundation released a report in 2015 that predicted a major shift from inpatient to outpatient care and included a call for pharmacy staff development programs to "ensure that there are adequate opportunities for education and training in management of ambulatory care pharmacy practice, transitions of care, and medication management of chronic illnesses" (Beans, 2016). Inge Corless, the forum representative from the American Academy of Nursing, remarked that significant challenges exist to finding appropriate placements and supervisors for training nurses outside of the acute care setting. Fraher agreed and said that in addition to the challenges in finding settings and supervisors, there are stringent regulatory requirements about who can oversee nursing education, which could complicate efforts to have nurses trained in community-based settings. Fraher added that such challenges are not unique to nursing, and that as patient support moves away from acute care, every health profession will have to grapple with how to train workers in home and community-based settings.

These data (shown in Figure 2-1) along with shifts in care, said Fraher, require a broader definition of the health care workforce. Workforce planning efforts need to engage workers, in home- and community-based settings, including such health care professionals as patient navigators, community health workers, paramedics, and dietitians. Workforce training needs to acknowledge and support integrated care delivery models that utilize health professionals in new ways and require interprofessional collaboration, added Fraher. For example, social workers—who were traditionally not included in health workforce data—can serve as behavioral health specialists, can manage and coordinate care among health care teams, and can refer patients to community resources (Fraser et al., 2018).

Perhaps most importantly, remarked Fraher, is the broadening definition of the health care workforce that includes the patient, family, and community as essential parts of the team. Health care team models that engage the patient, Fraher said, can promote shared decision making; encourage providers to do more asking, listening, and educating; emphasize a focus

on health literacy, coaching, and goal setting; and honor and validate the work of caregivers and families.

Fraher shared an example of a patient-centered, interprofessional model of community-based health care: Community Aging in Place—Advancing Better Living for Elders (Johns Hopkins School of Nursing, 2019). This program allows a senior to age in his or her own home with the help of a team that includes an occupational therapist, a registered nurse, and a handyman. The team works together to make home modifications and provide assistive devices that help the patient navigate his or her home more safely. Participation in the program, which is currently active in 12 cities, has been shown to alleviate symptoms of depression and improve the individual's ability to perform activities of daily living. This program, said Fraher, is a great example of how non-traditional health care workers—such as handymen—can serve as essential members of a patient's interprofessional care team.

Retooling the Current Workforce

Discussions about training for the future of health care largely focus on redesigning the curricula used to prepare students to enter the work environment. However, said Fraher, new entrants comprise a very small percentage of the overall workforce (see Table 2-4). The health care system will not be transformed by new entrants, she said, but by the workforce that is already employed in the system: To facilitate such a transformation, training would need to be "embedded in collaborative practice environments that benefit patients, learners, and the health care system." Fraher commented that one of the biggest challenges in retooling the current workforce is that "time spent training is not time spent billing." Health systems are reluctant to take providers away from patient care for training, no matter how valuable it may be in the long run. Another challenge, she said, is that providers do not have the curricula or systems in place to educate the existing workforce. One way to address this, she suggested, might be to develop modular courses around specific topics, such as care coordination or patient engagement.

Fraher said that the focus is often on the "shiny new graduates" but that, in order to make real change, the existing workforce must be addressed. Joanne Spetz at the University of California, San Francisco, added that another strategy is to help create motivation for the existing workforce to retool. Spetz told participants about a Health Resources and Services Administration–funded project in Los Angeles County and its focus on a "mission of transformation" in order to motivate the workforce to redevelop their skills. The project brought nurses together to talk about professionalism and the nursing role, and to train in specific skills. It also brought

TABLE 2-4 Number of Health Professionals in the Workforce Versus New Entrants to the Workforce as Identified Within Select Professions for the Year 2012

Profession	Total Workforce	New Entrants	New Entrants as a Percentage of Total Workforce
Physicians	835,723	21,294[a]	2.5%
Physician Assistants	106,419	6,207	5.8%
Registered Nurses	2,682,262	146,572	5.5%
Licensed Practical Nurses and Licensed Vocational Nurses	630,395	60,519	9.6%
Dentists	157,395	5,084	3.2%
Chiropractors	54,444	2,496	4.6%
Optometrists	33,202	1,404	4.2%
Social Workers	724,618	41,769	5.8%
Physical Therapists	198,400	10,102	5.1%
Occupational Therapists	90,483	6,227	6.9%

[a]The number of physician graduates includes those completing medical and osteopathic schools in the United States; it does not include graduates of foreign medical schools who enter the pipeline at the graduate medical education level, also known as residency training.
SOURCE: Presented by Fraher, November 13, 2018.

in students from a local university. The engagement and interaction between nurses and students energized everyone to get involved in creating a better system. Fraher said that, ultimately, retooling will only be successful if the existing workforce becomes comfortable with taking on new roles and letting go of their traditional tasks; in her view, this can be one of the harder barriers to overcome. Reamer Bushardt, a pharmacist, physician assistant, and senior associate dean at The George Washington University, added that transforming the system will require "humility by all involved" and resisting the tendency to protect one's own profession.

Better Data

Finally, said Fraher, better data are needed to monitor workforce trends in employment and education. The data that are currently available are not always an accurate reflection of reality. For example, if a nurse works in an ambulatory practice that is owned by a hospital, the data may inaccurately count the nurse as a hospital employee. Another data gap, said Fraher, is

in capturing the health care workers—such as social workers—who act as bridges between ambulatory and inpatient care. In order to fully understand the current workforce and the trends occurring in health care, concluded Fraher, it is critical that the data collected are accurate and complete.

THE FUTURE WORKFORCE

The U.S. population, like that of the rest of the world, is aging, said Joanne Spetz, an economist at the University of California, San Francisco. Projections show disproportionate growth in the number of people older than 65: that growth is particularly pronounced among those older than 85 (see Figure 2-2). These are the ages, said Spetz, at which there are increasingly complex, serious diseases and both cognitive and functional losses taking place. Alzheimer's disease is a particular concern in this age group. Projections suggest that the number of older people with Alzheimer's will increase from 4.7 million in 2010 to more than 13 million by 2050 (see Figure 2-3).

Spetz asked the pressing question: Who is going to take care of this aging population and their complex health issues? A 2008 Institute of Medicine report projected that there will be a need for 3.5 million additional

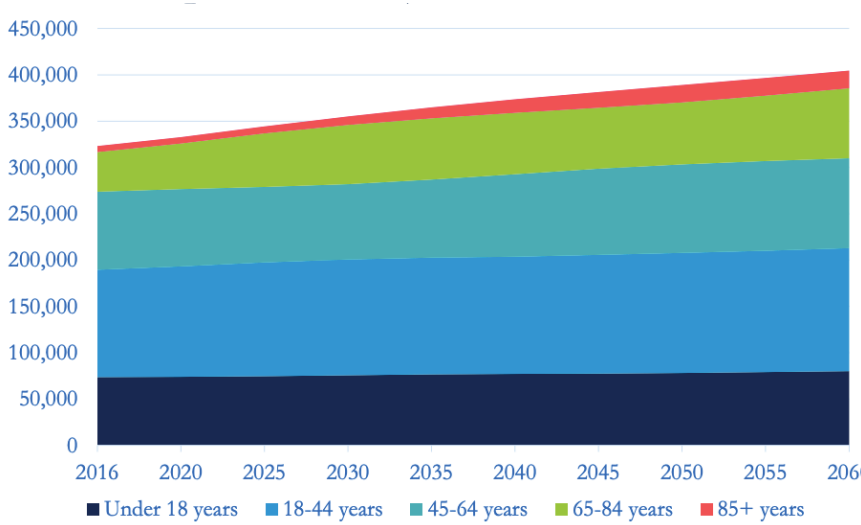

FIGURE 2-2 U.S. population projections by age group, as measured in thousands. SOURCES: Presented by Spetz, November 13, 2018. Projected Age Groups and Sex Composition of the Population: Main Projections Series for the United States, 2017–2060. U.S. Census Bureau, Population Division: Washington, DC.

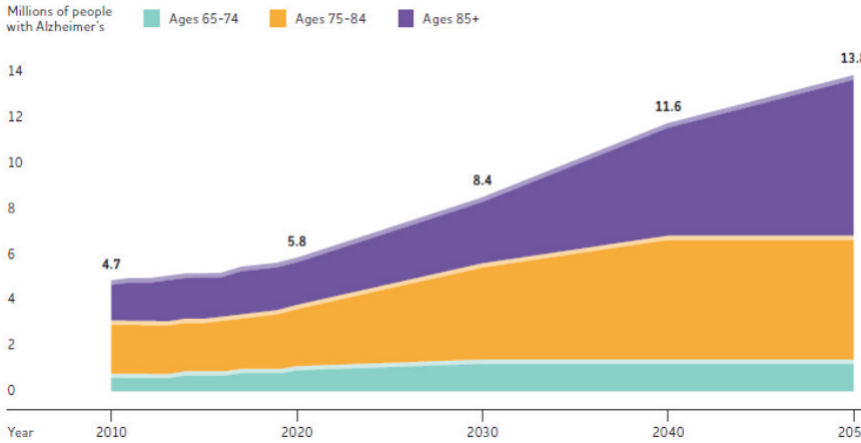

FIGURE 2-3 Projected numbers of people aged 65+ with Alzheimer's disease.
SOURCES: Presented by Spetz, November 13, 2018; Alzheimer's Association, 2018; U.S. Census Bureau, 2017.

health care workers in order to meet the continued needs of the population by 2030. This type of long-term care (LTC) primarily takes place in home- and community-based settings, said Spetz, with only 25 percent of LTC occurring in institutions such as nursing homes and assisted living facilities. Because of the variety of settings for LTC, that workforce is also varied: Institutions are primarily staffed by certified nursing assistants and licensed practical nurses who are supervised by registered nurses (RNs), while patients in home- and community-based settings are cared for by a combination of people: family members, friends, clergy, community members, direct-care workers, nurses, therapists, counselors, pharmacists, and physicians (see Figure 2-4).

Spetz remarked that, while the health care workforce is often thought of in terms of physicians, physicians actually make up only a small percentage of the caregivers in LTC. However, physicians do play an important role in providing and coordinating related forms of care. The number of physicians specializing in areas relevant to this population is low. Spetz further noted that many training program slots in geriatrics go unfilled. Of those which are filled, she said, up to 80 percent are supported by international students—an indicator that the United States is not producing a sufficient supply of geriatricians to fill the nation's requirements. Retention is also an issue. With half of all U.S. geriatricians failing to recertify, there is now a projected shortfall of 13,000 geriatricians by 2030 (Kottek et al., 2017). A similar shortfall is projected within palliative care. Despite the obvious overlap between these two specialties, there are few opportunities for dual

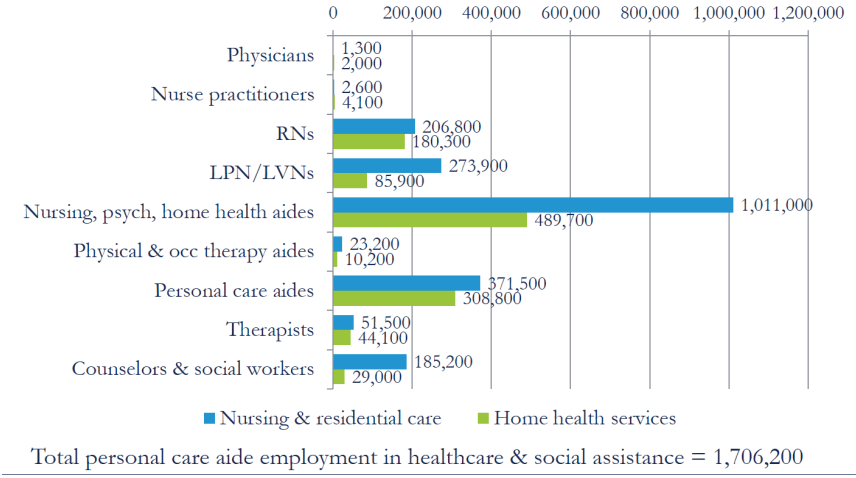

FIGURE 2-4 Various jobs in long-term care for the year 2016.
NOTE: LPN/LVN = licensed practical nurse/licensed vocational nurse; occ = occupational; psych = psychiatric; RN = registered nurse.
SOURCE: Presented by Spetz, November 13, 2018.

specialization or cooperation between fields, Spetz pointed out. Pamela Jeffries, dean of nursing at The George Washington University, commented on the accreditation system for palliative care nursing, which she said recently changed. Nurses can now sit for certification without having special academic training in the area and this has reduced the number of people enrolled in associated specialty programs.

Spetz said the majority of the LTC workforce is made up of nurses, home health aides, and personal care aides (privately employed workers who assist with daily care activities). Nurse practitioners employed in nursing and residential care facilities are a rapidly growing part of the LTC labor market, she added, particularly in comparison with physicians and physician assistants. Home health and personal care aides also make up a large percentage of the LTC workforce, although the job titles, education, and requirements for these workers vary widely. In California, home health aides are employed by home health agencies, certified by the Department of Public Health, and must have 120 hours of education and training. Unregistered home care aides, in contrast, are employed directly by consumers. They are not required to be certified or registered or to undertake any education or training. There are a number of other categories of home workers, said Joanne Spetz at the University of California, San Francisco, each with their own training and certification requirements (or lack thereof),

including affiliated or independent registered home care aides and in-home support services providers.

Spetz underscored the importance of adequate training. If these workers even receive training, she said, it is almost never in collaboration with other members of the health care team, such as nurses or physicians. Unfortunately, this means that various workers who are taking care of patients have not learned to work together or to communicate effectively. Spetz noted that team communication is particularly important if the patient has dementia or Alzheimer's. Susan Scrimshaw, the recent past president of The Sage Colleges and former co-chair of the forum, observed that home health care workers are doing a "tremendous amount of very valuable work." Proper training, she said, would enable them to identify risks and to reach out to the rest of the team when a patient needs additional attention. Spetz responded by saying that Washington State has been working to develop a training and professionalization program for home workers, one that creates a career ladder along which additional specialization and knowledge may lead to better pay. Spetz further remarked that Washington expects the program to lead to "lower emergency department visits, fewer hospitalizations, and fewer institutionalizations." There are some other "glimmers of hope" in interprofessional training for home and community-based care, she said: a Centers for Medicare & Medicaid Services (CMS) (2019) test project called Independence at Home Demonstration trains and analyzes outcomes of home care–based teams led by physicians and nurse practitioners; Veterans Health Administration programs train patient-aligned care teams; and other small pilot projects that train home care aides to be collaborative care team members.

PROVIDER PERSPECTIVE ON TRAINING

Chris MacDonell, a managing director at the Commission on Accreditation of Rehabilitation Facilities (CARF) International, said that its accreditation system works with providers of rehabilitation services in 27 different countries. MacDonell sent a survey to 1,000 CARF-affiliated providers in the United States to learn more about workforce development and management. The 78 survey responses were compiled and presented at the workshop. Results showed that 72 percent of providers offered clinical internships and 53 percent offered pre-clinical experiences. Those experiences included both inpatient and outpatient rehabilitation, which is in contrast to other professions, wherein more student opportunities are in the outpatient arena. MacDonell captured the general opinion of the respondents who work with students, quoting one of them as saying: "Working with students is an excellent way to keep our employees current [and] develop their mentoring/leadership skills. [It] has been one of the

most successful recruitment strategies for new grads. Definitely worth the time invested!"

In the survey, MacDonell asked providers about challenges they faced working with students in rehab settings. The main challenge—cited by more than 25 percent of survey respondents—was a lack of available staff to precept students. Other challenges included interference with productivity requirements, insufficient communication with the university or college, and students being inadequately prepared for work in clinical settings. MacDonell noted that concerns with productivity expectations and staff shortages were also commonly reported, as was the view that "seeing patients" ultimately takes priority over training students.

The survey included questions about what educators should consider when developing or revising their student experiences. According to MacDonell, providers gave a lot of feedback in this area, which included the following considerations:

- Students should have realistic expectations about working in the real world. For example, a student in a placement may only have 20 minutes to do an assessment rather than several hours.
- Students should understand the restrictions and requirements of billing guidelines, particularly Medicare rules.
- Education systems should consider the financial burden on the clinic sites. One respondent expressed a fear that "placing the burden on the clinic sites will substantially impact the number of clinical sites in the future."
- Students are often unprepared for the demands of the work environment: the productivity expectations, the ability to streamline priorities, the ability to interact with relevant populations, etc. MacDonell noted that a particular concern was with the students' ability to understand the diversity and cultural issues of populations served.
- Preceptors need to understand the students' base of knowledge.
- Educational institutions should invite providers to lecture on the realities of health care, including current and projected trends, and how these realities should impact the expectations of new graduates. MacDonell said that, as accreditors, CARF believes that redesigning education and training will require a focus on input from all key parties, feedback, and communication.
- Clinical supervisors could benefit from guidance about how to be good supervisors (e.g., how to provide constructive feedback).
- Students who score well in academics do not always do well in clinical settings; they tend to lack the necessary communication and social skills. MacDonell said that, as the health care system

moves toward person-centered care, students need the skills to understand the patient's perspective and to communicate effectively with families.
- Educational institutions and clinical sites must improve their two-way communication.

In closing, MacDonell cited an often quoted maxim that says, "If you want to travel fast, you travel alone. If you want to go far, travel with others." The others in this case, said MacDonell, are the clinical placements. If educational institutions want to give students meaningful clinical learning opportunities, they need to engage with the clinical settings and listen to both their concerns and their perspectives.

DISCUSSION

The presentations by Fraher, Spetz, and MacDonell triggered numerous ideas, thoughts, and concerns in the minds of the workshop attendees that were shared during the large group discussions. The comments touched on three critical areas for the health professions that included the cost of education and training; the role of technology; and the ties that are or could more closely unite educators across the education to practice continuum.

Cost of Education and Training

Spetz talked about the potential for "huge cost savings" from programs like Independence at Home that use a home care–based team approach. She also brought up work being done in Washington State, mentioned previously in this chapter, that creates a career ladder for personal care aides through a joint arrangement between the workers union and the state government. Those in state government believe there will be a cost savings in the end by ensuring adequate training and a better wage so nursing aides can earn more money while attaining additional specialization and knowledge. The government also expects lower utilization rates of expensive urgent care facilities. This example triggered a response from Pamela Jeffries who commented that hospitals are now starting to charge education programs to precept their students. Programs that receive support from CMS can better manage the added expense, she said, but this is not the situation in nursing. In those cases, the additional costs are shifted to the student.

Guardia Banister, executive director of the Institute for Patient Care at Massachusetts General Hospital (MGH), and her partner Mary Knab at the MGH Institute of Health Professions, spoke about their shared resource model that is detailed in Chapter 4. "The hospital provides instructors,

the institute funds CFC [clinical faculty coordinator] time, and we come together and find multiple ways in which we can figure out together what's going to work with our shared resources in a way that's cost-effective and works for all stakeholders involved," Knab remarked. Charnetia Young from CVS Health also talked about cost but from an industry training perspective. "We want costs reduced, quality increased, and access expanded," while acknowledging that "ultimately, businesses have to be profitable, just like hospital systems."

It was Barbara Barney-Knox and Jane Robinson, both with California Correctional Health Care Services, who brought up the conversation about a return on investment (ROI) for their nurse training program housed at a correctional facility. "We want to develop our RN workforce from our existing employees and we want to reduce turnover rate, vacancy rate, reduce the recruiting costs and really become an employer of choice," they said. Fraher offered numerous suggestions on how they might quantify the cost to benefit ratio. In support of Fraher's ideas, Barney-Knox reported that turnover rates can cost upward of $58,000. This could be used as part of the ROI argument for continuing the program, Fraher suggested, along with documentation of a happier and more committed prison workforce, and statistics showing a diminished need for emergency care and fewer hospitalizations.

The Role of Technology

Several participants discussed the role of technology in training students and retraining the existing workforce. Fraher said that one issue that needs to be considered is the degree to which technology will "substitute versus supplement versus enhance." For example, technology could substitute for a provider with a service such as in-home blood pressure monitoring. It could supplement communication between the home and the provider, and it could enhance by providing more detailed or new types of information. Spetz added that tech developers often do not think about the health workforce, and sometimes not even about the end user (e.g., the patient or community). She said there is a lack of consideration about who is going to use the technology, how will it affect practice, and how it will affect the education that is needed. She joked that some developers have "never talked to an old person but think it's going to be so cool to put monitors on all of them." Fraher added that while the perspective of the health care provider is important, technology should be patient-centered and developed in a way that meets the patients' needs, rather than trying to retrofit the existing workforce with new technologies.

Strengthening Ties Across the Education to Practice Continuum

During the question and answer period, several workshop participants commented on the importance of engagement and communication with the faculty who act as preceptors for students in clinical placements. MacDonell said that faculty should be invited into the classroom regularly to discuss the realities of health care. Lemmietta McNeilly, chief staff officer representing the American Speech-Language-Hearing Association, added that, while academic institutions and communities vary across the country, there should be a minimum number of times students actually observe or hear from real-life health professionals who are currently practicing. Frank Ascione, director of the Center for Interprofessional Education and Professor of Pharmacy at the University of Michigan, described the "very successful" model of partnership his college had with preceptors.

The first element of the model includes site preceptors as part of the school's clinical faculty, which means they receive continuous professional development and that the expectations and responsibilities of all parties are clear. Second, the preceptors are "guaranteed" that students will be on their "best behavior," Ascione said, with efforts made to align the expectations of students and preceptors. Finally, the model seeks to demonstrate the value students add to the clinical setting. For example, he said, students were involved in published medication reconciliation projects—cataloging a patient's full list of medications—which were a clear demonstration of how sites can benefit from student involvement. MacDonell responded by saying the CARF survey showed that many providers do *not* see the value in having students in clinical placements and instead view students as a further demand on their already limited time and resources. She said that if the model and results Ascione described were replicated in other sites, this could help providers and organizations see the value in serving as clinical placements.

Susan Skochelak of the American Medical Association concurred with MacDonell that students and faculty need to better understand the realities of the health care system. While the educational system is "great" at teaching basic and clinical science, said Skochelak, it is missing health system sciences. For example, students need to learn about social determinants of health, working in teams, the structure of the health care system, patient safety, and value-based care. MacDonell agreed, saying that if students lack a "reality-based course" about what a clinical setting will be like, "it really creates havoc within the clinical setting."

Bushardt shared his experience as a department chair and clinical operations executive at an academic health center. The health center used a system to identify how many months it took for a new recruit to be fully prepared for practice. He said that students from schools where educators

were the "most engaged and curious about the transition of new graduates into practice" and who had spent time in the health system to try to understand provider and administrator concerns were better prepared to enter practice than their colleagues who had not gone to such schools. Skochelak shared a model where students learn about the system not from provider preceptors but from patient navigators who truly understand "what is working and isn't working for a patient and their family." McNeilly further commented on the challenges in teaching students about the reality of today's health care system while also keeping faculty at educational institutions up to date on current health, educational, and community systems. She asked, "How do we enhance the knowledge and skills of the faculty who have not actively engaged in clinical practice for several years?"

Pamela Jeffries, dean of nursing at The George Washington University, listed several concerns with shifting training from acute care to other settings. First, in her experience, she said, it is not feasible or sustainable to train one or two students in a community setting given the financial and time burdens placed on the site and the supervisor. Second, nursing education is largely geared toward preparing students for the National Council Licensure Examination (NCLEX), a standardized exam nurses *must* pass in order to practice. NCLEX is weighted toward acute care nursing, so even nurses who plan to work in community settings must learn acute care in order to pass. Launette Woolforde, who represents the National League for Nursing, agreed with Jeffries saying that, if there is to be a shift in the testing standards to more closely meet the realities of the workplace, educational institutions need to work with licensing agencies. In addition, said Woolforde, there is resistance from traditional practice leaders who believe nurses must be trained in acute care before working in other settings. This resistance would have to be addressed for there to be change, she said. Mary Dickow with the Organization for Associate Degree Nursing added to the discussion. She cited a pilot project in California that is trying to shift the clinical rotation experiences for students away from acute care settings. The project is based on a program at Thomas Jefferson University in which clinical placements are completely community-based and 98.5 percent of students pass the NCLEX. McNeilly shared another challenge that exists within community-based training, which is finding competent clinical educators who are willing to supervise students in placements; this is particularly challenging in fields such as speech-language pathology. For example, she said, the current requirement that only speech-language pathologists can supervise graduate students in speech-language pathology limits the ability to train students in a variety of settings with varied patient populations.

Malcolm Cox, formerly with the U.S. Department of Veterans Affairs, asked the presenters what it would take to move beyond the accretion of

data toward making real changes. He noted that, while related data are more powerful now than 30 years ago, the issues and the trends have not changed significantly. Spetz responded to Cox by describing a challenge posed by the current financial incentive structure. These incentives are aimed at training in acute care, she said, so a change in training toward greater community-based settings would require a shift in dollars: Some community settings may view training students as a financial burden for which they need to be compensated, and universities may not have the money to do so. Cox acknowledged that financial incentives are a significant problem and noted that policy changes will be necessary to make a difference. Fraher stated that data alone are insufficient for change; however, data can be used to "challenge the prevailing narrative" and to frame issues in a way that encourages policy discussions. Fraher called herself a "data agitator" and said that producing data is incredibly important, but that using data to "make people uncomfortable" is how changes get made.

Anthony Breitbach, representing the Association of Schools of Allied Health Professions, built on Fraher's remarks by saying that transforming the health care system must be an iterative process: It starts with students and existing workers getting engaged and agitated enough to want to create a more dynamic health care system that, in turn, will attract "even better and brighter students." He argued, "We lose good [students] because they see the same old thing. If they see [a] bigger and wider [line of] thinking that's really addressing societal needs, I think students who initially wouldn't even go into health care" would be attracted to join the health workforce. These energized students would energize the care providers, he said, which would then help transform the system.

REFERENCES

Alzheimer's Association. 2018. 2018 Alzheimer's disease facts and figures. *Alzheimer's & Dementia* 14(3):367–429.

Beans, B. E. 2016. Experts foresee a major shift from inpatient to ambulatory care. *P&T: A Peer-Reviewed Journal for Managed Care and Formulary Management Decision Makers* 41(4):231–237.

Bodenheimer, T., and D. Mason. 2016. Registered nurses: Partners in transforming primary care. Paper read at Registered Nurses: Partners in Transforming Primary Care conference in Atlanta, GA.

CMS (Centers for Medicare & Medicaid Services). 2019. *Independence at home demonstration*. https://innovation.cms.gov/initiatives/independence-at-home (accessed February 21, 2019).

Fraher, E. 2018. *The health workforce in the US: Trends and challenges facing efforts to strengthen links between education and practice*. PowerPoint presented at the Global Forum on Innovation in Health Professional Education's Joint Workshop on Strengthening the Connection Between Health Professions Education and Practice, Washington, DC.

Fraser, M. W., B. M. Lombardi, S. Wu, L. de Saxe Zerden, E. L. Richman, and E. P. Fraher. 2018. Integrated primary care and social work: A systematic review. *Journal of Social Work and Research* 9(2):175–215.

IOM (Institute of Medicine). 2008. *Retooling for an aging America: Building the health care workforce*. Washington, DC: The National Academies Press.

Johns Hopkins School of Nursing. 2019. *Community aging in place—advancing better living for elders (CAPABLE)*. https://nursing.jhu.edu/faculty_research/research/projects/capable/index.html (accessed March 14, 2019).

Kottek, A., T. Bates, and J. Spetz. 2017. *The roles and value of geriatricians in healthcare teams: A landscape analysis*. San Francisco, CA: University of California, San Francisco, Health Workforce Research Center on Long-Term Care.

Turner, A., C. Roehrig, and K. Hempstead. 2017. What's behind 2.5 million new health jobs? In *Health Affairs Blog*: Health Affairs. https://www.healthaffairs.org/do/10.1377/hblog20170317.059235/full (accessed March 18, 2019).

U.S. Census Bureau. 2017. Projected age and sex composition of the population: Main projections series for the United States 2017–2060. Washington, DC: U.S. Census Bureau, Population Division.

3

Patient-Centered Care and Education

Highlights

- The many competing voices in health care include accreditors, educators, providers, payers, regulators, students, employers, and patients. It can be difficult to genuinely hear people, she said, and the loudest voices often get the most attention. (Eilers)
- Providers need to have the tools and knowledge to manage these situations and to facilitate communication within the family while also keeping the patient's wishes front and center. (Eilers)
- Performance metrics are pushing providers to assess their priorities given they may have only 7 minutes for a patient visit regardless of the complexity of the person's health condition. (Lamb)
- Productivity can be a disrupter of relationships between providers and patients/families. (Dickow)

NOTE: These points were made by the individual workshop speakers/participants identified above. They are not intended to reflect a consensus among workshop participants.

"How do we keep the patient at the center of the education and care delivery continuum, especially in times of rapid change?" asked Miguel Paniagua, medical advisor for the National Board of Medical Examiners. June Eilers, a researcher and educator at the University of Nebraska Medical Center College of Nursing, was in a position to respond to Paniagua's question from multiple perspectives. In addition to being a nurse and a scholar, Eilers herself had been a patient and a caretaker for an ill loved one. She described the many competing voices in health care, including those of accreditors, educators, providers, payers, regulators, students, employers, and patients. It can be difficult to genuinely hear people, she said, and the loudest voices often get the most attention. The patient voice, in particular, can be difficult to reconcile with the other voices in the system. Patients vary in their preferences and their levels of knowledge and motivation. Often dealing with the trauma of a health condition, they may not have chosen when or where to receive care. In addition, said Eilers, patients are not always *patient* and their view of the situation can be very different from others. Eilers noted that a patient's voice is not just conveying the perspective of the individual patient but also his or her family. Despite these challenges, she said, it is critical that patients' voices be at the center of health care. Patients are the only source of information about certain conditions, she added. For example, only a patient can assess his or her level of pain or nausea; providers must listen carefully to patients in order to properly evaluate their conditions and co-formulate plans for recovery.

Diversity is often discussed in health care education and training, said Eilers, and providers seek to recruit students who are diverse in culture, age, and gender. However, they should also pay attention to preparing students for the diversity of the patient population. Some patients are very knowledgeable about health and care delivery systems, while others have little experience with them. Some patients are comfortable speaking up and having open discussions with their providers, she said, while others keep quiet and "would never argue with a provider." Some patients are technologically savvy and able to easily navigate patient portals and electronic records. Others lack Internet service, Internet-capable devices, or the knowledge of how to access such information. These variations in patients' circumstances can be multiplied when the patient's entire family is involved, because each person brings his or her own knowledge, experience, and expectations to the table.

PREPARING STUDENTS AND HEALTH CARE WORKERS

Eilers posed a question to the workshop participants for discussion: How do we prepare students and health care workers for dealing with the "disruption" of patient and family voices and perspectives? Eilers noted

that she was using the word "disruption" in part to trigger reactions; while most agree that patients should be the center of health care, she said, they are sometimes viewed as "disrupting our smooth flow." Participants discussed the issue with their tablemates before reporting back to the group with their thoughts on Eilers's question.

Kathy McGuinn with the American Association of Colleges of Nursing started the report-back by describing an example of a "disruptive" patient as a person who comes into the emergency room at 3:00 a.m. with a headache. The patient may be dismissed as a mere disruption, yet, if the emergency room staff actually engaged with the patient and listened, they might learn relevant information (e.g., a family member recently died of meningitis). Joanna Cain, representing the American College of Obstetricians and Gynecologists, reported that individuals in her group discussed how family members can disrupt their loved one's care plan. For example, a dying patient's adult child shows up and wants to try new interventions when the patient himself is ready for hospice; or, an elderly patient's idea of independence at home might vary from what her children think is appropriate. Eilers brought up another potentially disruptive scenario in which a family has done extensive research on the patient's condition and has predetermined ideas about which treatments are appropriate. Providers need to have the tools and knowledge to manage these situations and to facilitate communication within the family while also keeping the patient's wishes front and center. Cain noted that one way to introduce these skills to both incoming and current providers might be through simulations. Paniagua added that the United States Medical Licensing Examination includes a clinical skills portion, yet none of the scenarios involve more than one person advocating or arguing for the patient perspective. The competency of dealing with and communicating with multiple family members is not typically tested, he said, even though it is a much needed and relevant skill for managing real-world situations.

This conversation compelled Susan Scrimshaw, an anthropologist by training and the recent past president of The Sage Colleges, to consider the importance of providers acknowledging and understanding the culture of the patient and the family. First, she said, providers need to find ways to balance patient requests and best practices. The example she offered involved individuals' cultural practices or traditions. Deeply engrained beliefs can lead a person (or patient) to seek a specific course of action, despite scientific evidence suggesting that a different path may be more appropriate. In these scenarios, providers need the ability to genuinely listen to patients' perspectives, understand them, and then guide patients through the decision-making process. The second way in which culture is relevant, she said, is that patients and families may be reluctant to talk to a provider who "doesn't look like them or … respect their ideas." Paniagua

agreed and added that, when providers and patients come from different cultures, it can affect their perceptions of each other and, ultimately, the care a patient receives.

Mary Dickow with the Organization for Associate Degree Nursing described her table's conversation as approaching disruption in a different way. Rather than thinking of the patient as the disrupter of productivity, Dickow reported framing *productivity* as the disrupter of relationships between providers and patients and their families. These relationships depend not only on how health professionals listen but also on what patients decide to share with certain staff. Dickow then told an anecdote about a patient who openly discussed his health issues and concerns with the nurse at the beginning of an appointment. When the doctor walked in and asked how the patient was doing, however, the man replied, "I'm doing great." This patient had found a sympathetic ear in the nurse and had already shared the relevant information. As a result, the doctor missed out on an opportunity to build the relationship with the patient.

Anthony Breitbach, representing the Association of Schools of Allied Health Professions, shared a story about a university-based program wherein health professionals in St. Louis work with school-based health care centers in providing schools with a nurse practitioner and behavioral health services, along with other health-related services. After 5 years, said Breitbach, the program lost funding. This led the school community, health care providers, and university representatives to come together to examine their options for keeping the program going. There were discussions about how services like immunizations and physicals might continue; however, explained Breitbach, these discussions took a turn when one of the principals "looked us in the eye" and said that the most important service, by far, was behavioral health. These schools and their students, said Breitbach, had become accustomed to having walk-in behavioral health care services available. As a result, those institutions had totally restructured their discipline policies. That principal's comment was characterized as "really eye-opening" and shifted the urgency of the conversation toward ensuring continuity of mental and behavioral health services crucial to the school community and away from what the health providers once thought was most urgent.

ENABLERS OF DISRUPTION

A number of participants raised concerns about technology as an enabler of disruption. Adrienne White-Faines from the American Osteopathic Association described her conversation about what to do with patients and families who rely on unapproved devices for monitoring patients' vital signs. This example was further explored by Eliers who brought up another challenge stemming from patients' use of the Internet to uncover "cures"

that may or may not be proven or even approved treatments. Paniagua was surprised that none of the conversations were about electronic health records (EHRs). The role of EHRs, he said, "can be disruptive or it could be positive." Launette Woolforde, representing the National League for Nursing, described technology, and the EHR in particular, as an added challenge to the ongoing trend toward care specialization. Moving away from a consolidated, primary care approach to one that is highly specialized has "created a disjointed health care system," her group observed. Eliers tied the two concepts together, saying "if one of your providers isn't part of the current system, their part of the record isn't in there."

There needs to be an alignment of goals, Gerri Lamb from the Arizona State University's Center for Advancing Interprofessional Practice, Education and Research remarked. Specifically, Lamb talked about the issue of aligning goals between people (i.e., patient, family, and provider) and incentives in the system like performance metrics. The metrics might include outcomes such as no-show or readmission rates, which are part of value-based purchasing and considered system disrupters. What they often do not consider are challenges due to a lack of transportation and other social determinants that cause patients to miss visits. In addition, said Lamb, performance metrics are pushing providers to assess their priorities given they may have only 7 minutes for a patient visit regardless of the complexity of the person's health condition. This, along with a shift in the culture, could lead to feelings of mistrust as pointed out by Pamela Jeffries, dean of nursing at The George Washington University. Speaking as a patient, Eliers described really struggling with how well prepared patients feel they need to be when visiting their providers. This is especially pronounced for patients with multiple health problems who feel they have to choose from among their various health-related issues as to what they want to discuss during the visit. There is no way that all of the issues can be considered in the time allotted, especially if the provider "takes the time to ask me what I think, because," said Eliers, "I usually have an opinion."

4

The Role of Health Care in Developing the Health Workforce

Highlights

- Education needs to adapt to not just what the market is, but to what it will be. (Newton)
- A true partnership requires building a relationship based on shared values and a shared commitment, as well as involvement from leaders at all levels. (Banister, Knab)
- Employers often feel as if students are unprepared to enter the workforce. (MacDonell, Young)

NOTE: These points were made by the individual workshop speakers/participants identified above. They are not intended to reflect a consensus among workshop participants.

Warren Newton, the forum representative from the American Board of Family Medicine, opened the session on health care's role in developing its workforce by saying, "The pace of change and the amplitude of change in health care is stunning." He continued by describing changes in health care organizations, including the shift toward pay-for-value and population health, that are dramatically changing the requirements of tomorrow's workforce. Although these changes are already under way, said Newton, most health system leaders have been focusing largely on finance and

governance, rather than workforce issues. This provides an opportunity for health education professionals to "manage up," informing health system leadership about how to best educate and prepare the clinicians needed to support new systems of care. With new competencies, and new professions being formed (e.g., interprofessional practice, practice facilitators, community health workers), he said, educational institutions should "put their heads to the ground, hear the footsteps, and try to produce what will be needed as their graduates" look to the future. Education needs to adapt to not just what the market *is*, but to what it *will be*; there needs to be continuous dialogue between the workplace and education in order to facilitate these changes. With this in mind, Newton introduced speakers who would discuss how practice and academia can work together on workforce issues.

INTERPROFESSIONAL DEDICATED EDUCATION UNITS

Guardia Banister, executive director of the Institute for Patient Care at Massachusetts General Hospital (MGH), and Mary Knab, director of impact practice at MGH Institute of Health Professions (IHP), spoke together about an innovative collaboration between their institutions called Interprofessional Dedicated Education Units (IPDEUs). Banister echoed what other speakers had said about the ongoing changes in the health care system: the population is growing older, patients are becoming more complex, there is a documented failure to adequately treat pain, and there is a shift toward a value-based payment system. While there are transitions toward ambulatory and in-home care, said Banister, it is important to remember that "acute care is not going to go away." There will always be critically ill patients who require an intensive level of care, she said, and there is a need for providers who are able to take care of these patients and their families. Another shift, said Banister, is toward recognizing the diversity among and number of providers who take care of patients (see Figure 4-1). There are many different disciplines involved in taking care of a patient, she said, and it is critical that these professionals work collaboratively.

Banister described how the IPDEU program got its start and how it evolved over time. The first iteration of the program, called "IPDEU 1.0," had student pairs from different professions spend 1 half day each week for one semester focusing on interprofessional collaborative practice and their own disciplinary knowledge. Frontline clinicians served as clinical instructors with Banister noting that, because these clinicians were delivering care every day, "they were current in terms of their knowledge and their preparation." The clinicians included nurses, occupational therapists (OTs), physical therapists (PTs), and speech-language pathologists (SLPs). There were also clinical faculty coordinators (CFCs) who acted as bridges between the academic and practice environments. The CFCs coordinated

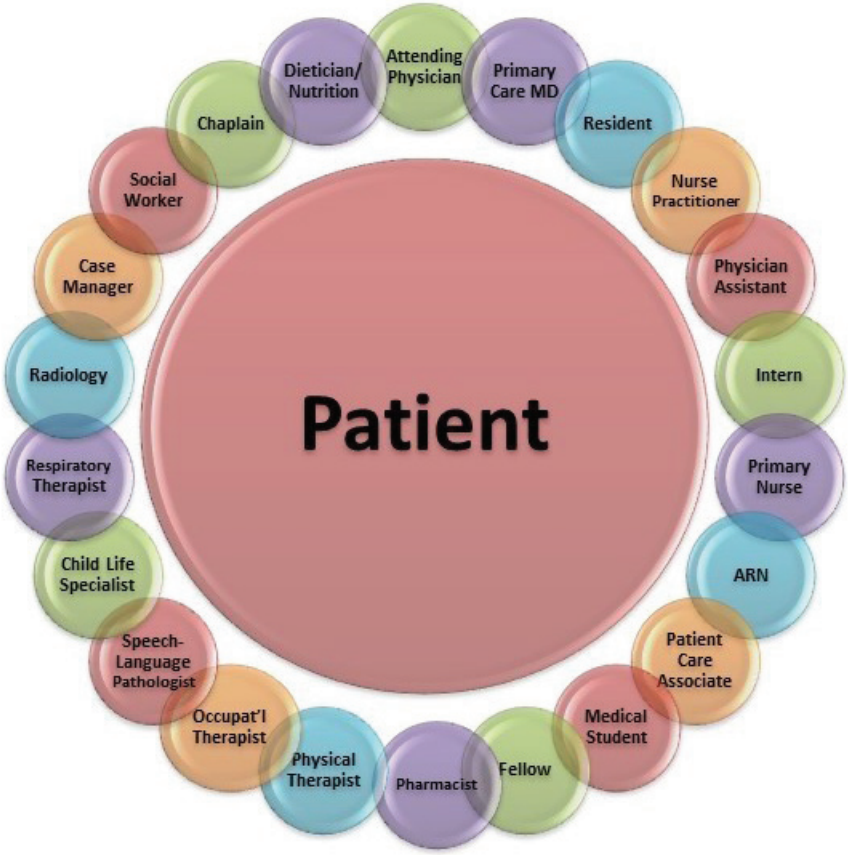

FIGURE 4-1 Complexity of the patient care team calls for collaborative effort.
NOTE: ARN = Association of Rehabilitation Nurses.
SOURCE: Presented by Banister and Knab, November 13, 2018.

all aspects of the program, including facilitation of end-of-day debriefing sessions in which the students and clinical instructors discussed their experiences. Unfortunately, said Banister, it quickly became apparent that this model was unsustainable: The logistics were complicated, the program needed additional staff to be successful, and only 12 students per semester could participate. In addition, she said, while comfortable with clinical teaching in general, the clinical instructors were frustrated by the pressures of trying to teach both discipline-specific information as well as interprofessional collaborative practice to students from their own and other professions.

Knab said there was great potential in the program despite these challenges, so the team decided to revamp the model. The new program, "IPDEU 2.0," was entirely focused on the interprofessional aspects of care delivery. The time commitment for the program was also shortened, meeting only 2 half days over 2 weeks. Interprofessional student dyads spend 1 half day with an instructor from nursing, and the other with an OT, PT, or SLP. Clinical instructors were renamed interprofessional practice instructors (IPIs), and their role was redefined to have a sole focus on teaching interprofessional collaborative practice. During the 1 half-day session, said Knab, IPIs saw their normal caseload and engaged students in active observation and discussion, highlighting their collaborations with other care team members. Each session ended with a wrap-up debrief. These changes to the program, said Knab, made it scalable and sustainable. Each semester, approximately 144 students go through the program, involving 3 acute care units (2 medical units and 1 cardiac stepdown unit). The program can be scaled up further by adding other units or days of the week.

This project, said Banister, is "truly an academic–practice partnership," and a team effort. Knab said IPDEU is "one of those gems that really functions at that nexus of academia and practice" and that part of the reason is a shared commitment (at all levels) to exemplary practice and student success. Clinical faculty coordinators actively bridge practice and education, educate and support the IPIs, and are "on the front lines" while the IPDEU experience is in progress. Knab noted that simply placing students in clinical settings does not equate to a true academic–practice partnership. A true partnership, she said, requires building a relationship based on shared values and a shared commitment, as well as involvement from leaders at all levels. IPDEU uses a shared resource model in which both the MGH and the IHP bear some costs for the programs. Everyone involved, from deans to unit directors, is invested in the program and is actively involved in making it work for all stakeholders. The most important stakeholders, Knab stressed, are the patients and their families.

The IPDEU program has impacted not just the students, Knab explained, but also the clinicians and patients involved. Students have described how the program helped them learn to be "compassionate with patients and advocate for them" and also how it improved their understanding of interprofessional team interactions in patient care. Instructors, said Knab, are making changes in their own practices based on their experiences in the IPDEU program. While acting as IPIs, clinicians emphasize the importance of interprofessional collaboration and seek to demonstrate its value in care delivery. Knab described one such instructor as saying, "I noticed [my] increased emphasis on persistence and follow-through surrounding interprofessional [teamwork] in my personal practice." She further illustrated similar stories from other clinicians, indicating that instructors

are "carrying this culture, carrying these values, and making [them] visible in ways that go well beyond" the program itself. Banister added that such changes to practice impact patients, as well; for example, a provider who has been working on an interprofessional team may notice that a patient would benefit from a consultation with a different type of provider (e.g., respiratory therapist) and would then help make that connection. Maria Tassone with the University of Toronto Centre for Interprofessional Education remarked on these benefits to providers and patients as demonstrating the value of having students in the practice environment, while adding that this is an "important key message that we need to be sharing."

Catherine Grus, representing the American Psychological Association, asked Banister and Knab how they are helping others duplicate the model they created. Banister replied that they have a three-pronged approach for spreading the word about the model. First, they present the model in forums, conferences, and symposiums. This has encouraged others to try it. Banister noted that their model is "not perfect" and encouraged people who implement the program to adapt it to their own cultures and environments. Second, the team has compiled a manuscript describing details of the program, which is under peer review for publication so that it can be shared with a wider audience. Third, said Knab, they are working with the National Center to consider a collaboration on outcomes research documenting the impact of the IPDEU model.

The next question was asked by Susan Skochelak, representing the American Medical Association, who asked Banister and Knab about their hopes for students participating in the IPDEU program. Knab expressed her opinion of wanting students to have "light bulb" moments and to realize that even the best provider needs to work as part of a team in order to fully meet patients' needs. She added that although the IPDEU experience is short, she hoped students would take what they had learned into their other clinical experiences and always keep "an eye toward … interprofessional aspects of care delivery."

CVS WORKFORCE INITIATIVES

CVS Health, said its Manager of Workforce Initiatives, Charnetia Young, is more than just a retail pharmacy. CVS Health has more than 250,000 employees (who work in every state except Wyoming) and covers a gamut of health care industries such as retail pharmacy, mail order pharmacy, prescription drug insurance, retail clinics, long-term care, and home infusion therapy. Because of this diversity of health care services, said Young, CVS Health employs a significant number of health care professionals. For example, CVS is one of the largest employers of nurse practitioners and registered nurses (RNs) in the United States.

As CVS Health expands its scope of health services, said Young, changes in the health care landscape have created challenges for it. First, health professionals are increasingly expanding their roles and practicing at the top of their licenses. This change is partly due to a shortage of professionals, said Young; when there is a shortage of RNs, licensed practical nurses are employed to fill the gap. Second, there is a low unemployment rate currently. For a company like CVS that needs to hire more people, said Young, this means that available workers are either individuals who have been out of the workforce or individuals with significant barriers to employment. Third, education and training programs often do not meet the needs of business. CVS has employed its own methods to train professionals both for the jobs of today and the jobs of the future. Young noted that employers often feel as if students are unprepared to enter the workforce for a number of reasons. Students might be lacking soft or hard skills. They might be trained on brand new technologies that businesses are not using yet. Young also said that educational institutions tend to change more slowly, whereas CVS can "pivot quickly" to change training curricula when the needs of the business change; and that "fail fast and fail cheap" is a motto they believe in. Finally, she said, there is a need for increasingly diverse talent to treat an increasingly diverse patient population. Because patients may be more comfortable with providers who are similar to them, "the more diverse the workforce is, the better off an employer will be."

The workforce initiatives department at CVS, said Young, works with more than 1,200 partners across the United States in order to recruit, train, and support its health care workforce. Young cited the reason for this program as "We need a workforce and it's not out there, so we've got to build it." The department runs a number of programs, which include apprenticeships, externships, internships, mock store training, incumbent worker training, and on-the-job training. Through these types of programs, said Young, the department has made a significant impact, as demonstrated through these numbers:

- 20,000 youth per year are hired for summer programs
- 20 percent of CVS employees are "mature workers" over age 50
- 35,000 associates per year are trained at CVS regional learning centers
- 8,000 plus registered apprenticeships
- 1,000,000 youth have been exposed to the Pathways to Pharmacy careers program
- 110,000 people have transitioned off of public assistance and into careers with CVS Health

Young noted that these programs and achievements, particularly the transitioning of people off of public assistance, would not be possible without assistance from CVS's 1,200 partners, who help ensure wraparound and supportive services.

Lisa Howley, representing the Association of American Medical Colleges, asked Young about the clinical training experiences CVS offers for students. Young said these programs are the "bread and butter" of talent recruitment, and that there are benefits for both the students and for CVS. First, she said, clinical training allows a student "to see if this is an environment they would like to be in." She noted that many students have a bias against working in retail clinics or retail pharmacies, but getting them in the door allows them to see the extent of the services offered and the impact they are making on the community. Second, the clinical programs allow CVS to evaluate whether a student is an appropriate fit or ready for the particular environment, and to identify gaps that may need to be filled. For example, the pharmacy clinical rotation program exposes students to different experiences over the course of 4 years. Upon graduation, the student receives a job offer. Young noted that this allows CVS "to address gaps earlier while they are still students and they are still in a learning framework." Young discussed other training opportunities at CVS, including initial job training and continuing education and development. CVS also offers employees assistance with additional education, such as providing support for clinicians seeking their M.B.A. degrees.

Gerri Lamb with Arizona State University asked Young if CVS has worked with academic organizations to better align the needs of the business with the training of their students and, if not, what it would take to do that. Young responded that CVS has had success in increasing the skill competencies of pharmacists. She noted that it was "a little easier to move the needle" because CVS employs so many pharmacists: "When you're the largest employer of pharmacists in the U.S. and you say that something needs to change—and I hire 70 percent of all your students at every school across the country—you change, right?" With other clinician groups, she said, it is not quite as easy to impact education and training. Young said that CVS wants to collaborate with academia in order to ensure that CVS's voice is heard and to help identify the gaps between academia and practice.

Frank Ascione, who represents the University of Michigan on the forum, asked Young to elaborate on how CVS—a for-profit organization—affects the CVS health care model. Young said "businesses have to be profitable" or they cannot continue offering products and services. As a result, clinicians who run programs within CVS have to be competent in patient care, increasing profits and decreasing costs. CVS's goals, said Young, are to "reduce cost, increase quality, and improve access," adding that these goals must be pursued while also keeping the bottom line in mind.

5

Meeting Needs of Populations, Students, and Educators

Highlights

- Eighty percent of new registered nurses who completed the apprenticeship program have reported increased confidence in their work, and a better understanding of their role within patient care and the health care community as a whole. (Barney-Knox, Robinson)
- The big task now is to articulate the value for government agencies, employers, students, and higher education. (Barney-Knox, Robinson)
- The use of a community-based participatory research framework helped to focus the center on the specific identified needs of the community residents (including primary care, dental health, and mental health), and to engage community members at every step of the process. (Dinkel)
- Students in all of these departments and schools helped to plan and organize the creation of the clinic; for example, business students helped create business plans, while communication students set up health literacy opportunities for patients. (Dinkel)

NOTE: These points were made by the individual workshop speakers/participants identified above. They are not intended to reflect a consensus among workshop participants.

LVN TO RN APPRENTICESHIP PROGRAM

Chief nurse executive Barbara Barney-Knox and deputy director of the Nursing Program Jane Robinson presented on the topic of the LVN to RN Apprenticeship Program in place at California Correctional Health Care Services (CCHCS). Barney-Knox led off by describing the well-established career tracks for employees within CCHCS, except for those employees who were licensed vocational nurses (LVNs). The LVN to RN Apprenticeship Program was developed in order to fill this gap and is a collaboration among six groups: CCHCS, the Division of Apprenticeship Standards, Service Employees International Union Local 1000, San Joaquin Delta College, the California Community Colleges Chancellor's Office, and the Board of Registered Nurses. The program, said Robinson, offers LVNs a career ladder, a boost in salary, incentives to continue as state employees, and greater job satisfaction.

Barney-Knox underscored that it is *not* one of California's 20/20 education programs, in which an employer pays an employee up to 20 hours of wages to go to school. Rather, this program not only pays the equivalent of up to 20 hours of work to attend school but also provides numerous types of support for the student, including a "success coordinator" who is available to provide academic resources, professional support, and help navigating school and work issues. It also offers other essential services that resolve issues around childcare, transportation, and other challenges to make it possible for students to participate and succeed in the program.

Robinson went on to describe the goals of the apprenticeship program within three main areas: students, community, and workforce. For students, the program seeks to prepare graduates who will be eligible for licensure to practice as registered nurses (RNs), who have a solid foundation in providing competent care, and who are able to function within legal and ethical boundaries. For communities, the program opens job opportunities to people who are traditionally overlooked for careers within the health workforce as it provides much needed clinical sites for overburdened community colleges. The third area, focusing on the workforce, helps reduce the cost of new hires by developing an RN workforce from existing employees. Reduced turnover and low vacancy rates then lead professionals to view CCHCS as an "employer of choice." In addition to these goals, said Robinson, the program will aim to improve patient outcomes. Eighty percent of new RNs who completed the apprenticeship program have reported increased confidence in their work, and a better understanding of their role within patient care and the health care community as a whole.

With permission, Robinson and Barney-Knox shared the stories of some of the participants in the program. One such participant was Alexis

Barba, a second-generation U.S. immigrant and first-generation college graduate who has been working on her nursing prerequisites for the past 7 years. Having recently graduated from the CCHCS LVN to RN Apprenticeship Program, said Robinson, Barba's compensation (with benefits) will double from about $6,400 per month to $12,900 per month. Upon being accepted into the program, Barba commented "I'm shaking in my skin because I'm so excited. I just saw no opportunity for doing this because of my work schedule." She recently started preparations to begin work on her bachelor's degree. Another of their program participants was Juanita Esquer. Esquer is a first-generation immigrant mother who shared Barba's enthusiasm: "I'm so excited. I feel blessed to be chosen. I've always dreamed of getting my nursing degree while I work. This is going to be life changing because I can better provide for my family."

The big task now, said Robinson, is to articulate the value for government agencies, employers, students, and higher education—and to mitigate any of the challenges the program encounters. For example, employers participating in the program will have to backfill LVNs as they attend school and when they become RNs. In addition, managing the apprenticeship program places additional workloads on existing administrative and executive staff. As for students' challenges, Robinson listed English as a second language; balancing work, school, and family obligations; and dealing with the challenges of not having attended school in years. In order to move this program forward and scale it up across the state, said Robinson, there is a need to prove the value for all stakeholders involved.

Following Barney-Knox and Robinson's presentation, Kennita Carter with the Health Resources and Services Administration asked workshop participants to brainstorm at their tables about how to "package this program for success" so that they could then share their ideas with the group.

Erin Fraher from the University of North Carolina at Chapel Hill opened the discussion by reporting that her group approached the issue in terms of return on investment (ROI)—quantifying the cost of the program and comparing it to the costs saved. The potential savings from this program, said Fraher, could include less money spent on recruiting and retaining staff, as well as money saved from fewer hospitalizations because of improved patient care. Barney-Knox responded that staff turnover is a very large expense and that, with the cost of replacing an employee somewhere between $35,000 and $58,000, savings in this area could help justify the costs of the program. Julie Pavlin, who directs the Board on Global Health at the National Academies of Sciences, Engineering, and Medicine, remarked that while helping nurses advance in their training could lead to better retention, it could also result in nurses being "snatched up by competitors in the community."

Pavlin encouraged the speakers to collect data in order to know the real impact of the program. One workshop participant suggested that the program could result in lower recidivism rates, thus lowering costs for the state since patients would receive better mental and physical health care while incarcerated. Fraher also mentioned the possibility of measuring nurse satisfaction, and then using this measure to demonstrate the value of the program. On this point, Mary Dickow of the Organization for Associate Degree Nursing said that many students want to remain and work in their own communities. This is another potential benefit of the program, she said, if the program were viewed as a way to improve the health and sustainability of the entire community, not just the prison population.

Malcolm Cox, a former co-chair of the forum, noted that some of these cost savings will take several years to become apparent. He then asked if the current grant funding will last long enough to demonstrate the ROI. Barney-Knox responded that the initial grant period was 3 years and that the current grant period is another 5 years, so this longer timeframe should allow them to measure changes in outcomes.

In the future, said Barney-Knox, CCHCS is hoping students will be placed in practicum sites at the correctional facilities; however, based on laws, regulations, and Board of Nursing requirements, it has not yet been possible. She added that one of the overarching goals of the program is to have CCHCS viewed as a viable health care organization, noting that the prison population mimics the demographics and health status of other communities. Barney-Knox closed her presentation saying: "By partnering with the community colleges, we can start to build a pipeline for future hires through clinical rotations that come through our prison system."

PATIENT-CENTERED CARE IN PUBLIC HOUSING

The Pine Ridge Family Health Center is a unique health care system where the primary care center is owned and operated by a public housing authority, said Shirley Dinkel of Washburn University in Topeka, Kansas. The health center offers primary and urgent care services, has a nurse practitioner-led health care center, and is a dedicated training site for Doctor of Nursing Practice students. In its 1 year of existence, said Dinkel, it has had 777 unique encounters with 359 new patients. It was originally designed to offer services only to those living in Pine Ridge Manor, the largest and oldest public housing neighborhood in Topeka. Soon it became clear that people from across Topeka were in need of these services. Topeka has a relatively high rate of poverty, said Dinkel, and more than one-quarter of its children live in poverty. The Pine Ridge Family Health Center is designed to provide health care services to those who face challenges in accessing care through other means. The center is embedded in the community, which is

absolutely key for access among people who lack transportation options. Dinkel said that the model of the center is to address multiple social determinants of health, in particular, transportation, access, and cost.

The center got its start because of "harmonic convergence at its finest," commented Dinkel. There was an opportunity for an interprofessional practice and education (IPE) grant from the Accelerating Interprofessional Community-Based Education and Practice initiative out of the National Center for Interprofessional Practice and Education (the National Center) (2018). Dinkel wanted to use it to develop an IPE curriculum in order to teach students how to create sustainable innovation within their own communities. At the same time, Dinkel said, she was "dragged" into a conversation about a local preschool that needed nurse practitioner volunteers to provide free health care services. This conversation took place between Dinkel, Jane Brown—who was then a faculty member at Washburn and is now the head nurse practitioner at the center—and Mallory Keeffe, who is a community social worker. Their conversation centered around the fact that children in the community had high ACE (adverse childhood experience) scores, which can translate into greater health risks later in life.

At some point in the conversation, Dinkel's "head popped off" and the idea of building a community health center from the ground up was born. A team of faculty at Washburn was assembled to develop the Classroom to Community IPE curriculum. The team included faculty and staff from the School of Nursing, School of Business, Department of Communication Studies, Small Business Development Center, and Office of Sponsored Projects. Dinkel said that the team created a curriculum that included instruction in social justice, motivational interviewing, business ethics, leadership of self, crisis communication, and trauma-informed care. Students from these varied departments and schools helped to plan and organize the creation of the clinic. Business students helped create business plans, communication students set up health literacy opportunities for patients, etc.

Barbara Brandt, who leads the National Center, underscored the importance of Dinkel's work by emphasizing that this type of collaboration within academic institutions can greatly benefit the institution itself and participating departments as individuals work together and learn from each other. The best part about this clinic, she said, is the substantial community support and collaborations between providers and organizations.

Dinkel acknowledged Brandt's comments, added that Washburn University and Topeka Housing Authority (THA) are the two founding partners of the health center, and noted that it is sustained through the work of local physicians, nurse practitioners, and medical institutions. Local residents have also been big supporters of the clinic, said Dinkel, and are co-creators of the effort. Residents participated in focus groups, helped to refine and administer a community assessment survey, volunteer at the

clinic, and help to get the word out about the clinic and its services. Dinkel added that, while there is a high rate of turnover in public housing, there are "resident champions" who have charged themselves with making sure that new residents know about the clinic.

The use of a community-based participatory research framework, said Dinkel, helped to focus the center on the specific, identified needs of the community residents (e.g., primary care, dental health, mental health) and to engage community members at every step of the process. In addition to outlining the community and resident support, Dinkel described the people involved—including the clinic's paid staff and people from THA—as "fearless" and "optimistic." THA has a "yes" approach to everything, she said, which has been critical to the success of the project. Trey George, chief executive officer of the nonprofit side of THA, has been known to say he does not know how they are going to make it happen, but the answer is yes. This optimistic spirit has helped in countless ways, including building the clinic itself and finding the resources to pay staff. In Dinkel's opinion, a key to the center's success has been everyone's ability to "embrace chaos" and to adapt and move forward when things go wrong.

The presentation then shifted to the center's future goals and the next steps for the IPE curriculum. First, said Dinkel, the center plans to hire an RN to serve as a preceptor for RN students moving into ambulatory care. Second, they and the center plan to expand the clinic and offer more services, such as optometry. Third, they are seeking increased resident participation on the Advisory Council. Fourth, she said, there is a need to develop outcomes measures in order to really capture the value of the clinic. Fifth, the center is looking at strategies for making the financing of the clinic more sustainable, including billing insurance companies and using payment plans. Finally, the IPE curriculum is being expanded and improved in order to give students rotations in the center and to encourage them, as Dinkel said, to "really think about social determinants of health."

Dinkel closed her presentation with a quote from a patient of the Pine Ridge Family Health Center, who said:

> I want to give a shout out to all of the staff at Pine Ridge and to THA as a whole for one of the very best experiences I've had accessing and receiving health care in my entire adult life. Leaving the office, all I could think about was the quality of my experience and care from start to finish. I knew at that moment that this would be my new primary medical care clinic. Your collective attentiveness and direct action are definitely making a difference to the underprivileged you serve in public housing in Topeka.

Anthony Breitbach with the Association of Schools of Allied Health Professions shared his concern that programs or initiatives such as the

Pine Ridge Family Health Center are potentially exacerbating the divide between health care for low-income people and health care for high-income people. He feared this type of system would send a message to students that "there are two health systems" rather than treat everyone the same. Dinkel responded by saying that she and her colleagues also address this type of attitude with their IPE curriculum, adding that her group does not "support academic tourism." She agreed with Breitbach about the dichotomy in health care and said that, while perhaps regrettable, it already exists and they are "not going to pretend like it doesn't." Dinkel then relayed a story about a friend of hers who was hiking through the woods with a heavy load and came to a downed tree that lay across the trail.

The friend took off her backpacks, threw them over the tree, climbed over the tree, put the packs back on, and continued to hike on. She later asked her friends and fellow hikers if they were also exhausted from climbing over the tree with all of their things. The friends responded, "No. We just walked around it." Dinkel analogized the current health care system to the downed tree: The system is "really hard for many, many people so let's just walk around it." The center is her way of helping people "walk around" the health care challenges, rather than work within a broken system.

REFERENCE

National Center for Interprofessional Practice and Education. 2018. *Accelerating interprofessional community-based education and practice*. https://nexusipe.org/advancing/accelerating (accessed February 21, 2019).

6

Envisioning Future Educators

Highlights

- Society—and health care in particular—is changing at a stunning rate, and students will need to be prepared to work within an evolving health care system. (Brandt, Chappell, Newton)
- Keeping up to date on changing health systems is too much for one individual. (workshop participant)
- Skills and knowledge for future health professions educators were grouped into five main areas: leadership skills, education, health and health care, technology, and business. (Bushardt, Woolforde)

NOTE: These points were made by the individual workshop speakers/participants identified above. They are not intended to reflect a consensus among workshop participants.

To envision the role of future educators given aforementioned societal changes, participants broke into small, interprofessional teams of three to five people to brainstorm and discuss issues regarding future facilitators of health professions education. The more specific objective was to explore the next generation of educators using a methodology based loosely on the ideas of Simpson and colleagues (2018), whose work linked the evolution of medical education to the educators' changing roles and new professional

identities. In the context of the workshop, participants looked more broadly at the transformation of education and health care. This included changes in education due to advanced technology, new medical–legal challenges, a transforming clinical environment, and greater emphasis on interprofessional learning with collaborative practice. Launette Woolforde from the National League for Nursing and Steven Chesbro from the American Physical Therapy Association divided the group into 12 interprofessional teams for discussions of the following three questions:

- What are pipeline opportunities for attracting/developing future health professions educators?
- What core skills will the health professions educators need?
- How will instructors keep up to date on clinical, educational, information technology, and legal needs of the health professions in changing clinical and educational environments?

The next sections are a summary of the discussions held during these small group breakouts. Any suggestions listed as a result of these conversations were made by individual participants and should not be construed as consensus opinions or recommendations or endorsement by the National Academies of Sciences, Engineering, and Medicine. It should be further noted that questions for the breakout groups were designed to stimulate thinking on Day 2 of the workshop wherein roughly half of the participants delved even deeper into the issues raised by these questions during a session titled Building a Pipeline of Disruptive Innovators in Health Professions Education. (See Chapter 7 for details.)

WHAT ARE PIPELINE OPPORTUNITIES FOR ATTRACTING/ DEVELOPING FUTURE HEALTH PROFESSIONS EDUCATORS?

Individual participants had a number of ideas in this area. Discussions acknowledged the fact that opportunities to attract and develop educators begin before college and do not end once a graduate enters the workforce. More than one contributor suggested increasing the emphasis on STEM (science, technology, engineering, and mathematics) education in primary and secondary schools, which led to a suggestion of forming student interest groups that could serve as drivers for future educators at all levels of schooling. The benefits of being a health educator, it was remarked, could be emphasized to students (e.g., summers off, flexible schedules) in an effort to build a strong pipeline into education. In addition, one participant mentioned recruiting health professions educators from multiple populations

to include people from diverse racial and ethnic backgrounds, people from underserved populations, and professionals from other areas or sectors (e.g., public health, military, secondary education). Community-based program staff could also help by identifying and supporting future potential educators in their endeavors.

Other participant comments implied that health professions educational programs could provide curricula to care providers who may be reluctant to enter into teaching, which would also elevate the role of health professions educators. Promoting education in this way could potentially increase the perceived value of education within health care. This inculcation, it was mentioned, could start in a student's first year of health professional education in an effort to expose students to educator experiences as early as possible. By simultaneously building an identity as an educator and a practitioner, students may be able to establish a broader foundation for dual identification.

In later years, during residencies and fellowships, opportunities such as joint clinical–educational appointments could further the trainees' skills and interests in pursuing excellence in health professions education. Graduates who enter the education workforce will likely stay within education if financial incentives—such as loan repayment and forgiveness and/or better pay and benefits—are in place, which would help attract and retain new talent. In addition to financial incentives, one participant pointed out how the culture of the work environment would have to be favorable to new hires. In order to retain the existing education workforce and to remain relevant in a changing world, the attendee noted, educational institutions would also need to address and plan for the major shifts occurring in health education and practice.

In addition to building a new workforce consisting of recent graduates, several individuals at the workshop noted the value of tapping into current health practitioners for retraining as potential health professions educators. For this to happen, participants remarked, the practitioners would require education and training on how to teach effectively. Academic/practice partnerships can help bring clinicians into the classroom and, one person said, practice partners can be invaluable in helping plan curricula that bridge the education-practice gap. The role of a clinical preceptor can be a good entry point for practitioners who want to get involved with education, in that it can potentially lead to a bigger education commitment from them in the future. That moved the conversation on this particular question to a final comment about the value of clinical faculty and the importance of including them as part of the core faculty team.

WHAT CORE SKILLS WILL THE HEALTH PROFESSIONS EDUCATORS NEED?

Participants on the interprofessional teams listed a number of skills that each believed future health professions educators would need to possess or develop, while noting that future educators may require new or expanded bases of knowledge in certain areas. Woolforde and Bushardt grouped the skills and knowledge suggested by the individual participants into five main areas: leadership skills, education, health and health care, technology, and business in the following manner:

Leadership Skills

Workshop participants discussed their individual perspectives on the variety of social and interpersonal skills that health professions educators would need in order to be effective leaders, teachers, and role models for students. Within this realm, future educators would need to

- Convey and model empathy.
- Collaborate, listen, communicate, and work collectively.
- Reflect appropriately to gain self-awareness (e.g., acknowledge what one does not know).
- Demonstrate cultural competence and emotional intelligence.
- Possess the ability to educate and mentor diverse populations.
- Lead and partner.
- Be positive role models (e.g., model ethical decision-making processes, model respect and professionalism).
- Provide feedback to others through constructive criticism and difficult conversations.
- Be flexible and adaptable.

Education

In terms of educational skills and knowledge, individual workshop participants described what they believed were important areas of focus. Those included

- Understanding and using faster, more focused teaching methods, with multiple modalities (e.g., didactic, simulation-based, clinical, online).
- Applying pedagogical and andragogical methods.
- Identifying, measuring, and evaluating outcomes.
- Balancing current and future needs of students.

- Conducting formative and summative assessments.
- Identifying educational needs, including distinguishing between educational and non-educational gaps.
- Acting as a guide rather than a "one-directional" teacher.
- Cultivating learners' mindsets through an educator's lens.
- Assessing competencies and evaluating self-directed and/or individualized learning, rather than cohort learning.
- Understanding longitudinal educational design and assessment.
- Adapting rapidly to new content.

Health and Health Care

The health care system is complex and continues to build in complexity. With that frame of reference, participants expressed individual opinions on preparing future health professionals for this rapidly changing system, which they said involves:

- Educating learners about the health care system.
- Recognizing the rapidly evolving future of health care.
- Envisioning the future role of interprofessional teams.
- Understanding how systems work and interact.
- Appreciating health promotion goals (e.g., wellness, well-being).
- Realizing the importance of social determinants and population health.
- Understanding key aspects of the Quadruple Aim.
- Staying relevant in practice and patient care.
- Partnering with patients and families as both co-learners *and* co-educators.
- Understanding and teaching translational science from bench to bedside, and as a tool for increasing community engagement.
- Being able to work and guide students and colleagues interprofessionally.

Technology

Participants expressed their personal views about technology, stating that its role has become more widespread in both education and health care. To remain relevant in a technologically advanced society, the majority of individuals suggested that tomorrow's health professions educators would need to

- Be comfortable with and embrace technology for teaching, health care, prevention, and research.

- Leverage technology to enhance learning outcomes.
- Possess digital literacy and professionalism.
- Know how to apply big data and population data analytics.
- Understand and be comfortable with telehealth tools and technologies.

Business

As outlined in the paper by Walsh (2015), the number of for-profit medical schools is increasing around the world, which raises questions about the motives, the quality, and the social accountability of such schools. These issues were considered as the participants—predominantly from academia—discussed balancing the social mission of health professions education with the business side of running cost-effective, valued educational programs. Individual participants pointed to management skills and knowledge they believed would help steer health professions educators toward a better understanding of how an educational business model might improve their ability to

- Effectively use resources.
- Calculate return on investment for education.
- Be a disrupter, an advocate, and an agent of change.
- Manage polarities and solve problems.
- Have basic business and financial literacy.
- Make evidence-based decisions.
- Partner with employers in order to ensure students are workforce ready.
- Take risks and think strategically.

HOW WILL INSTRUCTORS KEEP UP TO DATE ON CLINICAL, EDUCATIONAL, INFORMATION TECHNOLOGY, AND LEGAL NEEDS OF THE HEALTH PROFESSIONS IN CHANGING CLINICAL AND EDUCATIONAL ENVIRONMENTS?

It was stated by Warren Newton in his opening remarks captured in Chapter 4 that society—and health care in particular—is changing at a stunning rate, and that students will need to be prepared to work within an evolving health care system. This dynamic places a heavy burden on health professions educators, noted several group participants; as such, educators' responsibilities would entail keeping up with new clinical practice environments while applying the appropriate educational theory to practice. One participant also mentioned the importance of having educators who can explain how laws and policies will apply to new delivery systems, and how

changing technology will affect the future of health care practice. These were the messages of individual workshop participants as they discussed the various ways of ensuring that educators remain relevant and informed as the world around them changes.

One participant commented that keeping up to date on changing health systems is "too much for one individual." In response, other participants suggested that educators could more effectively collaborate so that the burden is shared among people with complementary knowledge and expertise. There were additional remarks made about program implementation. It is critical to ask educators, a commenter said, about what their needs are and how they prefer to receive information (e.g., virtually, in person). This led to other participant input about the importance of leveraging existing resources, for example, health departments that already use technology to push out relevant information.

Additional ideas were proposed for keeping health professions education instructors current. Participants suggested they could fit under three broad categories that dealt with new technologies, incentives and support, and facilitating interprofessional continuing education and communication. Participants' input within these three areas is as follows.

Technology

- Use technology to educate and support instructors where they are.
- Engage in resource sharing.
- Utilize simulations for increased hands-on training.
- Promote preferred resource alerts and just-in-time information.
- Build virtual learning environments and communities.
- Employ social media platforms for collaboration and communication.
- Test and develop useful smartphone applications.

Incentives and Support

- Provide financial support to educators for facilitating education and practice linkages.
- Offer academic incentives for professional development (e.g., changes in academic promotion practices).
- Change practice patterns to facilitate provider participation in professional development.
- Make professional development at institutions a priority by providing protected time for ongoing education and collaboration.

Interprofessional Continuing Education and Communication

- Promote interprofessional continuing education requirements to achieve strategic aims.
- Hold regular interprofessional think tanks focused on the changing environment.
- Provide continuing education credits to preceptors.
- Conduct current-update symposiums and workshops.
- Partner with hospitals, employers, and educators for cross-collaboration and discussion.
- Develop consortia for local, regional, and national interprofessional collaborations.
- Develop academic/practice partnerships that include students and faculty from a range of disciplines and sectors (e.g., health, law, business).
- Use an interprofessional team teaching approach for continuing education.

REFERENCES

Simpson, D., K. Marcdante, K. H. Souza, A. Anderson, and E. Holmboe. 2018. Job roles of the 2025 medical educator. *Journal of Graduate Medical Education* 10(3):243–246.

Walsh, K. 2015. Medical schools for profit? *Annals of Medical and Health Sciences Research* 5(3):155–156.

7

Disruption in Health Education and Practice

Highlights

- To change these types of incentives, all stakeholders—including accreditors, academics, and practitioners—must be present at the table and committed to making change. (Chappell)
- There needs to be equal focus on working interprofessionally across education and practice. (Troseth)
- The weak reliance on faculty as an educational resource was likely a manifestation of the relationship not yet being embedded and not yet being strong enough between the faculty and the emerging clinical leaders. (Blitz)
- We are revisiting the same issues; how can this group move ideas forward? (Brandt, Chappell, Cox, Lamb)
- To move forward on retooling the existing workforce, it is critical that the employers see the urgency of doing so, and the potential return on investment. (Cox, Fraher, Spetz, Young)

NOTE: These points were made by the individual workshop speakers/participants identified above. They are not intended to reflect a consensus among workshop participants.

On Day 2 of the workshop, attendees self-selected into one of two tracks for focused discussions exploring aspects of the education to practice continuum. Those in the first group (Track One) followed up on the previous day's discussion about attracting, retaining, and supporting health professions educators. They also discussed how to build a stronger connection between "disruptive innovators" across education and practice (see Box 7-1 for "Track One Context" information). Those in the second group (Track Two) shared their thoughts on potential actions they feel can be taken if the workforce—both existing and future—is to be prepared to fill an evolving role in a rapidly changing health care system (see Box 7-2 for "Track Two Context" information).

CONNECTING DISRUPTIVE INNOVATORS ACROSS EDUCATION AND PRACTICE

Opening Discussion

Bushardt and Woolforde opened the breakout session with a quote from the former president of the Macy Foundation, George Thibault (2013):

BOX 7-1
Track One Context

The current generation of health professional educators has a unique opportunity to shape the future of health professional education and the impact that it will have on the world's emerging innovators. To do that, educators will need to align their thinking with that of current innovators within education and care delivery. These innovators are looking at consumer-driven services for inspiration. As such, it may be necessary to introduce health professionals to the health care supply chains that are key assets to Amazon's success. Other strategies might include exposing learners to analytics and new technologies that promote personalized learning and a fuller understanding of health care finance.

Key to all of these educational opportunities will be understanding the demographics and needs of consumers. For example, an older student population may have different requirements than a younger student population raised in an era of smartphones and the Internet. Knowing other aspects of students' backgrounds can also help create a learning environment that engages each student on a personal level and improves their likelihood of successful completion of a health professions education program.

To thrive during this period of change, educators will have to think differently. They will be forced to rethink traditional silos and reach across to other health professions, to other sectors, and into the professional space to provide innovative educational experiences at reasonable costs—or to risk being left behind in a changing society.

SOURCE: Background paper available at http://www.nationalacademies.org/hmd/Activities/Global/InnovationHealthProfEducation/2018-NOV-13.aspx (accessed April 9, 2019).

The culture change that is needed to achieve a closer linkage between education and practice in a collaborative, interprofessional environment will require leadership, careful planning, innovative uses of technology, new partnerships, and faculty development. The health care workforce for tomorrow needs to be educated and trained in settings that are models for the efficient, reliable, collaborative practice that leads to the best patient outcomes.

BOX 7-2
Track Two Context

Technology has changed society. People are no longer asking for more convenient services at more affordable prices; they are demanding them. While some within health and education sectors are reluctant to adapt to this newer, faster, more technologically engaged world order, others are embracing change by introducing innovations that may soon reshape the faces of both industries. These innovations follow those in other industries that focus on providing more consumer-driven products and services.

Among students—who are the consumers of education—there is a greater demand for experiential learning that more closely aligns with job training. This is according to the observations of Andrew Roth, former president and chief executive officer of Notre Dame College. Roth's observations were supported by studies that found that students embrace blended learning; shorter, less expensive programs; and a more personalized experience facilitated through technology. Roth further described how student-consumers are influenced by an Amazon culture that effectively guides buyers through their online product options and how this has raised students' expectations of schools. In response, staff at Austin Peay State University (Clarksville, Tennessee) developed a predictive analytic model that recommends courses to students based on data collected from hundreds of thousands of former students' academic records (e.g., grades, course of study).

Like education innovators, health care innovators are also shifting toward a more consumer-driven market. In a study by Deloitte on what matters to health care consumers, researchers uncovered four priorities. These include personalization, financially justifiable choices, convenience, and technologically enabled care. While Amazon has not yet announced how it intends to enter the health care market, it is clear that (given its well-developed infrastructure and business model) it will be a major disruptor of currently fragmented, expensive, and often slow systems of care.

Given the high degree of overlap between consumer demands within care and education, it is time for all health professionals within education and practice to work together in coming up with the next generation of innovations—or to risk being left behind in a changing society.

SOURCE: Background paper available at http://www.nationalacademies.org/hmd/Activities/Global/InnovationHealthProfEducation/2018-NOV-13.aspx (accessed April 9, 2019).

Although health care has changed significantly in the 5 years since Thibault made this observation, said Bushardt, the constructs and framework are still relevant today. Thibault focused on six priority areas for health professions education and these areas were reflected in the conversations held at the workshop, added Bushardt:

- Interprofessional education
- New models for clinical education
- New content to complement the biological sciences
- New educational models based on competency
- New educational technologies
- Faculty development for instructional and educational innovation

Bushardt then harkened back to insights gained during the previous day's breakout session on envisioning future educators (see Chapter 6). He and Woolforde reviewed the various comments made in an effort to distill possible overarching themes stemming from the three questions discussed within the 12 interprofessional teams. Those themes, he said, included leadership, population health, teaching methods, technology, emotional intelligence, cognition in the future, big data, and social and health equity. Bushardt's aim was to link those conversations with the goals of the current session.

Session Goals

Bushardt and Woolforde reiterated the objective of the current session, which was to build on ideas from the previous day's discussions that focus on next steps for how education and educators can drive the incorporation of care delivery innovation into education. The hope, said Bushardt, is to start "building a bridge" between education and practice. Bushardt and Woolforde then asked workshop participants to reflect on the themes from the previous day's discussions and to think about the most urgent needs so that a strong connection can be made between education and practice. In response, several people commented on the importance of shifting incentives in support of current and future health professions educators. Kathy Chappell, American Nurses Credentialing Center, pointed out how the difficulties remain the same despite years of knowing what they are. This illustrates the problem, she said, that the current education-to-practice continuum does not prioritize nor incentivize continuing professional development. Both educators and practitioners must juggle competing priorities, as in the case of clinician educators who spend time focusing on academic achievement and advancement but then have less time for seeing patients.

In order to ensure that professional development is prioritized, said another participant, it must be embedded in the system whether through accreditation requirements, employer expectations, or other mechanisms. The end goal, she added, is to "build a health care workforce for the future, whether that is [through] the student pipeline or developing new skills in the current workforce, in order to meet the changing needs of the population."

Another misalignment of incentives, said Chappell, involves accreditation standards and the health needs of communities. For example, nursing schools focus on preparing students to pass the National Council Licensure Examination, which is acute care–oriented. The curriculum is driven by the focus of the licensure exam rather than by the needs of students or the patients and families they will serve in the future. She said, "As much as people think we need to be educating for the community setting, it's not going to happen while the incentives are misaligned." In order to change these types of incentives, she added, all stakeholders—including accreditors, academics, and practitioners—must be present at the table and committed to making change.

Michelle Troseth, National Academies of Practice, recognized that, while there is a big focus on the importance of interprofessional collaboration among professions, there needs to be equal focus on working interprofessionally across education and practice. Troseth explained that education is often "isolated" from practice, yet building a strong pipeline of health professions educators will necessitate drawing on the experiences and knowledge of health care practitioners and administrators. Mark Merrick, representing the Athletic Training Strategic Alliance, added that clinicians bring enormous value to education and that it would be shortsighted to only consider full-time faculty as educators; students and their future patients will be best served when they are educated by a wide variety of educators, he noted, including clinicians. This requires creating the kind of health professions education that would truly prepare students for the future of health care. However, as Merrick observed, "resistance from faculty" is a significant barrier. Some faculty, he said, do not see the need for change and "would love for us to go back to teaching it the way we did twenty years ago because that was the 'right' way." Merrick further stated that, in order to affect change, there needs to be "faculty and educators who are focused on where we are going; not where we have been."

A final comment from Troseth challenged everyone in the room to think differently about the gap between education and practice. Many people want to identify a specific "problem" within health care, she said, and then develop some explicit solutions to fix it. However, preparing for the future of health care is not a simplistic problem to be solved. Rather, said Troseth, providers must acknowledge that it is a complex system that

includes "paradoxes, dilemmas, and polarities." There are multiple tensions within the system, and multiple interactions between parts of the system. She said "there is not a quick fix," nor is there a discrete problem to solve; there are "many dilemmas that we have to manage as leaders." With this perspective in mind, the group began to explore and discuss models—for example, polarity thinking—that use various frameworks to address complex problems like the integration of education and practice.

Implications for Faculty Development for Emerging Clinical Teachers at Distributed Sites

Julia Blitz of the Centre for Health Professions Education and Marietjie de Villiers of the Faculty of Medicine and Health Sciences, both with Stellenbosch University in South Africa, joined the first group (Track One) through a virtual connection to present their research on the views and experiences of rural clinical preceptors. Blitz and de Villiers, along with their colleague Susan van Schalkwyk, collaborated to study and understand how clinicians working in rural environments view their roles as educators (Blitz et al., 2018). This effort was initiated, said Blitz, by a request from the government of South Africa to increase the number of graduates in all health professions in order to meet the needs of their respective communities. It was also driven by a desire to move health professions education out of the academic health complexes and into more realistic care settings and communities. Blitz noted that, according to the Ecology of Medical Care concept (Stewart and Ryan, 2015), which offers a population-based snapshot of health care needs and usage, only 1 person in 1,000 ever reaches an academic health center; therefore, unless students are trained outside of these centers, they will not have the full range of skills they need to care for patients in the environments where patients are likely to be found.

A distributed clinical platform, said Blitz, extends beyond traditional academic health centers. The sites where students are placed are chosen for a variety of reasons, including accessibility, patient profile, and space for students. However, Blitz added, placing students at these sites for clinical training means there are significant "human, technological, and financial" resource limitations. The research question that Blitz and her team were trying to answer through their work was: "How do clinicians working at distant, resource-constrained, and emerging training sites view their early experiences of having been delegated the task of clinical teaching?"

Blitz explained how their research began at a rural clinical school that was started in 2011. The researchers found that clinical teacher experiences evolved over time, she said, starting with excitement about the opportunity

but apprehension over the approach. The next phase of the journey was uncertainty and insecurity as a teacher, mixed with reservations about whether they had enough time to perform both their teaching and their clinical responsibilities. The clinician-teacher emerged in the third stage, with preceptors finding the work to be challenging but doable with the support of faculty. Finally, the preceptors saw themselves not as teachers but rather as having the responsibility for training future colleagues. In this stage, Blitz remarked, the preceptors saw reciprocal relationships between themselves and the students, as well as between themselves and the faculty. Blitz said that, at this point, "they were accepting the responsibility that they were being given and were really committing to the process" (see Figure 7-1).

The next step in their research, said Blitz, was "taking it a step more distant" and studying clinicians who were not associated with the creation of an actual rural clinical school. Blitz described the research methods they used for this next step as qualitative research with an interpretivist approach, wherein the researchers conducted in-depth, inductive interviews that were transcribed, anonymized, and coded. Blitz described the areas of research as being focused on "the three *r*s"—relationships, responsibilities, and resources.

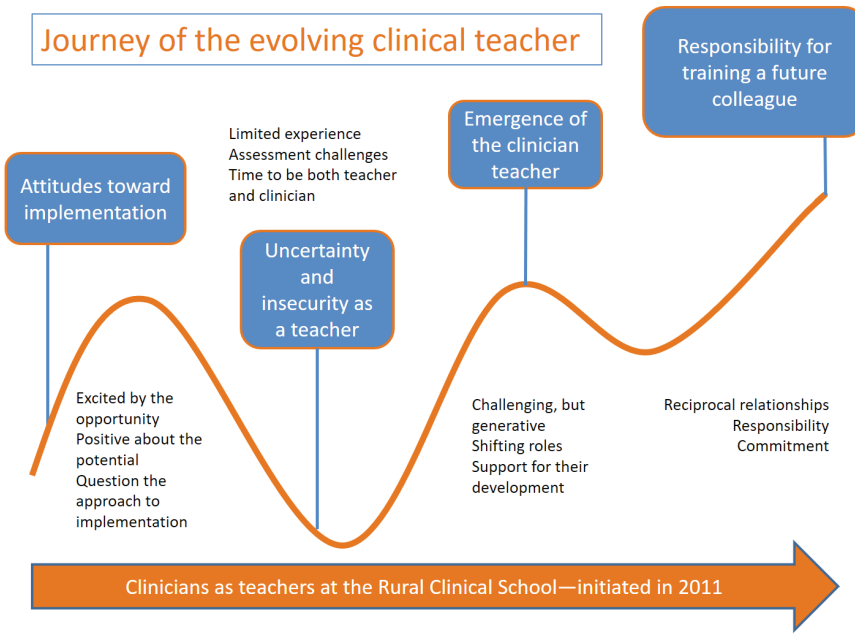

FIGURE 7-1 Journey of the evolving clinical teacher.
SOURCE: Presented by Blitz and de Villiers, November 14, 2018.

Relationships

Relationships were of two kinds, said Blitz. First were the clinicians' relationships with students. She explained that, as educators, the clinicians reported enjoying learning from and with students, and they understood the importance of creating a safe learning environment and of engaging the students in the work done by the clinical team. These clinicians saw their roles as part of the effort to meet the country's health needs. However, they were less positive about their relationships with the medical school. They felt there was a lack of information about clinician responsibilities and inadequate recognition for the contributions they were making. Most of all, the clinician-educators wanted an opportunity for two-way communication with the school, said Blitz. They wanted information (from the school) about the students and they wanted to be able to give input back to the school, describing how the students performed and where the gaps in their knowledge and skills were. In other words, she noted, the "clinicians wanted to co-create the curriculum" and close the gap between the students' education and what they needed in practice.

Responsibilities

The second focus of their research dealt with the responsibilities of students and the medical school. In this area, said Blitz, clinicians were "very clear that it was the students' responsibility to learn" rather than the clinicians' responsibility to teach. They also felt that faculty had the responsibility to give feedback to clinical staff on whether the students were meeting faculty's expectations in their clinical rotations. Blitz remarked that "uncertainty about expectations" was commented on by the first and second set of clinicians they studied: Both sets were "keen and enthusiastic" but requested more feedback from faculty about how they were doing.

Resources

Regarding clinical teaching, the researchers found that clinicians were turning to their own clinical mentors (rather than the faculty of the medical school) as a pedagogical resource. Blitz commented on how the weak reliance on faculty as an educational resource was likely "a manifestation of the relationship not yet being embedded and not yet being strong enough between the faculty and the emerging clinical leaders." The clinicians also expressed interest in belonging to a network of clinical educators, she said, that could be a resource for everyone to draw on for ideas and information.

This and other findings led Blitz to two main takeaways from her research. First, that clinician preceptors desire more preparation and support in their roles as educators. It was not sufficient to offer faculty development activities that only consisted of relevant pedagogical knowledge and skills. Organizational development, said Blitz, requires shared ownership; educators—whether full-time faculty or clinician preceptors—must have shared ownership over the educational process. Ensuring a smooth transition between education and practice requires faculty to engage existing networks of clinical practice to improve communication, she added, so that educators and clinicians can learn from each other's knowledge and skills.

The second big takeaway was about developing sound relationships. One way to build relationships, Blitz noted, is to identify the responsibilities and needs of the parties involved. For example, students could evaluate their experiences of clinical teaching so that clinicians could receive mediated feedback and faculty development directed toward their own identified needs. Relationships between the medical school and clinicians could also be intentionally developed through communication about students and clinical teaching, she remarked. In summary, said Blitz, there needs to be a two-way dialogue between health professions educators and clinical preceptors. Preceptors need to be partners in education who can "bring the clinical practice issues to us." Woolforde underscored that such a collaboration leading to a co-created curriculum is "disruptive in a good way" and helps "bridge the silos" between health professions educators and health care practice.

Exploring a "Bridging Model"

In the final hour of the breakout session, individual workshop participants discussed how one might potentially move forward with putting ideas into action. Bushardt started the conversation in hopes of sparking reflection and discussion. His list of themes and major takeaways were drawn from what he heard throughout the entire workshop and included the following:

- Changes in the workforce need to happen both through education of new graduates as well as through the retooling of the existing workforce.
- The current system of clinical education is not sustainable, not purposefully integrated, and not well-aligned with the practice environment.

- There are concerns from employers about the pace at which higher education can adapt to evolving practice needs.
- The generalist health professions educator is difficult to create and sustain.
- It is difficult to measure the impact of interprofessional education on patient outcomes and other effects of collaborative practice.
- Workforce and training sites are maldistributed geographically and not aligned with population needs.
- Changes to payment structures and regulatory requirements could drive rapid adoption of more practice-centered standards that have person- and population-centered care and well-being embedded directly into their models.
- It is critical to integrate voices of patients, families, and communities into decision making.

With these overarching themes in mind, Bushardt invited workshop participants to "think about enabling activities" that could help create a "bidirectional transfer and connection between education and practice." He also asked those within the group to think about barriers that might limit or prevent strong connections between the two sectors. To encourage creativity, Bushardt asked the participants to write their ideas on small sticky notes and to adhere those they considered biodirectional enablers to the rendered railing on a nearby eight-foot-long poster of a bridge (see Figures 7-2 and 7-3); by contrast, they were to adhere sticky-note comments representing obstacles to the space under the bridge. Before starting on their task, Woolforde reminded the attendees to focus on the center of the bridge. In other words, she said, look for common space between "Education" and "Healthcare Delivery" (or practice) to identify areas where the greatest overlap and likelihood of an impact will take place for both education and care delivery.

After each person in the room affixed their education-to-practice enabler and barrier sticky-notes to the bridge image, Woolforde and Bushardt then worked with the group in an attempt to create a semblance of order out of the almost 100 sticky notes scattered across the poster. Each person in the room suggested overarching areas in which their idea, and the ideas of the others, might most appropriately fit. The end result was a set of priority issues—based on individual, interprofessional perspectives from the attendees in the room—that were subdivided into five themes. Bushardt and Woolforde presented each theme as a priority topic along with what they believed to be important actions to take within each specific area. The groupings were as follows:

FIGURE 7-2 Bridging the education-to-practice divide can be assisted by identifying enabling activities and obstacles.
SOURCES: Photo by Mike Bird on Pexels. Presented by Bushardt and Woolforde, November 14, 2018.

FIGURE 7-3 Bridging the education-to-practice divide design-thinking exercise.
SOURCES: Photo by Mike Bird on Pexels. Presented by Bushardt and Woolforde, November 14, 2018.

Research and Data

- Include preceptors in research.
- Generate data that demonstrate the value proposition for clinical education.
- Use regional health data to drive curricula.

Communities of Practice

- Revise accreditation standards to use as incentives for change.
- Create competencies and evaluation instruments for distance clinical faculty.
- Recognize the importance of interprofessional education.
- Devise systems (both in academia and practice) that value time for collaboration.

Relationships

- Education and delivery must form a partnership of equals around shared goals and values.
- Relationships require shared goals, language, communication, and tools.
- Educator preparation should be intentional.

Alignment

- Align goals of education licensure, accreditation, regulation, and practice.
- Incentivize interprofessional education and collaborative practice.
- Employ interprofessional continuing professional development.

Partnership

- Develop solid infrastructure for partnerships, rather than just ad hoc meetings.
- Adopt a model, framework, approach, or infrastructure to support the partnership (e.g., polarity thinking, graduate medical education).

In addition to these themes, Bushardt called out three other areas that would factor into each of the priorities. They include resources, technology, and innovation. Resources, said Bushardt, are most often thought of

as time, money, and expertise. In her presentation, Blitz had remarked that: "The farther you go away from academic health complexes, the more limited the resources tend to become … human, technological, and financial." With limited resources, creativity and innovation become virtual necessities.

Technology can facilitate innovation through communication and collaboration Woolforde pointed out before shifting the conversation. She asked each person in the room to state what he or she considered the most urgent issue to address in bridging educators with practitioners. Sara Fletcher of the Physician Assistant Education Association felt it was "incentivizing people early on." Kathy Chappell for the American Nurses Credentialing Center believed it to be *moving* the needle: "We are revisiting the same issues. How can this group move ideas forward?" The idea for Troseth was to create strong pipelines between education and practice to bring in new ways of teaching with new partners. Steven Chesbro of the American Physical Therapy Association expressed his view that having benchmarks could be what drives education to a higher level. Accreditation is the minimum, he said, while benchmarks move beyond standards.

Alex Johnson of Massachusetts General Hospital's Institute of Health Professions believed effective teaching could improve linkages. He commented that "every clinician is a teacher, so how do we frame that throughout training?" Mark Merrick with the Athletic Training Strategic Alliance felt the urgent need was in retooling the current health and education workforce: "Affecting change by bringing in a new cohort takes a long time, so we need to retool the current workforce to work interprofessionally." The key, for him, was how to affect the future of health care by embedding education into practice. Chappell also remarked on the urgent need to build a workforce that can meet the changing health care needs of the future: "Schools, practitioners, and faculty need to be at the table. We need to align incentives for all stakeholders."

Troseth described her vision of engaging all stakeholders through what she called a *polarity map* that uses a sort of yin and yang approach to promote both interprofessional education and collaborative practice. She outlined potential action steps to move forward using polarity mapping, which included

- Setting a common vision across the faculty and care providers.
- Integrating core competencies for interprofessional collaborative practice into the curriculum.
- Gaining clarity on individual and team scope of practice that includes addressing areas of overlap.
- Using technology and tools to enhance live collaborative practice.

Based on the discussion, said Woolforde, it seems as if the main area that would better align health professions education with health care delivery involves a combination of *relationships*, *partnerships*, *alignment*, and *shared values*. She further clarified that such a commitment to a set of values would be demonstrated through a formal agreement or structure implemented on a community level, a national level, and everywhere in between. After further discussion Bushardt expressed his opinion on what he believed he heard, which was a keen interest in making "relationships" the highest priority. In support of this, Shirley Dinkel, Washburn University in Topeka, Kansas, added, "I think relationships come first, because without relationships you don't have alignment or shared vision." However, as Blitz pointed out from research, with relationships come the risk of power struggles. Creating strong ties between educators and those in the practice environment will require some thought as to how "academics enter their practice," she said, and how perceptions of power differentials are overcome. The discussion led to a final comment by Bushardt in proposing his thematic priority list that was informed by the group's discussions to emphasize or prioritize "building relationships" by creating a solid infrastructure for partnerships.

ALIGNING DISRUPTION WITH INNOVATION

Track Two: Prioritization

The goal for this session, said Barbara Brandt, is to "prioritize what needs to be worked on in terms of urgency." The health care system, she reiterated, is not incrementally changing but rather is changing quickly and dramatically, and the health professions education system is not prepared for these changes. Box 7-2 provides the context for Brandt's remarks that were shared with the workshop participants prior to the meeting.

Brandt sought to understand the participants' views of what constitutes urgency and what related actions might be taken to better prepare educators to work jointly with those in the practice environment. To do this, Brandt asked each breakout group participant to identify three priority actions for bringing practice and education together. Each person's list would then be discussed within small groups before their ideas were presented to the entire Track Two group. Brandt emphasized her request for urgent actions saying, "If it is not urgent at all, do not put it down." The reported items expressed by individuals to the larger group were captured by the rapporteur and separated into the following inventory of ideas based on each individual's proposed action list. This catalogue of ideas separated naturally into divisions starting with the *creation* of concepts and actions, then moving to the *formation* of valued activities that includes building the evidence base for the *improvement* of processes. Better *collaboration*

and alignment among all relevant stakeholders can lead to an *application* of team training and an *escalation* of interprofessional engagement. These divisions are outlined in the lists below.

Creation

- Creating opportunities for co-learning for students and practitioners.
- Creating and reforming financial streams to support health professions education in the community and at other sites.
- Creating financial and time options for health professions students to experience and work in practice settings (including communities).
- Creating a broader sense of understanding and common vision among and across the health professions and educators.
- Creating a compendium of strategies for increasing non-traditional clinical experiences.
- Creating a health care workforce that mirrors the populations served.
- Creating pathways for people in the existing workforce to do things differently; create clear routes for people to retool their careers.

Formation

- Making the case for student value in clinical settings, and/or develop new roles for students to bring value to clinical settings.
- Making changes in education and training funding to allow for training in more locations, in other types of practices, and in ways that promote the broader inclusion of professions.
- Building the evidence base about the link between health outcomes and interprofessional practice.
- Developing pre-service and continued lifelong learning that is focused on interprofessional education that translates into practice.
- Developing more standardized means of assessment.

Improvement

- Improving management processes and sharing of big data.
- Improving health workforce satisfaction and efficiency.
- Changing payment models to make time for collaborative learning; in combination with that, change perverse compensation systems that disincentivize practitioner participation in interprofessional activities.

- Changing accreditation standards to allow non-guild members to serve as preceptors and evaluators, plus align education and delivery accreditation.
- Restructuring financial and resource models for clinical education.
- Expanding the integrated accreditation system internationally.

Collaboration and Alignment

- Collaborating between organizations that represent health professions programs, health regulators, payers, business partners, policy makers, patients, and other stakeholders.
- Aligning education programs to meet the needs in workforce shortage areas.
- Aligning the future health care workforce with the community needs (e.g., geographic and profession/specialty distribution, diversity that mirrors the population).
- Aligning educational programs to meet population health needs.
- Integrating social needs and social factors into the delivery of health care.
- Integrating technology and innovation; health educators are primarily consumers of technology but, instead, need to be at the table developing technologies.
- Bringing together educational accreditors across the health professions and set core interprofessional behaviors and skills.
- Engaging employers and health care systems in understanding the urgency of workforce transformation.
- Working with industry to develop better transition-to-practice models.

Application

- Focusing training on patient outcomes, which will necessitate training in teams.
- Focusing on keeping patients and families in the center of education and practice.
- Identifying, developing, and supporting faculty practitioners to work collaboratively.
- Addressing the financial sustainability of health professions programs at the level of the individual student.
- Using the workforce need and development argument to improve clinical and community experiences for students.
- Selecting future learners differently (e.g., select people who are flexible, quick thinking, curious, and excited to be part of a team).

Escalation

- Increasing longitudinal interprofessional, community-based training.
- Increasing depth and diversity of teams in practice and education, including across disciplines and characteristics such as race and gender.
- Increasing incorporation of patient-reported outcome measures in training and practice.
- Increasing community and patient engagement through practice and education design and function.
- Collecting and using data to drive change, even when it makes people uncomfortable (e.g., be "data agitators").
- Educating and training that links patients with teams of health professionals working collaboratively.
- Educating students across all professions about critical health systems (e.g., informatics, social determinants, delivery of care).
- Re-educating the existing workforce regarding interprofessionalism and collaborative practice.

After listing these actions, Brandt and her colleagues—Christine Arenson for Thomas Jefferson University and Gerri Lamb for Arizona State University's Center for Advancing Interprofessional Practice, Education and Research—led the entire group through discussions on the similarities and differences between the proposed items. They also asked those in the room to consider the degree of urgency associated with each action. Breitbach remarked how some of the items were "just best practices" and should already be in place, while other items could require major policy shifts and would, therefore, take some time to implement. Malcolm Cox commented on the difference between priority and impact. Many actions are high priority, he said, but perhaps the focus should be on those actions that will generate the greatest impact. This remark triggered Maria Tassone at the University of Toronto's Centre for Interprofessional Education to consider looking at the list differently.

She suggested that distinctive actions could be taken on the macro level (e.g., law and policy changes), on the meso level (e.g., organizational initiatives), and on the micro level (e.g., individuals and teams). The macro-level actions would likely take longer to carry out, but hold the potential for greater impacts, while the micro-level actions may have less of a system-wide impact but could be accomplished almost immediately. Caswell Evans from the University of Illinois at Chicago College of Dentistry noted that, in order to accomplish the types of sweeping law and policy changes necessary to impact macro-level issues, health professions would need to advocate for

health care advancement as a unified team. He observed that many of the health professions lobby for policy change as individual organizations. For there to be real change, he said, health professions would have to look beyond their own organizational needs, taking a broader and more inclusive approach wherein all of the health professions would come together for a combined effort toward a unified goal.

Health Professions Education in the Age of Risk and Innovation

When the National Center for Interprofessional Practice and Education (the National Center) was first funded in 2012, said Brandt, the gap between health professional education and practice was wide; there was an obvious need to bring the two systems together. Figure 7-4 is a visual depiction of the convoluted connections between education (in blue, above the divide) and health care practice (in green, below the divide). In the years since the establishment of the National Center, added Brandt, there have been massive changes in health care as a system.

The focus of health care is shifting from provider-driven to consumer-driven. New care delivery and payment models are encouraging new roles among existing health providers. At the same time, new roles are emerging: community health workers, care coordinators, community paramedics, etc. Technology and scientific advancements are transforming roles and responsibilities. These changes are not incremental; rather, they represent a major shift. Brandt analogized this change to the Copernican revolution, through which the world vision moved from an Earth-centered model to one where the sun was at the center of the universe. Like the widespread impact of that revolution, she said, changes in health care have resulted in a lot of confusion so that "we are actually [mired] in even more chaos and complexity" than when the National Center emerged in 2012.

Brandt then listed what she called "The Six Ds," which she believes could help simplify an exceedingly complex world view of health care into a structure that can more easily open communication with systems leaders (see Figure 7-5). Such conversations with C-suite executives about workforce development are grounded by these Six Ds—disruption, deregulation, distribution, demographics/diversity, deployment of new teams, and digital health/learning—and are typically based on payment models. These payment models, she said, are currently in flux with "one foot in the fee-for-service and one foot in the value-based payment" arenas. Some systems are fully invested in transitioning to value-based payments, while others are resisting change. Disruption is ever-present in the new health care system, she said, with Amazon, CVS, Google, and others entering the health care realm and developing novel ways of meeting patients' needs.

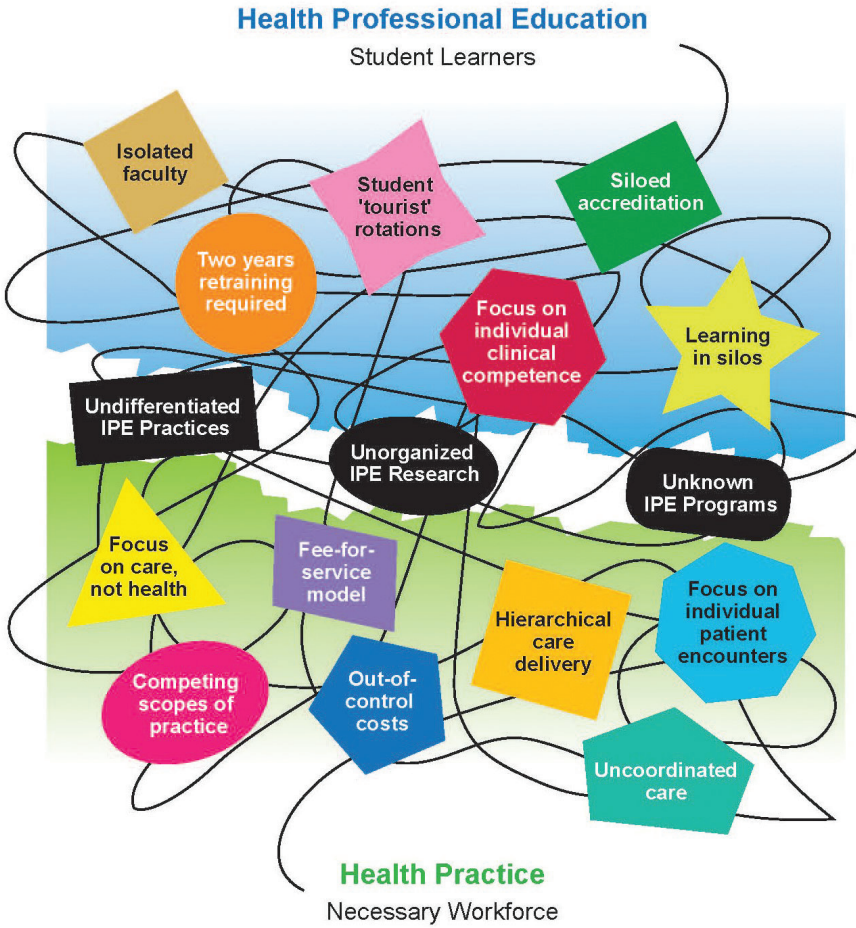

FIGURE 7-4 The 2013 world view of health care.
NOTE: IPE = interprofessional education.
SOURCE: Presented by Brandt, November 14, 2018. Used with permission by Brandt and the National Center for Interprofessional Practice and Education.

Distribution, demographics, and diversity of the workforce alone are complex issues, Brandt underscored, as she provided the group with examples. Some states have provider shortages, while others have a surplus of providers. In some undergraduate and health professions education, enrollment is decreasing, she added, which causes concern about the future workforce. Certain health professions are rapidly expanding, while others are experiencing declining enrollment numbers. All of that impacts provider roles and models of care, as well as the structure of heath care teams,

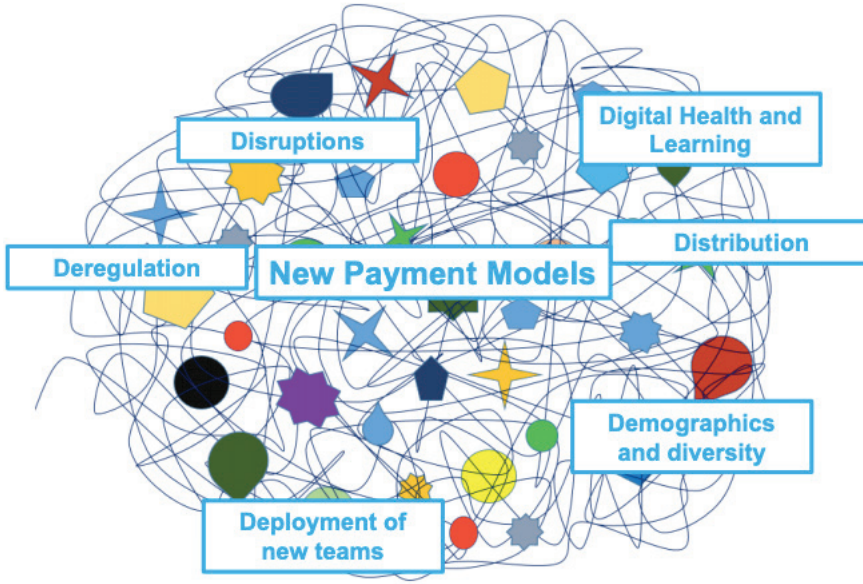

FIGURE 7-5 The new world view of health care.
SOURCE: Presented by Brandt, November 14, 2018. Used with permission by Brandt and the National Center for Interprofessional Practice and Education.

Brandt noted, which will require a retooling of the current workforce so that health care teams are designed around maximizing effectiveness and efficiency. In her final comment, Brandt acknowledged that technologies (such as artificial intelligence, health trackers and wearables, and genome sequencing) are rapidly transforming health care. Health education and practice must keep up with these trends, she concluded, if the workforce is to be prepared to navigate future health care systems.

Refining Prioritization

Following Brandt's presentation, the breakout group members returned to the list of urgent actions they had compiled earlier from individuals' input. Lamb asked participants to reflect on whether their priorities had shifted after listening to the different perspectives of others. Following some discussion, each participant listed their top three to five priority-action items. This led to a more in-depth dialogue between Lamb and the group as participants described their own, prioritized lists and talked about the differences and overlaps in the various lists. Based on the participants' descriptions, Lamb projected her list of urgent priorities from which action plans could be derived. That list included

- Collaborate between organizations that represent health professions programs, health regulators, payers, business, policy makers, patients, and other stakeholders.
- Create and reform financial streams to support health professions education in the community and at other sites.
- Integrate social needs and social factors into the delivery of health care.
- Integrate technology and innovation; health educators are primarily consumers of technology but, instead, need to be at the table developing technologies.
- Re-educate the existing workforce regarding interprofessionalism and collaborative practice.
- Engage employers and health care systems in understanding the urgency of workforce transformation.
- Make the case for student value in clinical settings and/or develop new roles for students to bring value to clinical settings.
- Align the future health care workforce with community needs (e.g., geographic and profession/specialty distribution, diversity that mirrors the population).
- Align educational programs to meet population health needs.

Moving Forward

Given Lamb's list of urgent priorities, the participants discussed possible next steps for moving the items into action. First, however, Brandt and Cox noted that many of these ideas are not novel but have been discussed at length in previous publications, such as the Macy Foundation's 2013 report *Transforming Patient Care: Aligning Interprofessional Education with Clinical Practice Redesign*. These sorts of reports help to emphasize the urgency and importance of these ideas, said Cox. Participants then began to discuss how to turn several of the more urgent ideas into action.

On the issue of re-educating and retooling the existing workforce, Frank Ascione with the University of Michigan Center for Interprofessional Education suggested using pilot programs and practice models to demonstrate how this can best be accomplished. Lamb added that once successful models are generated, lessons learned could be quickly spread and pilot programs scaled up, rather than "recreating the wheels over and over" through repeated demonstration projects. Erin Fraher from the University of North Carolina at Chapel Hill noted that academics can sometimes be reticent to use existing models, adding that implementation and dissemination science can help overcome this barrier. Another way to move this area forward, someone remarked, is to lean on existing organizations such as the

Accreditation Council for Continuing Medical Education and the National Academies of Practice. These organizations already prioritize education of the existing workforce and would, therefore, likely be great resources for disseminating new ideas. Finally, Joanne Spetz, a health economist with the University of California, San Francisco, said that, in order to move forward on retooling the existing workforce, it is critical that employers recognize both the urgency of doing so and the potential return on investment.

Other ideas were proposed by individual participants that could potentially be useful for moving the identified priorities forward. Those ideas included

- Developing incentive structures, such as grant programs, to encourage collaboration between education and practice.
- Using patient stories and patient perspectives to convince decision makers of the importance of interprofessional care.
- Sending an interprofessional team of representatives to lobby Congress and other entities who "hold the purse strings" in order to reform financial streams.

In considering the third bullet, Cox remarked that it is often more efficacious to suggest that money be moved around into different pots, rather than to ask for additional funds. In other words, he said, when lobbying decision makers for funds to support interprofessional education and practice, it is important "to talk about money, but not just *more* money." This notion was backed by another commenter who said "there is money available, but we should make a case" for using it to promote interprofessionalism across the education-to-care spectrum by emphasizing the potential for producing better patient outcomes.

Fraher stressed the importance of interprofessional support while working together to build a better health care system: "This work is important, it is incremental, it takes courage, and we are going to get shot down—so, we need to be supportive of each other. We need to build-in the fact that we *all* are moving toward this together. We need that support from each other."

REFERENCES

Blitz, J., M. de Villiers, and S. van Schalkwyk. 2018. Implications for faculty development for emerging clinical teachers at distributed sites: A qualitative interpretivist study. *Rural Remote Health* 18(2):4482.

Stewart, M., and B. Ryan. 2015. Ecology of health care in Canada. *Canadian Family Physician/Médecin de Famille Canadien* 61(5):449–453.

Thibault, G. E. 2013. Reforming health professions education will require culture change and closer ties between classroom and practice. *Health Affairs* 32(11):1928–1932.

Appendix A

Workshop Agenda

Strengthening the Connection Between Health Professions Education and Practice: A Joint Workshop with the National Center for Interprofessional Practice and Education

November 13–14, 2018

DAY 1: November 13, 2018

Keck Center of the National Academies, Room 100
500 Fifth Street, NW, Washington, DC 20001

WORKSHOP OBJECTIVE: To explore ways of effectively educating the needed health workforce in settings appropriate for high-quality clinical practice while also assessing the necessary investments and potential outcomes of new models of care with learning.

9:00 am **Welcome**

- Caswell Evans, Global Forum on Innovation in Health Professional Education (IHPE) Co-Chair

SESSION I: SETTING THE STAGE

9:05 am Foundation of the Workshop

Objective: To understand the goals of health professions education at the intersection of practice within the clinical environment.

Barbara Brandt, Workshop Co-Chair

Workshop foundations:

1. Education and practice are working toward the same goal: To improve the health of patients and populations without compromising the health and well-being of the education or practice workforce.
2. Facilitating greater alignment between education and practice will better target workforce needs and improve workforce development.
3. Technology is a potential lever for innovation and cost containment for both education and health care.

SESSION II: WORKFORCE DEVELOPMENT

9:30 am **Workforce and Training Data**

Objective: To review the current workforce and education data on who is in the health workforce, where they provide care, where they train, and why some health systems/ organizations are not training health professionals.

Moderator: Reamer Bushardt, The George Washington University

- Erin Fraher, University of North Carolina at Chapel Hill
- Joanne Spetz, University of California, San Francisco
- Chris MacDonell, Commission on Accreditation of Rehabilitation Facilities (CARF) International

10:45 am **BREAK**

11:15 am **Patients' Role Within Care and Education Innovations**

Objective: To engage in conversation on keeping the patient at the center of education and care delivery within rapidly changing health systems.

Facilitator: Miguel Paniagua, National Board of Medical Examiners

- June Eilers, University of Nebraska College of Nursing

Table discussions

12:00 pm **LUNCH**

1:00 pm **The Role of Health Care in Developing the Health Workforce**

Moderator: Warren Newton, American Board of Family Medicine

- Gaurdia Banister, Massachusetts General Hospital (MGH), and Mary Knab, MGH Institute of Health Professions
- Charnetia Young, CVS Health

2:00 pm **BREAK**

SESSION III: MEETING NEEDS OF POPULATIONS, STUDENTS, AND EDUCATORS

2:30 pm **Learning from Examples**

Objective: To learn from innovative examples of health professional training that meet patient and/or population needs.

Facilitator: Kennita Carter, Health Resources and Services Administration

Adapted apprenticeship: Licensed Vocational Nurse to Registered Nurse Within a California Prison

- Barbara Barney-Knox and Jane Robinson, California Correctional Health Care Services

Classroom to Community: Implementing Patient-Centered Care in Public Housing

- Shirley Dinkel, Washburn University (Topeka, Kansas)

4:00 pm Breakout Groups: Envisioning Future Educators

Objective: To explore the next generation of health educators, knowing that the role of the educator is rapidly changing and will likely require an ability to educate using technology; knowledge of legal issues; understanding of changes in the clinical environment; and interprofessional learning with collaborative practice.

With this understanding, respond to the following forward-looking questions:

A. What are pipeline opportunities for attracting/developing future health professions educators?
B. What core skills will the health professional educators need?
C. How will instructors keep up to date on clinical, education, information technology, and legal needs of the health professions in changing clinical and educational environments?

The Why: Launette Woolforde, National League for Nursing, and Reamer Bushardt, The George Washington University

The How: Instructions by Steven Chesbro, American Physical Therapy Association

Directions: Each person will receive a card with a room and group assignment. Go to your assigned room and gather with your group at your assigned flip chart number that corresponds to the above questions. (Note: Some groups will start with B or C.) You will have 10 minutes to consider your first question and 6 minutes each to consider your second

and third questions. Write your input on the flipchart or star others' responses that match your own.

Breakout room coordinators:

Room 101: Steven Chesbro, American Physical Therapy Association

Room 103: Ronald Cervero, Uniformed Services University of the Health Sciences

Room 105: Sara Fletcher, Physician Assistant Education Association

Room 106: Alex Johnson, MGH Institute of Health Professions

5:00 pm ADJOURN (from breakout groups)

DAY 2: November 14, 2018

Keck Center of the National Academies, Room 208
500 Fifth Street, NW, Washington, DC 20001

A continental breakfast will be available starting at 7:30 am

7:30 am Breakfast in Room 207

SESSION III: NEXT STEPS

8:00 am **Facilitated Discussions**

Objective: To build on ideas from the previous day's discussions that focus on next steps for how education and educators can drive the incorporation of care delivery innovation into education.

Each participant is asked to pick a track based on the description noted below:

Track One: Aligning disruption with innovation (Room 208)

Facilitator: Barbara Brandt, National Center for Interprofessional Practice and Education, assisted by:

- Christine Arenson, Thomas Jefferson University
- Gerri Lamb, Arizona State University's Center for Advancing Interprofessional Practice, Education and Research

Track Two: Building a pipeline of disruptive innovators in health professions education (Room 201)

Facilitators: Reamer Bushardt, The George Washington University, and Launette Woolforde, National League for Nursing

Breakout room coordinators discuss responses to previous day's questions

Cue up "Understanding of the views and experiences of rural clinical preceptors" (virtual)

- Julia Blitz, Stellenbosch University Centre for Health Professions Education (South Africa) and Marietjie de Villiers, Stellenbosch University Faculty of Medicine and Health Sciences (South Africa)

Explore a "bridging model"

11:00 am **ADJOURN**

Appendix B

Speaker Biographical Sketches

Christine A. Arenson, M.D., is Alumni Professor and Chair of the Department of Family and Community Medicine at Sidney Kimmel Medical College at Thomas Jefferson University in Philadelphia, Pennsylvania. Dr. Arenson graduated from the University of Delaware in 1986 and from Sidney Kimmel Medical College (then Jefferson Medical College) in 1990. She completed family medicine residency training at Thomas Jefferson University Hospital, followed by a fellowship in geriatric medicine. She served as both the founding Director of the Jefferson Division of Geriatric Medicine and Palliative Care and the founding Co-Director of the Jefferson Center for Interprofessional Practice and Education. Most recently, Dr. Arenson has been actively engaged in primary care transformation to meet the Quadruple Aim: Improve the Experience of Care, Improve Health Outcomes, Reduce Costs, and Restore Joy in Practice. She serves on the board of the Delaware Valley Accountable Care Organization and on the executive steering committee for Jefferson Health population health and primary care initiatives. She remains actively engaged in interprofessional education nationally, currently serving as Chair of the American Interprofessional Health Collaborative.

Gaurdia Banister, Ph.D., R.N., NEA-BC, FAAN, is the Executive Director of the Institute for Patient Care at Massachusetts General Hospital. The Institute serves as a catalyst for promoting interdisciplinary research, education, and clinical practice development. Dr. Banister has academic appointments at the Massachusetts General Hospital Institute of Health

Professions and the University of Massachusetts Boston's College of Nursing and Health Sciences. She is a former Johnson & Johnson/Wharton Nurse Fellow and is an alumna of the Robert Wood Johnson Foundation Executive Nurse Fellows Program. Dr. Banister's research interests include innovative models of interprofessional education, transition to practice considerations for culturally diverse nursing students, and the impact of mentoring on career success and progression.

Barbara Barney-Knox, M.B.A., M.A., B.S.N., R.N., is a Chief Nurse Executive for California Correctional Health Care Services (CCHCS). She is responsible for ensuring professional practice and compliance for the 35 California Department of Corrections and Rehabilitation prisons. Ms. Barney-Knox has been with CCHCS for 4 years and has been instrumental in developing and implementing Shared Governance, a nursing professional practice model that empowers nurses to have a voice in decision-making processes. Prior to working for CCHCS, she spent 8 years as a leader at Kaiser Permanente and 17 years at the University of California, Davis, Health System. Ms. Barney-Knox received her B.S.N. from San Jose State University almost 30 years ago. She has a master's degree in Psychology and graduated summa cum laude with her M.B.A. She currently serves as the President-Elect for Western American Correctional Healthcare Services.

Julia Blitz, B.Sc., M.B.Ch.B., D.C.H., FRCP, M.P.H., D.Phil., MASSAf, is Vice-Dean of Learning and Teaching at Stellenbosch University Faculty of Medicine and Health Sciences in Cape Town Area, South Africa. From 2009 to 2010 Professor Blitz was at Penang Medical College; and before that she worked for more than 7 years as Professor and Head of Family Medicine at the University of Pretoria. Professor Blitz received her Ph.D. from Stellenbosch University in 2018.

Barbara Brandt, Ph.D., M.Ed., is known for her work in health professional education; specifically, interprofessional practice and education and continuing health professions education. Dr. Brandt, Director of the National Center for Interprofessional Practice and Education (the National Center), has served as a tenured Professor of Pharmacy and an Associate Vice President at the University of Minnesota for more than 15 years. Dr. Brandt holds a bachelor of arts in the teaching of history from the University of Illinois at Chicago, as well as master of education and doctor of philosophy degrees in continuing education (with specialization in the health professions) from the University of Illinois at Urbana-Champaign. She completed a W.K. Kellogg Foundation-sponsored, postdoctoral fellowship for faculty in adult and continuing education at the University of Wisconsin–Madison.

Reamer L. Bushardt, Pharm.D., PA-C, DFAAPA, tenured Professor and Chair of the Department of Physician Assistant Studies at Wake Forest Baptist Medical Center's School of Medicine, was named Senior Associate Dean for Health Sciences at The George Washington University School of Medicine and Health Sciences. Dr. Bushardt has published extensively on the education and training of health care professional students and leaders, interprofessional education, and collaborative practice models. He serves as Editor-in-Chief for the *Journal of the American Academy of Physician Assistants*, is a member of the North Carolina Medical Board, and is a fellow in the Federation of State Medical Boards. Dr. Bushardt received his doctor of pharmacy and bachelor of science in pharmaceutical sciences from the University of South Carolina and his bachelor of science in physician assistant studies from the Medical University of South Carolina. In addtion, he completed an administrative fellowship in health system leadership and workforce innovation at Wake Forest Baptist Medical Center.

Kennita Carter, M.D., is a Senior Advisor in the Division of Medicine and Dentistry within the Bureau of Health Workforce at the Health Resources and Services Administration. She received a bachelor of science in psychobiology from the University of California, Los Angeles, and completed both medical school and a residency in internal medicine at the University of Maryland School of Medicine. Dr. Carter is a board-certified internist and fellowship-trained geriatrician who completed her fellowship at Union Memorial Hospital in Baltimore. She also completed a Leadership Program in Integrative Healthcare at Duke University in Durham, North Carolina, and was a recipient of a Bravewell Fellowship in Integrative Medicine at the University of Arizona. Dr. Carter trains geriatric medicine fellows, internal medicine residents, and medical students in an interprofessional setting as volunteer faculty at the U.S. Department of Veterans Affairs. Other areas of interest include health equity, spirituality in medicine, and physician well-being.

Ronald Cervero, Ph.D., M.A., is a Professor in the Graduate Program of Health Professions Education at the Uniformed Services University of the Health Sciences School of Medicine. Dr. Cervero was extensively involved in health professions education at the University of Georgia (UGA), where he founded and was co-director of the Institute for Evidence-Based Health Professions Education, served as co–Principal Investigator for Georgia's Public Health Training Center, and spent 7 years as an Educational Consultant for the Augusta University-UGA Medical Partnership. As such, he led the Provost's initiative on interprofessional education, which created a campus-wide effort to build and sustain an interprofessional practice and education program linking all health professions units. Dr. Cervero received the 2008

Aderhold Distinguished Professor Award from UGA's College of Education for excellence in research, teaching, and outreach. He received his M.A. in the social sciences and his Ph.D. in education at The University of Chicago.

Steven Chesbro, P.T., D.P.T., Ed.D., is Vice President for Education at the American Physical Therapy Association. In this role, he provides leadership for the Department of Education which includes the divisions of academic services, accreditation, postprofessional credentialing, and residency and fellowship education. Prior, Dr. Chesbro served as Dean of the College of Health Sciences, and Founding Director of the Center to Advance Rehabilitative Health and Education at Alabama State University. He has also held faculty positions at Howard University and the University of Oklahoma Health Sciences Center. Dr. Chesbro's career has focused on health professions education, including initiatives to improve diversity in education and workforce environments, and is a board-certified geriatric clinical specialist. He has completed a B.A. and an M.S. (psychology and college teaching) at Northeastern State University, a B.S. (physical therapy) at Langston University, an M.H.S. (neurologic physical therapy) at the University of Indianapolis, an Ed.D. (occupational and adult education) from Oklahoma State University, and a D.P.T. from the Massachusetts General Hospital Institute of Health Professions.

Malcolm Cox, M.D., is an Adjunct Professor of Medicine at the University of Pennsylvania. He most recently spent 8 years as the Chief Academic Affiliations Officer for the U.S. Department of Veterans Affairs (VA), in Washington, DC, where he oversaw the largest health professions training program in the country and repositioned the VA as a major voice in clinical workforce reform, educational innovation, and organizational transformation. Dr. Cox received his undergraduate education at the University of the Witwatersrand and his M.D. from Harvard Medical School. After completing postgraduate training in internal medicine and nephrology at the Hospital of the University of Pennsylvania, he rose through the ranks to become Professor of Medicine and Associate Dean for Clinical Education. He has also served as Dean for Medical Education at Harvard Medical School; on leaving the Dean's Office, he was appointed the Carl W. Walter Distinguished Professor of Medicine at Harvard Medical School. Dr. Cox has served on the National Leadership Board of the Veterans Health Administration, the VA National Academic Affiliations Advisory Council (which he currently chairs), the National Board of Medical Examiners, the National Advisory Committee of the Robert Wood Johnson Foundation Clinical Scholars Program, the Board of Directors of the Accreditation Council for Graduate Medical Education, and the Global Forum on Innovation in Health Professional Education of the National Academies

of Sciences, Engineering, and Medicine. Dr. Cox is a recipient of the University of Pennsylvania's Lindback Award for Distinguished Teaching and, in 2014, was recognized by the Association of American Medical Colleges as a nationally and internationally renowned expert in health professions education.

Shirley Dinkel, Ph.D., APRN-BC, FAANP, is nationally certified as both a family and an adult nurse practitioner. For more than 20 years, her professional practice has been in the care of the medically indigent and other vulnerable populations. She has been a Nurse Educator since 1991 and is Associate Dean of Graduate Programs at Washburn University. As a fellow in the American Association of Nurse Practitioners, she is nationally recognized for her leadership in nurse practioner education and practice. While at Washburn University, she has served in multiple interdisciplinary roles: Principal Investigator for the Classroom to Community: Implementing Patient-Centered Care in Public Housing program, Director of Student Health Services, member of the University Behavioral Assessment Team, and Faculty Sponsor for Washburn Transformational Experience. She is an active Board Member for several community organizations, including the Pine Ridge Family Health Center Advisory Council and Kansas Patients & Providers Engaged in Prevention Research.

Jill Duncan, R.N., M.S., M.P.H., Executive Director at the Institute for Healthcare Improvement (IHI), provides strategic development and programming leadership for IHI in a number of ways: quality, cost, and value focus area; leadership of IHI's Joint Replacement Learning Community; program coordination and faculty leadership for IHI's Leading Quality Improvement: Essentials for Managers program; and program development and facilitation for many of IHI's workforce development initiatives. Previous responsibilities include daily operations and strategic planning for the IHI Open School, and development and leadership of Impacting Cost + Quality. Duncan draws from her learning as a Clinical Nurse Specialist, quality leader, pediatric nurse educator, and frontline nurse.

June Eilers, Ph.D., APRN-CNS, BC, FAAN, received each of her nursing educational degrees from the University of Nebraska Medical Center, where she currently holds two part-time positions: one as Volunteer Associate Faculty with the College of Nursing and one with the College of Public Health as a Co–Principal Investigator on a Eugene Washington Award with Patient-Centered Outcomes Research Institute. She is the designated patient representative on the steering committee of that award. Dr. Eilers spent more than 35 years in the clinical setting, working as an Advanced Practice Nurse and Nurse Researcher with the Office of Nursing Research

and Evidence Based Practice at the Medical Center. Her clinical expertise and research has been focused primarily in cancer care.

Caswell Evans, D.D.S., M.P.H., practices at the University of Illinois at Chicago (UIC) College of Dentistry and is also a faculty member in the UIC School of Public Health. Previously he served as the Executive Editor and Project Director for *Oral Health in America: A Report of the U.S. Surgeon General*. For 12 years, Dr. Evans was Director of Public Health Programs and Services for the Los Angeles County Department of Health Services. He is a member of the National Academy of Medicine and a past President of the American Public Health Association, the American Association of Public Health Dentistry, and the American Board of Dental Public Health. Dr. Evans is Chair of the DentaQuest Foundation Board. He also serves on the Chicago Board of Health and on the boards of the Institute of Medicine of Chicago, Oral Health America, and the Children's Dental Health Project.

Sara E. Fletcher, Ph.D., Vice President and Chief Learning Officer for Physician Assistant Education Association (PAEA), has been an educator for 16 years, has taught at both the primary and university levels, and has served as a public school administrator. She has also designed curricula for local and national audiences. Dr. Fletcher holds a master's degree in school administration and a Ph.D. in educational leadership. Previously, she served as Director for Medical Education at Wake Forest University, where she worked with the PA program conducting student admissions interviews, serving as an external reviewer for an accreditation site visit, and facilitating problem-based learning for small groups. In her current role, she partners with several of PAEA's volunteers on initiatives involving curriculum, assessment, and faculty development.

Erin Fraher, Ph.D., M.P.P., is an Associate Professor in the Department of Family Medicine at the University of North Carolina (UNC) at Chapel Hill's School of Medicine. Dr. Fraher directs the Health Resources and Services Administration–funded Carolina Health Workforce Research Center and has worked as a health workforce researcher, workforce modeler, and policy analyst for more than 20 years. Her research focuses on understanding the flexible use of workers in new models of care, developing new methodologies to project how many health workers will be needed under different possible "futures," and using life course theory to better understand health professionals' career trajectories. Dr. Fraher is a member of the Council on Graduate Medical Education charged with advising the Secretary of the U.S. Department of Health and Human Services and Congress on physician workforce trends, training issues, and financing. Dr. Fraher is an expert on comparative health workforce systems, having worked for the

National Health Service in England, Health Workforce New Zealand, and the College of Nurses of Ontario in Canada. She has a B.A. in economics/Spanish from Wellesley College, a Master of Public Policy from University of California, Berkeley, and a Ph.D. in health policy and management from UNC at Chapel Hill.

Alex F. Johnson, Ph.D., CCC-SLP, is Provost and Vice President at the Massachusetts General Hostpital (MGH) Institute of Health Professions in Boston. As Provost he serves as Chief Academic Officer, with responsibility for all of the academic programs, the faculty, and the students at the Institute. Dr. Johnson is also a Professor in the MGH Institute Department of Communication Sciences and Disorders, a teacher in the Master of Science in Health Professions Education program, and on the faculty of the Harvard-Massachusetts Institute of Technology Program in Speech and Hearing Bioscience and Technology. Originally from Ohio, he completed both his bachelor's and master's degrees at Kent State University and his Ph.D. in speech-language pathology at Case Western Reserve University.

Mary Knab, P.T., Ph.D., D.P.T., joined the Center for Interprofessional Studies and Innovation in 2012. There she is a key leader in the institute's interprofessional initiative: IMPACT Practice. Dr. Knab has also served as Associate Professor for the Masters of Health Professions Education program since its launch in 2012. Since completing a Ph.D. in educational studies at Lesley University in 2012, Dr. Knab's primary research interests have centered on the role of reflection in the development of health professionals along a novice-to-expert continuum, narrative as a vehicle for reflection, and models for interprofessional learning and development across academic, simulation, and clinical learning environments.

Gerri Lamb, Ph.D., R.N., FAAN, is Professor and Director of the Center for Advancing Interprofessional Practice, Education and Research at Arizona State University in Phoenix. Dr. Lamb is past Chair of the American Interprofessional Health Collaborative and Convener of the Arizona Interprofessional Research and Learning Collaborative, an effort among seven universities and eight clinical organizations in Arizona to advance interprofessional practice and health care for vulnerable populations. Dr. Lamb has served as Principal Investigator on several grants funded by the Josiah Macy Jr. Foundation to design and implement new interprofessional learning programs. Her current Macy-funded grant focuses on academic and practice co-created educational tools to improve team-based care in primary care and community-based clinical settings. Dr. Lamb also is well known for her research, publications, books, and presentations on community-based care coordinationa practice, which she views as high-performance teamwork.

Christine M. MacDonell, FACRM, Managing Director of the Medical Rehabilitation and International Aging Services/Medical Rehabilitation accreditation areas for Commission on Accreditation of Rehabilitation Facilities (CARF) International, has more than 35 years of experience as a provider, administrator, and trainer in the human services field. Ms. MacDonell has represented CARF at international and national meetings since 1991, introducing and promoting the concepts of quality oversight and enhancement of human services through the CARF accreditation process in both medical rehabilitation and aging services. In 2003, she became responsible for the transition of the Continuing Care Accreditation Commission aquired by CARF that February.

Warren P. Newton, M.D., M.P.H., serves as the President and Chief Executive Officer-Elect of the American Board of Family Medicine (ABFM). A member of the Global Forum on Innovation in Health Professional Education since its founding, Dr. Newton has served successively as Chair of Family Medicine, Chief Academic Officer, and Director of North Carolina Area Health Education Centers at the University of North Carolina (UNC). A personal physician and health services researcher for 34 years, he has been heavily involved in practice transformation at the local, regional, and statewide levels. He founded and led large-scale care transformation collaboratives in primary care residencies across three states and in more than 1,400 primary care practices. He has worked closely with the UNC Sheps Center for Health Services Research, with ABFM, and with North Carolina Health and Human Services on workforce issues across many professions. Dr. Newton has served on the Liaison Committee on Medical Education and was the Founding Chair of the American Board of Medical Specialties Committee on Continuing Certification.

Miguel A. Paniagua, M.D., FACP, FAAHPM, received his undergraduate degree from Saint Louis University before earning his M.D. at the University of Illinois College of Medicine, Chicago, where he is completing a Master of Health Professions Education program. Dr. Paniagua completed his internal medicine residency and gerontology/geriatric medicine fellowship at the University of Washington Seattle. He currently serves as Medical Advisor for Test Development Services at the National Board of Medical Examiners (NBME). His work at NBME includes research on wellness and burnout, as well as on how race, ethnicity, and patient characteristics impact exams. Dr. Paniagua is working toward development of assessments of competencies such as communication skills and interprofessional team work, as well as other innovations across various NBME examinations. One day per week, Dr. Paniagua practices consultative hospice and palliative medicine at the Hospital of the University of Pennsylvania and holds

an adjunct appointment to the faculty of the Perelman School of Medicine at the University of Pennsylvania.

Deborah Powell, M.D., is Dean Emerita of the University of Minnesota Medical School and a professor in the Department of Laboratory Medicine and Pathology at the University of Minnesota Medical School, where she coordinates the medical school pathology curriculum. At the University of Minnesota, Dr. Powell instituted the Medical School's Flexible M.D. program, which is an individualized model of medical education designed to be more adaptable to students' career and learning goals. Dr. Powell served as Chair of the Association of American Medical Colleges (AAMC) Board of Directors from 2009 to 2010 and was the first female Chair of the AAMC Council of Deans in 2004. She is currently working on a pilot study of a new model for training medical students who want to go into pediatrics via a competency-based model that combines undergraduate medical education and graduate medical education. Currently, the model is being tested in four U.S. medical schools including the University of Minnesota. Dr. Powell was elected to the National Academy of Medicine in 2000.

Jane Robinson currently serves as Deputy Director and Statewide Chief Nurse Executive for correctional health care at California Correctional Health Care Services, which she joined in 2006. Ms. Robinson has more than 30 years of experience in nursing at various levels of health care systems in both community hospitals and state prison settings. She provides nursing leadership and oversight to state prisons located in California. Prior to coming to California, Ms. Robinson worked in correctional health care for the Washington Department of Corrections as a Continuous Quality Improvement Nurse and a Health Care Manager. Ms. Robinson has also served as a patient advocate for detainees in jail settings in the capacity of a court expert. Prior to her work in correctional health care systems, she was a patient care coordinator in an acute care hospital in the Midwest, where her responsibilities included quality management, staff development, and policy and program development. Ms. Robinson mantains various memberships in the Advisory Board at Clover Park Technical College, AIDS Education & Training Center Program, University of Washington, National Commission on Correctional Health Care Academy, and the American Correctional Health Services Association.

Susan C. Scrimshaw, Ph.D., is past President of The Sage Colleges in Troy, New York. Previous positions include President of Simmons College (Boston, Massachusetts); Dean of the School of Public Health at the University of Illinois at Chicago; and Associate Dean of Public Health and Professor of Public Health and Anthropology at the University of

California, Los Angeles. She is a graduate of Barnard College with a Ph.D. in anthropology from Columbia University. Her research includes community participatory research methods, health disparities, pregnancy outcomes, violence prevention, and culturally-appropriate delivery of health care. She is a member of the National Academy of Medicine and a fellow of both the American Association for the Advancement of Science and the American Anthropological Association. Dr. Scrimshaw served on the Chicago and Illinois State Boards of Health. She is past President of the board of the U.S.-Mexico Foundation for Science and of the Society for Medical Anthropology. She is also former Chair of the Association of Schools of Public Health. Dr. Scrimshaw lived in Guatemala until age 16. She speaks Spanish, French, and Portuguese.

Javaid I. Sheikh, M.D., M.B.A., is an internationally renowned medical executive, distinguished clinician-scientist, and recognized thought leader and innovator in global academic medicine. As Dean of the groundbreaking Weill Cornell Medicine–Qatar (WCM-Q), he is the Chief Academic Officer of the first successful international location of a U.S. research-intensive, graduate-level medical school to grant a medical degree from a U.S.-based university. Prior to joining WCM-Q in 2007, Dr. Sheikh built a distinguished career as Professor of Psychiatry and Behavioral Sciences, Associate Dean, Chief of the Medical Staff, and Board Chair of the Palo Alto Institute for Research and Education at Stanford University School of Medicine and the Veterans Affairs Palo Alto Health Care System in California. At Stanford, Dr. Sheikh published the first studies exploring the impact of aging on anxiety disorders while delineating differential sleep architecture in various anxiety disorders. His work, funded both by the National Institutes of Health and private sources, resulted in more than 140 publications and more than 100 abstracts in peer-reviewed scientific journals.

Joanne Spetz, Ph.D., is a Professor at the Institute for Health Policy Studies, the Department of Family and Community Medicine, and the School of Nursing at the University of California, San Francisco (UCSF). She is the Associate Director for Research at the Healthforce Center at UCSF and the Director of the UCSF Health Workforce Research Center for Long-Term Care. Her fields of specialty are economics of the health care workforce, shortages and supply of registered nurses, organization and quality of the hospital industry, impact of health information technology, effect of medical marijuana policy on youth substance use, and the substance use disorder treatment workforce. Dr. Spetz is an Honorary Fellow of the American Academy of Nursing who received her Ph.D. in economics from Stanford University after studying economics at the Massachusetts Institute of Technology.

Kate Tulenko, M.D., M.P.H., M.Phil., FAAP, serves as the Chief Executive Officer of Corvus Health, a global health workforce services company that provides recruitment, staffing, training, TeleHR, human resources management, quality improvement, and advisory services. She is a globally recognized expert in health workforce and health systems strengthening. Previously, Dr. Tulenko served as Vice President of Health Systems Innovation for IntraHealth International; Director of CapacityPlus, the U.S. Agency for International Development's flagship global health workforce project; and coordinator of World Bank's Africa Health Workforce Program. She has received a Rainer Arnhold Fellowship for innovation in global development, was named one of "300 Women Leaders in Global Health" by the Graduate Institute of Development Studies in Geneva, has published widely (including in *The New York Times* and *Foreign Policy*), and is an occasional global health commentator for China Global Television Network. She has received degrees from Harvard University, Cambridge University, the Johns Hopkins University School of Medicine, and the Johns Hopkins Bloomberg School of Public Health.

Launette Woolforde, Ed.D., D.N.P., R.N.-BC, has served in various roles in the clinical setting (in medicine, surgery, and critical care) and in the academic setting (as a professor at several schools of nursing). Currently, Dr. Woolforde is Vice President for Nursing Education and Professional Development at Northwell Health and an Assistant Professor at Hofstra/Northwell School of Medicine. Northwell Health, comprised of 23 hospitals and more than 650 outpatient centers, is the largest employer in New York State. There, Dr. Wooldforde oversees a broad scope of strategic efforts and education programming that impacts the health network's more than 67,000 employees (including its 17,000 plus nurses). Dr. Woolforde has earned numerous degrees including a Doctor of Nursing Practice (D.N.P.) from Case Western Reserve University and a Doctor of Education (Ed.D.) from Teachers College at Columbia University. She co-authored the current *Scope and Standards of Practice for Nursing Professional Development* and is a Board Member at the National League for Nursing and the Association for Nursing Professional Development. She is also a Fellow of The New York Academy of Medicine.

Charnetia Young is Manager of Workforce Programs for CVS Health.

Brenda Zierler, Ph.D., R.N., FAAN, a Professor in the Department of Biobehavioral Nursing and Health Systems at University of Washington School of Nursing, is the representative from the American Academy of Nursing. Dr. Zierler is a health services researcher who conducts research exploring the relationships between the delivery of health care and outcomes—

at both the patient and system levels. In the past 10 years, she has focused on the implementation and evaluation of interprofessional education and collaborative practice. She is now leading efforts in the science of team science for interprofessional research teams. Dr. Zierler is a Board Member and past Chair of the American Interprofessional Health Collaborative, and a member of the Global Forum on Innovation in Health Professional Education.

Appendix C

Forum-Sponsored Products

GLOBAL FORUM ON INNOVATION IN HEALTH PROFESSIONAL EDUCATION SUMMARIES AND PROCEEDINGS

nationalacademies.org/ihpeglobalforum

Interprofessional Education for Collaboration: Learning How to Improve Health from Interprofessional Models Across the Continuum of Education to Practice: Workshop Summary (2013)

Establishing Transdisciplinary Professionalism for Improving Health Outcomes: Workshop Summary (2013)

Assessing Health Professional Education: Workshop Summary (2013)

Building Health Workforce Capacity Through Community-Based Health Professional Education: Workshop Summary (2014)

Empowering Women and Strengthening Health Systems and Services Through Investing in Nursing and Midwifery Enterprise: Lessons from Lower-Income Countries: Workshop Summary (2015)

Measuring the Impact of Interprofessional Education on Collaborative Practice and Patient Outcomes (2015)

Envisioning the Future of Health Professional Education: Workshop Summary (2015)

A Framework for Educating Health Professionals to Address the Social Determinants of Health (2016)

Exploring the Role of Accreditation in Enhancing Quality and Innovation in Health Professions Education: Proceedings of a Workshop (2016)

Future Financial Economics of Health Professional Education: Proceedings of a Workshop (2017)

Exploring a Business Case for High-Value Continuing Professional Development: Proceedings of a Workshop (2018)

Improving Health Professional Education and Practice Through Technology: Proceedings of a Workshop (2018)

A Design Thinking, Systems Approach to Well-Being Within Education and Practice: Proceedings of a Workshop (2019)

NATIONAL ACADEMY OF MEDICINE PERSPECTIVE PAPERS

Breaking the Culture of Silence on Physician Suicide (2016)

I Felt Alone But I Wasn't: Depression Is Rampant Among Doctors in Training (2016)

Defining Community-Engaged Health Professional Education: A Step Toward Building the Evidence (2017)

100 Days of Rain: A Reflection on the Limits of Physician Resilience (2017)

A Multifaceted Systems Approach to Addressing Stress Within Health Professions Education and Beyond (2017)

Addressing Burnout, Depression, and Suicidal Ideation in the Osteopathic Profession: An Approach That Spans the Physician Life Cycle (2017)

Burnout, Stress, and Compassion Fatigue in Occupational Therapy Practice and Education: A Call for Mindful, Self-Care Protocols (2017)

Promoting Well-Being in Psychology Graduate Students at the Individual and Systems Levels (2017)

Stress-Induced Eating Behaviors of Health Professionals: A Registered Dietitian Nutritionist Perspective (2017)

Breaking Silence, Breaking Stigma (2017)

Breaking the Culture of Silence: The Role of State Medical Boards (2017)

The Role of Accreditation in Achieving the Quadruple Aim (2017)

Nursing, Trauma, and Reflective Writing (2018)

The Role of Health Care Profession Accreditors in Promoting Health and Well-Being Across the Learning Continuum (2018)

Utilizing a Systems and Design Thinking Approach for Improving Well-Being Within Health Professions' Education and Health Care (2019)