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Research Brief

Many Paths to Primary Care: Flexible Staffing and Productivity in Community Health Centers

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Numerous areas of the United States have an inadequate supply of primary care physicians and the shortfall is expected to grow and spread as more Americans gain access to health insurance. The problem is particularly severe in rural areas and in low-income urban neighborhoods where doctors are hard to attract. To address these concerns, as well as to improve the quality of care, there is increased interest in “team-based” care that utilizes a broader range of medical staff including nurse practitioners, physician assistants, nurses and medical assistants in primary care settings.

A model for this kind of team-based care already exists in federally funded community health centers; safety net providers that provide comprehensive primary care for more than 21 million low-income patients nationwide. Finding and retaining clinicians has long been difficult for community health centers (CHCs), in part because they are generally located in medically underserved areas that typically experience shortages of primary care physicians. These health centers have learned how to adjust to this shortfall by leveraging non-physician staff to provide care and keep productivity on track.

Despite this experience, the paths to transforming primary care staffing and practices have not been well mapped. With funding from the Health Resources and Services Administration (HRSA), researchers in the Department of Health Policy at George Washington University examined extensive data on community health centers in order to gain insight into how particular staffing configurations effect productivity and to see if the extending the use of nurse practitioners, physician assistants and other non-physician staff can be relevant for the broader array of primary care practices. The GW researchers set out to answer the following questions:

- To what extent are nurse practitioners, physician assistants, nurses and other medical staff currently being used in CHCs?
- What is the best method for determining productivity, defined as the number of medical visits per staff person? Is it possible to determine the contribution of different practitioners (doctors, advanced practice, nurses, etc.) to productivity?
- Is there an optimal mix of physicians and alternate providers for all centers or does the staffing mix change depending on local circumstances?
- How can the experience of CHCs help primary care group practices make the transition to “team-based” models?

Methods

Researchers examined primary data from the 2012 Uniform Data System (UDS), annual reports filed by all community health centers receiving federal Section 330 grants, including sites in the 50 states, District of Columbia and U.S. territories. The main sample included 1,191 centers operating in about 8,900 sites in 2012. The UDS also reports the number of medical visits and patients, diagnostic categories of visits, and other key caseload and financial characteristics.

For this study medical staff was divided into four categories: physicians (all MDs and DOs; most are in primary care specialties), advanced practice staff (nurse practitioners, physician assistants and certified nurse-midwives), nurses (registered, licensed vocational and practical nurses) and other medical staff (e.g., medical assistants, nurse aides, lab, or radiology staff).

Productivity was measured by calculating the number of weighted medical visits per center in 2012. The researchers used diagnostic codes to “weigh” visits—adjusting for the complexity of different types of care depending on diagnosis, age of patient and whether or not there were multiple health problems. The UDS has limited information about who is present for each office visit, showing only the lead clinician type, usually a physician, as solely responsible for the visit. The GW researchers considered the medical staff composition of each health center along with the number of weighted visits to try and estimate the contributions of all medical staff to productivity. Their reasoning was that in team-based care, the visit should be viewed in terms of “joint productivity:” At the beginning of a visit, a medical assistant may take vital signs, a physician may conduct the evaluation and make a diagnosis, and a nurse may draw blood, administer an injection or educate the patient. Even staff members who are not in the exam room also play a role in medical productivity, such as those who conduct lab work or maintain quality assurance.

Finally, to help understand how the local workforce, demographics and policy environment can affect CHC staffing, the researchers tapped another data source, the Area Health Resource File. This data set includes the concentration of physicians, advanced practice staff and nurses in individual communities, as well as information about the percent of the population living below the poverty line. Additionally, the resource file outlines scope of practice policies that determine which services (treatment, prescribing) nurse practitioners can perform without physician authorization in each state.

Findings

Community health center staffing is driven by a number of factors including the concentration of clinicians in the community, nurse practitioner scope of practice laws and the health center caseload. A key finding is that CHCs have been creative in making do with what they have. In counties with more primary care physicians per 1,000 residents, CHCs have more physicians and fewer advanced practice staff. Centers located in rural areas with fewer physicians use more advanced practice staff. Interestingly, counties with higher concentrations of advanced practice nurses also use fewer “other” medical personnel. Scope of practice laws also affect staffing; centers in states where nurse practitioners can prescribe medication and see patients without physician authorization tend to employ slightly fewer doctors. Finally, centers with more uninsured patients also had a higher percentage of advanced practice staff than physicians who might require higher salaries.

The GW researchers used a range of analytic techniques to come up with other key findings related to primary care staffing and productivity at community health centers:

- The median number of medical staff working full time at a CHC is 27.2 with 5.0 of those being physicians. This is comparable to the typical medical practice for American physicians: the median physician works in a group practice of 5 to 9 doctors. On average, physicians comprise

about one-fifth (19%) of the medical staff in CHCs, advanced practice staff are 18%, nurses are 26%, and other medical staff are 37% of the total but the size and staffing composition vary widely.

- Based on the UDS data, there are four main staffing patterns in CHCs that correlate with the size of the practice, location and patient demographics:
 1. **Typical**—This group of 441 centers had staff makeup similar to the national average; roughly one-fifth physicians, one-sixth advanced practice nurses, one-quarter nurses and more than one-third other staff. “Typical” practices are the largest, roughly 50 staff with an average of 56,000 weighted medical visits.
 2. **High Advanced Practice**—In this small group of 44 centers, about half of the staff were advanced practice nurses and one-eighth were physicians. These centers were more likely to be rural and smallest in size, with an average of 10 staff and 14,000 visits.
 3. **High Nurse**—In 295 centers, nurses made up almost half the staff. These centers also tended to be in rural areas and smaller in size; with an average staff of 31 handling 38,000 visits.
 4. **High Other Medical Staff**—In 431 centers, about half the staff was made up of other medical professionals, such as medical assistants and lab techs. These centers have similar characteristics to “typical” practices, yet tend to be located in urban areas and serve more patients with limited English proficiency.

Despite the four distinct staffing patterns, overall productivity remained similar across all CHCs, ranging between 1,100 and 1,300 visits per staff person. The visit-to-staff levels were slightly higher for the high advanced practice and high nurse centers, averaging above 1,200 per staff person. When regression models are used to determine the contribution to productivity for staff members in all CHCs, physicians came out on top. Overall, one additional physician in a practice is associated with 2,994 additional visits. Advanced practice staff are next with 1,584 visits per staff and every additional “other” medical staff was associated with 548 visits.

When the same analysis was applied to each staffing model, the relative contribution to productivity changed. In high advanced practice centers, nurse practitioners and physician assistants had higher contributions. Similarly, the effect of nurses and other medical staff were larger in high nurse or high other medical centers respectively.

Policy Implications

The ability to develop effective primary care teams is relevant not only to the future of CHCs, but to the broader system of group medical practice in the U.S. as they transition to new models of team-based care like patient-centered medical homes. There is a general understanding that with a projected shortage of primary care doctors, practices will have to rely on other medical staff—nurse practitioners, medical assistants, licensed practical nurses, etc.—if they want to increase capacity and deliver comprehensive and patient-centered care.

The important finding from this study is that there is no “optimal” model for staffing primary care practices. Rather than having a monolithic one-size fits-all approach to staffing and care provision, health centers can be flexible and take advantage of the staff they have. With productivity similar for all configurations, staffing patterns are often shaped by environmental factors, such as location, availability of clinicians, scope of practice laws and by the characteristics of patients.

A suggestive finding was that specific professions contribute more to productivity when they are in CHCs with high concentrations of that group. This includes advanced practice providers, nurses and “other medical,” but is most pronounced for CHCs with high nurse ratios. While the study does not investigate the mechanism for this effect, plausible interpretations include an increase in peer learning as the numbers in a specific worker category grow, and the possibility that CHCs become better at organizing work flow as they have more of each type of staff.

The researchers note an important limitation of the data used in the study; it measures the number and types of staff at CHCs, but does not measure their actual roles in patient care or how staff interact to form effective teams. They recommend further research to obtain a finer-grain view of the roles and responsibilities of different types of health professionals. The researchers also point out that this study does not consider how particular CHC staffing configurations correlate with quality measures, such as health outcomes, patient satisfaction and the cost-effectiveness of care. Although previous studies have found the care provided by CHCs to be high quality and comparable to that provided at other ambulatory settings, further research on this issue is also recommended.

In the end, community health centers have proven to be very adaptable, using flexible staffing with a range of medical providers—often working at the “top of their capabilities”—to meet growing demand for team-based, cost-effective care. These findings provide important insights for the broader system of group medical practice in the U.S., which are now facing many of the same pressures that health centers have long encountered.