RESEARCH ARTICLE

The Benefits and Challenges of Interprofessional Training Programs Implemented to Increase Access to Primary Care for Medicaid Enrollees

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Abstract

Background: Interprofessional (IP) care teams that bring together health care providers from multiple disciplines can provide a broader scope of services and enhance efficiency so as to increase availability of providers. The use of IP teams may be of particular benefit for Medicaid enrollees who experience difficulty accessing care given socioeconomic barriers and limited provider availability. However, IP training is critical to ensure that health and social service providers understand their roles on these teams. Our study sought to understand the benefits and challenges of IP training programs, including how such programs could help improve access to health care for underserved populations.

Methods: We conducted a qualitative study across 10 health care organizations where IP training programs had been implemented. Learners, preceptors, and program staff were interviewed and asked about the structure of the programs, individual roles within the programs, and satisfaction with the programs. Interviews were transcribed and analyzed using rigorous qualitative methods.

Results: Two types of IP training programs were identified: those offering a specific program that integrated behavioral health and primary care, and those offering a general program that included multiple types of providers. Benefits of IP training included expanded access to primary care providers, increased ability to deliver 'whole person care' that addressed social determinants of health, and improved support across disciplines. Challenges included navigating logistics of integrating IP trainees into a program, changing expectations about approaches to IP care delivery, technology issues, and funding.

Conclusions: IP training programs can increase access to care for Medicaid enrollees and improve primary care delivery by increasing the number of trained providers and improving the capacity of organizations to deliver care that addresses social determinants of health. Addressing challenges around logistics, technology, and funding can help IP training programs succeed and sustain their efforts to improve care for Medicaid enrollees.

Keywords: Interprofessional training, interprofessional teams, primary care provision, social determinants of health, Medicaid

1. Introduction

Access to primary care for Medicaid enrollees is a persistent challenge in the U.S. health care system[1-4] with studies citing an insufficient number of primary care providers who accept Medicaid as a significant contributor to limited access.[5] While the Affordable Care Act (ACA) increases payments to providers who treat Medicaid enrollees, gaps in care access for these patients still endure.[3,6,7]

One potential solution to the problem of insufficient numbers of primary care providers who accept Medicaid has been to promote the use of interprofessional (IP) teams.[8] In primary care, IP teams may include physicians, nurses, mental health professionals, physiotherapists, pharmacists, dietitians, midwives, social workers, and community health workers.[9,10] These teams work together to collaboratively manage a panel of patients and are composed of

members that contribute unique skills and take on distinct responsibilities, facilitating a broader scope of patient care than could otherwise be accomplished by a single provider. Furthermore, the IP team model of care provision can allow other team members to help primary care providers manage their workload as immediate referrals and consults can occur when needed given the participation of other IP team members.[11] As a result, the efficiency of the primary care workflow and provider availability to see more patients may both be increased.[12]

In order to implement efficient and effective IP care teams, team members must be trained and oriented to the IP team-based primary care model, a deviation from the siloed manner in which health professionals are traditionally educated.[13] Such training can occur in the context of IP primary care education programs, wherein trainees (e.g., residents, students) from multiple professions (e.g., physicians, nurses, behavioral health, pharmacy, etc.) learn to collaboratively provide primary care. Common aspects of these programs include shared curricula across disciplines, team-based learning, simulation, and didactic teaching methods.[14,15] Such programs also aim to develop non-technical skills including responsibility, communication, accountability, and trust.[15,16] The need for this model of education is now greater than ever so that IP care teams can be capable of managing complex conditions and providing high-quality care to all patients they serve.

While the use of IP teams is expanding, less is known about how organizations are training and preparing providers to work in an IP care team model.[17] Our study aimed to improve our understanding of IP training in the context of organizational efforts to expand patients' access to primary health care services. We examined IP training programs implemented through a workforce development initiative, the Ohio Medicaid Technical Assistance and Policy Program (MEDTAPP), that was designed to increase access to primary care providers for the state's Medicaid enrollees.

2. Materials and Methods
2.1 Study Design
Using a multiple case study design, we conducted in-person site visits to the 10 Ohio sites that had implemented IP training programs through the MEDTAPP program. Site visits were conducted between May 2015 and June 2016 and involved interviews with key stakeholders who had been involved in the implementation of IP training programs as well as learners participating in those programs. In addition, prior to the site visits, we reviewed all background documents pertaining to the program. Our study was approved by the Institutional Review Board of The Ohio State University.

2.2 Data Collection
As our first step in data collection, we conducted semi-structured telephone interviews with lead administrators from each of the programs to understand the overall structure of the training program and what types of activities it offered. Then, at least three members of the research team conducted an in-person visit to conduct interviews and view program sites. Interviewees from the sites included lead administrators, faculty members, learners who took part in the training, and program placement site advisors. A list of interviewee roles and numbers of interviewees is presented in Table 1. In some cases, we also visited program placement sites to conduct additional interviews with program staff, learners, and faculty members.

Table 1: Interviewees, by Role

Interviewee Role	Number Interviewed
Program Leaders	52
Program Staff	118
Placement Site Staff	25
Program Learners	70
Total	**265**

We used a semi-structured guide to conduct all interviews. The interview guide included questions about the interviewee's role in the program, activities the program site offered, general perspectives about participation in IP training programs, opportunities for learners after training, and satisfaction with the program. When key stakeholders were absent during the site visit, we interviewed these individuals by telephone after the site visit. All interviews were audio recorded and transcribed verbatim for analysis.

2.3 Data Analysis

Our analysis approach utilized the constant comparative method of qualitative data analysis and standard techniques to code our interview data.[18] We took an iterative approach which included reading interview transcripts as well as reviewing relevant available literature. A coding team, led by the lead investigator, first created a preliminary coding dictionary defining broad categories of findings from the transcripts. Following Constas' approach, we then classified our broad codes into themes.[19] A coding team of three members met frequently throughout the coding process to ensure consistency in coding as well as review any new codes or themes that emerged.[20] We used the ATLAS.ti software program to support the coding process.[21]

3. Results

We found three main categories of findings in our analysis of IP training programs. These included 1) characterizing different approaches to IP training; 2) identifying the perceived benefits of IP training; and 3) noting the challenges of implementing IP training programs. We describe these findings in greater detail below and include comments from our interviewees as additional supporting evidence.

3.1 Approaches to IP Training

We found two main approaches to IP training: (1) training programs that focused on integrating behavioral health and primary care; and (2) general training programs that incorporated a range of disciplines in a broader IP training model. Notably, both types of training programs included a range of learner types and various disciplines such as medical students, nursing and social work students, residents and physicians from both primary care and psychiatry, pharmacy residents and pharmacists, community health workers, and nurse practitioners. However, the programs focused on the integration of behavioral health and primary care services did not cover additional primary care needs such as dentistry, for example, or care provision in alternative settings, such as through school-based health centers. As one interviewee of a focused training program described, *"And so these were preceptors who were, and are, very seasoned clinical therapists, counselors more traditionally trained in the mental health world. And we wanted them to learn how to do behavioral health care within a primary care setting, and then be able to teach the students how to do that."* In contrast, descriptions of the more

general programs listed participants beyond behavioral health providers. For instance, one interviewee reflected, *"Pharmacy, nursing, medicine, and some of the health professions, and health and rehabilitation sciences,* *dietetics, respiratory therapy, and PT [physical therapy] primarily."* Additional comments describing these alternative programmatic approaches are provided in Table 2.

Table 2: Approaches to IP Primary Care Education Programs

Program Approach	Interviewee Comment
Focused Approach to Integrate Behavioral Health and Primary Care	"Functioning in a fully embedded way in a primary care clinic means that you are often not going to have prescheduled appointments when you go in. You are going to be serving in more of a consultative role in the moment, very dynamic. Physician is in seeing the patient and he or she kind of breaks down the barriers and it's obvious about what's going on. The physician will actually, with the patient's permission, invite the behavioral health consultant into the exam room to have a 15-minute in-the-moment session with this patient." "So, everybody needs to be trained in an interdisciplinary way that they understand what each other does, that they learn to appreciate and value what one another does, and kind of see the end-goal, what that means for patient care and patient outcomes and to always kind of keep that as your focus. Think about patient flow. One of our big challenges, um, and every time we go into a new center we have this challenge, is by bringing behavioral health services in, by bringing students in, you're changing your patient flow. And that has…gonna have an impact on productivity, it's gonna have an impact on how people do their work. How…thinking about at what point do you want to introduce behavioral health screens, who's gonna do them, who's gonna score them, how do you get in touch with…how do you bring the behavioral health person into the team care. So, the whole patient flow process and for every center it's different." "And we realized now how much we didn't know at the time about how complicated doing behavioral health integration is…it looks really good on paper but when you start to do it, it's very very messy for a variety of reasons…clinically, and also organizationally and in terms of documentation and making it sustainable… And in terms of who, who knows how to do it. You know, no one really knew how to do it, and we had to learn how to do it. The supervisors had to learn how to practice integrated care so they could train the students in doing it and so I feel like at this point, we've definitely mastered that."
Broad Approach to Incorporate a Range of Disciplines	"They're using an interprofessional model, which is communication, team work, collaboration, roles and ethics, so they kind of try to incorporate those into each case conference every month, to understand where someone would be coming from as a physician, or as an advanced nursing provider how those might differ, how you might collaborate, and things like that that are brought into the discussion, which also surrounds underserved issues and things related to that."

	"All the health professions are invited, so medicine, dentistry, nursing, social work is invited as well, vet med [veterinary medicine] is invited as well, optometry, pharmacy, so all the students get together there. Um, they're jumbled up in groups, and so they're distributed amongst, I think it is about 32 groups and they do role exploration, as well as case-based discussion." "Well…in terms of interprofessional teams, Ohio was one of the pioneers and one of the real leaders in getting mental health courts and juvenile drug courts into you know, into existence, particularly the juvenile ones. And…[city] is one of the very few in the nation that has a juvenile drug court. And it's just about the only one, I believe, that actually has psychiatric services in house at the juvenile hall for that service, which is just absolutely remarkable. …And it allows us to interface with the juvenile justice system, with all of the psychologists and the ACT [Assertive Community Treatment] teams that go out into the community. It's just a remarkable synergy of the legal system and the psychiatric system and then the psychology...the therapeutic community."

3.2 Benefits of IP Training

A majority of interviewees were very positive about the benefits of IP training, and described both benefits to the learners who received the training as well as to the patients who then received care from IP teams. We identified four main types of benefits of this training: 1) expanded access to primary care providers; 2) increased ability to deliver 'whole person care'; 3) increased support across disciplines; and 4) increased confidence and employability of IP-trained learners. We describe these benefits in greater detail below, and provide additional exemplary quotes in Table 3.

Table 3: Benefits of IP Primary Care Education Programs

Program Benefit	Interviewee Comment
Expanded Access to Primary Care Providers	"We've provided an opportunity for patients to take away the long waiting time and have this nice access to psychiatry services, so I think without the grant, you know that that, that wouldn't be possible, that's very beneficial for the patients, and there's also a huge benefit I think in terms of the learning that's going on." "I feel like we are doing like, like 10 times better at least, and that's not an exaggeration, than what we used to do…we used to have a long waiting list to access our services in the child psychiatry area because we had a fairly traditional kind of referral system, where the pediatricians would refer to us, and now we essentially have like almost no waiting list because the services are being delivered in the primary care clinic. Now we have an integrative care clinic with our interns…. We have fully staffed and we're growing in the ability to take care of kids in the pediatric clinic where there are 50,000 children a year seen."
Increased Ability to Deliver 'Whole Person Care'	"Now that even just the residents having to learn, 'No wait a minute, no we've got these behaviorists here right in our clinic, we don't have to go that whole route of referral,' you know, so there was a bit of a learning curve for that as well. Just you know, them realizing, 'Oh that's right we have the warm hand off here, we've got the psychologists and the counselors here.' They can refer to

	psychiatry, but it seems now that everybody's kind of well aware of how it works." "…I mean they just, I mean to watch the other professions' jaws just drop when you see a social worker get engaged, like, 'Oh my gosh I didn't know those resources were out there for these patients too…'"
Increased Support Across Disciplines	"I found just in practice with multidisciplinary teams, I think the importance of them is there are so many resources out there unless you are meeting as a multidisciplinary team, so many of them get underutilized; the resources available to the patient and when you are meeting as an interdisciplinary team you want to know the tricks of the trade, and who to lean on, and who to ask, uh, for input from, I just find that very helpful, and you know this MEDTAPP certainly reinforces that." "So, I mean we, I kind of just talked, I found myself; I had a couple of patients who needed the help of the mental health counselor so, I thought I could just turn to her and ask her questions, and some of the other staff, the MAs [medical assistants], knew these patients well, they were able to give me some background. I think that it is really helpful that we have that kind of team-based training working with the different staff members and they are so willing to help us."
Increased Confidence and Employability of IP-Trained Learners	"So, to give me an opportunity to learn a little bit more about, like I said before, where my scope starts, where it stops, who I can refer to, and kind of have a little bit more of that friendly feel with some of the other professions and the familiarity was extremely appealing for me." "…trying to introduce medical personnel to the way that the oral health and hygiene has an impact on systemic health and they were…and that's definitely an opportunity for interdisciplinary collaborative efforts to be made, especially within a community health center setting whereas there's not necessarily as many opportunities for medical and dental to work alongside one another and both can learn their value…"

First, programs typically included an experiential component to the training which interviewees noted enabled providers to expand patients' access to primary care. For instance, one interviewee noted that IP training can expand capacity to serve underserved patients as residents/fellows could see more patients than a single supervisor: "*It really helps our ability to provide…basically the time that I need to carve out to supervise them. If I was seeing folks clinically, I could not see nearly as many as they can. …They can see a lot more people than I can see in just the time that I need to carve out to supervise their interactions.*" In addition, with IP training, access to providers could be expanded to new locations, something that was particularly important in smaller communities. One interviewee described offering an IP program in a school, explaining, "*So, being integrated into that school and making relationships and establishing trust and having an actual presence…we're doing chart reviews on anyone that enrolls in our program…looking at what are their actual health needs, have they had a well child visit, have they had immunizations, do they have chronic diseases such as asthma and diabetes and we've done outreach letters…are now starting to do follow-up phone calls to the families.*"

Another benefit of IP training involved the ability for trained learners to provide 'whole person care' that addressed

social determinants of health. As one staff member noted, *"It's really helped us develop a number of really innovative strategies to address the mental health and behavioral health needs of the children. ...Our staff has grown and the pediatricians who are on staff who have benefited...they have become much more skilled at addressing mental health issues and collaborating with the mental health staff on managing those problems."* Another interviewee similarly explained this benefit, *"I am one of the FQHCs [Federal Qualified Health Centers] and I love it, because it is very interdisciplinary, if we have a patient who we feel is struggling with a mental health issue we have, we literally just walk down the hallway and grab the behavioral health counselor or the therapist and say, 'Hey can you just pop in and meet this patient?'"*

A third benefit highlighted by interviewees involved an increased sense of support across disciplines. One interviewee reflected, *"I think it [MEDTAPP] expanded opportunities to share with interdisciplinary, interprofessional health care providers regarding a different approach...to Medicaid populations about health behaviors, or the lack thereof. And so it allowed, number one, us to bring together psychologists and psychiatrists and family docs and train them together, to help them see that this truly is kind of a team effort in working with patients regarding behaviors. And we also had students involved in that as well as faculty."* This collegiality was also noted in descriptions of how the culture was changing around care delivery: *"So the culture has changed over time, which is really cool because they really see the value. They saw it before but now they really see the value of having a behavioral medicine person being there. ...Also, having the Family Medicine residents and physicians being able to understand the value of having a behavioral medicine person and what they bring to a team."*

Finally, learners also reported more confidence with their roles as IP-trained individuals. As one learner told us, *"...during each of those sessions it was very interesting to see what types of questions the general medicine student asked versus the types of questions I asked, and then we also saw how they implemented diagnostic and treatment as well."* Interviewees also noted that employers valued the training learners received in IP programs. As one interviewee told us, *"I had a couple of MEDTAPP program graduates last year that that's one of the reasons that [hospital] hired them."* A learner reflected, *"I didn't realize, you know, how much they do and how much we work together you know...I had no idea that they could diagnose a lot of mental health disorders, so for me that was really interesting."*

3.3 Challenges of Implementing IP Training Programs

Interviewees described four main challenges of developing, implementing, and sustaining their IP training programs: 1) navigating logistics of integrating IP trainees into a program; 2) changing expectations about approaches to care delivery; 3) technology issues; and 4) funding.

Table 4: Challenges of Implementing IP Primary Care Education Programs

Program Challenge	Interviewee Comment
Navigating Logistics of Integrating IP Trainees into a Program	"So, we kind of first had to figure out first, how are all the learners going to be fitting in schedule wise and then we're…and office wise, and then we're getting that layer first, and then we're going to be looking at okay how do we layer on an interdisciplinary case conference to [hospital], and then we'll be layering on a kind of a community-based project to [school], so that's kind of where we kind of see the [school] learning center as being able to try to integrate these different pieces." "When you are doing something that nobody else in the city is doing it takes some time to get that set up. So, that was pretty much what we spent the first year doing."
Changing Expectations about Approaches to Care Delivery	"And clinicians need to be taught how to work in an integrated environment clinically. Not just being good team members but clinically how do you modify, how do you practice in order to work in integrated care settings." "And again, you know now therapists it's sacred, you don't interrupt them when they're in session. Well when you're in the primary care office you just have to get over that sacred thing and realize that you are going to be interrupted if the physician has what they consider an urgent or emergent situation."
Technology Issues	"If I need to let them know, it's…I will contact…call them and there's sometimes I will send something, but of course because, in email with the university, has to be secured. So, I don't have access to their EHR [electronic health record] records that they have on their patients. So, what I…there's no names, nothing mentioned, so I will say, 'Saw client, will update you at the next meeting.' Or something like that, I will…or very very little, we don't do the whole…because I'm not a part of… I don't have access, so obviously I can't put all of that information out there." "…but we had huge issues with access to the internet through [clinic]. So, for two years, we actually have been working with [clinic] and the college of social work to figure out how we can have internet access, unblocked, to let students be able to find resources for patients because that's primarily what they were using those…the iPads for…was to look up resources. Then we had issues with printing because our iPads weren't connected to their, uh, printers. They're very locked down, as you can imagine, with HIPAA [Health Insurance Portability and Accountability Act]. and everything, so we had a separate internet system that came and went based on kind of how connectivity was, but after two years, we finally got to a point and this was…students talked about this, that having a lack of internet access is a barrier to our provision of care."
Funding	"Forgive me for being Captain Obvious but the issue is not so much openness to team training or even venues as it is support for the people and you know what we've had to deal with as a child psychiatry residency is the fact that our residents get very little CMS [Centers for Medicare and Medicaid Services] funding."

	"I think it's having funding to have physicians and faculty there, I think. I don't know if we would be able to do that, the funding piece. We're still trying to figure out the sustainability of some of this as we go forward, 'cause it's an important place for them to be, it's meeting a community need but we're really trying to figure that out."

Across sites studied, interviewees frequently mentioned logistical challenges they faced in integrating the role of IP trainees with existing clinic practices. For instance, one interviewee described the challenge of moving from the concept of providing IP care to implementation: *"It's such a culture shift and you don't kind of understand what it means on paper but then actually learning each other's language and using the correct terms and all of the acronyms and the things that would just get lost in the shuffle when you're not used to working on the opposite side of it."* In contrast, interviewees described when they had overcome this challenge and increased awareness and understanding, as indicated by comments in Table 3.

Another challenge noted involved the need to explicitly change expectations about how care could be delivered when using an IP model. In this context, the importance of recognizing different approaches by professions had to be countered by the need to accommodate IP approaches to care. This issue was particularly salient when the setting did not accommodate the new approach to care. As one provider noted, *"One of the challenges is we have to simultaneously train students and their supervisors because the supervisors don't necessarily have the skills that we're trying to teach the students. And that's been interesting."* Similarly, another participant explained, *"We thought that this would be the way to do it, would be to collaborate with other mental health agencies who already know what they're doing. But what we learned is that what they do is different from what we do inside the centers."*

Challenges with technology and funding made up the remaining issues highlighted around implementing and sustaining IP training programs. With respect to technology, the most common barrier noted involved the challenge of having different systems in use in different locations. As one interviewee lamented, *"That's one of our biggest problems is we have different computer systems, so we don't know who is receiving mental health services."* Funding was also frequently mentioned as a challenge, with the need for ongoing funding highlighted as a specific barrier to the long-term sustainability of IP training programs over time.

4. Discussion

IP primary care training programs have the potential to improve access to care as well as outcomes for patients in underserved areas by expanding the availability of primary care providers, but the experiences of such programs have been varied. Programs included in our study took different approaches to educating IP teams including programs that integrate behavioral health and primary care versus broad training for IP team members across a range of disciplines. With respect to increasing the availability of primary care services, IP training programs appeared to enable physicians to focus on providing clinical care and free up time that might otherwise be spent dealing with issues somewhat outside their expertise so that appointments could be shortened and more appointments made available. Research supports the use of IP teams to improve access to care,[22,23] and future research can investigate the

opportunities created by IP training programs in particular.

In addition, as the failure to address social determinants of health has been linked to poorer patient outcomes across a range of settings,[24-26] the potential for IP training to heighten awareness about this issue was also clear in our study. Interviewees described the ways in which IP programs trained learners to address social determinants of health through direct instruction, by providing opportunities to work with patients dealing with these issues, and by reinforcing cross-disciplinary approaches to care that collaboratively address patients' social contexts. Previous studies have shown that early exposure to patients who are challenged by their social determinants of health can have a lasting impact on medical professionals,[27-29] thus, IP training programs that offer learners the opportunity to work with patients and multi-disciplinary providers to address social determinants of health may be more likely to continue with this focus throughout their careers.

Furthermore, evidence suggests that interactions with individuals from other disciplines can improve providers' knowledge and skills, help them to collaborate with colleagues, and increase their understanding of the issues their patients face.[30-32] Learners who participated in our interviews described their appreciation for the availability of other professionals with whom they could consult easily or to whom they could immediately refer a patient in need of care outside their area of expertise. This appeared particularly relevant for primary care residents who could discuss a case with a psychiatry resident or with a behavioral health specialist co-located in the clinic, highlighting the important opportunities presented by IP programs that promote and teach tools to facilitate these types of interactions.

At the same time, interviewees noted challenges to implementing IP education programs, many of which were similar to the patient-centered medical home literature.[33,34] Future work should investigate how to best address such challenges to ensure effective implementation and use of IP training programs within health care organizations that can improve care access and outcomes for their underserved populations.

5. Conclusion

IP education programs can increase the availability of trained providers able to serve Medicaid enrollees, including enhancing organizations' capacity to address the social determinants of health in ways they cannot without IP teams. Addressing challenges such as the need for increased interoperability of electronic health record systems and ensuring funding to allow practitioners in different disciplines to provide multi-disciplinary care can both improve enrollees' access to primary care and enhance providers' ability to deliver primary care that is appropriate for the needs of the patient populations served.

6. References

1. Abdus S, Mistry KB, Selden TM. Racial and ethnic disparities in services and the patient protection and affordable care act. *Am J Public Health*. 2015;105(S5):S668-675. doi: 10.2105/AJPH.2015.302892.

2. 2016 National healthcare quality and disparities report. Rockville, MD: Agency for Healthcare Research and Quality. 2016. Available from: http://www.ahrq.gov/research/findings/nhqrdr/nhqdr16/index.html.

3. Alcala HE, Roby DH, Grande DT, McKenna RM, Ortega AN. Insurance type and access to health care providers and appointments under the Affordable Care Act. *Med Care*. 2018;56(2):186-192. doi: 10.1097/MLR.0000000000000855.

4. Sharma R, Tinkler S, Mitra A, Pal S, Susu-Mago R, Stano M. State Medicaid fees and access to primary care physicians. *Health Econ*. 2018;27(3):629-636. doi: 10.1002/hec.3591.

5. Decker SL. In 2011 nearly one-third of physicians said they would not accept new Medicaid patients, but rising fees may help. *Health Aff (Millwood)*. 2012;31(8):1673-1679. doi: 10.1377/hlthaff.2012.0294.

6. Golberstein E, Gonzales G, Sommers BD. California's early ACA expansion increased coverage and reduced out-of-pocket spending for the state's low-income population. *Health Aff (Millwood)*. 2015;34(10):1688-1694. doi: 10.1377/hlthaff.2015.0290.

7. Neprash HT, Zink A, Gray J, Hempstead K. Physicians' participation in Medicaid increased only slightly following expansion. *Health Aff (Millwood)*. 2018;37(7):1087-1091. doi: 10.1377/hlthaff.2017.1085.

8. Morgan S, Pullon S, McKinlay E. Observation of interprofessional collaborative practice in primary care teams: an integrative literature review. *Int J Nurs Stud*. 2015;52(7):1217-1230. doi: 10.1016/j.ijnurstu.2015.03.008.

9. Franklin CM, Bernhardt JM, Lopez RP, Long-Middleton ER, Davis S. Interprofessional teamwork and collaboration between community health workers and healthcare teams: an integrative review. *Health Serv Res Manag Epidemiol*. 2015;2:2333392815573312. doi:10.1177/2333392815573312.

10. Supper I, Catala O, Lustman M, Chemla C, Bourgueil Y, Letrilliart L. Interprofessional collaboration in primary health care: a review of facilitators and barriers perceived by involved actors. *J Public Health*. 2015;37(4):716-727. doi: 10.1093/pubmed/fdu102.

11. Rasin-Waters D, Abel V, Kearney LK, Zeiss A. The integrated care team approach of the department of Veterans Affairs (VA): geriatric primary care. *Arch Clin Neuropsychol*. 2018;33(3):280-289. doi: 10.1093/arclin/acx129.

12. Altschuler J, Margolius D, Bodenheimer T, Grumbach K. Estimating a reasonable patient panel size for primary care physicians with team-based task delegation. *Ann Fam Med*. 2012;10(5):396-400. doi: 10.1370/afm.1400.

13. Institute of Medicine Committee on the Health Professions Education Summit. Health professions education: a bridge to quality. Washington DC: National Academies Press. 2003. Available from: https://www.ncbi.nlm.nih.gov/books/NBK221525/.

14. West C, Graham L, Palmer RT, Miller MF, Thayer EK, Stuber ML, et al. Implementation of interprofessional education (IPE) in 16 U.S. medical schools: common practices, barriers and facilitators. *J Interprof Educ Pract*. 2016;4:41-49. doi: 10.1016/j.xjep.2016.05.002.

15. Harada ND, Traylor L, Rugen KW, Bowen JL, Smith CS, Felker B, et al. Interprofessional transformation of clinical education: the first six years of the Veterans Affairs Centers of Excellence in Primary Care Education. *J Interprof Care*. Feb 2018:1-9. doi: 10.1080/13561820.2018.1433642.

16. Bridges DR, Davidson RA, Odegard PS, Maki IV, Tomkowiak J. Interprofessional collaboration: three best practice models of interprofessional education. *Med Educ Online*. 2011;16:6035. doi: 10.3402/meo.v16i0.6035.

17. Pecukonis E, Doyle O, Bliss DL. Reducing barriers to interprofessional training: promoting interprofessional cultural competence. *J Interprof Care*. 2008;22(4):417-428. doi: 10.1080/13561820802190442.

18. Glaser BG. The constant comparative method of qualitative analysis. *Soc Probl*. 1965;12(4):436-445. doi: 10.1525/sp.1965.12.4.03a00070.

19. Constas MA. Qualitative analysis as a public event: the documentation of category development procedures. *Am Educ Res J*. 1992;29(2):253-266. doi: 10.2307/1163368.

20. Corbin JM, Strauss A. Grounded theory research: procedures, canons, and evaluative criteria. *Qual Sociol*. 1990;13(1):3-21. doi: 10.1007/BF00988593.

21. ATLAS.ti (version 6). Berlin, Germany: Scientific Software Development.

22. Green BN, Johnson CD. Interprofessional collaboration in research, education, and clinical practice: working together for a better future. *J Chiropr Educ*. 2015;29(1):1-10. doi: 10.7899/JCE-14-36.

23. Levinson DR. Access to care: provider availability in Medicaid managed care: Department of Health and Human Services, Office of Inspector General. 2014. Available from: https://oig.hhs.gov/oei/reports/oei-02-13-00670.pdf.

24. Baker A, Cronin K, Conway PH, DeSalvo KB, Rajkumar R, Press MJ. Making the comprehensive shared care plan a reality. *NEJM Catalyst*. 2016. doi: 10.1056/CAT.16.0838.

25. Hewner S, Casucci S, Sullivan S, Mistretta F, Xue Y, Johnson B, et al. Integrating social determinants of health into primary care clinical and informational workflow during care transitions. *eGEMs*. 2017;5(2):2. doi: 10.13063/2327-9214.1282.

26. Sullivan SS, Mistretta F, Casucci S, Hewner S. Integrating social context into comprehensive shared care plans: a scoping review. *Nurs Outlook*. 2017;65(5):597-606. doi: 10.1016/j.outlook.2017.01.014.

27. Holmqvist M, Courtney C, Meili R, Dick A. Student-run clinics: opportunities for interprofessional education and increasing social accountability. *J Res Interprof Pract Educ*. 2012;2(3):264-277. doi: 10.22230/jripe.2012v2n3a80.

28. Tong STC, Phillips RL, Berman R. Is exposure to a student-run clinic associated with future primary care practice? *Fam Med*. 2012;44(8):579-581.

29. Feldman CT, Morici B, Goodrich S. Early exposure to underserved patients and its impact on initial employment decisions regarding physician assistants.

J Physician Assist Educ. 2018;29(3):144-149. doi: 10.1097/JPA.0000000000000213.

30. Jones MD, Jr., McGuinness GA, First LR, Leslie LK. Linking process to outcome: are we training pediatricians to meet evolving health care needs? *Pediatrics*. 2009;123(Suppl 1):S1-7. doi: 10.1542/peds.2008-1578C.

31. Vickery KD, Rindfleisch K, Benson J, Furlong J, Martinez-Bianchi V, Richardson CR. Preparing the next generation of family physicians to improve population health: a CERA study. *Fam Med*. 2015;47(10):782-788.

32. Lochner J, Lankton R, Rindfleish K, Arndt B, Edgoose J. Transforming a family medicine residency into a community-oriented learning environment. *Fam Med*. 2018;50(7):518-525. doi: 10.22454/FamMed.2018.118276.

33. Janamian T, Jackson CL, Glasson N, Nicholson C. A systematic review of the challenges to implementation of the patient-centred medical home: lessons for Australia. *Med J Aust*. 2014;201(3 Suppl):S69-73. doi: 10.5694/mja14.00295

34. Doolittle B, Tobin D, Genao I, Ellman M, Ruser C, Brienza R. Implementing the patient-centered medical home in residency education. *Educ Health (Abingdon)*. 2015;28(1):74-78. doi: 10.4103/1357-6283.161916.