Reimagining Public Health Infrastructure and the Health Workforce for the 21st Century

Advisory Committee on Interdisciplinary, Community-Based Linkages (ACICBL)

Reimagining Public Health Infrastructure and the Health Workforce for the 21st Century Twentieth Annual Report to the Secretary of the U.S. Department of Health and Human Services and the U.S. Congress

October 2021

HRSA

Health Resources & Services Administration

Contents

Authority

The Advisory Committee on Interdisciplinary, Community-Based Linkages (ACICBL or Committee) provides advice and recommendations on policy and program development to the Secretary of Health and Human Services (Secretary) and the U.S. Congress concerning the activities under Title VII, Part D, of the Public Health Service Act as authorized by section 757 (42 U.S.C. 294f). The Committee is governed by provisions of the Federal Advisory Committee Act (FACA) of 1972 (5 U.S.C. Appendix 2), which sets forth standards for the formation and use of advisory committees.

Each year, the Committee selects a topic concerning a major issue within the healthcare delivery system that is relevant to the mission of the Health Resources and Services Administration's (HRSA) Bureau of Health Workforce (BHW) Title VII, Part D, Interdisciplinary Community-Based Linkages programs. After the Committee analyzes the selected topic, it develops and sends recommendations to the Secretary concerning policy and program development. In 2021, the Committee developed recommendations that support models and strategies for ensuring that public health infrastructure and the health workforce are prepared to address the needs of the 21st century.

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Acknowledgements

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Executive Summary

The United States currently is experiencing health disparities and inequities in health care access, which has eroded trust in public health messaging and practices. In the short-term, this presents challenges for successfully addressing the COVID-19 public health emergency. In the long-term, clinicians, researchers, public health advocates, and policy makers must consider how to rebuild public trust in scientific evidence, address health disparities, prepare for public health emergencies, and meet the needs of an aging population. Several evidence-based practices and strategies are available to support progress toward these goals and a reimagined health system that meets the Quintuple Aim for health care quality, defined as: 1) improved patient experience, 2) improved health outcomes, 3) lower health care costs, 4) higher satisfaction among health care providers, and 5) equity.

Telehealth can increase access to health care and facilitate interprofessional care[1]. Collaborative efforts to enhance trust in public health efforts and practices can increase individuals' and communities' engagement and improve health outcomes. Interprofessional care that emphasizes equity, inclusion, and diversity can facilitate progress toward achieving all five core aspects of health care quality. Age-friendly health ecosystems apply evidence-based person-centered practices to address social determinants of health, improve environmental context, and improve individual and population health outcomes.

The Committee recommends support for Title VII, Part D programs to educate and train the health workforce to utilize telehealth, evidence-based communications strategies, interprofessional practice, and principles of age-friendly health ecosystems. Training in these areas will support transforming public health infrastructure and systems, and progress toward implementing 21st century health systems that achieve the Quintuple Aim of Health Care Quality.

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[1] 1 In recent years, the term "interprofessional" has become widely used in place of "interdisciplinary," focusing on teamwork and collaborative practice in addition to the composition of the team.

Recommendations

Recommendation One: Congress should increase funding to Title VII, Part D programs by 25 percent to support telehealth training to the health care workforce, to increase access to health care and community-based services for rural, underserved, vulnerable, and overlooked[2] populations, through efforts to increase secure internet access, equipment purchases, increasing digital literacy, and virtual services pertaining to remote patient monitoring.

Recommendation Two: BHW should educate and train the health care workforce on ways to increase public trust around public health initiatives, to include vaccinations, and educate and train the health workforce on vaccine options and the impact of health disparities on public health, by partnering with communities to co-develop and deliver public health information and services to individuals who are rural, underserved, vulnerable, and overlooked populations.

Recommendation Three: BHW should educate and train the health workforce on core competencies identified by the Interprofessional Education Collaborative (IPEC) and performance measures identified by the Institute of Medicine (IOM) for interprofessional practice and education (IPE) that reflect the principles of diversity, equity, and inclusion and align with the Quintuple Aim.

Recommendation Four: BHW should require Title VII, Part D grant recipients to train and educate participants in the principles and practice of developing, implementing, and evaluating age-friendly ecosystems.

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[2] "Overlooked" refers to groups historically not included in research and clinical trials, due either to being unintentionally disregarded or intentionally ignored. Groups may be overlooked because addressing their needs is not profitable.

Reimagining Public Health Infrastructure and Workforce for the 21st Century

Background

Public health experts have identified a need for research and infrastructure to guide development of a robust public health system that delivers optimal services, including public health emergency prevention and response activities (Martin & Bekemeier, 2021). The Committee's recommendation focus on how to improve Title VII, Part D programs' capacity to support this goal. The following sections summarize evidence supporting the rationale for the Committee's current recommendations. The background sections describe the potential for telehealth to increase health care access for communities with the greatest need, the importance of increasing public trust in public health initiatives and information, the value of interprofessional practice and education, and the importance of implementing age-friendly ecosystem models for high-quality health care delivery.

Telehealth

Telehealth is an essential component of public health infrastructure, which has been demonstrated to increase access to health care, facilitate interprofessional collaboration, and address disparities. Telehealth is a central component of the Centers for Disease Control and Prevention (CDC) framework for providing health care. During the COVID-19 public health emergency (PHE), telehealth allowed access to care in many cases when in-person clinical care would have posed serious health risks (CDC, 2020). Lessons learned during the PHE suggest it would be beneficial to make long-term changes in health care systems to expand and enhance telehealth.

Telehealth: Increasing Access to Health Care

Multiple studies and demonstration projects have shown that telehealth increases access to health care by reducing necessity for travel and facilitating communication between providers and patients and among health care teams across long distances. Rural Healthy People 2020 cites multiple examples of telehealth increasing rural communities' access to a broad range of health care services including maternal health care, emergency medicine, psychotherapy, medication management, and tobacco use cessation (Bolin et al., 2015). The reduced transportation burden, timeliness, and convenience of telehealth also increase access to health care for urban patients (Altarum, 2017). Asynchronous telehealth supports sharing information between primary care providers and specialists, reducing the need for patients to visit specialists, and reducing risk of rehospitalization and death (Sokol, 2021).

Telehealth can support interprofessional team-based collaboration between providers who are in different locations. Examples include supporting both synchronous and asynchronous communication between supervising dentists and dental aid therapists serving patients in remote locations in Alaska (Glassman, 2016), supporting pharmacists in conducting remote medication reviews with patients and sharing results with primary care physicians (Taylor et al., 2018), and

training and support for community health workers who lead diabetes group visits (Vaughan et al., 2020). Johnson and Mahan (2020) describe the capacity for telehealth to facilitate interprofessional collaboration to address needs for medical, mental health, and social services. Telehealth facilitates access to multiple service providers from one secure location with internet access. The University of Kansas School of Nursing conducted a quality improvement project to apply interprofessional care to support children and their families during hospitalization and transition to home. Telehealth facilitated communication between inpatient and primary care providers, allowed providers insight into family home environments, and facilitated rapid response to patients' and families' questions (Scotten et al., 2015).

Figure 1. Project ECHO model for telementoring.
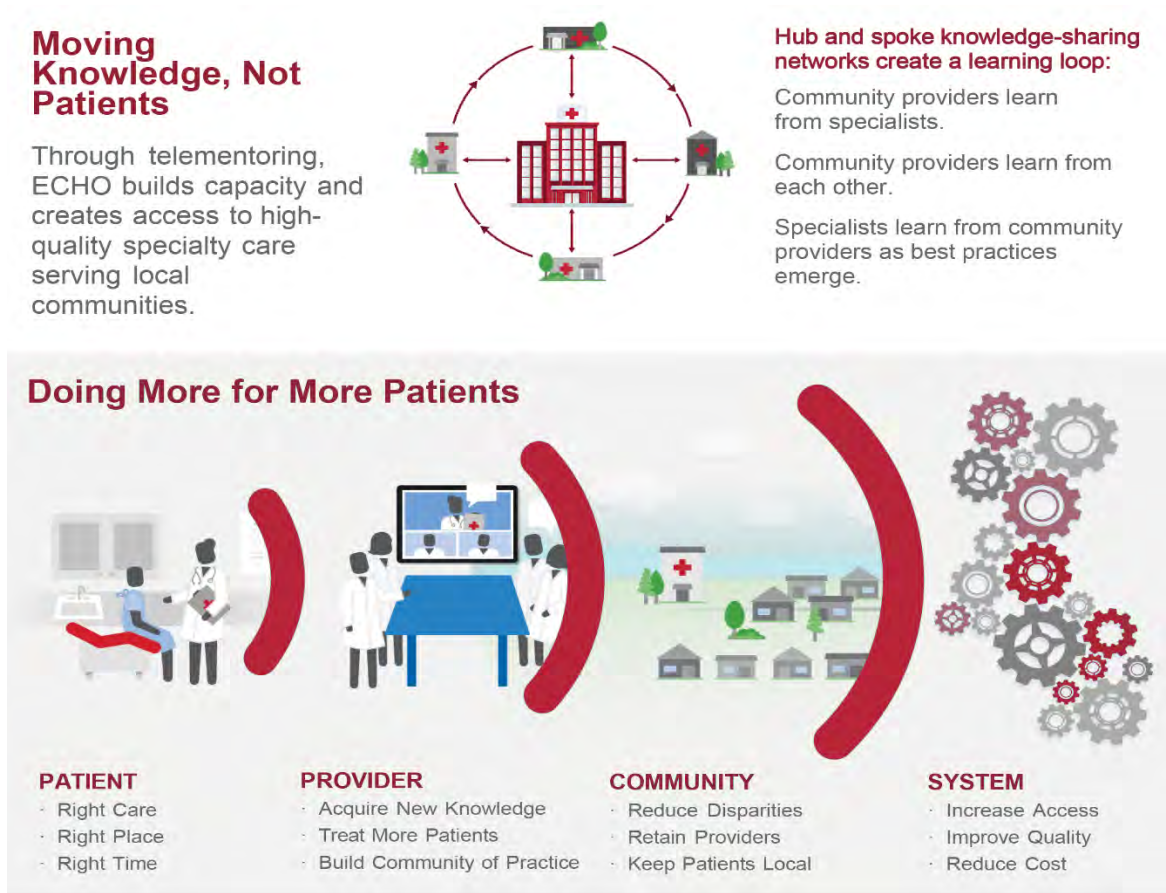
Source: https://www.unmc.edu/publichealth/centers/cbbeid/Project_ECHO/index.html

Telehealth also supports telementoring. Project Extension for Community Health Outcomes (ECHO) is a telementoring model that allows specialists to teach community providers about a broad range of topics, including opioid addiction, HIV, mental illness, and cancer, resulting in increased capacity of primary care providers to deliver necessary services to their patients (Robert Wood Johnson Foundation, 2021). Figure 1 illustrates the Project ECHO model. Telemonitoring, or use of digital technology to transmit health data such as blood pressure or

blood glucose levels, is an effective strategy for managing chronic health conditions (McLean et al., 2013).

Title VII Part D Program Telehealth Use

Title VII Part D programs and grant recipients- Area Health Education Centers (AHEC), Geriatrics Workforce Enhancement Program (GWEP), and Behavioral Health Workforce Education and Training (BHWET)- have utilized telehealth to support education and training efforts as well as clinical services to rural and underserved communities. North Carolina AHEC developed a telehealth toolkit to illustrate approaches to using telehealth for chronic care and wellness visits, (NC AHEC, 2020a), a checklist for high-risk patient management through telehealth (NC AHEC, 2020b), and a behavioral and mental health telehealth toolkit (NC AHEC, 2020c). Eastern AHEC offered webinar training in using telehealth to deliver mental health services during the COVID-19 pandemic (Eastern AHEC, 2020). Charlotte AHEC offered a webinar on effective telehealth for older adults (Burnight, 2021).

GWEP supports Circle of Friends, a project to assess and address loneliness and isolation among older adults, which uses video conferences and phone calls to provide support (Berg-Weger& Morley, 2020). GWEP also supports a University of Hawaii project that developed a simulation that successfully supported collaboration between medical, nursing, and pharmacy students working from distant sites (Wen et al., 2021). University of Southern California GWEP offers virtual geriatric assessments during the COVID-19 PHE (USC GWEP, 2021).

The University of Memphis received BHWET funding to support Interprofessional Teams Grounded in Apprenticeships, Telehealth, and Evidence (INTEGRATE), which offers interprofessional behavioral health practicums and internships (University of Memphis Media Room, 2021). Augusta University applies BHWET funding to train behavioral health graduate students to apply telemedicine (Carney, 2018). While telehealth's potential to increase access to health care has been demonstrated and supported by Title VII, Part D programs, there are barriers to telehealth implementation and access that currently prevent it from reaching its full potential.

Barriers to Telehealth Implementation

Barriers to telehealth implementation include lack of provider training, low digital literacy among patients, and lack of affordable, accessible broadband internet services.

Need for Provider Training in Telehealth

Telehealth implementation requires providers who know how to use it. In 2016, the American Medical Association (AMA) called for more formalized training in telehealth, with a press release stating, "The vast majority of medical students are not being taught how to use technologies such as telemedicine or electronic health records during medical school and residency. As innovation in care delivery and technology continue to transform healthcare, we must ensure that our current and future physicians have the tools and resources they need to provide the best possible care for their patients" (AMA, 2016, para. 2). While telehealth utilization increased dramatically during the COVID-19 public health emergency, need for

training persists. The Reimagine New York Commission conducted a needs assessment that indicated many providers want more training, guidelines, and information about best practices in telehealth (Wicklund, 2021). The Arkansas Technology Training and Rural Assistance Center for Telehealth (ATTRACT) was initiated in response to providers' requests for more training in telehealth development and implementation (Boulden, 2020).

Clinical evaluation and care, and ethical considerations vary between professions, and training in applying telehealth to these areas should reflect this. For example, van Houwelingen et al. (2016) identified using telehealth for triage as a core telehealth competency for nursing. Glueckauf et al. (2018) describe a consensus-based framework for telebehavioral health competencies that include techniques that maximize a therapeutic atmosphere and professional boundaries in social media. The American Association of Medical Colleges (AAMC) identifies patient safety assessment as a core telehealth competency (AAMC, 2021). Telehealth training strategies should support tailoring for the competencies required by each health profession.

Low Digital Literacy

Low digital literacy is a barrier to telehealth utilization. An estimated 16 percent of people in the U.S. aged 16-65 years old lack basic skills in using digital technology (Mamedova, Pawlowski & Hudson, 2018). Low digital literacy is associated with computer anxiety and other barriers to use (Lepore et al., 2019). Some studies have demonstrated the effectiveness of socioculturally tailored telehealth resources to increase users' confidence and competence in using digital technology. Examples include the Fostering African-American Improvement in Total Health (FAITH!) mHealth application to improve cardiovascular health, and Peer-and Technology-Supported Self-Management Training app to support patients 60 years and older in managing mental and chronic health conditions. Developers of both products collaborated with community members throughout product development in order to ensure resources were user-centered and usable. Researchers suggest this should be a central component of work to increase digital literacy (Brewer et al., 2020).

Need for Reliable and Affordable Telehealth

Disparities in telehealth access can exacerbate racial, ethnic, and socioeconomic disparities in health outcomes. Patients' lack of access to broadband at home is a current major issue. In summarizing research on barriers to telehealth, Altarum Institute (2017) concluded, "The main barrier to telemedicine is access to reliable broadband or satellite since live video (synchronous) requires high-speed, high-quality connections on all devices (para.5)." The Federal Communications Commission identified lack of broadband access as a major problem for rural residents, nearly one-third of whom do not have access to broadband internet in their homes. Reasons for lack of access include internet providers refusing coverage due to high costs of serving few customers, and customers' inability to pay providers' fees. Therefore, people most in need of telehealth have the most difficulty accessing it (Roleff, 2021).

In an analysis of medical chart notes on nearly 8,000 clinical encounters, Pierce and Stevermeyer (2020) found that Black patients, patients without private insurance, and rural patients were less likely to have used telehealth. In an analysis of policies relevant to telehealth access, Ortega et al. (2020) argue that policy solutions are necessary to ensure telehealth access disparities do not increase, which would lead to worsening health disparities. The authors conclude that increased

access requires change implemented by health care systems and government agencies. Leath et al. (2018) describe a model for a telehealth ecosystem developed collaboratively by a social science research organization, community foundation, and open access telecommunications provider. The model aims to deliver affordable, accessible health and social services delivery. Model implementation includes health asset mapping, needs assessment, and development of a cross-sector provider network. An open access telehealth system supports health promotion, collaboration, performance monitoring, and dissemination of information about best practices. The authors emphasize the importance of access to affordable internet service for implementation.

Conclusions and Rationale for Recommendation One

Telehealth has become an essential component of public health infrastructure. Its benefits include reducing burden associated with travel, facilitating communication between patients and care providers, facilitating collaboration between care providers, and supporting telemonitoring. However, there are several barriers to telehealth implementation and utilization. Providers have expressed a need for more training in telehealth implementation. Low digital literacy among patients is a barrier to telehealth use. Lack of access to reliable and affordable broadband services is a critical barrier to telehealth achieving its full potential to increase access to health care. Title VII, Part D programs have demonstrated capacity to use telehealth to increase access to health care among populations with highest need. Additional investment in training the health workforce to use telehealth and to support patients in increasing digital literacy, as well as investment in equipment and ensuring internet access will help to overcome these barriers and increase access to the benefits telehealth offers.

Public Trust

Public trust in public health initiatives is essential for these initiatives to succeed. Currently, COVID-19 vaccination is an urgent public health goal, while public trust in public health is declining. It is urgent to develop effective approaches to regain public trust in order to resolve the COVID-19 PHE and successfully implement future initiatives to prevent and manage PHEs and promote good public health.

Declining trust in public health institutions

According to the 2020 Kaiser Family Foundation Health Tracking Poll, the American public's trust in public health information sources declined between April and September 2020. Specific concerns included distrust of the vaccine safety testing process and of some individuals who delivered broadly disseminated public health messages. Results of the 2021 Emergency Communication and Public Safety Trust Survey indicate low public trust in COVID-19 vaccine distribution efforts, with only 37 percent of respondents expressing confidence. While 77 percent of respondents indicated trust in information disseminated by local officials, researchers expressed concern that more than one in five respondents did not report trusting this information during a global pandemic (Hamel et al., 2020). Prior to the COVID-19 pandemic, decreased public trust in public health messaging and interventions such as vaccines, was already a concern. Researchers at the Pew Research Center (Funk, Kennedy & Hefferon, 2017) analyzed

American Trends Panel survey data related to trust in vaccines. Results showed that 88 percent of Americans believed that the benefits of vaccines outweigh the risks. However, trust was lower among some groups than others, with African Americans and younger adults being more concerned about vaccine risks than other groups. Only 55 percent of participants expressed trust in medical scientists. The authors noted that medical scientists were one of the most trusted information sources, with more than 80 percent of respondents placing low confidence in the media and elected officials. More understanding of science was associated with higher trust in scientists. Figure 2 summarizes U.S. adults' intentions regarding the COVID-19 vaccine by race/ethnicity.

Figure 2. U.S. adults' intentions regarding COVID-19 vaccine by race/ethnicity.

Source: https://www.kff.org/coronavirus-covid-19/report/kff-covid-19-vaccine-monitor-january-2021/
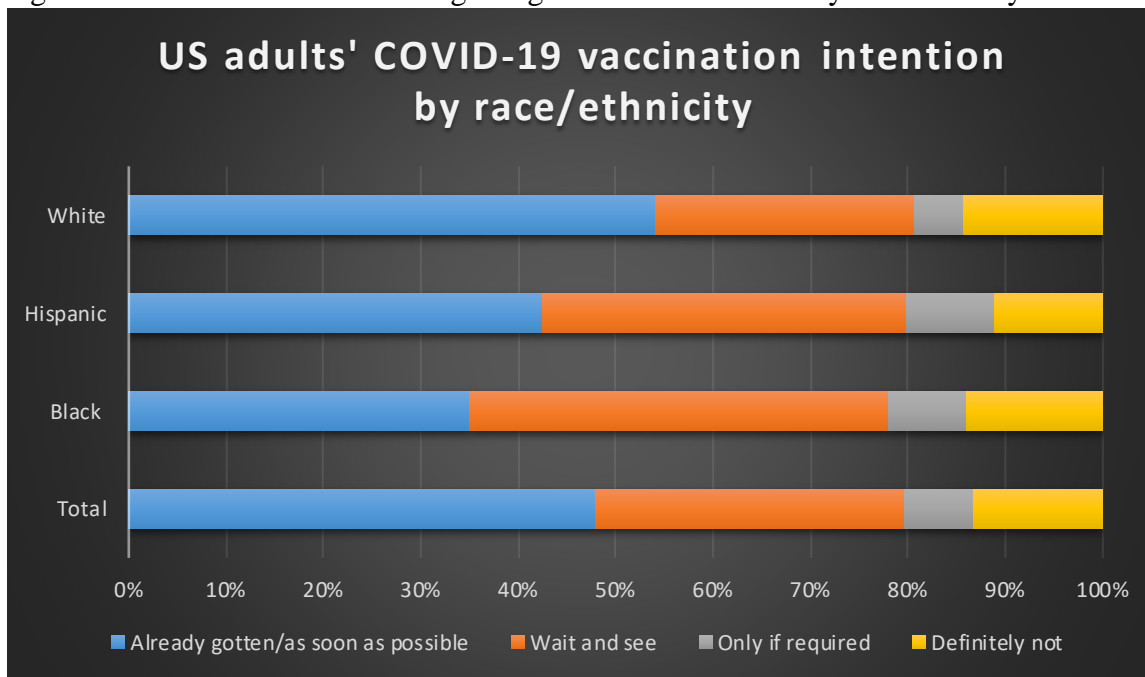
Value of trust in public health institutions

Public trust is critical for the success of public health initiatives and efforts. Bargain and Aminjonov (2020) summarized studies of public trust in government and government responses to the COVID-19 PHE. Analyses showed that trust was related to support for public policies, a sense of cohesion, and adherence to public health guidelines. In an assessment of the effects of public officials' adherence to public health guidelines on adherence among the general public, Fancourt, Steptoe & Wright (2020) found that public confidence in guidelines is linked to officials' adherence. The authors noted the importance of public trust in the government's ability to handle the pandemic. Public trust will remain important after the current PHE has resolved. It is also important to increase trust in other vaccines and in other evidence-based clinical and public health services and initiatives.

Role of health workforce in public's trust in public health institutions

Research suggests the health workforce can play an important role in restoring public faith in public health institutions. In analyzing consumer panel input on factors that influence patients' care choice, Koch-Weser et al. (2019) found that doctors were one of the most trusted sources of information, while government websites were one of the least trusted sources. Duke et al. (2017) collected survey data from a nationally representative survey of more than 4,000 consumers to find that a patient's relationship with a doctor is related to trust in medical advice. The authors also found that patients who feel a doctor respects them are more likely to trust and adhere to that doctor's advice. Training the health workforce in approaches for building patients' trust is an important strategy for rebuilding public trust in public health messages and initiatives. Several evidence-based strategies are available.

Strategies for Increasing Public Trust

Strategies for increasing public trust in public health institutions include applying evidence-based health communications principles, collaborating with partners in arts and humanities to develop culturally appropriate materials, engaging celebrities to leverage their influence, and collaborating with community-based organizations to develop messages that resonate with priority audiences.

Applying Health Communications Principles
The CDC's Field Epidemiology Manual (Tumpey, Daigle & Nowak, 2018) emphasizes the importance of communication and relationship when addressing public health emergencies and conducting investigations. The authors state that communication that conveys empathy, honesty, commitment, and competence is critical for effectively addressing public health emergencies and conducting inquiries. Health communications expert K. Vish Viswanath emphasizes the importance of credible, effective health communications to counter the misinformation circulated during the COVID-19 pandemic. He recommends tailoring messages to address audience's values and concerns, discussing uncertainty and risk clearly, making evidence-based recommendations, and strategically countering misinformation (Igoe, 2020).

Partners with Health Communications Expertise
Health communications experts are valuable partners for developing public health messaging. They offer expertise in evidence-based principles for conveying information effectively. Health communications experts can provide guidance in the best approach for message framing, tailoring messages for priority audiences, developing persuasive messaging, applying theories of behavioral change in messaging, formative research methods, effective dissemination strategies, and message evaluation (Parvanta et al., 2011). Several studies have demonstrated the value of applying communications expertise to public health messaging. Luntz (2020) conducted a poll to identify which language will be most likely to increase vaccine confidence among Americans who are currently less likely to get vaccinated. Effective mass media campaigns to prevent smoking among youth are grounded in communications theory and formative research. A systematic review of mass media public health campaigns found that grounding in communications theory and formative research are associated with effectiveness. Message

design and tailoring also are core factors in whether messages result in targeted outcomes (Stead et al., 2019).

Partners in Arts, Humanities, and Entertainment

Partners in arts and humanities are valuable for developing effective public health communication. Local arts initiatives were critical for culturally competent messages about the Ebola epidemic in West Africa (Sonke & Pesata, 2014). University of Kentucky College of Nursing's Farm Dinner Theater project offered theater performances and facilitated discussions about stress, depression, suicide, and access to local health care systems. Participants' health behaviors improved significantly compared to a group that received standard educational materials (Sonke et al., 2019). Art and humanities partners can develop public health messages that communicate understanding of audience perspectives and values. Celebrities also can be influential public health messengers. In a systematic review of research on celebrity influence, Hoffman and Tan (2013) described multiple mechanisms for celebrity influence, concluding, "Celebrities have substantial sway as health advisors (p. 3)." Alatas et al. (2020) analyzed response to Twitter communication promoting vaccines from high-profile Indonesian celebrities and organizations and found that messages identified as coming from celebrities were 72 percent more likely than others to be liked or retweeted.

Community-Based Partners

Effective public health communication requires understanding priority audiences. Community partners and advocates can ensure health messages are appropriate for priority audiences. The Health Research and Educational Trust (HRET) conducted interviews with hospital, health system, and community leaders about effective hospital and community partnership, and found that facilitating effective communication about community needs and community engagement were core roles for community partners (HRET, 2016). An evaluation of the DC Tobacco Free Families Campaign found that community partners ensured that messages were delivered by people with whom priority audiences identified, responded to audience needs, and reflected audience values (Dearfield & Pugh-Yi, 2011). Martinez et al. (2012) found that community-based non-profit staff were essential participants in formative research to develop culturally appropriate messaging to encourage increased exercise and fruit and vegetable consumption in an urban Hispanic community. Partners were instrumental in engaging community members, describing environmental context, and determining how community members seek health information.

Conclusions and Rationale for Recommendation Two

Public trust in public health initiatives and messages has been declining, with alarming results during the COVID-19 PHE, when trust in vaccines and other efforts to prevent infection has been crucial. The success of vaccinations to address this PHE, other vaccines, and other public health initiatives depends upon public trust. Title VII, Part D programs are poised to be instrumental in efforts to increase public trust in public health initiatives and messages. Health care providers currently are one of the most trusted sources of health information. Training the health workforce to assume an active role in public health education and promotion, to be aware of and support current public health initiatives and objectives, and to apply evidence-based communications approaches should be a core strategy for increasing public trust. Partners play a
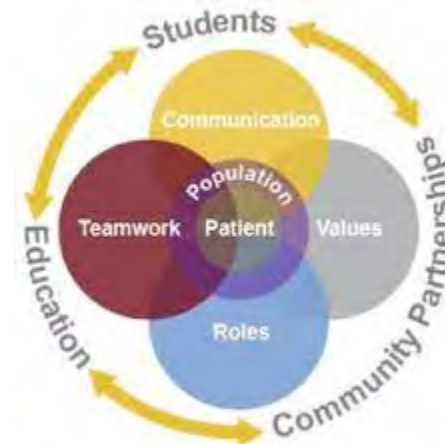
key role in developing and disseminating effective public health communications. Collaboration with community partners is an integral part of Title VII, Part D programs. Existing partnerships with organizations familiar with community needs, values, and perspectives makes these programs an ideal vehicle for rebuilding public trust in public health.

Interprofessional Care's Role in High Quality Health Care

The Institute of Medicine's (IOM) report, "Health Professions Education: A Bridge to Quality" (Greiner & Knebel, 2003) was a catalyst for the focus on interprofessional health education and training. The report cited evidence that interprofessional care is necessary for the coordination, collaboration, and communication necessary to navigate complex health care systems. Interprofessional care allows team members to integrate expertise and observation to optimize care by improving outcomes and increasing efficiency. Therefore, IOM identified interprofessional teamwork as a core competency for health professionals and emphasized the need for interprofessional training. The field currently recognizes the value of teaching interprofessional values and skills in interprofessional clinical learning environments from the beginning of health profession education (Weiss et al., 2019).

Extensive evidence supports the importance of interprofessional teamwork in health care delivery. Rosen et al. (2020) note that patient safety risks are linked to errors and weaknesses in communication between health care providers and care transitions. Care transition problems are linked to more than one in four surgical adverse events. Team communication problems are associated with errors in diagnosis, medication, and inhibit communication that supports recovery from errors. Poor team communication is associated with mortality and morbidity, with communication failure being twice as likely to cause preventable deaths than errors in technical competence. The authors note, "No one individual can assure a patient receives the highest standard of care, nor can he or she protect a patient from all potential harms… (p.3)."

Figure 3. Interprofessional Educational Collaborative core competencies.

Source: http://jicareblog.org/research-note-examining-the-implementation-of-collaborative-competencies-some-key-challenges-for-enacting-competency-based-education/

Interprofessional Practice Competencies

Ensuring that health care providers are delivering interprofessional care effectively requires defining and measuring core competencies. The Interprofessional Education Collaborative (IPEC) is a group of national professional organization representatives that collaborates to identify core competencies in interprofessional practice as well as strategies for achieving those competencies. IPEC has developed a framework, which is endorsed by the Health Professions Accreditors Collaborative, with four core competency domains (shown in Figure 3):

1) values and ethics for professional practice, which refers to working with people from other professions and maintaining a climate of mutual respect and shared values.

2) understanding the roles and responsibilities of all health care team members, and applying this understanding to assess and address patients' needs, and to promote and advance population health.

3) communication with patients, families, communities, and professionals in health and other fields that supports a team approach to promoting and maintaining health and preventing disease.

4) applying relationship-building values and principles of team dynamics to perform effectively in different team roles to plan, deliver, and evaluate patient- and population-centered care and safe, timely, efficient, effective, and equitable population health programs and policies (IPEC, 2016).

At inception, the Collaborative emphasized that interprofessional practice should improve health care quality as defined by the Triple Aim (Berwick, Nolan & Whittington, 2008): improving individual patients' experiences, improving population health, and reducing costs. The field has since expanded this definition to the Quintuple Aim, which adds the aims of optimal care provider experience and business processes (Myers, 2019). In addition, equity, diversity, and inclusion are essential for training and education as well as high quality clinical practice. Ponce (2021) noted that interprofessional, team-based practice requires effective communication between people of disparate backgrounds. Team members' and patients' perspectives are shaped by culture and language as well as by academic experiences. Ponce concluded that IPE should include instruction on equity, diversity, and inclusion, social determinants of health, and structural racism in order to facilitate providers' understanding of patients' perspectives and health care decisions. Evaluations have found that IPE contributes to participants' support for and commitment to interprofessional health care (Conti et al., 2016; Gould et al., 2015).

Need for Additional Interprofessional Training and Practice Opportunities

Research demonstrates a need for additional capacity for interprofessional training and practice. Mpofu et al. (2014) analyzed students' assessments of their IPE experiences and found that, while students valued what they had learned, they also perceived that faculty required more IPE training in order to teach effectively. Students reported that opportunities to apply the lessons they had learned in practice often were lacking. Walker, Cross & Burnett (2018) conducted a

systematic literature review of IPE in rural settings and recommended more research on how to optimize IPE for the unique needs of these communities.

Need for Interprofessional Education and Practice Performance Measurement

In addition to being trained in IPE competencies, the health workforce should understand performance assessment of these competencies. Currently available measures include the Index of Interdisciplinary Collaboration (Gould et al, 2015; Bronstein, 2013). Thistlewaite et al. (2014) report a need for additional development of reliable and valid measures of interprofessional care competency in order to support progress toward implementing team-based interprofessional education and practice. In their recommendations for designing and implementing IPE, van Diggele et al. (2020) note a continuing lack of rigorous IPE evaluation and analysis of how it affects healthcare delivery and patient outcomes. In response, IOM has formed a committee to explore and assess methods for measuring IPE impact on learning and health systems outcomes, as well as what research is needed. The Committee's recommendations include committing resources to developing stakeholder consensus regarding performance measurement and priority outcomes, applying mixed methods designs to support analysis of how IPE affects outcomes, and inclusion of economic variables in IPE evaluations (Zierler, 2021). The National Center for Interprofessional Practice and Education collaborates with multiple stakeholders to build on the IOM model. Center researchers focus on outcomes defined by the Quadruple Aim for health care quality and have identified elements of a core data set and exemplar data sources. The Center also emphasizes the need for mixed methods rigorous evaluations of IPE (Arenson, 2021). Support for performance measurement development and implementation and for ensuring the health workforce can assess competence in interprofessional care is essential for competent team-based interprofessional care.

Conclusions and Rationale for Recommendation Three

Interprofessional team-based care is essential for safe, high-quality health care delivery. Effective team-based care requires a set of core competencies. The health workforce must be trained in these competencies and associated performance measures that link to the Quintuple Aim. Team-based interprofessional training is a central component of Title VII, Part D programs. Program analysis indicates that AHEC, GWEP, and BHWEP programs offer team-based interprofessional training. A total of 81 percent of GWEP sites offering team-based training (National Center for Health Workforce Analysis, NCHWA, 2020a), all AHEC participants receiving interprofessional training in academic year 2018-19 (NCHWA, 2020b), and BHWET requiring experiential placements that offer team-based interprofessional training (Grantwatch.com, 2021). Supporting Title VII, Part D programs in building on their experience and expertise to improve and expand training in interprofessional team-based care will be an important step toward achieving the Quintuple Aim for health care quality.
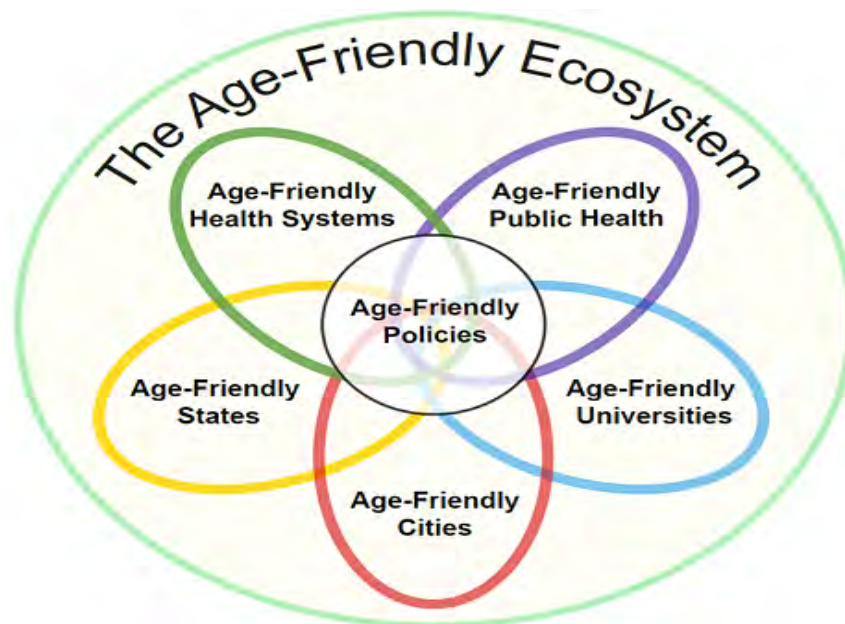
Age-Friendly Ecosystems

Age-friendly health ecosystems are a model for health care delivery that aims to improve health by centering on core components of care quality and recognizing the influence of environment and policy on individual and population health outcomes. The John A. Hartford Foundation,

Institute for Health Improvement, the American Hospital Association, and the Catholic Health Association of the United States launched the Age-Friendly Health Systems initiative with the purpose of responding to the needs of the aging U.S. population. The number of adults in the U.S. aged 65 years and older is projected to approximately double between 2012 and 2050. Older adults are more likely than others to have complex health needs, with 80 percent having at least one chronic health problem and 77 percent having two or more chronic health problems. Health systems often are underprepared to meet older adults' needs, and older adults are disproportionately harmed by health system errors (Institute for Healthcare Improvement, IHI, 2020a).

Age-Friendly Health Systems and Ecosystems Framework

Age-friendly health systems apply a framework in which practice and resources align with a set of evidence-based core components of quality health care for older adults, referred to as "the 4M's." The 4 M's are: What matters, medication, mentation, and mobility (Tabbush et al., 2019). "What matters" refers to knowing patients' health goals and aligning care with these goals across settings (Laderman et al., 2019). Medication refers to prescribing medication in a way that aligns with patients' goals, mental health needs, and mobility. Mentation refers to preventing and treating decline, dementia, depression, and delirium (IHI, 2020; Harris, 2017). Mobility refers to supporting daily safe movement. These priorities should drive care, be applied as a set, and be practiced reliably across patients and settings. The framework is designed to focus on wellness and functioning rather than illness. Its principles apply to all health care needs and cultures. To be an age-friendly health system, systems must continually strive to improve care quality using plan-do-study-act cycles (IHI, 2020).

Figure 4. Age-friendly ecosystem components.

Source: Fulmer (2020)

Evidence indicates that age-friendly health systems are successful in achieving their goals. Kent Hospital found that length of stay and falls have decreased, and patient, family, and staff satisfaction have increased since implementing a 4 M's framework (Fulton, 2020). Cedars-Sinai Medical Center reports that surgery complications, length of stay, and readmissions have declined since it started implementing age-friendly care (Rosen & Breda, 2021). Maine Medical Center has found that administration of high-risk medication has reduced while administering the Confusion Assessment Method and Bedside Mobility Assessment Tool has increased since becoming an age-friendly health system (IHI, 2020b). An expert panel review of systems that apply the 4 M's found this approach is associated with improved physical and mental health outcomes, reduced over-prescribing, and increased safe mobility (Mate et al., 2021).

The concept of age-friendly health ecosystems builds on the principles of age-friendly health systems to recognize the role of environmental and policy context in health over the lifespan. Age-friendly health ecosystems apply principles of age-friendly health systems to the public sphere (Wetle, 2020; ACICBL, 2019). Fulmer (2020) describes age-friendly ecosystems as comprising health and public health systems, governments, and academic institutions, which affect policy, as illustrated in Figure 4. Age-friendly ecosystems focus on social determinants of health, prevention, and improving environmental context (Fulmer et al., 2020). They work to improve public health systems by connecting and convening sectors and professions; coordinating existing supports and services, collecting data to assess community health status; conducting, communicating, and disseminating research findings and best practices; and complementing and supplementing existing supports and services (Batchelor, 2021). In an interview discussing age-friendly ecosystems Dr. Fulmer stated, "An age-friendly ecosystem refers to the collective efforts to adapt society to meet older adults' needs worldwide (Batchelor, 2021, para. 7)."

Age-friendly public health systems are a core component of age-friendly health ecosystems. Age-friendly public health systems connect and convene multiple sectors and professions; coordinate services; collect data for needs assessments and intervention development; conduct research to identify best practices; disseminate research findings and information about best practices; and integrate public health and clinical efforts. The number of age-friendly health systems and public health systems is growing rapidly. These systems are expected to contribute to development of age-friendly ecosystems and to expanding the improved health outcomes achieved by age-friendly health systems (Batchelor, 2021; Fulmer et al., 2020; Wetle, 2020).

Conclusions and Rationale for Recommendation Four

Health systems must prepare to meet the needs of older adult patients as the U.S. population ages. Age-friendly health systems offer a model of care delivery associated with improved patient health outcomes as well as patient, family, and provider satisfaction. Age-friendly ecosystems aim to expand the promise of age-friendly health systems by acknowledging and addressing the influence of environmental and policy factors, including social determinants of health. Title VII, Part D programs currently prioritize training the workforce to serve the needs of older adult patients. This is the purpose of GWEP. BHWET trains the health care workforce to improve mental health outcomes, including depression, which is a priority issue for older adults. AHECs offer several geriatrics programs, including AHEC West, which offers an Age-

Friendly Certificate Achievement Program, Western New York Rural AHEC, which offers a webinar series on older adults and opioids, and Charlotte AHEC, which offers continuing education training on managing diabetes for older adults. Title VII, Part D programs work with community partners, and offer training that focuses on population health and social determinants of health. The Committee recommends building on these efforts by requiring all Title VII, Part D programs to train participants in the framework and principles of age-friendly ecosystems in order to improve individual and population health outcomes, and increase health equity for older adults.

Summary

Improving health care quality as defined by the Quintuple Aim will require a health workforce skilled in utilizing telehealth, working with partners to increase public trust in public health, practicing team-based care, and applying principles for building age-friendly health ecosystems. Telehealth offers effective, efficient approaches to increasing access to health care and addressing disparities in health care outcomes and access. Telehealth facilitates interprofessional health care. It is critical for the health workforce to be trained to utilize telehealth for education, collaboration, and practice, and to learn how to ensure telehealth mitigates, rather than exacerbates, disparities in health and healthcare access.

Several factors, including misinformation, have eroded public trust in public health institutions. It is critical to rebuild this trust to successfully distribute and deliver COVID-19 vaccines, and to prevent and respond to future public health emergencies. The health workforce is one of the most trusted sources of health information and can play a critical role in rebuilding public trust. Partners from multiple sectors including health communications; arts, humanities, and entertainment; and community-based organizations can ensure public health messaging will resonate with priority audiences.

Competence in team-based interprofessional care is essential for delivering safe, high-quality health care. IPEC has identified core competencies that are recognized by multiple health professional organizations, including the Health Professions Accreditors Collaborative (HPAC) (HPAC & National Center for Interprofessional Practice and Education, 2019). It is critical for the workforce to be trained in these competencies and in associated performance measures that ensure the health workforce practices team-based interprofessional care that supports the Quintuple Aim of health care quality.

With their person-centered approach and emphasis on quality improvement, age-friendly health ecosystems offer a model for transforming health systems to meet the needs of an aging population. Training the health workforce in the principles and practices of age-friendly health ecosystems will support system transformation toward quality improvement.

As recommended in the Committee's 17th report to the Secretary and Congress (ACICBL, 2019), Title VII, Part D programs currently offer health workforce training in telehealth, working with community-based partners, team-based interprofessional care, and serving the needs of older adults. These programs are poised to implement the Committee's recommendations with additional support and resources. Investing in efforts to support Title VII, Part D programs in

implementing Committee recommendations will expand programs' capacity to build evidence, public health infrastructure and health systems that meet U.S. health care needs in the 21st century.

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