Optimal Panel Size: Are We Asking the Right Question?

Health care systems are investing resources into managing primary care physicians' panel sizes in the name of population health and accountable care and in pursuit of standardized work expectations for salaried physicians (1). In some organizations, panel size is calculated monthly, with automatic opening or closing of new patient appointments in response. The algorithms for these calculations are usually unknown to physicians managed in this way, are often proprietary, and usually take a limited number of practice variables into consideration.

In their systematic review (2), Paige and colleagues find that "evidence about the association between panel size and aims of health care is surprisingly thin . . . At best, the studies signal that there might be causal relationships between larger panel size and worse clinical quality, worse patient experience, and provider burnout."

In asking whether the optimal panel size in primary care is 500 patients, 2500 patients, or somewhere in between, are we asking the right question? Better questions are, what are the resources and practice models that facilitate optimal management of a population of patients by primary care physicians and their teams, and what resources and models provide access to the highest-quality primary care for the U.S. population?

Most algorithms adjust panel size on the basis of *patient* characteristics, such as age, sex, number of medications, clinical risk score, and visit frequency. Few adjust for *practice* characteristics, such as staffing levels, skill level of support staff, composition of the extended care team, regulatory environment, and degree of local decision authority. Yet these details matter. A physician working in a stable partnership with 2 registered nurses and an extended care team comprising a pharmacist, a social worker, and a dietitian, in an environment where clinicians are not overwhelmed by technology and administrative burdens, will be able to provide more wraparound care to more patients than a physician who arrives in clinic each day not knowing which medical assistant (if any) will be assigned to them and has no other clinical support staff resources.

Furthermore, although panel size may be one determinant of Quadruple Aim (3) outcomes, it is not likely to have the greatest effect. Other variables drive primary care value and professional satisfaction, including comprehensiveness of the care delivered (4), continuity with one's physician (5), clinical mastery, practice efficiency, training level of the clinical support staff (6), team structure and function (7), time for relationship building with patients, subspecialty support, and opportunities for community at work. A physician whose training, support, and clinical team allows better management further into each specialty area, facilitating greater integration across conditions and greater trust within the patient–physician–team relationship, would

be expected to have better clinical outcomes and greater professional satisfaction. For example, a primary care physician working with half a medical assistant (that is, sharing a medical assistant with another physician) and a different medical assistant each day may refer a patient with early congestive heart failure, depression, polymyalgia rheumatica, and postmenopausal bleeding to 4 different secondary care physicians, thus increasing costs, fragmenting care, and contributing to the challenges of avoiding drug–drug and drug–disease interactions. Another physician who is partnered with 2 registered nurses and is further supported by an extended care team may manage each of these problems, including any hospitalizations, with backup subspecialty virtual consultation as necessary, structurally ensuring coordinated, cost-effective care.

The starkest conclusion to be drawn from Paige and colleagues' review is that the U.S. health care system needs far greater investment in the science of practice. In this country, more than $100 billion is spent each year researching new tests and treatments, yet only a fraction of that amount is spent researching the optimal delivery models by which to deploy (or choose wisely not to deploy) those tests and treatments.

The $3 trillion U.S. health care industry is underperforming, in part because of underpowered primary care. As a consequence, primary care physician resources are being squandered. These physicians spend a majority of their day on work that does not require a medical school education, such as order entry, prescription refills, visit note documentation, and being the first responder to the inbox. This dysfunctional practice model, coupled with disparities in payment for cognitive versus procedural work (8), drives trainees away from primary care. Those who choose primary care may reduce their patient contact hours as a coping strategy to manage the mismatch between work demand and work resources. By cutting patient contact hours while still working more than 40 hours per week, many of these physicians have in effect made the choice to work full-time hours for part-time pay.

With greater investment in practice science, it should be possible to discover more precisely how the practice environment affects the aims of health care. Big data and metrics of electronic health record use (9), such as Work Outside of Work, could advance our understanding of practice dynamics and panel capacity. How do Work Outside of Work and panel capacity vary by the size and skill level of the support staff and extended care team? How many patient contact hours result in a 40-hour workweek for a 1.0–full-time equivalent physician? (For that matter, how many hours are physicians expected to work each week?) How does this expectation and the support staff model affect recruitment and retention? All of these variables affect panel capacity, quality, and satisfaction. Another prom-

ising approach is to build on Milstein's methods in "Uncovering America's Most Valuable Care" (10): Identify practices with high quality, high satisfaction, and high panel capacity, and then dive deeper to discover key ingredients.

Rather than asking, "What is the ideal panel size in primary care?" we suggest reframing the question to "What is the ideal practice model that results in the best outcomes for the entire U.S. population?" We believe that a well-trained, well-resourced primary care team will make the most of society's investment in these physicians' training and will contribute to better experiences for patients and clinicians, lower costs, and better access to care.

Christine A. Sinsky, MD
Marie T. Brown, MD
American Medical Association
Chicago, Illinois

Corresponding Author: Christine A. Sinsky, MD, American Medical Association, 330 North Wabash Avenue, Suite 39300, Chicago, IL 60611; e-mail, christine.sinsky@ama-assn.org.

Current author addresses are available at Annals.org.

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Current Author Addresses: Drs. Sinsky and Brown: American Medical Association, 330 North Wabash Avenue, Suite 39300, Chicago, IL 60611.