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Personalized Strategies to Activate and Empower Patients in Health Care and Reduce Health Disparities

Jie Chen, PhD,

Department of Health Services Administration, School of Public Health, University of Maryland, College Park

C. Daniel Mullins, PhD,

Pharmaceutical Health Services Research Department, School of Pharmacy, University of Maryland

Priscilla Novak, MPH, and

Department of Health Services Administration, School of Public Health, University of Maryland, College Park

Stephen B. Thomas, PhD

Department of Health Services Administration, Maryland Center for Health Equity, School of Public Health, University of Maryland, College Park

Abstract

Designing culturally-sensitive personalized interventions is essential to sustain patients' involvement in their treatment, and encourage patients to take an active role in their own health and health care. We consider patient activation and empowerment as a cyclical process defined through patient accumulation of knowledge, confidence, and self-determination for their own health and health care. We propose a patient-centered, multi-level activation and empowerment framework (individual-, health care professional-, community-, and health care delivery system-level) to inform the development of culturally informed personalized patient activation and empowerment (P-PAE) interventions to improve population health, and reduce racial and ethnic disparities. We discuss relevant Affordable Care Act payment and delivery policy reforms, and how they impact patient activation and empowerment. Such policies include Accountable Care Organizations and Value Based Purchasing, Patient Centered Medical Homes, and the Community Health Benefit. Challenges and possible solutions to implementing the P-PAE are discussed. Comprehensive and longitudinal data sets with consistent P-PAE measures are needed to conduct comparative effectiveness analyses to evaluate the optimal P-PAE model. We believe the P-PAE

Jie Chen, PhD, Department of Health Services Administration, School of Public Health, University of Maryland, College Park, 3310E School of Public Health Building, College Park, MD 20742-2611, Phone: 301-405-9053, Fax: 301-405-2542, jichen@umd.edu.

C. Daniel Mullins, PhD, Pharmaceutical Health Services Research Department, School of Pharmacy, University of Maryland, Saratoga Building@, Room 12TH FLR, Phone: 410-706-0879, Fax: 410-706-5394, dmullins@rx.umaryland.edu

Priscilla Novak, MPH, Department of Health Services Administration, School of Public Health, University of Maryland, College Park, College Park, MD 20742-2611, pnovak1@umd.edu

Stephen B. Thomas, PhD, Department of Health Services Administration, Maryland Center for Health Equity, School of Public Health, University of Maryland, College Park, 3302E SPH Building #255, College Park, MD 20742-2611, Phone: 301.405.8357, sbt@umd.edu

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model is timely and sustainable, and will be critical to engaging patients in their treatment, developing patients' abilities to manage their health, helping patients to express concerns and preferences regarding treatment, empowering patients to ask questions about treatment options, and building up strategic patient-provider partnerships through shared decision making.

Introduction

Patient engagement in health care has been considered as a “blockbuster drug of the century” (Kish, 2012), with the potential to achieve the “triple aim” of improved health outcomes, better patient care, and lower costs (Berwick, Nolan, & Whittington, 2008). Engaging patients to actively participate in their care has become a priority for policy makers, with the goal of improving health care delivery system quality and efficacy (Hibbard, Mahoney, Stock, & Tusler, 2007; Hibbard & Cunningham, 2008; Johnson, 2011; Fitzsimons & Fuller, 2002). There are provisions of the Affordable Care Act (ACA) that encourage providers (including physicians, nurses, and pharmacists) to engage patients as proactive and empowered participants in maintaining their good health and effectively managing chronic disease, by using new care delivery models such as the patient-centered medical home, Accountable Care Organizations, and the establishing best practices through shared-decision making (Patient Protection and Affordable Care Act, Sections 3021, 3022, and 3506; 2010).

Research suggests that patient engagement levels differ by race and ethnicity (Hibbard et al., 2008; Hibbard, Greene, & Overton, 2013), with African Americans and Latinos demonstrating lower engagement levels compared to Whites (Cunningham, Hibbard, & Gibbons, 2011). Although patient engagement models have been presented by Hibbard (2004), Parchman (2010), and Becker (2008), we suggest that evidence of using patient activation models to reduce racial and ethnic health disparities is still lacking (Koh, Brach, Harris, & Parchman, 2013). Less engagement in wellness and prevention may be a factor in the greater observed severity and disease burden among minorities (Institute of Medicine, 2002). Evidence suggests that culturally tailored community-based patient education programs (Alegría et al., 2008; Alegría, Sribney, Perez, Laderman, & Keefe, 2009; Hibbard & Greene, 2003), and programs targeted to reduce language barriers can effectively engage minorities in their own care, and eventually improve population health of underserved minorities (Flores, 2006). Thus, it is critical for clinicians and policy makers to have a comprehensive understanding of how to enhance patient engagement, particularly among racial and ethnic minorities, to improve health and reduce health disparities (Alegría et al., 2014).

In this study, we consider patient activation and empowerment as a cyclical process defined through patient accumulation of knowledge, confidence, and self-determination for their own health and health care. We propose a patient-centered, multi-level activation and empowerment framework (individual-, health care provider-, community-, and health care delivery system-level) to inform the development of culturally designed Personalized Patient Activation and Empowerment (P-PAE) interventions to improve population health, and reduce racial and ethnic disparities.

The Concept of “Personalized Patient Activation and Empowerment”

Patient activation and empowerment

Patient activation and patient empowerment are two interdependent concepts (Hibbard, Mahoney, Stockard, & Tusler, 2007; Hibbard & Cunningham 2008a; Alegría et al., 2008; Alegría, Scribney, Perez, Laderman, & Keefe, 2009; Cortes, Mulvaney-Day, Fortuna, Reinfeld, & Alegría, 2009). Patient activation refers to patients’ knowledge, skill, and confidence to manage their health and health care (Hibbard & Greene, 2003). Patient empowerment involves patients’ self-efficacy and capacity to make informed decisions about their health care (Aujoulat, Marcolongo, Bonadiman, & Deccache, 2008). Unlike patient activation, patient empowerment is a more proactive concept, which reflects patients’ self-determination to make autonomous decisions and facilitate self-promoted healthy behaviors (Aujoulat, Marcolongo, Bonadiman, & Deccache, 2008).

Adapted from this literature, we use patient activation and empowerment improvement to denote a life cycle process that increases patients’ knowledge, confidence, and self-determination of their own health and health care. Patients gain knowledge of their health conditions, treatment plans, or health care access through providers, communities, or policy interventions. Research suggests that after gaining knowledge, patients are more likely to develop confidence (Ludman et al., 2013). With confidence, patients can be motivated and gain self-determination abilities, such as the ability to communicate with their providers, and express their health concerns and preferences (Chen, Mortensen, & Bloodworth, 2014). Self-determination empowers patients to seek more health information, acquire more knowledge of their health from providers or other sources, and become more confident (Aujoulat, d’Hoore, & Deccache, 2007; Aujoulat, Marcocolongi, Bonadiman, & Deccache, 2008). Hence, we expect that with the accumulated knowledge, confidence, and self-determination, patients may take more responsibility for their health, and be more involved in treatment. The progression of this dynamic progress depends on various factors, such as patients’ races and ethnicities, cultural background, and community characteristics (Chen et al., 2014; Ludwig et al., 2012; Gaskin, Dinwiddle, Chan, & McCleary, 2012a, 2012b).

Personalized Patient Activation and Empowerment (P-PAE)

Personalized Patient Activation and Empowerment (P-PAE) strategies, are strategies specifically designed based on the characteristics of individuals, and are necessary to engage and sustain patients from diverse cultural backgrounds in health care (Koh, Brach, Harris, & Parchman, 2013; Jerant, Sohler, Fiscella, B. Franks, & P. Franks, 2011). Not every intervention to improve patient activation and empowerment works equally well for all racial and ethnic minorities (Shaw & Krause, 2001; Skolasky, Mackenzie, Wegener, & Riley, 2008; Sandman, Granger, Ekman, & Munthe, 2012).

Compared to Whites, racial and ethnic minorities play relatively passive roles in health care and are less willing to participate in the health care decision-making (Finfgeld, 2004; Sandman, Granger, Ekman, & Munthe, 2012; Aujoulat, d’Hoore, & Deccache, 2007; Aujoulat, Marcocolongi, Bonadiman, & Deccache, 2008). Variables that mediate patient activation and empowerment, such as self-efficacy and patient-provider relationship, are

usually less favorable among minorities than among others (Aujoulat, d’Hoore, & Deccache, 2007; Aujoulat, Marcocolongi, Bonadiman, & Deccache, 2008). Racial and ethnic minorities are also more likely to experience stress caused by job loss, poverty, limited health care access, or single parenthood (Hibbard et al., 2008; Macartney, Bishaw, & Fontenot, 2013). Latinos and African Americans report worse patient-provider relationships and communication, and are less likely to initiate healthy behaviors or adhere to treatment plans (Wang et al., 2003). Studies also show that minority patients are less likely to have opportunities to ask questions during provider visits, receive less information on their treatments, and are less likely to be consulted their preferences in treatment decisions (Link & Phelan, 1995). Compared to Whites, African Americans have significantly smaller “social networks” (Shaw & Krause, 2001). These findings suggest that tailored policies focusing on improving patient-provider relationship, self-efficacy, and social support, may be even more necessary among minorities compared to Whites.

Vulnerable populations with low levels of activation and empowerment may gain more health benefits from improved activation and empowerment, as Hibbard et al. (2013) noted that “patients who start at the lowest activations tend to increase the most.” Improving patient activation and empowerment and through implementation of P-PAE has the potential to improve minorities’ health and improve health disparities, one of the major goals of Healthy People 2020 (U.S. Department of Health and Human Services, 2013).

The Personalized Patient Activation and Empowerment (P-PAE) Model

P-PAE is a multi-dimensional concept, involving patients, their providers, their communities, and the overall health care delivery system, and reflecting patient, provider, and social and physical environments. In this present study, we propose a patient-centered multi-level activation and empowerment framework to inform the design of P-PAE strategies (Figure 1). Our model is adapted from the existing literature on the theory of patient-centered outcomes research (PCORI, 2013a; Selby, Beal, & Frank, 2012), the social behavior model (Janz & Becker, 1984), the chronic care model (Wagner, Davis, Schaefer, Von Korff, & Austin, 1999; Barr et al., 2003; Brownson et al., 2007), shared decision-making framework (Sandman, Granger, Ekman, & Munthe, 2012; Légaré & Witteman, 2013; Légaré et al., 2011), health literate care model (Koh, Brach, Harris, & Parchman, 2013), and patient activation and empowerment studies (Hibbard et al., 2008; Aujoulat, Marcocolongi, Bonadiman, & Deccache, 2008; Anderson & Funnell, 2010; Feste & Anderson, 1995; Hibbard, Mahoney, Stockard, & Tusler, 2005; Holmström & Röing, 2010; Carman et al., 2013). Our proposed framework puts patients in the center of the delivery system and uses patient-centered outcomes research theory to explain how patient activation and empowerment can be personalized. This model provides a conceptual and analytical framework to understand the interaction and interrelationship between patients, health care providers, communities and health care delivery system level factors. Patient centered outcomes research is needed to test optimal P-PAE strategies with different racial and ethnic sub-groups. We elaborate on each component of the P-PAE model below.

Patient-Centered Framework

Patients are in the center of our proposed framework. Outcomes of treatment can only be optimized if the patients actively participate in treatment and take responsibility for their own health. Health care providers, community environment, and the health care delivery system can individually or simultaneously influence patients' knowledge, confidence, or self-determination, to improve patient activation and empowerment. Improved patient activation and empowerment, in return, may benefit the patient-provider relationship, and increase the efficiency of health care delivery systems. As indicated in Figure 1, P-PAE requires synergy among patients, providers, communities and delivery systems.

Health Care Providers

Our definition of providers includes physicians, nurses (Sofaer & Schumann, 2013), physician assistants, social workers, and pharmacists (Dabbs, Song, Geest, & Davidson, 2013). The patient-provider relationship has been well studied in the literature (Finfgeld, 2004; Sandman, Granger, Ekman, & Munthe, 2012; Fraenkel & McGraw, 2007; Nygardh, Malm, Wikby, & Ahlström, 2012; Quill & Brody, 1996; Guerrero, Chen, Inkelas, Rodriguez, & Ortega, 2010; Vargas-Bustamante & Chen, 2011; Brownson et al., 2007). Shared decision-making between providers and patients is generally considered an effective way to improve health care quality and patient satisfaction (Fraenkel & McGraw, 2007; Nygardh, Malm, Wikby, & Ahlström, 2012; Quill & Brody, 1996). Recent studies show patient-provider communication, such as the practice of interpersonal exchange, and treatment goal setting can significantly improve patient engagement (Flores, 2006; Heard & Alexander, 2012). Provider's active role engaging patients can be more helpful for racial and ethnic minorities, since research suggests they encountered worse physician-patient relationships, and were less active compared to Whites (Chen, Mortensen, & Bloodworth, 2014). Racial and language concordance have the potential to improve P-PAE through shared cultural background between providers and patients (Vargas-Bustamante & Chen, 2011).

Communities

Recent research suggests that the social environment ("refers to relations among people living in a particular area and encompasses concepts such as connectedness to and similarity with neighbors and social disorder") has a significant impact on the choices individuals make each day (Williams et al., 2012; Gaskin, Dinwiddle, Chan, & McCleary, 2012a, 2012b). Community health care resources (e.g. hospitals, clinical centers) and population characteristics, and the built environment are significantly associated with health care access and utilization (Gaskin, Dinwiddle, Chan, & McCleary, 2012a, 2012b; Davidson, Andersen, Wyn, & Brown, 2004; Ludwig et al., 2012; Benjamins, Kirby, & Bond Huie, 2004), health outcomes (White, Haas, & Williams, 2012; Williams et al., 2012; Freedman, Grafova, & Rogowski, 2011; Freedman, Grafova, Schoeni, & Rogowski, 2008), and health disparities (White, Haas, & Williams, 2012; Williams et al., 2012). Hibbard (2009) noted the importance of improving patient activation at the community level. Chen, Mortensen, & Bloodworth (2014) presented a conceptual framework for the association of contextual factors, including medical environment, neighborhood characteristics and patient activation,

to empirically show that patient activation varies by neighborhood poverty levels and number of immigrant residents. Community health care resources and population characteristics, such as residential segregation, are significantly associated with health disparities (Chen, Mortensen, & Bloodworth, 2014; Gaskin, Dinwiddie, Chan, & McCleary, 2012a, 2012b; Williams et al., 2012). More evidence is needed to determine how the community can improve patient activation and empowerment among diverse populations to reduce disparities.

Delivery System Policy

Having health care access and insurance can significantly improve health care quality and reduce racial and ethnic disparities (Institute of Medicine, 2002; Chen & Vargas-Bustamante, 2011; Vargas-Bustamante & Chen, 2012). We expect that health care access and insurance status can influence racial and ethnic disparities in patient activation and empowerment as well. The literature suggests that Latinos' lower activation and empowerment may reflect their limited health care access (Cunningham, Hibbard, & Gibbons, 2011), and type of health insurance (Hibbard et al., 2008). Health insurance cost-sharing can influence patients' willingness to seek treatment and adhere to provider-suggested plan-of-care (Carman et al., 2013; Korda & Eldridge, 2012). The structure of the health care delivery system, including how, where, and when care is made available, policies regulating reimbursement for different types of care (Centers for Medicare and Medicaid Services, 2013a, 2013b), and whether patient preferences for care are valued (James, 2013), have the potential to impact P-PAE.

Prompting P-PAE under the Affordable Care Act

The U.S. faces major barriers to implement P-PAE model successfully. These barriers include a fragmented health care delivery system (Enthoven, 2009), lack of continuity of care (Warth, 2011), and insufficient payment incentives for providers to engage patients in treatment. Under the ACA, patient activation and empowerment has been recognized as an "integral component of quality" (James, 2013). These ACA provisions include increased access to health insurance through exchanges and Medicaid expansion, the creation of Accountable Care Organizations, establishment of Value Based Purchasing, development of Patient Centered Medical Homes, and a requirement that non-profit hospitals deliver a community health benefit.

Health Insurance Exchanges

Under the ACA, 35 million Americans were projected to gain insurance (Congress, 2010) and as of late February 2015, well over 9 million previously uninsured individuals enrolled in coverage through Federally facilitated coverage expansion options (White House, 2015). While Medicaid will facilitate the provision of insurance to low income individuals in states that have chosen to opt-in, the Exchanges serve as marketplaces where insurance plans can be purchased and provide the majority of insurance coverage. Having health insurance can directly influence patient activation and empowerment, particularly for those who are currently uninsured (Cunningham, Hibbard, & Gibbons, 2011). Knowing you have insurance coverage, or being confident through gaining insurance, for instance, can be ways

to improve patient activation and empowerment. Supports from patient navigators and in-person programs may be necessary to help newly insured patients select and understand the insurance coverage (Torrey, 2013; Centers for Medicare & Medicaid Services, 2013c). Centers for Medicare & Medicaid Services have provided financial support to patient navigation programs that serve in the Federally-facilitated and State Partnership Marketplaces (Centers for Medicare & Medicaid Services, 2013c).

Accountable Care Organizations and Value Based Purchasing

Accountable Care Organizations (ACOs) (Centers for Medicare and Medicaid Services, 2013a, 2013b) are accountable for overall health care treatment, cost, as well as health care quality. Value Based Purchasing (Centers for Medicare and Medicaid Services, 2014) pays hospitals for achieving certain quality and care-coordinating goals. Both provisions advocate integrated health care, which requires patients to be activated, empowered, and responsible in their own health, and promotes interactions between patients, providers, and health systems. Under these provisions, patients and providers are encouraged to share decision-making. Shared decision making allows care decisions to be tailored to reflect patients' true preferences (James, 2013). With ACOs, coordinated care among physicians, hospitals, and other health care professionals is required to promote the health of Medicare patients, especially those with chronic diseases, to get "the right care at the right time, while avoiding unnecessary duplication of services and preventing medical error" (Centers for Medicare and Medicaid Services, 2013a, 2013b). The goal of the ACOs is to improve efficiency. Improving personalized patient activation and empowerment is fundamental to achieve this goal (Cunningham, Hibbard, & Gibbons, 2011; Hibbard & Greene, 2003; Alegría, Scribney, Perez, Laderman, & Keefe, 2009; Finfgeld, 2004; Sandman, Granger, Ekman, & Munthe, 2012; Hearld & Alexander, 2012). The ACA also promotes value-based payment reform to provide incentive payments to reward quality improvement and achievement, through Medicaid & Medicare payment adjustments, incentive payments, bundled payments, and shared savings programs (Centers for Medicare and Medicaid Services, 2014). Payment reforms incentivize a high level of patient activation and sustained participation in health care.

Patient Centered Medical Homes

Patient-centered medical homes (PCMH) are an alternative health care delivery model that requires care coordination among patients and providers (Cassidy, 2010). Providers have been offered aids and financial support to create patient centered medical homes. However, because the operation of a PCMH necessitates the use of electronic health records and practice management tools, the transition can often be quite challenging. A recent study (Edwards, Bitton, Hong, & Landon, 2014) suggests that payment incentives for providers and patients have been increased to promote patient centered medical home initiatives in recent years. Because PCMHs focus on having most of the patient's needs delivered through one service entity, providers have the opportunity to enhance P-PAE through motivational interviewing and repeated interactions with the same panel of patients (Chen, Mortensen, & Bloodworth, 2014).

Community Health Benefit

In addition to the above provisions that can directly influence P-PAE, other provisions of the ACA can promote patient activation and empowerment indirectly. Such programs include the establishment of community health teams (section 3502) (Millenson & Macri, 2012), the requirement of price and quality transparency (Yegian, Dardess, Shannon, & Carman, 2013), provision of decision-aids to address diverse levels of health literacy (Koh, Brach, Harris, & Parchman, 2013), and requirements that hospitals that do not pay taxes demonstrate a “community benefit” through the provision of charity care and establishment of prevention and wellness programs (Corrigan, Fisher, & Heiser, 2015). Patients can gain more support from the community, have the opportunity to know the price and quality of health care through public reporting, and receive individually designed education programs under these provisions of the ACA.

Challenges and possible solutions to implement the P-PAE model

Although financial incentives have been distributed under the ACA, and ongoing policies have been implemented to encourage and sustain effort from different stakeholders, there still remains a gap in our knowledge about how to best accomplish the integration of different stakeholders to promote patient activation and empowerment. We believe successful implementation of the P-PAE model requires involvement of multiple stakeholders (e.g. diversified health care workforce) and provision of comprehensive services (e.g. housing, physical environment). For example, effective P-PAE has to be accompanied by health care providers’ collaborative support. In other words, unless providers also make necessary changes, efforts by patients will be undermined (Légaré & Witteman, 2013).

The committed partnerships between stakeholders are the key of the P-PAE model (Edwards, Bitton, Hong, & Landon, 2014; Corrigan, Fisher, & Heiser, 2015). Public health leadership will be needed to encourage and sustain the partnerships among various stakeholders. Such leadership should be able to establish long-term relationships with community residents, assume more responsibilities for underserved populations, and commit to promote population health. Local health departments, for example, have the potential to lead the implementation of P-PAE model, since within their charge to perform the essential public health services they should: “inform, educate, and empower people about health issues, develop policies and plans that support individual and community health efforts, enforce laws and regulations that protect health and ensure safety, link people with needed personal health services and ensure the provision of health care otherwise unavailable.” (Handler, Issel, & Turnock, 2001) Emerging literature shows local health departments’ success in controlling diseases and reducing mortality (Brown, Martinez-Gutierrez, & Navab, 2014; Mays & Smith, 2011, Grembowski, Bekemeier, Conrad, & Kreuter, 2010, Rodriguez, Chen, Edusei, Suh, & Bekemeier, 2012). In addition to local health departments, federally qualified health centers (FQHCs) (Centers for Medicare & Medicaid Services, 2015) also have the mission to provide comprehensive health care services for vulnerable populations. More research will be needed to further explore the roles of local health departments and FQHCs in improving P-PAE.

Empirical comparative effectiveness tests focusing on identifying an optimal P-PAE model require data sets with multi-level (individual-, health care professionals-, community-, and health care delivery system-levels) variables. Comprehensive and longitudinal data sets are needed. Medicare Current Beneficiary Survey Patient Activation Supplement File provides sixteen questionnaires on patient activation among Medicare beneficiaries (Parker, Regan, & Petroski, 2014). Health Tracking Household Survey provides thirteen questionnaires on patient activation for all the adults in the U.S. However, these patient activation measures are not included in its recent survey. With the help of electronic health records, comprehensive and longitudinal data sets, such as MORE² Registry® Research Edition Data Dictionary, that tracks individuals' health records are emerging. But most of these data sets do not have information on patient activation and empowerment. In addition, it is critical to have consistent measures of patient activation and empowerment across different surveys to conduct comparative effectiveness analysis.

In addition, qualitative studies are needed to identify in-depth barriers and challenges, acknowledge factors associated with activations that have been omitted in quantitative data sets, and help to estimate the causal effects on activation and empowerment (Mullins, Abdulhalim, & Lavallee, 2012). Through quantitative and qualitative analyses, effective P-PAE interventions, especially for hard-to-reach populations, can be explored comprehensively.

Healthcare Transformation through the P-PAE Model

Our proposed framework is relevant for policy makers to improve the efficiency and equity of the health care delivery system in the U.S. Activating and empowering patients in health and health care is a priority to improve the efficiency and quality of the health care delivery system under the ACA. Rearrangement of financial incentives provides the momentum to implement patient centered care to promote P-PAE. If P-PAE strategies are successfully implemented, we can expect to see decreased health care costs, improved efficiency and quality, reduced health disparities, and improved population health. Patients would directly benefit from the health gains of being activated and empowered. Providers and delivery systems should adopt P-PAE strategies to cultivate patients' confidence, improve patients' activation, and encourage patients to express health concerns and treatment preferences. Providers participating in ACOs, PCMHs and other Value Based initiatives would also financially benefit from the health gains that result from improved patient activation and empowerment. Community organizations, such as non-profit health entities and local health departments, can also integrate P-PAE strategies to empower those they serve. Greater availability of existing health care data sets would facilitate evaluation of P-PAE.

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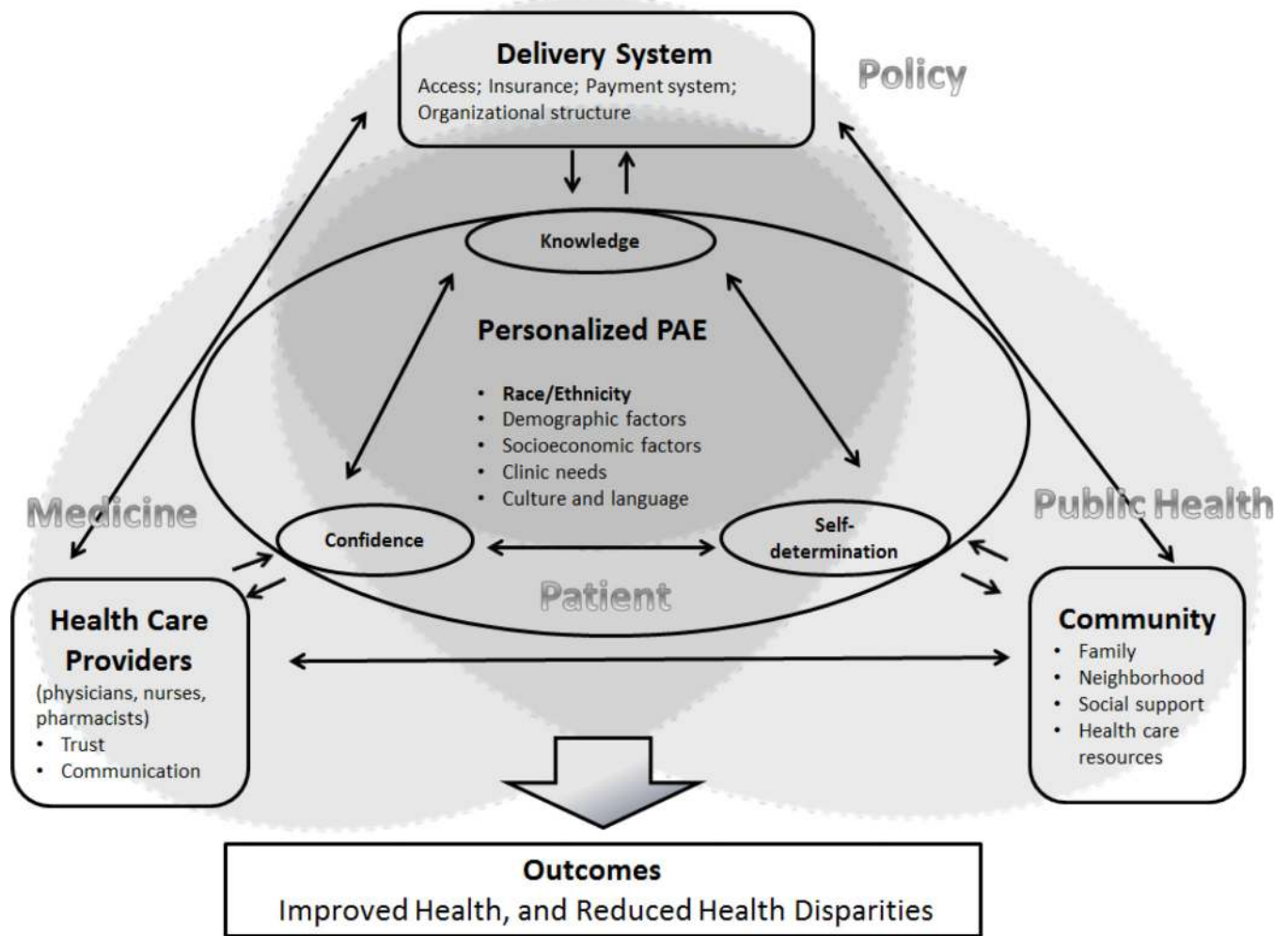


Figure 1. Patient-Centered Multi-Level Personalized Patient Activation and Empowerment Framework

Note: Our proposed patient-centered multi-level activation and empowerment framework is adapted from the existing literature, including patient-centered outcomes research (PCORI, 2013a; Selby, Beal, & Frank, 2012), the social behavior model (Janz & Becker, 1984), the chronic care model (Wagner, Davis, Schaefer, Von Korff, & Austin, 1999; Barr et al., 2003; Brownson et al., 2007), shared decision-making framework (Sandman, Granger, Ekman, & Munthe, 2012; Légaré & Witteman, 2013; Légaré et al., 2011), health literate care model (Koh, Brach, Harris, & Parchman, 2013), and patient activation and empowerment literature (Hibbard et al., 2008; Aujoulat, Marcolongo, Bonadiman, & Deccache, 2008; Anderson & Funnell, 2010; Feste & Anderson, 1995; Hibbard, Mahoney, Stockard, & Tusler, 2005; Holmström & Röing, 2010; Carman et al., 2013).

Table 1

Key ACA Provisions Related to Personalized Patient Activation and Empowerment (P-PAE) Framework

Programs/Provisions	Narrative	Direct Relation to the P-PAE Model
Health Insurance Exchanges (Congress, 2010; White House, 2015)	<ul style="list-style-type: none"> Insurance coverage 	<ul style="list-style-type: none"> Health Care System: access and insurance Patient: knowledge of exchange HCP: coordinate under patients' insurance Community: Patient navigators help with enrollment
Accountable Care Organizations (Centers for Medicare and Medicaid Services, 2013a, 2013b)	<ul style="list-style-type: none"> Coordination among doctors, hospitals, and other health care providers Patient-provider shared decision-making Decision-aids programs and health information technology 	<ul style="list-style-type: none"> Health Care System: policy requirement Patient: all aspects of P-PAE HCP: promote patients' engagement and encourage P-PAE Community: encourage patient engagement, assist to design culturally reflected community interventions
Patient-Centered Medical Homes (Cassidy, 2010)	<ul style="list-style-type: none"> Patient-centeredness Coordination among patients and primary care providers 	<ul style="list-style-type: none"> Patient-centered framework: coordination and collaboration Health Care System: policy requirement Patient: P-PAE HCP: encourage patient engagement by considering patients' cultural backgrounds
Innovative Value-Based Payment System (Centers for Medicare and Medicaid Services, 2014)	<ul style="list-style-type: none"> Provide incentive payments to reward quality improvement and achievement 	<ul style="list-style-type: none"> Health Care System: policy requirement and payment incentive HCP: encourage P-PAE
Community (Millenson & Macri, 2012)	<ul style="list-style-type: none"> Community health team 	<ul style="list-style-type: none"> Health Care System: policy requirement Patient: P-PAE Community: community involvement
Transparency (Yegian, Dardess, Shannon, & Carman, 2013)	<ul style="list-style-type: none"> Public reporting 	<ul style="list-style-type: none"> Patient: knowledge to make decisions

Notes: 1. HCP: Health Care Providers (e.g. physicians, nurses, and pharmacists); 2. Programs/Provisions can be overlapped. For example, the ACO also requires innovative value-based payment reform, quality transparency, etc.