

APPENDIX A. SEARCH STRATEGIES

DATABASE SEARCHED & TIME PERIOD COVERED:

OVID Medline - From inception to 5/29/2020

LANGUAGE:

English

SEARCH STRATEGY:

((patient care team/ or "patient care team*".ti,ab OR "team based".ti,ab OR "team culture".ti,ab OR "team dynamic".ti,ab OR "team function*".ti,ab OR teamwork.ti,ab OR "team work".ti,ab OR "multidisciplinary team*".ti,ab OR "interdisciplinary team*".ti,ab OR "integrated care".ti,ab OR "shared care".ti,ab) AND (("primary care" OR "primary health care").ti,ab or primary care/) AND (role.ti,ab OR roles.ti,ab OR responsibilit*.ti,ab OR model.ti,ab OR models.ti,ab OR organization.ti,ab OR organization.ti,ab OR arrangement.ti,ab OR structure.ti,ab OR professional roles/))

APPENDIX B. PEER REVIEWER COMMENTS AND RESPONSES

Question	Reviewer comment	Authors Responses
Are there any <u>published</u> or <u>unpublished</u> studies that we may have overlooked?	Yes - Crawford, E. R., Reeves, C. J., Stewart, G. L., & Astrove, S. L. (2019). To link or not to link? Multiple team membership and unit performance. Journal of Applied Psychology, 104(3), 341–356. https://doi.org/10.1037/apl0000381	We retrieved and evaluated this article and now include it in the review.
Additional suggestions or comments can be provided below. If applicable, please indicate the page and line numbers from the draft report.	I would classify this work as a very helpful negative study. It is disappointing that the literature did not provide more solid lessons, but the search was comprehensive and the inclusion and exclusion criteria were logical. The comments in the discussion on future research needed are compelling. I am attaching comments within the draft that do not address any major issues but include some suggestions and identification of a few places in which I found the writing difficult to follow.	No response needed
	Page 5, line 23: nice, distilled and clear	No response needed
	Page 5, line 56: All of these studies no matter what the design?	Included studies needed to be hypothesis-testing, but could be randomized or non-randomized. We added “hypothesis-testing” to the text
	Page 6, line 3: Why not put this as part of the list above? Why not make the language for the list consistent across all numbered inclusion criteria? Ok, I see below where you used the 1-4. I think it would work if you just put the outcome inclusion first, and numbered the others below	In the Executive Summary the full text about includes and excludes has been shortened. This text about the outcomes needed for includes is taken from a longer list in the main report on pages 11-12, but we added this as point 5 to this list
	Page 6, line 9: were	This typo was corrected
	Page 6, line 44: not something the VA RN's on teamlets have? Sentence not clear, certainly VA has RNNPs with prescribing authority	We have clarified this to state it is not currently something that teamlet RNs have authority to do.
	Page 6, line 51: I expected to see the last point (differing patient populations....) in the table below.	This was added to the table
	Page 8, line 25: It could be helpful to extrapolate on the patient population comment (see my prev comment) if possible. I think that is where we may need to go in thinking about program design, in addition to understanding all the things you said about research gaps.	This additional information was added to the Future Research section



Page 11, line 51: where is the outcome inclusion? OK, I see it below after excludes. To me, it seems important enough to put above.	We moved this text up.
Page 12, line 9: Given that there is so little in the literature on this, would it be worthwhile to include more of the literature referenced here for development of a conceptual framework for future research studies?	Although we did not assess this literature in detail, there appears to be a rich qualitative literature describing attributes for good team functioning, and VA may want to consider making this the focus of a new ESP review
Page 12, line 17: Same as above, is there anything there that would be useful for framework development?	Same as above.
Page 12, line 39: were	This typo was corrected
Page 14, line 14: ok so applied on full text review...	No response needed
Page 14, line 17: Another possibly interesting article batch, given that a pharmacist is such a major part of VA teams (supposed to be per 6 teamlets)	There is a large body of literature, and existing reviews of portions of that literature, on adding pharmacists to teams. Not all of it appeared to be primary care, and some of it was condition-specific, such as adding a pharmacist to do diabetes medication adjustments. But this might be a fruitful area for another ESP review.
Page 16, line 39: Meaning that more physicians/team members resulted in less burnout??	That is correct, less burnout. We added this clarification to the text.
Page 16, line 50: I don't get this--what does assuming care mean? Should it be 1000 patients? Or is it a multi-provider practice? Sounds very interesting.	The model started with the idea that care was going to be delivered to 10,000 patients, and then determined how many MDs, how many RNs, etc. would be needed to deliver high quality care. We have made this clarification to the text.
Page 18, line 17: Whose burnout? MD's, RNs, clerks?	It is MD burnout. We have clarified this in the table.
Page 18, line 41: What was the level of variation across these practices? In team composition, or in patient population?	That information is not presented in the article
Page 19, line 37: So the initial follow-up was very short. And, fyi, they didn't appear to have attended to depression, which was likely to be high in their demographic and is usually a state upon which improvement in all others depends	This observation is noted, but we did not make any changes to the text. The main point seemed to us to be that once the intervention was taken away, care regressed, making a stronger case that the improvements seen during the intervention were causally linked.
Page 20, line 12: very interesting.	No response needed



<p>Page 20, line 17: I'm assuming here in addition to a physician? Does it say what the practice size or number of physicians per NP/PA was?</p>	<p>Yes, this is in addition to having a physician, as the survey was sent to Family Physicians. The panel size varied from about 1900 to 2500, with solo practitioners having larger panels. This was added to the text. The other information is not available.</p>
<p>Page 20, line 49: very interesting</p>	<p>No response needed</p>
<p>Page 21, line 7: I think you had a previous comment about RNs prescribing. If this data is what that comment was based on, adjustment of doses is so very different than prescribing ability. Maybe the titrate wording can also be added to the previous comment on prescribing.</p>	<p>Twenty of the 29 studies reported that the nurse was allowed to independently initiate a new medication, (as stated in the text), so 2/3 of the data describe a situation that currently cannot exist in VA. So we left the text as is (other than to qualify that this is currently the case, leaving open the possibility that it could change.)</p>
<p>Page 21, line 27: Makes me curious about what criteria they failed on...</p>	<p>Those articles are included in the flow and in Appendix C</p>
<p>Page 25, line 9: very interesting</p>	<p>No response needed</p>
<p>Page 25, line 58: I wonder if more work on these article sets could be the basis for developing a better model for use in future studies like the ones you suggest. Just an idea.</p>	<p>A good suggestion for possible future ESP work.</p>
<p>This is a typically competent review from the ESP group from Greater Los Angeles that addresses several aspects of an important question: "what is the ideal structure for personnel in primary care?" It is puzzling and to some extent, disheartening, that this question remains unanswered more than 50 years after the "modern" primary care model was introduced. Given that this country employs tens of thousands of health professional in primary care, spends billions of dollars, and achieves less than satisfactory outcomes, it would seem that considerable effort would be devoted to this issue. Unfortunately, as this review delineates, there is still a dearth of high-quality data on the optimal strategy for deploying workforce in the primary care setting.</p> <p>Consistent with studies conducted in other contexts, this review supports the notion of a nurse care manager as a member of a primary care team. Apart from this, the available studies do not provide much needed, specific information about the ideal composition of the team. Missing</p>	<p>No response needed</p> <p>As the reviewer guessed, this information is, in general, not reported in the original research studies.</p>



	<p>from the review, and perhaps the studies included, was meaningful description of the clinical settings, including other personnel, characteristics of the clinic populations, IT resources, etc. These are key in understanding how the nurse care managers would function. VA, for example, includes nurse care managers on every team, but in many locations, they function more as ancillary providers, dealing with phone calls and urgent care, rather than true care managers who help to proactively shepherd a panel of patients.</p> <p>Another key “finding” of the review is that there is no consistency or uniformity in the literature with regard to key outcomes. Each study seems to have defined an idiosyncratic endpoint ranging from screening for specific conditions, to access, to comprehensive primary care. This makes it impossible to compare strategies.</p> <p>A few studies cited appear to address the critically important cost of increment cost/gain. Adding personnel invariably enhances some output but the decision that faces every manager is whether doing so results in outcomes that could be achieved in a simpler or less expensive manner. Again, however, without an appreciation for the baseline circumstances and resources, it is difficult to generalize these findings.</p> <p>As outlined by the authors, this review fits into a larger landscape of other literature that addresses more specific questions about team structures. Even so, however, the sum total remains unsatisfactory. There exists no consensus about how best to structure primary care in terms of cost and health outcomes. The authors are wholly correct that VA is in a strong position to address this issue though interventional trials. As the VA budget begins its inevitable cyclical contraction, the question about how to provide excellent care more efficiently would seem a high priority.</p>	<p>This is an excellent point and 1 we have added to the future research – namely the need for an agreed-upon metric to evaluate different team structures on.</p> <p>No response needed</p> <p>No response needed, but these are very cogent policy points</p>
	<p>Page 6 line 37: Not clear why the word "Occupations" is added at the end of the question</p>	<p>This was a typo! We have removed it.</p>



<p>Page 6 line 42: typo: should be "dedicated" not "dedicate"</p>	<p>This typo has been corrected</p>
<p>Page 7: not clear why there aren't 13 studies in the Certainty of Evidence Table</p>	<p>Some low quality studies don't contribute to certainty of evidence findings. As noted in the text, "We did not include as "findings" or rate for certainty of evidence conclusions based on results of single studies that were cross-sectional or pre-post in design."</p>
<p>Page 8: line 11: Advanced Practice Registered Nurses (APRN) are Licensed Independent Practitioner and have prescribing authority in the VA</p>	<p>The text was changed to indicate that this applies to RNs, not APNs or NPs</p>
<p>Page 12 Line 32: abbreviation PGS is not spelled out anywhere</p>	<p>Text changed to indicate that this is 1 of the authors</p>
<p>Page 15: flow chart: how were the initial 3,249 excluded?</p>	<p>This is based on titles that are obviously irrelevant</p>
<p>Page 17 Line 4: Typo: should be "implemented an" not "implemented and an"</p>	<p>This typo was corrected</p>
<p>Page 19 line 45: Typo:the word "time" should be removed</p>	<p>This typo was corrected</p>
<p>Page 24 line 40: should be "dedicated"</p>	<p>This typo was corrected</p>
<p>Page 24 line 43: see above re prescribing authority for nurses</p>	<p>This clarification was made (to indicate we are talking about teamlet RNs)</p>
<p>General question: could the Key Question have been revised to be broader in scope in order to obtain a greater number of articles and more information. Addition of grey literature? change in exclusion criteria?</p>	<p>This is a potentially good question for a future ESP review. There is a great deal of qualitative literature, and some quantitative literature, about team functioning that is not about team structure – it could be fruitful to evaluate this in depth.</p>
<p>Please update my affiliations: Karin Nelson, MD MSHS Director, Primary Care Analytic Team, VHA Office of Primary Care Professor of Medicine, University of Washington</p> <p>Would specify in introduction that PACT is a medical home model. Consider changing "work life of the health care workforce" to "wellbeing..."</p>	<p>This change was made.</p> <p>This was added.</p> <p>This change was made.</p>



	<p>Thanks!</p>	
	<p>Major: Throughout the document there is commentary that nurse prescribing authority is not available in VA. My understanding is that granting RNs this authority is not impossible, just not currently done. This authority may depend on state/regional laws, union positions, etc. Would not use absolute wording implying this is not something VA could consider pursuing.</p>	<p>This issue was also brought up by other reviewers, and changes have been made to indicate that this text is about teamlet RNs, not about APNs or NPs, and that it only describes the current situation, as it might change at some later date.</p>
	<p>Avoid wording stating providers are “dealing with” patients or health problems, it sounds pejorative.</p>	<p>We re-worded this to avoid any perception of pejorative language</p>
	<p>Page 16, line 38-39 – unclear what is meant by “proportion of physician FTE on the team”, this seems important as it is the team structure being tested (Bruhl, 2020)</p>	<p>We’ve added how this was defined by the authors of the article by Bruhl and colleagues</p>
	<p>Page 16, line 46 – it seems important to try to define what this study meant by ‘high-quality, comprehensive care’. Even if the study did not directly define the phrase, can some insight be gained based on what modeling assumptions they used – was there a quantified amount and type of care their models were calculating how to achieve (Meyers, 2018)</p>	<p>We looked hard for a definition and could not find it. We believe this was done by doing site visits at exemplar institutions with a reputation for delivering “high quality, comprehensive care”, and seeing what their staffing ratios are. But the articles never is explicit on this.</p>
	<p>Page 20, lines 23-32 – its not clear what the difference is between ‘medical scribe’ strategy and ‘ATBC’ strategy, and why the ATBC strategy is twice as ‘expensive’. Is ATBC done by a higher level professional? Or does it just require more time on the part of the scribe?</p>	<p>The original article is not more explicit than how these are described in the report, but we believe the difference is that the medical scribe is essentially taking dictation from the attending physician and entering it into the electronic health record. The ATBC strategy has medical assistants meeting with the patient, without the attending doctor being present, and completing a history and doing counseling and entering that information into the electronic health record, where it is briefly reviewed by the attending physician.</p>



	<p>Summaries state that chronic care managers can improve “some outcomes for some patients” – it would be more helpful to be more specific (e.g. ‘medication intensification for patients with DM or HTN’) and would not take much more space/word count.</p> <p>It seems in general that there is a theme of benefits from team members practicing at the top of their license / with increased authority, but within the guidance of PCP-written protocols or PCP partnership. This theme could be emphasized more in the take-aways/summaries.</p>	<p>These outcomes have been added to the text.</p> <p>This is a theme which is compatible with the results, but since this hypothesis wasn’t 1 explicitly tested we are reluctant to add it as a conclusion.</p>
	<p>Page 5 Line 17-18: “Thus, there are 3.0 full-time equivalent (FTE) staff for each PCP FTE” This ratio is often not achieved. More accurate to say “The model aims to provide 3.0 full-time equivalent...”</p>	<p>This clarification was made.</p>
	<p>Page 6, Line 37 – Suggest rewording this shorter version of KQ1 to better explain why it says “Occupations?”</p>	<p>The “Occupations” was a typo and has been removed.</p>
	<p>Page 6, line 53 – States pre-post studies were excluded but studies examining practices pre-post new team structures are specified elsewhere as included.</p>	<p>Pre-post studies were included as evidence, but we refrained from drawing conclusions if the only evidence was a single study that was pre-post in design.</p>
	<p>Page 8 – Appreciate examples of larger units for teamlets, suggest using colors such as red/blue/yellow that do not imply a hierarchy (in the current example, gold may be ‘best’, silver ‘second best’, etc)</p>	<p>This change was made.</p>
	<p>Page 14, lines 11 – Clarify what is meant by ‘measurement’ abstract.</p>	<p>We re-classified this study to have as its exclusion criterion that it was not about specific team member roles. It was a study reporting the development of a survey.</p>
	<p>Thank you for the opportunity to review this much needed review. Below are some minor suggestions, mostly clarifications, that would strengthen the quality of the reporting:</p> <p>1. p. 7, Certainty of evidence (COE) table -- a total of 13 publications were included in the review, but findings seem to be based only on the 6 studies in the COE table. What about the other 7? If the other 7 were "single studies that were cross-sectional or pre-post in design", then perhaps an additional row in the table summarizing these 7 is</p>	<p>The “missing” studies from the certainty of evidence table are the studies for which we did not deem it appropriate to create rows about their conclusions, as they would have to be rated as “Very Low” in their certainty of evidence, which is tantamount to saying we don’t know whether or not a conclusion is even directionally correct. We don’t think they can be summarized in 1 additional row and don’t believe they deserve a row each. Thus we continue to leave them out of the Certainty of Evidence table, but we added some text to</p>



	<p>warranted. Otherwise it is confusing to read about a k of 13 and only see 6 studies discussed in the table. Re: the 1 modeling study, you may also want to clarify that the fact that it is a modeling study decreases certainty (can't really tell from the table).</p>	<p>alert readers as to why the discrepancy between n=13 and n = 6. The modeling study is identified as a modeling study in the current table; we have added that this is a limitation</p>
	<p>2. Data abstraction (p. 12 line 32): Data extraction was completed by the PI, alone. Granted, this is not unusual in rapid reviews. Nonetheless, what measures were taken to ensure data accuracy given that only 1 person extracted the data (e.g., 10-20% check, structured database dropdowns to ensure consistency)?</p>	<p>The person who was supposed to be the second reviewer for this had to drop out due to COVID related family issues, and thus the review was completed by a single reviewer. There was no ability to do a data check.</p>
	<p>3. GRADE criteria (p. 12 line 52): It's not clear how the domains of risk of bias, imprecision, inconsistency, indirectness, and publication bias are used to arrive at the ratings of high-very low confidence in the effect estimate (quite frankly, the original BMJ papers that present the GRADE criteria aren't much more help). Perhaps walking the reader through an example would help connect the dots for the reader. Along related lines, please also provide more detail around the domains of risk of bias (are you equating this to "study limitations" as stated in the BMJ paper?) imprecision (of what? the effect estimate?) inconsistency (of results), indirectness (of evidence) and reporting bias. You may want to consider adding a little bit of similar detail for the risk of bias criteria discussed in lines 37-45 of page 12.</p>	<p>We agree that applying GRADE to situations other than tightly defined interventions summarized with meta-analytic methods can be challenging. We have added to the text (main body only, not in the Executive Summary) how we worked through the 1 finding that had something about Low certainty evidence, where we also explain how we operationalized each domain.</p>
	<p>4. Figure 1. I assume the "studies of adding other members to the team" were excluded? It might be more obvious to the reader to simply add "(excluded)" at the end of the title of that box that's just off on a corner by itself.</p>	<p>These were all excluded at the abstract phase, so we have added these numbers to the box in the flow about reasons for abstract rejection.</p>
	<p>5. Description of the Evidence (p. 16, lines 4-20). I understand that paragraph form is the traditional way of reporting this information. But I've never found it very useful, because you're describing each dimension separately. So you don't know, for example, if the 1 England study was also the 1 RCT. I think this descriptive information will come across far better in a simple table. With only 13 studies, you can just give the entire dataset (sorted by the most</p>	<p>This table has been added.</p>



	meaningful variable rather than alphabetically by author).	
	6. Response rate critique (p. 16 line 41). The Bruhl and colleagues study is critiqued for having a "low response rate", and this is cited as a limitation. 52% is considerably above average. Anseel et al. (2010) did a review and meta-analysis of survey study response rates and found that for surveys of employees in organizations (both web-based and paper-and-pencil) the median response rate is 41% (average 43%), and that rate decreases considerably the busier the type of respondent is (e.g., median response rate for top leadership is 31%). Further, if the sample is representative, the response rate is not nearly as much of an issue. Suggest reconsidering the impact of the response rate on the overall quality rating of the study.	When we are assessing risk of bias we don't as a rule "grade on a curve" – a low response rate is treated as an absolute, rather than how it fares relative to other similar studies. In this particular case, Bruhl and colleagues used an online survey instrument sent to 420 physician or NP/PAs assigned to Family Medicine care teams in 1 large, multi-state health system. Only just over half of providers responded. While the authors did present some basic demographics on the non-responders (somewhat more males, smaller teams, more physicians), in our view this is not nearly enough information on the non-responders to conclude that their burnout scores would be about the same as the responders, and thus non-response bias is a legitimate concern about the findings in this study, We did not make any change to the response rate critique.
	7. Appendix C. Only 63 references are listed in the excluded studies list. Yet Figure 1 (Flow diagram) identifies 201 studies that were excluded (129 at the abstract level, 72 at the full text level). Suggest listing all 201 in the appendix, organized by reason for exclusion at each stage (i.e., just like in Figure 1).	The abstract rejects have now been added to this.
Are the findings presented in a way that is helpful for decision-making? Do you have any recommendations on how this report can be revised to more directly address or assist with implementation?	I wonder if the helpfulness of the findings could have been enhanced by broadening the question or changing the exclusion criteria in order to increase the return of included publications. This might provide more evidence about the structure of teams and any outcomes related to different structures.	We can't change the key question at this stage, but exploring the qualitative and quantitative literature for information about what makes teams effective teams might be a promising topic for a new ESP review.
	Nice presentation	No response needed.



APPENDIX C. CITATIONS FOR EXCLUDED PUBLICATIONS

Abstract Excludes

Not Research (n=27)

1. Arevian, M., The significance of a collaborative practice model in delivering care to chronically ill patients: a case study of managing diabetes mellitus in a primary health care center. *Journal of Interprofessional Care*, 2005. 19(5): p. 444-51.
2. Badger, L.W., et al., The case for integration of social work psychosocial services into rural primary care practice. *Health & Social Work*, 1997. 22(1): p. 20-9.
3. Bodenheimer, T. and B.Y. Laing, The teamlet model of primary care. *Annals of Family Medicine*, 2007. 5(5): p. 457-61.
4. Bodenheimer, T. and R. Willard-Grace, Teamlets in Primary Care: Enhancing the Patient and Clinician Experience. *Journal of the American Board of Family Medicine: JABFM*, 2016. 29(1): p. 135-8.
5. Campbell, J.G. and A. Richard-Eaglin, Implementing an Integrated Team-Based Model of Care. *North Carolina Medical Journal*, 2018. 79(4): p. 228-229.
6. Corso, K.A. and D. Gage, Nurses and Psychologists Advancing the Patient-Centered Medical Home Model. *Nursing Administration Quarterly*, 2016. 40(3): p. 192-201.
7. Dahl-Popolizio, S., et al., Enhancing the value of integrated primary care: The role of occupational therapy. *Families, Systems, & Health*, 2016. 34(3): p. 270-80.
8. Falloon, D., The social worker. A member of the primary care team? *West Indian Medical Journal*, 1998. 47 Suppl 4: p. 28-30.
9. Fiscella, K. and S.H. McDaniel, The complexity, diversity, and science of primary care teams. *American Psychologist*, 2018. 73(4): p. 451-467.
10. Freund, T., et al., Skill mix, roles and remuneration in the primary care workforce: who are the healthcare professionals in the primary care teams across the world? *International Journal of Nursing Studies*, 2015. 52(3): p. 727-43.
11. Hahn, N. and W. Weart, The pharmacist's role in the optimal delivery of primary care in a managed care world. *Pharmacy Practice Management Quarterly*, 1996. 15(4): p. 36-43.
12. Jortberg, B.T. and M.O. Fleming, Registered dietitian nutritionists bring value to emerging health care delivery models. *Journal of the Academy of Nutrition & Dietetics*, 2014. 114(12): p. 2017-22.
13. Leasure, E.L., et al., There is no "i" in teamwork in the patient-centered medical home: defining teamwork competencies for academic practice. *Academic Medicine*, 2013. 88(5): p. 585-92.
14. Moore, T., et al., Increasing access to care using clinical pharmacy specialist providers in outpatient mental health: Successful practice integration within the Department of Veterans Affairs. *Journal of the American Pharmacists Association: JAPhA*, 2020. 09: p. 09.
15. Nigro, S.C., et al., Clinical pharmacists as key members of the patient-centered medical home: an opinion statement of the Ambulatory Care Practice and Research Network of the American College of Clinical Pharmacy. *Pharmacotherapy: The Journal of Human Pharmacology & Drug Therapy*, 2014. 34(1): p. 96-108.
16. O'Connor, P.J., L.I. Solberg, and M. Baird, The future of primary care. The enhanced primary care model. *Journal of Family Practice*, 1998. 47(1): p. 62-7.



17. Patterson, E., H. Muenchberger, and E. Kendall, The role of practice nurses in coordinated care of people with chronic and complex conditions. *Australian Health Review*, 2007. 31(2): p. 231-8.
18. Price, E., et al., Organisation of services for people with cardiovascular disorders in primary care: transfer to primary care or to specialist-generalist multidisciplinary teams? *BMC Family Practice*, 2014. 15: p. 158.
19. Raju, A., et al., The expanding role of Minnesota pharmacists in primary care. *Minnesota Medicine*, 2011. 94(10): p. 49-51.
20. Reckrey, J.M., et al., The critical role of social workers in home-based primary care. *Social Work in Health Care*, 2014. 53(4): p. 330-43.
21. Smith, M., et al., Why pharmacists belong in the medical home. *Health Affairs*, 2010. 29(5): p. 906-13.
22. Smith, M., D.W. Bates, and T.S. Bodenheimer, Pharmacists belong in accountable care organizations and integrated care teams. *Health Affairs*, 2013. 32(11): p. 1963-70.
23. Soan, E.J., et al., Exercise physiologists: essential players in interdisciplinary teams for noncommunicable chronic disease management. *Journal of multidisciplinary healthcare*, 2014. 7: p. 65-8.
24. Stephens, L., Family nurse practitioners: "value add" in outpatient chronic disease management. *Primary Care; Clinics in Office Practice*, 2012. 39(4): p. 595-603.
25. Taylor, E.F., et al., Enhancing the primary care team to provide redesigned care: the roles of practice facilitators and care managers. *Annals of Family Medicine*, 2013. 11(1): p. 80-3.
26. Vrijhoef, H.J., et al., The nurse specialist as main care-provider for patients with type 2 diabetes in a primary care setting: effects on patient outcomes. *International Journal of Nursing Studies*, 2002. 39(4): p. 441-51.
27. Yang, Y.T. and M.R. Meiners, Care Coordination and the Expansion of Nursing Scopes of Practice. *Journal of Law, Medicine & Ethics*, 2014. 42(1): p. 93-103.

Not about Specific Team Member Roles in TBPC (n=24)

1. Annis, A.M., et al., Trends in primary care encounters across professional roles in PCMH. *American Journal of Managed Care*, 2018. 24(7): p. e222-e229.
2. Blumenthal, K.J., A.T. Chien, and S.J. Singer, Relationship among team dynamics, care coordination and perception of safety culture in primary care. *Family Practice*, 2018. 35(6): p. 718-723.
3. Diop, M., et al., Does enrollment in multidisciplinary team-based primary care practice improve adherence to guideline-recommended processes of care? *Quebec's Family Medicine Groups, 2002-2010. Health Policy*, 2017. 121(4): p. 378-388.
4. Engels, Y., et al., The effects of a team-based continuous quality improvement intervention on the management of primary care: a randomised controlled trial. *British Journal of General Practice*, 2006. 56(531): p. 781-7.
5. Giannitrapani, K.F., et al., Role expansion on interprofessional primary care teams: Barriers of role self-efficacy among clinical associates. *Healthcare*, 2016. 4(4): p. 321-326.
6. Grol, S.M., et al., The role of the general practitioner in multidisciplinary teams: a qualitative study in elderly care. *BMC Family Practice*, 2018. 19(1): p. 40.
7. Hall, T.L., et al., Understanding adaptations to patient-centered medical home activities:

- The PCMH adaptations model. *Translational Behavioral Medicine*, 2017. 7(4): p. 861-872.
8. Henschen, B.L., et al., Four-Year Educational and Patient Care Outcomes of a Team-Based Primary Care Longitudinal Clerkship. *Academic Medicine*, 2015. 90(11 Suppl): p. S43-9.
 9. Hung, D.Y., et al., Experiences of primary care physicians and staff following lean workflow redesign. *BMC Health Services Research*, 2018. 18(1): p. 274.
 10. Jones, S.M.W., et al., Measuring attributes of team functioning in primary care settings: development of the TEAMS tool. *Journal of Interprofessional Care*, 2020. 34(3): p. 407-413.
 11. Kayingo, G., et al., Primary Care Teams, Composition, Roles, and Satisfaction of PA Students During Primary Care Rotations. *The Journal of Physician Assistant Education*, 2015. 26(2): p. 88-92.
 12. Laberge, M., et al., Costs of health care across primary care models in Ontario. *BMC Health Services Research*, 2017. 17(1): p. 511.
 13. Laberge, M., et al., Hospitalizations for ambulatory care sensitive conditions across primary care models in Ontario, Canada. *Social Science & Medicine*, 2017. 181: p. 24-33.
 14. Ladebue, A.C., et al., The experience of Patient Aligned Care Team (PACT) members. *Health Care Management Review*, 2016. 41(1): p. 2-10.
 15. Levesque, J.F., et al., Dimensions and intensity of inter-professional teamwork in primary care: evidence from 5 international jurisdictions. *Family Practice*, 2018. 35(3): p. 285-294.
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Full Text Excludes

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APPENDIX D. RISK OF BIAS TOOL

Risk of Bias Assessment for Included RCT

Author, year	Random sequence generation	Allocation concealment	Blinding of participants and personnel	Blinding of outcome assessment	Incomplete outcome data	Selective reporting
Litaker, 2003 ¹²	Unknown	Unknown	High risk	High risk	Low risk	Low risk

Risk of Bias for Included Observation Studies with Control

Author, year	Confounding	Selection bias	Bias in measurement classification of interventions	Bias due to deviations from intended interventions	Bias due to missing data	Bias in measurement of outcomes	Bias in selection of reported results
Ohved, 2000 ⁸	High risk	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk
Dorr, 2006 ¹⁵	High risk	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk