Addressing the Social Determinants of Health: The Role of Health Professions Education

Advisory Committee on Training in Primary Care Medicine and Dentistry

Thirteenth Annual Report to the
Secretary of the United States Department of Health and Human Services
and the Congress of the United States

December 2016

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Authority

The Advisory Committee on Training in Primary Care Medicine and Dentistry (ACTPCMD) is a federal advisory committee under the auspices of the Health Resources and Services Administration (HRSA), an agency of the U.S. Department of Health and Human Services (HHS). HRSA is the primary federal agency for improving access to healthcare by strengthening the healthcare workforce, building healthy communities, and achieving health equity. ACTPCMD is authorized by sections 222 and 749 of the Public Health Service Act (PHSA) (42 U.S.C. §§ 271a, 749), as amended by section 5303 of the Patient Protection and Affordable Care Act (ACA).

ACTPCMD provides advice and recommendations on policy and program development to the Secretary of the U.S. Department of Health and Human Services (Secretary) and is responsible for submitting an annual report to the Secretary and to Congress concerning the activities under sections 747 and 748 of the PHSA, as amended. Reports are submitted to the Committee on Health, Education, Labor, and Pensions of the Senate and the Committee on Energy and Commerce of the House of Representatives. In addition, ACTPCMD develops, publishes, and implements performance measures and longitudinal evaluations, as well as recommends appropriations levels for programs under Part C of Title VII of the PHSA, as amended.

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Acknowledgements

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In memoriam

The members of the Advisory Committee on Training in Primary Care Medicine and Dentistry would like to recognize the contributions to this report from Ms. Crystal Straughn, who passed away unexpectedly. Ms. Straughn served with distinction for several years as the technical writer for the Committee. Ms. Straughn epitomized the best qualities in all of us and set the bar high in terms of her kindness, caring, dedication, conscientiousness, and enjoyment of life. Her outstanding work will be remembered for many years to come, and she will be greatly missed.

Executive Summary

The landmark *Heckler Report*, published by the U.S. Department of Health and Human Services over 30 years ago, documented significant health disparities between whites and minority populations in the United States. It was one of the first reports to identify a link between these disparities and the social determinants of health (SDH), which are non-medical circumstances related to how people live, grow, and work (e.g., housing, education, income) that impact health outcomes. The Advisory Committee on Primary Care Medicine and Dentistry (ACTPCMD) has identified the need to advance education in SDH for all healthcare professions students. Studies have shown that addressing SDH through targeted interventions can improve health outcomes and increase patient satisfaction, while reducing overall costs.

Many organizations have called for a redesign of health professional training to meet the changing needs of the U.S. population, which is both aging and becoming increasingly diverse. One important aspect of change is adding curricular content and training opportunities to help students understand the ways that social factors impact health. The goal is to prepare students who take into account both biological and non-biological factors when assessing their patients and developing treatments plans.

Students need to develop cultural competency, the ability to provide services that respect the health beliefs and practices of the communities they serve, along with cultural humility, a commitment to address the power imbalance implicit in the provider-patient relationship. Sociocultural differences between healthcare provider and patient can affect communication and decision-making. Failure to address sociocultural differences often results in poorer health outcomes and lower quality care.

Training of healthcare professionals should be team-based and interprofessional (including physicians, physician assistants, nurses, social workers, and others), emphasize the importance of the patient's social history, take place in varied locations (e.g., hospitals, clinics, community health centers), and include opportunities for service-learning. In addition, students need opportunities to learn about health policy and health advocacy. Schools and faculty members can develop partnerships to ease access for patients to available social services or legal consultations to address SDH factors.

Data collection and sharing can help identify health trends and areas of health disparities. The electronic health record (EHR), widely used in many healthcare settings, can be adapted to improve the collection of social information. The healthcare system is evolving to stress quality of care, while incentives offered by some states are encouraging more community-based physicians to serve as preceptors for medical, physician assistant, and nurse practitioner students. All of these factors contribute to the need for increased education in SDH.

Social and other nonmedical factors have a significant impact on individuals, communities, and population health. Health professions education must incorporate training in SDH to provide students with the skills needed to become quality healthcare professionals that practice in rural and underserved communities after graduation, can refer patients to social service resources to improve their health, and can advocate for changes to reduce health disparities related to SDH.

Committee Recommendations

1. ACTPCMD recommends HRSA support interprofessional clinical educational activities to address the social determinants of health needs for vulnerable populations, using the Title VII, Section 747 and Section 748, funding mechanisms. This support should include establishing an administrative priority for this area, to be achieved through the development of curricular content in cultural humility, reflection, advocacy, and techniques that will provide the trainees with the tools to improve patient, family, and community health. The curricula should include a longitudinal experiential component, along with faculty development programs to ensure faculty modeling of the educational activities.

2. ACTPCMD recommends HRSA include support for programs to assess the impact and effectiveness of various methods of training learners regarding social determinants of health in the funding opportunity announcements for Section 747 and Section 748 grant applications, with a goal of creating a repository of best practices in measuring the effectiveness, outcomes, and impact of these programs.

3. ACTPCMD recommends HRSA include support for faculty development in funding opportunity announcements for Section 747 and Section 748 grant applications. Faculty development includes the development and evaluation of educational modalities that can be used to train faculty, staff, and other healthcare provider educators in the delivery and modeling of care to improve the social determinants of health for their patient populations. These modalities should be flexible enough to be used in continuing educational programs, medical, dental, and physician assistant schools, or by licensure boards.

4. ACTPCMD encourages the Secretary of HHS to support Medicare's continued development of a payment infrastructure based on value, specifically one that would support team-based care to facilitate improved outcomes through attention to the social determinants of health, as this will provide a market for learners trained to address social determinants through Title VII, Section 747 and 748 funding mechanisms. In addition, the Committee feels value-based payments should become the norm for Medicaid and commercial payers as well.

Background

Over 30 years ago, Dr. Margaret Heckler, then Secretary of the U.S. Department of Health and Human Services (HHS), released the seminal *Report of the Secretary's Task Force on Black and Minority Health*, also known as the *Heckler Report*. This report documented health disparities in the United States that impact the health of racial and ethnic minority populations, and was one of the first to identify a link between social determinants of health (SDH) and health disparities (Heckler, 1985). In particular, the report identified several priority health problems that contribute to creating an excess burden of disease and account for most of the disparity in mortality among racial and ethnic minorities as compared to whites (Gracia, 2015). Still relevant today, the report highlighted the importance of addressing SDH and noted that clinical interventions alone are insufficient to eliminate health disparities (Rich, 2010).

The World Health Organization (WHO, n.d.) defines SDH as the circumstances in which people are born, grow up, live, work, and age, along with the systems put in place to deal with illness. These are in turn shaped by a wider set of forces that include the local environment, economics, education, social and community context, and access to healthcare. Today, over a third of total deaths in the United States each year can be attributed to poor education, racial segregation, lack of social supports, and poverty (Heiman & Artiga). Addressing these factors along with others such as public safety and food availability are vital to improve the overall health of the population (Healthy People 2020, n.d.).

The *Heckler Report* elevated awareness of health disparities to a national level and influenced national progress toward health equity on several fronts, including innovative community-level interventions such as the Healthy Start Program, and landmark legislation such as the Affordable

> *"Health inequity really is a matter of life and death."*
> Margaret Chan, MD, MPH, Director-General, World Health Organization, 2008

Care Act (ACA) (Artiga, 2016; Gracia, 2015). Underscoring the recommendations from the *Heckler Report* task force was an urgent call to action to develop health professionals who can advance health equity for vulnerable populations. Rising *per capita* healthcare costs in the United States, lagging health indicators relative to other developed countries, and persistent health disparities in morbidity and mortality all show that the urgency to address SDH is greater than ever (Squires, 2012).

Significant strides have been made to eliminate health disparities at the national, local, and individual levels through a number of multi-sectoral strategies, yet future health professionals and frontline clinicians report inadequate training to address SDH (Bachrach, Pfister, Wallis, & Lipson, 2014). Although medical students and residents are taught to take a social history from patients, and this social history is a required element for inclusion in progress/medical notes for reimbursement, the opportunity to teach the connection between this social history and the impact that SDH may have on a person's health trajectory is overlooked. The healthcare system has traditionally focused on the treatment and prevention of disease through medicine and the modification of individual behaviors. However, the United States spends less on social needs and more on healthcare compared to other Western countries. Recent analyses show that increased spending on social needs can decrease infant mortality rates and improve life expectancy (Heiman & Artiga, 2015).

The 13th annual report of the Advisory Committee on Training in Primary Care Medicine and Dentistry (ACTPCMD) is a call to action to accelerate incorporation of SDH into the curricula of health professional trainees in primary care medicine and dentistry. This report describes the critical need to advance the incorporation of SDH as a core element of health professions education, training, and continuing education for future healthcare professionals and the faculty that train them, and provides models and case studies of programs that have incorporated SDH in their curricula and clinical practices. Given the profound impact that SDH have on the health outcomes and health status of individuals and populations, improved understanding of SDH among healthcare professionals promises to advance health equity and quality of care, lower the cost of care, and improve health outcomes. Now more than ever, the healthcare workforce needs training in SDH to meet the rapidly changing needs of our nation.

Addressing the Social Determinants of Health

Engaging people and patients in the context of their lives maximizes the impact of healthcare on health outcomes. On an individual level, this allows for whole person, patient-centered care which provides the greatest opportunity to fully address the patient's needs. At a population level, systematic assessment of SDH provides a mechanism for cross-sector partnerships within and outside of the healthcare system. These partnerships can identify opportunities to leverage resources and improve the health and well-being of the community.

In one case, a study found that black and Hispanic children in Boston were hospitalized with complications from asthma more frequently than white children. Boston Children's Hospital created the Community Asthma Initiative (CAI) to address this racial and ethnic health disparity. CAI nurses make home visits to low-income Boston neighborhoods to provide healthcare for children with asthma. Data indicated that CAI decreased asthma-related hospitalizations by 79 percent, and asthma-related emergency department visits by 56 percent, at 12 months. The CAI model has been applied to other communities and has been used to make a business case to inform lawmakers and health insurers about the positive individual and population health outcomes that result from addressing SDH in a community (Woods et al., 2016).

There is an increasing focus on patient behavior change. Lack of adherence by the patient to the treatment regimen can be frustrating for both the patient and the provider. As identified by Maslow in his Hierarchy of Needs, all human beings have basic needs which must be met in order for them to have the opportunity to achieve their full potential. When the most basic of needs (e.g., food and safety) are not met, a person may not be able to significantly change behavior to address higher needs (e.g., health promotion or education). SDH contextualizes the systemic and structural challenges that patients may face in addressing their health goals. For instance, a physician may recommend to the parents of an obese child to increase physical activity and include more fruits and vegetables in the child's diet, to decrease the risk of diabetes. However, the family may live in a neighborhood that lacks safe areas to walk or with limited access to parks and playgrounds. The school meals program may only offer high calorie meals and low cost options like soda, while the family may not have access to nearby supermarkets to purchase healthy foods (Klein and Vaugh, 2010).

Addressing SDH and developing a plan of action and targeted interventions may not only improve patient satisfaction, but also reduce costs, improve health outcomes, and increase health equity (Bachrach, Pfister, Wallis, & Lipson, 2014). Numerous studies have demonstrated the benefit of incorporating a systematic approach to identifying SDH that may play a major role in disease prevention, health promotion, and the management of chronic diseases. For example, the Iowa Healthy Links Better Choices/Better Health Program assists people in managing chronic health conditions (e.g., heart disease, diabetes, and emphysema). Six weekly, interactive workshop sessions address issues related to SDH and chronic illness by teaching participants how to manage medications, make healthy food choices, begin an exercise regimen, deal with stress, control pain, and communicate with healthcare professionals. The program helps to show how providing a community with services to address SDH can increase healthy behaviors and overall health, and decrease hospital stays (Iowa Department of Public Health, 2011).

Social Determinants of Health Curriculum

Many national and international organizations have called for a redesign of health professional training across the educational continuum, to meet the needs of our nation's 21st century population which is both aging and becoming increasingly diverse (Association of American Medical Colleges [AAMC], 2016; Thibault, 2013). One important aspect of change is adding curricular content to address SDH. The impact of intervening on social factors is broad, ranging from the individual up to community, state, and national levels. A recent survey found that 80 percent of physicians who responded acknowledged the importance of SDH in their patients' lives, but rarely addressed them (Bachrach, Pfister, Wallis, and Lipson, 2014). In addition, most physicians believe that unmet social needs of their patients contribute to worsening of health, yet also feel unable to address health concerns caused by these needs (Swain, 2014).

Social Determinants of Health Education

The biomedical model, focused on identifying and treating disease, is the prevailing framework taught in most medical schools. Little emphasis has been placed on the magnitude that environment, background, and resources ultimately has on health. Addressing SDH begins with educating current and future healthcare professionals on the ways that social factors impact health. SDH should be included in the undergraduate, graduate, and continuing education curricula of health professionals, so that students are taught early in their education and throughout their careers the skills needed to help their patients achieve optimal health and to reduce health inequalities (UCL Institute of Health Equity, 2013). SDH should be included in competency requirements and incorporated into didactic and community-based clinical learning experiences that enable students to become aware of and sensitive to the needs of the population they serve. SDH competencies include cultural humility, reflection, advocacy, cultural competency, partnership skills, patient communication, and empathy. The goal is to prepare students who take into account both biological and non-biological factors when assessing their patients and developing treatments plans (Martinez, Artze-Vega, Wells, Mora, and Gillis, 2014).

Cultural Competency and Cultural Humility

Schools of medicine, dentistry, and other health professions are incorporating courses in cultural competence and cultural humility, including content on race, bias, and disparities, into their

curricula (AAMC, 2016). Cultural competence in healthcare refers to providing appropriate services that are respectful of and responsive to the health beliefs, practices, and needs of diverse patients. Cultural humility involves a lifelong commitment to addressing the power imbalance implicit in the provider-patient dynamic, and to developing equal and mutually beneficial partnerships with patients, their families, and local communities. By tailoring services to meet the culture practices and preferences of the individuals and communities they serve, health professionals can facilitate communication, reduce health disparities, and improve health outcomes (HHS Office of Minority Health, 2016).

It is critical to teach students not only awareness of ethnic or religious differences in relation to health outcomes, but to expose them to learning experiences that demonstrate how race, ethnicity, and inequalities are connected. Educators must provide students with the tools to ask their patients the right questions surrounding culture to determine patient needs (Dogra, Reitmanova, and Carter-Pokras, 2009). Research has revealed that sociocultural differences between patient and healthcare provider can affect communication and decision-making, important factors which are linked to patient satisfaction, treatment plan adherence, and health outcomes. Failure to address sociocultural differences often results in poorer health outcomes and lower quality care (Awosogba, et al., 2013).

Diversity and culture in medical education must include reflection for students to address their unconscious biases and prejudices. The Department of Veterans Affairs (VA), Center for Health Equity Research and Promotion, and the VA Office of Health Equity created a training program that raises awareness of unconscious bias among healthcare professionals. In 2014, the curriculum was piloted at three VA facilities. The training allows primary care teams a safe space to discuss bias and discrimination and to teach techniques to help healthcare professionals recognize that biases can affect patient communication (AAMC, 2016).

The Role of Health Professions Education

Traditionally, medical education has lacked formal training on SDH and its short- and long-term effects on individuals. A majority of health professions trainees were not raised in poverty and are unable to build on past experiences. They rotate to different sites for clinical training that are predominantly hospital-based. As a result, they fail to develop an understanding and awareness of local community barriers and assets (Klein, 2015).

The role of healthcare faculty in SDH education is to develop curricula that train the next generation of providers to screen for social determinants of health and intervene on their patients' behalf. In regards to medical education and evaluation, competency-based entrustable professional activities (EPAs) are a new concept in both undergraduate and graduate medical education. EPAs mark certain milestones in professional development and create a holistic description of the way a physician should progress in training (Klein, 2015).

Health professions trainees often provide care for patients in poverty, and need to learn to assess and manage the SDH that affect their patients. Training should be interprofessional (including physicians, physician assistants, nurses, social workers, and others), take place in varied locations (e.g., medical institutions, community health centers), have a curriculum that is tailored to the level of the learner, and use evaluation metrics that capture impact. Dr. Melissa Klein

(2015) stated, "It is important to ensure our learners understand all the other issues that families and communities face so that we can holistically address the family and the patient, and improve health." She recommended the development of a national, standardized SDH curriculum, with multi-disciplinary, team-based SDH training; the expansion of SDH awareness beyond primary care; and the integration of SDH education, population health training, and technology (Klein, 2015).

Service Learning

Medical residents and other healthcare professions students can increase their awareness and understanding of social, cultural, and environmental factors affecting health through community-based service-learning. Service-learning is a structured learning experience that combines community service with preparation and reflection. Service-learning can strengthen clinical and interprofessional training, along with leadership and communication skills. By helping students understand and determine the needs of underserved communities, service-learning can strengthen campus-community relationships and improve healthcare access for underserved populations (Pelletier, 2016a; Stewart and Wubbena, 2014).

In one example, Rush Medical College in Chicago, Illinois, created the Rush Community Service Initiatives Program (RCSIP) to provide medical students with community-based volunteer experiences, with the goal to increase the life expectancy of individuals in the local community who are uninsured or underinsured. In a health promotion activity called *5+1=20*, student and faculty volunteers teach high school youths in underserved neighborhoods about *five* health challenges which are prevalent in Chicago's underserved communities – asthma, diabetes, hypertension, high blood pressure, and HIV. Each youth *(one)* can then share this information with family, friends, and neighbors *(reaching 20 or more)*, to help them avoid these health problems or manage them better to increase life expectancy. The youths also share what they have learned at school health fairs, which include blood pressure screenings, vision screenings, blood glucose tests, and health education. At least 90 percent of medical residents who participated in RCSIP said their community service-learning experiences strengthened what they learned in classroom and clinical training. It also increased their understanding of the roles of other disciplines, their ability to work in teams, and their communication skills (Pelletier, 2016a).

Social History

Healthcare professionals can learn more about a patient's experience and social environment by asking appropriate questions. While they have traditionally asked patients about tobacco, drug, and alcohol use, these questions do not provide a full picture of a patient's life, health habits, and other factors. Obtaining a more complete social history may include asking about the patient's developmental, family, and medical history, as well as relevant information about life events, social class, race, religion, education, and occupation.

Taking a social history provides a more complete picture that can put a patient's health behaviors and health status in context. Healthcare professionals can ask patients about their individual characteristics (e.g., gender identification and education), life circumstances (e.g., housing and job history), emotional health (e.g., religious beliefs and family stresses), perceptions of healthcare (e.g., fears regarding healthcare and alternative care practices), health-related

behaviors (e.g., diet, exercise, and smoking), and access to and utilization of healthcare (e.g., health insurance status and health literacy). For example, conducting a complete social history can help a provider identify that the patient has limited income and no transportation, which can give insight into why the patient may miss appointments or fail to fill prescriptions (Behforouz, Drain, and Rhatigan, 2014).

The University of New Mexico developed a social determinants prescription form to assist healthcare providers in referring patients for social services. The form allows students, primary care residents, and community health workers to work together to address SDH impacting a patient by prescribing resources to address hunger and food insecurity, prescription benefits, housing assistance, employment, education, work-force training, and health insurance coverage options (University of New Mexico School of Medicine, n.d.). In one practice of approximately 3,000 patients, 53 percent had at least one adverse social determinant that could be addressed through a prescription to appropriate social resources (Kaufmann, 2015).

Students and residents can be trained in motivational interviewing to motivate and empower patients to improve health behaviors. They can also receive training in shared decision-making, team-based care, health literacy assessment, communication, counseling, and care planning. They can examine their own biases and stereotypes to obtain social histories, and visit the communities where their patients live to gain a greater understanding of how SDH affect health. Providers must also learn how to use this information to develop care plans that encourage person-centered care and how to connect their patients with community services to improve health outcomes (Behforouz, Drain, and Rhatigan, 2014).

Continuing Professional Development

Lifelong professional development should be a key part of educating health professionals in SDH. Early health professions education is only a small part of learning that takes place over the course of a health professional's career, and SDH is often a small component of that education. Continuing professional development provides an opportunity to teach SDH and community research in an interprofessional environment (Institute of Medicine [IOM], 2016).

For example, the Robert Wood Johnson Foundation's Health & Society Scholars program accepts 12 postdoctoral students each year who learn about the many ways to evaluate the broad range of factors that influence both individual and population health. The goal of the program is "to improve health by training scholars to investigate the connections among biological, genetic, behavioral, environmental, economic and social determinants of health; and develop, evaluate and disseminate knowledge, interventions, and policies that integrate and act on these determinants to improve health" (Robert Wood Johnson Foundation [RWJF], n.d.).

In another example, researchers, dental professionals, and community organizations developed an interactive continuing education course on poverty at a private dental clinic in Canada, which helped prepare dental care practitioners to address SDH in disadvantaged patients. The course included videos featuring individuals living in poverty and six capsules on SDH: 1) the causes of poverty and welfare; 2) housing and food insecurity, basic needs competing with oral health; 3) welfare and work; 4) oral healthcare trajectories and access-to-care; 5) managing dental appointments, and 6) stigmatization and relationships with oral health professionals. The course

used group discussions and critical reflection to address empathy, patient communication and sensitivity. Participants reported a deeper understanding and sensitivity to causes of poverty and the experience of an individual on welfare. Participants also described understanding patient behaviors differently, enhanced patient communication, and improved equity in making appointments. The study also showed that shared decision-making increased between the provider and the patient (Lévesque, Levine, and Bedos, 2016).

Community Engagement, Co-location of Services, and Partnerships

Public health, government, businesses, education, labor, housing, justice, transportation, environment, agriculture and other sectors of the community must form strong partnerships to achieve the goals necessary for changing the social, economic, and environmental conditions that affect health (Brennan Ramirez, Baker, and Metzler, 2008). Partnerships between educational institutions and communities provide an opportunity for service learning in underserved communities. This increases the opportunity to recruit diverse students and faculty to work in communities to improve population health. These partnerships are crucial to providing service learning opportunities for students and should be an example to students on how to solve problems and work collaboratively with other professions, sectors, and populations. Community members can teach students, healthcare professionals, and faculty about the needs and priorities of the community and in turn work together to address the social determinants of health and health disparities (IOM, 2016).

> *"Today, the importance of the relationship between neighborhoods and health continues to be recognized, with zip code understood to be a stronger predictor of a person's health than their genetic code."*
> Harry J. Heiman and Samantha Artiga, The Henry J. Kaiser Family Foundation, 2015

Research has established that patients' health is connected to social factors. Students and residents require training to learn how to screen for food insecurity, domestic violence, health insurance access, transportation, and other social issues. But more importantly, students and healthcare professionals need tools and resources to help address these issues. This requires providers to work in the community to provide patients with the resources needed to improve their health (Klein, 2013). In one survey at an academic urban clinic, over 90 percent of pediatric residents felt it was important to screen for family psychosocial needs, but fewer than 20 percent routinely incorporated screening into their practice, often due to lack of time, training, and awareness of available community resources (Vasan and Solomon, 2015).

Community Engagement

Engaging the community to participate in partnerships with universities begins with building trust through such activities as completing a community needs assessment, conducting community-based participatory research, and recruiting minority students and faculty. Community engagement is helped by working collaboratively with groups of people affiliated by geographic proximity, special interest, or similar situations to address needs that most directly affect them. It often involves partnerships and coalitions that help mobilize resources and influence systems, change relationships among partners, and serve as catalysts for changing policies, programs, and practices (Kaprielian, et al., 2013).

Community-based participatory research gathers people in the community to work with researchers, healthcare professionals, and other partners to investigate an issue in a community and develop interventions to address or eliminate the issue. For example, a doctor working in a hospital may notice an increase of persons with diabetes from a Latino community. The doctor can gather community residents, community health center leaders, and a Latino doctor practicing in the community, to look into the reasons behind this increase. The community residents may assist the research by questioning others in the community on eating habits, attitudes, and the availability of healthy food or nutrition information. The gathered information can help the community health leaders to devise strategies to promote exercise and good nutrition, and provide residents with clear and accurate health information. This collaboration builds trust because all members of the team provide input and share the same goal, to improve the health of community members (Rabinowitz, n.d.).

A needs assessment can identify and map issues in a community such as poverty levels, nutrition, stress, housing, income, and crime (Heiman & Artiga, 2015). An understanding of community assets and needs can motivate community members to make changes to improve health. A needs assessment should describe: 1) the makeup and history of the community, to provide a context on its current concerns; 2) what matters most to the people in the community, in terms of safety, education, housing, health; 3) the issues that matter to key community stakeholders; 4) the evidence on which problems or goals should take priority; and 5) the barriers against and resources for addressing the identified problems (University of Kansas, n.d.)

Overall, partnerships are needed to increase understanding of a community's needs and assets; improve public policies and health systems; engage new issues without having sole responsibility for addressing them; develop widespread public support for issues or actions; share or develop the necessary resources for taking action and problem solving; minimize duplication of effort and services; recruit participants from diverse backgrounds and with diverse experiences; promote community-wide change through multiple approaches; and gain community members' trust in a broad-based coalition of partners (Brennan Ramirez, Baker, and Metzler, 2008, p. 34).

Co-location of Services

In addition to providing health services, healthcare professionals may refer patients to other services that address SDH, such as legal aid, food banks, nutritionists, social workers, community health workers, therapists, and counselors (Klein, 2015). For example, a healthcare professional may refer a patient to a food pantry to purchase healthy food, join a community walking program, or attend group counseling in diabetes management (Behforouz, Drain, and Rhatigan, 2014). These services can also be easier to access through co-location, which places multiple services (e.g., public health, social services, legal services, dental services, and mental/behavioral health services) in the same physical space (Ginsburg, 2008).

Co-location takes an "all hands on deck" approach to SDH. One healthcare professional alone cannot provide for all the needs of every patient. For example, the co-location of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) office in the patient-centered medical home can improve access to social services to address food insecurity, reduce transportation issues, and increase patient satisfaction (Garg, Jack, and Zuckerman, 2013). The La Maestra Community Health Centers at City Heights, in San Diego, California, has a safety-

net clinic that contains retail shops, a pharmacy, a health education center, medical and dental clinics, a laboratory, and a mental and behavioral health center. The Native American Health Center's Seven Directions, in Oakland, California, has a facility with medical, dental, and WIC services, along with an outdoor community ceremonial space and 36 units of affordable housing (Lyn, 2016). Co‑locating services has benefits for the patient and provider by improving access, and increasing communication and collaboration with other providers (Ginsburg, 2008).

Medical–Legal Partnerships

Over 250 hospitals and healthcare institutions in 36 state hospitals have developed medical–legal partnerships (MLPs), in which lawyers and paralegals are embedded in the healthcare setting to work with doctors and other healthcare professionals to address the social needs of patients (National Center for Medical Legal Partnership, n.d.). Legal advocates are essential to patients who do not know their rights regarding proper living conditions or what to do when they are threatened with eviction. Legal experts also assist doctors in finding proper resources for their patients. Many of the social conditions that impair health, such as lack of health insurance, poor housing, low education, unemployment, and poor access to food, can be traced to laws unfairly applied or under-enforced, often leading to the improper denial of services and benefits designed to help vulnerable people (Lawton and Sandel, July 8, 2015). A MLP can help people who need legal assistance with health issues, such as by getting landlords to remedy poor housing conditions that aggravate a patient's asthma, helping patients establish eligibility for Medicaid, securing educational services for children with special needs, or helping women escape domestic violence situations (Krisburg, 2016).

As Dr. Bruce Gordon, pediatric oncologist, said in a PBS News Hour feature, *Why doctors are prescribing legal aid for patients in need*, "We physicians have relatively little understanding of the legal process. And we say things like, 'You ought to be out of that house. You ought to be in someplace clean.' And then I sort of wash my hands of it and don't realize the downstream implications. Somebody's got to help them get the resources" (Judd, 2015).

MLPs may be funded through philanthropy, civil legal aid, and healthcare funding. Hospitals also fund MLPs to meet community benefit requirements. In 2014, HRSA allowed health centers receiving HRSA grants to use federal "enabling services" funds to pay for on-site civil legal aid to meet the needs of populations and communities. Enabling services include case management, transportation, language interpretation, and outreach. Civil legal aid assists health centers in improving individual and population health and well-being by addressing housing, insurance, domestic violence and other social and environmental determinants (National Center for Medical Legal Partnership, 2014).

Community engagement and local partnerships, co-location of services, and resources like MLPs are invaluable to communities in addressing SDH. These partnerships and resources allow patients and communities easy access to the programs needed to improve health. When healthcare professionals participate in these partnerships, they have close access to resources and services to become an advocate for their patients and community populations.

Health Advocacy and Policy

Health advocacy refers to actions taken by a healthcare professional to promote social, economic, educational, and political changes that ease the suffering or address threats to individual or public health identified through the physician's work and expertise. Many health professionals recognize the importance of advocacy but do not participate in advocacy activities. Advocacy goes beyond helping patients get the services they need by working to address the source of the problems they face.

Some healthcare professionals state they do not have the time or the skills to participate in advocacy. Others believe their participation will not make a difference or influence policy. Many healthcare professionals are burnt out from stressful and isolating medical training that removes them the community. In addition, healthcare professionals are trained to remove their personal preferences and opinions from decision-making and to avoid religion and politics when speaking with the patient. Some fear if they become advocates they may lose their job. To alleviate these fears and ensure healthcare professional advocates, advocacy training is needed in medical education (Earnest, Wong, and Federico, 2010).

Encouraging healthcare professional advocacy requires changes to undergraduate and graduate medical education. Residents need training on SDH and issues that affect patient health outside of the medical office visit, as well as interprofessional training in population health, leadership, social and organizational change, communications, and health policy. It is crucial to take the skills learned from these courses and apply them in a community-based learning setting. Advocacy training needs support from the medical community, accrediting bodies, schools, and organizations. For example, the Pediatrics Residency Review Committee of the Accreditation Council for Graduate Medical Education requires advocacy training and service-learning for pediatric residents (Earnest, Wong, and Federico, 2010).

The American Medical Association holds an annual advocacy conference in which attendees can gain skills and knowledge about advocating for legislation. In order for healthcare professionals to become successful advocates, they must dedicate time to training and participating in organizations and initiatives to incite change. Universities must support and reward faculty advocacy activities, and establish stronger partnerships with the community, local organizations, and local businesses. Healthcare providers can engage in advocacy by identifying local health problems, working with local partners, and developing and communicating plans for a solution. The following are examples of how healthcare providers make a positive impact in their communities through advocacy work:

- volunteer on a statewide health board or coalition to advocate for state healthcare reform to help the uninsured.
- join a school board to advocate for improved nutrition and exercise options in schools to address childhood obesity.
- work with social services agencies to suggest hiring a social worker to improve patient access to services needed to address SDH.
- apply for a community grant to install window guards on apartment building windows to decrease risk of injuries to children related to falls from windows (Earnest, Wong, and Federico, 2010).

Faculty Development

Faculty development is needed to support faculty and clinical preceptors in providing interprofessional, community-engaged courses and service learning activities that address SDH. Currently, the predominant education model is to have members of different health professions learn separately until they are fully trained, before allowing them to work together as a team. This practice often leads a lack of understanding of others professional roles and expertise, and fails to build the competencies needed for effective teamwork and collaborative practice.

There are many advantages to a more longitudinal, integrated model for clinical education, which allows students to have meaningful interprofessional learning and collaboration experiences. For example, longer clinical rotations allow students in all of the health professions have the opportunity to form relationships with patients and families over time. This type of learning environment helps students to develop a full understanding of the impact and management of SDH on chronic disease, appreciate the importance of context and social factors in health, and find role models for professional development. Continuity in the site of learning also allows students to learn more efficiently. They do not need to spend time and energy at the beginning of each new rotation to learn new computer systems, institutional logistics, and local rules. A student embedded in one site is more likely to be deeply engaged and able to participate meaningfully in improving care at that site.

However, the main barrier to this model is a lack of skilled faculty, who must be expert in their respective clinical fields, as well as skilled in providing constructive and meaningful feedback and evaluation to learners in fields other than their own, and be able to indicate how to provide care in a manner would best help relieve the disease burden caused by societal inequity. Faculty who work in these settings need training to reinforce what students learn during community-based service learning (IOM, 2016).

In addition, faculty development programs can help faculty members to utilize teaching strategies that impart skills in interprofessional teamwork, collaboration, and problem-solving. By investing in faculty development programs on SDH, advocacy, and empathy, universities can create teachers and students who value diversity and community (Sorcinelli, n.d.).

Measures and Evidence

Population health can be improved by developing replicable measures and reproducible evidence, along with interprofessional collaborations to assess outcomes in an organized and scholarly fashion. Measures are needed that provide evidence for effective training in health and social outcomes. There is a lack of data on SDH, including metrics for measuring population health, making it difficult to quantify community health needs or justify funding interventions (Association of Academic Health Centers [AAHC], 2014).

Data sharing

Data sharing is one the most important aspects of integrating medical care and social services, by allowing medical and non-medical professionals to work interprofessionally regarding patient

care and monitoring long-term outcomes. Colorado and Washington are currently working to provide social services data.

The Colorado State Data Analytics Contractor hosts a web portal that provides healthcare professionals access to a database that includes information on patient demographics, healthcare utilization, and disease burden. Colorado is also working to collect data on SDH to link Medicaid outcomes with the outcomes of other state and larger health systems (Mahadevan and Houston, 2015).

Meanwhile, Washington established an integrated social service client database that promotes collaboration among state agencies, Medicaid, criminal justice, and family services. The database identifies patient risks, costs, and outcomes at the state, community, individual or family level. The database uses the tool, *Predictive Risk Intelligence System,* to assist healthcare professionals and administrators in developing interventions for high-risk patients. The state is using the data to determine who uses emergency and inpatient services the most. This allows them to link these individuals (inmates, homeless) to social service programs that can meet their needs (Mahadevan and Houston, 2015).

Electronic Health Records

Healthcare professionals collect important data about patients that they track on a daily basis (e.g., blood sugar levels, blood pressure, body weight) in electronic health records (EHRs). This information is valuable for routine healthcare, but information on nonmedical factors that also affect health is not routinely included in the EHR. The only social information included in most EHRs is race/ethnicity, tobacco use, alcohol use, and residential address. Nearly 80 percent of physicians use EHRs today, but most of these systems are not designed to collect data on SDH. However, there has been a recent call to include SDH information in EHRs due to growing evidence of their significant impact on health. Healthcare professionals can use social determinants data in EHRs to provide comprehensive patient care, improve population health, and advance health research (Pelletier, 2016b).

In 2014, the Institute of Medicine (IOM) [note: now the National Academy of Medicine] released the reports, *Capturing Social and Behavioral Domains and Measures in Electronic Health Records, Phase 1 and Phase 2*. The reports found that healthcare professionals can alter patient and population health by including social factors in the EHR. In phase 1, the study identified 17 social and behavioral domains that could be included in EHRs. In Phase 2, the list was narrowed down to the 12 most important: race/ethnicity, tobacco use, alcohol use, residential address, educational attainment, financial resource strain, stress, depression, physical activity, social isolation, intimate partner violence (for women of reproductive age), and neighborhood median household income (IOM, 2014).

Hospitals and medical centers are increasingly incorporating information on the social determinants in EHRs. Pediatricians at Johns Hopkins Children's Center enter a basic family social history into the EHR notes section, which can help families in need receive social services and assistance from a community group. At Boston Medical Center, an MLP included a letter in the EHR to provide heat and electricity for low-income patients with chronic conditions. As a result, there was a 300 percent increase in the number of utility-protection letters (Pelletier,

2016b). "We need more evidence that doing this work at the intersection of social determinants and medical care actually makes a financial impact on health systems," said Laura Gottlieb, MD, MPH, a member of the University of California, San Francisco, Department of Family and Community Medicine (Pelletier, 2016b).

Payment and Incentives for Social Determinants of Health

An increased focus on SDH presents the best option for improving health outcomes and reducing healthcare costs in the United States. The goal is to provide quality healthcare for all individuals and offer the social services needed to address all areas of life that hinder proper health. Many public and private reimbursement methods do not consider the circumstances of patients negatively impacted by SDH. Failure to include a social services component in incentives and payment hinders a healthcare provider from providing the patient with all options to improve their health and affect the social determinants that affect their health (AAHC, 2015).

Payment and financial incentives are necessary to shift focus away from fee-for-service payment models to focusing on social service coordination. It is vital for social needs to be linked to healthcare to improve health outcomes for individuals, communities, and populations (Mahadevan and Houston, 2015).

Fee-for-service payment models compensate health providers for volume, not value. They focus on the quantity of services provided and not on the quality and effectiveness of those services (Miller, 2012). This model has contributed to increased healthcare costs and reduced quality care. For many years, the U.S. healthcare system has failed to recognize the impact of SDH. Reimbursement and financial incentives for non-health support services is crucial to combating health disparities and poor health outcomes.

The United States is moving away from a fee-for-service payment system to concentrate on quality care. In January 2015, HHS Secretary Sylvia Mathews Burwell announced that the goal of HHS is to build "a system that delivers better care; a system that spends healthcare dollars more wisely; and a system that makes our communities healthier" (Burwell, 2015). In addition, HHS set a goal for 85 percent of Medicare fee-for-service payments to be based on quality and value in 2016, and 90 percent by 2018. Alternative payment models that incorporate social needs and other nonmedical services and allow the healthcare professional to focus on the quality and cost of care for the individuals, communities and populations they serve are the future of value-based care (Mahadevan and Houston, 2015).

Accountable Care Organizations

Accountable Care Organizations reward healthcare providers for delivering quality care at reduced costs. The Centers for Disease Control and Prevention (CDC) defines an Accountable Care Organization (ACO) is an integrated delivery system in which a group of healthcare professionals or organizations enters into a formal agreement with a payer such as Medicare to deliver improved quality and health outcomes for a defined population of patients, at a lower cost of care. The ACO model replaces fee-for-service with a reimbursement system that gives financial incentives for healthcare professionals to prevent sickness and use social services to enhance care for patients (CDC, 2014).

State health systems recognize the importance of integrating social services with clinical care. However, to effectively incorporate social support, ACOs need team-based care, data sharing, referral networks and resources, and healthcare professional collaboration. Many states are currently providing financial incentives and data-sharing arrangements within ACOs (Mahadevan and Houston, 2015).

Hennepin Health is an ACO with the goal to advance social services and lower healthcare costs. It includes a health plan, medical center, social services organization, and Federally Qualified Health Center (FQHC). It shares financial risk for more than 10,500 Medicaid recipients in Hennepin County, Minnesota. Hennepin Health receives a capitated (fixed total cost of care) per-member per-month payment (PMPM) from Minnesota's Medicaid agency to pay for its members' Medicaid services. At the end of each year, if Hennepin Health has saved money relative to the PMPM capitation payments received, the provider partners receive a dividend based on the amount of care provided to the members, using formulas reflecting each partner's size and pre-established performance measures (Leavitt Partners, 2015).

Hennepin Health determined that Medicaid patients were high users of the healthcare system and emergency services and had the greatest need. In addition, several of Hennepin Health's primary care clinics provide dental care. The agency found that dental emergency room (ER) visits were expensive, and many of the visits resulted in prescribing pain killers, a major issue in a community with many substance abuse and mental health issues. Transportation to dental services was a challenge for many patients. As a result, Hennepin Health began providing same day dental services by transporting ER patients to an offsite clinic to ensure that patients received the dental care they needed. Hennepin Health also provided incentives to encourage annual preventative dental care to prevent future ER visits. The ACO has kept costs below the PMPM payments every year (Leavitt Partners, 2015).

Patient Centered Medical Home Model

In a Patient Centered Medical Home (PCMH), an interprofessional team of doctors, nurses, and other professionals oversees patient care. A PCMH also promotes population health through addressing SDH. PCMH providers must address patient social needs before they receive payment. This includes advancing care coordination, encouraging self-care and referring patients to social services (Bachrach, Pfister, Wallis, & Lipson, 2014).

Blue Cross Blue Shield of Michigan requires PCMHs to refer patients to social service agencies. Primary care providers and specialists participating in the PCMH program must show that they: maintain a database of community resources; train staff to identify and refer patients to these resources; have a systematic approach to assessing patients' needs and making referrals; track referrals of high-risk patients to community resources; and work to ensure that the patients follow up on their referrals. Blue Cross Blue Shield of Michigan pays PCMH healthcare professionals' enhanced fees through a fee-for-value reimbursement system. This was possible due to savings received through the PCMH program. The program saved $155 million from 2009 to 2011and $155 million in 2012 (Bachrach, Pfister, Wallis, & Lipson, 2014).

The PCMH model can assist homeless patients through interprofessional care teams, which can not only provide medical care, but address poor living conditions, food insecurity, and lack of transportation. The Valley Homeless Healthcare Program (VHHP), in Santa Clara County, California, has clinics located near the local shelters that provide homeless patients with care from physicians, nurses, behavioral health providers and social service providers. There is no advance appointment needed and all clinics are walk-in only. VHHP also operates mobile units to reach remote patient populations (Schrag, 2014).

Bundled Payment Model

The bundled payment model provides a reimbursement payment for an episode of care or a specific condition over a defined period of time. The provider has the incentive to work within a budget to achieve a positive health outcome but they also assume financial risk if care is more expensive than the specified bundled payment (Spencer, Lloyd, and McGinnis, 2015). For example, an acute care bundle payment would cover the cost of an emergency room visit and follow up appointment with a healthcare professional. A chronic care bundle has a set fee that is paid to providers to manage chronic services such as educational interventions or environmental assessments (Farmer, McStay, George, McClellan, and Sennet, 2015).

Healthcare professionals can achieve improved outcomes by including social services in bundled payments. This can be achieved through the integration of health and social services, such as by referring a patient with congestive heart failure to a smoking cessation or community-based nutrition program. States can address SDH by tying social service quality metrics to bundled payments. Metrics can be direct (housing status) or indirect (30-day readmissions), and can ensure that healthcare professionals are aware that patients can be referred to social services. Healthcare professionals could also receive funds to disseminate to social service or community-based agencies as part of the bundle for non-emergency transportation or housing (Spencer, Lloyd, and McGinnis, 2015).

Bundled payments can inspire healthcare professionals to work interprofessionally to care for patients, improve quality, and reduce costs. This system also allows patients and employers to know the total cost of care from the beginning, giving them the option of comparing cost and services with other healthcare professionals (Morales, n.d.).

State Tax Deduction Incentives

In the state of Georgia, a Preceptor Tax Incentive Program (PTIP) provides a tax deduction for community-based faculty physicians who serve as preceptors. The tax deduction is intended to assist Georgia programs with providing the community-based educational resources needed to graduate students in primary care. Physicians receive a $1000 credit per 160 hours of precepting they provide for third- and fourth-year medical students, as well as students enrolled in nurse practitioner and physician assistant programs at accredited public or private universities in Georgia. The deduction cannot exceed $10,000 annually (Scott, 2014).

Following a HRSA Bureau of Health Workforce webinar on Georgia's PTIP, Dr. Richard Colgan, a medical professor and the director of the Maryland Area Health Education Center program, worked to develop a PTIP in Maryland. In 2011, Maryland ranked last of the 50 states

for Graduate Medical Education trainees who were likely to be generalists, and the state had difficulty in recruiting and retaining healthcare professionals in underserved areas (University of Maryland School of Medicine, 2016). The Maryland PTIP was signed into law in May 2016, with the goal to increase the number of preceptors. As in Georgia, Maryland physician preceptors can receive a credit of $1,000 per student up to a maximum of $10,000 annually. They must complete 12 weeks of clinical training to be eligible for the tax incentive (Laff, 2016).

Several counties in Colorado do not have a primary care physician, and patients may travel 30 miles or more to visit their physician. To improve access to care, the Rural & Frontier Health Care Preceptor Tax Credit bill was signed into law in June 2016, to go into effect on January 1, 2017, and continue annually until January 1, 2020. Rural preceptors will receive a tax credit of $1,000 by taking at least one student for a 4-week rotation (Espeseth, 2016). The bill encourages rural doctors to precept medical students who have an interest in providing primary care services in rural areas of Colorado. Credits are also available in certain areas for advanced practice nurses, physician assistants, and dentists (Coltrain, 2016).

Social Determinants of Health Models

There is an increasing interest in examining the impact of SDH. Medical schools are beginning to add curriculum on advocacy, social determinants, and social services. The following innovative courses and programs work in the community to improve population health and help the underserved access services to improve social needs.

Morehouse School of Medicine Community Health Course

Morehouse School of Medicine requires first-year students to enroll in a yearlong Community Health Course, where they learn to conduct a community health needs assessment and develop interventions. The course exposes students to the economic, social, and cultural issues that impact health, allowing them to understand the challenges that the underemployed, poor, and underserved patients face on a daily basis. Many community members do not have access to nutritious food, social services, or healthcare. The program goal is to graduate healthcare professionals who will return to underserved communities and provide care that is greatly needed (Buckner, Ndjakani, Banks, and Blumenthal, 2010).

Community members greatly benefit from student service. Many of the students and faculty are role models to the youth and young adults in the community. The students have created life skills, sexual education, and substance abuse workshops for youth in underserved areas, and many continue to mentor the youth in the community after completing the course. Some members of the community have displayed short-term behavior changes like increased exercise and eating healthier food (Buckner, Ndjakani, Banks, and Blumenthal, 2010).

New Mexico Community Health Workers

Community Health Workers (CHWs), also known as tribal community health representatives or promotores/a, are frontline public health workers who are trusted members of the community and serve as bridge between the community and the healthcare system. They typically share the same language, ethnic, cultural, educational, and class background as people in the community

they serve. CHWs assist individuals in navigating the healthcare system, and provides education on self-care and tools to improve health. They also travel to individual homes or meet patients outside of the medical office (New Mexico Department of Health, n.d.). They have a major role in care coordination, addressing SDH and health disparities, improving access to care, and reducing healthcare costs (New Mexico Department of Health, 2014).

In 2014, New Mexico Governor Susana Martinez signed legislation to create a voluntary statewide CHW training and certification program. Governor Martinez said, "Community health workers are an important piece of our healthcare workforce, particularly in rural and underserved areas of New Mexico. By establishing uniform professional standards, more New Mexicans who seek to further their careers as healthcare professionals will be able to serve our families and communities while continuing to deliver the high-quality care New Mexicans need and deserve" (State of New Mexico, 2014, para. 2). In August 2015, the New Mexico Department of Health began certifying experienced CHWs through a process that allowed them to earn credit through a combination of employment and volunteer service (New Mexico Department of Health, 2015).

Seattle-King County Healthy Homes Project

The Seattle-King County Healthy Homes Project has used CHWs to provide home visits to low-income families who have children with persistent asthma. The CHWs were trained on asthma self-management, taught families how to identify indoor and environmental asthma triggers, and provided resources (e.g., bedding covers, vacuums, and cleaning supplies) to address these triggers. The CHWs also offered tools for asthma self-management and safe medication use (U.S. Department of Health and Human Services, 2012). As a result, urgent healthcare visits by these children decreased by two-thirds (Bachrach, Pfister, Wallis, & Lipson, 2014).

University of Cincinnati Children's Hospital Medical Center

The University of Cincinnati Children's Hospital Medical Center has an experiential and didactic learning Advocacy Course designed to give medical students an understanding of the issues faced by economically-disadvantaged individuals, in order to develop tools and interventions to provide proper care for children. The course is a required 2-week block rotation for the pediatric class. Students visit the local Free Store Food Bank and the Hamilton County Jobs and Family Services, where they shadow a case worker assisting individuals with benefits applications. They also receive interdisciplinary didactic information from pediatricians, legal aid attorneys and paralegals, and social workers on public benefits, budgeting on a fixed income, housing, and educational rights and laws. Students are required to reflect on their experience and ways they can incorporate it into their future in their practice. The students learn that family experiences and situations vary, so they need to ask about the families' social situation. They also realized the importance of information on advocacy and community issues and resources to help underserved families receive the services they need (Klein and Vaughn, 2010).

University of New Mexico Programs

The Combined Bachelor of Arts /Medical Degree Program at the University of New Mexico is designed to address the state's physician shortage by training students committed to practicing in its medically under-served communities. The program is funded by the New Mexico State

Legislature and is open to New Mexico high school seniors planning to begin college the fall semester after their high school graduation. Students first earn a baccalaureate degree through the College of Arts and Sciences to prepare for medical school. Upon successfully completion, students transition to the University of New Mexico School of Medicine to complete their doctor of medicine degree. The undergraduate program includes a basic science curriculum and a summer practicum immersion experience where students live and work in different rural communities in New Mexico. They are also required to complete a community health project and shadow physicians in rural hospitals and clinics (Cosgrove, et al., 2007).

Dr. Arthur Kaufman, Vice Chancellor for Community Health, University of New Mexico Health Sciences Center, spoke with the ACTPCMD members at the August 2015 meeting. He emphasized that by addressing social determinants of health, this program has been successful in ensuring that physicians stay in New Mexico after their training and practice in underserved areas. Approximately 70 percent of the rural graduates stay in rural New Mexico, approximately 25 percent of the urban graduates practice in rural New Mexico, and approximately 50 percent of the urban graduates practice in an FQHC (Kaufmann, 2015).

Health Extension Rural Offices

The University of New Mexico Health Sciences Center developed the Health Extension Rural Office (HERO) program to increase the capacity of the healthcare system to address social determinants of health. HERO agents are located in rural communities across the state and they work with community partners to identify community health needs and provide resources in education, clinical service, and research. County health report cards track interventions, community needs, and outcomes. Agents address social determinants such as education, food insecurity, and local economic development. The HERO agent's primary role is to live in the community; link local community health needs with university resources; mobilize participation of different sectors in the community; improve local health services and systems; encourage youth to finish school, enter health careers; recruit and retain the local health workforce; bring latest research, evidence-based healthcare practices to the community; and strengthen the community capacity to address local health problems (Kaufman, et al., 2010).

The HERO program has produced positive outcomes for patients and the community. HERO has increased the number of physicians practicing in rural communities, which adds approximately $1 million to the community (Kaufman, et al., 2010). Immunization rates in 19- to 35-month-old children increased from 68.2 percent in 2009 to 76.1 percent in 2012. In addition, New Mexico's Nurse Advice Line reduced emergency department visits by 70 percent, saving approximately $3.5 million per year (Kaufman, et al., 2015).

Conclusion

Social and other nonmedical factors have been proven to have a significant impact on individuals, communities, and population health. Health professionals, health professions education, communities, and social services must come together to address health disparities. Health professions education must provide the skills needed to train students to become quality healthcare professionals that practice in rural and underserved communities after graduation. They should be trained to become advocates in their community and go beyond the office to

make a significant impact on the health and lives of the community members they serve. Curriculum must change to incorporate SDH throughout the course of learning and through continuing education. Community-based learning experiences should be a year or longer so students are exposed to how poverty, food insecurity, education, environment, and culture impact the daily lives of the patients they serve. Multidisciplinary teams should be provided with development resources to optimize training in these environments.

It is crucial to address SDH to prevent disease before it starts and to end health inequalities and improve access to care. An interprofessional team that includes a diverse group of healthcare professionals, along with lawyers, faculty members, community leaders and members, and policy experts can have a major impact on community health. In addition, the healthcare system must make investments on social factors that affect health to alter an individual's health from childhood to adulthood.

List of Acronyms and Abbreviations

AAHC	Association of Academic Health Centers
AAMC	Association of American Medical Colleges
ACA	Patient Protection and Affordable Care Act
ACO	Accountable Care Organization
ACTPCMD	Advisory Committee on Training in Primary Care Medicine and Dentistry
CAI	Community Asthma Initiative
CHW	Community Health Worker
CDC	Centers for Disease Control and Prevention
FQHC	Federally Qualified Health Center
EHR	Electronic health record
EPA	Entrustable Professional Activity
ER	Emergency Room
FACA	Federal Advisory Committee Act
HERO	Health Extension Rural Office
HIV	Human Immunodeficiency Virus
HRSA	Health Resources and Services Administration
HHS	U.S. Department of Health and Human Services
IOM	Institute of Medicine
MLP	Medical Legal Partnership
PCMH	Patient-Centered Medical Home
PMPM	Per-Member Per-Month Payment
PHSA	Public Health Service Act
RCSIP	Rush Community Service Initiatives Program
RWJF	Robert Wood Johnson Foundation
SDH	Social determinants of health
VA	Department of Veterans Affairs
VHHP	Valley Homeless Healthcare Program
WIC	Special Supplemental Nutrition Program for Women, Infants, and Children
WHO	World Health Organization

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