BRIEF REPORT

High-Performing Teamlets in Primary Care: A Qualitative Comparative Analysis

Melinda A. Chen, MD, MS, Claude Rubinson, PhD, Eloise M. O'Donnell, MPH, Jing Li, PhD, Thomas Bodenheimer, MD, and Lawrence P. Casalino, MD, PhD

Purpose: **In efforts to improve patient care, collaborative approaches to care have been highlighted. The teamlet model is one such approach, in which a primary care clinician works consistently with the same clinical staff member. The purpose of this study is to identify the characteristics of high-performing primary care teamlets, defined as teamlets with low rates of ambulatory care sensitive emergency department (ACSED) visits and ambulatory care sensitive hospital admissions (ACSAs).**

Methods: **Twenty-six individual qualitative interviews were performed with physicians and their teamlet staff member across 13 teamlets. Potentially important characteristics related to high-performing primary care teamlets were identified, calibrated, and analyzed using qualitative comparative analysis (QCA).**

Results: **Key characteristics identified by the QCA that were often present in teamlets with low rates of ACSED visits and, to a lesser extent, ACSAs were staff proactiveness in anticipating physician needs and physician-reported trust in their staff member.**

Conclusion: **This study suggests that physician trust in their staff and proactiveness of staff in anticipating physician needs are important in promoting high-performing teamlets in primary care. Additional studies are indicated to further explore the relationship between these characteristics and high-performing teamlets, and to identify other characteristics that may be important. (J Am Board Fam Med 2024;37:105–111.)**

Keywords: **Patient Care Team, Primary Health Care, Qualitative Research, Trust**

Introduction

Many practices focus on establishing teams in which primary care physicians work closely with nurse practitioners, nurses, medical assistants, and others to care for patients.[1,2] Teams may be difficult and expensive to create; the concept of "teamlets"—dyads composed of a primary care clinician and 1 other staff member (most often a medical assistant) who work together most of the time—has emerged as a simpler, less expensive alternative to teams.[3–6] Teamlets may exist on their own or within a health care team.

Anecdotally, teamlets have long been common in primary care (though the term emerged only recently), but there is little research aimed at identifying characteristics of high-performing teamlets.[7–9] In previous work, we found that /77% of primary care physicians reported working together with 1 staff member at least 80% of the time.[10] In this study, we seek to identify the characteristics or combinations of characteristics most common in high-performing teamlets by linking Medicare claims data to physician survey and interview data with teamlet physicians and staff members.[11–14]

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From the Division of Health Policy & Economics, Department of Population Health Sciences, Weill Cornell Medical College (MAC, EMO, LPC), Division of General Internal Medicine, Department of Medicine, University of California, San Diego (MAC), Department of Social Sciences, University of Houston – Downtown (CR), Comparative Health Outcomes, Policy and Economics Institute, Department of Pharmacy, University of Washington (JL), Department of Family Community Medicine, University of California, San Francisco (TB).

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Corresponding author: Melinda Ann Chen, MD, MS, Weill Cornell Medical College: Department of Population Health Sciences, 402 E. 67th St., New York, NY 10065 (E-mail: mec2015@med.cornell.edu).

Methods

Overview

We used QCA to analyze the relationship between teamlet characteristics and being a high-performing teamlet (defined as those with a lower proportion of their patients having ambulatory care sensitive emergency department (ACSED) visits, ambulatory care sensitive hospital admissions (ACSAs), or both). We selected these outcomes because high quality outpatient care may reduce the ACSED visit and ACSA rates.[15,16] QCA is an analytic technique that can quantitatively analyze qualitative data – even when the number of cases is relatively small[13, 17] – to determine the characteristics or combination of characteristics most commonly associated with a given outcome.

Sample and Interviews

As described previously,[10] we randomly sampled 2300 general internists and family physicians drawn from the nationwide Care Precise database. Selected physicians were sent a survey to determine whether they worked with the same staff member in at least 80% of clinic sessions and, if so, to characterize the physician's perspectives on the positive and negative aspects of working this way (Appendix 1).

An invitation to participate in a 30-minute qualitative interview (via Zoom) was sent to the 533 physicians who reported working in a dyad). Twenty-one physicians and their respective staff member participated in interviews conducted from 2020 to 2021. Eight of these 21 teamlets were excluded because the physician had not worked with their current staff member during the 2019 period for which quantitative data were available or because, by the time of the interviews, they were working mostly in nonprimary care practice. Interviews were conducted with physicians and staff in the 13 remaining teamlets confidentially and separately using a semistructured qualitative interview protocol focused on understanding the working relationship of the teamlet (Appendices 2 and 3). Each participant received a small stipend.

Analysis

Each interview was coded by 2 researchers (MC and EO) using Atlas TI version 8.4.4 to identify potentially important characteristics of teamlets. Before analyzing the data using QCA, these characteristics were refined based on the extent to which the themes arose in interviews and in physician survey responses, and were reviewed and agreed on by the entire study team. QCA requires all data to be "calibrated" before analysis,[11] which involves locating cases on a 0.0 to 1.0 scale, where 1.0 indicates that the characteristic under consideration is fully expressed and 0.0, that it is not expressed. Scores within the 0.0 to 1.0 range indicate that the characteristic is partially expressed. Calibrations were performed by MC and EO to assign a scaled numeric score indicating the extent to which the characteristic was expressed based on interview and survey responses (Table 1). Coders and the team were blinded to teamlets' performance until after coding and calibrations were completed.

Teamlets with sicker patient panels may have higher rates of ACSED visits and ACSAs even with good outpatient care, so we calculated, for each teamlet, observed-to-predicted ratios of their ACSED visits and ACSAs respectively from 2019 Medicare claims data. The observed values were the actual ACSED visit and ACSA rates among patients attributed to the teamlet, and the predicted values were derived using a risk adjustment model with patient age, gender, dual-eligible status, race (white, black, other) and Centers for Medicaid and Medicare Services Hierarchical Condition Category score as predictors. A lower observed-to-predicted ratio of either ACSED visit or ACSA rates suggested that the teamlet had achieved a lower rate of adverse events given their patient risk profile. We also used the average of these 2 ratios as an additional composite outcome measure.

We then conducted a QCA using the software packages Kirq (https://grundrisse.org/qca/kirq/) and fs/QCA (https://sites.socsci.uci.edu/~cragin/fsQCA/software.shtml) to identify patterns of characteristics associated with low observed-to-predicted ACSED visit and ACSA rates using sufficiency analyses, following the protocol outlined by Rihoux and Ragin.[13] Details of the calibrations are presented in Table 1. The 3 outcomes were calibrated using the direct method;[13] the explanatory characteristics were manually calibrated as detailed in Table 1. The manual calibrations were determined collaboratively, with each teamlet's score being reviewed by the research team.

Necessity testing identified no characteristics as necessary for realizing any of the outcomes with a

Table 1. Calibration Details for Characteristics Based on Interview and Survey Data

Characteristic	Description	Calibration Rules
	Outcomes	
Ambulatory Care Sensitive Emergency Department (ACSED) visits	Low ratio of observed-to-predicted ACSED visits, with "low" defined as ≤ half as many observed visits as predicted (i.e., a 1:2 ratio)	A continuous measure ranging from 0.0 to 1.0, where 0.0 represents ≥ 2:1 ratio, 0.5 = 1:1 ratio and 1.0 ≤ 1:2 ratio
Ambulatory Care Sensitive Hospital Admissions (ACSA)	Low ratio of observed-to-predicted ACSA, with "low" defined as ≤ half as many observed visits as predicted (i.e., a 1:2 ratio)	A continuous measure ranging from 0.0 to 1.0, where 0.0 represents ≥ 2:1 ratio, 0.5 = 1:1 ratio and 1.0 ≤ 1:2 ratio
Y5050 (composite measure defined under description)	Mean of ACSED visits and ACSA	(ACSED visits + ACSA)/2
	Explanatory Characteristics	
Trust	Physician reports high degree of trust in the staff member's judgment	1.0 = Trusts staff member very enthusiastically 0.75 = Trusts staff member but not very enthusiastically OR survey indicates a great deal of trust but not discussed in interview 0.25 = Trusts staff member only moderately 0.0 = Low level of trust
Relationship (rel)	Physician and staff member both report that the staff member has a good relationship with patients	1.0 = High level of trust, comfort, or rapport from patients 0.75 = Moderate level of trust, comfort, or rapport from patients 0.0 = Low level of trust, comfort, or rapport from patients
Communication (comm)	Physician and staff member both report good communication in the teamlet	Composite-value from 0.0 to 1.0 calculated by: ("good communication" score x 0.5) + ("can the staff member speak up when they think the physician made a mistake" score x 0.3) + ("respect for each other" score x 0.2)
Proactiveness of the staff member (proactive)	Staff member is highly proactive in anticipating the physician's needs	1.0 = Staff nearly always proactive and anticipates physician needs 0.75 = Staff proactive and anticipates physician needs more often than not 0.0 = Staff has little or no knowledge of physician preferences and is not proactive
Comfort	Physician and staff member both report feeling comfortable and familiar with the other	1.0 = Expresses comfort and familiarity very enthusiastically 0.75 = Expresses comfort and familiarity 0.0 = Expresses significant discomfort and unfamiliarity

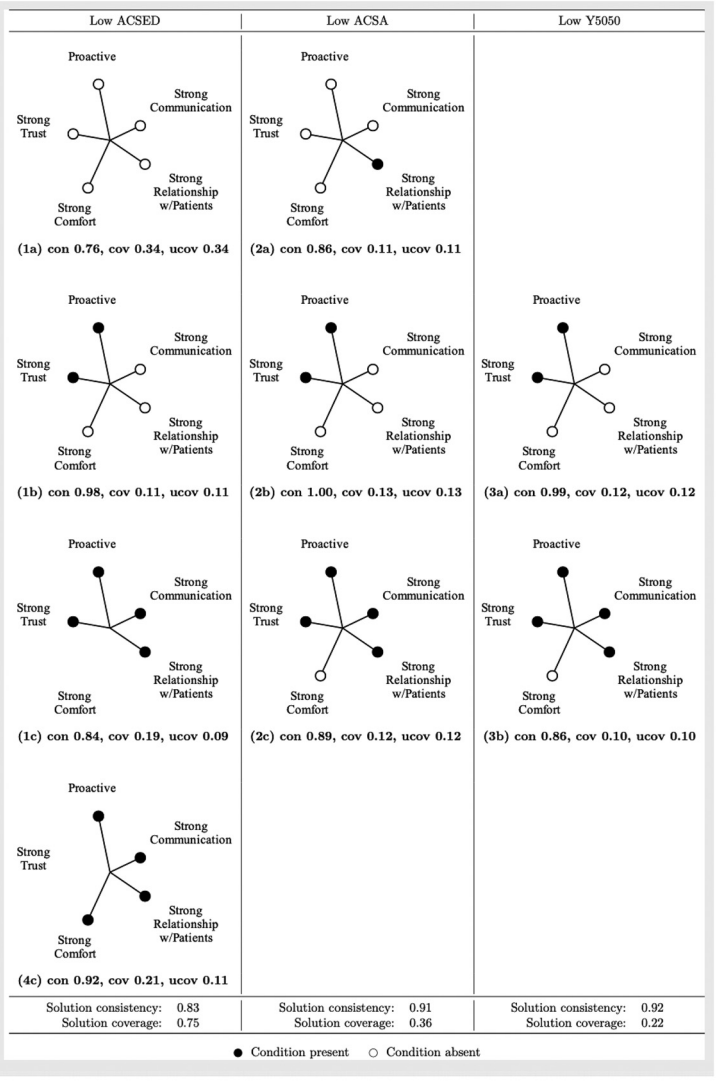
necessity consistency score of ≥ 0.9. For the sufficiency analysis, the complex solution[11] is presented, using the rule that both raw (configuration) consistency and PRI (proportional reduction in inconsistency) consistency must equal or exceed 0.75 for determining a configuration to be sufficient for realizing the outcome.

Results

Teamlets practiced in a variety of outpatient settings in different geographical areas of the United States, and included physician-owned practices and hospital/health system-owned practices. They encompassed solo primary care practices along with practices with up to 12 physicians.

We found a pattern of characteristics in teamlets that had low ACSED visit rates and, to a lesser extent, low ACSA rates or low composite ACSED visit and ACSA rates (Figure 1). Specifically, high performing teamlets had high levels of staff proactiveness in anticipating physician needs and high levels of physician-reported trust in the staff member. Good relationships between the staff member and patients, good communication between the staff member and physician, or both were also often present. Four out of the 8 teamlets with low

Figure 1. Star chart of teamlet types with low rates of ambulatory care sensitive emergency department visits and hospital admissions.



Notes: The QCA results for the complex solution (11) are presented as a series of star charts (18). Each star chart depicts one type of teamlet that successfully realized the outcome and its associated characteristics. A filled circle indicates the presence of a characteristic; an empty circle, its absence. The lack of a circle indicates that the characteristic is irrelevant to realizing the outcome. Each column represents one outcome: a low rate of ambulatory care sensitive emergency department (ACSED) visits, a low rate of ambulatory care sensitive hospital admissions (ACSAs), and an equally-weighted index of both (Y5050). The figure is laid out to facilitate comparison: configurations with fewer characteristics present are located toward the top; those with similar structures are placed next to one another.

Measures of fit are additionally provided for each individual star chart as well the solution in its entirety. All measures of fit range between 0.0 and 1.0.

- *Consistency (con)* indicates the degree to which a given configuration of characteristics is associated with the presence of the outcome. If all cases belonging to a given configuration exhibit the outcome, consistency will be 1.0
- *Coverage (cov)* provides a measure of empirical relevance and reports the fraction of cases with the outcome that are described by this configuration. If all cases of the outcome belong to a single configuration, coverage will be 1.0
- *Unique coverage (ucov)* reports the fraction of cases that are solely described by this individual configuration. Cases that are described by more than one configuration of characteristics do not contribute to ucov.
- *Solution consistency* and *solution coverage* report *con* and *cov* for the combination of all configurations for the given outcome, measuring the overall fit of the model.

Table 2. Key Qualitative Comparative Analysis Characteristics and Sample Quotes from Qualitative Interviews

	Quotes from Physicians	Quotes from Staff Members
Proactiveness of staff member in anticipating physician needs	"I very much prefer the one-on-one. I have my staff person, and she has one physician. You really get to know the person. You get to know how they work, how they operate after years. They kind of read your mind at times and know what you want before you want it." "We know each other well enough to anticipate what the next move is. For example, if I'm going to take a lesion off of somebody's skin, she… has all the instruments that I need, and they are all in the room when I go in… She knows exactly the kind of help I need when I'm doing something like that without having to say."	"In the beginning, of course, we were strangers. We didn't really know how each other worked. But, as time progressed, I learned more of how she works as a doctor… And then it helps a lot with patient care… We know right away what we or she needs me to do for the patient." "I'm one step ahead of him. I help him out before he sees the patient… If a patient comes with a urinary tract infection, I give them the cup [to check the urine]… For chest discomfort, I would do an EKG, so I'm one step ahead… So I start doing all of that… so he could take more time with the other patients that are coming in."
Good relationships between staff member and patients	"She takes the best social history on my patients. She knows the names of the pets of my patients. She knows if they've had a major loss, if they lost their job or a loved one… I think [the patients] see her each time, and she takes a personal interest in them. I think they feel a strong relationship with her. That makes my job easier. The patients are coming in more relaxed… I think seeing the same faces each time gives them comfort and confidence in what we're doing." "The patients not only trust her but like her. And that really helps a lot. They know that if they tell her something, it's as good as telling me. They know if they pass something on to her, it will get to me."	"I can't take a vacation without them yelling at me when I get back. [They say], "You weren't here when [the patient] called and the receptionist can't get a word out of them." Bottom line, [the patients] won't tell the receptionist a darn thing. If they're having a heart attack, they need to talk to me. I've sent several and saved several since by demanding that they go to the ER."
Good communication between staff member and physician	"When we mess up, we're both very direct about it. For example, let's say that she forgot to follow up with the patient. She'll follow up, and we'll move on… We communicate through computer, through phone, [or] in person. We have all lines of communication open… She understands when to respect my boundaries… So I think our relationship is built upon mutual respect and anticipating what the other needs and it makes a big difference when you work with somebody who understands those things about you."	"We are very real and true to each other. If I snap, I will make sure I acknowledge and apologize for snapping. If she's had a crappy day, she'll do the same. I think having that mutual developed respect and appreciation and also accountability for each other and what we need to do to make the practice run smoothly has made us have a better relationship throughout the years."
Comfort and familiarity between staff member and physician	"We try our best to convey that it's not just a workplace. We use it as a second home environment. I tell them all the time. I spend more time with them than my children and my wife. I respect their time, and they respect mine. We have a healthy relationship in the office."	"This is kind of my home away from home… We have kind of like a family relationship where I look forward to coming to work and working for him."
Physician-reported trust in the staff member	"I give my medical assistant tremendous latitude. If patients are running late and she wants to move them around [because of] who is sick or who I'm going to be able to catch up with, I don't correct her… I'm not going to second guess. I think that conveys a respect for the person that you trust their judgment. I think [in] any relationship, communication and respect are important. People also want to feel that they're growing in the role, learning new things, or getting additional responsibilities."	Not applicable

ACSED visits did not have any of these relationship-related characteristics.

Figure 1 presents the results of the QCA as a series of star charts,[18] depicting those combinations of characteristics associated with (a) low ACSED visit rates, (b) low ACSA rates, and (c) low ACSED visit rates and low ACSA rates. (A truth table detailing the sufficiency analysis is included in Appendix 4.) Table 2 shows key characteristics identified in the QCA along with sample quotes associated with each characteristic, taken from interviews with physicians and their teamlet staff member.

Discussion

Primary care teamlets may be a simple and inexpensive way to improve primary care, but the characteristics and combinations of characteristics common in high-performing teamlets have not been identified. Our analysis found that 2 characteristics – physician-reported trust in the staff member and high levels of staff proactiveness in anticipating physician needs – were more likely to be present in high-performing teamlets. Good relationships between staff members and patients and good communication between staff members and physicians were present in some high-performing teamlets, suggesting that 1 does not need to have a picture-perfect teamlet to realize benefits.

This study has limitations. First, it is possible that teamlets with strong working relationships between their members were more likely to participate. This may have led to less variation between teamlets on the presence or absence of relationship-related characteristics.

Second, the number of participating practices was relatively small despite multiple rounds of recruitment mailings and phone calls, and the practices in the study may not be representative of the wide range of practices in primary care. Recruitment for the study coincided with the beginning of the Coronavirus pandemic, which may have made physicians and staff members less likely to participate due to difficulty contacting physicians and staff (because some may have been working remotely), increased staffing changes and turnover, and increased practice workloads. Nevertheless, QCA is a useful tool for identifying patterns in data with a small sample size.[13,17]

Four of the high-performing teamlets did not conform to any of the explanatory recipes identified by our QCA, indicating that there are other combinations of characteristics that can produce high-performing teamlets in addition to those we identified. Identifying these additional pathways to high-performing teamlets is a subject for future research. Future research is also warranted to evaluate further whether staff proactiveness in anticipating physician needs and physician trust in their staff member are related to high-performing primary care teamlets and to expand on our initial studies by exploring whether staff trust in physicians and staff proactiveness in meeting patient needs are also important. Such research should also investigate whether additional factors are instrumental to high-performing teamlets. Through these additional studies, interventions to support strong and sustained teamlet relationships can be developed, such as efforts to foster staff proactiveness and to reduce staff turnover.

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To see this article online, please go to: http://jabfm.org/content/37/1/105.full.

References

1. National Academies of Sciences, Engineering, and Medicine. *Implementing High-Quality Primary Care: Rebuilding the Foundation of Health Care*. The National Academies Press; 2021.
2. Bodenheimer T, Ghorob A, Willard-Grace R, Grumbach K. The 10 building blocks of high-performing primary care. Ann Fam Med 2014;12:166–71.
3. Bodenheimer T, Laing BY. The teamlet model of primary care. Ann Fam Med 2007;5:457–61.
4. Bodenheimer T, Willard-Grace R. Teamlets in primary care: enhancing the patient and clinician experience. J Am Board Fam Med 2016;29:135–8.
5. Chen EH, Thom DH, Hessler DM, et al. Using the teamlet model to improve chronic care in an academic primary care practice. J Gen Intern Med 2010;25 Suppl 4:S610–614.
6. Rodriguez HP, Giannitrapani KF, Stockdale S, Hamilton AB, Yano EM, Rubenstein LV. Teamlet structure and early experiences of medical home implementation for veterans. J Gen Intern Med 2014;29 Suppl 2:S623–631.
7. Shekelle PG, Begashaw M. *What are the effects of different team-based primary care structures on the*

quadruple aim of care? a rapid review [Internet]. Department of Veterans Affairs 2021.

8. Crabtree BF, Nutting PA, Miller WL, et al. Primary care practice transformation is hard work: insights from a 15-year developmental program of research. Med Care 2011;49 Suppl:S28–S35.
9. Harrod M, Weston LE, Robinson C, Tremblay A, Greenstone CL, Forman J. "It goes beyond good camaraderie": a qualitative study of the process of becoming an interprofessional healthcare "teamlet". J Interprof Care 2016;30:295–300.
10. Casalino LP, Jung HY, Bodenheimer T, et al. The association of teamlets and teams with physician burnout and patient outcomes. J Gen Intern Med 2023;38:1384–92.
11. Ragin CC. *Redesigning social inquiry: fuzzy sets and beyond*. University of Chicago Press: Chicago, IL; 2008.
12. Ragin CC, Rubinson C. Volume 2: comparative methods. In Badie B, Berg-Schlosser D, Morlino L, eds. *International Encyclopedia of Political Science*. Sage Publications: 2011:331–41.
13. Rihoux B, Ragin C. *Configurational comparative methods: qualitative comparative analysis (QCA) and other techniques*. Sage Publications; 2009.
14. Ragin CC, Rubinson C. The distinctiveness of comparative research. In Landman T, Robinson N, eds. *The SAGE Handbook of Comparative Politics*. Sage Publications: 2009:13–34.
15. Meyers DJ, Chien AT, Nguyen KH, Li Z, Singer SJ, Rosenthal MB. Association of team-based primary care with health care utilization and costs among chronically ill patients. JAMA Intern Med 2019;179:54–61.
16. Walker RL, Ghali WA, Chen G, et al. ACSC indicator: testing reliability for hypertension. BMC Med Inform Decis Mak 2017;17:90.
17. Mello PA. Qualitative comparative analysis: an introduction to research design and application. Georgetown University Press; 2021.
18. Rubinson C. Presenting qualitative comparative analysis: notation, tabular layout, and visualization. Methodological Innovations 2019;12:20597 9911986211.

Appendices.

Appendix 1.

National Survey of Primary Care Physicians

Thank you so much for taking the time to participate in the **National Survey of Primary Care Physicians**. This study is being conducted by Weill Cornell Medical College to gain insights on primary care practices. The survey will take 8 minutes to complete.

SURVEY INSTRUCTIONS:

- For each question, please check the box or boxes next to the most appropriate answer or answers.
- Please answer all questions unless directed otherwise. For some questions, you will see instructions telling you to skip ahead to other questions in the survey.
- When you have completed the survey, please return it in the enclosed postage-paid envelope.
- **IF YOU HAVE ANY QUESTIONS:** Call: 484-840-4375 or Email: info@primarycaresurvey.com

These first two questions are to verify that you are eligible to participate.

A. Are you a family physician or general internist?

- □ Yes
- □ No

B. Are you scheduled to see patients at a single ambulatory practice site at least 20 hours a week? Please do not count hours (if any) in which you are supervising residents.

- □ Yes
- □ No

If you answered "Yes" to both question A and B, please go to question 1. If you answered "No" to question A, B or both, you are not eligible to participate in the remainder of this survey.

***Important**: Even though you are not eligible to participate, we would appreciate it if you would return the survey in the enclosed self-addressed, stamped envelope. Your responses to questions A and B are very important for the research. Even if you are not eligible to complete the rest of the survey, please cash the enclosed check as a token of our appreciation for responding. While you are not eligible to participate, we will be happy to send you the results of our research once the project is completed. If you would like to receive these results, please provide your email address below:*

_____

EXTENT TO WHICH YOU WORK FREQUENTLY WITH THE SAME STAFF MEMBER

1. Think about the clinical staff member – a medical assistant (MA), registered nurse (RN), licensed vocational nurse (LVN) or licensed practical nurse (LPN) – with whom you work most frequently.

In what proportion of your ambulatory clinical sessions do you work with this person? Do not consider clinic sessions, if any, when you supervise residents. *Please check the response below that best fits your situation.*

- □ I work with this person in 80% or more of my ambulatory clinic sessions
- □ I work with this person in 60-79% of my ambulatory clinic sessions
- □ I work with this person in 50-59% of my ambulatory clinic sessions
- □ I work with this person in less than 50% of my ambulatory clinic sessions →SKIP TO QUESTION 10

2. Is this staff member with whom you work most frequently…

- □ A Medical Assistant (MA)
- □ A Registered Nurse (RN)
- □ A Licensed Vocational Nurse (LVN)
- □ A Licensed Practical Nurse (LPN)
- □ Some other position (please specify:_____)

3. How many years have you worked with this person?

- □ Less than one year
- □ Between one and two years
- □ Between two and three years
- □ More than three years

[INSERT RESPID]

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YOUR OPINIONS ABOUT WORKING FREQUENTLY WITH THE SAME STAFF MEMEBER

For the next few questions please think only about the staff member with whom you work most frequently.

4. How important is this staff member in helping you take better care of your patients?

- □ Very important
- □ Somewhat important
- □ Not very important
- □ Not important at all

5. To what extent do you feel that your patients trust this staff member to help them with health issues?

- □ A great deal
- □ Moderately
- □ A little bit
- □ Not at all

6. How confident are you that this staff member would alert you if she or he noticed that you made an error?

- □ Very confident
- □ Somewhat confident
- □ Slightly confident
- □ Not confident

7. For each activity in the table below, please let us know whether this staff member does or does not perform the activity regularly. *Please select one for each activity.*

Activity	*Performs Regularly*	*Does Not Perform Regularly*
Highlighting for you services that the patient may need (e.g. the patient needs a mammogram or should have a hemoglobin A1c checked)	□	□
Bringing key pieces of information to your attention (e.g. "Mr. Blake's son recently died")	□	□
Verbally reviewing the care plan with the patient at the end of a visit	□	□
Performing medication reconciliation	□	□
Relaying your medical advice to the patient	□	□
Serving as a scribe during patent visits	□	□
Some other important activity (please specify:_____)	□	□

8. To what extent do you feel that you can depend on this staff member to carry our his/her responsibilities?

- □ A great deal
- □ Moderately
- □ A little bit
- □ Not at all

9. How much influence do you have over selecting the staff member with whom you work most frequently?

- □ A great deal of influence
- □ Some influence
- □ Very little influence
- □ No influence

[INSERT RESPID]

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10. In your practice, how much of a barrier, if any, are each of these to achieving the model of having one physician and one staff member work together consistently?

	Not a barrier	*A minor barrier*	*A major barrier*	*I don't know*
Not enough staff	□	□	□	□
High MA/LPN/LVN/RN turnover	□	□	□	□
There are staff and/or physicians whom others prefer not to be paired with	□	□	□	□
Physicians prefer to work with multiple staff	□	□	□	□
MAs/LPNs/LVNs/RN prefer to work with multiple physicians	□	□	□	□
Too difficult to schedule	□	□	□	□
Leadership does not prioritize having one physician and one staff member work together consistently	□	□	□	□
Some other barrier (please specify:_____)	□	□	□	□

BURNOUT

11. Using your own definition of "burnout," please select the answer that best describes how you feel about work.

- □ I enjoy my work. I have no symptoms of burnout.
- □ Occasionally I am under stress, and don't always have as much energy as I did, but I don't feel burned out.
- □ I am definitely burning out and have one or more symptoms of burnout, e.g. emotional exhaustion.
- □ The symptoms of burnout that I'm experiencing won't go away. I think about work frustrations a lot.
- □ I feel completely burned out. I am at the point where I may need to seek help.

TEAMS

12. Do you work within a larger, formally defined team that includes at least three different types of staff (e.g. MA, RN, MD) including you?

- □ Yes
- □ No → SKIP TO QUESTION 16

13. What types of staff are members of this formally defined team? Please check yes or no for each type of staff in the table below. If you share a type of staff (e.g. clinical pharmacist) with another team, please select "Yes."

Type of Staff	*Yes*	*No*
RN	□	□
LPN or LVN	□	□
Medical assistant	□	□
Clinical pharmacist	□	□
Social worker	□	□
Behavioral health specialist	□	□
Nurse practitioner or physician assistant	□	□

14. For approximately how many years have you worked with this formally defined team?

- □ Less than one year
- □ Between one and two years
- □ Between two and three years
- □ More than three years

15. How important, if at all, is this team in helping you to take better care of your patients?

- □ Very important
- □ Somewhat important
- □ Not very important
- □ Not important at all

[INSERT RESPID]

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16. Has your practice been formally recognized as a patient-centered medical home by an external entity such as the National Committee for Quality Assurance (NCQA), the Joint Commission, or a health insurance company?

- ☐ Yes
- ☐ No
- ☐ Don't know

YOU AND YOUR PRACTICE

17. In a normal week, how many half days are you scheduled to see patients in your primary ambulatory practice site?

_____ half days per week

18. Approximately how many other physicians (all specialties) work at your main primary ambulatory practice site? Your best guess is fine.

_____ physicians

19. Approximately how many physicians (in all specialties) work in your organization as a whole, including at other practice sites? Your best guess is fine.

- ☐ 1-2 physicians
- ☐ 3-9 physicians
- ☐ 10-24 physicians
- ☐ 25-99 physicians
- ☐ 100 or more physicians

20. Who owns your practice? By "owns your practice" we mean the organization that employs the non-physician staff and owns the practice's equipment?

- ☐ All or some of the physicians who work in the practice
- ☐ An academic medical center
- ☐ A hospital or hospital system (not an academic medical center)
- ☐ A health insurer
- ☐ Our practice is a community health center
- ☐ Some other organization (please specify: _____)

21. To what extent do you agree with the following statement:

"Our practice site is well-organized and highly efficient in providing quality patient care."

- ☐ Strongly disagree
- ☐ Somewhat disagree
- ☐ Neither agree nor disagree
- ☐ Slightly agree
- ☐ Strongly agree

22. If you have anything you would like to add, please give us your thoughts here. Often these thoughts turn out to be the most important part of the survey. If you need more space, please continue on the bottom of this page.

_____

_____

23. Thanks very much for participating in the survey! We are grateful for your valuable time! If you would like us to email you the articles that give the results of the research once it is complete, please provide your email address here. We will not share this address or use it for any other purpose.

_____

☐ I do not wish to receive a copy of the report

That completes the survey. To ensure that your survey reaches us, please return it in the enclosed postage-paid envelope to:

Lawrence Casalino, M.D.
Weill Cornell Medical College
Primary Care Survey
c/o SSRS
PO Box 90730
Allentown PA 18109

[INSERT RESPID]

Appendix 2.

Physician Interview Protocol

In responding to our questions, please tell us about how things worked in your teamlet before the COVID-19 epidemic. But if you have something to add about how things have been during the epidemic, please do not hesitate to tell us.

1. *Can you tell us about a time that [name] was particularly helpful with a patient or patients?*
2. *In your survey that you completed {give an approximate date}, you said you work with the same staff partner at least __% of the time [will customize to the respondent since we will read the individual's survey responses before doing the interview]. Is that still true?*

   IF NOT STILL TRUE:

   a. *Ask whether there is someone new that the physician works with and about what % of time works with that person.*

   b. *Regardless of the percent time, continue with the interview as it stands below, asking about the current partner, but toward the end of the interview ask why the physician switched staff members.*
3. *We are seeking to understand more about your experiences working consistently with one staff person. Could you tell us a little bit about your working relationship with your staff partner? How has it evolved over time?*
4. *How well do you feel that [name] knows your patients and has a trusting relationship with them?*

   Probe: (If they do feel there is such a relationship):

   a. *Can you tell me about a time when this knowledge of your patients/trusting relationship with your patients (or lack thereof) made a real difference?*
5. *What is the best thing about working with [insert staff member's name]?*

   a. *Probe: can you give us an example?*
6. *What is the most difficult thing about working with [insert staff member's name]*

   a. *Probe: can you give us an example?*
7. *What are some things that you wish your staff partner could do but which they do not currently do? Why don't they do these things?*

   a. *Probe:*

   government regulations
   union rules
   staff member's access to the EHR
   documentation issues

   any others?
8. *Do you prefer to work with one staff member consistently or would you prefer to work with different staff members on different days?*

   a. *Probe: Why?*
9. *You answered in your survey that you have ("a great deal of influence/some influence/very little influence/no influence" – customize based on response to survey Q9) over selecting the staff member with whom you work most frequently. Can you tell us more about how you are involved in the hiring of this staff member?*

   a. *Probe: Are you satisfied with the extent of involvement you have in hiring the staff member with whom you work most frequently? Why or why not?*
10. *Do you consider that you and [staff member name] are a small team within a larger, formally defined team that includes other staff members as well?*

    Probe if YES:

    a. *How important to you is the small team (you and NAME) vs. the larger team? Can you explain?*

    Probe for examples.

    b. *If no longer working with the same staff member, ask: Can you give us a sense of why you stopped working with the previous staff member?*
11. *In the survey, you mentioned that staff turnover was a [major barrier/minor barrier/not a barrier]. Can you tell me more about this?*

    a. *Probe: Is this a problem for you or your practice? If not, what have you been able to do to keep MAs in your practice?*
12. *What advice would you offer a younger colleague about working with a clinical staff partner such as a medical assistant? What do you think is most important to making that relationship effective?*
13. *How do you imagine that the COVID-19 pandemic may change the role of and your relationship with your clinical staff partner in the long term?*
14. *Is there anything else that you would like to add? Is there anything we haven't asked you that we should be asking?*

Appendix 3.

Staff Interview Protocol

In responding to our questions, please tell us about how things worked in your teamlet before the COVID-19 epidemic. But if you have something to add about how things have been during the epidemic, please do not hesitate to tell us.

1. *Can you tell me about a time when you and Dr. X worked particularly well to look after a patient?*
2. *About how long have you been working with Dr. X? (make sure worked with doctor during entire 2019)*
3. *About what percent of your time do you work with Dr. X?*
4. *Has your working relationship with Dr. X evolved over time?*
   Probe: If so, how has it evolved?
5. *What do you think are the two most valuable things that you do to help Dr. X and his/her patients?*
6. *Could you tell us about a time that you worked particularly well together with Dr. X to take care of a patient's needs?*
7. *Did your practice give you additional training so that you can provide more help to Dr. X and his/her patients?*
   a. *Probe:*
      1. *If not described, ask the interviewee to tell you a bit about this additional training.*
8. *Are there responsibilities that you would like to take on, but that you can't do because of legal, union, or other barriers?*
9. *What is the best thing about working with Dr. X?*
   a. *Probe: can you give us an example?*
10. *What is the most difficult thing about working with Dr. X?*
    a. *Probe: can you give us an example?*
11. *Do you prefer to work with one physician consistently or would you prefer to work with different physicians on different days?*
    a. *Probe: Why?*
12. *We'd like to ask you a question about burnout, and whether you feel burned out from your work. Do you feel burned out: [Note: if the interviewee asks what we mean by burn out, tell them to use their own feeling of what it means to be burned out.]*
    a. *Frequently*
    b. *Occasionally*
    c. *Never or almost never*
13. *Do you consider that you and [Dr. X] are a small team within a larger, formally defined team that includes other staff members as well?*
14. *Probe if YES:*
    a. *Does the larger team help you and Dr. X take better care of patients?*
    b. *Probe:*
       1. *If yes, give an example.*
       2. *If no give an example*
15. *What are the most positive things about your job that entice you to stay?*
16. *What advice would you offer a younger colleague about working with Dr. X? What do you think is most important to making that relationship effective?*
17. *How do you imagine that the COVID-19 pandemic may change the role of and your relationship with your clinical staff partner in the long term?*
18. *Is there anything else that you would like to add? Is there anything that we haven't asked you that we should be asking?*

Appendix 4.

Truth Table.

						Low Rate of ACSED visits			Low Rate of ACSAs			Low Rate of both ACSED visits and ACSAs		
trust	rel	comm	proactive	comfort	N	scon	pri	out	scon	pri	out	scon	pri	out
1	1	1	1	1	1	0.86	0.83	1	0.29	0.00	0	0.57	0.25	0
1	1	1	1	0	1	0.83	0.79	1	0.89	0.87	1	0.86	0.83	1
1	1	1	0	1	1	0.75	0.66	0	0.75	0.66	0	0.75	0.66	0
1	0	0	1	0	1	0.98	0.98	1	1.00	1.00	1	0.99	0.99	1
0	1	1	1	1	1	0.98	0.98	1	0.34	0.00	0	0.66	0.49	0
0	1	1	1	0	2	0.46	0.25	0	0.50	0.50	0	0.48	0.39	0
0	1	0	0	1	1	0.02	0.00	0	0.44	0.00	0	0.23	0.00	0
0	1	0	0	0	1	0.54	0.16	0	0.86	0.84	1	0.70	0.57	0
0	0	0	0	0	4	0.76	0.75	1	0.49	0.48	0	0.62	0.56	0

Notes. Nine combinations of characteristics describe 13 teamlets. Rows lacking empirical instances (remainders) are omitted. Three outcomes are reported: ambulatory care sensitive emergency department (ACSED) visit rate, ambulatory care sensitive hospital admission (ACSA) rate, and a composite measure of the ACSED and ACSA rates of equal weighting. The presence of the characteristic is indicated by a 1; its absence, by a 0. Degree of consistency with the presence of the outcome is reported as *scon*. *Pri* is a more conservative measure of consistency that removes the influence of ambiguous observations that exhibit consistency with both the presence and absence of the outcome. For a teamlet type to be classified as consistently associated with the presence of the outcome, both *scon* and *pri* must exceed 0.75, marked by a 1 in the corresponding outcome (*out*) column.