AAIM Perspectives

System Citizenship: Re-Envisioning the Physician Role as Part of the Sixth Wave of Professionalism

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INTRODUCTION

The past century has seen a steady expansion of the physician role within complex health care delivery systems.[1,2] Beyond clinical expertise, physicians are becoming leaders and change agents in social determinants of health, high-value care, patient safety, and health system improvement.[3-8] Critical advances in medical education, notably through the Accreditation Council for Graduate Medical Education (ACGME)

systems-based practice (SBP) competency and the American Medical Association (AMA) Accelerating Change in Medical Education and Reimagining Residency work in health systems science education, have created important opportunities for alignments among complex health systems, the clinical learning environment, medical schools, and a new conception of the physician role.[9-15] This evolving landscape directly challenges the medical community to reimagine a 21st-century physician identity that includes the knowledge, skills, and mindset to work effectively within systems to improve patient and population health.[16-20]

The goal of this article is to address this challenge, establishing the concept of system citizenship and the role of system citizen as a unifying framework for this expanded professional identity. We explore the driving factors that necessitate the development of physicians as system citizens, define and describe the system citizen physician, and articulate the essential and reciprocal role of the clinical learning environment as the

"country" that nurtures and coproduces a supporting culture for system citizens. This conceptual framework can provide the foundation for developing the kind of empowered, resilient, and collaborative roles that physicians will need as they navigate a landscape of change during their careers.

A BRIEF HISTORY OF THE PHYSICIAN ROLE AND PROFESSIONALISM

While the concept of system citizenship applies to all health care professionals, this article focuses on the physician role. The traditional physician identity as a scientific and technical expert has its roots in the late 19th century.[2,21-23] At the time, biomedical science was rapidly advancing and there was a strong post-Enlightenment movement to embrace scientific methods and inquiry.[24] These factors reshaped medicine as well as medical education. Successful physicians exhibited mastery of medical knowledge, excelled in caring for individual patients, and treated illnesses with an expanding array of cutting-edge tools. Professionalism focused primarily on becoming a physician healer, inclusive of personal commitments to trustworthiness, respect, empathy, and altruism.[25] These traits were embedded in the physician exemplar who employed reason, knowledge, and skills acquired through a demanding educational process to improve patient health. Notably, it was a time when health care delivery systems were in their infancy and medical education had little regulation or governance.[26]

Medicine has changed substantially since that time. These changes have been driven by remarkable strides in biomedical science and new approaches to care delivery, particularly in the last 50 years. Health care delivery systems now have their design informed by the need to address social determinants of health, health care disparity, waste, variability in quality, and gaps in care at the patient, system, and population levels.[27-31] Two decades ago, health care leaders began calling for corresponding changes in physician identity to mirror the changes in the health care system. Lucey[17] called for a paradigm shift from "personally-expert sovereign physicians" to "collaboratively-effective systems physicians," asserting that it is not possible for physicians to continue to practice in traditional, independent roles. Marcotte et al[7,8] reframed professionalism to include high-value stewardship. Hafferty

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- The physician role must evolve to meet the needs of the 21st century health care system.
- The physician role should embrace system citizenship, the idea that physicians diagnose and treat the system as they do individual patients.
- In order for physicians to embrace system citizenship, health care systems need to be willing to support physicians in that work.

and Castellani, in their work on physician professionalism stated, "Traditional conceptions of what it means to be a professional—as a stand-alone entity—are neither *systematically* realistic nor ultimately sustainable."[32]

Likewise, academic and independent organizations responded to the growing needs of health care systems and took actions to encourage physicians to expand their role beyond the traditional boundaries of clinical expertise. ACGME implemented SBP competency in 1999, and the American Board of Internal Medicine created a charter on physician professionalism.[9-15,33] The charter indicated that physician professional behavior should include improving quality of care, increasing access to care, and creating just distribution of finite resources.[33] The charter propelled us into what Hafferty and Levinson[2] described as the "fourth wave" of professionalism. "Waves" up to that point had concentrated on the authority and independence of the physician with limited-to-no expectation of "civic professionalism" or a "systems-informed professionalism."[34,35] However, the charter fell short in that it focused on professionalism as solely the responsibility of the individual physician. It was not until several years after the publication of the charter that professionalism was described more broadly and the influence of the larger system on the professional behaviors of physicians was acknowledged.[36] This acknowledgement launched the professionalism movement into the "fifth wave." The most recently described "sixth wave" of professionalism took that acknowledgment of the system role in professionalism even further and assumes that there is a dynamic and complex interdependency between the individual physician and the health care system that results in physician professional behavior.[2] This concept of "civic professionalism" or "systems-informed professionalism" critically highlights the interplay between individual physician's professionalism and the impact of the clinical environment on the professional behavior of physicians.[34,35] Overall, the work done by these leaders and organizations has created the foundation for a new description of the physician role.[16-20]

Despite the volume and significance of the work describing this new physician professionalism—which has also been supported by the efforts of the Institute of Medicine, ACGME, the American Medical Association, and multiple medical boards—there has not been extensive uptake of this new physician identity conception.[4,9-11,37] From medical students to attendings, data continue to demonstrate that physicians do not view systems-minded work as part of their everyday

role.[38-41] What is needed now is a unifying conceptual framework to synthesize and clarify this physician identity, which we contend should include the skills and mindset to work effectively within and among systems to improve patient and population health. Enter the concept of "system citizens."

SYSTEM CITIZEN

We were led to the concept of system citizenship as described by Peter Senge[42-44] during a search to find a unifying framework that consolidated recent work on physician identity. Senge, among others, argues that in complex global businesses, a business cannot be responsible to only itself to be successful. It must also be responsible to larger global and societal organizations to succeed.[42-44] Thomas Friedman[45] emphasized this concept when he declared "the world is flat" and highlighted the new relationships among organizations occurring on a global scale. For example, a company may make a tremendous profit, but if the larger supply chain that sources the company is faltering, that company will not succeed for long. It behooves businesses and their leaders to not only understand their own business, but to deeply understand the interdependencies their business has on other organizations and comprehend how all systems rely on one another.

With this globalization of systems, Senge has argued that organizations need to embrace being system citizens, that is, embrace a commitment to, and responsibility for, the larger professional community.[42-44] Similarly, we believe that modern-day individual physicians must have a commitment to, and responsibility for, the larger health care system. Although the roots of system citizens and citizenship are clearly not new and build upon the history outlined, we believe it is time for this concept to shift from an optional, aspirational goal to one that is more fully articulated and integrated into practice.

To help facilitate this shift, we propose the following definition of system citizen as: a health care professional who uses systems thinking knowledge, skills, and mindset in their professional identity role to contribute to the holistic needs of individual patients, populations of patients, and the health system to achieve the best outcomes.

In short, system citizens embrace professionalism qualities such as humility and apply systems thinking skills in the process of teaming, advocating, learning, and leading.[15,46-54] They build collaborations with others across specialties and settings, discern how a system is functioning to make improvements, see interdependencies among systems, and provide high-quality care for individual patients as well as populations of patients.[36,41-48] They employ a growth mindset and contribute to redesigning systems of care. Table 1[10,13,15,40,42,43] provides a description of representative characteristics, skills, habits, and roles of system citizens.[55]

HEALTH CARE SYSTEM CLINICAL ENVIRONMENT "COUNTRY"

Next, we describe the essential and reciprocal role of clinical environments as the "country" that nurtures and coproduces a supporting culture for system citizens. Of note, we fully anticipate that the definitions of citizen and country will be enriched over time.

The Health Care Country

System citizenship cannot be achieved solely through individual physician actions. Rather, system citizens need a clinical environment, or "country," that nurtures their professional behaviors. A country is described as a group of people that are bound together by a common history, identity, tradition, and often, language, who have organized themselves under a government.[56] While not exactly a "country," health care in general shares a common history (eg, the history of medicine), identity (eg, "healer"), traditions (eg, the white coat), and language (eg, medical terminology). Likewise, each health system has its own unique history, identity, traditions, and potentially, its own unique way of communicating within and between teams. Each health care system "country" either does or does not afford opportunities for its physicians to engage in effective behaviors: "good learning requires good patient care, and neither can be accomplished if the system in which they operate is not enabling."[57] An aligned and supportive "country" is a critical prerequisite for the development of system citizens.[58-60] The interplay between system citizens and health system requires all individuals, whether they function in leadership suites or clinical team huddles, examination rooms or classrooms, to view themselves as citizens of the same country.

But what does an effective health care system "country" look like? Table 2[9,13-15,41,46,55-57,59,61-75] highlights categories of affordances for SBP and system citizens within clinical environments.[59-73,76-78] Some organizations are already doing work to try to improve affordances for system citizens.[74,75,79] For example, the ACGME Clinical Learning Environment Review pathways initiative identified gaps in the effectiveness of the clinical learning environment to facilitate improvement of physician education in multiple SBP-related areas (eg, patient safety, quality improvement, care transitions).[80-86] In parallel, the American Hospital Association has raised discussion about how to systematically incorporate competencies such as SBP into their clinical environments.[84] These data highlight that some entities are already thinking critically about how to approach both the development of individual physicians and how to create the conditions

Table 1   System Citizen Characteristics, Knowledge, Skills, Habits, and Roles

Domain*	Example Characteristics†
Personal characteristics and attitudes	■ Mindset of growth, humility, and curiosity ■ Expertise in listening and collaborating ■ Engagement in innovation and navigating uncertainty ■ Resiliency in advocacy and change management
Knowledge/skills	■ SBP/HSS core domains □ Value, health care delivery, policy, financing □ Population/social determinants of health □ Evidence-based medicine □ Teamwork and collaboration □ Health information technology/informatics □ Creating and supporting a Learning Health System □ Change management
Habits	■ Systems thinking □ Inclusive of reflection, curiosity, accessing others' perspectives ■ Critical thinking
Roles	■ Collaborator/Team contributor ■ Process designer ■ Advocate ■ Evaluator ■ Coach ■ Manager ■ Consultant

HSS = health systems science; SBP = systems-based practice.
*Domains informed by prior work.[43]
†Representative items informed by prior works[10,13,15,40,42]

that support the development of the traits, attributes, and mindset of system citizens.

Coproduction for Creating and Sustaining Citizenship

The system citizen and health care country must be aligned. Yet, achieving the vision of the system citizen physician who leads and collaborates within a fully supportive health care country requires more than a shared goal. It requires a shared process. First described in political analysis and public service contexts, coproduction has been defined as the process that brings together individuals, services, and leadership to make "better use of each other's assets, resources, and contributions to achieve better outcomes."[87-92] Coproduction has been described in health care delivery and medical education; we propose its use at the intersection of both.[88,91,92] In coproduced clinical learning environments, educators, learners, and clinical leaders engage in collaborative thinking and planning with a shared goal of improved education and patient outcomes.[92]

This idea would represent a major shift in current practice in many US academic health systems. Rather than independently designing education and then seeking funding, educators would engage system leaders at the design table. Rather than planning new system initiatives with only business plans, system leaders would open up the discussion to learning plans, and the kinds of professional pathways needed to sustain nimble learning health systems.[92] System citizens create an evolving relationship among physicians, education programs, and health systems, where coproduced plans honor the contributions of all parties.[93,94] Some early signs of this collaboration are revealed through "bridging roles," which involve individuals who have an understanding of both education and health systems and promote volitional integration of both.[95]

CHALLENGES AND NEXT STEPS

There are significant challenges to operationalizing system citizenship. Many physicians have not been sufficiently educated in systems-based learning and may struggle to role model necessary skills and behaviors.[70,96] Many students actively seek their own development as system citizens but find themselves in learning environments that not only do not reflect these values, but actively discourage real-time application of these competencies (negative affordances).[58] In the absence of a meaningful process of coproduction,

Table 2 Affordances for Systems-based Practice and System Citizens in the Clinical Learning Environment

Domain*	Category†	Representative Examples
Personal	*Personal epistemological practices* — What individuals know, can do, and value	• Trainees, faculty, and staff with knowledge, attitudes, and skills in SBP/HSS • Faculty engaged in prioritizing HSS learning and teaching with trainees[63]
Sociocultural	*Faculty role modeling and teaching* — What faculty educators role model and teach in the CLE	• Faculty use HSS-based teaching scripts with trainees during patient care • Faculty demonstrate importance of SDH, QI, and high-value care during patient care
	Collaborative working relationship between GME and system — Degree of collaborative approaches to health care delivery and education between GME and the health system	• Health system and educators collaborate on integrating trainees into system initiatives • System and educator leaders coproduce health care redesign, ensuring affordances for SBP/HSS are considered[70-75]
	Hidden curriculum — Unwritten, unofficial, and unintended lessons, values, and perspectives learned by trainees in CLE	• GME programs, faculty, and trainees prioritize SBP as important as other competencies • Approach to learning is centered on comprehensive patient health (including HSS)
Organizational	*Personnel and staffing* — Individuals and educators who can provide affordances for teaching or role modeling for learning	• Interprofessional staff (eg, social workers, pharmacists) embedded into teams • Professionals (eg, engineers) strategically design care to promote SBP affordances
	Health information technology/informatics — The availability and use of technology, decision support, data, and clinical informatics into health care delivery processes	• EHRs with embedded links to costs, charges, SDHs, community resources, etc.[65] • Dashboards with quality metrics assigned to clinicians, trainees, and teams[56] • Central collection, analysis, and communication of population health measures by site
	Financing, policy, and accreditation — The decisions, plans, and actions undertaken to achieve specific goals in the CLE or education program	• LCME requirements for interprofessional education and collaboration experiences[66] • ACGME requirements for SBP milestones in GME training[9,41] • Health system investment in HSS initiatives (safe care transitions, high-value care, etc.)
	Didactic curriculum — Formal learning methods and plans focusing on baseline knowledge acquisition	• Morbidity and mortality conferences include holistic approach, inclusive of SBP/HSS[67-69] • Academic half days with a developmental sequencing of HSS concepts
	Practice curriculum — Activities and experiences along which individuals progress to learn work skills to practice effectively	• Team-based rounds include explicit assessment and action on SDH, behavioral factors[64] • Practice-based assessments of SBP/HSS skills (eg, collaboration, high-value care)[61,62]
	Practice pedagogies — Activities or interactions that enrich or augment workplace learning experiences (distinct from didactics) by making accessible the knowledge to be learned	• Think-aloud teaching and systematic teaching scripts during work tasks related to SBP • Processes of care delivery (transitions of care, medication reconciliation) that can be observed, practiced, and reflected upon to assimilate prior competencies • Artefacts of SBP (eg, QI projects, population health management opportunities)[59]
Physical and Virtual Space	*Physical and virtual space* — Physical spaces in which learning and practice occur, and the infrastructures and resources (eg, online resources) that provide virtual learning "space"	• Structure and space that allows opportunities for interprofessional team-based rounds[64] • Providers are located near patients, staff, etc. • Space for in-person and virtual learning is available

ACGME = Accreditation Council for Graduate Medical Education; CLE = clinical learning environment; EHR = electronic health record; GME = graduate medical education; HSS = health systems science; LCME = liaison committee on medical education; QI = quality improvement; SBP = systems-based practice; SDH = social determinants of health.

*Domain informed by the clinical learning environment framework proposed by the Macy Foundation Report.[59]

†Categories informed by the health systems science framework and concepts related to resident research affordances [13-15],[55,57]

physicians, even those in innovative health systems, may lack agency and engagement. Health systems investing in the "quadruple aim" may find their efforts disabled by a lack of co-investment from their professional staff.[97,98] A mutually shared professionalism between physician and system requires a large change that may be challenging in medicine. Altogether, these multilevel challenges make progress slow and arduous.

So where do we go from here? We categorize next steps as identifying the knowledge, attitudes, and behaviors of effective system citizen and identifying the "affordances" that high functioning health care system "countries" provide to their citizens. Many unanswered questions remain:

1. What are the knowledge, attitudes, and behaviors of a system citizen?
2. Is it possible to effectively assess "system citizenship"?
3. When does a "system citizen" develop? Is it possible that this citizenship occurs prior to medical school?
4. Depending on when the knowledge, attitudes, and behaviors of system citizen form and develop, how might we effectively foster or select for those qualities?
5. What are the behaviors of an effective health care system "country" that fosters system citizenship?
6. What are effective interventions to increase the ability of the health care system "country" to foster its system citizens?
7. How might concepts such as coproduction help to develop the health care system "country" and its citizens?

We hope that this article will accelerate and sharpen the focus on developing system citizens, translating the concept from the literature and discussions among education leaders and bringing it to classrooms, clinics, and board rooms.

CONCLUSION

The history of medicine is one of continuous evolution coupled with an enduring foundation of individual dedication to the profession's highest principles. Over the last century, this evolution has been characterized by remarkable advances in our understanding of health and disease and by substantial changes in the organization of clinical care delivery. This progress has presented the profession with an existential challenge. How can we embody the best traditions of our profession and contribute to improving health in the face of this evolved landscape? Can we adapt who we are to where we are? We believe the answer is in the improvisation mantra of "yes, and" and in the concept of system citizenship. Yes, the mantle of dedication and professionalism that physicians have traditionally

shouldered remains core. And there are new professional responsibilities that need to be integrated into the physician professional identity. We need to collaborate with all stakeholders in a process of coproduction toward a shared vision of improving the health of patients and populations through educating system citizens and creating a health care country that supports system citizenship.

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