Competencies for the Adaptable Physician: Training Residents to Care for Vulnerable Populations

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Abstract: The US faces a need for more primary care physicians to care for an increasingly vulnerable population. The advancing age, growing diversity, high burden of chronic illness and socio-economic decline of the population requires medical educators to produce primary care physicians with expertise in public health, quality improvement and interprofessional teamwork in addition to our traditional focus on clinical excellence. In this article, multidisciplinary faculty of the Initiative on Poverty, Justice and Health from the University of Cincinnati Academic Health Center and other faculty working with vulnerable populations describe our vision of a new breed of primary care doctor, the Adaptable Physician, and the competencies needed to provide high quality, community-oriented primary care to vulnerable populations. Through a structured consensus process, we have developed six competencies and associated specific knowledge, skills and attitudes of the Adaptable Physician and have mapped these to the ACGME competencies to facilitate curriculum development in primary care residency programs. We propose a national consensus process for the stakeholders in primary care to define the competencies needed to care for vulnerable populations at individual and population levels and to improve care provided in diverse settings.

Keywords: Primary care, vulnerable populations, medical education, health professions education, competencies, curriculum development, poverty, adaptable physician, public health, interprofessional teamwork, quality improvement, health disparities.

INTRODUCTION

The U.S. faces a national need for more primary care physicians committed to caring for vulnerable populations. As described in Starfield's "Contribution of Primary Care to Health Systems and Health," the diminishing number of primary care physicians in the US is likely to result in more costly care with poorer health outcomes and decreased equity [1]. This concerning trend in our physician workforce is compounded by trends in our population; patients are becoming increasingly more vulnerable. Advancing age, growing diversity, high burden of chronic illness, [2] and socio-economic decline of the population [3,4] have created a need for a new generation of primary care physicians who are able to provide high quality care to a wide variety of patients in diverse settings.

These primary care physicians will require competencies beyond those traditionally developed during residency training. Knowledge and skills from community medicine, public health and improvement science are needed. In 2002, the Institute of Medicine (IOM) report, "Unequal Treatment", summarized the findings of over 100 studies on health disparities and concluded that, "Even among the better-controlled studies, the vast majority of published research indicates that minorities are less likely than whites to receive needed services…even after correcting for access-related factors, such as insurance status" [5, p. 2]. Their findings led the IOM to recommend that "health care professionals need tools to understand and manage the cultural and linguistic diversity of patients…Cross-cultural curricula should be integrated early into the training of future health care providers..." (p. 6). This call is further motivated by the second goal of Healthy People 2010: to eliminate health disparities

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among segments of the population, "including differences that occur by gender, race or ethnicity, education or income, disability, geographic location, or sexual orientation" [6].

The 2003 IOM report "Health Professions Education: A Bridge to Quality," provided detailed evidence that, "Clinical education simply has not kept pace with or been responsive enough to shifting patient demographics and desires, changing health systems expectations, evolving practice requirements and staffing arrangements, new information, a focus on improving quality or new technologies" [7, p. 1-2]. The committee made a strong argument for competency-based education and proposed a set of five core competencies that all clinicians should possess: provide patient-centered care, work in interdisciplinary teams, employ evidence-based practice, apply quality improvement, and utilize informatics. They deliberately acknowledged overlap with other efforts to define competencies, especially those of the American College of Graduate Medical Education (ACGME) whose six competencies (Table **1** – ACGME Competencies) have governed curriculum development and evaluation in residency training since their introduction in 1999.

Table 1. ACGME Competencies

The residency program must require its residents to obtain competencies in the 6 areas below to the level expected of a new practitioner. Toward this end, programs must define the specific knowledge, skills, and attitudes required and provide educational experiences as needed in order for their residents to demonstrate:
1. Patient Care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health
2. Medical Knowledge about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care
3. Practice-Based Learning and Improvement that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care
4. Interpersonal and Communication Skills that result in effective information exchange and teaming with patients, their families, and other health professionals
5. Professionalism, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population
6. Systems-Based Practice, as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value

ACGME Minimal Competencies for Residency Education[2].
[2]http://www.acgme.org/outcome/comp/compMin.asp accessed 03/05/09.

Four years later, a third IOM report, "Training Physicians for Public Health Careers,"[8] addressed the critical shortage of public health physicians by recognizing that public health is practiced to an extent by all physicians and by describing the recommended content areas for public health physicians, including cultural competence, leadership, and clinical and community preventive services. That report stated, "Organizational partners should develop models to integrate training in public health principles and practice with physician education at both the undergraduate and graduate levels. Each graduate medical education program should identify and include relevant public health concepts and skills."

Each of the above reports argues strongly for the addition of new content areas in our training of physicians to cover the needs of our changing world. Nowhere will these be more important than when training physicians to care for vulnerable populations. Health care for vulnerable communities can only reach excellence if it includes assessing and intervening at the levels of populations and health care systems. But as yet, there has been no consensus process among educators in the field to translate these content areas into specific knowledge, skills and attitudes (KSA) for primary care residents.

In this paper, we propose a set of competencies that are applicable across all primary care specialties and that will prepare physicians to care for the most vulnerable in our communities. These competencies can be used by programs to go forward with curriculum change even now. However, our primary purpose has a more far reaching goal. We are making a call to begin a discussion among stakeholders in medical education and public health that will define the competencies required by the next generation of physicians. Such a discussion is the next step toward a much needed national consensus. Then, once defined, medical educators will have worthy tools with which to teach our future physicians, tools that will help residents become active participants in the charge to resolve inequities in high-quality, community-oriented primary care for the poor and vulnerable, both in the US and globally. It is time to prepare our best and our brightest to take on the challenge of becoming the quintessential 21st century primary care doctor, whom we have chosen to call the Adaptable Physician.

OVERVIEW

This article will include:

1) A brief description of the *Initiative on Poverty, Justice and Health* (IPJH), an education consortium in its fifth year that creates and implements curricula about health care for poor, vulnerable populations with didactic and experiential electives in both local and international communities;

2) A description of the methods and results of the structured process used by IPJH to develop a definition of the adaptable physician, the competencies of the adaptable physician and the specific knowledge, skills and attitudes which are required;

3) A discussion integrating our work with that of other efforts published in the literature;

4) Suggested next steps toward national consensus.

INITIATIVE ON POVERTY, JUSTICE AND HEALTH

The Initiative on Poverty, Justice and Health (IPJH) formed in June 2004 as an interdisciplinary physician faculty work group at the University of Cincinnati Academic Health Center. The mission of IPJH is to improve the quality of health care for vulnerable populations here and abroad through novel education of medical students and residents. Supported in part with funding from the federal Health Re-

source and Services Administration (HRSA), IPJH has developed the expertise of the involved faculty in curricular development and small group teaching as well as in content areas necessary to provide excellent care for vulnerable populations. IPJH created innovative curricula including an interdisciplinary primary care resident rotation[1] and a longitudinal experience for medical student scholars. An explicit goal of IPJH is to foster and support commitment of medical trainees to care for vulnerable populations, particularly the poor, in their future careers.

The six IPJH faculty represent the major primary care programs at the University of Cincinnati (Internal Medicine, Pediatrics, Medicine/Pediatrics, and Family Medicine) and collectively have over 100 years of experience practicing, teaching, and observing health care in many different medically underserved communities both in the United States and globally. Each faculty participant has experience with at least three of the following care settings and populations: Urban and rural Community Health Centers (CHCs) and Federally Qualified Health Centers (FQHCs), Migrant Health Centers, Healthcare for the Homeless programs, Indian Health Service sites, healthcare for recent immigrants and refugees, free clinics, community mental health organizations, inner-city health care organizations, HIV/AIDS clinics, urban academic health center clinics and hospitals, and primary care and hospital sites located in developing countries (multiple sites in Africa and Central America).

One goal of the IPJH faculty group collaboration over the last five years has been to define the commonalities between patients with differing vulnerabilities and cultures. This identification has led to recognition of the competencies that are required for their care. In turn, the competencies have produced a vision of a new type of primary care physician; a physician with the knowledge, skills, and attitudes necessary to provide high quality health care to diverse vulnerable populations and communities.

METHODS

Six IPJH faculty participated in a structured consensus building process to accomplish the following: 1) specifically define the general concept of the "adaptable physician" that had developed from our work, and 2) identify and define physician competencies and related points of knowledge, skills, and attitudes of the "adaptable physician" that are broadly applicable to the care of different poor, vulnerable populations, across a variety of underserved community settings. A separate process was then used to map these KSA elements to the ACGME competencies.

The first process consisted of three sequential stages to generate independent responses and then reach consensus on first the definition of the adaptable physician, then the competencies, and finally the associated KSA.

In each stage of the first process, faculty initially generated a response independent of one another. These individual responses were then shared in a "round-robin" fashion (one response per person each time) with each response recorded centrally. Borrowing from the rules of brainstorming techniques, only clarifying questions were asked at this point and there was no criticism or discussion about the evolving list of responses.

The responses were then condensed and evaluated using a modification of a structured small group discussion technique—the Nominal Group Technique (NGT) [9,10] – to agree upon revisions until a consensus was reached for each stage.

In the third stage, the KSA were modified, elaborated on and then culled using NGT with a goal of reaching 10-15 KSA elements in each competency. The decision was made to go for optimal rather than minimal KSA to expand the breadth of information shared.

The second process included two IPJH faculty and two faculty who had not been involved in the above process who independently mapped the KSA to the ACGME competencies and compared the mapping. Inter-rater agreement among the four raters was initially 65% overall. Discrepancies in mapping were discussed individually until 100% consensus was reached. Wording of some elements was changed during this discussion when it was clear that the meaning understood by the independent faculty differed from that intended by IPJH.

RESULTS

The results of each stage of the first process are shown in tables. Table **2** shows the consensus definition of the adaptable physician. Table **3** shows the six competencies of the adaptable physician and the associated KSA for each competency, mapped to the ACGME six competencies. In total, 91 KSA elements were endorsed by the group during the first process and 94 resulted from the second process, with the additional three elements coming from splitting several of the original elements for clarity.

Table 2. Definition of Adaptable Physician

The adaptable physician can enter any health environment and, regardless of technological or ancillary support, deliver high quality care consistent with that environment. He or she will be equally comfortable walking into a suburban primary care office, a migrant health center, a homeless shelter clinic or a small hospital in a developing country and listen, assess, and respond to the health needs of individual patients and their community. He or she will be equally capable of assuming leadership, working within a team, and assessing system function for ongoing improvement. In order to serve vulnerable populations, the adaptable physician must identify personal and communal resources to maintain his or her commitment and passion.

The KSA for each of the competencies of the adaptable physician ranged from 13 to 19 with a mean of 15.6. There were 33 total knowledge elements, 35 skill elements and 26 attitude elements. There were total 147 maps to the ACGME competencies, since a number of the KSA elements mapped to more than one ACGME competency. Of those 147, 16% were Patient Care, 6% Medical Knowledge, 11% Practice-Based Learning and Improvement, 21% Interpersonal Skills and Communication, 26% Professionalism and 20% Systems-Based Practice.

As we generated the KSA elements, it became clear that the competencies of the adaptable physician had several

[1]Available upon request from corresponding author.

Table 3. Competency Goals for the Adaptable Physician

A. COMPETENCY GOALS FOR THE ADAPATABLE PHYSICIAN								
COMPETENCY		**KSA DESCRIPTIONS**	**ACGME COMPETENCIES**					
			PC	**MK**	**PBLI**	**IPC**	**Prof**	**SBP**
PROVIDE HIGH QUALITY CARE IN DIVERSE SETTINGS	**K**	Identify national and local health disparities		X				
		Recognize medical conditions more likely to impact vulnerable populations		X				
		Understand access to care where you practice						X
		Describe constructs for healthcare improvement (e.g. Model for Improvement)			X			X
		Identify relevant performance indicators for your population and practice						X
	S	Demonstrate strong clinical skills	X		X			
		Gain patient's trust (e.g. nonverbal communication, honesty, integrity)	X			X		
		Coach patients in behavior change (e.g. harm reduction and self-management goal setting techniques, motivational interviewing)				X		
		Demonstrate ability to access, interpret and apply new information	X					
		Improve care at a population level (e.g. disease registries, problem statements, solution analysis, team work, PDSA cycles)			X			X
	A	Think outside the box			X			
		Recognize and attend to priorities of the patient first	X				X	
		Value partnership with patients	X				X	
		Advocate for individual patients in the clinical realm populations	X				X	
		Advocate for improving the practice setting			X		X	X
		Advocate for patient populations at local regional or national levels					X	X
PRACTICE EFFECTIVELY WITH LIMITED RESOURCES	**K**	Understand strengths and limitations of medical technology	X					
		Know resources available to the patient, organization and community						X
		Know the cost of care you provide	X					X
		Understand the effectiveness of the therapeutic relationship	X			X		
		Know disease patterns in the community		X				
	S	Prioritize care to appropriately conserve resources (e.g. stewardship)	X					X
		Brainstorm novel solutions to limited resources	X					X
		Use clinical alternatives to improve value (e.g. alternative or non-traditional treatments and limited use of technology)	X					X
		Work to secure needed resources for patients and community			X			
		Assess needs and resources in a systematic fashion			X			X
	A	Value a thorough history and careful physical exam	X					
		Strive for excellence	X				X	
		Be comfortable with uncertainty	X				X	
BRIDGE SOCIAL AND CULTURAL DIFFERENCES BETWEEN PROVIDER AND PATIENT	**K**	Describe the social and cultural context of your patients and practice setting	X		X			
		Understand past social injustice and resulting mistrust					X	
		Know what and who cultural brokers are		X		X		
		Understand cultural norms, culture specific beliefs and practices (e.g. health beliefs, perceptions of time and money, gender roles, religious beliefs)		X			X	
		Describe models of provider-patient interaction (e.g. health belief model)	X	X				
		Know the information contained in the Universal Declaration of Human Rights		X				
	S	Communicate effectively with patients of different languages (e.g. develop language skills and work effectively with interpreters)				X	X	
		Demonstrate use of communication techniques to address low health literacy				X		
		Utilize interview rubrics (e.g. Kleinman questions)	X			X		
		Recognize how social and cultural differences influence the way we see patients and they see us				X	X	
		Identify food insecurity and other markers of poverty		X				
	A	Suspend judgment					X	
		Be patient				X	X	
		Recognize shared humanity				X	X	
		Accept that some differences are irreconcilable				X	X	

K = Knowledge S = Skills A = Attitudes.
PC = Patient Care MK = Medical Knowledge PBLI = Problem Based Learning and Improvement.
IPC = Interpersonal and Communication Skills Prof = Professionalism SBP = Systems-Based Practice.

(Table 3). Contd…..

B. COMPETENCY GOALS FOR THE ADAPATABLE PHYSICIAN									
COMPETENCY		**KSA DESCRIPTIONS**	**ACGME COMPETENCIES**						
			PC	**MK**	**PBLI**	**IPC**	**Prof**	**SBP**
INTERPRET HEALTH IN A COMMUNITY CONTEXT	**K**	Know the community demographics and health indicators where you practice						X
		Identify the social determinants of health.		X				X
		Know the principles of primary care interventions (e.g. COPC)						X
		Understand the built environment (e.g. sidewalks, parks, street lights, roads, means of transportation, water source and cleanliness)						X
		Know the history of the community						X
		Understand the current and past impact of human rights violations						X
	S	Interpret patient concerns and formulate treatment plans with attention to family and community context						X
		Demonstrate family counseling skills						X
		Partner with patients, family and community to improve health	X			X		X
		Assess community needs and assets (e.g. identify key informants, understand roles of schools, faith communities and other organizations)	X					
		Involve community, family and religious leaders in health care	X			X		
		Know how to access the media to promote health				X		X
	A	Consider patient as part of a larger context	X					X
		Be willing to ask difficult questions that may rock the status quo				X	X	
		Balance the needs of many with the needs of one					X	X
FUNCTION WELL IN A VARIETY OF TEAMS	**K**	Understand roles of team members				X		X
		Describe different styles of leadership				X		
		Understand elements of organizational culture						X
		Know and apply variety of team building exercises				X		
		Understand how different personalities affect team work				X		
		Work well with others from different cultural backgrounds, SES and training				X	X	
	S	Be an effective teacher			X	X		
		Use techniques for effective group process (e.g. mission/vision and strategic plans, meeting rules, brainstorming, communication, project management, feedback)				X		
		Assess functioning of team and devise solutions to improve (e.g. recognize strengths and limitations, effectively resolve conflict, distinguish group needs from wants)			X	X		
		Demonstrate servant leadership skills				X	X	
		Practice active listening skills				X		
		Be able to use appropriate humor				X		
		Appreciate the strength, training and leadership of non-physician health professionals					X	X
	A	Be willing to let others share or receive credit				X	X	
		Value patients as community partners and integral team members					X	X
		Be sensitive to effects of traditional power structures					X	X
SUSTAIN COMMITMENT AND PASSION FOR THE CARE OF VULNERABLE POPULATIONS	**K**	Know mentors who can give you guidance feedback and reality checks			X		X	
		Know whom you can turn to for help				X	X	
		Identify spiritual and philosophical meaning connected to the work					X	
		Recognize signs of stress and professional burnout			X		X	
		Know the origin of your commitment and passion and nurture it					X	
	S	Practice strategies for renewal and work-life balance (vacation, exercise, sleep, non-medical interests, self-reflection)					X	
		Eliminate work not central to your purpose (e.g. clarify purpose, say no effectively, delegate)					X	
		Set goals for your own personal and professional development			X		X	
		Find collaborators with shared passion					X	
		Accept challenges consistent with your core purpose					X	
		Develop resilience and healthy coping strategies					X	
		Request and incorporate feedback			X	X		
	A	Do what makes you come alive					X	
		Be willing to ask for and receive counsel			X	X		
		Understand that the patient isn't perfect – don't idealize the poor	X				X	
		Recognize you can only do what you can do – accept your limitations			X		X	
		Be adventurous and open to change					X	
		Depersonalize others' anger				X		
		Have a sense of humor					X	

K = Knowledge, S = Skills, A = Attitudes.
PC = Patient Care, MK = Medical Knowledge, PBLI = Problem Based Learning and Improvement.
IPC = Interpersonal and Communication Skills, Prof = Professionalism, SBP = Systems-Based Practice.

overlapping themes and attributes: humility, diversity, service, excellence and community. To emphasize these areas of commonality, in addition to elaborating each competency with specific KSA elements, we created a graphic representation of the competencies that highlights the overlapping themes – the medical home for vulnerable populations that is depicted in Fig. (**1**) below.

DISCUSSION

Residents currently provide significant amounts of indigent care to diverse populations during their training. When learners have negative experiences with primary care, they are dissuaded from pursuing that path as a career [11,12]. As stated by Holmboe and Bowen in their paper on 'Reforming Internal Medicine Training', the residency clinics of academic medical centers typically attract a patient population with a disproportionate share of complex medical and psychosocial issues [13]. The patient with multiple serious medical problems complicated by poverty, illiteracy, and substance abuse may overwhelm the clinical abilities of an internist in training, particularly in the absence of multidisciplinary resources (p. 1166). Since that describes the majority of academic medical centers as well as many community programs where residents practice, defining the knowledge,

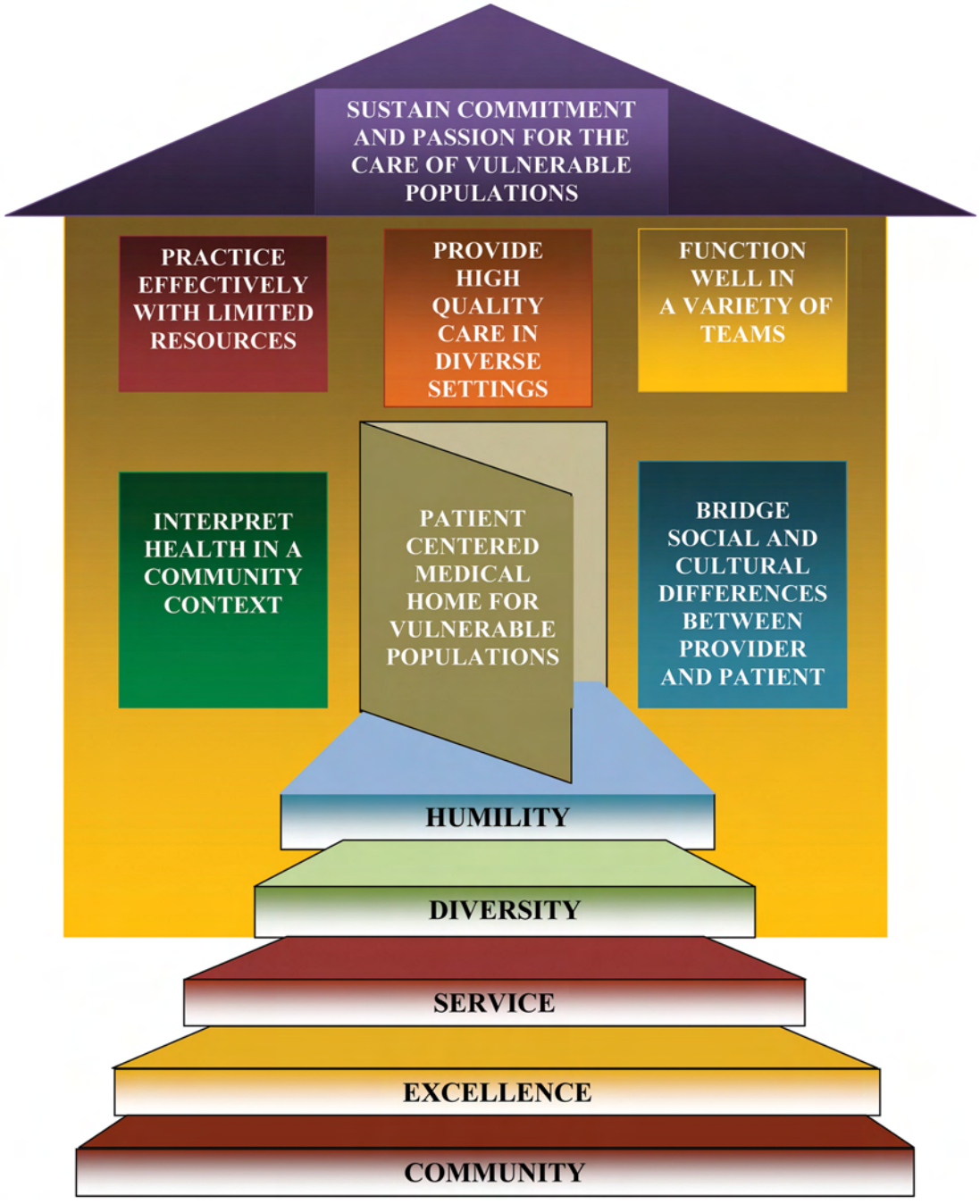

Fig. (1). Medical home for vulnerable populations.

skills and attitudes that faculty should emphasize in these settings is a high priority.

Better equipping our residents to care for vulnerable populations could improve care provided during their residency, create a higher sense of self-efficacy that may increase interest in primary care or public health careers, and leave residents better prepared for such careers upon graduation. This same logic has driven efforts to define competencies in other interdisciplinary fields at a national level, in particular by the Association of American Medical Colleges in developing the Geriatric Competencies for Medical Students [14].

Defining the specific competencies needed by the adaptable physician when caring for vulnerable populations facilitates curriculum development; learning experiences can be designed that will best facilitate competency acquisition. Likely, these curricula will be non-traditional in many residency training settings, moving residents outside the walls of academic health centers and transferring some of their instruction to health professionals outside their own discipline. In fact, expanding the diversity of resident experience in these ways is one of the benefits of curricula directed towards caring for vulnerable populations. The adaptability to multiple settings and instructors that learners can develop from such programming could enhance their success in other pursuits such as highly functioning teams, health care improvement initiatives, and continuing medical education in practice.

In particular, during this process we found that all faculty involved prioritized the intrapersonal skill of self-reflection and interpersonal skills of teamwork and partnership (this became evident given the large number of KSA emphasizing these skills). While these skills are included in the ACGME competencies of Professionalism and Interpersonal Skills/Communication, the development of these particular skills have not been traditionally emphasized in resident training. This may be, in part, because the expertise required to teach them effectively often rests more in fields of educational psychology and organizational development, which are not traditional partners of medical educators. Recognition of the importance of teamwork to high quality patient care and patient safety has encouraged more steps toward interprofessional learning, but these experiences are often logistically difficult given the silos created by traditions of single profession training and the sense of turf around professional identity [15].

IPJH has developed several curricular innovations to promote self-reflection and teamwork. First, residents from Internal Medicine, Family Medicine, Pediatrics and combined Medicine-Pediatrics programs rotate together in a small group on the IPJH elective. Each week, learners post a story about a patient or provider on Blackboard, an easily accessible electronic learning platform. In particular, they are asked to comment on the impact of poverty or culture on the patient's health or the trials and tribulations of working with vulnerable populations from the provider perspective. These posted threads are discussed weekly in a session facilitated by a learner and attended by all learners and several faculty. Patient-provider stories create sharing among learners about the various settings in which they are working for the month. This is often a time when learners begin to recognize through shared peer experience the significance of certain health indicators, markers of poverty, and challenges to their patients such as unemployment, transportation, and single parenthood.

Second, we emphasize teamwork and partnership in several ways during the month. The orientation includes a work style assessment completed by each learner [16], followed by a discussion of impact of different work styles on team functioning. One of our faculty also teaches a session on different philosophies of leadership, emphasizing the benefits of servant leadership as an approach to leading teams that care for vulnerable populations. Learning sessions during the month include field trips to a variety of community resources, discussions featuring patients or families describing the impact of poverty and culture on their health, and emphasis on several academic-community partnerships in our city that promote health of vulnerable populations. Each month is carefully planned to include a significant amount of time to reflect on the work.

Other institutions have developed innovative programming in caring for vulnerable populations as well. One of the most compelling and comprehensive programs is the Montefiore Social Medicine Program (MSMP). MSMP is a residency training program in Social Medicine located at the Montefiore Medical Center and Albert Einstein College of Medicine in the Bronx, New York City. Since 1970, this program has trained primary care physicians collaboratively in family medicine, internal medicine, and pediatrics for underserved communities within a population health and social medicine framework [17].

Other programs have also taken local or regional steps to define competencies for residents. Four family medicine residency programs associated with the Medical College of Wisconsin, for example, have a Community Health Curriculum composed of seven competencies: (1) teamwork, (2) knowledge and use of community resources, (3) sociocultural competency, (4) community education, (5) community partnership, (6) population health, and (7) research and evaluation [18].

The processes we used to derive competencies and KSA have limitations. While we are interdisciplinary primary care faculty caring for vulnerable patients ourselves in clinical practice, and several of us have advanced training in medical education or public health, other constituents may have very different ideas regarding the competencies and KSA needed. Faculty from geographically diverse institutions, community-based public health physicians, other public health professionals, leadership scientists and patients themselves could vitally inform these proposed competencies.

We limited our focus to graduate medical education because our focus in IPJH has been medical trainees and we were interested in defining the competencies needed for practice. However, the process should be extended to look at what competencies should be recommended for medical undergraduates in caring for vulnerable populations, as well as what faculty development and continuing medical education is needed, recognizing the process of lifelong learning in medicine. In fact, several of the involved faculty expressed a desire to use the competencies we had developed as the basis for personal learning plans.

Given the interdisciplinary nature of caring effectively for vulnerable populations, it is not medical education alone that could benefit from defining competencies needed in caring for vulnerable populations. While we developed competencies specifically for physicians and mapped those to ACGME competencies for resident education, competencies in caring for vulnerable populations could be defined in nursing and pharmacy and mapped to their analogous governing competencies. This process has begun at least in nursing with the Quad Council of Public Health Nursing Organizations who published national public health nursing competencies in 2003, using as a framework the Council on Linkages between Academia and Public Health Practice "Core Competencies for Public Health Professionals" [19]. Competencies developed by consensus processes in each profession could be cross-referenced across professions to encourage interprofessional curricular development, as was done in Geriatrics by the Commonwealth Fund [20].

If we are to take up the charge of the IOM in their report on "Health Professions Education: A Bridge to Quality", we should go one step further than cross-referencing across professions and actually collaborate to develop interprofessional competencies in caring for vulnerable populations. A broad based national strategy was outlined in this report to move forward in further defining and institutionalizing their five interprofessional competencies across the professions and their recommendations could provide guidance for a national consensus process specifically around competencies of caring for vulnerable populations. At the University of Cincinnati, we have begun this process locally as part of our institution's participation in the Institute for Healthcare Improvement's Health Professions Education Collaborative (HPEC). Our HPEC team's focus is improving quality of health for vulnerable populations.

The new curricular development facilitated by defining KSA elements and mapping to competencies will evoke some of the health care system changes needed to support trainees being educated in practice environments that provide excellent team-based care.

Finally, faculty development programs are needed to improve capacity to educate trainees effectively in these competencies.

More immediate next steps in this process that should be strongly considered include: 1) the establishment of an accessible, indexed repository for curricula available on vulnerable populations (perhaps through the MedEdPortal); 2) the creation of interest groups in the primary care specialty or program director organizations to facilitate networking across disciplines; and 3) the development of connections that will be needed to move this and other local attempts to define the needed competencies to a broader level of consensus building nationally in the field. Whatever the subsequent steps are, they should be crafted by the collaborative work of all health professions involved in primary care, facilitated by professionals through teamwork and guided by our patients as the primary stakeholders.

CONCLUSION

The adaptable physician represents a new breed of physician who can lead primary care locally and globally. He/she possesses the competencies to care for vulnerable populations at individual and population levels and to improve care provided in diverse settings. Building consensus around the specific knowledge, skills and attitudes needed by the adaptable physician, and creating curricula that teach those elements, is a challenge that medical educators committed to caring for vulnerable populations must take on.

GLOSSARY

Active Listening Skills

Behaviors used to listen, attend to the person speaking, and to and either conveying understand or request clarification. These include activities such as maintaining eye contact, paraphrasing, facing the person speaking, reflecting back content to communicate empathy, demonstrating attentiveness, asking questions, and summarizing.

Built Environment

Structures created by humans (as opposed to the natural environment) such as buildings, parks, roads and other transport corridors, as well as housing and residential areas, commercial centers, pipelines and utilities.

Food Insecurity

Applies when people live with hunger and fear of starvation. As opposed to "food security" which is a term that refers to the physical, social and economic access for all people to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life [24].

Health Belief Model

Although the term refers to several different specific models that have evolved from one constructed by Rosenstock in 1966 for psychologists, it currently generally refers to what someone believes about the variables that affect various aspects of their health and how those beliefs influence the actions that person takes in response to recommended health action. It includes such elements as an individual's perceived illness severity, therapy benefit, coping strategies, spiritual/religious values, and cultural.

Health Indicators

Measures that reflect or indicate the state of health of persons in a defined population; eg, infant mortality rate or physical fitness.

Health Literacy

The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions. These are the skills that all people need to, for instance, find their way to the right place in a hospital, fill out medical and insurance forms, and communicate with healthcare providers [6].

Institute of Medicine (IOM)

A nonprofit organization within the National Academy of Sciences. It is chartered to work outside the framework of government to ensure scientifically informed analysis and independent guidance. As an adviser to the nation to improve health, IOM strives to provide unbiased, evidence-based, as

well as authoritative information and advice concerning health and science policy to policy-makers, professionals and leaders in every sector of society, and the public at large.

The Kleinman Questions

Eight questions developed out of medical anthropology research, designed to elicit the patient's health beliefs and expectations or concerns about the disorder and the treatment. They include: 1) What do you call the problem? 2) What do you think has caused the problem? 3) Why do you think it started when it did? 4) What do you think the sickness does? How does it work? 5) How severe is the sickness? Will it have a short or long course? 6) What kind of treatment do you think you should receive? What are the most important results you hope to receive from this treatment? 7) What are the chief problems the sickness has caused? and 8) What do you fear most about the sickness? [25].

Markers of Poverty

Findings that are associated with the presence of poverty. Some are universal (e.g. severe nutritional deficiency) while others may be culturally based (e.g. going without shoes). Common markers of poverty in urban centers in the U.S. include residence in public housing, certain race/ethnicity, lower education rates, numbers of single parent households, and high rates of infant mortality, incarceration, substance abuse and youth suicide.

Model for Improvement

An approach to process improvement that helps teams hasten effective changes. A major component of this model is the PDSA Cycle (see below).

Nominal Group Technique (NGT)

A decision making method, useful to teams of many sizes, that allows for rapid decision making while considering all opinions. 1) Each team member gives their view of the solution, 2) Duplicate solutions are eliminated, 3) Remaining solutions are ranked individually by each team member (1,2,3 etc), 4) Solution with the highest total ranking is selected as the final decision. There are variations on how this technique is used. For example, it can identify strengths versus areas in need of development, rather than be used as a decision-making voting alternative. Also, options do not always have to be ranked, but may be evaluated more subjectively.

PDSA Cycle

A structured method for promoting change; an acronym for Plan (a specific planning phase), Do (a time to try the change and observe what happens), Study (an analysis of the results of the trial) and Act (devising next steps based on the analysis).

Motivational Interviewing

A directive, client-centered counseling style focused on eliciting behavior change by helping patients to explore and resolve ambivalence thereby increasing motivation to change. The acronym FRAME is used for the key elements which include feedback (after assessment of patients present condition), responsibility (emphasize the patient's personal responsibility), advice (clarifying that things do need to change), menu (providing alternative strategies), empathy, and support of self-efficacy (use examples from patients past to encourage belief in success). Persuasion and coercion are not appropriate.

Problem Statements

This term has multiple definitions. It is used in relation to the need to thoroughly comprehend a complex problem before it can be solved. One definition contains a useful acronym, SMART: specific, measurable, attainable, relevant/reasonable, and timebound (specify a date for solution).

Servant Leadership Skills

Skills that facilitate a leader's ability to others' needs and interests above self-interest, to experience fulfillment through the success of others and not necessarily need to receive personal credit or acclaim, and to invest time and energy in others to help them grow and do well.

Social Determinants of Health

The economic and social conditions under which people live which determine their health status e.g. poverty, education, working conditions, housing conditions, social support, stress, and neighborhood.

Solution Analysis

A specified methodology by which one may solve a problem such as going through the four part process of identifying evaluation criteria, specifying alternatives, evaluating possible outcomes of various alternatives, then recommending one or more courses of action.

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