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Considerations for Patient Panel Size

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Introduction

The prevalence of chronic disease remains high in the United States. In the U.S., six in ten adults experience a chronic illness while four in ten adults have two or more.[1] Those that experience chronic conditions visit primary care physicians and specialists. Primary care enhances the health of populations, reduces health costs, and improves quality of life. By 2034 there will be a shortage of between 17,800 to 48,000 primary care physicians and a shortage of between 21,000 and 77,100 of non-primary care physicians.[2] To ensure that proper patient care is provided, it is imperative that physicians and providers deliver adequate patient care to optimize health outcomes. Adequate patient care can be delivered by focusing on patient panel sizes for physicians, providers, and the organization of healthcare.

Patient panel size refers to the number of patients that a physician cares for during a specified period, usually 12 or 18 months. The standard patient panel size has often been determined to be 2500 patients. However, according to the Journal of the American Board of Family Medicine, this number is not feasible for a primary care physician to provide adequate patient interaction for all patients. At a panel size of 2500, a physician would have to work 21.7 hours per day to provide proper care to each patient.[3,4] Calculating the ideal patient panel size is important to ascertain the number of patients seeking consultations and treatments, as well as the provider's workload. It is important that providers on the same level share similar workloads, especially if they are earning similar salaries.[5]

Many factors affect what the patient panel size for a physician should be, including the organizational set up of practices, how the physician prefers to care for their patient, the type of patient population that the physician cares for, and the number and type of health professionals who work with physicians.[3] Due to these changing factors, it can be just as important to manage patient panel sizes as it is to know the proper patient panel size.

The purpose of this review is to identify the number patients that should be on a provider's panel to provide adequate patient interaction and determine how to manage patient panels for optimal outcomes. This review seeks to answer the following questions:

1. What is the ideal patient panel size based on disease (or wellness) state?
2. What factors affect patient panel size and how can panel sizes be managed correctly?

Answering these questions can provide guidance to primary care providers and team members to help providers have enough time to care for patients that need services. Optimizing care will improve patient health outcomes.

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Patient Panel Size

How to Determine Patient Panel Size?

Establishing a patient panel for providers ensures that the patient is given a provider with whom they can build a relationship and trust.[5] Patients deserve adequate care to optimize their health outcomes and determining patient panel sizes can ensure that practices are making enough revenue. In the past, the ideal patient panel size has been calculated by determining the current panel size, not necessarily what the panel size should be for optimal care.[5,6] Determining the current panel size has previously been completed by using the "four-cut method."[6]

First, the patient panel for the practice must be identified. In 2007, the Family Practice Management Journal suggested that the patient panel for a practice was determined by identifying the patients who have seen a provider in the last 18 months, since many patients do not visit providers within a one year timeframe.[7] More recently, the active panel has been suggested to be the patients seen by a physician or primary care provider within the last 12 months.[6] It is unclear which period of time is correct, and practices may use different timeframes depending on what is best for them.

Second, the patient panel per provider is calculated by assigning a patient on the practice's panel to the provider that they have visited the most. Sometimes, a patient on the practice's panel has seen more than one provider. Certain guidelines can assist to determine what provider's panel the patient should be on. If the patient has seen providers equally, then the patient is assigned to the provider who they saw first, last, or for their most recent health check.[5,6]

Another way to calculate patient panel size is using a supply and demand equation, like panel size multiplied by visits per patient per year (demand) which equals provider visits per day multiplied by provider days per year (supply). The number of patients needing an appointment must equal the number of appointment slots that a provider has available.[7] Lack of appointments create high demand and may cause inadequate care. Too few patients needing to be seen causes practice revenue to decrease.

A systematic review to determine the patient panel size for the Veterans' Administration (VA) showed that some of these older methods can be updated.[8] The "right-sized" process can be used to determine what the panel should be for providers:6 this process factors in patient and workload complexity.[6] Severity of patient illness, reporting and patient charting guidelines, refilling prescriptions, and conducting visits via telehealth while checking patients in-person throughout the workday will decrease physician capacity to conduct appointments.

In order to "right size" the patient panel, the Family Practice Management Journal created a spreadsheet. First, practices should use the "four-cut method to assign patients to providers. This information goes into the spreadsheet, which includes the current panel, visit rate, physician days worked, and visits per day so that the current panel and right-sized panel can be compared. The right-sized panel is calculated by dividing clinician visit capacity by the panel visit rate. The equation is days worked per year multiplied by visits per day divided by visit rate.[6] No evidence was found that this equation determines the ideal patient panel size; numerous factors impact the capacity that physicians have to see patients, other factors influence the need for patients to receive services, and these factors can constantly evolve.

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Factors Affecting Patient Panel Size / Supply and Demand

Changing Primary Care System

Balancing patient demand and provider supply is important to create the ideal patient panel size, however the organization of healthcare affects demand and supply. Primary care in the U.S. is changing rapidly.[9] Understanding primary care is important as populations in the U.S. visit primary care services more than any other type of healthcare service. The American Medical Association's Physician Practice Benchmark Surveys assist in understanding the change in primary care. These surveys have been conducted every even year starting in 2012.[10] From 2012 to 2018, the percentage of physicians practicing in large practices (at least 50 physicians) increased.[11] In 2020, the number of physicians switching from working in private practice to working in hospitals increased.[12,13] Although limited evidence shows that practice size is associated with quality of care, one review showed that some larger practices are associated with better quality of care while some smaller practices (five physicians or fewer) are related to improved patient outcomes, like satisfaction.[14] The change from physicians working in larger practices compared to smaller practices may affect patient panel sizes. More physicians in the practice could allow for increased patient panels as physicians have the largest scope of practice. Still, no literature was found to support this relationship.

Physician Preferences and Characteristics

How a physician manages their patient affects patient panel size and supply of appointments. Some physicians may prefer to have fewer patients so that they can spend more time consulting with each patient. Longer and more in-depth visits increase the length of appointments which will impact how many patients can be seen per day.[7]

Types of physicians like residents and supervising physicians also affect panel size. Residents require a certain number of visits, but their panel is usually smaller than physicians. Supervising physicians and physicians who have academic responsibilities may also need an adjusted panel size to account for other duties.

Patient Characteristics

Patient population affects panel sizes. Age, failing to keep appointments, and disease complexity will impact demand and supply.[7–9,15] In 2014, the youngest (0-4) and oldest (65-100) patients visited primary care physicians most often,[9] but not all these patients will require the same amount of appointment time. Patients who fail to keep appointments affect the supply of physician visits per day: no shows make physicians unable to see any patient during an appointment slot.[7] Patients with more severe illnesses may require longer visits.[8]

Future Supply

The supply of physicians is changing. Physicians in the United States are getting older. One reason for the shift away from smaller practices is that physicians are retiring but not being replaced by younger physicians.[13] Many primary care physicians start in their 20s and work for around 40 years. In 2017, more than 25% of primary care physicians were 60 years of age or older.[9] Many of these physicians are of retiring age. As physicians retire the supply of providers reduces, and the data shows that younger physicians are not necessarily taking the place of retiring physicians, especially ones who work in smaller practices. Older physicians may have

decreased activity levels affecting their speed and type of care performed.[15] Younger physicians may have higher activity levels and be more motivated to treat patients causing younger physicians to be able to see more patients.

Advanced Practice Providers

Physicians are primary care providers, but nurse practitioners and physician assistants provide primary care as well. As physicians retire and the physician shortage problem intensifies, it will be important to take a team-based approach and introduce more nurse practitioners and physician assistants into the healthcare workforce. In 2017, about 50% of nurse practitioners and 40% of physician assistants were practicing in primary care.[9] Integrating additional primary care providers into practice environments positively affects patient panel size and supply and demand. NPs and PAs can increase the supply of provider appointments by increasing physicians' scope of practice.[16,17] A retrospective cross-sectional analysis was conducted using the National Sample of Survey of Nurse Practitioners to understand the productivity of nurse practitioners. Of the nurse practitioners included in the survey, some had their own patient panel (64%) while others did not. The average patient panel size for NPs with patient panels was 567. The average number of patients seen per week for NPs was around 80 patients, and this average did not differ between NPs who had a panel and those who did not: NPs who had their own patient panels provided a higher proportion of specific services to patients than NPs who did not have their own panels. Additionally, having a physician on site compared to not having one was associated with an increase in patients seen and greater chance of NPs having a patient panel.[17]

Team care can help with productivity. When physicians work with NPs as well as PAs, physicians can offer more services.[16] NPs and PAs are advanced practice providers who have similar skill levels to physicians. Data from a survey from the American Board of Family Medicine Certification Examination showed that PAs had a larger effect on primary care physician panels and scope of practice than NPs and PAs and NPs together: the mean panel size was 2,263.[16]

Managing Patient Panel Sizes

Managing patient panel sizes can be helpful since many different factors affect the ideal patient panel size per provider. Provider panels have limits: if providers are assigned too many patients, then wait times, no-shows, and scheduling increases. However, avoiding too small of patient panels is just as important. Costs of practices cannot be covered when panel sizes are too small.[7]

Practices can close provider panels to new patients if a provider has too many patients on their list.[5,6,18] The panel can remain open for providers that have lower patient panels unless the whole practice needs to close to new patients. Hiring new team members can help limit patient panel sizes to avoid closing provider panels.[19] Assigning other staff members to assist physicians can help optimize patient panel size, as can assigning nurses or physician assistants to patient appointments.[19]

Practices and physicians can also optimize the visit length, which then affects the number of patients seen.[7] Practices should ensure that patients see the same doctor regularly so that relationships can be built. Reducing visit interruptions by ensuring all equipment needs are in the room and tests and labs are completed can reduce visit length. Finally, team members can limit

visit length by supporting the primary care provider and limiting physician responsibilities that other staff can accomplish.

Discussion

Research is needed to calculate the ideal patient panel size for any disease or wellness sate. Angstman et al could not identify their primary objective of determining the ideal panel size for their practice,[20] and the strongest evidence shows that a panel size of 2500 patients per provider is not feasible.[3,4] Higher panel sizes may negatively affect patient health outcomes, and may be associated with poorer clinical quality, patient experience, and burnout of providers.[21]

Determining a proper patient panel size is important for practices and providers to establish patient provider relationships, ensure providers are sharing workloads, and confirm that costs of practices are being covered. It may be as equally important to focus on other aspects of care—like the factors affecting panel sizes—to ensure that providers are providing the most cost effective and adequate care.[8,20–22]

Conclusion

Large patient panels per provider are likely not feasible, but determining the optimal patient panel per provider is challenging. Demand for appointments and supply of providers are ever evolving. Assigning patients to providers should be done so that provider-patient relationships can be formed. Limiting visit length, and preparing for changes in primary care and supply by utilizing other healthcare providers may provide efficient care and reduce physician patient panel sizes as needed.

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